Oregon
Tina Kotek, Governor

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Oregon State Energy Strategy Feedback

The following is a compilation of written feedback received during engagement to inform the Oregon Energy Strategy. It reflects all comments received between December 2, 2024 and August 14, 2025 through email and the Oregon Energy Strategy comment portal. The Oregon Department of Energy solicited feedback throughout this time period to inform the Phase 2 policy discussions.

House Bill 3630 directs the Oregon Department of Energy to develop an Oregon Energy Strategy that identifies pathways to achieving the state's energy policy objectives, develops policy recommendations to help achieve these objectives, and that is informed by robust stakeholder engagement. The Energy Strategy is meant to serve as a resource over time through continued analysis and engagement to help Oregon achieve emissions reductions in line with state energy and climate policy goals.

The process to develop the Oregon Energy Strategy is divided into three phases: Phase 1 focuses on the modeling and technical analysis to explore different pathways to meeting the state's energy policy objectives. Phase 2 applies learnings from this analysis to inform policy discussion and develop policy recommendations. Phase 3 involves the development of the final report, which must include: a summary of pathways to achieve Oregon's energy policy objectives, policy recommendations, and a description of the engagement process and how stakeholder perspectives informed the Energy Strategy.

The Oregon Department of Energy continues to invite written feedback on the Energy Strategy comment portal throughout the development of the Energy Strategy. The comment portal can be found here: https://odoe.powerappsportals.us/en-US/energy-strategy/

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Public Comment

Better Energy LLC, Tracy Farwell, 12.3.24

Our Oregon State Energy Strategy must acknowledge its total dependency on out of state liquid fuel sourcing.

Oregon Energy Strategy

Public Comment

Better Energy LLC, 1.31.25

It would be instructive to depict three possible Cascadia seismic "wild card" events (early, moderate, late) on an appropriate energy transition timeline. Solving this inescapable problem before it happens is a huge cost saving compared to after-the-fact costs (saves more than 10:1) https://www.nibs.org/files/pdfs/ms_v4_overview.pdf

4 February 2025

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS – HB 2581

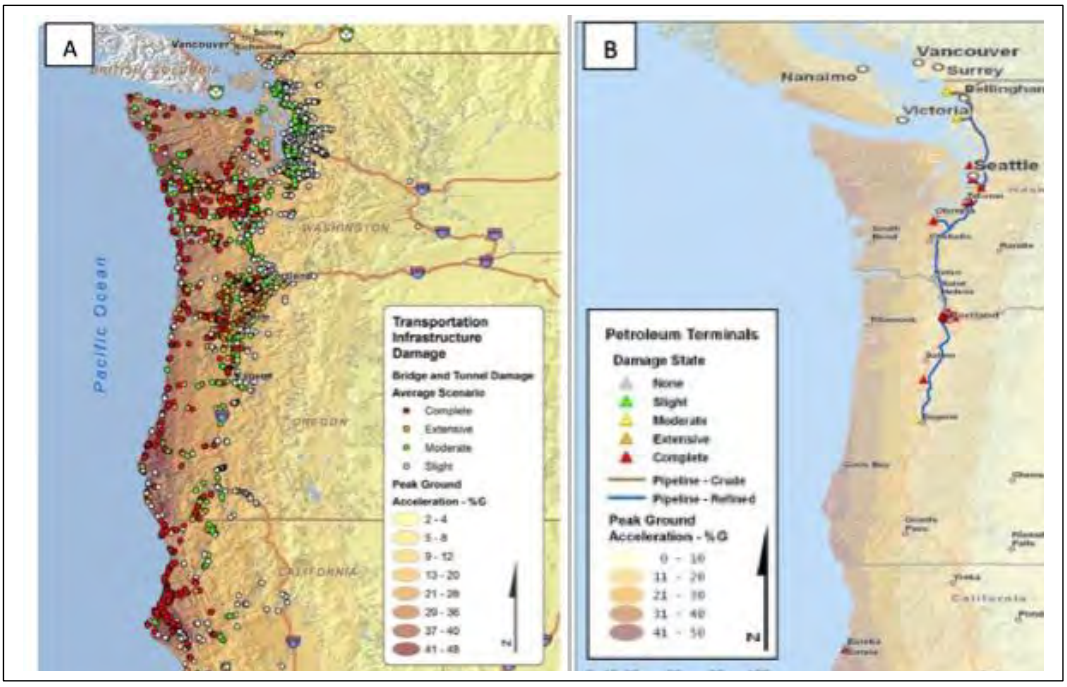
Chair Representative Thuy Tran
Vice-Chair Representative Dacia Graber
Vice-Chair Representative Rick Lewis
Members of the Committee

RE: HB 2581 Expands the Duties of the State Resilience Officer

Situation Report
Our Oregon Resilience and Emergency Response Advisor correctly advised the Committee on 30 January 2025* that based on the known 10,000-yr history of the West Coast, the next seismic megathrust event will devastate the environment and the economy on a national scale never seen before. There is no evidence that this is an exaggeration. With support from the Committee but otherwise no staff, no budget, no authority, expanding her duties seems less promotion but more like delegated stress, in effect.

We can help by partnering with the Committee and with the Advisor to expand our awareness of facts and data that will guide our strategic Oregon response. Naturally we know that preparing infrastructure in advance greatly reduces after-the-fact costs. Investing in durability before-the-fact reduces demand on public emergency recovery cost by at least 10 to 1. Inflationary risk can be controlled. With advanced planning for energy self-sufficiency first responders can act without waiting for infrastructure rebuild.

There is evidence that the geographic destruction will be greater in Washington than in Oregon. Our Oregon Resilience Plan states, "We believe that it would be beneficial for both states to work together at a regional level to address the common challenge of resilience to a region-wide seismic event."

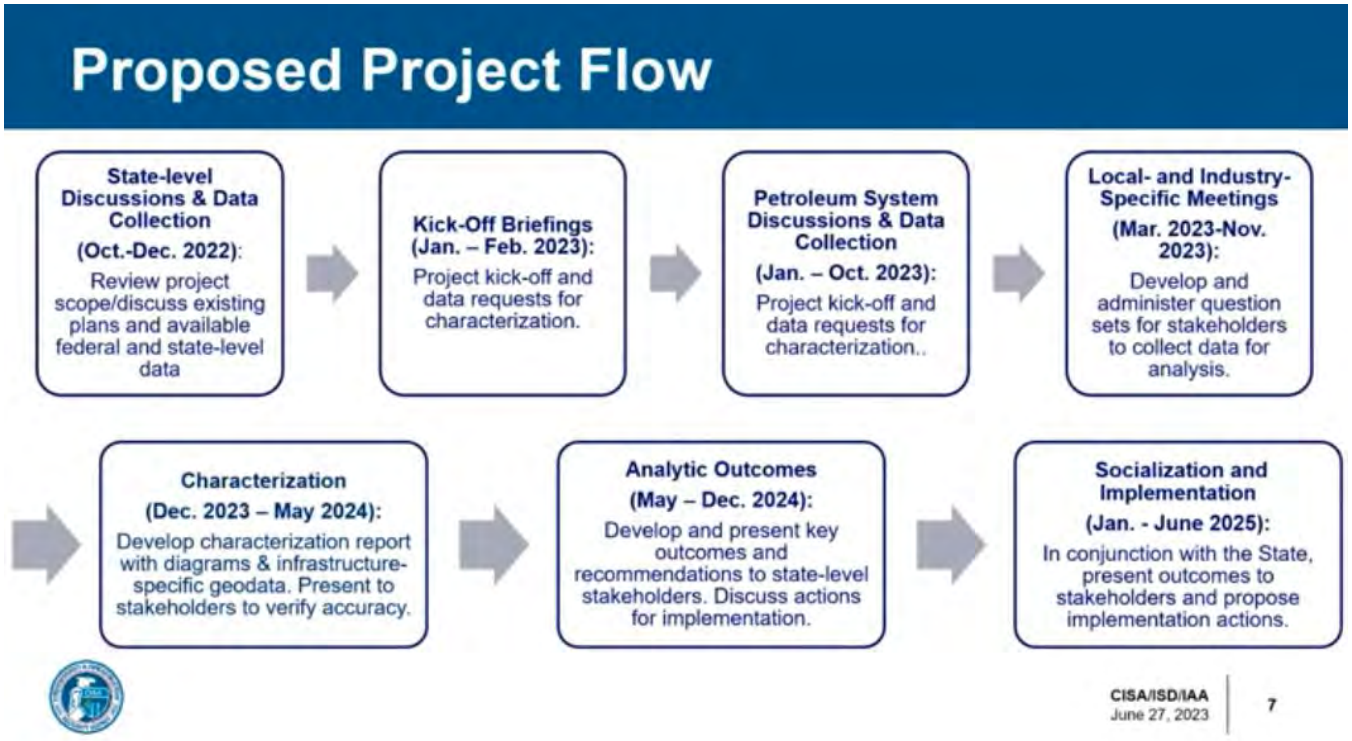


Credit:
Seismic Alaska

Single pipeline.

With Cascadia M8, damage is complete.

A collaborative effort has started in Washington but has not formally reached Oregon, although the Seismic Vulnerability Assessments under Oregon DEQ auspices are making initial progress.



This WASHINGTON LAST MILE FUELS REGIONAL RESILIENCY ASSESSMENT PROGRAM (RRAP) is conducted by DHS Cyber and Infrastructure Security Agency, with leadership from he Infrastructure Assessments and Analysis (IAA) Group under CISA's Infrastructure Security Division (ISD).

CISA Region 10 Consists of Alaska, Washington, Idaho, and Oregon.

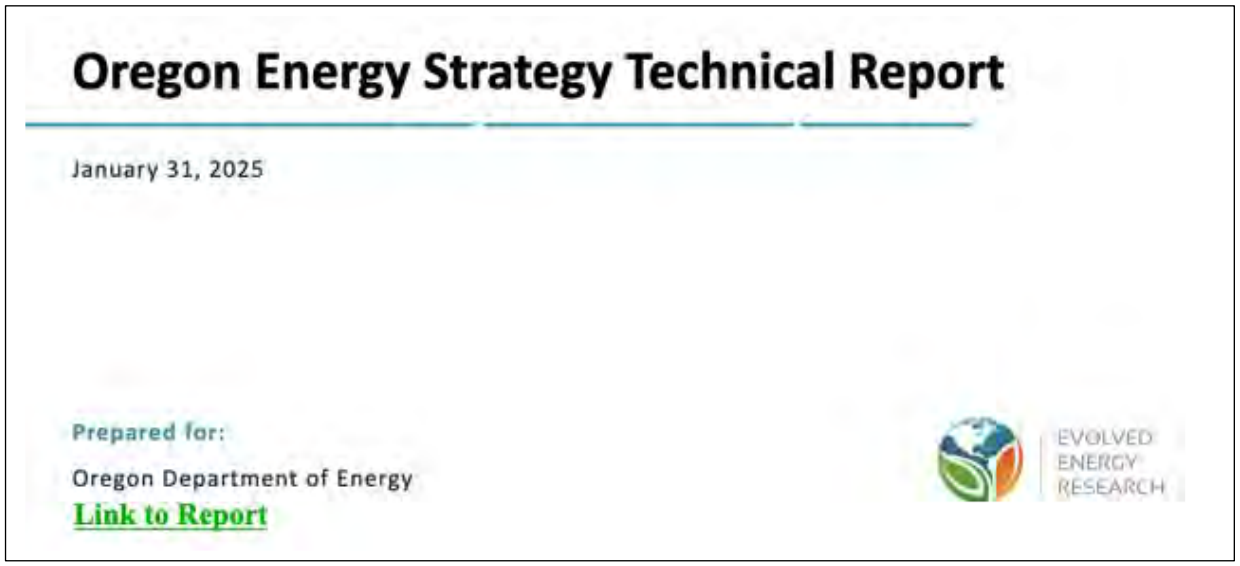
The latest available status report is given in this 60-minute streaming video featuring a June 27, 2023 teleconference later posted on 12 October 2023. Significant observations are made:

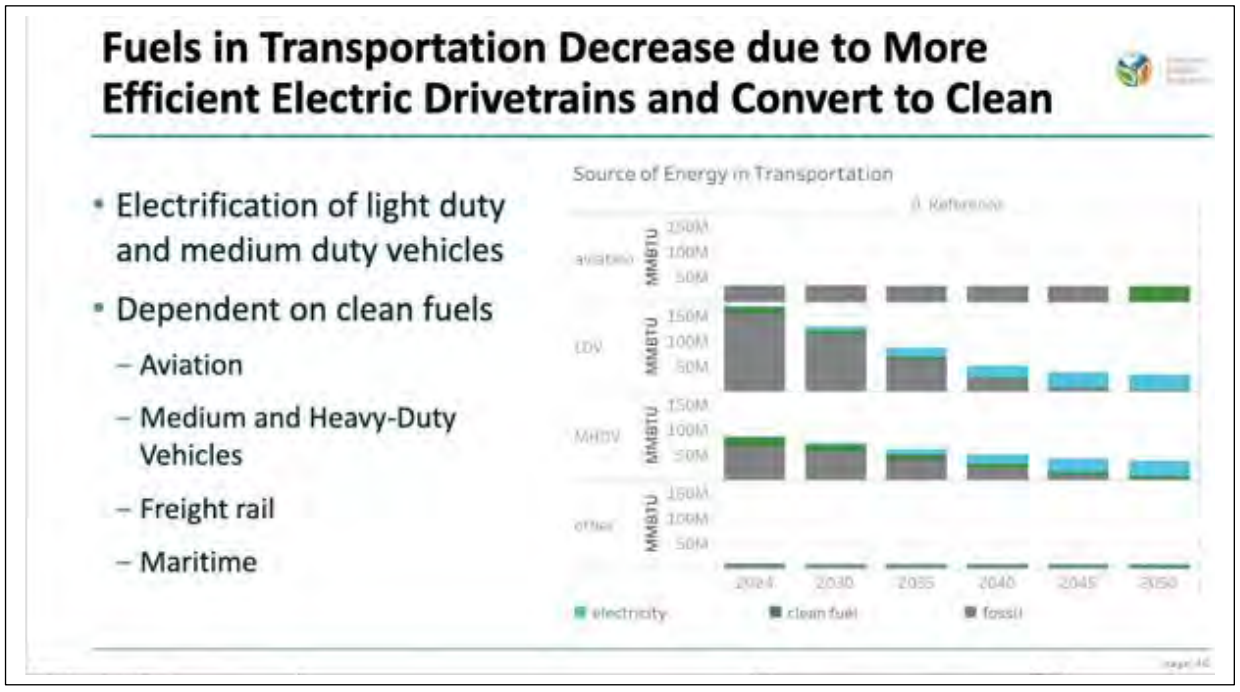
- This is year 3 of a 3-year assessment period.
- Resilience Enhancement Options (REO) will be identified.
- Pipelines have been unearthed by landslides.
- Contingency Fuel Points of Distribution (F-PODs) will be identified.
- Washington will rely on Federal support for catastrophic incidents.
- FEMA and DoD beginning to engage (June 2023).
- Additional National Petroleum Reserve proposed in Salt Lake City.
- Fuel distribution by "book and ledger" after power failure.
- Local fuel wholesale contracts often need catastrophe response clauses.
- Price-gouging was discussed.
- Vulnerability of the Olympic Pipeline was noted, plus consideration of a more durable second pipeline.

- Washington ships fuel to California under favorable economic terms.
- Oregon fuel is sourced to Washington (Cougar Den)

The IAA group has employed Idaho National Labs to lead the Fuels RRAP. A catch-up on current status is being requested (either to this NGO partner or to the Oregon House Committee).

So far, the recent Oregon DOE Energy Strategy Technical Report does not factor the Cascadia M8 critical infrastructure disruption but could. This is less a mere scenario and more an inescapable future.





Clean fuels for Aviation are expected to lag those for Light Duty Vehicles (LDVs like cars and light trucks) as well as Medium and Heavy-Duty Vehicles (MHDVs). Energy in Transportation is expected to attain clean non-emitting goals in 2050.

Fuels in Oregon Transportation Decrease …..

Assume Cascadia M8 in 2030 (inevitable in future, not just a scenario)

Oregon Unable To Depend On Rebuild of Washington Critical Fuels Infrastructure

- Seems to be no WA Critical Infrastructure recovery timeline
- May result in Military Department intervention
- CEI Hub critical infrastructure compromised (90% of Oregon fuel supply)
- Marginal excess capacity in Midwest refineries is not known
- Salt Lake City National Fuel Reserve not established
- OEM can't access emergency fuel – recruit EVs (like Amazon Rivian vans)
- Oregon emergency transition to expanded electricity grid
- Oregon emergency demand/acquisition of LDV, MHDV, Rail
- Maintain carbon fuel fleets where possible

Fuels in Oregon Transportation Decrease …..

Excess Capacity of Upper Midwest Refineries is Unknown

https://www.eia.gov/energyexplained/oil-and-petroleum-products/refining-crude-oil-refinery-rankings.php

U.S. Refineries, Operable Capacity as of January 1, 2023, Upper Midwest

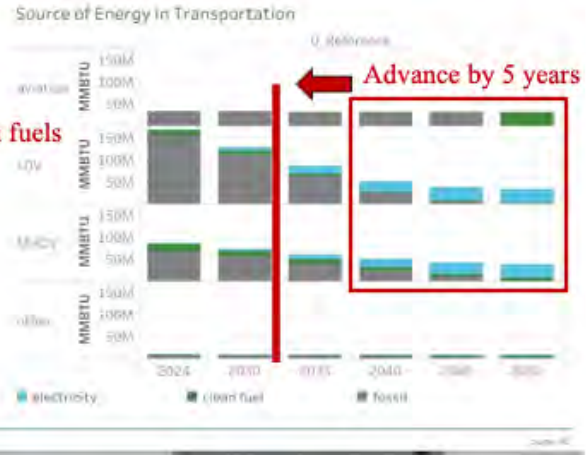
Corporation	Company	State	Site	Barrels per calendar day	Excess Capacity
Marathon Petroleum Corp	Tesoro Refining & Marketing Co	Utah	Salt Lake City	66,000	
Phillips 66 Company	Phillips 66 Company	Montana	Billings	66,000	
CHS Inc	Cenex Harvest States Coop	Montana	Laurel	62,500	
ExxonMobil Corp	Exxonmobil Refining & Supply Co	Montana	Billings	61,500	
Chevron Corp	Chevron USA Inc	Utah	Salt Lake City	54,720	
HF Sinclair Corp	HF Sinclair Woods Cross Refining LLC	Utah	Woods Cross	39,330	
FJ Management Inc	Big West Oil Co	Utah	North Salt Lake	31,664	
Calumet Specialty Products Pa	Calumet Montana Refining LLC	Montana	Great Falls	24,600	
Silver Eagle Refining Inc	Silver Eagle Refining	Utah	Woods Cross	15,000	

Fuels in Transportation Decrease due to More Efficient Electric Drivetrains and Convert to Clean

Edited

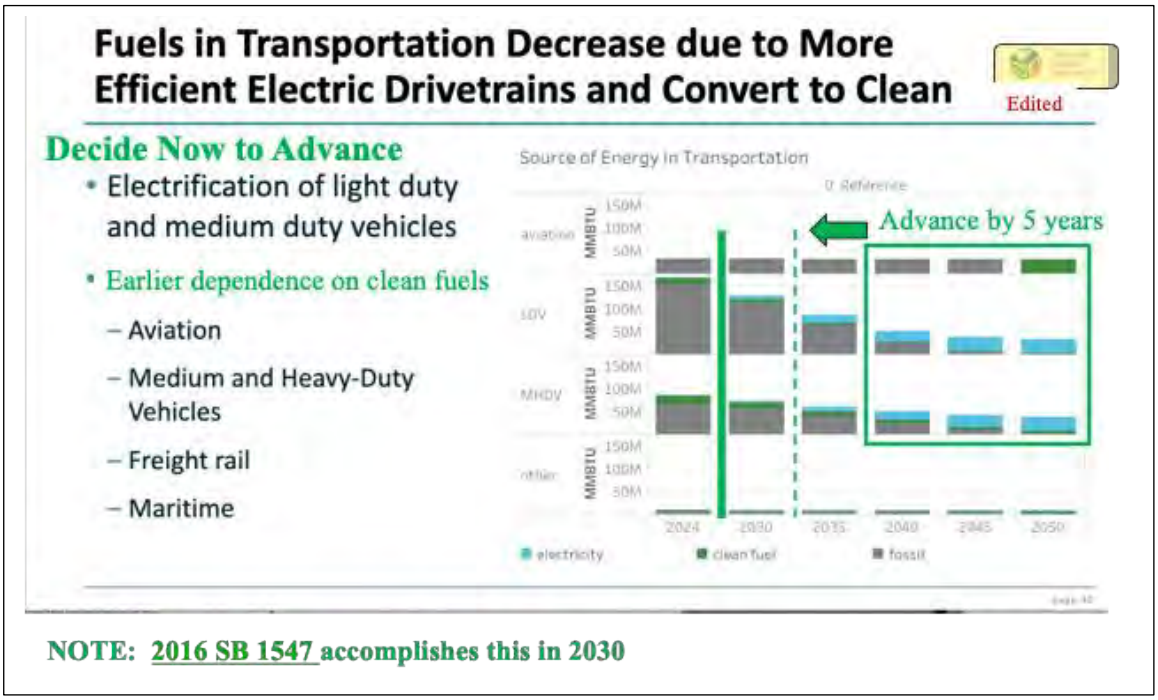
Assume Cascadia M8 in 2030

- Electrification of light duty and medium duty vehicles
- Forces earlier dependence on clean fuels
  - Aviation
  - Medium and Heavy-Duty Vehicles
  - Freight rail
  - Maritime



Whenever the next Cascadia event occurs it will force a lengthy and costly rebuild of carbon fuel logistics infrastructure, leading to cost trades favoring less costly infrastructure that avoids commodity fuel handling. For example, the electricity grid does not involve costly high-maintenance commodity fuel management and delivery.

Considering the inevitability and the sizeable cost penalties for emergency responses we see in the kinds of demands faced by FEMA (tens of $B per episode), we can consider the avoided cost when deciding to transition to less vulnerable more durable infrastructure before-the-fact.

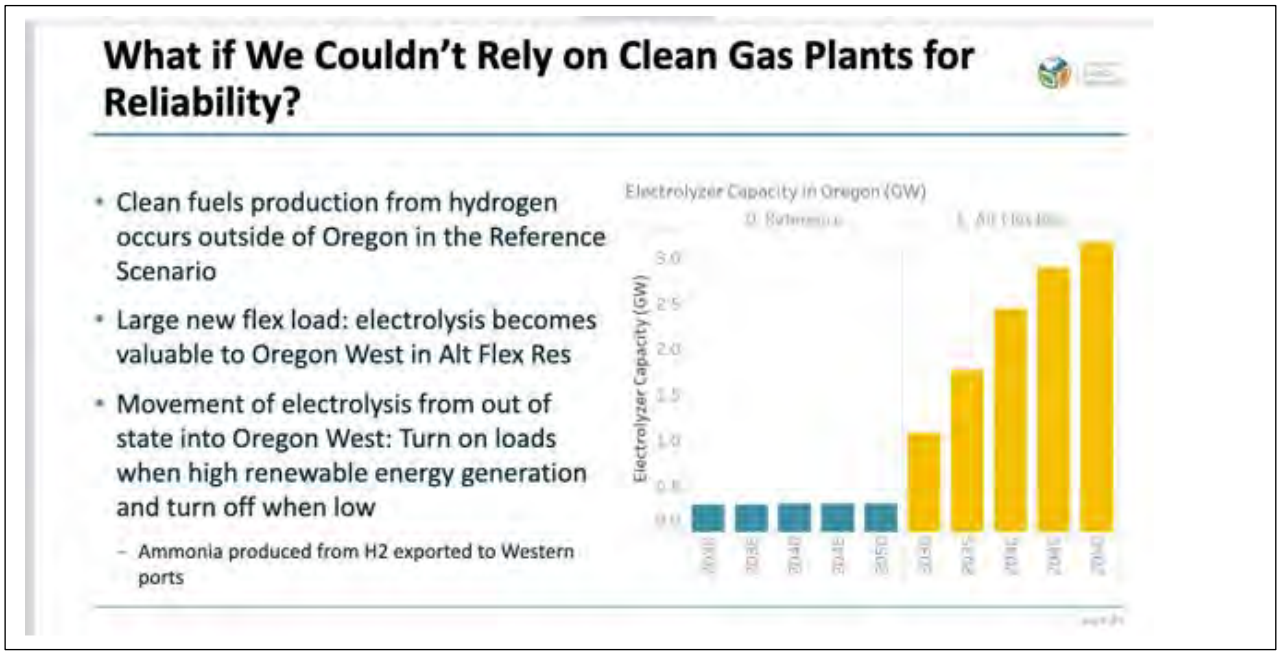


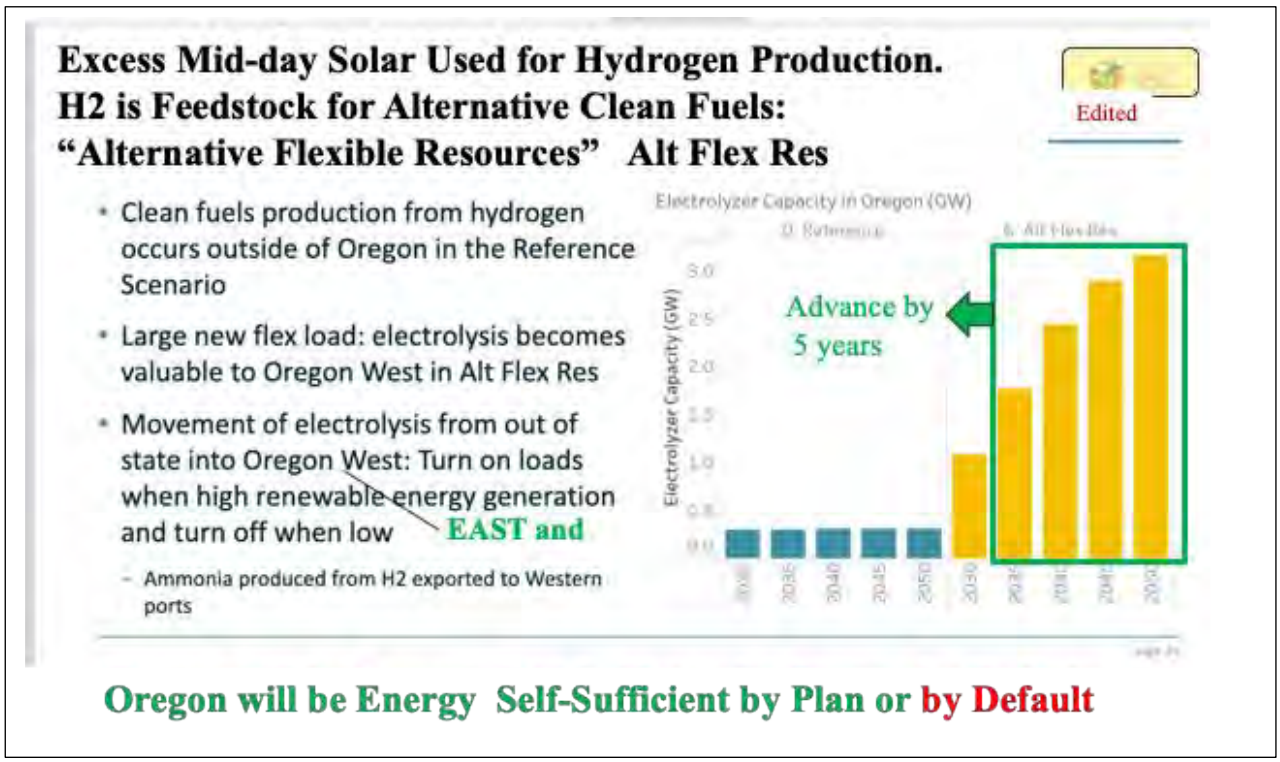
Fuels in Oregon Transportation Decrease …..

Plan to Advance to More Efficient Electric Drivetrains

- Planning is easier than waiting for the inevitable then reacting under duress
- More efficient energy use means less total energy needed for same benefit
- Less energy needed means energy goals achieved sooner
- More durable critical infrastructure ahead of Cascadia M8
  - Means OEM not impeded by failed fuel infrastructure
  - Cost of upgraded lifeline infrastructure is 1/10 of post-M8 disaster $$$
  - Lives saved by averting predictable service delivery barriers typically confronting first responders

Natural Gas demand in western Washington will remain unchanged after Cascadia but lifeline infrastructure restoration costs there will spike the cost of gas in Washington and Oregon.





*NOTE

The Bird Flu agenda as conducted by the Oregon House Emergency Management Committee on 30 January 2025 was the most effective peer-discussion kumbaya in the history of government. Not a single rash trigger word was uttered. This establishes a "no guff" precedent that should please continue. The video record from this meeting constitutes a training film for how to collaborate in public, as is.

Oregon Energy Strategy

Public Comment

Better Energy LLC, 2.4.25

Please accept this Testimony as a Comment pertaining to the 31 January 2025 event held at OMSI.

https://olis.oregonlegislature.gov/liz/2025R1/Downloads/PublicTestimonyDocument/119748

Oregon Energy Strategy

Public Comment

Better Energy LLC, Tracy Farwell, 4.3.25

For 24 April: Oregon State Energy Strategy must please answer the inevitable Cascadia Catastrophe in terms of preventing stranded fuel islands due to infrastructure collapse - not yet acknowledged to date.

Oregon Energy Strategy
Public Comment – ODOE Scope to narrow

The Urgent Need for Durable Energy Infrastructure Does Not Show Up In Model Graphics

22 May 2025

With abundant evidence that excellent processes include widespread public engagement, important factors are nevertheless not being acknowledged.

The ODOE Energy Strategy is more effective if it guides its generalized conclusions from a consideration of the dire risks faced by Washington County, the most energy compromised County in Oregon.

- The County Sustainability Office is defunded
- The County Emergency Management Staff is being defunded
- There is no possibility the County will survive the return of the Cascadia megaquake, due to total stranding from commodity fuel infrastructure collapse

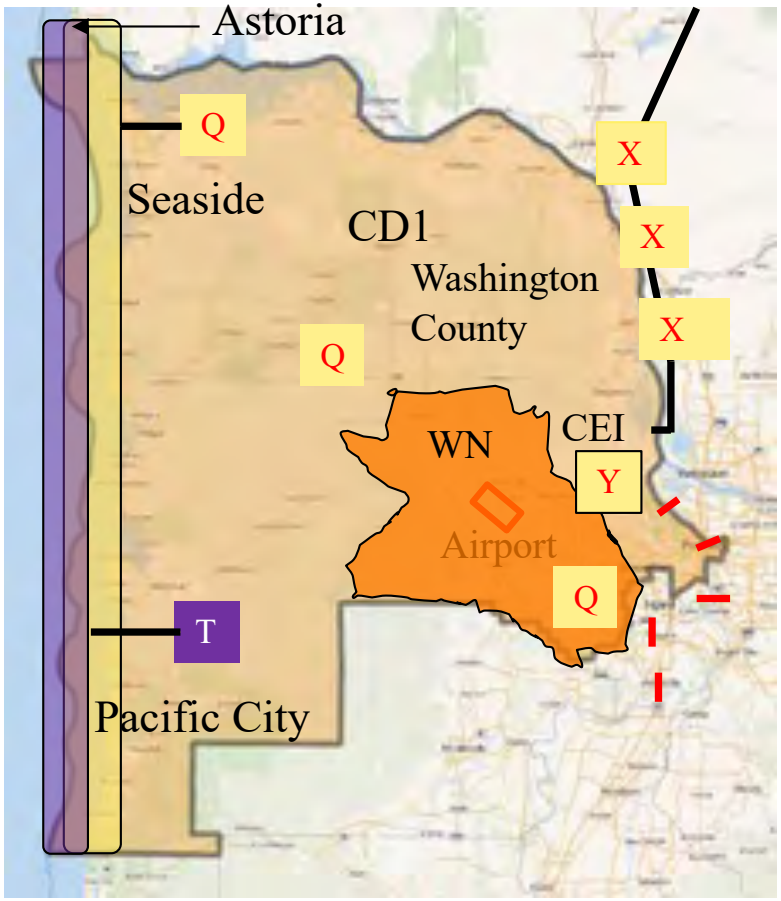
NOTE: This Comment cites verifiable facts rather than opinion

Oregon Energy Strategy
Public Comment – ODOE Scope too narrow

22 May 2025

No one is arguing that Washington County is not THE most threatened in Oregon for fuel insecurity. Population 598,000

First Congressional District on Cascadia Day Zero – and all at the same time



– Failed rail bridges preclude fuel delivery

X Olympic Pipeline failure
- Strands Oregon

Y CEI Hub collapse
- Ends tanker truck logistics to CD1

Q Quake collapse
- Closes Columbia at Astoria Bridge
- Damages coastal infrastructure
- Extensive coastal road/bridge loss
- Extensive utility damage
- Damages Wash Co infrastructure
- Damages bridges, maybe utilities

T Tsunami
- Re-damages coastal infrastructure
- More coastal road/bridge loss
- More utility loss

Oregon Energy Strategy
Public Comment – ODOE Scope too narrow

22 May 2025

The fundamental question of when to plan for the inescapable Cascadia catastrophe has been answered poorly in the past.

Oregon seismic policy documents cite the risk as 37% in 50 years. Unfortunately, this math does not describe public safety risk, but instead was derived to guide structures engineers with design life decisions. We know this from a review of the history of USGS seismic math.

A careful review of USGS Cascadia Paleoseismicity data discloses that over 80% of historic return intervals between events have been exceeded since 1700 as unrelieved tectonic plate stress increases every year. Anyone can double check facts from this analysis:
https://better-energy-llc.com/be-cautious/an-undeniable-hard-stop/

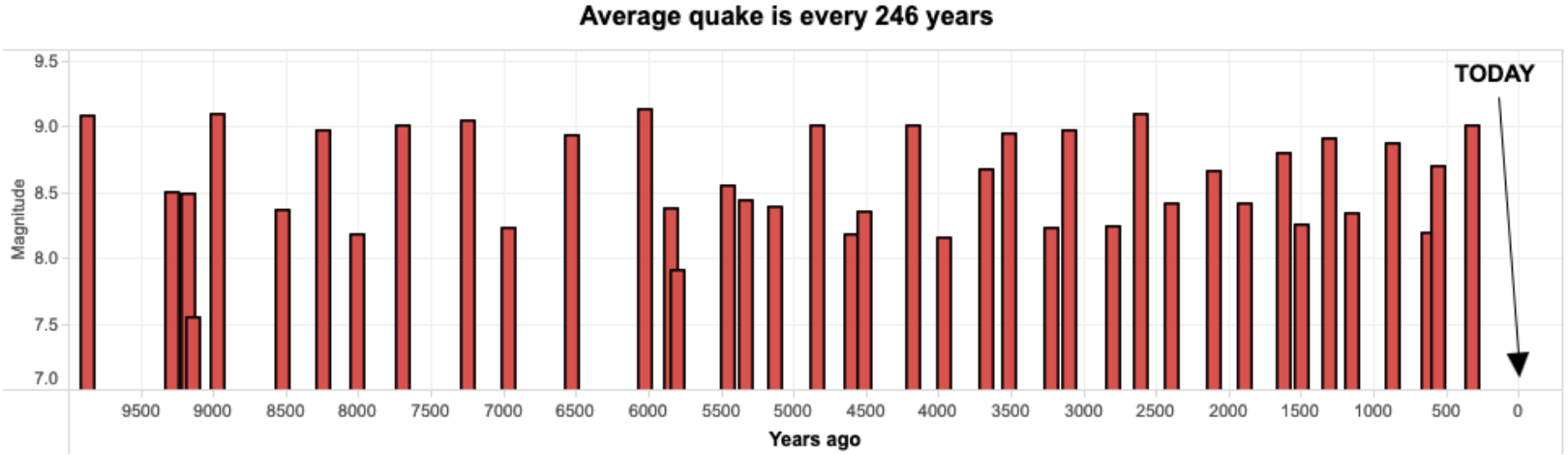
The math says the odds of a destructive Cascadia return tomorrow are 4 to 1. This should influence ODOE strategy, calling for contingency planning.

Oregon Energy Strategy
Public Comment – ODOE Scope too narrow

Northwest history of recurring M8 and M9 Events

10,000 years of Cascadia earthquakes

The chart shows all 40 major earthquakes in the Cascadia Subduction Zone that geologists estimate have occurred since 9845 B.C. Scientists estimated the magnitude and timing of each quake by examining soil samples at more than 50 undersea sites between Washington, Oregon and California.

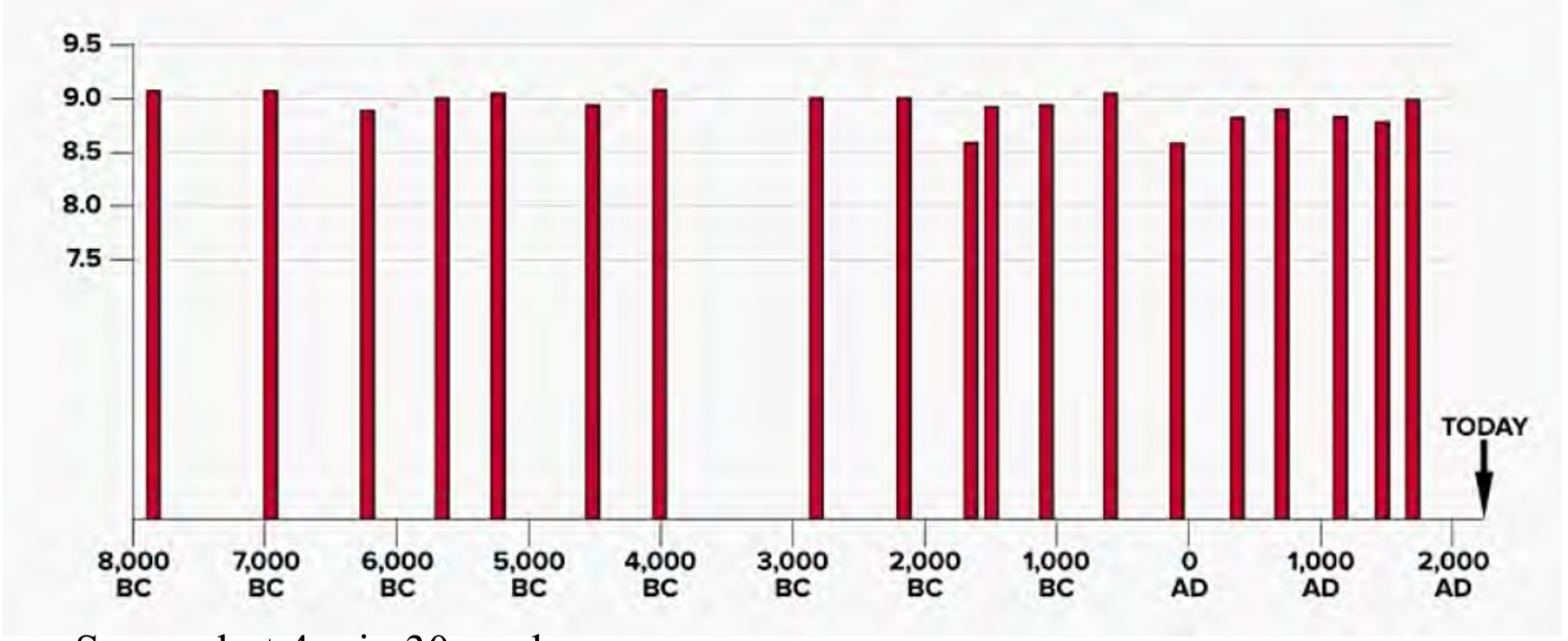


Last event was 1700. Add average 246 = 1946, when chance was 50%.
https://projects.oregonlive.com/maps/earthquakes/timeline

Oregon Energy Strategy
Public Comment – ODOE Scope too narrow

22 May 2025

How to dismiss near term risk:
Only look at M9 Events



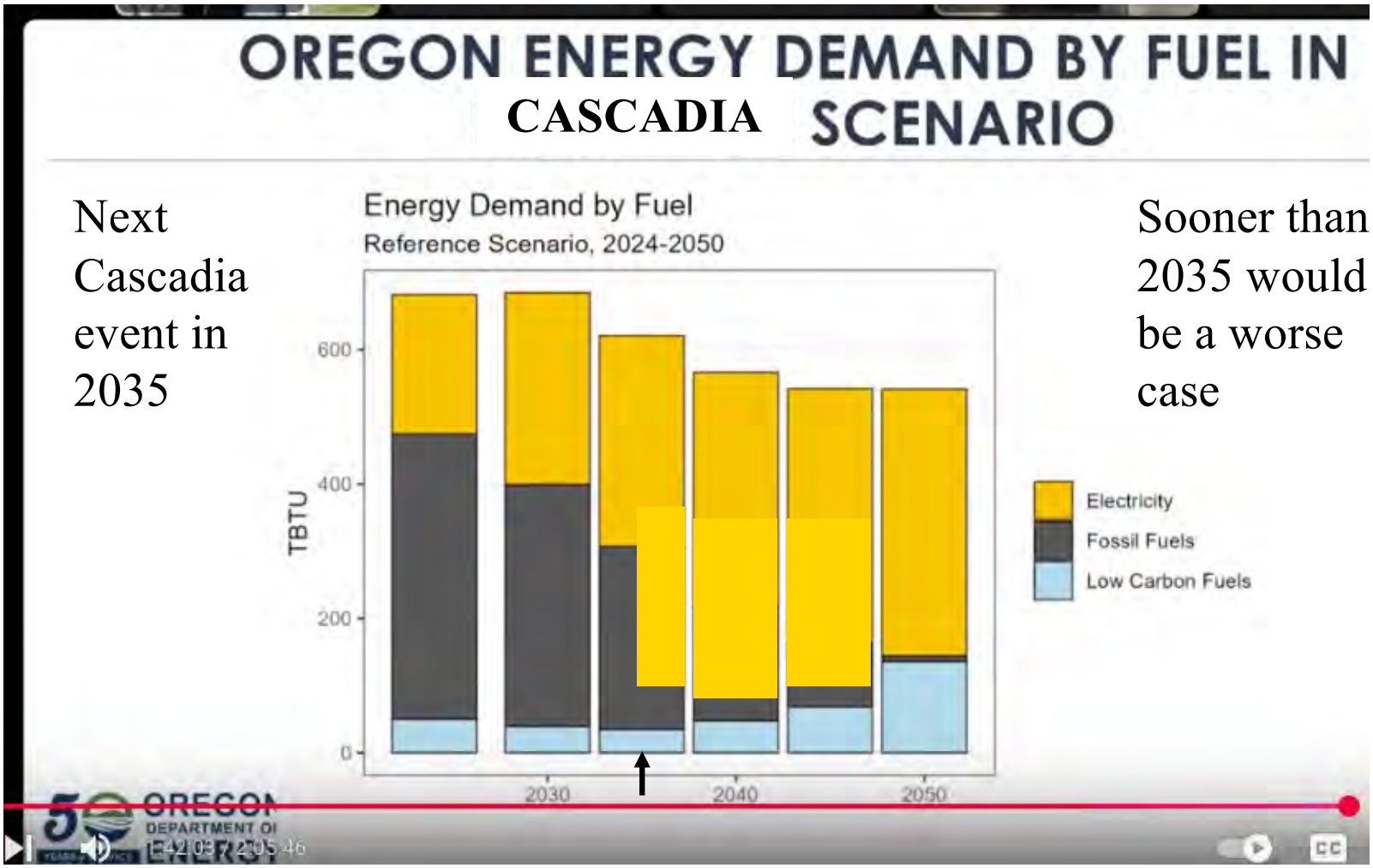
Screenshot 4 min 30 sec here:
https://www.youtube.com/watch?v=GP-vyAwiXCM

Says average interval 400 to 500 years.

Oregon Energy Strategy
Public Comment – ODOE Scope too narrow

22 May 2025

Factoring Cascadia would look like this, with a collapse of fossil fuel infrastructure.



22 May 2025

Such a scenario would require a step in electricity production, no doubt from gas generation and renewables.

- Fuel switching would be supported by contingency transition to gas peaker generation
- VMT and petro fuel pollution would drop immediately
- Emergency response would be substantially impeded by fuel scarcity
  - Contingency plan would accelerate transition to electrified first response fleets
  - Emergency fuel depots built in advance are a necessary measure
  - Durable replacements bridges and overpasses must be accomplished
- Pace of infrastructure rebuild would be impeded from fuel scarcity
  - Contingency planning would accelerate electrified construction fleets
- Grid destruction on the coast would be extensive
  - Service restoration made easier by first-alert shutdown of substations
- Grid enhancements called for in 2025 HB 3336 are a huge step in contingency planning
- Testimony supporting HB 3336: Senate E and E

Oregon Energy Strategy
Public Comment – ODOE Scope too narrow

22 May 2025

By studying the most threatened county, the resultant Energy Strategy will disclose priority actions driven by our unique West Coast geologic reality.

- Because of Cascadia history, a contingency energy strategy will happen by default on Day 1 under immense admin stress.
- Factoring an inescapable contingency scenario during current analyses is intelligent and efficient.
- Coordination for fuel resupply during this contingency scenario is made extremely difficult by contrived barriers
  - Impoundment of 2021 IIJA mandated infrastructure appropriations
  - Impoundment of 2022 IRA mandated infrastructure appropriations
  - Washington State Fuels RRAP (Regional Resiliency Assessment Program) that excludes factoring contingency fuels to Oregon

Oregon Energy Strategy
Public Comment – ODOE Scope too narrow

22 May 2025

Oregon must come to terms with geology even if a strategic course correction results

- When faced with the inevitable, contingency preparation is not an option
- Military Department has an interest in contingency energy concepts

As regulator for fossil gas infrastructure the Oregon Public Utility Commission would contribute to the Cascadia contingency planning

- Pressurized gas pipeline infrastructure is located inland so less risk
- Electricity grid would be stabilized by Cascadia contingency energy contracts
  - Extensive list of IOU power stations in Oregon
  - Plus COUs
- Gas utility service fleets would be stranded for fuel
  - Electrified gas utility service vehicles pose unique safety hazards

Respectfully submitted, Tracy Farwell, Better Energy LLC, Sustainability Desk

Oregon Energy Strategy

Public Comment

Bob Wright, 1.7.2025

In addition to reducing harmful emissions, we also need to clean up past pollution (also called “ legacy emissions”).

Oregon Energy Strategy

Public Comment

Canby Transmission Inc., Jeff Marsh, 4.1.25

Why is E85 automotive fuel not readily available in Oregon ? 1 station in Bend Or has it. I thought Oregon is a green state and with all the vehicles that can run it it doesn't make since. Older cars are easily converted and it reduces emissions on classic cars immensely ! Modern vehicles it reduces emissions and 85% is renewable resource. What's up and why is it not available ??? Is it not really about emissions and more about the $$$ that's what I believe.

May 9, 2025

Submitted via online portal

Oregon Department of Energy
550 Capitol St. NE
Salem, OR 97301

Re: ODOE's Energy Strategy Straw Proposals and Draft Policy Actions

I. Introduction

These comments reflect the perspectives of several organizations that are part of the Environmental Justice and Equity Policy Working Group. We appreciated how ODOE EJ staff structured our conversations. However, we offer as general process feedback that in the future ODOE should be more accommodating to the realities of organizations working on EJ when organizations express capacity concerns with ODOE's timelines. ODOE's denial of our request for an extension limited our ability to provide feedback in these comments.

For example, rather than being able to better coordinate and make sure that we all agree to the individual observations under each draft recommendation, the collaborators for this document wrote down our observations in a less collaborative format. As a result, this document should not be understood as one where all of us necessarily endorse all of the comments under each draft recommendation, but rather as a collection of feedback from those who were able to collaborate in the document.

II. Generally applicable feedback

We appreciate efforts by ODOE and other Oregon Energy Strategy team members on this project. Our group discussed each set of recommendations from each workgroup separately. We encourage the Energy Strategy to include a section that acknowledges the importance of considering funding and implementation capacity and trade offs down the line, as recommendations are selected to become policies.

To ensure that environmental justice perspectives are centered throughout the Strategy, across issue areas, we recommend that the following language be included in each of the topic areas: *…"all with a responsibility to explicitly utilize an environmental justice and energy justice lens and equitable processes through meaningful community engagement to prioritize environmental justice and impacted communities."* Currently, this is only stated in the Developing Clean Electricity Generation and Transmission section, but we feel this is an integral approach that should be central to all policy actions. This approach is especially important in light of how a future user is likely to use the OES, by quoting specific recommendation text that bolsters a particular argument rather than by looking for the umbrella language on EJ and adjusting each recommendation as necessary.

Below, we offer responses to the draft policy recommendations outlined by ODOE. Each draft policy is in italics, and our response, where applicable, is non-italic, regular type.

III. Transportation Electrification

Vehicle Electrification

Potential Policy Actions:

- *Establish a sustainable source of state funding to support the rapid deployment of charging and fueling infrastructure statewide.*
    - We recommend that this recommendation includes that some of the funding should be allocated to technical assistance for entities with lower resources to be able to access this funding.
    - We feel it is necessary for this action to clarify that the charging and fueling infrastructure supported here are focused on zero emission vehicles, and not the expansion of fossil fuel fueling infrastructure. We recommend the following edit: "...rapid deployment of *zero emission vehicle* charging and fueling infrastructure statewide."
- *Establish and fund a statewide technical assistance program for public and private fleets to support their transition to zero emission vehicles. The program should include support with the development of a fleet transition plan, an infrastructure assessment, and an electricity rate analysis.*
- *Develop a revolving loan fund to provide low- or no-interest loans for public and private fleets and middle-income households to purchase zero emission vehicles and infrastructure.*
    - We would like to better understand what the workgroup identifies as "low interest" rates.
    - Low-income households should be included in this recommendation. We are not aware of any other recommendations or programs that would make zero emission vehicles available for free to low-income households. These are often households that are subject to high, sometimes predatory, interest rates when purchasing a vehicle. Access to low or no-interest loans when purchasing a zero emissions vehicle could be transformational for low-income households.
- *Establish a working group of state entities and others to develop regulations and standards for hydrogen refueling infrastructure, including station certification and testing protocols, as well as safety, fuel quality, and consumer protection standards.*
    - This recommendation should explicitly center Tribal perspectives.
- *Complete a MHD ZEV Technology Readiness and Feasibility Assessment to evaluate ZEVs that can be deployed in the near, mid, and long term based on cost, availability, range, payload, and operational capabilities. The study should include a Deployment Strategy that outlines a MHD ZEV roadmap for Oregon policymakers.*
- *Complete a statewide assessment of MHD charging and fueling infrastructure needs (public and depot) to meet the targets established by Advanced Clean Trucks.*

- *Launch a public information campaign (including an updated webpage, educational video, and radio, TV, and social media spots) to educate consumers and dealers about the benefits of electric vehicles, including grid benefits such as the cost savings potential of participation in managed charging and demand response programs.*
    - The public information campaign should also take place in languages other than English, leveraging trusted relationships between organizations and marginalized communities to spread information. Dealers should be required to provide accurate information since this will likely result in higher sales.

Grid Integration

Potential Policy Actions:

- *Require IOUs to publish and maintain interactive, circuit-level Hosting Capacity Maps (HCMs) showing available capacity for EV charging infrastructure, building electrification, distributed generation, and battery storage. The state should establish uniform standards for data formats and granularity, visualization tools, and public access protocols.*
- *Open an investigation on how utilities can best engage in proactive planning for the electric grid and make upfront investments in grid infrastructure in anticipation of load growth (i.e., prior to load materializing) while minimizing the risk to ratepayers.*
    - We recommend that this investigation begin with an assessment of learnings from Public Utility Commission (PUC) dockets around utility planning processes (such as Distribution Systems Plans, Clean Energy Plans, and Integrated Resource Plans).
    - The investigation should include an environmental-justice lens, with metrics to measure community benefit; utility investment prioritization should maximize community benefits. Assessing risk to ratepayers should take into consideration benefits to the most vulnerable ratepayers.
- *Provide technical assistance to help publicly owned utilities assess the load growth, DER, conservation, and demand response potential in their service territory and determine hosting capacity, distribution system needs and strategies for handling load increases.*
    - We would like to better understand the funding mechanism for this technical assistance offering. For example, will this be paid by ratepayers? We may need a comprehensive conversation about where ratepayer funded support is appropriate given the current upward rate pressure that our community faces. The Energy Strategy may call the need for that conversation in the text of the document without attaching to any specific recommendation, since ratepayer funding is one of possible funding sources for several recommendations.
- *Require IOUs to develop EV-specific rates for residential and commercial customers that better align the cost of EV charging with grid conditions. Commercial fleet rates should be designed to reduce or replace traditional demand charges and cater to varying demand levels.*
    - IOUs should also offer solutions to multifamily customers that allows them to experience similar financial benefits from EVs as single-family residential

customers. Currently, folks unable to charge at home largely have access to higher cost charging options than folks able to charge at home.

- *Establish average and maximum energization timelines for connecting new or upgraded electrical services, ensuring timely access to electricity for EV charging and clean energy projects.*
- *Complete a comprehensive review of charge management systems and their integration.*

VMT Reduction

Potential Policy Actions:

- *Study true cost pricing strategies to better align Oregon's transportation funding mechanisms with state climate goals and the full societal cost of transportation system use. This study should identify and quantify key transportation externalities such as environmental impacts, infrastructure costs, congestion impacts, public health and safety, and social equity considerations and propose implementation pathways for integrating true cost pricing into Oregon's long-term transportation funding model.*
    - While the social equity considerations language in this draft recommendation may already cover this concern, it is important that this recommendation considers how to avoid negatively impacting low-income community members as we integrate true cost pricing into Oregon's long-term transportation funding model.
- *Increase funding for Oregon's Safe Routes to School and Great Streets programs at levels commensurate with need through increased allocations from the State Highway Fund. (Note: the transportation package may include this.)*
- *Increase the Statewide Transit Tax commensurate with need to support additional transit funding. (Note: the transportation package includes some of this.)Level 3 - Restricted*
- *Establish a revolving loan program to provide low or no-interest loans for the development of housing, or infrastructure that supports the development of housing, in Climate Friendly Areas, close to higher frequency transit, or areas designated for residential infill, with preference given to affordable housing projects.*
- *Establish a statewide e-bike incentive that includes prioritization of and higher incentive levels for income-qualifying Oregonians.*
- *Amend ORS 267 to grant Transportation Districts the same tax authority as Mass Transit Districts, specifically the ability to enact or increase payroll/self-employment taxes within specified limits by board ordinance rather than through voter approval.*
- *Create a statewide safety framework for public transit, including standards for community-based unarmed personnel, data reporting, safe infrastructure, and safety in design.*

IV. Developing Clean Electricity Generation and Transmission

Facilitate responsible development of electricity infrastructure in Oregon

- *Establish a new state entity to, at minimum, engage in statewide transmission planning, establish designated transmission corridors, and lead regional engagement efforts on transmission, all with a responsibility to explicitly utilize an environmental justice and*

energy justice lens and equitable processes through meaningful community engagement to prioritize environmental justice and impacted communities

- *Study barriers to project development, particularly barriers affecting projects that do not quickly proceed to construction following siting and permitting approvals*
    - We recommend that the barriers studied should be identified through community input to ensure that the study's considerations reflect community needs and experiences around transmission siting.
- *Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects*
    - It is critical that robust and meaningful Tribal/Indigenous input be central to the development of this statewide inventory.

Promote resilience for local communities

- *Continue and as practicable expand statewide energy and energy resilience funding opportunities, including a funding opportunity for creating a formalized community benefits plan that provides meaningful engagement in the process for Environmental Justice communities (HB 4077)*
    - The term "meaningful engagement" should be clearly defined and outlined.
- *Investigate and direct investor-owned utilities to implement microgrid tariffs*
    - Because the OES will be accessed by many people, including those less familiar with utility regulation speak, it will be important to clarify what a tariff is to make this recommendation widely understandable.

Foster regional collaboration and efficient resource sharing

- *Continue, and as practicable increase collaboration with neighboring states and regional entities*
- *Study potential for shared risk development models to secure large-scale investments, including long-lead time resources and emerging generation and storage technologies*
    - It is important to specifically add an environmental justice lens to this item as specific long-lead time projects can impact EJ communities. Thoughtful conversation is critical to make sure that any future actions pursuant to this draft recommendation do not inadvertently incentivize projects with negative impacts to environmental justice communities.

Cross-cutting Ideas

- *Integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels that prioritize an equitable transition to explicitly include environmental justice communities.*
    - We recommend that "equitable transition" be clearly defined.
- *Extend HB 2021 clean energy requirements to new large loads*
- *Investigate and implement performance-based ratemaking for investor-owned utilities*

- We would like to mention the efforts that OJTA, Verde, CEP, and CUB have undertaken this legislative session with their work on the FAIR Energy Act, as well as other legislative work seeking to explore performance-based ratemaking.

V. Low Carbon Fuels

Fuel Supply

Promote development of low carbon fuel resources to increase overall supply, affordability, and availability to all Oregon communities

- *Explore opportunities to facilitate low-carbon intensity fuel production facilities in Oregon.*
  - It is crucial that this recommendation explicitly names incorporating an EJ lens in the exploration to identify and avoid the risk of low-carbon intensity fuel production facilities that burden energy justice communities.
- *Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects.*
  - We reiterate that efforts to conduct a statewide land-use inventory under this recommendation, and land-use inventories more broadly, must have Tribal/Indigenous input.
- *Update and expand Biogas and Renewable Natural Gas Inventory Report to evaluate all biogenic feedstock opportunities in the state and how they can be used for biofuels.*
- *Funding and technical assistance for investments in fuel innovation pilot projects such as hydrogen, biofuels, thermal energy networks, and geothermal projects.*

Fuel Demand

Reduce demand for fossil fuel resources and ease the transition burden to low-carbon fuels in hard to electrify applications in transportation, industry, and electricity generation while retaining resilience and safety

It would be helpful for us to better understand how ODOE or the workgroup participants define resilience for the purpose of the heading above.

- *Funding and technical support for industrial and manufacturing demonstration projects incorporating efficiency improvements and low carbon fuel technology.*
- *Study how to improve and decarbonize fuel energy storage across the state to improve statewide resilience.*
- *Revise integrated resource planning regulatory framework for natural gas utilities allowing them to develop innovation plans that meet GHG reduction targets through new resource projects, (hydrogen, thermal energy networks, geothermal, or other innovations) providing greater flexibility and regulatory clarity on resource procurement, project prudence evaluation, and cost recovery for utilities.*
  - This recommendation should be amended to explicitly include that the exploration of gas-utility innovation to meet GHG reduction targets should

minimize the risk of saddling gas customers with large and risky infrastructure spending that leads to rising bills. This could be accomplished by making sure that utilities have small pilots with demonstrated success, overseen by their regulator, before seeking to scale particular solutions. Importantly, it is unclear to us if this is not something that the utilities can do already, within the bounds of their current regulatory structure.

Electrification and Strategic Consumption

Protect existing critical Oregon businesses and energy consumers while overall fuel demand declines and transitions to low-carbon fuels in hard to electrify applications.

- *Integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels while prioritizing an equitable transition to explicitly include environmental justice communities.*
    - We would like more clarity on what the subcommittee had in mind for an equitable transition that explicitly includes environmental justice communities. It sounds reasonable but details would be helpful.
- *Investigate and implement performance-based ratemaking for natural gas and electric utilities*
    - We would like to mention the efforts that OJTA, Verde, CEP, and CUB have undertaken this legislative session with their work on the FAIR Energy Act, as well as other legislative work seeking to explore performance-based ratemaking.
- *Fund a consumer facing energy transition service program to educate and financially support residential and commercial building conversions from primarily natural gas, propane, or oil heat to efficient electric options owned or operated in low income, rural, and disadvantage communities.*
    - If the workgroup had a sense of funding sources, that would be helpful in evaluating this recommendation.

VI. Building Electrification, Energy Efficiency, and Distributed Energy Resources

Building Electrification and Energy Efficiency

- *Modify existing energy rebate programs to primarily serve low-income households and disadvantaged communities including higher incentive rates and support from community partners*
    - We would like to better understand the details of the “support from community partners.”
    - What qualifies a household as low-income? What metric would be used to determine income thresholds?
    - We also recommend that more programs be made available to renters, who tend to be excluded from accessing rebate or incentive programs.

- *Transition non-income qualified households to programs that offer low-interest financing from revolving loan funds for high efficiency heat pumps and other energy efficiency measures.*
    - A definition of “low-interest” would be helpful as well as the source of the revolving loan funds.
    - Need to include consideration of interaction between energy efficiency measures.
- *Establish flexible funding grant program for statewide weatherization and related deferred maintenance measures. Prioritize homes with greatest needs.*
    - It is important to define “weatherization” to include what installation standards will be used within this definition. Will funding this increase rates? If so, by how much?
    - We recommend that a clear metric be used to identify “homes with greatest needs.” Further, energy cost burden should be considered in this metric.

Distributed Energy Resources

- *Develop a guidebook for community level DER and Demand Response – tie in resilience and microgrid optionality – aimed at supporting smaller municipalities, rural counties and other groups that cannot afford to participate alone, but could benefit from a collaboration*
    - Community/CAP agencies should be involved in this process.
- *Support adoption of distributed energy resources to increase energy resilience, enable demand response programs and provide grid services and financial benefits for utilities and customers.*
- *Conduct a study to assess the workforce implications of meeting Oregon’s future energy needs, with the goal of identifying opportunities for new job creation, assessing potential job displacement, and informing strategies to support and expand workforce development efforts to promote a just transition.*

Thank you for considering our comments and recommendations. We look forward to continuing to engage in this process to develop equitable, environmentally just policy actions and strategies within the Energy Strategy.

Sincerely,
Silvia Tanner, Multnomah County Office of Sustainability
Nikita Daryanani, Coalition of Communities of Color
Greer Klapecki, Community Energy Project
Christina Zamora, Klamath and Lake Community Action Services

Oregon Energy Strategy's Justice and Equity Framework

Background

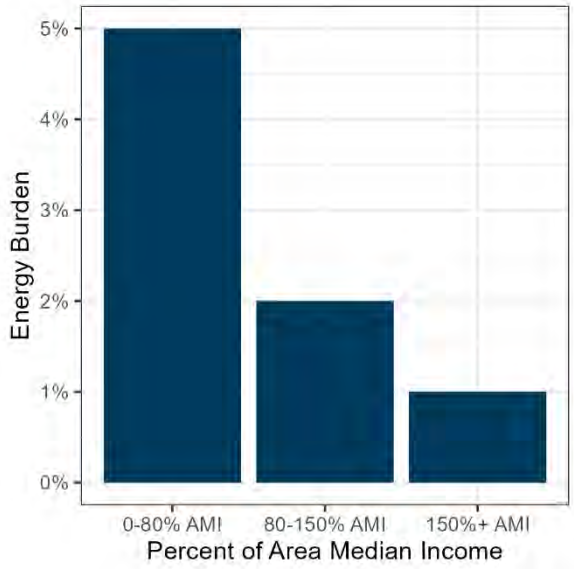
The Equity and Justice Framework provides a tool to help implement the Oregon Energy Strategy with equity and justice at the core of how Oregon moves toward its energy policy objectives.

The Equity and Justice Framework aims to reduce the disproportionate costs of energy burden, negative health effects from energy-related pollution, and lack of resilience against extreme weather induced by climate change as the state adopts new programs, regulatory structures and business models to move the state toward cleaner energy sources. The framework is a tool to apply as you read the Energy Strategy. It can help determine what equity and justice methods could be used to move Oregon toward its energy goals.

To create equitable strategies for accomplishing our state's climate and energy goals, we first recognize there are disparities in how Oregonians experience benefits from or are burdened by our energy system. For example, Oregonians with lower incomes spend a greater proportion of their annual household income on home energy costs, see Figure 1.

The state is currently in the process of developing an Oregon-based Environmental Justice Mapping Tool to help identify communities underrepresented in government processes and harmed by environmental and health hazards. This tool, which is expected to be available in 2027, may provide more comprehensive insight into disparities affected by the development and use of energy in the state vital for developing equitable policy. However, even as that tool is under development, there should be a concerted effort to meaningfully involve (as defined in Oregon House Bill 4077) those who have been historically and are currently excluded from decision making processes, and provide a framework that demonstrates how to create just and equitable practices when developing energy policies, actions, and outcomes.

Figure 1: Energy Burden by Household Income



Source: United States Department of Energy Low-income Energy Affordability Data (Archived in December 2024 by the Harvard Dataverse)
Notes: Energy burden is defined as the percent of household income that is spent on home energy costs.

Throughout the Oregon Energy Strategy, the terms environmental justice and environmental justice community are used, following Oregon HB 4077's definition of "communities of color, communities experiencing lower incomes, communities experiencing health inequities, tribal communities, rural communities, remote communities, coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including seniors, youth and persons with disabilities."

Additionally, HB 4077 defines "meaningful involvement" as: (a) Members of vulnerable populations have appropriate opportunities to participate in decisions about a proposed activity that will affect their environment or health; (b) Public involvement can influence a decision maker's decision; (c) The concerns of all participants involved are considered in the decision-making process; and (d) Decision makers seek out and facilitate the involvement of members of vulnerable populations. The report also adheres to this definition.

The strategy employes targeted universalism [CEP Policy and Advocacy Manager commented: I've always heard targeted universalism as solutions that benefit the most marginalized/struggling groups that then benefit everyone else as a result. Is that correct? Maybe we can add that here.], which establishes a universal goal for all groups concerned and then sets targeted strategies to achieve those goals based on different groups' structure, culture, and geographies (University of California Berkley's Othering and Belong Institute). Targeted universalism is an approach that recognizes that while a goal may be universal, the solutions to achieve that goal across different communities must be targeted. The approach incorporates the idea that conversations, policies, and programs

must be informed by the needs of different communities, and that decisionmakers must engage with communities to understand and co-create solutions. With this approach, we can better understand burdens, benefits, and barriers for communities across the state to help ensure an equitable energy transition.

An equitable energy transition must be rooted in energy justice, which is defined by the Initiative for Energy Justice as:

> "the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system. Energy justice explicitly centers the concerns of communities at the frontline of pollution and climate change ("frontline communities"), working class people, indigenous communities, and those historically disenfranchised by racial and social inequity."

The Equity and Justice Framework has adapted the Initiative for Energy Justice's definition of energy justice to create accessible, affordable, reliable, and resilient energy strategies that work to maximize community benefits for Oregonians.

[THE FRAMEWORK WILL GO HERE IN THE FINAL DOCUMENT BUT IS AT THE END OF THIS NARRATIVE FOR EASE OF EDITING]

Equity and Justice Framework

The Equity and Justice Framework is not a one-size-fits-all approach. Justice and equity meet the needs of communities and people where they are and the way the framework is used must adapt. Often, there is not a simple answer or a linear process. There may be times when we need to consider multiple strategies within the framework to accomplish one action. For example, people may need more information, resources, and educational opportunities to meaningfully engage in any decision-making processes. This will require building relationships [CEP Policy and Advocacy Manager commented: Do we need to say how those relationships will be built here?] with trusted community organizations across many interests and industries.

The Energy Strategy's Equity and Justice Framework adopts the four pillars of energy justice from the University of Michigan's 2022 Energy Equity Project. These pillars work together to provide direction to achieving just and equitable outcomes in energy policies.

- **Procedural:** All groups who stand to benefit or are burdened are provided space to participate and their decisions should be taken seriously throughout the process.

- **Recognition:** No one group should dominate a process. Process understands and addresses demographic, social-economic and geographic variables, disproportionate burdens, and lived experiences of environmental justice communities.
- **Distributive:** Understanding of indirect and community benefits (health, jobs, environment, etc.) and intentional distribution of benefits to overburden [CEP Policy and Advocacy Manager commented: This word doesn't make sense to me here. Are we intentionally overburdening them? Or is it supposed to be overburdened communities?] communities.
- **Restorative:** Recognizing and reflecting on past harms and injustices caused by the energy system and actively working to prevent future harms and maximizing future benefits.

Using the pillars and community feedback, the Environmental Justice and Equity Working Group formed six methods for centering equity and justice in Oregon's energy goals. Each method has supporting metrics to understand if progress is made toward equitable outcomes.

Evaluating progress

Before a policy moves into implementation, metrics should be established and then continually be collected and analyzed throughout the program to understand if there are unintended consequences that need to be mitigated. Finally, when a program ends or moves into its next iteration, it should be evaluated to address any unforeseen risks, environmental justice communities who were not included, additional burdens, and any unmet metric goals.

The Equity and Justice Framework can be used as a lens to determine best practices, metrics, and equitable outcomes throughout the energy policy process.

[FRAMEWORK IS BELOW IN WORD FORMAT FOR EASY EDITING AND COMMENTING, IT WILL BE FORMATTED INTO A MATRIX FOR FINAL DRAFT]

"Potential metrics" are taken from or inspired by 220174_EEP_Report_8302022.pdf

EQUITABLE ACCESS TO DECISION-MAKING PROCESS

- All policies or programs to expand energy infrastructure are designed to ensure environmental justice and energy burdened [CEP Policy and Advocacy Manager commented: Apologies if I missed this, but did we define energy burdened above? If not, a quick little definition might be good.]communities have equitable access to meaningful involvement in decision-making bodies, including

using plain language, language translations, and encouraging participation from non-experts. [CEP Policy and Advocacy Manager commented: We might even say something to the effect of "utilizing community knowledge that has been previously left out of expert-level spaces". Reminds me of things like Indigenous storytelling, oral history and other qualitative data collection methods usually discredited.]

- Policies and programs intentionally reduce barriers to participation in decision-making bodies for environmental justice groups, including evaluating the feasibility of a compensation process for participation, and incorporating the cost into agency program planning.

Potential metrics:

- Percentage of participants with economic, health, pollution burden or other energy-burden factors such as climate vulnerability score [CEP Policy and Advocacy Manager commented: Do we need/want to define what this means?].
- Percentage of budget dedicated for meaningful involvement.
- Post-process survey on accessibility and transparency.

EQUITABLE ACCESS TO INFRASTRUCTURE DEVELOPMENT

All policies and programs expanding infrastructure to support technology adoption and energy reliability are designed to ensure environmental justice and energy burdened communities have equitable access to electric vehicle charging, reliable energy sources, and energy resilience.

Potential metrics:

- Reduced frequency and duration of power outages in environmental justice and medically vulnerable communities
- Number of public electric vehicle charging stations in under-resourced communities
- Number of charging stations in low to moderate income multifamily housing
- Diversity of electricity options, number of battery storage facilities

INVEST IN LONG TERM INCENTIVE PROGRAMS FOR ENVIRONMENTAL JUSTICE COMMUNITIES

- Develop statewide prioritization criteria for energy funding/assistance to reduce barriers for people with the greatest assistance need
- Provide increased and stable funding and assistance for those in low-income and energy burdened households

- Establish revolving loans with a beneficial timeline for repayment to minimize monthly loan payments for low or no interest loans to medium-income households

Potential metrics:

- Number of energy funding/assistance programs created specifically for or serving majority energy-burdened households within environmental justice communities
- Percentage of program participants who are part of an environmental justice community,
- Reductions in negative environmental-related health conditions (such as asthma, respiratory disease, ...) in environmental justice communities

PROMOTE HOLISTIC WORKFORCE DEVELOPMENT IN UNDERSERVED COMMUNITIES

- Develop and expand trainings, apprenticeships, and continuing education programs for relevant incentive programs, cultural responsiveness, and technology specifics and benefits in underserved communities for sales, contractors, tradespeople, and landlords.

Potential metrics:

- Number of colleges and vocational schools offering energy-related training programs, incentives, energy-efficiency technologies, and apprenticeships to environmental justice communities and percentage of enrollment that identifies as an environmental justice community member. [CEP Policy and Advocacy Manager commented: Will there be a definition provided to participants to help them determine if they are a member of these communities? If so, what does that look like?]
- Percentage of new energy jobs held by members of environmental justice, frontline, and low-income communities and percent employment retained in energy industry.
- Percent of environmental justice community-owned business in energy industry
- Percent of policies supporting hiring, training, and retention of people in environmental justice communities

DEVELOP PARTNERSHIPS AND RESOURCES IN ENVIRONMENTAL JUSTICE COMMUNITIES

- Provide community outreach and informational opportunities that include in-person engagement, and resources/tools that are in plain language [CEP Policy and Advocacy Manager commented: We should define this; it makes it sound like plain language is English. At least that's how it came off to me as it's being to compared to multiple languages. Maybe saying something like 'accessible' language or something similar.] and multiple languages

- Partner with community organizations who are trained and compensated appropriately to be trusted partners and community navigators in the field
- Consider opportunities to collaborate with city and county government and utilities to best support communities and consumers [CEP Policy and Advocacy Manager commented: Consumers v customers?]

Potential metrics:

- Number of people participating in processes and/or programs from environmental justice communities
- Number of materials that are culturally specific and relevant and percentage of program materials available in multiple languages
- Number of partner environmental justice organizations/trusted community organizations participating in or distributing program materials
- Percentage of meetings hosted with interpretation, translation services, and meetings wraparound services [CEP Policy and Advocacy Manager commented: We may want to flesh out a bit what wraparound services look like.]

CONSIDER THE INTERSECTION OF ECOSYSTEMS

- Balance energy needs — like access to affordable energy and economic opportunity — with the needs of ecosystems [CEP Policy and Advocacy Manager commented: If we use nature in the following bullet, it might be easier to use that here. Otherwise, I think it can get confusing.] and cultural priorities.
- Make decisions that minimize harm to both communities and nature, and ensure that environmental burdens and benefits are distributed equitably, without disproportionately impacting marginalized groups.

Potential metrics:

- Improved outdoor air quality particularly in areas with disproportionately poor air quality
- Improved indoor air quality particularly in areas with disproportionately poor air quality
- Increased investment for wildfire risk management
- Increased salmon/wild fish populations / Increased endangered or culturally significant wildlife populations
- Reduction in heat islands

May 9, 2025

Michael Freels
Oregon Department of Energy

Re: Comments on the Low-Carbon Fuels Policy Working Group Straw Proposals

Submitted via website: Oregon Energy Strategy - Public Comment Portal · Customer Self-Service

Dear Michael:

The Clean Fuels Alliance America (Clean Fuels) appreciate the opportunity to provide comments on the straw proposals presented in the April 30th meeting of the Low Carbon Fuels working group. Clean Fuels is the U.S. trade association representing the entire biodiesel, renewable diesel, and sustainable aviation fuel supply chains including the farmers and other feedstock suppliers, the fuel producers and distributors, and the fleets that use them. Clean Fuels serves the on- and off-road transportation sectors including highway, rail, marine, and aviation sectors; and stationary sources such as power generation and the heating oil market. Made from an increasingly diverse mix of resources such as waste greases and fats (recycled cooking oil, animal fats, distilled corn oil) and crops (soybean, canola and other intermediate oilseeds and cover crops), the clean fuels industry is a proven, integral part of America's clean energy future.

In the working group meeting on April 30, 2025, ten straw proposals were presented for discussion. In general, Clean Fuels feels like a disproportionate amount of time was spent on discussing how low carbon fuels can replace electricity production and natural gas in the pipeline and not enough time on transportation. It is widely accepted throughout the fuels industry that there will be a long-term (out to 2050) need for low carbon liquid fuels in the hard-to-electricity transportation sectors[1] yet none of the 10 straw proposals is primarily focused on how to provide support for these fuels as part of a larger portfolio of options.

[1] Decarbonizing Combustion Vehicles: A Portfolio Approach to GHG Reductions
https://www.transportationenergy.org/research/reports/decarbonizing-combustion-vehicles-a-portfolio-approach-to-ghg-reductions/

Following the structure laid out in the concept paper, Clean Fuels offers these comments:

Fuel Supply

While Proposal #1 aims to explore opportunities to facilitate low-carbon intensity fuel production facilities in Oregon, it should also include opportunities to improve infrastructure and policy that will ensure access to all parts of the state so all Oregonians can benefit from them. In addition, Proposal #3 aims to update and expand the biogas and renewable natural gas inventory report, but its scope should be expanded to all biofuels. A comprehensive statewide biomass availability assessment is long overdue for Oregon and only this type of broad assessment should be used to inform the identification of Oregon's highest and best uses of all its resources and for all applications throughout the economy and parts of the state.

Fuel Demand

The proposals here are aimed at reducing demand for fossil fuels but nothing aimed at increasing demand for lower carbon fuels. My understanding is that, in previous meetings, the concept of increasing the required blending of biomass-based diesel into the diesel pool was suggested but it didn't make it into a straw proposal. The inclusion of this concept accomplishes two very important things: 1) it ensures access to these lower carbon fuels statewide; and 2) it can lower the cost of fuels to heavy-duty vehicles because of the Clean Fuels Program credits that it generates. At a high level, Clean Fuels believes that this could be a reasonable addition to Oregon's portfolio of strategies.

Electrification and Strategic Consumption

Clean Fuels believes that these proposals unnecessarily focus on electricity and natural gas resource planning for long-term strategy and fail to provide the opportunity for biofuels in the short- and mid-term which, I believe, is supposed to be the focus of the straw proposals. Biofuels can reduce greenhouse gas emissions immediately, are available commercially, and are cost-effective while the transition to zero emission technologies is still evolving. The time value of carbon emphasizes that the delay in reducing emissions by just one ton of carbon for five years will necessitate the need to reduce annual emissions by over 13 tons to make up for lost time. Incorporating biofuels into a straw proposal should be considered as a short- and mid-term strategy.

I'd also like to take this opportunity to comment on the presentation by Energy Innovation. My understanding was that the intent of this agenda item was to present policy options that exist outside of Oregon for the working group to consider, as there have been previous discussions about policies that already exist within the state. Oregon currently has a low carbon fuel standard so I was confused about why information from a different low carbon fuel standard was presented. While the base policies are similar, the markets are very different, the details of the regulations are different, and it is an unfair comparison to lead the audience to conclude that what has happened in California will necessarily occur

in Oregon and then offer recommendations about how to make adjustments. The Oregon Clean Fuels Program has been the most successful climate program implemented in the state and it needs to continue to be considered as a valuable tool in decarbonizing fuels well into the future. At a high level, I recommend that an additional straw proposal could be that existing policies need to be updated at a regular frequency to align with the long-term goals of the state.

Clean Fuels thanks ODOE staff for the opportunity to participate in this process. Thank you for your consideration of these comments.

Sincerely,

Cory-Ann Wind
Director of State Regulatory Affairs
Clean Fuels Alliance America

Oregon Energy Strategy

Public Comment

Justin DiMello, City of Hillsboro, 4.9.25

Hi Joni,

Thanks for the opportunity to provide written input. Not working for an electrical utility or an energy regulator, I'm not expert in the specific day-to-day barriers and challenges that confront our state as we work to achieve the energy goals. But the two areas that jump out are the need to 1) **shorten permitting timelines** and 2) **enhance regional planning**. As a city, we could do more to plan for, and sometimes even provide, transmission corridors within our jurisdiction if there were better system master planning. Similarly, enhanced regional planning may allow for a more proactive approach to permitting. Hillsboro's economic activity continues to increase and the growth we're experiencing especially in the tech and biotechnology industries are vital for the entire state economy. Already, the long delivery times for the new transmission infrastructure needed to bring renewable energy generated east of the Cascades to where industry needs it here in the Willamette Valley is starting to constrain economic growth and we're thankful for ODOE's work to identify and address barriers. We're optimistic about the efficiencies that DERs and DR programs can unlock within the existing grid, especially in the near term. However, we fully agree that the delivery of new transmission capacity needs to be expedited if we are to meet the energy goals without foregoing major economic opportunities for the city, region, and state.

Thanks!

Oregon Energy Strategy

Public Comment

Justin DiMello, City of Hillsboro, 5.9.25

Dear Joni,

Thank you for the opportunity to provide written comments on the draft policy actions reviewed by the Developing Clean Electricity Generation & Transmission Policy Working Group. Please find comments related to each of the draft policy actions listed below and additional comments responding to the four helpful prompting questions provided in your email further below.

Draft Policy No. 1

"Establish a new state entity to, at minimum, engage in statewide transmission planning, establish designated transmission corridors, and lead regional engagement efforts on transmission, all with a responsibility to explicitly utilize an environmental justice and energy justice lens and equitable processes through meaningful community engagement to prioritize environmental justice and impacted communities."

Comment: While environmental justice, energy justice, and equitable engagement processes are vital, they are widely understood to be an integral part of all state policies. Therefore, it's unclear why they are specifically called for in the draft policy language while the primary goal of the policy, namely, to expedite the delivery of transmission projects, is not stated. It should be mentioned foremost. This draft policy holds the opportunity to accelerate transmission infrastructure but also the threat of an additional layer of governance that will hinder planning processes and project delivery. State support of regional community engagement activities, highlighting the vital role of an enhanced transmission system in meeting the GHG-emission goals, is welcome, again, as long as it remains tightly focused on the goal of transmission delivery.

Draft Policy No. 2

"Study barriers to project development, particularly barriers affecting projects that do not quickly proceed to construction following siting and permitting approvals."

Comment: Shining light on when and how projects terminate unsuccessfully, whether before or after siting and permitting approvals, will undoubtedly be helpful, so such a study is welcome. It should be relatively easy to do. Specifying what precisely is meant by "siting and permitting approvals" would clarify the draft policy. Anecdotally, few projects in our area move all the way through our local permitting process without quickly proceeding to construction so I'm curious if this is focused on large-scale projects permitted by EFSC or is more general.

Draft Policy No. 3

“Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects.”

Comment: I’m skeptical that the inventory effort will be worth the effort. Power industry site selectors are very capable. The clause “update the current land classification” is too vague to be able to support or oppose. Is it referring to rezoning that would significantly enlarge the statewide portfolio of properties eligible or entitled to such projects? That presents opportunities but could bog down in conflict with local jurisdictions.

Draft Policy No. 4

Continue and as practicable expand statewide energy and energy resilience funding opportunities, including a funding opportunity for creating a formalized community benefits plan that provides meaningful engagement in the process for Environmental Justice communities (HB 4077).

Comment: Given the current economic landscape and the growing energy needs of the state’s most successful industries, which are the foundation of the state economy, limited resources should be used strategically. Focusing funding on efforts that support economic vitality, such as transmission projects, supports the long-term fiscal health needed to expand funding opportunities for community resilience, and other important priorities.

Draft Policy No. 5

Investigate and direct investor-owned utilities to implement microgrid tariffs.

Comment: The greater clarity and certainty provided by well-defined and simple to understand tariffs should encourage private investment in microgrid systems and DERs. The policy should be clarified as to whether it means “investigate” or “direct”. I recommend “investigate” with a reiteration that the goal of the policy is to stimulate private investment and minimizes taxes, costs, fees, or other measures that would inhibit investment.

Draft Policy No. 6

Continue, and as practicable increase collaboration with neighboring states and regional entities.

Comment: This policy is -- I understand and appreciate it’s by design – extremely vague. In so far as it goes, yes, collaboration is good.

Draft Policy No. 7

Study potential for shared risk development models to secure large-scale investments, including long-lead time resources and emerging generation and storage technologies.

Comment: Such a study could reveal tremendous opportunities. I assume the draft policy is focused on state action to move costly large-scale or long-lead time resources forward. Is there an opportunity to also study potential for industry-led investments? In the data center market, for

example, some companies may have both the willingness and the access to capital needed to take on large-scale projects themselves, if allowed to do so.

Draft Policy No. 8

Integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels that prioritize an equitable transition to explicitly include environmental justice communities.

Comment: Considering equity in an integrated transition to electricity and clean fuels will be important to ensure that those who struggle with the capital costs needed to transition aren't unfairly burdened with higher energy costs.

Draft Policy No. 9

Extend HB 2021 clean energy requirements to new large loads.

Comment: I'm unclear on what this draft policy means. Don't HB 2021 clean energy requirements already extend to all retail electricity providers, including those serving large new loads, such as data centers? Is the intent of this draft policy to impose additional clean energy sourcing or energy efficiency requirements on such loads?

Draft Policy No. 10

Investigate and implement performance-based ratemaking for investor-owned utilities.

Comment: As the current regulations reward the utility based on capital additions to its rate base and the behaviors that the policy intends to incentivize include capital additions, I'm skeptical that this is the most effective tool. The draft policy should include the desired policy goals and outcomes.

Responses to prompting questions.

Question: What additional suggestions (if any) do you have on the policy actions discussed in out last meeting?

Responses: None. I made them all above.

Question: What policy actions were NOT discussed in our last meeting that should be surface in our list?

Responses: Explore options for streamlined permitting

Question: What benefits or risks for policy action (or inaction) in the areas we discussed relating to: cost, feasibility, energy burden, environment justice, land use and natural resources, resilience, community benefits, economic effects, and employment? Do you have any suggestions on how to mitigate risks or leverage benefits?

Responses: Risks include the inadvertent addition of more governance for its own sake. Policy inaction or policies that slow delivery of transmission carry huge risks to the state economy. The leading-edge industries upon which the state economy is significantly reliant are power-intensive and location specific. DERs and micro-grids hold great promise, but do not eliminate the need for greatly expedited transmission bringing power to where it is needed. To compete with other states that do not have similar clean energy goals, Oregon will need a more robust and responsive grid very quickly.

Question: Do you have any supplemental information (reports, analysis, testimonials, etc.) related to these policy actions that you could share?

Response: No.

Thanks again for the opportunity to participate as a member of the working group and to provide comments!

New Policy Needed

Update existing statewide RFS to increase biofuel blending requirement for diesel. The policy should have an end date or other feature so that as the need for diesel declines, there is no longer an incentive to bring renewable fuels into the State. In addition, Oregon needs an additional incentive to attract low carbon fuels to make up for the fact that CPP compliance is not fungible, but the cap and trade programs in CA and WA create a cash incentive through their credit markets. Oregon needs an additional incentive to make up for this, so that Importers don't loose money bringing renewable fuels to Oregon as opposed to CA and WA. Setting a CI limit is tricky because if set too high it becomes an air quality policy, not a carbon emissions reduction policy, but if the policy were created with an incentive to bring in low carbon fuels, then a CI standard wouldn't be necessary.

City of Portland's renewable fuel requirements for retail diesel sales

Fuel type by volume	**Current**	**July 1, 2024**	**July 1, 2026**	**July 1, 2030**
Diesel	95%	85%	50%	1%
Renewable fuel such as biodiesel or renewable diesel	5%	15%	50%	99%

What do we need to better understand?

Study is needed on competing geographies and their value stack for diesel and renewable fuels. Currently, Oregon may not be well positioned entice low carbon renewable fuels, like BD and RD, into the State (even with policy mandating it. Study what incentives state could provide to keep our price competitive.

Study is needed on target end date.

Oregon Energy Strategy: Low Carbon Fuels Policy Working Group: Summary of Potential Policy Strategies

Low Carbon Fuel Development

Production and Distribution

Build on/Adjust/Improve Existing Policy

- Reform current permitting and siting of fuel production facilities, make it easier for existing fuel producers to expand their capabilities.

Commented [NP1]: City of Portland's long-term goal is to shrink consumption of fossil fuels over time. The way this is written implies carte blanche over expansion. Any expansion should be for renewables and that should be for a limited duration.

- Greater flexibility and regulatory clarity on resource procurement, project prudence evaluation, and cost recovery for utilities.
- Expand Clean Fuels Program to provide credits for low carbon fuels used as direct use fuels and increase credit amounts to secure more fuel supply.

New Policy Needed

- Promote and fund the development of low carbon fuel production and distribution infrastructure while protecting water and air quality, and natural resources
- Allocate greater financial support for rural communities to reflect greater VMT and fuel uses
- Encourage Oregon transportation fleets use in state produced low-carbon fuels
- Fund industry tax credits that encourage innovation and development of pilot low carbon fuel projects

What do we need to better understand?

- Develop a low carbon fuel utilization and application strategy. Research and identify the best sector applications or opportunities for low carbon fuels.
- Evaluate the potential of developing fuel resources like biogas production, storage, distribution, and use in comparison to the potential impact to water and air quality and natural resources. Evaluate the economic and social impacts to the state and surrounding communities. Use a carbon intensity rating for potentially produced fuels to measure impact.
- Evaluate the potential to accelerate in state production of SAF and its use in Oregon aviation
- Evaluate the impact of adopting the City of Portland's Renewable Fuel Standard statewide
- Taskforce to identify potential low carbon fuel sites in Oregon

Feedstocks

Build on/Adjust/Improve Existing Policy

- Allow regulatory structures more flexibility in evaluating cost and risk to align with the changing low carbon fuel market
- Adjust Oregon Clean Fuels Program to require lower carbon intensity ratings to receive fuel credits.

Commented [DK2]: By this are they referring to home heating fuels like natural gas and fuel oil? If so, that's a complete overhaul of the goals and purpose of the clean fuels program....

Commented [DK3]: Seems like the program is kind of already designed to do this over time..... but if this change was made, it would significantly complicate the ability to reach the program goals, especially given the issues with the incentive stack. This would only work if that problem was solved. As this would exclude most biofuels from being compliance mechanisms, the specific study about feedstocks noted below would be critical.

Commented [NP4R3]: There's some truth to what OPIS pointed our during the TAC meeting on April 10. See slides 30-32 and slide 53 RFS TAC PowerPoint Presentation for April 10 meeting

New Policy Needed

- Develop an awareness building and facilitation program to help agriculture and industrial feedstock producers locate local resources and work together to collect, store, and distribute waste materials to fuel producers

Commented [DK5]: If you're looking to do the above action then agriculture is not the right partner here, it would be more likely FOG waste haulers.

What do we need to better understand?

- Evaluate the availability and access to fuel feedstocks to support low-carbon fuel production in Oregon

Innovation

Build on/Adjust/Improve Existing Policy

- Reform current permitting and siting of fuel production facilities to reduce delays and expand waste feedstock utilization.
- Expand utility regulatory structure to allow for greater innovation, pilot projects, and cost recovery
- Collaborate with states to support the development of a regional low carbon fuel market

Commented [DK6]: Don't we already do this?

New Policy Needed

- Oregon Public Utility Commission establishes a new regulatory framework for natural gas utilities allowing them to meet GHG reduction targets through new resource projects. Utilities would submit innovation plans to detail their investment in pilot projects and customer financial burden. https://mn.gov/puc/activities/economic-analysis/ngia/
- No longer allow investor-owed utilities to own or control energy generating infrastructure in Oregon
- Create a regulatory evaluation structure for any new investments in infrastructure, protecting consumers, and reducing the risk of new stranded assets.
- Grant funds, incentives, or tax credits for low carbon fuel or electrification pilot projects in industrial applications
- Direct public fleets to prioritize use of low carbon fuels produced in state

What do we need to better understand?

- Evaluate the ability to provide lifecycle emission scoring for all fuels used in Oregon to demonstrate the value of lower carbon intensity fuels

Need for Fuel Resources to Support the Electric Grid

Electricity reliability

Build on/Adjust/Improve Existing Policy

- Direct Use and Transportation sector incentives to promote the adoption of new technologies and low carbon fuels in operations.
- Adjust regulatory structure to promote natural gas and electric utility duel system resource planning
- Fund state pilot projects to develop and evaluate geothermal and thermal energy network projects as technical solutions

New Policy Needed

- Greater state commitment to developing and participating in regional energy markets

What do we need to better understand?

- Evaluation of the potential long term benefits, costs, and feasibility of maintaining existing natural gas electricity generation infrastructure and development of new capacity to support electricity system flexibility and resilience.
- Evaluate the potential of dual fuel appliances in buildings reducing the need for new clean fuel electricity generating resources.

Electrification

Hard to Electrify End Uses and Informing Investment Decisions

Build on/Adjust/Improve Existing Policy

- Create and enforce near term transportation sector decarbonization goals. Include transportation electrification date when ICE vehicles can no longer be sold in the state

New Policy Needed

- Create a new road use charge based on weight, efficiency, and vehicle miles traveled.
- Create legislative targets for low carbon fuel applications
- Fund and support development of pilot industrial centers/parks focused on symbiotic energy relationships between businesses to conserve energy and increase productivity.
- Create and fund an EV workplace charging program to increase awareness and incentivize installation of charging infrastructure

What do we need to better understand?

- Evaluate utility (gas/electric) business models and consider how regulatory framework needs to change to help utilities evolve and remain viable businesses.
- Conduct a gap analysis to evaluate how best to expand level 1 charging

Fuel Demand Declines

Decommissioning or repurposing existing infrastructure across the supply chain

Build on/Adjust/Improve Existing Policy

- Allow natural gas utilities to subsidize targeted electrification, thermal energy network, geothermal, carbon capture and storage, and energy efficiency projects through customer cost recovery

New Policy Needed

- Funding and technical support for geothermal, thermal energy network, and energy efficiency projects.

What do we need to better understand?

- Evaluate the impact and support needed for customers and businesses to electrify or transition to low carbon fuel applications
- Evaluate the ability to target specific areas for community scale electrification programs to gradually reduce natural gas demand. Including a process for natural gas and electric utilities to collaborate on the transition of services

Oregon Energy Strategy

Public Comment

Jennifer Hill-Hart, CUB, 5.14.25

Well, not in the morning but here is something. Sorry, the legislature took over morning. I will make sure we provide formal comments in June.

- What benefits or risks exist for policy action (or inaction) on the following areas: cost, feasibility, energy burden, environment justice, land use and natural resources, resilience, community benefits, economic effects, and employment?
    - Building Electrification, EE, and DERs
        - Recommendation 1.4:
            - While several panelists brought up concerns about the blanket approach of this recommendation, CUB supports it. incentivizing further gas usage and/or gas buildout than what is already existing is fundamentally in opposition to decarbonization, electrification, energy efficiency, and affordability.
        - Recommendation 2.1:
            - It is altruistic of data centers to contribute directly, but it must not be through a mechanism that creates perverse incentives for data centers to amend cost allocation of utility investments shared by other customers. For example, just because they pay for heat pumps for a whole suburb because it reduces system peak does not mean they get to skirt paying for the capacity costs of additional transmission buildout. Secondly, consideration of increasing PPC revenues is fine, but the ability of customers to pay more through the PPC also needs to be considered.
            - Do we need to be worried about the cost effectiveness of targeting the houses that are most costly to repair? You can make expensive improvements to a home but that does not always come with gains in EE. Then funds are used to increase market value for someone's home, not for EE benefits. But this is not through the PPC so idk
        - Recommendation 3.1:
            - Of course, CUB is going to emphasize the importance of energy affordability, and note that while these are great recommendations, we have to be mindful of the potential costs to residential customers as a result. For example, increasing the PPC to pay for some of these things is being recommended at a time when the ETO budget will be increasing significantly by 2030, not to even mention that electric bills in general are going to keep rising, and there is ongoing federal funding uncertainties. We need to ensure that all costs are equitably shared among all customer classes, hold utilities accountable to implementing the most cost-

effective options possible, and consider how the utilities can chip in to help absorb some of these costs. For example, through utility-funded programs and alternative financing mechanisms.

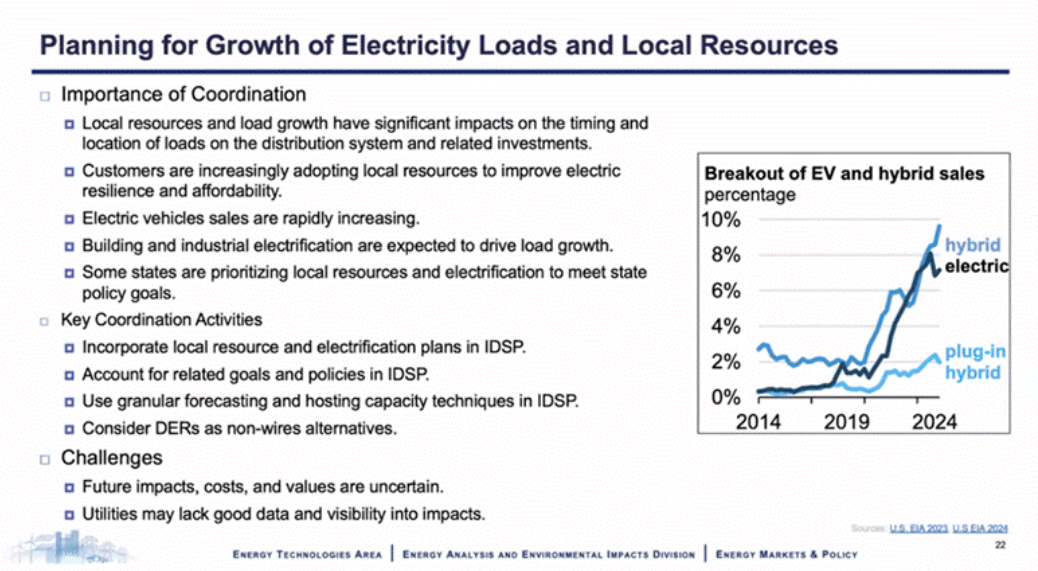
- We also need to make sure we are relying on existing data only meaningfully consider those low-carbon fuels that are realistic and financially viable. The PUC has found that gas utility proposals for low-carbon fuels are not relying on solid data and are not currently cost-effective clean energy proposals as alternatives to decarbonization. The best place to consider these fuels is for the harder to decarbonize sectors like transportation.

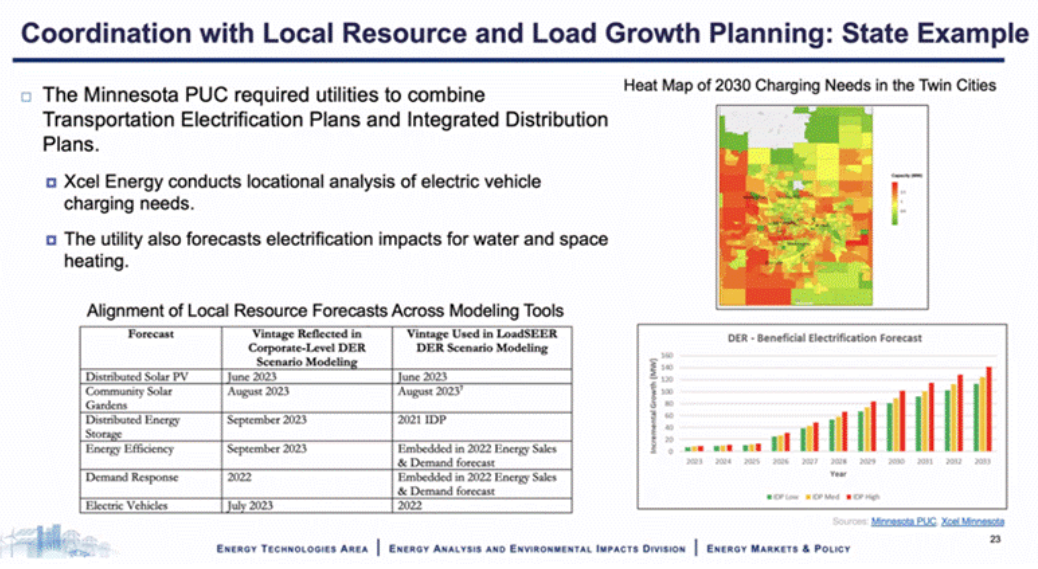
- Recommendation 4.2: There are serious equity concerns if electric IOU utilities in OR suddenly switched from default residential tariff rates to TOU rates overnight. Generally, the customers who enroll into TOU rates are the ones that can financially benefit from it, ie customers who have solar + storage—the well off customers. If it is the case that rate design is revenue neutral, lower income customers will end up subsidizing higher income customers under a TOU tariff because they have no choice but to pay the higher on peak pricing because they can't shift their load. Any change in default residential TOU rates must not harm low-income customers who don't have the capability to shift load around, and end up subsidizing higher income customers.

- TE and BE/DER should ensure that all factors that influence distribution system needs are captures. For example, ODOE should consider municipal plans (e.g., comprehensive land use planning documents) in addition to Oregon and Tribal planning goals and guidelines. Should also consider utility DSP and TEPs for better insights and integrated planning and to improve stakeholder ability to participate and realize efficiencies

- If any, what additional suggestions to those action or additional policy actions would you suggest to mitigate risks or leverage benefits?
    - CUB reached an agreement with Avista gas in their last rate case, where they agreed to pilot a project to cap certain segments of their gas distribution system, saving ratepayers lots of money by simply giving them a heat pump instead. As supporting proof that conversion of a gas customer to full electrification can be done, this is something worth considering.
- General thoughts
    - Overall these are high level, more granularity may be appropriate with specific examples.
    - Are these plans presented in a way that supports ratepayers? Are they capturing the addition of large loads such as data centers?
    - Are wildfire risk/mitigation and State's emergency mitigation plans considered?
- Do you have any supplemental information (reports, analysis, testimonials, etc.) related to these policy actions that you could share?

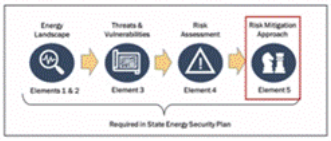
- *See In the Matter of AVISTA CORPORATION, dba AVISTA UTILITIES, Request for a General Rate Revision*, Docket No. UG 519, Stipulating Parties of STAFF, AVISTA, AWEC, CUB and GREEN ENERGY INSTITUTE/CLIMATE SOLUTIONS Joint Testimony, 12-13 (Apr. 4, 2025), available at: https://edocs.puc.state.or.us/efdocs/HTB/ug519htb335924115.pdf.
- These slides are from a presentation, *Integrated Distribution System Planning: Coordination Across Planning Processes*, by the Lawrence Berkeley lab to the National Associate of Utility Consumer Advocates Electricity Committee this week for your reference (we are working to see if we can get a copy of the slide deck and any affiliated report).





Comprehensive State Energy and Energy Security Planning

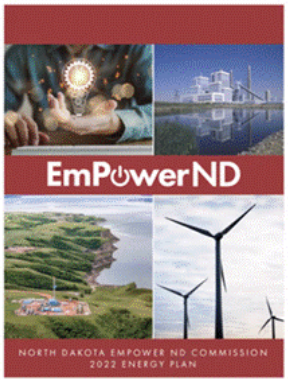
- Importance of Coordination
  - State energy plans build consensus towards shared goals of meeting energy needs in a cost-effective and sustainable manner and guide actions towards those goals.
  - Comprehensive plans cover key issues that may impact distribution planning by assessing existing energy policies and identifying emerging energy trends, challenges, and opportunities.
  - A common understanding of energy infrastructure and interdependencies is critical to energy security.
  - State Energy Offices can help identify critical facilities and collaborate with experts (e.g., universities) to develop forecasts and risk assessments.
  - Distribution system investments support state energy and security initiatives.
- Key Coordination Activities
  - Use working groups or facilitate information and data sharing across entities.
  - Ensure outreach and coordination with entities involved in local resilience planning such as counties and cities.
- Challenges
  - Multiple entities are involved.
  - Entities need to identify ways to protect and share sensitive information.



Sources: U.S. DOE, U.S. DOE 2024

State Energy Plans: State Example

- North Dakota's energy plan focuses on supporting continued reliable, affordable, and sustainable energy production in a manner that enables economic growth.
  - Utility, industry, agricultural, and government representatives contributed to the plan's development.
- Key issues identified that impact the distribution system include:
  - Creating partnerships to identify the most economic routing for new energy infrastructure
  - Adding large loads (such as data centers) to use more energy resources locally and contribute to grid flexibility
  - Establishing "energy parks" that will create competitive advantages for new energy and agricultural businesses by sharing infrastructure costs, such as for new roads, communications, and water systems
  - Supporting energy storage development as a means to accommodate variable resources and create jobs in the state



Source: Empower ND Commission and ND Department of Commerce

Oregon Energy Strategy

Public Comment

Dave Peticolas, 2.22.25

One concept that seems to be missing from the energy strategy is abundance. Provisioning abundant energy resources would make other goals like equity and affordability much easier. Abundant energy is the foundation of material well-being and Oregon's Energy Strategy should have more focus on policies and actions that would make more energy available to more people.

Oregon Energy Strategy

Public Comment

Dave Van't Hof, 3.21.25

Hi Michael. Regarding my prior suggestions that the plan take a harder look at the role of biofuels in the shorter time horizon (say 2025 to 2035) as a key component of a decarb plan/strategy, I suggest you take a look at the City of Portland's RFS and the analysis underlying it. When Portland did its decarb pathways analysis, it concluded that the second biggest single policy step it could take to reduce emissions in the shorter term was to update its Renewable Fuel Standard to phase out sale of diesel by 2030. It was projected to reduce overall emissions by 6% by 2030. In comparison, a goal for the city to achieve 100% renewable electricity for all PGE territory in Portland by 2030 (which in my view is not likely to happen) was projected to achieve an 8% reduction. Other combined Buildings policies - to achieve 15% more energy efficiency and 10% electrification by 2030 - was 4% reduction, and other combined transportation policies - VMT etc was projected to achieve 7% reduction. See, page 4 of the PDX Climate Emergency Workplan download. While mandating the phase out of diesel statewide may not be likely, developing policy that accelerates the transition from diesel to biofuels (CA reached 70% at one point last year I think) highlights why clean fuels policy, in addition to electrification policy, and longer term hopes for green hydrogen, is a crucial component of any decarb strategy, particularly in the shorter term.

All the best,

Dave

Oregon Energy Strategy

Public Comment

David Van't Hof, 4.14.25

Greetings Michael. This is a long list of possible actions! Here are policy actions I think would have the most impact on the low carbon fuels part of the equation:

1. Public Fleets. Rather than encourage, I suggest considering "require" state fleets to use biofuels (R99 or a 99% blend of RD/BD). The state already encourages it and state fleets have already made a significant shift toward biofuels (according to DAS, state fleets used close to 1 million gallons of biofuels - mostly R99 - in 2024). There may need to be a few caveats around price (should R99 become significantly more expensive per gallon in a given period than diesel) and temperature (e.g. not requiring it in cold temperatures) and availability (particularly for eastern Oregon). I would also suggest expanding it to requiring or encouraging other public fleets like school districts, transit, and local government fleets as well. Finally, I would add a prioritization that public fleets use Oregon produced low carbon fuels to the extent they are available and cost competitive.

2. Direct use. I agree with the proposal to expand the clean fuels program to provide credits for low carbon fuels. I also suggest requiring any existing backup generators in Oregon over a certain size to use R99 instead of diesel (say 10Kw or larger).

3. Extension of Portland RFS. I suggest modifying the provision in your document that suggests evaluating the impact of expanding the Portland RFS statewide to, "expand the Portland RFS to the Portland Metro Area and evaluate the impact of further expanding it throughout the I-5 corridor and statewide." As you know, there were several attempts to expand the RFS statewide that met with significant opposition in the Legislature. Starting with the Portland Metro Area might be a more doable first step.

4. Permitting. The first bullet talks about making it easier for existing fuel producers to expand in Oregon. To my knowledge there are only a couple of small pilot low carbon fuel producers in Oregon to date. One hydrogen facility and the former Sequential biodiesel facility. I suggest broadening this to say something like, "assess permitting and incentive policies that would help low carbon fuel producers locate or expand production in Oregon." Note, there is a bill this session that would create a task force to do just that with respect to SAF.

Additional Comments on the Draft Oregon Energy Strategy
Date: 5/9/2025
By: Earth Advantage

Recommendation 2.1 “Transition existing heat pump incentive programs to primarily serve low- and moderate-income households. Increase the incentives to cover a higher share of total costs. Prioritize funding for homes with electric resistance or fossil fuel primary heating systems. (Consider an exception for utility incremental costs-based programs to continue incentivizing highly efficient equipment selection.) “

We agree with the intent of this recommendation. However, we suggest that “highly efficient equipment selection” be replaced with “high performing heat pump installations”. The switch is suggested because many of other factors may influence the actual performance of the heat pump to a greater extent than the efficiency ratings it holds. These factors involve proper design, installation and testing.

The details of what that work entails probably does not belong in a policy language, but we’ll share what the basics could be. The elements of a high performing heat pump installation would start with design with proof of a correct heat loss calculation that uses the home’s actual characteristics and not default values. Also at the design stage would be selection of adequate equipment to align with the heating and cooling loads calculated the home using local weather data. The last design element would only be required for ducted systems. It is the inclusion of a 4-inch pleated filter. To ensure the heat pump performs well over time, for any heat pump system, there should be an automatically produced report from a Bluetooth connected tool confirming evacuation and decay results showing that the refrigerant lines were properly prepared for refrigerant. For ducted systems, there should be a duct leakage test showing less than 200 cm @ 25 Pascals for the system. Ducted systems should also have external static pressure test results of below 0.8 IWC (inches of water column).

Energy Trust of Oregon Comments on ODOE's OES Draft Policy Recommendations for the Building Electrification, Energy Efficiency, and Distributed Energy Resources Policy Working Group

Energy Trust appreciates the opportunity to participate in ODOE's OES working groups and provide comments and feedback.

Policy Recommendation 1.2 Establish an alternate-pathway compliance path in residential building code that requires increased envelope efficiency measures if electric resistance or natural gas is used for primary space or water heating systems

Energy Trust Comments: Creating a code pathway that allows for use of electric resistance HVAC or DHW seems suboptimal, since proven compressor-based technology exists to effectively serve these end uses. Using building codes to promote limiting installation of electric resistance technologies in new residential buildings to backup for a HP will better serve the state in achieving its energy efficiency and decarbonization goals. Similarly, any code pathway that doesn't require a good a high level of weatherization will result in additional new housing stock that will need retrofit EE weatherization measures at some point in the future, which is a less cost-effective means of achieving that savings.

Policy Recommendation 2.1 Transition existing heat pump incentive programs to primarily serve low- and moderate-income households. Increase the incentives to cover a higher share of total costs. Prioritize funding for homes with electric resistance or fossil fuel primary heating systems. (Consider an exception for utility incremental costs-based programs to continue incentivizing highly efficient equipment selection.)

Energy Trust Comments: Heat Pumps are still expensive. Energy Trust does not yet see that the HP market has been transformed so that above moderate-income customers are installing Heat Pumps in circumstances where a heat pump is an appropriate solution (e.g., a home with adequate ducts that is currently using electricity to heat). We still believe that incentives are needed to encourage heat pump installations for above-moderate income customers. Energy Trust continues to see a role for utility incremental cost-based programs to advance the market for extended capacity, variable speed, and other highly efficient HP equipment.

Policy Recommendation 2.2 Establish grant program with flexible funding for statewide efficiency, weatherization and related deferred maintenance measures. Eligible entities should include CAP agencies and other community partners that provide energy-related services. Consider increased revenues from public purpose charge as a potential source of funding in IOU service territories. Allow direct contribution to community organizations from funding partners such as data centers.

Energy Trust Comments: Energy Trust regularly encounters projects where remediation/repairs are required before Energy Trust funds can be applied for efficiency measures. In some of these cases, there is not an active or engaged community partner or CAP operating in the area. A grant program may be a way to apply these remediation funds effectively and in a streamlined way in these cases.

Policy Recommendation 4.1 Direct ODOE, ODOT and Energy Trust of Oregon to catalogue DR ready devices installed through existing incentive programs. Allow additional incentives to be paid for DR ready devices. Develop / adopt equipment standards requiring DR readiness for heat pumps, EV chargers and other consumer energy related devices.

Energy Trust Comments: If this recommendation advances as a granular, address level requirement, Energy Trust foresees the need for appropriate protection of sensitive customer data. Reporting the aggregation of potential DR resource by area would lessen those concerns while meeting other objectives. Presently DR programs are under the purview of utilities and not Energy Trust, as Jake Wise's (PGE) noted at the latest working group meeting. Energy Trust would work in coordination with any investor-owned utility reporting as applicable.

Oregon Energy Strategy: Low Carbon Fuels Policy Working Group: Summary of Potential Policy Strategies

Low Carbon Fuel Development

Production and Distribution

Build on/Adjust/Improve Existing Policy

- Reform current permitting and siting of fuel production facilities, make it easier for existing fuel producers to expand their capabilities.
- Greater flexibility and regulatory clarity on resource procurement, project prudence evaluation, and cost recovery for utilities.
- Expand Clean Fuels Program to provide credits for low carbon fuels used as direct use fuels and increase credit amounts to secure more fuel supply.
- Ensure policy doesn't force technology options that aren't ready or mature yet. If a technology option needs additional development, work with early users to share risk and financial burden in order to build success stories that will drive additional investment by others.

New Policy Needed

- Support actions that increase access (or do not limit access) to low-carbon fuels by Oregon entities. Ensure new policies manage both supply and demand continually.
- Support actions that provide for lower cost volatility in the price of low-carbon fuels. If policies either limit or do not support increased supply, and simultaneously increase demand, this will increase price volatility for existing users.
- Ensure policy doesn't direct limited low-carbon fuel supplies to non-optimal use cases. (ex. If the energy return on energy invested is better for a stationary application of the limited supply of low-carbon fuels, but due to policy, the credits are higher to put that fuel into a new mobile application that requires the fleet owners to make significant investment, this is problematic.)
- Promote and fund the development of low carbon fuel production and distribution infrastructure while protecting water and air quality, and natural resources. Yes!
- Allocate greater financial support for rural communities to reflect greater VMT and fuel uses.
- Encourage Oregon transportation fleets use ~~in state produced~~ low-carbon fuels
- Explore opportunities for the State to create fuel contracts that ensure Oregon entities continue to have access to low-carbon fuels at the lowest possible prices.

Commented [KH1]: I don't know what this means. Which utilities? Electric utilities or nat gas utilities or both? Which policy is this action item addressing? ODEQ's GHG reduction program? RPS requirements? Climate Protection Program? HB2021?

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Commented [KH2]: The Oregon Clean Fuels program is designed to address transportation fuels specifically. To include direct use fuels would require many changes to this policy that I don't think would make sense. The Climate Protection Program is the policy mechanism to address direct fuel use. I understand that the CCI function of the Climate Protection Program is an opportunity to increase equity in our communities, but as an improvement to existing policy, I really want to ensure that anything that is done to meet the intent of CPP actually reduces GHGs, and doesn't just give money to disadvantaged communities as that would just be a bandaid that won't stop the actual bleeding.

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Commented [KH3]: Demand is there and will increase based on fuel performance and impacts. Actions related to increasing (not limiting) fuel availability and managing prices to compete with fossil fuels and reduce price volatility is where policy could help most.

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Commented [KH4]: My understanding is the only in-state biofuel (ethanol, biodeisel, renewable diesel, or renewable propane) producer was SeQuential. SeQuential was sold to Crimson Renewable Energy which was sold to Neste. I have heard that Neste plans to close the bio*diesel* production at the Salem facility and keep the used cooking oil collection/aggregation business as a feedstock for *renewable diesel* production overseas…

As a major buyer of renewable fuels in the state over the past 10 years at two entities (Lane Transit District and EWEB which holds the fuel contract for about 12+ orgs in the mid-valley), driving up demand for renewable fuels is not the problem. There is plenty of demand already and new policies are only increasing the demand in Oregon, WA, CA, and among the airlines for sustainable aviation fuel. What we need to do is develop policies to increase the *production* of fuels, or not discriminate against fuels based on where they are produced at least until the supply side of the equation is more robust.

…

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Can state contracts increase the purchasing power of individual entities? (Example: Greater Oregon Fuel Contract in Willamette Valley, hosted by EWEB.)

- Encourage low-carbon fuel use in stationary applications, not just transportation options.
- ~~Fund industry tax credits that encourage innovation and development of pilot low carbon fuel projects~~

What do we need to better understand?

- Ensure solid understanding of the largest fuel users in the state, who is currently using which low-carbon fuels, and their experience to monitor what is needed in the market.
- Ensure the state and consumers understand the full range of low-carbon fuels available for various applications (ethanol, biodiesel, renewable diesel, renewable natural gas, renewable propane, etc.) Currently, ODOE's website only describes some of these fuels: https://www.oregon.gov/energy/energy-oregon/Pages/Renewable-Fuels.aspx
- Develop a low carbon fuel utilization and application strategy. Research and identify the best sector applications or opportunities for low carbon fuels. Build on areas of initial success.
- Evaluate the potential of developing fuel resources like biogas production, storage, distribution, and use in comparison to the potential impact to water and air quality and natural resources. Evaluate the economic and social impacts to the state and surrounding communities. Use a carbon intensity rating for potentially produced fuels to measure impact.
- Evaluate the potential to accelerate in state production of SAF and its use in Oregon aviation
- Evaluate the impact of adopting the City of Portland's Renewable Fuel Standard statewide
- Taskforce to identify potential low carbon fuel sites in Oregon

Feedstocks

Build on/Adjust/Improve Existing Policy

- Allow regulatory structures more flexibility in evaluating cost and risk to align with the changing low carbon fuel market
- Adjust Oregon Clean Fuels Program to require lower carbon intensity ratings to receive fuel credits.

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Commented [KH5]: Hopefully, the CPP will help with this, but studying the largest stationary fuel uses could help with this.

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Commented [KH6]: Yes, this would help. Traditionally in Oregon, limited supplies of low-carbon fuels have flowed to transportation uses because we have a Low Carbon Fuels Program and that has made the cost lower in that application, compared to usage of low-carbon fuels in stationary applications where it might make more sense from a lifecycle energy perspective, but without the credits the cost didn't pencil… Let me know if you want specific examples where this has happened in Oregon.

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Commented [KH7]: Don't we have this already with the lifecycle emissions posted for ALL the different fuel pathways under the Clean Fuels Program? Are they wanting to expand that reporting to include other impact areas beyond GHGs? This also sounds like the DEQ initiative to develop the producer responsibility reporting for products in the state.

Commented [KH8]: See comment about ensuring sufficient supply before driving up demand, otherwise all we are doing is driving up the price.

New Policy Needed

- Develop an awareness building and facilitation program to help agriculture and industrial feedstock producers locate local resources and work together to collect, store, and distribute waste materials to fuel producers

What do we need to better understand?

- Evaluate the availability and access to fuel feedstocks to support low-carbon fuel production in Oregon
- Understand how changes in federal policy (removal of the Blenders fuel credit in favor of IRA Section 45Z Clean Fuel Production Credit) will impact availability of low-carbon fuels in Oregon.
-
- Understand the real challenges faced by early adopters of heavy duty EVs and low-carbon fuel users to better understand the impacts to fleet owners. (Examples: Lane Transit District, TriMet).
-
- For the largest fuel consumers in the state (public and private), understand motivations and interest levels in their current or future use of biofuels in mobile and stationary applications and new vehicle types to determine what would be required to share risk and manage the clean energy transition.
- Map where unused feedstocks could come from and identify the barriers to why those flows of feedstocks aren't yet being tapped. This could help identify policy opportunities to bring these feedstocks to higher and better use.

Innovation

Build on/Adjust/Improve Existing Policy

- Reform current permitting and siting of fuel production facilities to reduce delays and expand waste feedstock utilization.
- Expand utility regulatory structure to allow for greater innovation, pilot projects, and cost recovery
- Collaborate with states to support the development of a regional low carbon fuel market

New Policy Needed

- Oregon Public Utility Commission establishes a new regulatory framework for natural gas utilities allowing them to meet GHG reduction targets through new resource projects. Utilities would submit innovation plans to detail their investment

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Commented [KH9]: There is an example of a significant project in Lane County to develop RNG from the Short Mountain Landfill. This is a project that will significantly reduce GHGs, and develop a new source of low-carbon fuel that could be used in other hard to decarbonize applications that is on the brink of dying from opposition from waste haulers. Is there an opportunity lend support to projects like these to ensure they move forward?

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Commented [KH10]: EWEB has worked hard to ensure our part of the Valley continues to have access to renewable fuels at a reasonable cost. To do this, we sponsor the GOFC contract to increase the purchasing power of fuel consuming entities in our region. Could DEQ or a state entity do this for the state with the major renewable fuel producer to ensure Oregon continues to have access and to manage the price volatility at least somewhat?

in pilot projects and customer financial burden. https://mn.gov/puc/activities/economic-analysis/ngia/

- No longer allow investor-owned utilities to own or control energy generating infrastructure in Oregon.
- Create a regulatory evaluation structure for any new investments in infrastructure, protecting consumers, and reducing the risk of new stranded assets.
- Grant funds, incentives, or tax credits for low carbon fuel or electrification pilot projects in industrial applications
- Direct public fleets to prioritize use of low carbon fuels ~~produced in state~~
- Fund industry tax credits that encourage innovation and development of pilot low carbon fuel projects

What do we need to better understand?

- Evaluate the ability to provide lifecycle emission scoring for all fuels used in Oregon to demonstrate the value of lower carbon intensity fuels.

Need for Fuel Resources to Support the Electric Grid

Electricity reliability

Build on/Adjust/Improve Existing Policy

- Direct Use and Transportation sector incentives to promote the adoption of new technologies and low carbon fuels in operations.
- Adjust regulatory structure to promote natural gas and electric utility duel system resource planning
- Fund state pilot projects to develop and evaluate geothermal and thermal energy network projects as technical solutions

New Policy Needed

- Encourage utilities to identify peak load shedding opportunities by working with entities in their service territories through strategic utilization of existing back-up on-site energy generation. For existing diesel or gas generators, find ways to encourage those to switch to low-carbon fuels. Look for opportunities to utilize other back-up options such as low-carbon hydrogen production or solar and storage.
- Greater state commitment to developing and participating in regional energy markets

Commented [KH11]: How would this help? Who would own and dispatch these resources instead? Utilities really are the best folks to ensure the lights stay on…

Commented [KH12]: See comments above to remove the "produced in state" requirements until there is actually sufficient production for existing and potential future demand. I disagree with this recommendation.

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Commented [KH13]: This already exists under the Oregon Clean Fuels program, but you can only gain these insights by staring at a wonky spreadsheet and it only applies to fuels used in transportation applications. Could we expand the fuel pathways under the Oregon Clean Fuels program to better help fuel users to understand which fuels available to purchase are the lowest carbon options for a range of transportation and stationary applications?

Commented [KH14]: I'm not following how this supports electricity reliability… Is this talking about utility direct use of low carbon fuels in buildings and transportation applications? Or in power generating assets?

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What do we need to better understand?

- Map the back-up power infrastructure in Oregon and potential for those pieces of equipment to run on low-carbon fuels and be available in times of regional grid capacity constraints.
- Work with academic institutions (UO, OSU, etc.) to identify where new low-carbon fuel infrastructure could be placed to strategically support grid operations and manage electricity price volatility, while generating new sources of low-carbon fuels during times of depressed electricity prices or renewable curtailment.
- Evaluation of the potential long-term benefits, costs, and feasibility of maintaining existing natural gas electricity generation infrastructure and development of new capacity to support electricity system flexibility and resilience.
- Evaluate the potential of dual fuel appliances in buildings reducing the need for new clean fuel electricity generating resources.

Electrification

Hard to Electrify End Uses and Informing Investment Decisions

Build on/Adjust/Improve Existing Policy

- Create and enforce near term transportation sector decarbonization goals. Include transportation electrification date when new ICE vehicles can no longer be sold in the state

New Policy Needed

- Create a new road use charge based on weight, efficiency, and vehicle miles traveled.
- Create legislative targets for low carbon fuel applications
- Fund and support development of pilot industrial centers/parks focused on symbiotic energy relationships between businesses to conserve energy and increase productivity.
- Create and fund an EV workplace charging program to increase awareness and incentivize installation of charging infrastructure

What do we need to better understand?

- Evaluate utility (gas/electric) business models and consider how regulatory framework needs to change to help utilities evolve and remain viable businesses.
- Conduct a gap analysis to evaluate how best to expand ~~level 1~~all types of EV charging

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Commented [KH15]: The Power Council has indicated there is significant change of regional rolling blackouts in the PNW over the coming years. What opportunities for load shedding exist with existing equipment? If that back-up equipment had to run more often that it doesn't today during peak load times, how can we ensure that equipment is running with low-carbon fuels instead of fossil diesel and fossil natural gas?

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Commented [KH16]: In 2024, EWEB worked with the UO's Electrochemistry Department to understand how pairing different types of renewable electricity generating resources with a low-carbon hydrogen electrolyzer could support fuel producing during times of low/negative electricity prices and or curtailment. Initial study results were very positive for potential for return on investment, yet the co-location for these types of project were key to making them pencil. Support for identification for where these locations would make the most sense would be really helpful.

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Commented [KH17]: Isn't this what the Clean Fuels Program is?

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Commented [KH18]: Don't we already have this, as a date it is 2035, right?

Commented [KH19]: EWEB advocates for policies that are technology/fuel neutral and economy-wide in any new policy applications. This ensures that the lowest GHG options can win and doesn't distort the market.

- Work with utilities to better understand how they are currently spending clean fuels program credits. Provide guidance on ways utilities can utilize these funds towards the most strategic and highest and best end uses.

Fuel Demand Declines

Decommissioning or repurposing existing infrastructure across the supply chain

Build on/Adjust/Improve Existing Policy

- Allow natural gas utilities to subsidize targeted electrification, thermal energy network, geothermal, carbon capture and storage, and energy efficiency projects through customer cost recovery.
- Ensure that approved Community Climate Investments under the Climate Protection Program actually reduce greenhouse gas emissions.

New Policy Needed

- Funding and technical support for geothermal, thermal energy network, and energy efficiency projects.
- See note above under the electricity reliability section about how we might be able to repurpose existing community back-up generation infrastructure to manage new high peak loads and support peak shedding.

What do we need to better understand?

- How can electric and gas utilities better work together to decarbonize the economy in the most efficient and strategic ways. How can they plan together look at the bigger energy picture?
- Evaluate the impact and support needed for customers and businesses to electrify or transition to low carbon fuel applications
- Evaluate the ability to target specific areas for community scale electrification programs to gradually reduce natural gas demand. Including a process for natural gas and electric utilities to collaborate on the transition of services
- Understand how to work with and provide support for the companies that are making technology in Oregon that will lead to the biggest emissions reductions. (Heavy-duty, on- and off-road equipment/vehicle manufacturers, fuel producers, etc.) How can the state help them share risk, do more, move faster, to ensure the technology actually meets the intended end-use.

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Commented [KH20]: I know the CCI's are designed to ensure funding and investment flows to disadvantaged communities and I support that from an equity perspective. I just want to ensure that companies aren't selecting this option as a delay tactic to shy away from real investments in GHG reduction projects.

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Oregon Energy Strategy

Public Comment

Farmers Conservation Alliance, 5.8.2025

Irrigation and water delivery systems often incur the highest electricity costs during peak demand periods, typically in the late afternoon and early evening. To address this, we are evaluating the integration of battery energy storage systems (BESS) designed to shift pump loads from peak to off-peak hours. By charging the batteries during periods of lower electricity rates and discharging them when rates spike, we can significantly reduce energy costs without disrupting water delivery schedules.

In addition to load shifting, this battery concept offers substantial resiliency benefits. During grid outages or natural disasters, the battery can serve as a backup power source, ensuring that critical pumping operations continue uninterrupted. This is particularly valuable for districts with vulnerable infrastructure or in regions prone to wildfire, ice storms, or other grid disruptions.

We're modeling systems that not only reduce operating costs through energy arbitrage but also provide emergency backup for hours—or even days—depending on the battery size. In some cases, this could be paired with on-site renewables like solar PV to create a microgrid solution, offering long-term energy independence and reliability.

We believe this dual-function approach—economic efficiency coupled with emergency preparedness—makes battery integration an increasingly strategic investment for modern water infrastructure.

PROJECT OVERVIEW

The Langell Valley Irrigation District seeks to evaluate and install a battery energy storage system (BESS) to co-locate near the Moxley pump station. The primary objectives are to provide backup power during power safety shutoffs, enable load shifting to optimize energy costs, and facilitate participation in peak demand or time-of-use (TOU) programs. The selected electrical engineering firm will be responsible for assessing, designing, and implementing the battery system.

The installation of a battery will enhance the resilience of the Moxley pump station by ensuring continuous operation during planned and unplanned outages. The battery will provide backup power, allowing uninterrupted water delivery even during power safety shutoffs. By reducing dependency on the grid, the system will enable the pump station to maintain operations during periods of grid instability or curtailment events. Additionally, the BESS will help mitigate voltage fluctuations, improving power quality and reducing the risk of pump motor damage caused by inconsistent power supply. During extended outages, stored energy can be prioritized for critical water deliveries, ensuring reliable emergency water distribution. Furthermore, with integrated SCADA and remote monitoring, the district will be able to proactively detect and respond to power disruptions, enhancing cybersecurity and operational control while minimizing downtime and risk.

Phase 1: Site Assessment & Feasibility Study

1. Load Analysis & Energy Profiling (HOSS):
    - Conduct a detailed assessment of the Moxley pump's electrical demand (e.g., horsepower, voltage, amperage, and energy consumption patterns).
    - Analyze historical energy usage and demand charges to identify potential cost savings through load shifting.
    - Evaluate power safety shutoff risks and backup power requirements.
2. Site Evaluation (HOSS):
    - Assess available space for battery installation, including structural and environmental constraints.
    - Evaluate existing electrical infrastructure for integration compatibility.
    - Conduct preliminary geotechnical and environmental reviews, if necessary.
3. Grid Interconnection & Utility Coordination (FCA):
    - Review existing utility service agreements and interconnection requirements with Pacific Power.
    - Assess the feasibility of participating in the Wattsmart program and other available incentive programs.
    - Determine TOU rate structures and demand response program eligibility.

Phase 2: System Design & Engineering

4. Battery System Selection (HOSS):
    - Determine optimal battery chemistry (e.g., lithium-ion, iron flow) based on site conditions and operational needs.
    - Size the battery to meet backup power requirements and load-shifting objectives.
    - Define battery capacity, discharge rate, and cycle life requirements.
5. One-Line Diagram & System Integration Plan (HOSS):
    - Develop a one-line electrical diagram detailing integration with existing pump station infrastructure.
    - Design protective relaying, switchgear modifications, and any necessary transformer upgrades.
    - Define communication protocols for battery management system (BMS) and Deliverables
6. Economic Analysis (FCA)
    - Pro-forma built on TOU rates vs demand rates
7. Site Assessment Report (including load analysis and feasibility findings) (FCA)

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May 9, 2025

Oregon Department of Energy
Energy Strategy Team
Via upload to Public Comment Portal

RE: Oregon Energy Strategy – consideration of draft policy recommendations

The Green Energy Institute at Lewis & Clark Law School is a nonprofit energy and climate law and policy organization within Lewis & Clark's top-ranked environmental, natural resources, and energy law program. We appreciate the opportunity to participate in the Oregon Department of Energy's Energy Strategy workgroups, and we offer these comments for consideration as ODOE prepares its draft policy recommendations.

GEI actively engages in the development and implementation of Oregon's greenhouse gas emissions (GHG) reduction policies, with a specific focus on Oregon's Climate Protection Program (CPP), Oregon's 100% Clean Energy for All (HB 2021), and transportation policies implemented by the Oregon Department of Environmental Quality (DEQ) and the Oregon Public Utility Commission (the Commission or PUC). As a result of our regular and deep participation in proceedings at the Commission and DEQ, we have gained an understanding of the pressures and challenges facing industries and utilities, and the ways in which our current laws, regulations, and policies incentivize the actions that will make it harder to achieve GHG emissions reductions. We also regularly hear from regulators, stakeholders, and utility actors about their hope that ODOE's Energy Strategy will provide accurate and clear information about *how* to achieve Oregon's emissions targets.

Given the value it could serve in shaping Oregon's future, let's make sure we get the Energy Strategy right. Let's make sure it is guided by science and facts, and let's make sure it provides useful direction to the agencies and legislature so that the time, effort, and dollars spent offers an unbiased and clear vision to meet Oregon's energy and greenhouse gas emissions laws.

At this critical juncture in ODOE's planning, we urge the agency to return to the legislature's directives in HB 3630. A few key provisions that should guide ODOE's policy recommendations:

- The Energy Strategy must identify "optimized pathways" to achieve the state's energy policies that "reflects the best available information, data analyses and time horizons" to achieve those policies; and

- The report must summarize that strategy and, importantly, "[r]ecommend legislation or changes to policy necessary to implement" the strategy.[1]

Notably, the legislature does not ask ODOE to identify information gaps nor does it ask ODOE to consider litigation risk or political will. Instead, the legislature mandated that the Energy Strategy "reflects the best available information, data analyses and time horizons necessary to achieving" the state's policies.[2] While it is helpful and acceptable to flag what we don't know, that should be the appendix to the strategy. In fact, the legislature recognized that the strategy might change based on new information and data analysis, requiring ODOE to periodically update the Energy Strategy.[3]

I. Focus on existing data to inform policy recommendations: stop studying

We urge ODOE to focus on **what it knows now** and offer policy recommendations based on that knowledge. Aside from deep expertise in its staff and its own published reports, as well as the extensive modeling undertaken by the CETI-OES Team, ODOE should also consider the specific directions by the legislature to consider:

- Existing energy and integrated resource plans
    - NW Natural, Cascade, and Avista Natural Gas utilities' IRPs
    - PGE and Pacific Power utilities' IRPs
    - Any planning produced by consumer owned or publicly owned utilities; and
- Energy-related studies and data analysis.[4]

As members of the Low-carbon Fuels (LCF) and Transportation Electrification (TE) workgroups, we note an absence of the use of already available information and a focus on the need for more studies and assessments.

For example, seven of the 20 recommendations in the TE workgroup recommended completing studies, convening workgroups, or establishing frameworks (e.g. Strategies 4, 5, 6, 9, 13, 14 and 20). Four of the 10 recommendations in the LCF workgroup recommended inventories, studies and investigations (e.g. Strategies 2, 3, 6, 9).

Additionally, at least a handful of the recommendations in both workgroups appear to be redundant of existing work product. For example, in the TE workgroup, strategy 9 recommends "opening an investigation into how electric utilities can best engage in proactive planning and investment" to anticipate load growth. Each of the investor-owned utilities, as well as the Northwest Power and Conservation Council, have been and continue to evaluate load growth in their regions.

Similarly, in the LFS workgroup, a strategy to update the Biogas and Renewable Natural Gas Inventory Report to evaluate biogenic feedstock opportunities, when there is no concern or

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[1] HB 3630, Sec. 2(1) and Sec. 3.
[2] HB 3630, Sec. 2(5)(a).
[3] HB 3630, Sec. 2(5)(b).
[4] HB 3630, Sec. 2(2)(c) and (d).

complaint that ODOE's 2018 report is insufficient, would be a fruitless exercise. The recommendation during the meeting that such an inventory be expanded to other alternative fuels is redundant of the natural gas utilities' integrated resource plans, and the recommendation that any such inventory identify the highest and best uses for these fuels ***is what this Energy Strategy is charged with doing.*** See ODOE, Oregon Energy Strategy Policy Working Group, Low-Carbon Fuels Breakout Session #4, Slide 4 (Apr. 30, 2025) ("Our Scope": "Best application of low carbon fuels used in buildings, industry, and transportation.").

Where additional information is necessary, any draft policy suggesting the formation of an investigation or working group should also include the direction to implement the recommendations of the investigation or assessment.

Finally, we recognize that ODOE relied on the best available data and assumptions in its modeling, but we think it would also be helpful to refer to other publicly available documents, including utility integrated resource plans and energy-related studies, in forming policy recommendations. For example, NW Natural, Cascade, and Avista Natural Gas all completed integrated resource plans in the last several years. In the case of all three IRPs, the PUC expressed concern about relying on "costly decarbonized fuels" to serve customers.[5] These integrated resource plans provide helpful context in considering the policies we want the Energy Strategy to advance. Increasing risks and costs to customers, for the benefit of natural gas utilities to develop innovation plans that rely on alternative fuels, for example, is inconsistent both with the IRP outcomes and with ODOE's modeling. Similarly, a host of data-driven and peer reviewed reports reflect where and how alternative fuels are best used—and it is *not* in buildings.[6] ODOE's recommendations should reflect the known facts at this time and ensure that limited available alternative fuels are directed toward their highest and best use and not to heat buildings.

II. Identify policy suggestions that will actually implement the strategy

The purpose of gathering all of this information is to identify the policies that need to change or be adopted in order to successfully implement the strategy. There appears to be an overreliance on funding and study strategies, all of which nibble around the edges of the larger structural problems we face in meeting Oregon GHG emissions reductions obligations.

For example, in the TE space, Oregon's Constitution Article IX, Section 3a is a barrier to the State's ability to raise and spend highway funds.[7] Relatedly, Oregon Department of

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[5] In the Matter of Avista Corp, Or. Pub. Util. Comm'n, LC 81, Order No. 24-156, at 1 (May 31, 2024); *see also* In the Matter of NW Natural, Or. Pub. Util. Comm'n, LC 79, Order No. 23-281, at 9 (Aug. 2, 2023) ("NW Natural's assumptions skew optimistic rather than presenting an objective view of the significant risks and uncertainties"); In the Matter of Cascade Natural Gas Corp., Or. Pub. Util. Comm'n, LC 81, Order No. 24-158, 7 (May 31, 2024).

[6] *See, e.g.* ACEEE, The Potential for Alternative Fuels in Building Decarbonization (Apr. 30, 2025).

[7] Amy Schlusser, Carra Sahler, & Rachel Pemberton, Building Bridges to Oregon's Transportation Future: A Comprehensive Guide to Raising and Spending Highway Revenues

Transportation must be held accountable for decisions that increase the state's GHG emissions from transportation. Such an approach could include oversight or conditioning of funding allocations based on the success of its GHG emission reduction efforts. For example, going back to at least 2013, ODOT identified the need to "move to a more sustainable funding source that covers the revenue needed to maintain and operate the transportation system and accounts for the true cost of travel."[8] Including another proposal to study how to account for the cost of travel is an inefficient and counterproductive use of this Energy Strategy opportunity.

With respect to LFS, Proposal Item #7 is particularly troubling. It recommends developing a regulatory framework to allow natural gas utilities to meet GHG reduction targets using alternative fuels, thermal energy networks, and geothermal. With respect to alternative fuels, the modeling reflects that "aggressive energy efficiency and electrification are key pillars of cost-effective decarbonization" so it is disconcerting that ODOE is contemplating a proposal that would revise the existing "least cost/least risk" framework used by the Public Utility Commission for more than thirty years.

Additionally, other more critical policies need addressing. For example, with respect to implementing the CPP, DEQ has authority only over the emissions from combustion and may not consider the source of the feedstock in accounting for GHG emissions of fuel suppliers. Accordingly, emissions from hydrogen produced from methane pyrolysis do not account for the carbon intensity of the feedstock. This is particularly problematic for emissions from biomethane since the Oregon law treats all sources of biofuels as carrying zero carbon. ODOE's own 2018 report reflects the wild variation in carbon intensities of biomethane depending on its source, ranging from -264 (gCO2e/MJ) for agricultural manure to 47 for landfill gas.[9] Our natural gas utilities are naturally relying on the cheapest biomethane at this point, which carry higher carbon intensities than 0.

Finally, in considering the use of clean fuels, we must contemplate unintended consequences. Alternative farm management practices may have a bigger impact on GHG emissions than encouraging the production of methane for use in our energy system.[10]

Sincerely,

Carra Sahler
Director and Staff Attorney

Jamie Johnson
Staff Attorney

Under the Oregon Constitution (July 2022), https://law.lclark.edu/live/files/33514-gei-building-bridges-report-2022pdf.

[8] Oregon Statewide Transportation Strategy, A 2050 Vision for Greenhouse Gas Emissions Reduction, Vol. 1, at 88 (Mar. 20, 2013).

[9] Or. Dep't of Energy, *Biogas and Renewable Natural Gas SB 334 Inventory,* 27-32 (2018), https://www.oregonlegislature.gov/citizen_engagement/Reports/DOE2018-biomethane-InventoryReport.pdf.

[10] *See* Emission and mitigation of greenhouse gases from dairy farms: The cow, the manure, and the field, 35 Applied Animal Science 2, at 238-254 (Apr. 2019).

Oregon Energy Strategy

Public Comment

Jeff Hammarlund, 3.19.25

As you may know, the two energy policy courses I taught most often at PSU for almost 30 years were **Northwest Energy Policy** and **The Smart Grid and Sustainable Communities**. Over the years quite a few employees from ODOE and the OPUC took these classes as a part of their professional development, as did folks from counterpart agencies in Washington, and occasionally Idaho and Montana, along with BPA, the Energy Trust, NEEA and many of the region's utilities. I also led or co-led a bunch of professional development workshops for BPA, the Energy Trust, NEEA, many of the region's major electric utilities, law firms with significant energy law practices, and, to my delight, ODOE. I am still a **senior fellow** at PSU's Center for Public Service and chair the advisory board for our popular **Graduate Certificate Program in Energy Policy and Management.** And I still do a little bit of consulting through my small firm. However, at 74, most of my time is spent in policy advocacy in support of a clean and just energy future.

For example, I co-chair the Climate, Energy and Environment team of the Consolidated Oregon Indivisible Network (COIN). If you can spare a minute, I encourage you to take a quick peek at all the **climate, energy, and environment bills** that COIN is supporting, opposing, or just watching. I also serve on the Strategy Team of the **Oregon Coalition for an Environmental Rights Amendment (OCERA**) and I serve on the Ecumenical Ministers of Oregon's Creation Justice Committee,

This Friday I will participate in a **Climate Café** with Senator Golden and others on why Oregon's faith community should be interested in and support SJR 28, a measure that would establish a **constitutional right to a healthy environment**. **I**f the legislature passes SJR 28, it will be referred to the voters to decide if we want to add this amendment to the state constitution during the 2026 general election. The Climate Café is being hosted by the Ecumenical Ministries of Oregon and Oregon Interfaith Power and Light. It is an extension of EMO's **Interfaith Earth Summit** that happened last Sunday. It was quite a success. It was a hybrid event with folks gathering in 18 different churches, synagogues, ashrams, and mosques around the state plus more than 450 people joining us on their devices on Zoom.

The next big event will be the **Day of Action** in front of the capital on March 26, in conjunction with the Senate Rules Committee hearing. Edith, frankly I did not think this bill had much of a chance several months ago. However, since Trump started advocating for drastic cuts in the federal budget for energy, environmental and climate programs, nearly all the Democratic legislators have decided to become supporters. They see this as the most viable "firewall" to protect Oregon from disastrous federal policies. We are still two or three votes short of passage, but we have a genuine chance. Other members of the OCERA Strategy Team met with the governor's energy and natural resources advisors last week. I did not attend this meeting, but I was told they were delighted to receive a high level of interest and support.

Of course, this is all up in the air at this point, so it may or may not be relevant to the state's energy strategy. I will send you in a separate email the pitch I recently made to the folks at OPB's Think Out Loud about featuring this topic in a future show.
Another policy issue that may be a bit out there in left field regards the apparent plans to convert coal plants that were stated for retirement to natural gas plants to address the growing demand from new data centers. These coal plants are not located in Oregon but there appears to be plans to expand the existing natural gas pipeline system and, if the current plans proceed, these are going to travel through Oregon to serve Cascade Natural and perhaps other natural gas companies. Two of my concerns involve safety and insurance. I am no expert on this subject but I have been learning about these issues from the **Pipeline Safety Trust**.
As you know, last year, the Canadian energy company TC Energy received final approval to significantly increase the amount of gas that it will move through its aging GTN Express gas pipeline by modifying three compressor stations located in Idaho, Washington and Oregon. The construction of this expansion has been completed, allowing TC Energy to increase the pressure and therefore the volume of gas it will be able to move through its more than 60-year-old GTN pipeline. There are some indications that this expanded operation raises safety concerns for adjacent communities and tribes. Recent reports and investigative articles have identified significant anomalies along the pipeline, as well as pipeline integrity issues which have been made public by former regulators and inspectors. For example, a recent report from Natural Gas Intelligence has highlighted "significant anomalies" along the pipeline, which led TC Energy to declare a force majeure—a legal term used when a company is unable to meet its obligations due to unexpected and uncontrollable events. Despite the serious implications, this force majeure incident has largely been kept quiet, with limited details shared with the public or regulatory agencies. The force majeure declared in November led to a reduction in natural gas flows at the Kingsgate hub.

Separately, additional safety concerns have been raised by Steve Bromley, a former GTN pipeline safety inspector, particularly regarding corrosion and structural damage to the pipeline. In a recent E&E News article, Bromley stated: "We've got some serious issues. We've got pipes sitting on rocks with bends and cracks. We've got pipe that's falling apart in sheets. We've got a company that knows about these conditions and fails to be proactive about repairing them." The inspectors are hired by TC Energy. When they find and report serious problems, they lose their jobs.

Under current regulations, these incidents are reserved for annual reporting to the Pipeline and Hazardous Materials Safety Administration (PHMSA), meaning critical safety information may not come to light for months or even years. This is only going to get worse under the Trump Administration. I appreciate that this is probably beyond the scope of the Oregon Energy Strategy, but I hope that the OPUC will explore this issue and consider funding its own inspections.
The other problem I uncovered is that most pipeline companies like TC Energy don't have liability insurance unless their state government requires it. Some states do require

significant liability insurance. Oregon does not. If there is a major explosion, leak, or fire caused by a faulty pipeline, I want to make sure the pipeline company is able to pay for the damages.

Here is another policy topic that I am pretty sure is relevant to the Oregon Energy Strategy. Way back in the early and mid 1990s, when I was deputy mayor and senior transportation planner with the City of Beaverton, I was mainly working on planning the MAX light rail stations that would serve Beaverton, However, I was also working on something created by the Oregon Department of Land Conservation and Development called the Transportation Planning Rule. This Rule was enacted to support Goal 12 (the Transportation Goal). The objective was to get local governments in Oregon's metropolitan areas to review and modify their building, development, and planning codes and policies to ensure that they were much more "bicycle, pedestrian and public transit friendly" rather than than the status quo, which was supporting travel by single occupancy autos. This led to some important improvements but not enough.

There is much more that can be done to update the land use transportation planning rule to reduce climate pollution. See the Department's Fact Sheet. This winter term I audited an urban planning course that explored what cities in other countries are doing to make a much more serious effort to address this issue. Many cities are taking on this challenge. To give you a glimpse of what one city is doing, check out these links to two videos and a short article describing what Paris is up to:
https://www.youtube.com/watch?v=GSQSBoHmG8s&t=92s
https://www.youtube.com/watch?v=X0LGLi7VQ4I and
https://www.urban.org/urban-wire/how-cities-can-use-paris-model-implementing-safer-street-infrastructure,

We don't need to go this far; there is lots of lower hanging fruit available to consider.

All the best,

Jeff Hammarlund
cell 503-944-9682

Oregon Energy Strategy

Public Comment

Jim Edelson, 4.29.25

This new assumption in the modeling for residential wood fuel use seem excessively high, has unintended health consequences, and does not seem documented.

"Households with wood stoves: By 2050, 75%

air-source heat pump (ASHP) with woodstove

hybrid, 20% woodstove only, 5% heat pump

only".

There is no other modeling in Pathways or other state decarbonization plans that assumes such excessive use of wood. In addition, feedstocks production and combustion of wood pellets and other wood sources frequently have higher GHG intensities than natural gas or oil. "Lower carbon fuels", including wood, should only be modeled on the basis of how many hybrid systems will be installed and supplied with fuels evaluated at carbon intensities assigned by DEQ's LCFS program. In addition, modeling should anticipate strict criteria emission limits on wood combustion, especially in metropolitan areas, that will be due to the morbidity and mortality impacts of increased wood combustion. See attached analysis of New York City Building Performance standard that had unintended health impacts, and has since changed policy on wood combustion,

Oregon Energy Strategy

Public Comment

Jim Edelson, 5.9.25

Additionally direct DCBS to include requirements for demand responsive equipment as is done in California, Washington and New York state energy codes. Edit as follows: 4.1 Direct ODOE, ODOT, DCBS and Energy Trust of Oregon to catalogue DR ready devices installed through existing incentive programs. Allow additional incentives to be paid for DR ready devices. Develop / adopt equipment standards and building codes requiring DR readiness for heat pumps, EV chargers and other consumer energy related devices

Oregon Energy Strategy

Public Comment

Kelley Albrecht, 1.22.2025

Require future solar projects to be built on stands that raise the panels high enough that plants can still grow below, making the land still usable for wildlife and grazing.

Oregon Energy Strategy's Justice and Equity Framework

Background

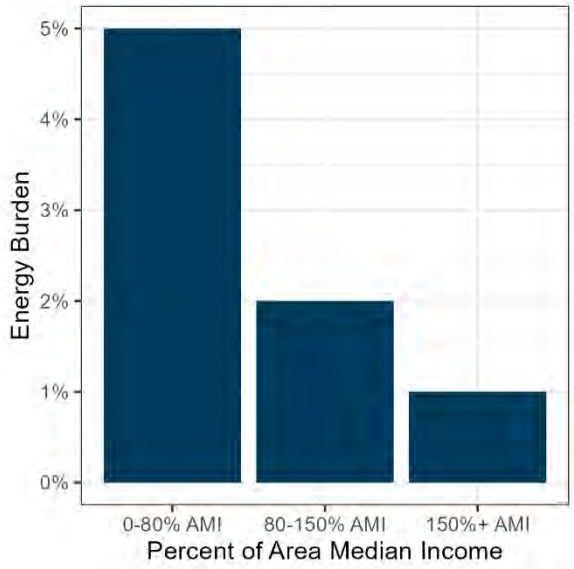
The Equity and Justice Framework provides a tool to help implement the Oregon Energy Strategy with equity and justice at the core of how Oregon moves toward its energy policy objectives.

The Equity and Justice Framework aims to reduce the disproportionate costs of energy burden, negative health effects from energy-related pollution, and lack of resilience against extreme weather induced by climate change as the state adopts new programs, regulatory structures and business models to move the state toward cleaner energy sources. The framework is a tool to apply as you read the Energy Strategy. It can help determine what equity and justice methods could be used to move Oregon toward its energy goals.

To create equitable strategies for accomplishing our state's climate and energy goals, we first recognize there are disparities in how Oregonians experience benefits from or are burdened by our energy system. For example, Oregonians with lower incomes spend a greater proportion of their annual household income on home energy costs, see Figure 1.

The state is currently in the process of developing an Oregon-based Environmental Justice Mapping Tool to help identify communities underrepresented in government processes and harmed by environmental and health hazards. This tool, which is expected to be available in 2027, may provide more comprehensive insight into disparities affected by the development and use of energy in the state vital for developing equitable policy. However, even as that tool is under development, there should be a concerted effort to meaningfully involve (as defined in Oregon House Bill 4077) those who have been historically and are currently excluded from decision making processes, and provide a framework that demonstrates how to create just and equitable practices when developing energy policies, actions, and outcomes.

Figure 1: Energy Burden by Household Income



Source: United States Department of Energy Low-income Energy Affordability Data (Archived in December 2024 by the Harvard Dataverse)
Notes: Energy burden is defined as the percent of household income that is spent on home energy costs.

Throughout the Oregon Energy Strategy, the terms environmental justice and environmental justice community are used, following Oregon HB 4077's definition of "communities of color, communities experiencing lower incomes, communities experiencing health inequities, tribal communities, rural communities, remote communities, coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including seniors, youth and persons with disabilities."

Additionally, HB 4077 defines "meaningful involvement" as: (a) Members of vulnerable populations have appropriate opportunities to participate in decisions about a proposed activity that will affect their environment or health; (b) Public involvement can influence a decision maker's decision; (c) The concerns of all participants involved are considered in the decision-making process; and (d) Decision makers seek out and facilitate the involvement of members of vulnerable populations. The report also adheres to this definition.

The strategy employs targeted universalism, which establishes a universal goal for all groups concerned and then sets targeted strategies to achieve those goals based on different groups' structure, culture, and geographies (University of California Berkley's Othering and Belong Institute). Targeted universalism is an approach that recognizes that while a goal may be universal, ~~the~~ **effective** solutions to achieve that goal across different communities must be targeted. The approach incorporates the idea that conversations, policies, and programs must be informed by the needs of different communities, and that decisionmakers must engage with communities to understand and co-create solutions.

With this approach, we can better understand burdens, benefits, and barriers for communities across the state to help ensure an equitable energy transition.

An equitable energy transition must be rooted in energy justice, which is defined by the Initiative for Energy Justice as:

> "the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system. Energy justice explicitly centers the concerns of communities at the frontline of pollution and climate change ("frontline communities"), working class people, indigenous communities, and those historically disenfranchised by racial and social inequity."

The Equity and Justice Framework has adapted the Initiative for Energy Justice's definition of energy justice to create accessible, affordable, reliable, and resilient energy strategies that work to maximize community benefits for **all** Oregonians.

[THE FRAMEWORK WILL GO HERE IN THE FINAL DOCUMENT BUT IS AT THE END OF THIS NARRATIVE FOR EASE OF EDITING]

Equity and Justice Framework

The Equity and Justice Framework is not a one-size-fits-all approach. Justice and equity meet the needs of communities and people where they are and the way the framework is used must adapt. Often, there is not a simple answer or a linear process. There may be times when we need to consider multiple strategies within the framework to accomplish one action. For example, people may need more information, resources, and educational opportunities to meaningfully engage in any decision-making processes. This will require building relationships with trusted community organizations across many **communities,** interests and industries.

The Energy Strategy's Equity and Justice Framework adopts the four pillars of energy justice from the University of Michigan's 2022 Energy Equity Project. These pillars work together to provide direction to achieving just and equitable outcomes in energy policies.

- **Procedural:** All groups who stand to benefit or are burdened are provided space to participate and their decisions should be taken seriously throughout the process.
- **Recognition:** No one group should dominate a process. Process understands and addresses demographic, social-economic and geographic variables,

disproportionate burdens, and lived experiences of environmental justice communities.

- **Distributive:** Understanding of indirect and community benefits (health, jobs, environment, etc.) and intentional distribution of benefits to overburden communities.
- **Restorative:** Recognizing and reflecting on past harms and injustices caused by the energy system and actively working to prevent future harms and maximizing future benefits.

Using the pillars and community feedback, the Environmental Justice and Equity Working Group formed six methods for centering equity and justice in Oregon's energy goals. Each method has supporting metrics to understand if progress is made toward equitable outcomes.

Evaluating progress

Before a policy moves into implementation, metrics should be established and then continually be collected and analyzed throughout the program to understand if there are unintended consequences that need to be mitigated. Finally, when a program ends or moves into its next iteration, it should be evaluated to address any unforeseen risks, environmental justice communities who were not included, additional burdens, and any unmet metric goals.

The Equity and Justice Framework can be used as a lens to determine best practices, metrics, and equitable outcomes throughout the energy policy process.

[FRAMEWORK IS BELOW IN WORD FORMAT FOR EASY EDITING AND COMMENTING, IT WILL BE FORMATTED INTO A MATRIX FOR FINAL DRAFT]

"Potential metrics" are taken from or inspired by 220174_EEP_Report_8302022.pdf

EQUITABLE ACCESS TO DECISION-MAKING PROCESS

- All policies or programs to expand energy infrastructure are designed to ensure environmental justice and energy burdened communities have equitable access to meaningful involvement in decision-making bodies, including using plain language, language translations, and encouraging participation from non-experts**, not limited to those with lived experience.**
- Policies and programs intentionally reduce barriers to participation in decision-making bodies for environmental justice groups, including evaluating the feasibility

of a compensation process for participation, and incorporating the cost into agency program planning.

Potential metrics:

- Percentage of participants with economic, health, pollution burden or other energy-burden factors such as climate vulnerability score.
- Percentage of budget dedicated for meaningful involvement.
- Post-process survey on accessibility and transparency.

EQUITABLE ACCESS TO INFRASTRUCTURE DEVELOPMENT

All policies and programs expanding infrastructure to support technology adoption and energy reliability are designed to ensure environmental justice and energy burdened communities have equitable access to electric vehicle charging, reliable energy sources, and energy resilience.

Potential metrics:

- Reduced frequency and duration of power outages in environmental justice and medically vulnerable communities
- Number of public electric vehicle charging stations in under-resourced communities
- Number of charging stations in low to moderate income multifamily housing
- Diversity of electricity options, number of battery storage facilities

INVEST IN LONG TERM INCENTIVE PROGRAMS FOR ENVIRONMENTAL JUSTICE COMMUNITIES

- Develop statewide prioritization criteria for energy funding/assistance to reduce barriers for people with the greatest assistance need
- Provide increased and stable funding and assistance for those in low-income and energy burdened households **commensurate with increases in energy costs**
- Establish revolving loans with a beneficial timeline for repayment to minimize monthly loan payments for low or no interest loans to medium-income households

Potential metrics:

- Number of energy funding/assistance programs created specifically for or serving majority energy-burdened households within environmental justice communities
- Percentage of program participants who are part of an environmental justice community,
- **Percentage of program participants served versus eligible populations**
- Reductions in negative environmental-related health conditions (such as asthma, respiratory disease, ...) in environmental justice communities

PROMOTE HOLISTIC WORKFORCE DEVELOPMENT IN UNDERSERVED COMMUNITIES

- Develop and expand trainings, apprenticeships, and continuing education programs for relevant incentive programs, cultural responsiveness, and technology specifics and benefits in underserved communities for sales, contractors, tradespeople, and landlords.

Potential metrics:

- Number of colleges and vocational schools offering energy-related training programs, incentives, energy-efficiency technologies**/installations,** and apprenticeships to environmental justice communities and percentage of enrollment that identifies as an environmental justice community member.
- Percentage of new energy jobs held by members of environmental justice, frontline, and low-income communities and percent employment retained in energy industry.
- Percent of environmental justice community-owned business in energy industry
- Percent of policies supporting hiring, training, and retention of people in environmental justice communities

DEVELOP PARTNERSHIPS AND RESOURCES IN ENVIRONMENTAL JUSTICE COMMUNITIES

- Provide community outreach and informational opportunities that include in-person engagement, and resources/tools that are in plain language and multiple languages
- Partner with community organizations who are trained and compensated appropriately to be trusted partners and community navigators in the field
- Consider opportunities to collaborate with city and county government and utilities to best support communities and consumers

Potential metrics:

- Number of people participating in processes and/or programs from environmental justice communities
- Number of materials that are culturally specific and relevant and percentage of program materials available in multiple languages
- Number of partner environmental justice organizations/trusted community organizations participating in or distributing program materials
- Percentage of meetings hosted with interpretation, translation services, and meetings wraparound services

CONSIDER THE INTERSECTION OF ECOSYSTEMS

- Balance energy needs — like access to affordable energy and economic opportunity — with the needs of ecosystems and cultural priorities.
- Make decisions that minimize harm to both communities and ~~nature, and~~nature and ensure that environmental burdens and benefits are distributed equitably, without disproportionately impacting marginalized groups.

Potential metrics:

- Improved outdoor air quality particularly in areas with disproportionately poor air quality
- Improved indoor air quality particularly in areas with disproportionately poor air quality
- Increased investment for wildfire risk management
- Increased salmon/wild fish populations / Increased endangered or culturally significant wildlife populations
- Reduction in heat islands

Oregon Energy Strategy's Justice and Equity Framework

Background

The Equity and Justice Framework provides a tool to help implement the Oregon Energy Strategy with equity and justice at the core of how Oregon moves toward its energy policy objectives. ***Comment****: Link doesn't work - get error message when click on it*

The Equity and Justice Framework aims to reduce the disproportionate costs of energy burden, negative health effects from energy-related pollution, and lack of resilience against extreme weather induced by climate change as the state adopts new programs, regulatory structures, and business models to move the state toward cleaner energy sources. The framework is a tool to apply as ~~you read~~ the Energy Strategy **is implemented**. It can help determine what equity and justice methods ~~could~~ **should** be used to move Oregon toward its energy goals. ***Comment****: This language does not seem sufficiently direct or assertive in how folks should use the framework. It seems like this is a tool that should be applied to implementing the Energy Strategy - an equity screen type of tool for policy implementation? Should be more direct about that…offered a couple edits along those lines.*

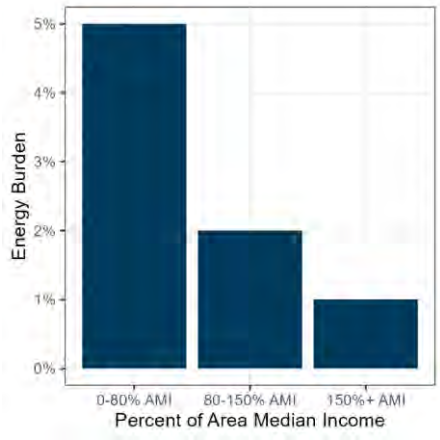
Also, did ODOE apply any of this in developing the Energy Strategy/recommendations - think would be good to add a discussion of that. In that discussion, can be clear about how far ODOE went - and how to use this tool to go further. HB 3630 requires that the Energy Strategy be informed by environmental justice so ODOE can/should explain how it addressed in Energy Strategy and how this tool fits in.

To create equitable strategies for accomplishing our state's climate and energy goals, we first recognize there are disparities in how Oregonians experience benefits from or are burdened by our energy system. For example, Oregonians with lower incomes spend a greater proportion of their annual household income on home energy costs, see Figure 1.

The state is currently in the process of developing an Oregon-based Environmental Justice Mapping Tool to help identify communities underrepresented in government processes and harmed by environmental and health hazards. This tool, which is expected to be available in 2027, may provide more comprehensive insight into disparities affected by the development and use of energy in the state and will be vital for developing equitable policy. However, even as that tool is under development, there should be a concerted effort to meaningfully involve **and fairly treat** (**both** as defined in Oregon House Bill 4077) [*Comment: Not just about meaningfully involving - also fair treatment*.] those who have been historically and are currently excluded from decision making processes, and provide

a framework that demonstrates how to create just and equitable practices when developing energy policies, actions, and outcomes. **In fact, key Oregon energy laws already have relevant directives that need to be achieved and can offer lessons learned to inform future actions (See, e.g., HB 2021).** *Comment: Appreciate the point above that shouldn't just wait for the EJ Tool, but also important to note that there are Oregon energy laws that already direct some of this - e.g, HB 2021. A fuller discussion of that could provide some additional context and make it clear that this is not some voluntary effort/academic exercise in the meantime while the EJ Mapping Tool is being put together.*

Figure 1: Energy Burden by Household Income



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Comment: Only spells out environmental justice community definition here - also spell out environmental justice

Additionally, HB 4077 defines "meaningful involvement" as: (a) Members of vulnerable populations have appropriate opportunities to participate in decisions about a proposed activity that will affect their environment or health; (b) Public involvement can influence a decision maker's decision; (c) The concerns of all participants involved are considered in the decision-making process; and (d) Decision makers seek out and facilitate the involvement of members of vulnerable populations. The report also adheres to this definition.

The strategy employes targeted universalism, which establishes a universal goal for all groups concerned and then sets targeted strategies to achieve those goals based on different groups' structure, culture, and geographies (University of California Berkley's Othering and Belong Institute). Targeted universalism is an approach that recognizes that while a goal may be universal, the solutions to achieve that goal across different communities must be targeted. The approach incorporates the idea that conversations, policies, and programs must be informed by the needs of different communities, and that decisionmakers must engage with communities to understand and co-create solutions. With this approach, we can better understand burdens, benefits, and barriers for communities across the state to help ensure an equitable energy transition.

An equitable energy transition must be rooted in energy justice, which is defined by the Initiative for Energy Justice as:

> "the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system. Energy justice explicitly centers the concerns of communities at the frontline of pollution and climate change ("frontline communities"), working class people, indigenous communities, and those historically disenfranchised by racial and social inequity."

The Equity and Justice Framework has adapted the Initiative for Energy Justice's definition of energy justice to create accessible, affordable, reliable, and resilient energy strategies that work to maximize community benefits for Oregonians.

[THE FRAMEWORK WILL GO HERE IN THE FINAL DOCUMENT BUT IS AT THE END OF THIS NARRATIVE FOR EASE OF EDITING]

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Equity and Justice Framework

The Equity and Justice Framework is not a one-size-fits-all approach. Justice and equity meet the needs of communities and people where they are and the way the framework is used must adapt. Often, there is not a simple answer or a linear process. There may be times when we need to consider multiple strategies within the framework to accomplish one action. For example, people may need more information, resources, and educational opportunities to meaningfully engage in any decision-making processes. This will require building relationships with trusted community organizations across many interests and industries. [JACKSON Katelyn * ODOE commented: Note to self on placement of this example]

The Energy Strategy's Equity and Justice Framework adopts the four pillars of energy justice from the University of Michigan's 2022 Energy Equity Project. These pillars work together to provide direction to achieving just and equitable outcomes in energy policies.

- **Procedural:** All groups who stand to benefit or are burdened are provided space to participate and their decisions should be taken seriously throughout the process.
- **Recognition:** No one group should dominate a process. Process understands and addresses demographic, social-economic and geographic variables, disproportionate burdens, and lived experiences of environmental justice communities.
- **Distributive:** Understanding of indirect and community benefits (health, jobs, environment, etc.) and intentional distribution of benefits to overburden [Zachariah Baker commented: Did ODOE mean overburdened communities here? There are multiple terms used throughout the document - overburdened, underserved, environmental justice communities. Would use environmental justice communities for these references as it is defined in statute.]communities.
- **Restorative:** Recognizing and reflecting on past harms and injustices caused by the energy system and actively working to prevent future harms and maximizing future benefits.

Using the pillars and community feedback, the Environmental Justice and Equity Working Group formed six methods for centering equity and justice in Oregon's energy goals. Each method has **potential** supporting metrics to understand if progress is made toward equitable outcomes.

Evaluating progress

Before or as [Zachariah Baker commented: Would include as a policy moves as well. Before could delay agencies from acting as they may need to figure it all out prior to kicking off implementation process. Part of the implementation conversation could be what metrics should be...]a policy moves into implementation, metrics should be established and then continually be collected and analyzed throughout ~~the program~~implementation to understand if there are unintended consequences that need to be mitigated, as well as what benefits accrue to EJ communities. Finally, when a program ends or moves into its next iteration, it should be evaluated to address any unforeseen risks, environmental justice communities who were not included, additional burdens, and any unmet metric goals. Similarly, programs should be evaluated to understand how they created benefits to EJ communities. [Zachariah Baker commented: This feels like it is only pointing out the negatives that could come. Think the evaluation should also include the positives - how benefited EJ communities, what led to success there, what could be built upon for further success, etc.]

The Equity and Justice Framework can be used as a lens to determine best practices, metrics, and equitable outcomes throughout the energy policy process.

[FRAMEWORK IS BELOW IN WORD FORMAT FOR EASY EDITING AND COMMENTING, IT WILL BE FORMATTED INTO A MATRIX FOR FINAL DRAFT]

"Potential [Guest User commented: General feedback for the subsections above: It would be good to also include 1-2 qualitative metrics under each that speak to folks experience with the processes, programs, etc.]metrics" are taken from or inspired by 220174_EEP_Report_8302022.pdf

EQUITABLE ACCESS TO DECISION-MAKING PROCESS

- All energy policies or programs, including those focused on ~~to~~ expanding energy infrastructure, [Guest User commented: Why just those ones? I agree that infrastructure expansion conversations should be procedurally just but wondering if there are other types of processes.] are designed to ensure environmental justice and energy burdened communities have equitable access to meaningful involvement in decision-making bodies, including using plain language, language translations, and encouraging participation from folks with non-technical expertise ~~non-experts~~as well as robust consideration of their perspectives and contributions. [Alma Pinto commented: Note on the language used here: the term "non experts" should be reframed to recognize the value of lived experience and community-based knowledge and expertise. Folks have deep expertise in their lives

and communities even when they do not hold technical degrees or use formal academic or technical language. A term like "non-technical experts" or "experts with lived experience and community-based knowledge" would better acknowledge that.]

- Policies and programs intentionally reduce barriers to participation in decision-making bodies for environmental justice groups, including evaluating the feasibility of a compensation process for participation, and incorporating the cost into agency program planning.

Potential metrics:

- Percentage of participants with economic, health, pollution burden or other energy-burden factors such as climate vulnerability score.
- **Percentage of feedback provided by EJ participants incorporated into policies and proposals.**
- Percentage of budget dedicated for meaningful involvement.
- Post-process survey on accessibility and transparency.

EQUITABLE ACCESS TO *THE BENEFITS OF* INFRASTRUCTURE DEVELOPMENT

All policies and programs expanding infrastructure to support **clean energy** [Zachariah Baker commented: It is not clear if this section is focused on clean energy infrastructure or more/other? Might be good to clarify here or in title/within paragraph.]technology adoption and energy reliability are designed to ensure environmental justice and energy burdened communities have equitable access to **the benefits of that infrastructure. This includes, but is not limited to equitable access to** electric vehicle charging, [Alma Pinto commented: We agree with the questions/comments submitted by Sarah from CUB here.]reliable energy sources, and energy resilience.

Program design is grounded on the equitable access to decision-making processes described above. Importantly, policies and programs should be carefully designed to avoid or mitigate negative impacts, like green gentrification.

Potential metrics:

- Reduced frequency and duration of power outages in environmental justice and medically vulnerable communities
- **Increased weatherization and other conversservation investement in EJ communities.**
- **Number of heat pumps, distributed energy resources (solar, batteries, etc.) and other clean energy technologies deployed to the benefit of EJ communities**

(either households getting direct benefits from on-site installation, bill discounts, increased resilience, etc., or less direct benefits like availability of a resilience hub in the community).

- Number of public electric vehicle charging stations in under-resourced communities [Alma Pinto commented: We recommend using "environmental justice communities" here, as it is the term officially defined in statute]
- Number of charging stations in low to moderate income multifamily housing
- Diversity of electricity options, number of battery storage facilities [Zachariah Baker commented: Unclear as written - think needs to be tied to in EJ communities?] in environmental justice communities

INVEST IN LONG-TERM INCENTIVE PROGRAMS FOR ENVIRONMENTAL JUSTICE COMMUNITIES

- Develop statewide prioritization criteria for energy funding/assistance to reduce barriers for people with the greatest assistance need
- Provide increased and stable funding and assistance for those in low-income and energy burdened households
- Establish revolving loans with a beneficial timeline for repayment to minimize monthly loan payments for low-income households, or no interest loans to medium-income households.

Potential metrics:

- Number of energy funding/assistance programs created specifically for or serving majority energy-burdened households within environmental justice communities
- Percentage of program participants who are part of an environmental justice community;
- Reductions in negative environmental-related health conditions (such as asthma, respiratory disease, …) in environmental justice communities

PROMOTE HOLISTIC WORKFORCE DEVELOPMENT IN UNDERSERVED [Zachariah Baker commented: EJ Communities?] COMMUNITIES

- Develop and expand trainings, apprenticeships, and continuing education programs for relevant incentive programs, cultural responsiveness, and technology specifics and benefits in underserved [Guest User commented: or EJ communities? I see a few descriptors for the communities throughout the document and it may be good to land on EJ since it is defined in statute.]communities for sales, contractors, tradespeople, and landlords.

Potential metrics:

- Number of colleges and vocational schools offering energy-related training programs, incentives, energy-efficiency technologies, and apprenticeships to environmental justice communities and percentage of enrollment that identifies as an environmental justice community member.
- Percentage of new energy jobs held by members of environmental justice, frontline, and low-income communities and percent employment retained in energy industry.
- Percent of environmental justice community-owned business in energy industry
- Percent of policies supporting hiring, training, and retention of people in environmental justice communities
- Percentage of program expenditures going to EJ community-owned businesses

DEVELOP PARTNERSHIPS AND RESOURCES IN ENVIRONMENTAL JUSTICE COMMUNITIES

- Provide community outreach and informational opportunities that include in-person engagement, and resources/tools that are in plain language and multiple languages
- Partner with community organizations who are trained and compensated appropriately to be trusted partners and community navigators in the field
- Consider opportunities to collaborate with city and county government and utilities to best support communities and consumers

Potential metrics:

- Number of people participating in processes and/or programs from environmental justice communities
- Number of materials that are culturally specific and relevant and percentage of program materials available in multiple languages
- Number of partner environmental justice organizations/trusted community organizations participating in or distributing program materials
- Percentage of meetings hosted with interpretation, translation services, and meetings wraparound services [Zachariah Baker commented: Is this referring to a subset of wraparound services specific to meetings? Or just wraparound services being offered?]

CONSIDER THE INTERSECTION OF ECOSYSTEMS

- Balance energy needs — like access to affordable energy and economic opportunity — with the needs of ecosystems and cultural priorities.
- Make decisions that minimize harm to both communities and nature, and ensure that environmental burdens and benefits are distributed equitably, without disproportionately impacting marginalized groups.

Potential metrics:

- Improved outdoor air quality particularly in areas with disproportionately poor air quality
- Improved indoor air quality particularly in areas with disproportionately poor air quality
- Increased investment for wildfire risk management
- Increased salmon/wild fish populations / Increased endangered or culturally significant wildlife populations
- Reduction in heat islands

April 2, 2025

To: Oregon Department of Energy
Janine Benner janine.benner@energy.oregon.gov

From: Kim Rush, President, NW Natural

Re: Comments on Oregon Energy Strategy

Dear Director Benner:

NW Natural writes to express concerns about the current state of the Oregon Energy Strategy effort. We believe it is important to step back and view the OES work from a high-level perspective. Our comments are not about specific data, assumptions, methodology or models. Rather, our comments are foundational.

In prioritizing decarbonization goals, currently the OES fails to address critical elements of responsible energy system planning, which include cost, reliability, and safety impacts. A state energy strategy that does not explore, acknowledge, and plan for all those considerations will exacerbate the negative impacts and heightened risks we're already seeing materialize today. It is also counter to the priorities set by the legislature which included cost and reliability offramp protections for Oregonians when passing the state's 100% clean electric bill.

Though NW Natural has been engaged in the OES process, Evolved Energy's modeling remains opaque. Based on what we can access, the reference case has been built on a mix of highly optimistic assumptions pertaining to integration of electrification paired with very conservative assumptions around alternative fuels (with little data to support the reasonableness of these choices). This reference case is then informing even more problematic alternative scenarios.

To that end, we are submitting relevant information that has been developed as an outcome of our Integrated Resource Planning (IRP) process currently underway.

NW Natural recently commissioned the consultant ICF to conduct a comprehensive study that includes a wide range of electrification scenarios for our system. Because our core business is natural gas, we have relied on ICF and its extensive national electric practice for their expertise. In addition, we hired an electric system consultant as well as a panel of regional electric experts with over 100 years of combined energy experience in the Pacific Northwest to form an independent Advisory Group (AG). The AG provided a local, critical review of electric supply assumptions and the source data being used to inform the ICF electrification analysis.

While the ICF study for NW Natural's IRP is not complete, the AG wrote a report raising several questions and concerns relevant to the OES about the cost and reliability impacts of any material level of electrification of gas loads to the Pacific Northwest electric system.

And while the AG report speaks for itself, the basic conclusion is that any assumption that large-scale electrification of natural gas heating (along with existing electric demand) can be reliably met in a fast, affordable, and decarbonized manner should be viewed with skepticism.

As you are aware, Oregon consumers and businesses are already experiencing rising energy bills and there is pressure on elected officials, regulators, and utilities to find ways to mitigate increasing rates. It is notable that these inflationary increases have yet to account for even higher energy transition costs - those are still to come. Reliability risks associated with a challenged Pacific Northwest energy system are also becoming better understood by the public, yet neither cost nor capacity constraints are included as part of this energy strategy development process.

The AG memo addresses these issues and identifies areas of opportunity for more robust analysis that we believe would significantly improve the OES work product.

Energy policies that impact public health, safety and our climate goals are too important to get wrong. Otherwise, our communities will be faced with untenable costs and reliability risks – with negligible climate benefits to show for it.

Thank you for taking this information into consideration.

Statement of the Independent Advisory Group Regarding NW Natural's Integrated Resource Plan and Evaluation of Electrification of Current Gas Loads (IRP)

Independent Advisory Group Members:

Mr. Lee Beyer (1)

Mr. Stefan Bird (2)

Ms. Debra Smith (3)

Mr. Stephen Wright (4)

February 2025

Executive Summary:

The four-member independent Advisory Group (AG) provides this statement on the elements of NW Natural's IRP (IRP) we were asked to review. This IRP examines different scenarios related to electrification of natural gas loads currently served by the local distribution company, NW Natural. Our engagement was to focus on key assumptions that would affect cost, reliability and carbon emissions on the electric system of the Pacific Northwest (PNW) and particularly those electric systems that overlap with NW Natural's service territory.

The AG was presented an initial set of three supply-side scenarios and four demand-side scenarios. The AG focused on the supply-side scenarios. These initial scenarios had different assumptions about the future development costs, location, timing and availability of different supply-side generation resources and transmission expansion throughout the PNW region. These kinds of resources would be needed for normal electric load growth and these three supply-side resource scenarios also are used in the IRP to meet the varying degrees of load growth assumed in the four demand-side scenarios. We understand that these four demand-side scenarios are driven by different assumptions about electrification of loads currently served by natural gas and not fundamental differences in "base load" electric demand growth. Although we did not review the demand-side scenarios in detail, this statement does express a concern about the "base load" forecast possibly underrepresenting electric load growth based on current trends.

We found the initial three supply-side scenarios presented to the AG to be overly optimistic by assuming base assumptions that would result in electrification of current gas loads being easier, faster and cheaper than our own experience and judgment. Even the least optimistic scenario was not consistent with our view of current reality facing the PNW energy system. Our collective feedback was that the electric future transition will be harder, slower and more expensive than the scenarios we were presented even without electrifying current natural gas use.

NW Natural then developed a revised set of supply-side scenarios with one scenario called "Current Trends" that reflected the most change from the original three scenarios. The other two scenarios moved somewhat, but our judgment is they remain too reliant on overly favorable

assumptions. It is the AG's view that the electric system will be greatly challenged to meet the existing policy prescriptions and planned load growth even without taking into account electrification of the natural gas system.

As an overall observation, we think the electric systems are already being pressed against the edges of their capabilities and electric systems are experiencing more "close call" events such as in January 2024 in the PNW. The electric systems of the region are also relying heavily on the gas systems for electric generation for peak load service. For example, the PNW electric system was in severe emergency conditions last January. Without record electric imports from the Southwest and Rocky Mountain states, the Pacific Northwest could have experienced rolling blackouts of a magnitude that would be unprecedented in our region.

The AG expressed views about future supply side additions, load forecasts, and electric system planning for uncertainty. The AG also added thoughts about the need for better gas-electric integrated system planning in the future although not achievable in this study.

The AG noted the following about future supply side additions:

1. The biggest unknown about the cost of future supply is estimating the availability and cost of zero emission load following resources. There are substantial federal research and development dollars currently authorized, but it is unknown how effectively these will be deployed. The current very high cost of maintaining reliability under stress conditions without carbon-emitting load following resources (the status quo) should be a scenario that is analyzed. The AG recommends maintaining the availability of natural gas-fueled generation capability, which will increasingly operate at lower dispatch factors as more zero fuel cost renewable energy becomes available, until cost-effective, longer duration, zero emitting load following resources can make more advances.
2. Battery costs have been decreasing and are increasingly being adopted in the market. Currently cost-effective batteries, however, are limited to four hour duration. Longer duration batteries such as 100 hour iron-air batteries are on the horizon, but it is unclear how long they will take before they achieve widespread commercialization. Other proven technologies such as pumped hydro storage may be available in limited geographical locations but are historically higher cost and face more challenging permitting timelines. Longer term storage is necessary to maintain reliability in a system with increased reliance on variable resources and even more so without carbon-emitting dispatchable generation.
3. New standardized modular nuclear reactors are an option for both energy and peaking capability, but the technology currently carries an extraordinary array of risk in terms of cost and timeframe to be in place.
4. Demand side options hold tremendous potential but there are limits to the amounts of firm energy and capacity that can be assumed to be available in the most difficult circumstances due to consumers willingness to sustain demand reductions under stress temperature conditions.
5. The transmission assumptions we were presented are based on current planned schedules. For transmission upgrades that do not require new right of way the assumptions are likely reasonable. The increasing resistance to new transmission nationwide suggests caution with respect to schedules for new transmission that requires new right-of-way. The ability to

meet Western states' emission reduction targets with current load forecasts, let alone under more aggressive data center expansion and or more aggressive natural gas-based electrification assumptions, will require expansion of the transmission grid to access and deliver energy reliably from new remote renewable resources and new load following resources. Historically long timelines to permit new transmission lines, particularly across federal lands, as well as concerns about customer rate pressure, suggest caution with respect to the assumed speed of development of new transmission lines.

6. The accredited capacity for wind appears high relative to the capacity attributed to wind in regions using an established ELCC methodology. Offshore wind, which has received opposition by the new federal administration, is also limited by available transmission on the coast, which is generally weak due to small coastal loads. More sizable offshore wind resources will require new network transmission to be permitted and constructed to intertie to bulk transmission that can access large load centers, which adds to the timing risk and uncertainty.
7. There has also been a trend across the country to derate accredited capacity for thermal resources due to operational challenges occurring during extreme temperature conditions. There are a variety of reasons including inadequate weatherization of equipment and fuel supply disruptions. We recommend consideration as to whether the capacity factors for thermal units should be modified. The Western Power Pool may be able to help with this assessment.
8. There is substantial evidence that the cost of the clean electricity transition increases steadily over time, with rapid increases after 80% renewables is achieved, if there are not adequate cost-effective zero-emitting load following resources available.[1] Today, we are likely still on the upward slope prior to achieving 80%. This projected increase in costs translates into rate impacts. Utilities are increasingly seeing push back from customers on rate increases, mostly related to new resource capital expense. Oregon's House Bill 2021 – 100% Clean Energy for All - that was passed into law includes consumer protections for both affordability and reliability in the form of regulatory off-ramps. In addition, the physical siting of these resources is experiencing strong opposition from many customers. This raises concerns about the industry's ability to bring new resources online in a timely manner. A feedback loop is needed to recognize that if rates increase dramatically and quickly, or if permitting processes do not evolve to address siting concerns, there will be consequences for the rate at which the clean electricity transition can occur.

It is also important to understand that current and long-term concerns about product affordability are based on resource adequacy, as well as a myriad of other factors also putting pressure on forward rate trajectories. Although this work only deals with the rate impacts of acquiring sufficient resources within the regulatory framework established by each state, rate impacts are cumulative and customers generally do not look at individual drivers such as wildfire mitigation, system resiliency, grid modernization or general capital investment. Instead, rate actions associated with resource adequacy must be examined in the context of all other rate pressures.

[1] 2019 Resource Adequacy Study in the Pacific Northwest on the Public Generating Pool website.

As a result, we have concerns about the achievability of the supply side assumptions even in the "Current Trends" scenario.

For the demand side, the "base load" demand forecast was standardized across the demand scenarios using current load forecasts. Like locking down other variables so that the policies and rates of electrification could be examined as the changing variable, we understand the purpose of a single "base load" forecast. However, we remain concerned that this forecast likely underrepresents the potential electric load increases being driven by factors other than electrification of gas load. Regional electric load forecasts have increased in an unprecedented fashion in the last two years, and we expect the forecasts to continue to increase. Specifically, data centers and AI have become large swing short-term variables and vehicle electrification is a long-term driver.

Planning Reserve Margin (PRM) is a key assumption in this analysis that addresses uncertainty in electric utility planning. We have already seen upward pressure on PRMs around the country due to the increased use of energy and dispatchability limited resources, load growth uncertainty and the capability of resources to deliver capacity during temperature related stress events, a challenge which has been exacerbated by extreme weather events. We also expect there will be an increasing effort to address the duration and magnitude of reliability risk (through tools like expected unserved energy or EUE) in addition to the standard probabilistic assessment of the frequency of electric outages. The emerging long duration, high magnitude outages during extreme weather events, as experienced in Texas and California, present high level human health and safety issues. In addition, the PNW is in the midst of a transition from being an energy constrained to a capacity constrained system and systems need to evolve as well. Electrification of natural gas uses will have the biggest impact at the times which are becoming the most challenging for the electric system. All these factors point toward the use of higher than historical levels of planning reserve margin to maintain the level of reliability PNW consumers have come to expect from their electric power system.

Moreover, the AG thinks the study should also consider the reality of periodic severe ice or windstorm events as we have experienced in recent years. Such events have resulted in multi-day electric distribution grid outages disrupting electricity supply to thousands of customers until electric distribution grid damage is repaired and power is restored. If natural gas winter heating capability is fully displaced by electric heating without auxiliary/hybrid natural gas heat pump capability, or without extraordinary levels of storage at the local retail user level, there will be substantial public safety and economic impacts. It is possible to underground electric distribution but only at significant expense, over a lengthy time period and requiring increased maintenance. The AG encourages that this risk receive attention in discussion of electrification.

Finally, we note that the AG believes there is potential for consumer value to be generated through increasing coordinated/joint planning and/or coordinated operations between gas and electric systems where there are overlapping service territories. Building on recent efforts to build collaboration in the PNW, it is recommended that synergies be unlocked that can reduce cost, improve reliability and decrease carbon emissions through consideration of coordinated and/or joint integrated resource planning, investment and operations for options from supply source to consumer use of the gas and electric systems.

Our specific recommendations regarding assumptions are included in the "Detailed Recommendations" section that follows below.

Detailed Recommendations:

The AG recognizes there is never a perfectly accurate single point forecast for the future. The IRP's goal of evaluating the impacts of possible future scenarios to help inform policy and strategy is reasonable, as long as the probability is not evenly weighted between the various scenarios currently being utilized. Our collective view is that, of the scenarios NW Natural is studying, the "Current Trends" supply side scenario most accurately reflects current reality now and for the foreseeable future. However, we continue to have residual concerns that the reasonable risk to electric system reliability is outside the range of the scenarios to be studied. This is due to supply, demand and uncertainty assumptions embedded in the study. We recommend addressing these concerns through sensitivity analysis to better understand load and resource uncertainty.

- The Current Trends scenario includes near-term increase in costs for wind, solar and batteries that best reflects current reality for the supply side in electricity markets. The causes for these increases would best be described as driven by high demand, supply chain challenges, import tariffs and permitting issues, driving costs up in the near term while technological improvements are driving costs down over the longer term. The other two scenarios follow more traditional NREL cost forecasting. The AG also noted there is an interaction between load and costs for supply. Higher loads lead to more stress on generation and transmission supply chains lead to higher costs. A scenario that assumes costs of all resources are higher when load growth is high is within the realm of reason and should be considered for scenario analysis purposes.
- The AG has suggested use of a sensitivity analysis approach that would vary the base load forecast using a higher growth rate. Although we do not have a specific numerical recommendation, we have suggested using the trends from the last two years as a basis for assuming a corresponding increase for at least one additional year at the beginning of the forecast period.
- The single planning reserve margin (PRM) that is based on PNUCC's short-term PRM of 16% is reasonable in the short term. However, consistent with comments above, the AG believes this PRM is likely understated in long-term studies that assume increasingly higher percentages of variable generation resources over time. Electric system planning in this new long-term environment will require more sophisticated modeling techniques to ensure reliable service in all 8,760 hours of the year and not just the peak hour. In-lieu of deployment of these more sophisticated modeling techniques, the AG recommends consideration of an approach that would increase the PRM in relationship to increasingly higher percentage reliance on zero-emitting variable generation resources that is supported by review of other expert sources, or alternatively consider a sensitivity scenario with a gradually increasing PRM to provide an indicator of potential cost and risk impact. Potential sources of this PRM insight are information emerging in the work performed by the Electric Systems Integration Group (ESIG), Pacific Power's current 2025 IRP process, and PRM analysis performed by RTO/ISOs across the nation. In the future, the AG's recommendation

to pursue coordinated joint planning between the electric and gas utilities would support a more informed set of assumptions including PRM and improved quality of analysis.

- There has been a trend across the country to derate accredited capacity for thermal resources due to operational challenges occurring during extreme temperature conditions. There are a variety of reasons including inadequate weatherization of equipment and fuel supply disruptions. We recommend consideration as to whether the capacity factors for thermal units should be modified. The Western Power Pool may be able to help with this assessment.
- With respect to reliability and the issues of moving from a "dual fuel" (electric and gas) system to a "single fuel" (electric system) we have raised numerous concerns about assuring that the IRP analysis carefully assess issues around resulting system reliability and the potentially profound public health and safety issues of relying on a single fuel (electric) system. NW Natural's IRP process examines its own gas system but is also attempting to evaluate the electric systems of the PNW which is a reason we were asked to serve on the AG. What is lacking, not just in this study but in all current integrated resource plans across the country, is an integrated systems perspective incorporating the gas and electric systems. The risk of reliance on one fuel is increased due to the exposure of the electric distribution system to ice and wind events. Recent storms in Oregon have displayed that multi-day electric outages while distribution systems are repaired would create a substantially greater human health and safety risk following electrification of the natural gas system. While this risk is difficult to address in this study, we recommend at least addressing qualitatively. Ultimately, these critical issues should be addressed through regional joint system planning (gas and electric).

Independent Advisory Group Members Bios:

(1) **Lee Beyer:** Lee Beyer was a member of the Oregon Legislature for 22 years serving in both the House and State Senate. From 2001 until 2010 he served as a member and Chair of the Oregon Public Utility Commission. He also served for many years as a board member of the Western Electric Coordinating Council, as a member of the EPRI Advisory Council and member and Vice-Chair of the NARUC Electricity Committee. During his time in the Legislature, Beyer chaired the committees with oversight of energy policy and was directly involved in the drafting and sponsorship of much of Oregon's recent energy legislation.

(2) Stefan Bird: Stefan Bird previously served as CEO of Pacific Power, a division of PacifiCorp, senior vice president, commercial and trading, PacifiCorp Energy, CEO of CalEnergy, an independent power producer, and vice president of acquisitions and project development for Berkshire Hathaway Energy. During his 17-year tenure at PacifiCorp, among other activities, Bird led the dramatic expansion of PacifiCorp's renewable energy portfolio and interstate transmission grid, western electricity market transformation and engagement in Oregon energy legislation.

(3) **Debra Smith:** Deborah (Debra) Smith served as CEO of Seattle City Light, General Manager of Central Lincoln PUD (serving the Oregon coast), and various roles at the Eugene Water & Electric Board. During her 30 years in the electric utility industry, Deborah prioritized customer responsiveness, collaboration across the region, and electrification/decarbonization. Deborah also served as the first female chair of the Public Power Council, as well as on the boards of the Smart Energy Provider's Alliance, the Electric Power Research Institute EPRI, and the American Public Power Association. She remains active on the Pacific Northwest National Lab advisory committee, as well as the Western Transmission Consortium.

(4) Stephen Wright: Steve Wright began his career developing energy efficiency supply curves and integrated resource plans. He served as Administrator/CEO of the Bonneville Power Administration from 2000-2013, CEO of Chelan Public Utility District from 2013-2021 and is now a member of the Southwest Power Pool Board of Directors as well as the Interim Markets+ Independent Panel. He has served on the boards of the Alliance to Save Energy, Electric Power Research Institute and American Public Power Association.

Mary Moerlins, NW Natural, 5.9.2025 Submission Text

In response to the development of the Oregon Energy Strategy, NW Natural is providing briefing materials, which will be uploaded in this portal, about our regional energy system and the negative impacts that arise from a confluence of siloed policies. A strategy that focuses on electrification does not ensure decarbonization will occur, and the data provided suggests that layers of legislative and regulatory policies intended to reduce emissions have questionable efficacy, raise costs and reliability risks.

TO:	JANINE BENNER, RUCHI SADHIR AND EDITH BAYER AT ODOE
FROM:	MARY MOERLINS, NW NATURAL
DATE:	MAY 9, 2025
RE:	ENERGY SYSTEM BRIEFING

Executive Summary

In response to the development of the Oregon Energy Strategy, NW Natural is providing the enclosed briefing materials about our regional energy system and the negative impacts that arise from a confluence of siloed policies. A strategy that focuses on electrification does not ensure decarbonization will occur, and the data provided suggests that layers of legislative and regulatory policies intended to reduce emissions have questionable efficacy, raise costs and reliability risks.

With this briefing, we ask ODOE to evaluate and explore the following questions during the next phase of development for the Oregon Energy Strategy:

- Why should Oregonians electrify efficient natural gas service when it would just mean more use of natural gas for the electric system, knowing that the electric grid is already so challenged?
- Why are policies deliberately making natural gas service to homes and businesses costly when there is already concern about rising energy bills?
- Why would Oregon, such a low-emitting state, exacerbate its energy affordability challenge with the most expensive compliance costs in North America?

Many policies and stakeholder interests are focused on electrification of residential natural gas heating with electric heat pumps. However, natural gas use for power generation is already at record highs despite the state's 100% clean electric goal. The 100% clean legislative goal is used to justify the electrification of space heating, however cost and reliability off-ramps put attainment deeply in question – even before new electric loads are factored in. In fact, near misses on the grid are already occurring with rolling blackouts imminent if things don't change quickly. Electric utilities are not modeling substantial electrification of natural gas service – we assume that's because it's impossible to reliably and affordably serve this additional load without even more fossil generation.

As it relates to cost, market-supported high-efficiency furnace incentives have been absent from Energy Trust's programs for roughly a decade – removing a key energy savings opportunity for gas customers. At the same time, the elimination of a Line Extension Allowance for gas customers makes lower emitting and less costly gas appliances more out of reach for low to moderate income households. Yet, millions of electric ratepayer dollars and taxpayer funds are being used for heat pump incentives that, in many instances, increase overall energy costs and carbon emissions compared to furnaces. Using ratepayer or taxpayer subsidies to push customers towards electric-only homes increases grid capacity challenges and the use of fossil generation.

Investments needed to make progress on the state's 100% clean electricity goals are in early stages – and we're already seeing concerns about rising electric rates. At the same time, DEQ's climate program will be extremely expensive, lacks requirements for commensurate climate benefits, and lacks actionable cost or reliability protections. These increases in gas-fired electric generation are not covered under DEQ's program, raising serious questions about the efficacy of Oregon's climate policy approach. Policies that make energy unaffordable for Oregonians already struggling economically will not be durable, putting progress on emission reductions at greater risk.

The solution is to look more broadly at how our energy system – both gas and electric – work together to meet the needs of our region by considering the following recommendations:

- Conduct joint system planning to explore hybrid technologies and capacity-based tariffs to lower overall gas and electric rates

- Insist that any energy strategy considers the needs of serving winter and summer peak loads to protect public health
- Re-instate high-efficiency gas incentives for customers to secure fast and affordable emission reductions and cost savings
- Revisit the design of DEQ's climate program to assess efficacy and ensure safeguards on costs for Oregonians
- Ensure that source emissions and objective cost/benefit analysis is used to evaluate energy programs and options

The Oregon Energy Strategy should ensure that policies are based on data and analysis, which shows that we will be more successful at reaching our climate goals by finding lower cost emission reductions, with incentives and programs that are for all applicable technologies, including high-efficiency gas equipment.

CONTACT

Mary Moerlins | Environmental Policy & Corporate Responsibility Director, NW Natural | Mary.Moerlins@nwnatural.com

Energy System Briefing

NW Natural®

What are the principles of effective energy policy?

- Delivered emissions and cost reductions we can achieve ***today*** are more valuable to Oregonians and the climate than theoretical savings at some point in the future.
- Technical decisions should be made using comprehensive, verifiable and impartial facts, data and analysis.
- Reliability is a public health issue and cannot be sacrificed.

March 2025

Executive Summary: Impacts of a confluence of siloed policies

Data suggests layers of legislative and regulatory policies intended to reduce emissions have questionable efficacy, raise costs, and reliability risks.

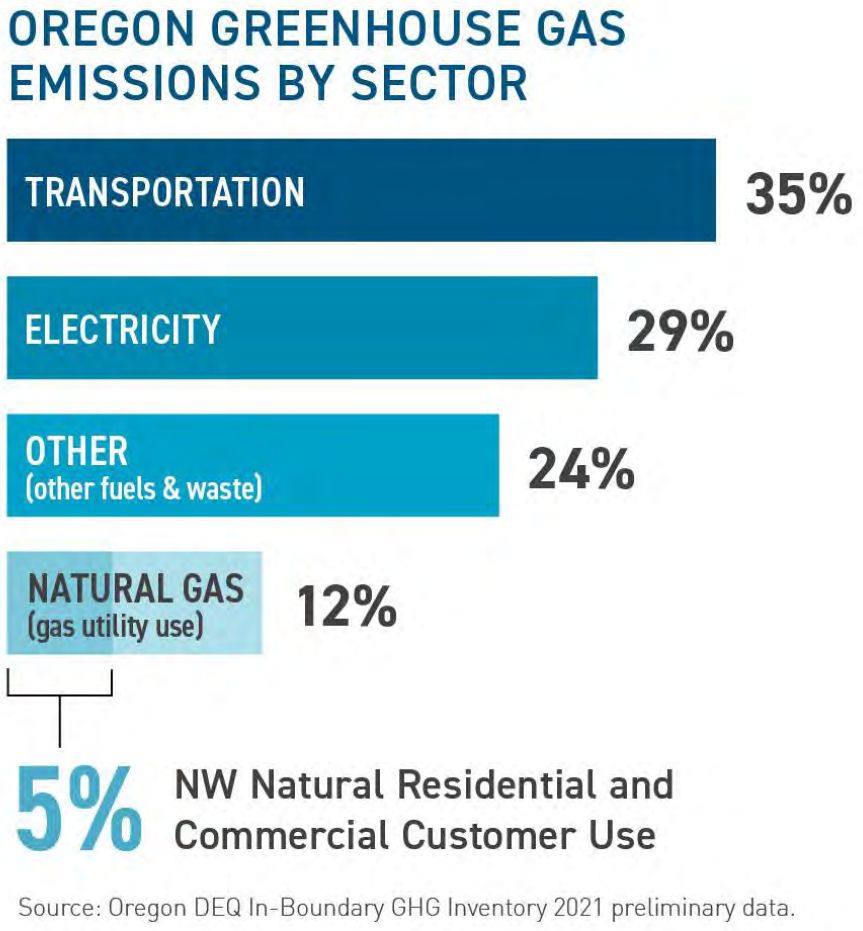
- **Why would we electrify efficient natural gas service when it would just mean more electric system gas use, and the grid is already so challenged?**
  - ✓ Many policies and stakeholder interests are focused on electrification of natural gas heating with electric heat pumps.
  - ✓ However, natural gas use for power generation *is already at record highs* despite 100% clean electric bill.
  - ✓ 100% clean legislative goal is used to justify electrification of heat, however cost and reliability off-ramps put attainment deeply in question – even before new electric loads.
  - ✓ Near misses on the grid are already occurring with rolling blackouts imminent if things don't change quickly.
  - ✓ Electric utilities *are not* modeling substantial electrification of natural gas service – likely because there is no way to reliably serve it without even more fossil generation.

- **Why are policies deliberately making natural gas service to homes and businesses costly when there is already concern about rising energy bills?**
  - ✓ Market-supported high efficiency furnace incentives have been eliminated – removing a key energy savings opportunity for gas customers.
  - ✓ Yet, millions of ratepayer dollars are being used to fund heat pump incentives that are not passing the Energy Trust's cost effectiveness test
  - ✓ Using ratepayer or taxpayer subsidies to push direct gas use heating to electric heating increases grid capacity challenges and use of fossil generation.
  - ✓ Elimination of the gas Line Extension Allowance makes lower emitting and less costly gas appliances more out of reach for low to moderate income households.

- **Why would Oregon, such a low-emitting state, exacerbate its energy affordability challenge with the most expensive compliance costs in North America?**
  - ✓ Investments needed to make progress on the 100% clean goals are just beginning – and already push back on rising electric rates is occurring.
  - ✓ At the same time, DEQ's climate program is unjustifiably expensive, lacks requirements for commensurate climate benefits, and has no cost or reliability protections.
  - ✓ Notable: *increases* in gas-fired electric generation are *not* covered under DEQ's program, raising serious questions about the efficacy of Oregon's climate policy approach.
  - ✓ Policies that make energy unaffordable for Oregonians already struggling economically will not be durable, putting progress on emission reductions at greater risk.

Role of Gas System

- NW Natural's system delivers 50% more energy than any other utility in Oregon over the course of a year.[1]
- During winter peak events, the gas system delivers an even greater percentage of total energy in Oregon.
- NW Natural has about an **88% customer overlap** with Portland General Electric and PacifiCorp in Oregon, with the remaining customers served by PUDs in our areas.
- NW Natural operates among the tightest systems in the country, consistently leading the industry with one of the lowest leaks per mile of distribution pipeline.[2]
- Policies that drive away from direct use of gas in homes and businesses to electric heating are not supported by facts or data **if the goal is to balance cost, emission reductions and reliability.**



Source: https://www.oregon.gov/deq/ghgp/Pages/GHG-Inventory.aspx

Sources:

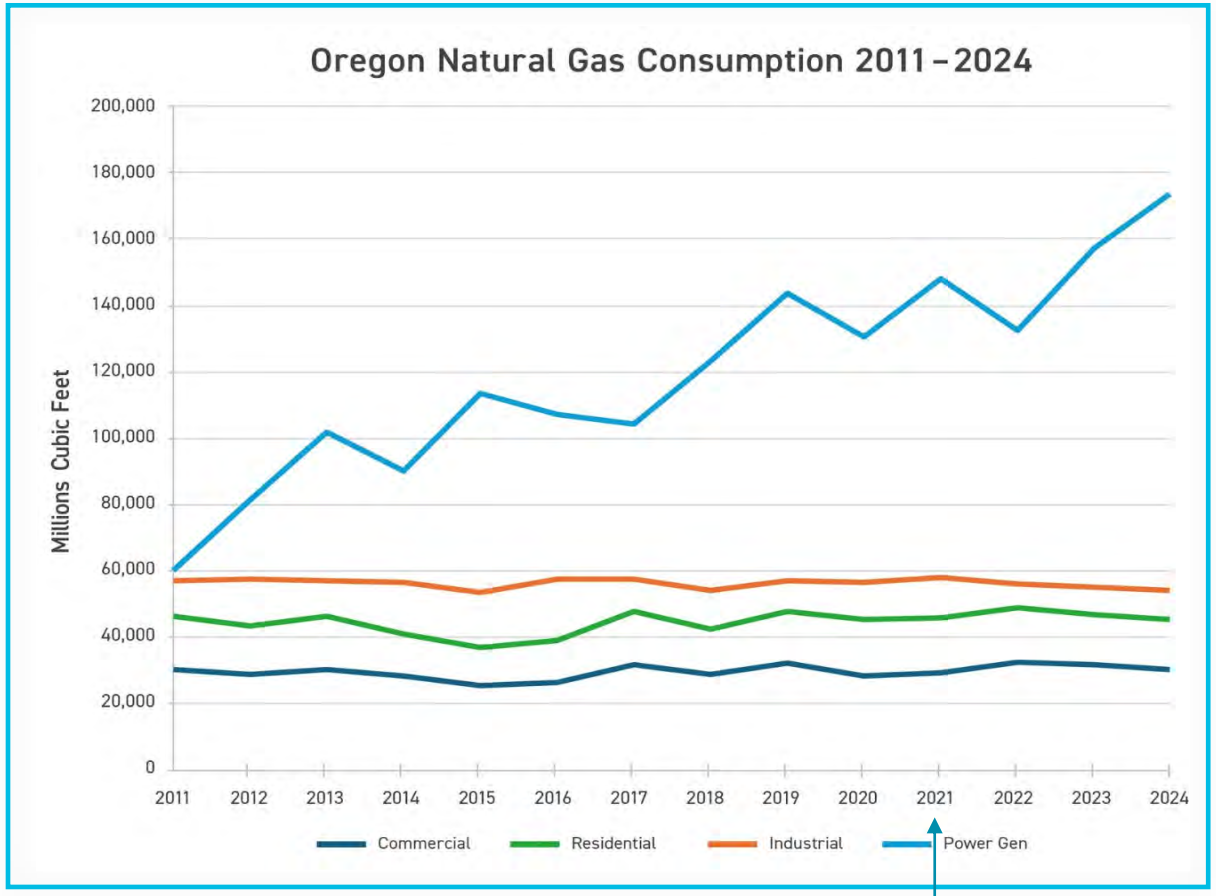
[1] 2023 Oregon Utility Statistics Report: https://www.oregon.gov/puc/forms/Forms%20and%20Reports/2023-Oregon-Utility-Statistics-Book.pdf

[2] Based on Annual DOT Report Data for natural gas operators reporting more than 7,000 miles of distribution main.

Why would we electrify natural gas service when it just means more electric system gas use, and the grid is already so challenged?

Natural Gas Use in Oregon

- Gas for electricity generation is at record highs - **despite clean energy mandates**. (Coal use has also been extended through 2029).
- Oregon relies on **more natural gas for power generation** than all the state's gas utilities deliver directly to homes, businesses, and industry.
- Even with growth in natural gas service over many years, direct gas use in appliances (where electrification policies target), **remains much lower**.
- How are policies that limit energy choice and push electrification of natural gas service **reducing fossil fuel use**?



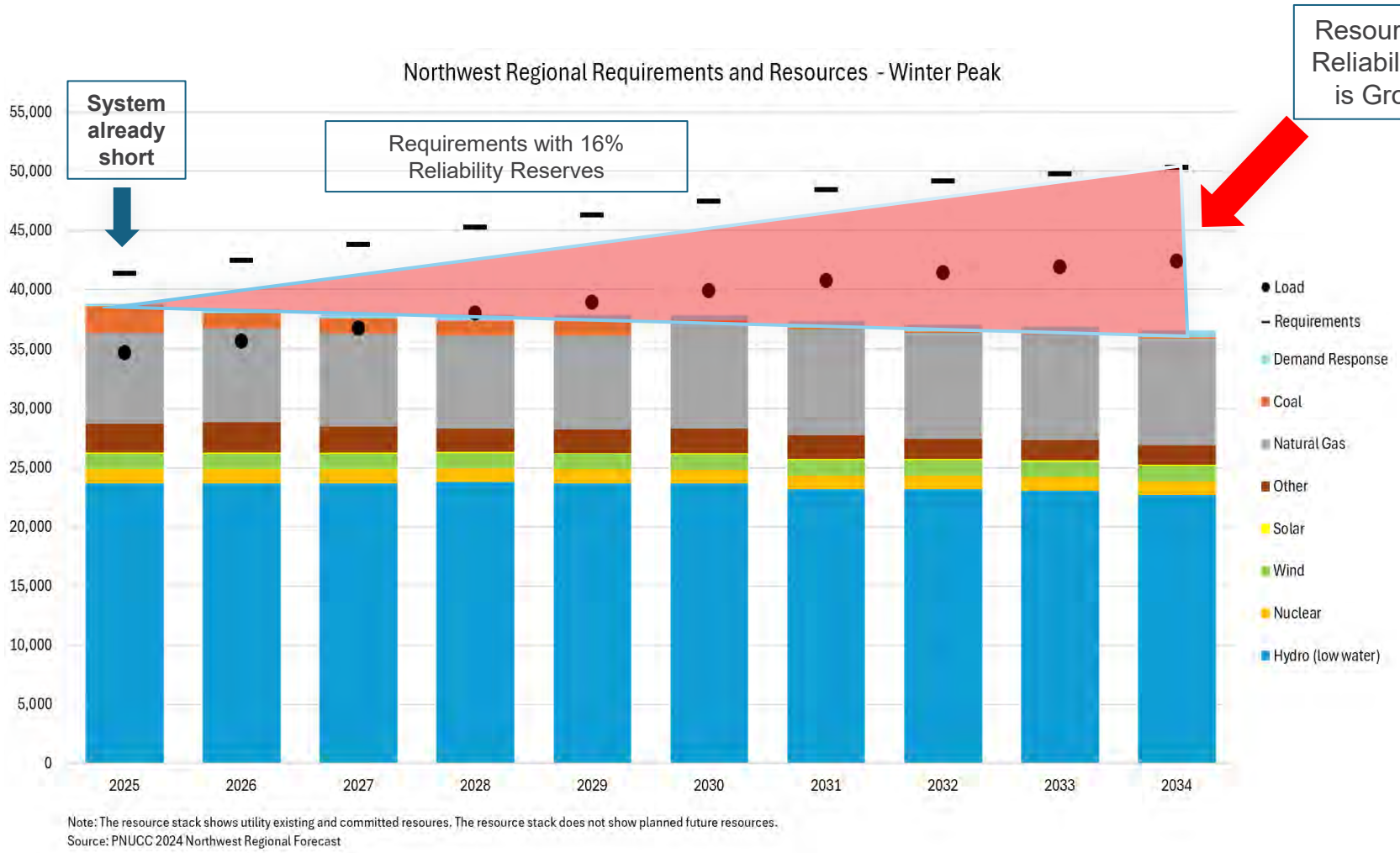
Electricity Production

Use in Homes and Commercial Businesses

100% Clean Electric Bill Passed (HB 2021)

Source: U.S. Energy Information Administration, May 2025
Oregon Natural Gas Consumption by End Use

Regional Electric System Challenges

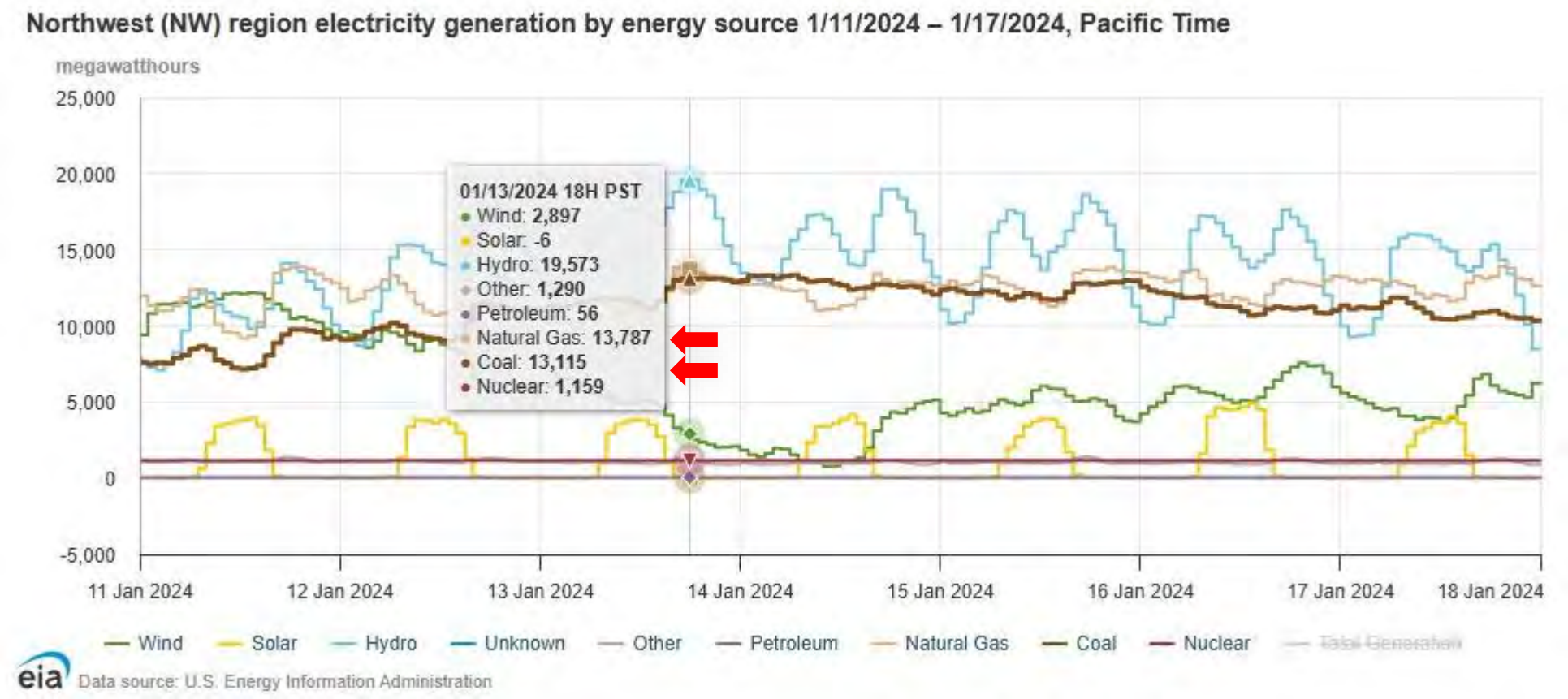


- The electric system is already at capacity during peak demand in the winter.
- This PNUCC forecast **does not** include material electrification of natural gas heating loads.
- Therefore, policies designed to move peak heating load from the gas system to the electric system will increase these grid reliability risks.

Source: PNUCC 2024 Northwest Regional Forecast, page 11 2024-PNUCC-Northwest-Regional-Forecast-final.pdf

Electric Mix During January Cold Weather

There is no reliable power in the winter without significant fossil fuel use.

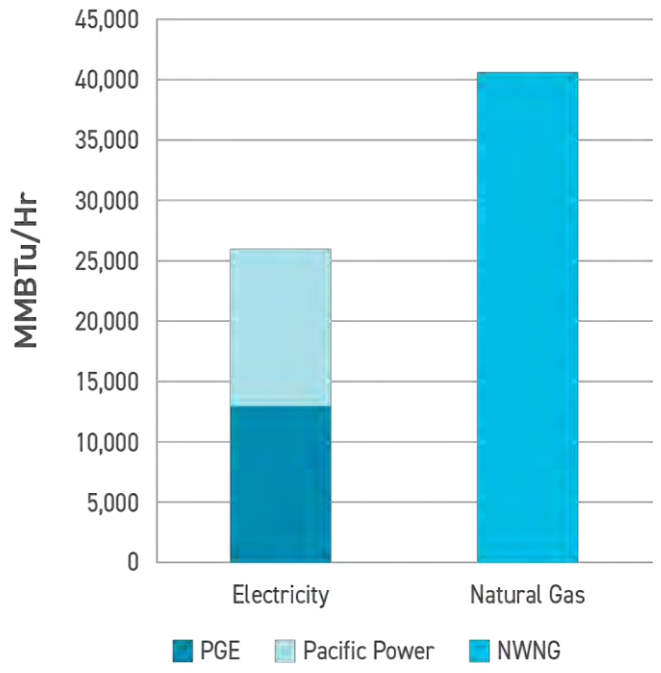


Source: [Real-time Operating Grid - U.S. Energy Information Administration (EIA)]

Energy Diversification is Critical

Peak Hour on Jan. 13, 2024

NWN delivered 55% more energy than PGE and Pacific Power combined.[1]

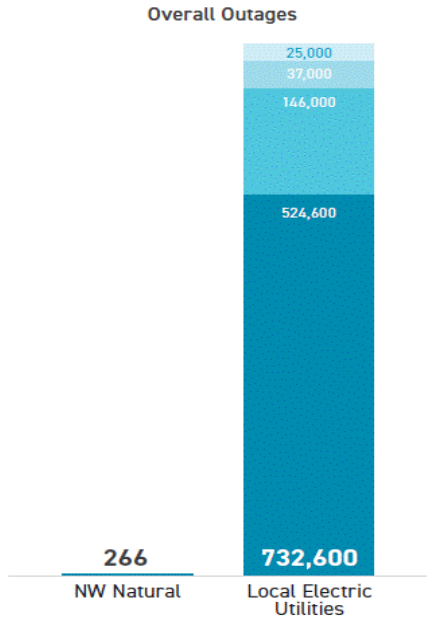


All energy systems have risks to mitigate – gas and electric.

- Having two operating energy systems to help communities hedge against risks, with one above ground – and one below ground offering heating options that can be leaned on in a power outage.
- ***"Rolling blackouts narrowly avoided in January 2024 when winter storm caused widespread outages in the Willamette Valley which dramatically reduced regional load."***[2]

Extreme Conditions

Downed trees and ice created unprecedented challenges for the electric system during the week-long storm.



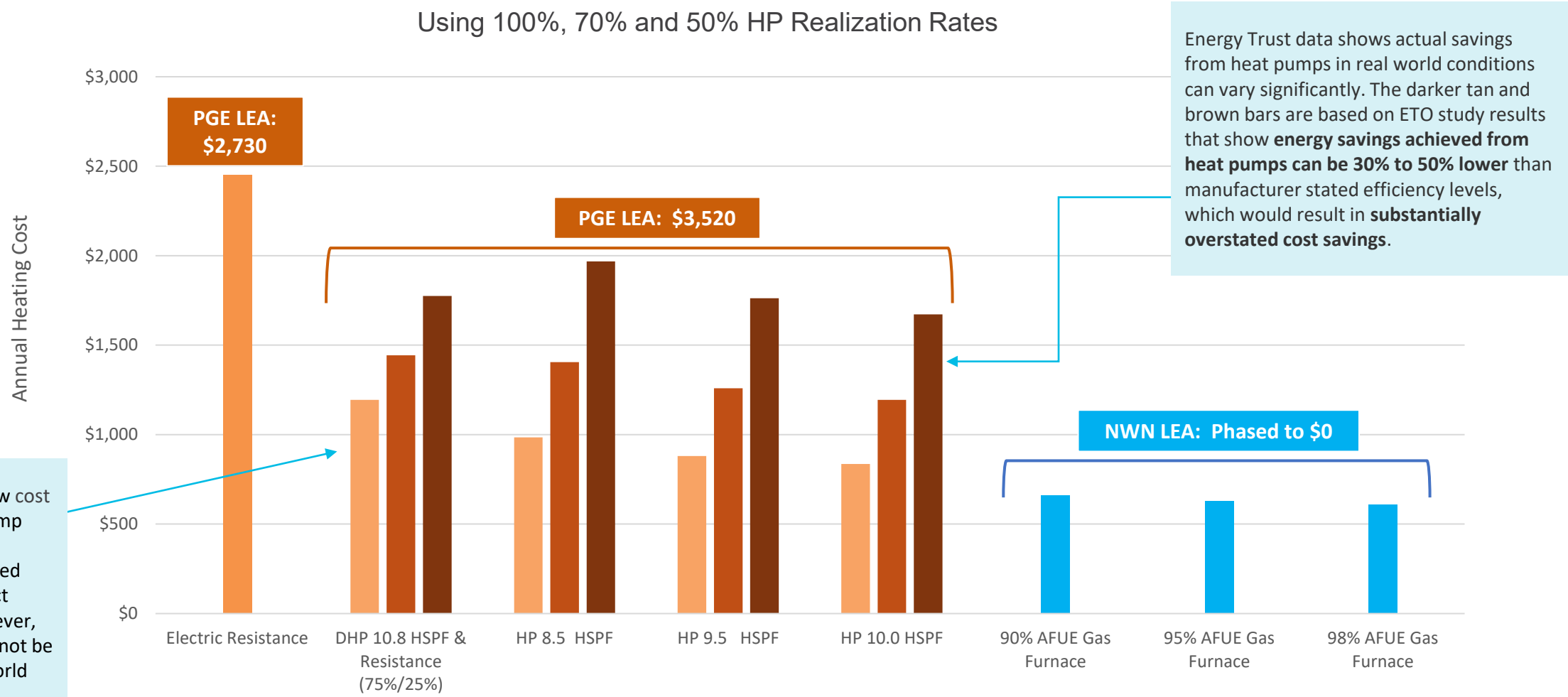
Sources: https://portlandgeneral.com/news/2024-01-22-pge-restoration-complete-from-severe-winter-weather#:~:text=Customer%20outages%20over%20the%20nine,access%20and%20extended%20restoration%20times, https://www.pacificpower.net/about/newsroom/news-releases/power-restored-for-most-oregonians.html, https://www.eweb.org/your-public-utility/news/nine-days-without-power-my-ice-storm-story-as-an-eweb-customer-and-employee, https://www.columbian.com/news/2024/mar/20/january-storm-cost-clark-public-utilities-about-26-million/

[1] Source: ICF using U.S. Energy Information Administration real time operating grid data from January 13, 2024.
[2] Source: Washington State Environment, Energy and Technology Committee. Committee Schedules, Agendas, and Documents, Clark PUD: Supply, Peak Load and Resource Adequacy Snapshot.

Why are policies deliberately making natural gas service to homes and businesses costly when there is already concern about rising energy bills?

Single Family New Construction Home – **PGE Cost Comparison**

Under a variety of operating assumptions, gas heating is less expensive and yet the gas allowance is being phased to zero.



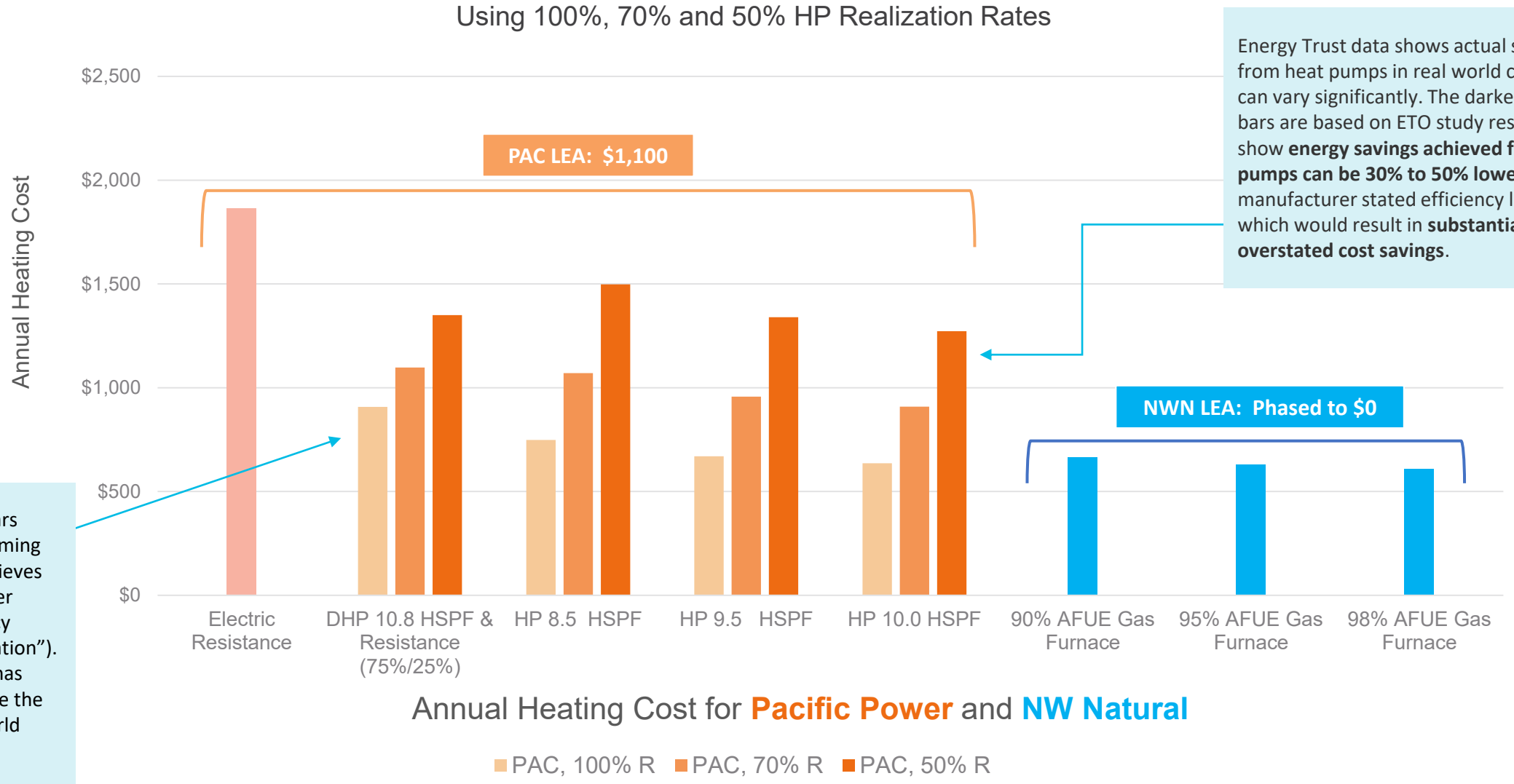
Energy Trust data shows actual savings from heat pumps in real world conditions can vary significantly. The darker tan and brown bars are based on ETO study results that show **energy savings achieved from heat pumps can be 30% to 50% lower** than manufacturer stated efficiency levels, which would result in **substantially overstated cost savings**.

Light tan bars show cost assuming heat pump achieves its manufacturer stated efficiency ("perfect operation"). However, this has shown to not be the case in real world conditions.

Sources & Data Assumptions: Appendix

Single Family New Construction Home – Pacificorp Cost Comparison

Under a variety of operating assumptions, gas heating is less expensive and yet the gas allowance is being phased to zero.



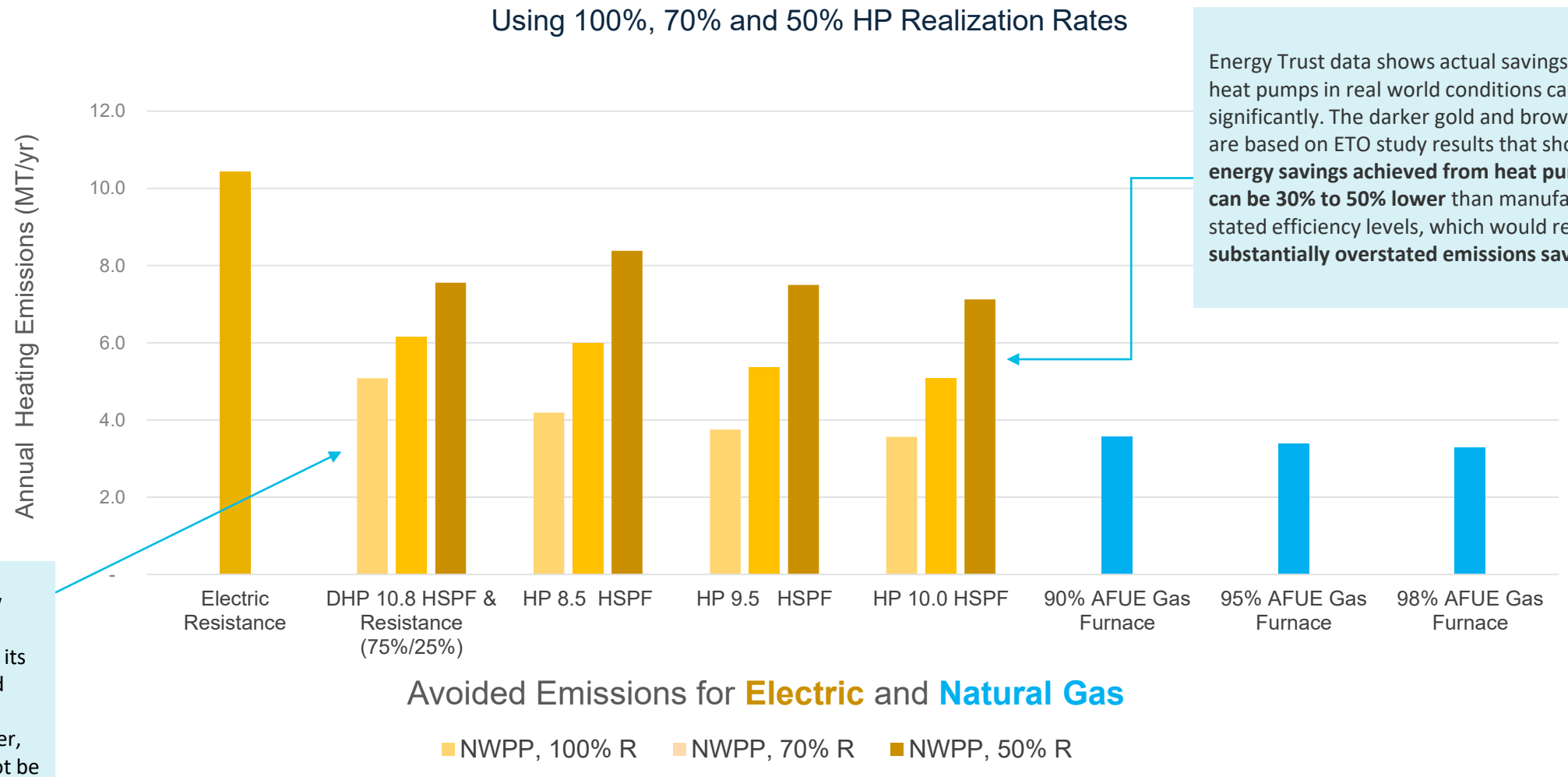
Energy Trust data shows actual savings from heat pumps in real world conditions can vary significantly. The darker orange bars are based on ETO study results that show **energy savings achieved from heat pumps can be 30% to 50% lower** than manufacturer stated efficiency levels, which would result in **substantially overstated cost savings**.

Light orange bars show cost assuming heat pump achieves its manufacturer stated efficiency ("perfect operation"). However, this has shown to not be the case in real world conditions.

Sources & Data Assumptions: Appendix

Single Family New Construction Home - **Emissions Comparison**

Under a variety of operating assumptions, natural gas heating is lower emitting and yet the gas allowance is being phased to zero.



Energy Trust data shows actual savings from heat pumps in real world conditions can vary significantly. The darker gold and brown bars are based on ETO study results that show **energy savings achieved from heat pumps can be 30% to 50% lower** than manufacturer stated efficiency levels, which would result in **substantially overstated emissions savings**.

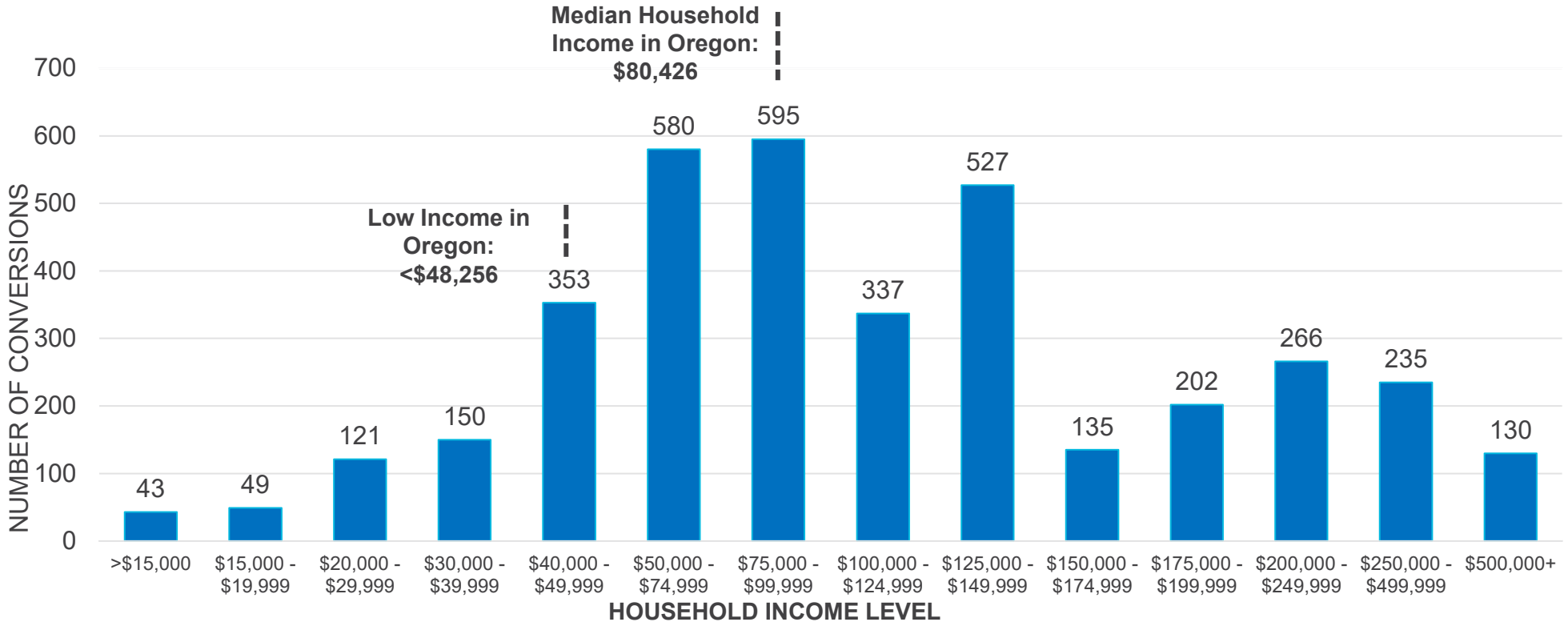
Light gold bars show emissions assuming heat pump achieves its manufacturer stated efficiency ("perfect operation"). However, this has shown to not be the case in real world conditions.

Emissions Basis:

- The Northwest Power Pool carbon intensity factor represents avoided emissions using non-baseload electricity generation mix and fossil fuel emissions from the SEEAT model.
- ASHRAE 105-2021 methodology, updated by GTI Energy with 2022 eGRID data.
- Full data and sources in the Appendix.

Conversions in Oregon by Income

Removal of the line extension allowance makes more affordable gas service more out of reach for low to moderate income people.

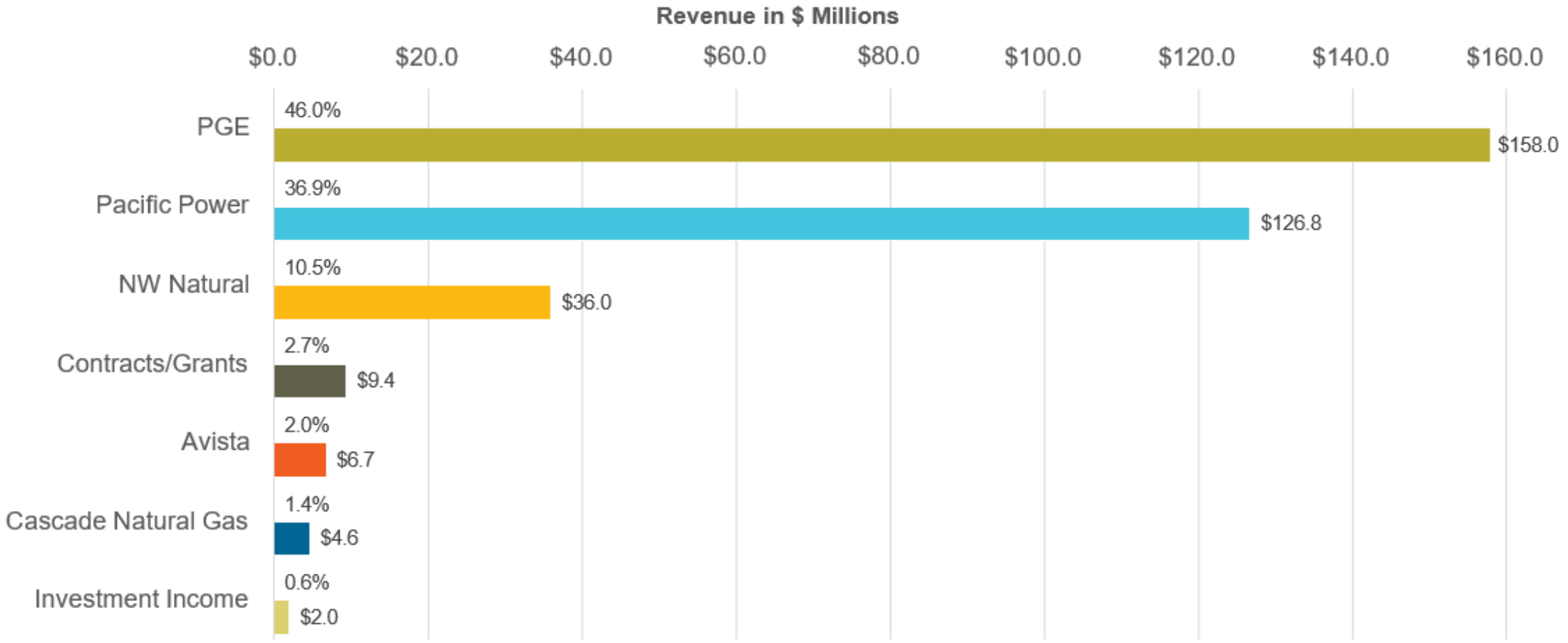


- Total 3,723 conversions from 2022 through 2024
- 35% of conversions were in homes with an income level of $75,000 or less.
- We believe access to an economically supported gas Line Extension Allowance is an equity issue.

Sources: Median Household Income in Oregon was provided by the U.S. Census Bureau; low-income threshold is a household incomes less than 60% of that median.

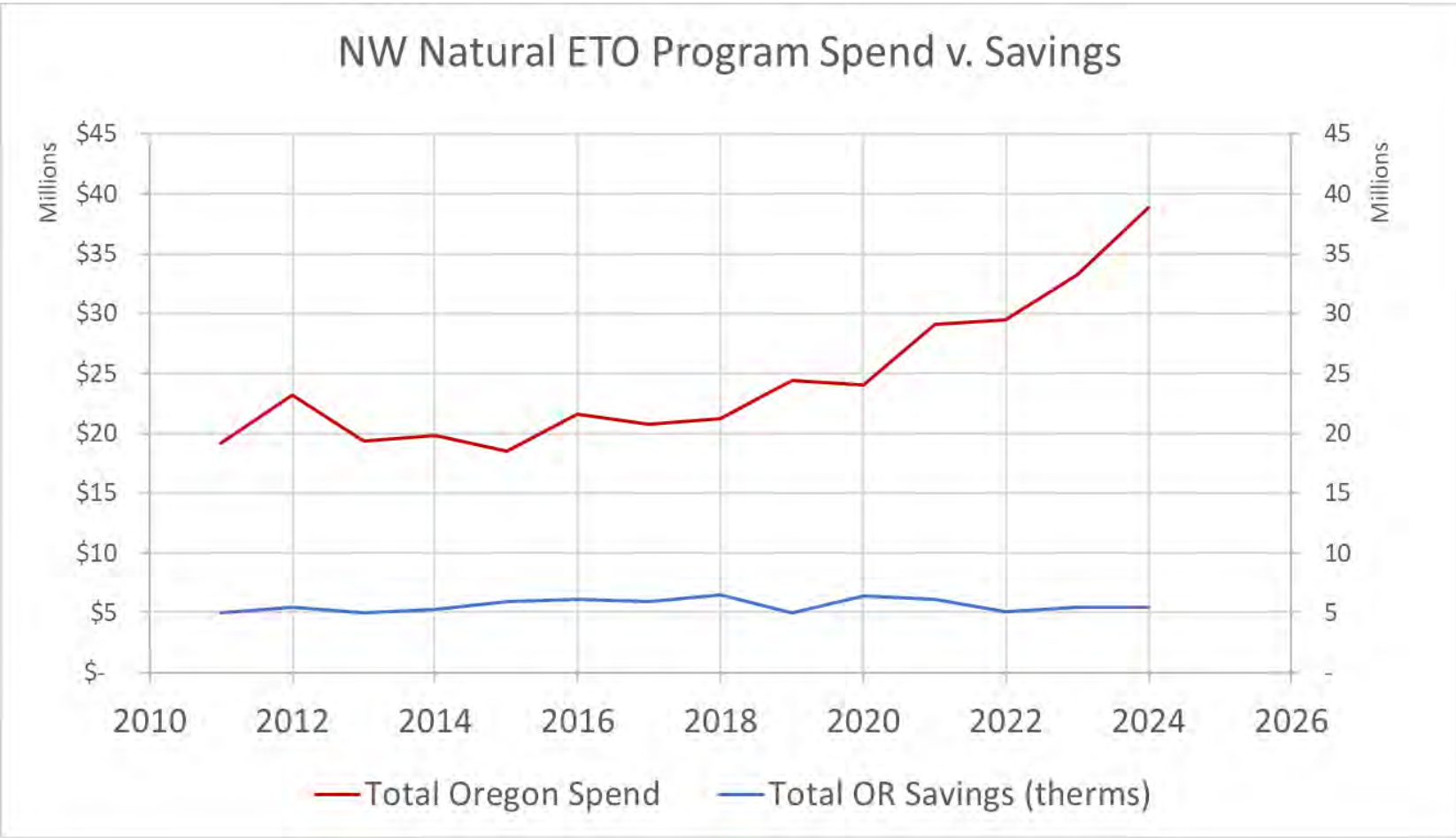
2025 ETO Revenues

$343.5 million, up 30% from 2024 budget



Source: Energy Trust – Final Budget Board Presentation

Program Costs Rising Rapidly



Source: Program data is pulled from historical Energy Trust Annual Reports and Energy Trust 2024 forecasted EOY values

- As the energy efficiency market has matured, many easy to implement measures have been installed, and inflation has also played a role in recent increases.
- However, given concerns about utility rate increases and costs, it is time to re-examine the approach.
- ETO savings are “deemed,” not actual, creating challenges for utilities under new compliance programs (CCIs) where *actual* usage and emissions are used to determine cost obligations.
- As a result, customers will likely be paying twice – once for ETO programs and again under DEQ's climate program.
- High efficiency furnace incentives for gas customers could be providing *actual*, substantive savings.

Cost Effectiveness Tests Incongruent

Pro-electrification programs based on known underperformance; lack of furnace incentives not supported by data.

- Over $11 million is budgeted in 2025 for heat pump measures where reductions in energy use are not enough to justify the cost of the equipment.* This is not unique to 2025. **Exceptions have been granted for underperforming heat pumps in Oregon since 2014.**[1]
- High efficiency gas furnace incentives are financially warranted but were phased out of the ETO's OR market rate program using the justification that the market has been "transformed" (despite data showing 28% of all furnaces being installed were 80%[2]).
- Moving from a low efficient gas furnace to high efficiency is the most impactful energy savings opportunity in a gas customers' home; it also reduces emissions and does not add to electric capacity challenges.

Energy Trust - Ductless Heat Pump Cost-Effectiveness

Measure	Savings (kWh)	Incremental Costs ($)	Maximum Incentive ($)	UCT BCR at Max Incentive	TRC BCR
Ductless Heat Pump - Single Family	918.00	$8,231	$1,888.02	1.0	0.3
Ductless Heat Pump - Manufactured Home	2,084.00	$5,350	$4,286.12	1.0	0.9
Ductless Heat Pump Heating Zone 1 - Multifamily	1,295.34	$5,262	$2,664.09	1.0	0.6
Ductless Heat Pump Heating Zone 2 - Multifamily	1,415.54	$7,337	$2,911.31	1.0	0.5

***Note: This is not all inclusive of all ratepayer/taxpayer subsidies for heat pumps, only what ETO has made transparent in the budget**

Source: [1] Energy Trust Exception Request: Table 2- Cost Effectiveness of Measure Applications

Energy Trust - WA Gas Furnace Cost-Effectiveness

Measure	Measure Life (years)	Savings (therms)	Incremental Costs ($)	Maximum Incentive ($)	UCT BCR at Max Incentive	TRC BCR
95%+ AFUE Gas Furnace	22	112.6	$1,630	$1,630	2.4	2.4

Sources:
[1] ITEM NO – OPUC Staff Report – ETO Heat Pump Exceptions
[2] Energy Trust WA Measure Approval Document - 2021 last available data

Acronyms: Utility Cost Test (UCT), Benefit-Cost Ratio (BCR), Total Resource Cost (TRC)

Exemptions for Underperforming Heat Pumps Costly

Energy Trust – "No-Cost" Measures Cost-Effectiveness

Measure	Savings (kWh)	Incremental Costs ($)	Maximum Incentive ($)	UCT BCR at Max Incentive	TRC BCR
Ductless Heat Pump 1:1 - Single Family - No Cost	918	$4,800	$7,500	0.3	0.5
Ductless Heat Pump 1:2 -Single Family - No Cost	918	$7,200	$12,000	0.2	0.3
Ductless Heat Pump 1:1 - Manufactured Homes No Cost	2,084	$4,800	$6,500	0.7	1.0
Ductless Heat Pump 1:2 Manufactured Home - No Cost	2,084	$7,200	$10,000	0.4	0.7
Ducted Heat Pump – Single Family, and Small MF - No Cost	4,428.85	$9,860	$17,500	0.5	1.2
Ducted Heat Pump - Manufactured Home - No Cost	4,031.20	$9,500	$14,000	0.6	1.1
Heat Pump Water Heater – all residential building types – No Cost	1,454.46	$4,260	$6,000	0.3	1.0
Ductless Heat Pump 1:1- Heating Zone 1- Multifamily - No Cost -	1,295.34	$5,156	$8,400	0.3	0.6
Ductless Heat Pump 1:1 - Heating Zone 2 - Multifamily - No Cost	1,415.54	$5,156	$8,400	0.3	0.7
Ductless Heat Pump 1:2 - Heating Zone 1 - Multifamily - No Cost	1,295.34	$7,829	$9,200	0.3	0.4
Ductless Heat Pump 1:2 - Heating Zone 2 - Multifamily - No Cost	1,415.54	$7,829	$9,200	0.3	0.5

- Incentives for ductless heat pumps don't pencil.
- For ducted homes, a high efficiency gas furnace is a much more cost-effective alternative with a better emissions profile, yet Energy Trust has removed access to high efficiency furnace incentives in Oregon.

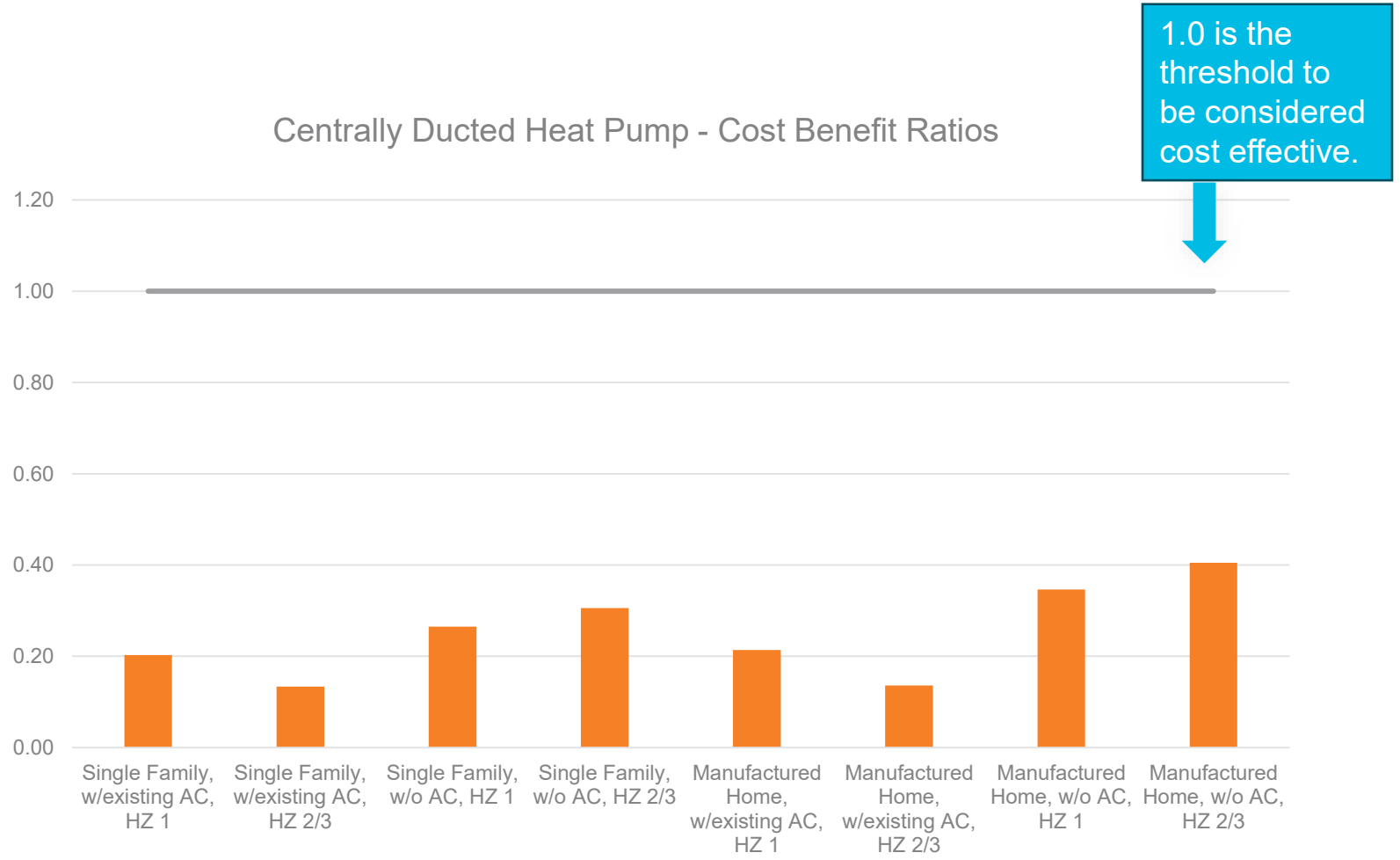
Source: [1] Energy Trust Exception Request: Table 4- Cost Effectiveness of Measure Applications

Acronyms: Utility Cost Test (UCT), Benefit-Cost Ratio (BCR), Total Resource Cost (TRC)

Ducted Heat Pumps – Regional Perspective

From a regional perspective, ducted heat pumps are not cost-effective.

- These measures are based on replacing an electric forced air furnace.
- None meet the standard cost-effectiveness test.
- When considering upgrading from less efficient heat pumps, the cost benefit ratio is even lower.



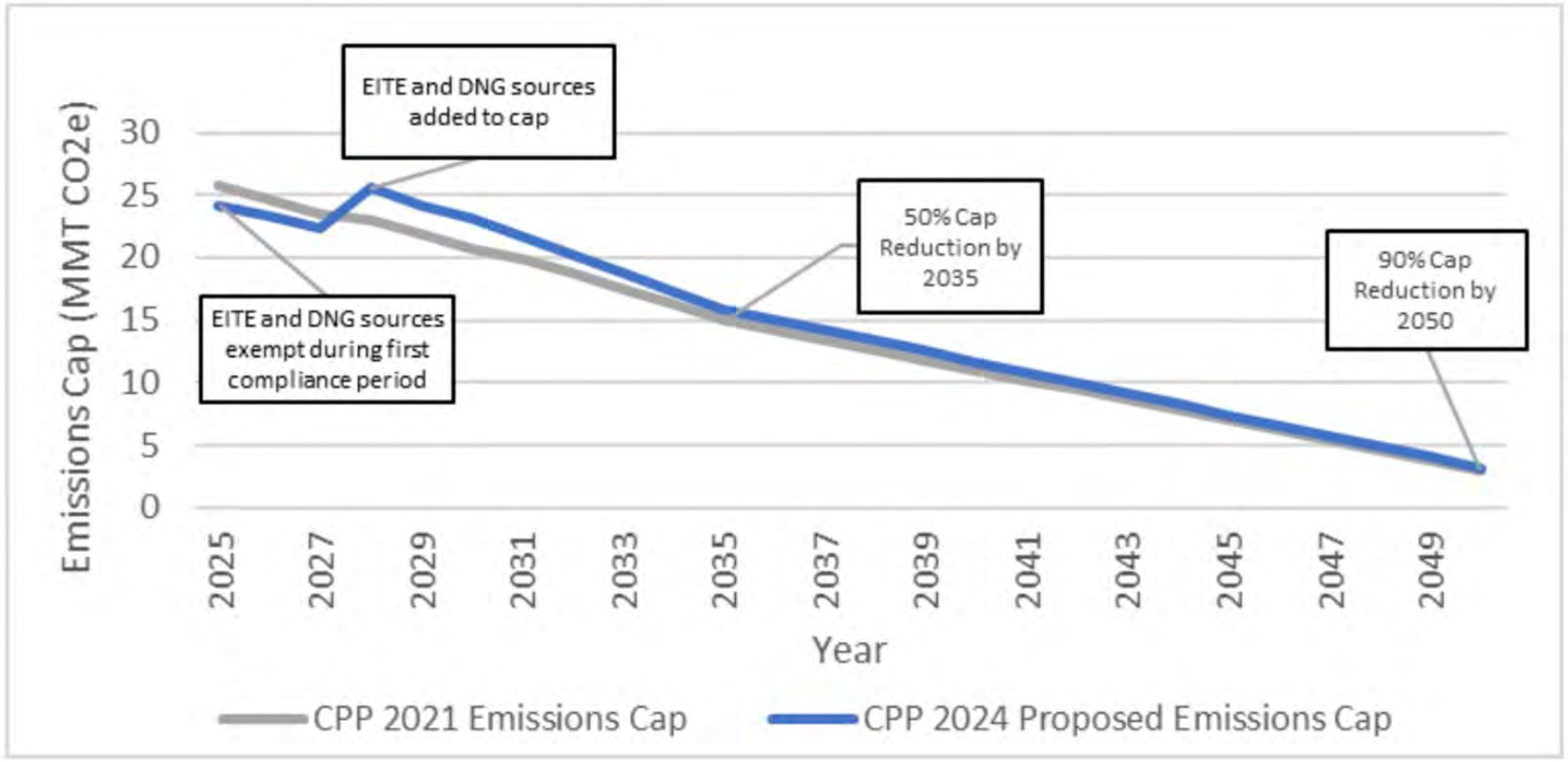
Source: Centrally Ducted Heat Pump Workbook v8.1 – Regional Technical Forum

Chart Key:
HZ = Heating Zone
AC = Centrally ducted air conditioning

Why would Oregon exacerbate its energy affordability challenge with the most expensive compliance costs in North America, yet be a low-emitting state?

New DEQ Climate Program

No substantive changes from the last program design



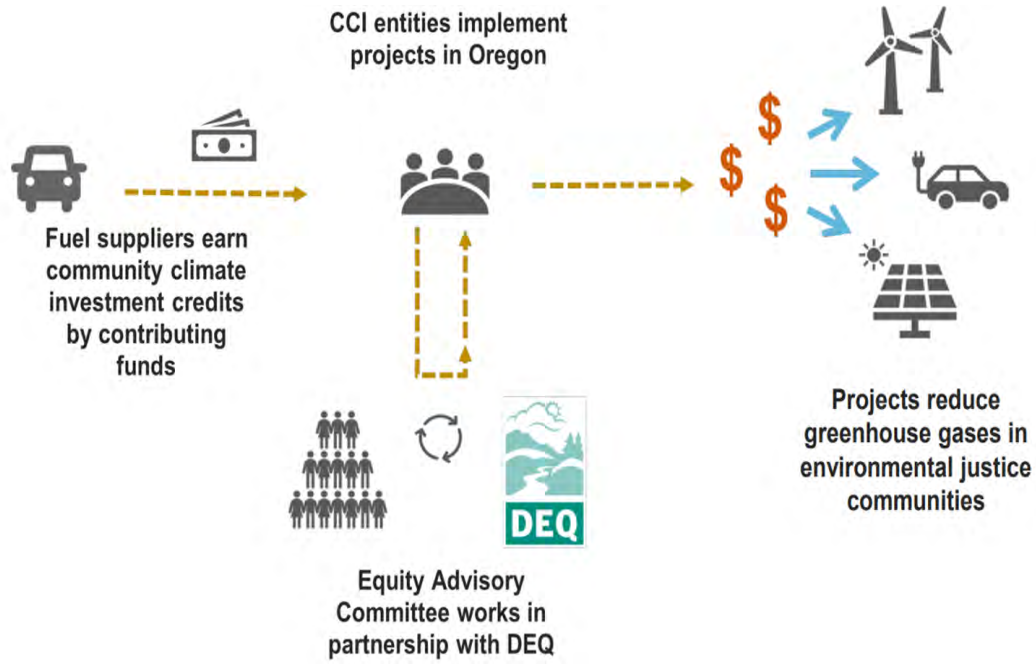
Source: Nov, 21, 2024 Environmental Quality Commission Item D Presentation Slides, Slide 12

Community Climate Investments (CCIs)

Significant Costs, No Clear Accountability, No Efficacy Requirements

- Unique to OR compliance – represents 1 metric ton of CO2e per CCI credit
- Fund will be run by a 503(c) nonprofit, called the CCI Entity
- CCI Entity, price, quantity allowed to be used for compliance, and fee returned to DEQ are all set or selected by DEQ
- The CCI Entity is not required to have energy or carbon compliance expertise and there are no standard carbon accounting protocols required for CCIs to follow
- CCIs automatically result in a claim of future "deemed" savings at the time of use for compliance, **without verification** (emissions savings from CCIs are hoped for but not required)
- There are **no penalties** for the CCI Entity or DEQ if emissions reductions do not occur commensurate with cost of the CCIs born by customers and there is no standard to measure reductions
- However, DEQ has created a **$12,000 per ton, per day penalty** for covered entity noncompliance with the program
- There is **no penalty for noncompliance with the 100% clean electric goals, nor is gas-fired generation covered under CPP**

DEQ's CCI Construct



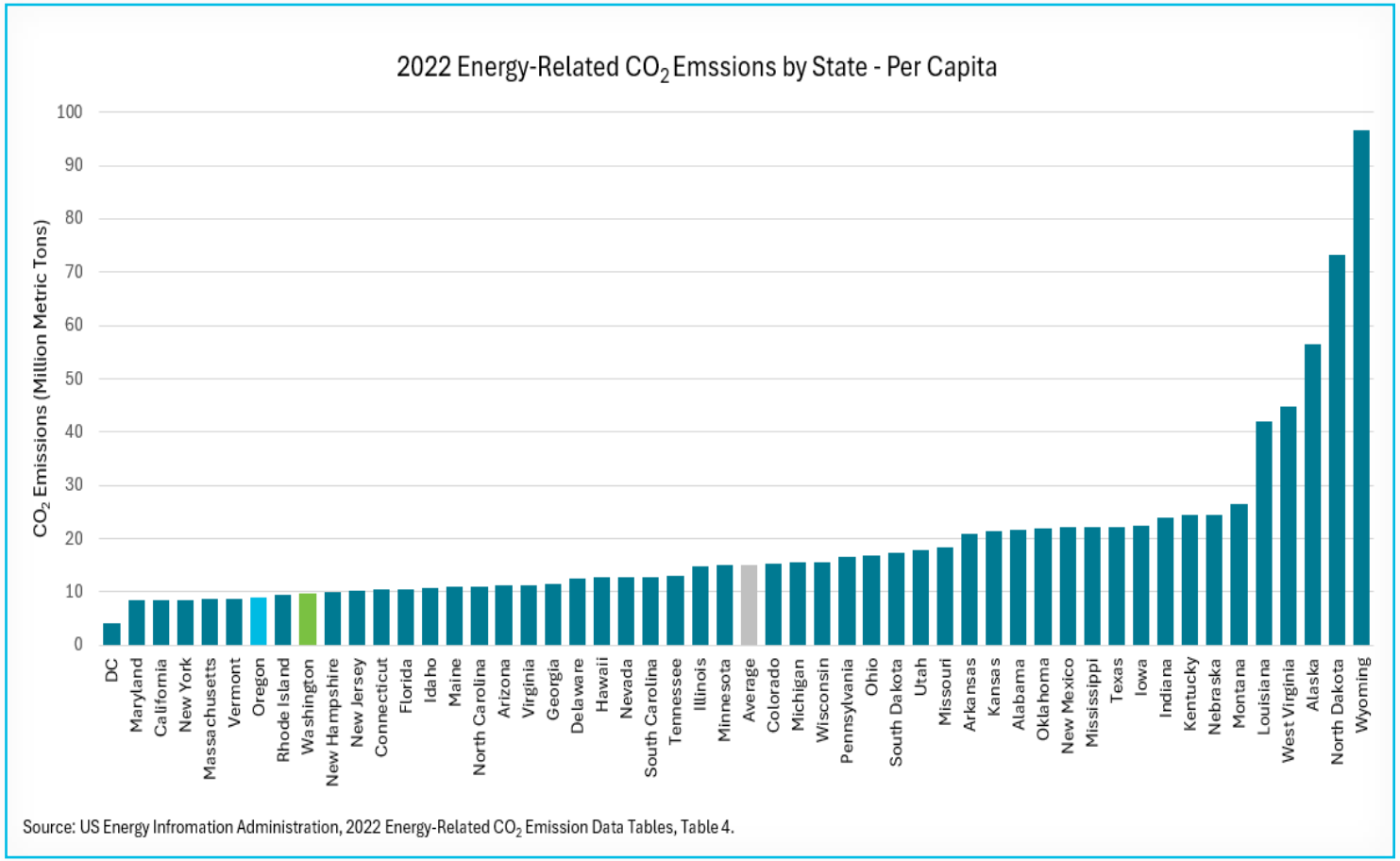
[1]Source: Department of Environmental Quality : Climate Protection Program Overview Factsheet

Oregon: Highest cost carbon compliance in North America

Yet among the lowest emitting states

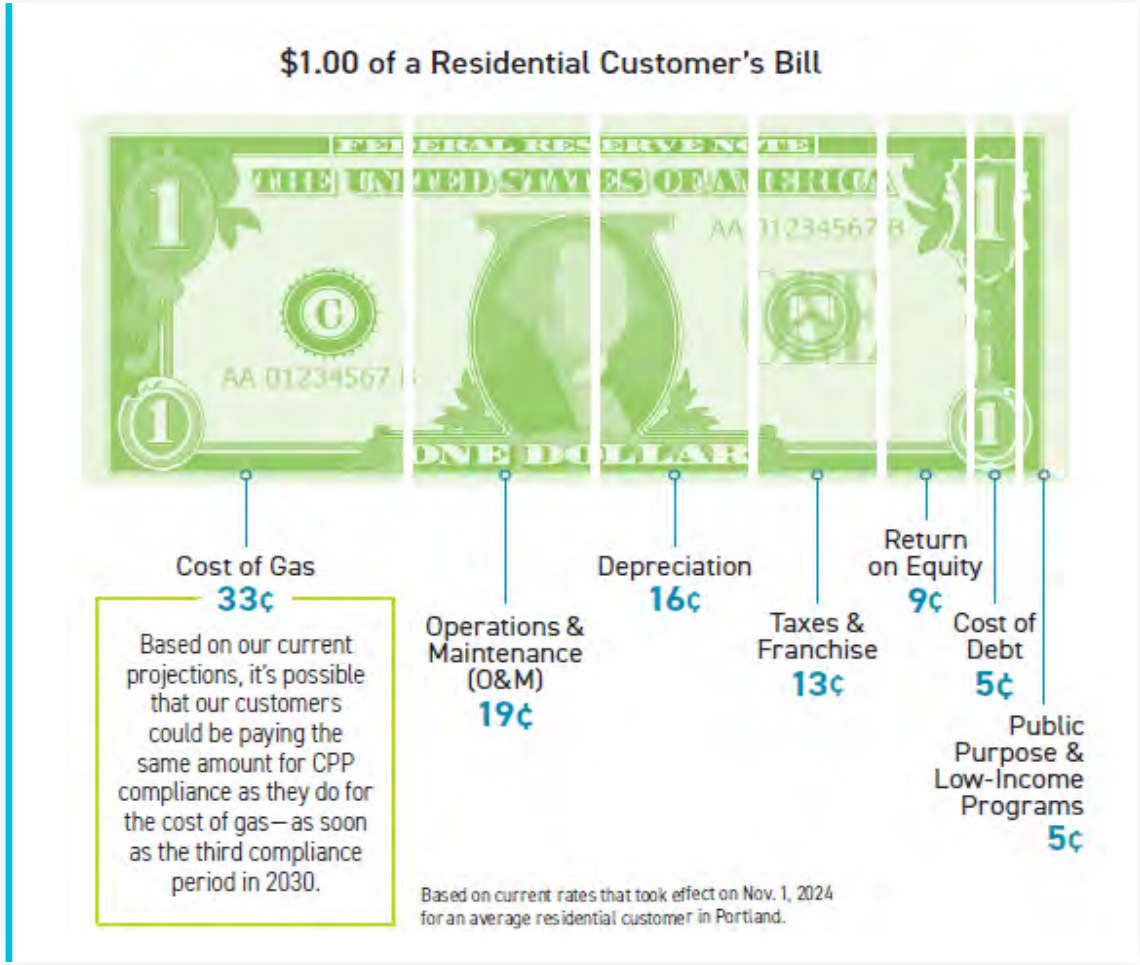
- Unlike 100% clean electric bill, CPP has no cost protections for customers, despite NW Natural's repeated requests.
- Policymaker discussions have yet to address how these costs will impact energy affordability on an already struggling Oregon population.
- Record high natural gas use for electric generation and associated emissions are excluded from CPP, raising serious questions about effectiveness.

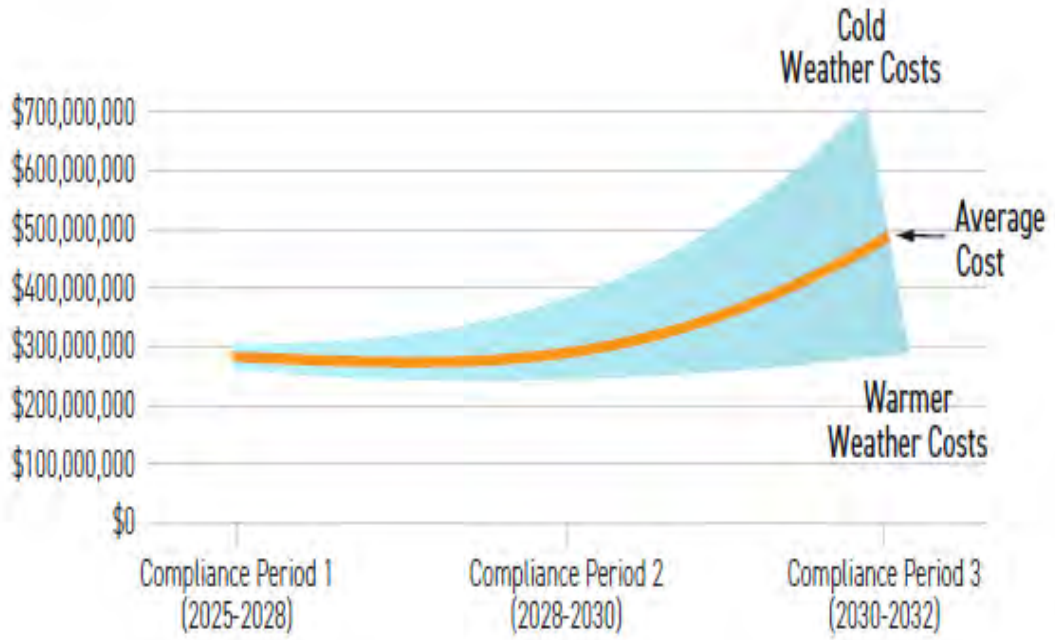
State(s)	Climate Program	Cost ($ per ton)
Oregon	Climate Protection Program (cap only)	**$132** ($1 +CPI ea. yr.)
Washington	Climate Commitment Act (cap & trade)	**$50.00** (Q1 2025 Auction)
California & Quebec	Western Climate Initiative (cap & trade)	**$29.27** (Q1 2025 Auction)
Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, Virginia, New York, Pennsylvania, Rhode Island, Vermont	Regional Greenhouse Gas Initiative (cap & trade)	**$19.76** (Q1 2025 Auction)
Canada **Starting April 1, 2025, this tax has removed due to economic impacts.**	Carbon Tax (economy wide)	**$80**



Source: US Energy Infromation Administration, 2022 Energy-Related CO_2 Emission Data Tables, Table 4.

A Program Oregonians Can't Afford





APPENDIX

Single Family New Construction Home Compare - Data/Sources

https://nwncompare.com/ (Cost Calculator using NEEA and recent utility rates.)

Variable	Input
Zip code	97204
Fuel Type	Electric (HP)
Energy Provider	PGE
Home Size (SF)	* 2,138
Year Built (New Construction)	2024
Home Type	Single Family
Primary Foundation	* Crawlspace
Equipment Type	Central HP
Ductless HP efficiency	* 10.8 (from RBSA)

Table: NEEA 2022 Regional Building Stock Assessment averages for the NWN territory.

Oregon	2025 Rates
NW Natural	$1.33/therm
Portland General	$0.1865/kWh
Pacific Power	$0.14190/kWh

PGE LEA Tariff:
Microsoft Word - 300-24-13_Eff Nov 1.2024
https://edocs.puc.state.or.us/efdocs/HAU/adv1630hau332353025.pdf

PacifiCorp LEA Tariff:
www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/rates-regulation/oregon/tariffs/rules/13_Line_Extensions.pdf

Emissions Basis:
- The Northwest Power Pool carbon intensity factor represents avoided emissions in the NWPP subregion.
- Calculated based on the non-baseload electricity generation mix, using fossil fuel emissions from the SEEAT model.
- ASHRAE 105-2021 methodology, updated by GTI Energy with 2022 eGRID data

ETO Heat Pump Realization Rate Analysis:
- "Summary of Recurve Analysis of Ducted Heat Pump Conversion Impacts," March 2020
- "Billing Analysis of Residential Ductless Heat Pump Installations," August 2024

Definitions:
- AFUE: Annual Fuel Utilization Efficiency
- DHP: Ductless Heat Pump
- HSPF: Heating Seasonal Performance Factor
- LEA: Line Extension Allowance
- Realization Rate: Achieved Savings / Predicted Savings

Emissions comparison assumptions

Emissions Basis:

- The Northwest Power Pool carbon intensity factor represents avoided emissions using non-baseload electricity generation mix and fossil fuel emissions from the SEEAT model.
- ASHRAE 105-2021 methodology, updated by GTI Energy with 2022 eGRID data.

Both electric power generation combustion and direct-use natural gas have been adjusted using ASHRAE 105 methodology to reflect full-cycle including upstream emissions. For overview of ASHRAE 105, see: https://www.ashrae.org/file%20library/about/government%20affairs/advocacy%20toolkit/virtual%20packet/standard-105-2021-fact-sheet.pdf

From GTI:

> GTI uses government and published data sources such as EPA's eGRID database, DOE's EIA, NREL and ANL's GREET dataset to estimate source energy and related Full-Fuel Cycle (FFC) GHG emissions for fossil fuels and electric energy consumed at a site. Currently, users have the option of using the eGRID 2019, 2020, and 2021 power plant level database screened to verify and align power plant classification with primary input fuel. SEEAT includes a source energy and carbon emission calculation methodology that accounts for primary energy consumption and related emissions for the FFC of extraction, processing, transportation, conversion, distribution, and consumption of energy. Furthermore, SEEAT is integrated into the Source Energy Factors and Composite Emission Factors module of EPAT.

https://www.epa.gov/egrid
https://www.eia.gov/
https://remdb.nrel.gov/about.php, https://www.nrel.gov/docs/fy07osti/38617.pdf and
https://www.nrel.gov/analysis/lci.html?utm_medium=pagemove&utm_source=analysis&utm_campaign=lci
https://greet.anl.gov/index.php
https://portfoliomanager.energystar.gov/pdf/reference/Emissions.pdf

Emissions comparison assumptions

GTI Emissions adjustment methodology:

From GTI:

> The methodology has been peer reviewed and published as a technical paper in ASHRAE. It has also been vetted, approved and incorporated by codes and standards bodies such as the American National Standards Institute (ANSI) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) into the ANSI/ASHRAE Standard 105-2021. This referenced standard serves as a means to provide consistent methods for determining, expressing, and comparing the energy performance of and the greenhouse gas emissions associated with the design of new buildings and with improvements to, or changes in, the operation of existing buildings.

Please refer to https://cmic.gti.energy/assets/SEEAT%20ToolDescription_2024.pdf

and https://cmicepatcalc.gti.energy/ToolDescription.pdf for more details.

Methodology to Evaluate End Use Options to Reduce CO2 Emissions from Buildings (OR-10-052)
Leslie, N.P.; Czachorski; M, Yang; Y. and Ron Edelstein. 2010. ASHRAE Transactions, Vol. 116, pt. 1.
Standard Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions. ANSI/ASHRAE Standard 105-2021.
American Society of Heating, Refrigeration and Air-Conditioning Engineers, 2021

Emissions comparison assumptions

What is Source Energy and Emissions Analysis Tool (SEEAT)?

The Carbon Management Information Center (CMIC) Source Energy and Emissions Analysis Tool (SEEAT), available free to the public at https://cmic.gti.energy/tools, determines source energy consumption and related greenhouse gas (GHG) and criteria pollutant emissions for selected fossil fuels and electricity based on point-of-use energy consumed by an appliance, building, industrial application, or vehicle. SEEAT is a flexible and simple tool for comparisons within and across energy forms. SEEAT uses government data and models and other publicly available data sources as the basis of its default energy and emission factors and calculations. The user can choose default input data for numerous parameters necessary for the analysis. SEEAT also offers user-specified input options for most energy and emission parameters to allow users to tailor the analysis as needed.

https://cmic.gti.energy/assets/SEEAT%20ToolDescription_2024.pdf

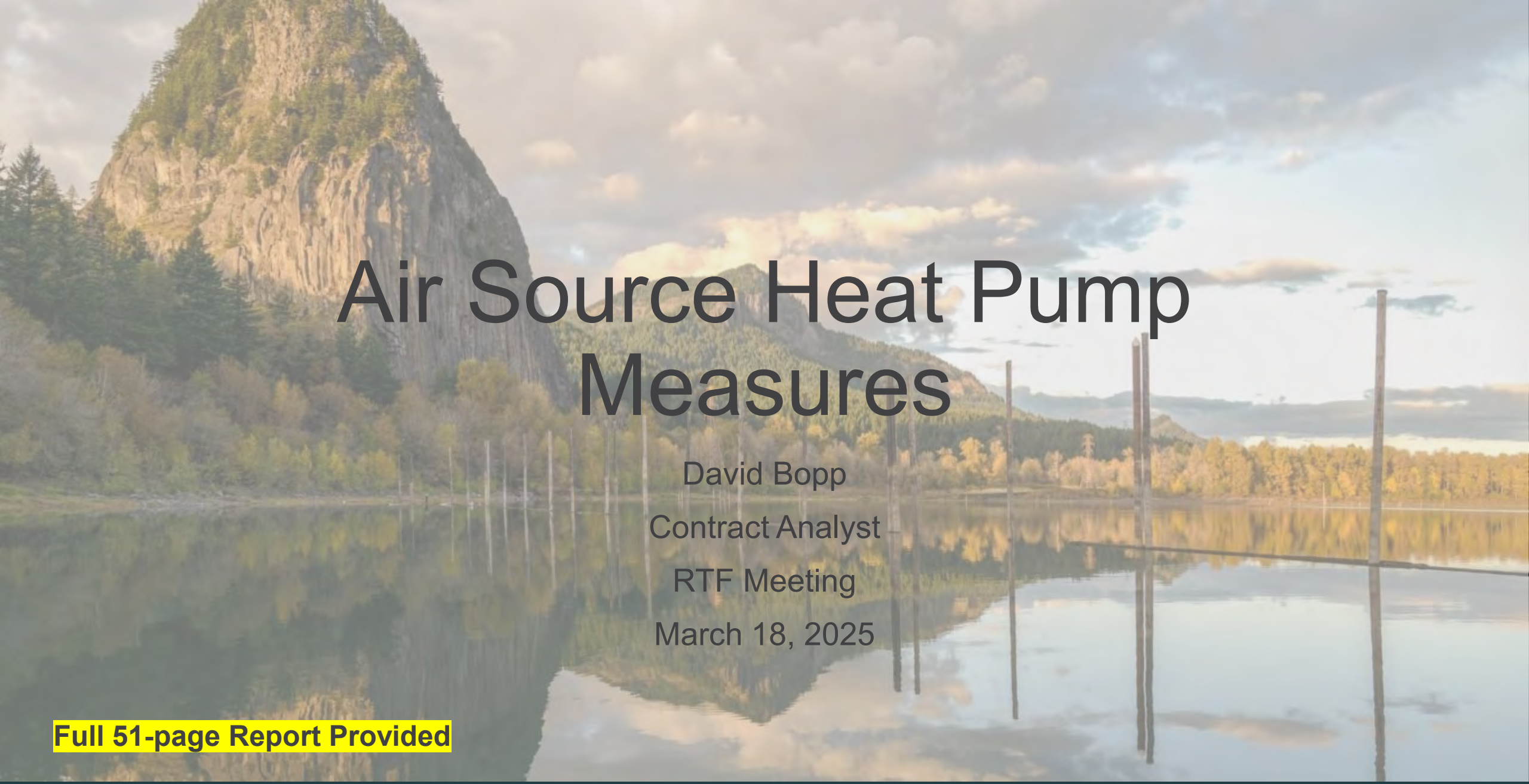
Emissions comparison assumptions

Supplementary Information on SEEAT/EPAT Methodology -

Energy conversion factor calculations used to calculate GHG Emissions in SEEAT/EPAT tools use the following sources:

Energy conversion factors for fossil fuels pre-combustion energy consumption are calculated using the National Renewable Energy laboratory (NREL) U.S. Life-Cycle Inventory (LCI) database and the Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) Model dataset. The NREL LCI database provides data needed to calculate source energy conversion factors for the three major types of coal (bituminous, subbituminous, and lignite) used in US power plants. Related supplemental data are provided in NREL report TP-550-38617 “Source Energy and Emission Factors for Energy Use in Buildings”. (www.nrel.gov/docs/fy07osti/38617.pdf) This report also provides data needed to calculate the percentage of coal fuel mix (bituminous, subbituminous, and lignite) used in electric power generation at state, regional, and national levels. (http://www.nrel.gov/lci/) GREET references current US EIA and EPA data sources as well as a database of information developed by Argonne National Laboratory during the past 15 years. The GREET program, sponsored by the U.S. DOE Office of Energy Efficiency and Renewable Energy (EERE), is being used by DOE for modeling emissions and energy use in transportation.

Energy conversion factors for fossil fuels combustion at power plants for conversion to electricity are calculated using the EPA Emissions & Generation Resources Integrated Database (eGRID2020) plant level database screened to verify and align fuel plant classification with primary input fuel. eGRID2020 provides detailed and aggregate data on electric power plant generation and emissions for the year 2020. Data is available for all US power plants and aggregated at state, eGRID sub-region, National Electric Reliability Council (NERC) region, and national levels. Relevant emissions data includes CO_2, NO_x, SO_2, Hg, CH_4, and N_2O emissions. In addition, the database includes the percentage of power supplied by coal, oil, natural gas, hydro, nuclear, and other renewable sources. This generation mix data is useful to estimate source energy conversion factors at state, regional, and national levels. Heat rates for electricity generation using fossil fuels like coal, natural gas, and oil as well as electricity transmission and distribution (T&D) losses are also available from eGRID2020. (http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html)



Air Source Heat Pump Measures

David Bopp

Contract Analyst

RTF Meeting

March 18, 2025

Full 51-page Report Provided

How do we wrangle efficiency out of a ductless heat pump?

We know that a heat pump has the potential to be very efficient. How do we get savings in the field?

1. Displace existing and used electric resistance heat
   - In a zonally heated home (warm living room and cooler bedrooms) it is critical the living room heat is displaced

What doesn't create savings?

1. Installations where electric resistance heat is not displaced
   - Non-electric resistance heat is the primary heat source
   - Installations in new house additions
2. Homeowner changes home conditioning
   - Higher thermostat setpoints are used to increase comfort (in one or many rooms)
   - The home is moved from zonally heated (warm living room with cool bedrooms) to central style heating where all rooms are kept at the same temperature

Source:
Air Source Heat Pump Measures, page 11
RTF Meeting, March 18, 2025

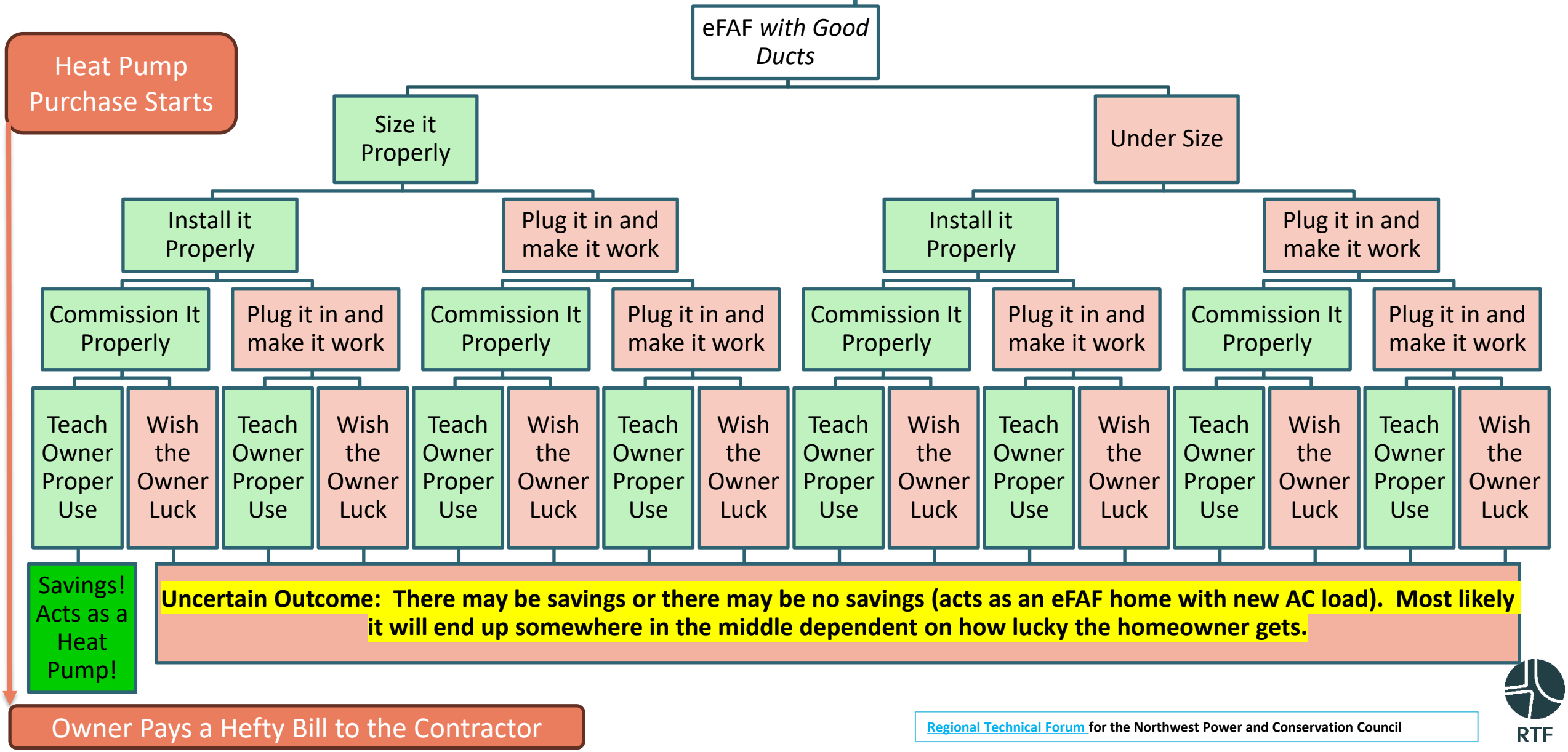
Issues Installing CDHPs in the Current Housing Stock of eFAF (also applicable to gFAF) homes

- Delivered Air Temperatures
- Heating Output
- HVAC Controls

- Spoiler: the current housing stock with the current occupant behaviors is not set up to successfully use CDHPs without electric resistance backup heat

Source:
Air Source Heat Pump Measures, page 13
RTF Meeting, March 18, 2025

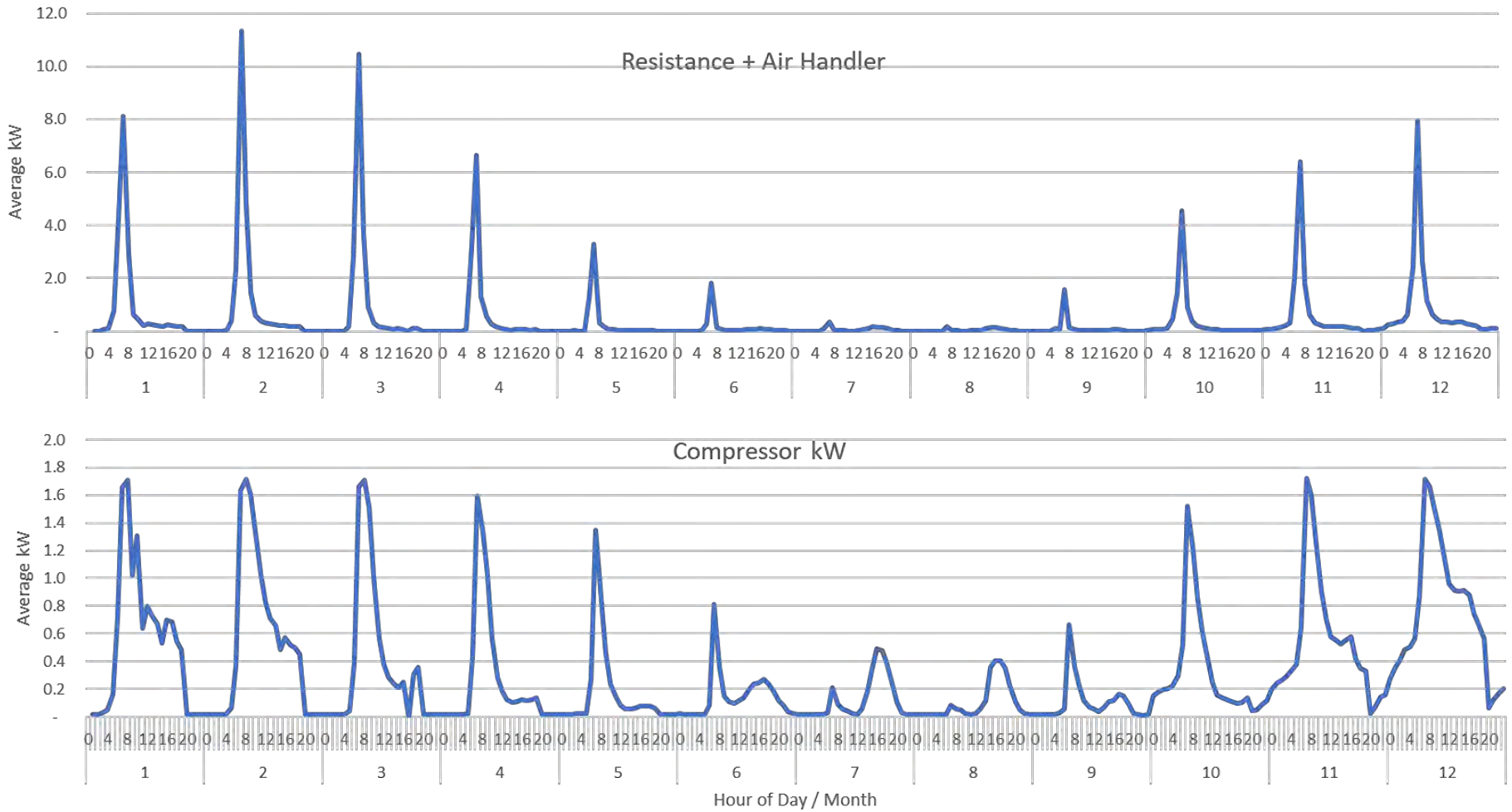
Why do Standards of Practice Matter When a Heat Pump is Installed?



eFAF/gFAF Setback Education Creates Peak Problems with Electric Resistance Backup for a CDHP

Source:
Air Source Heat Pump Measures, page 41
RTF Meeting, March 18, 2025

Apparent setpoint schedule: 69° F daytime / 60° F nighttime



It is possible that the setback is the only reason that the electric resistance is used in this house.

What is the Problem? Too Much Electric Resistance Heat

Source: HEMS Analysis

NW Natural is pleased to see that there is a high-level policy recommendation focused on maintaining affordability and energy system resilience. However, some of the proposed set of actions set to support the policies will have unintended consequences for the resiliency of our energy system.

1.1 - NW Natural is supportive of increasing financing options to support energy efficiency. Gas equipment was notably not included as eligible technology, and we would advocate for inclusion. As of 2021, 30% of Oregon's furnace sales were for 80% AFUE units. There are many inefficient gas furnaces within homes that could be upgraded and reduce carbon emissions for a fraction of the cost of a heat pump. Incremental improvement is more valuable than none.

1.3 - NW Natural is disappointed to see language eliminating incentives for new natural gas space and water heating equipment. This would eliminate the ability to pursue new gas heat pump technology and hybrid systems which would reduce gas load without exacerbating the electric grid. In addition, the loss of incentives could lead to loss of resiliency of our energy system. Energy reliability is essential at the household, business and community levels. NW Natural's pipeline system is an important resiliency asset to the people of Oregon. When a cold winter storm hits, and electricity is out, the gas system provides important, lifesaving heat and cooking ability for those with fireplaces and gas cooktops (Natural gas in a power outage - NW Natural). Additionally, many gas water heaters also work when the power is out. NW Natural recommends removing this action.

2.1 - NW Natural is supportive of prioritizing low- and moderate-income households. However, there was no discussion about how switching from natural gas to an electric heat pump may increase a customer's bill. NW Natural's Energy Burden Assessment showed that heating costs will increase a customer's heating cost within our territory (this does not include the additional cooling cost). We recommend requiring education on bill impacts.
https://edocs.puc.state.or.us/efdocs/HAH/um2211hah331408120.pdf

2.2 - NW Natural appreciates the focus on energy efficiency and weatherization projects around the state. NW Natural recommends adding language that highlights partnerships between the electric and gas utilities and the community partners. Working as partners will allow the utilities to help guide recommendations, creating a healthier and more resilient energy system.

3.2 - NW Natural appreciates the focus on decarbonizing large customers and industrial applications. However, NW Natural is worried about the focus on electrification of these businesses without concern for the overall cost and emissions impacts. The funding proposal is especially problematic because the Public Purpose Charge is funded by existing gas customers and this action, as proposed, could financially harm those very customers that remain on the gas system by shifting fixed costs. Gas customer efficiency dollars should not be spent on any electrification programs. NW Natural recommends changing the language in this recommendation to either be focused on gas decarbonization opportunities such as low or no carbon fuels, thermal energy networks, and other developing technologies. Focusing the scope of decarbonization on gas innovation will help utilities keep costs down while investing in technology/fuel options.

Other Considerations:

During the policy working group there were several suggestions that are worth amplifying:

- We need to focus on the quality of heat pump installations to ensure we are getting the most out of heat pumps. Energy Trust evaluations show that heat pumps do not achieve the savings being claimed. In some cases, there are no savings over an electric force air furnace. This issue is seen across the region yet we continue to assume 200-300% efficiencies.
    - https://nwcouncil.app.box.com/v/Mar2025RTF-ASHPReviewPPT
    - https://www.energytrust.org/wp-content/uploads/2024/08/FINAL-REBA-DHP-Report-Memo-with-Output-Summaries.pdf
- With the increase in heat pump installations, we also need to be considering the fugitive emissions associated with the refrigerants.
    - https://www.aceee.org/sites/default/files/proceedings/ssb24/pdfs/Cold_hard_facts_Impact_of_refrigerant_leakage_emissions_under_high_residential_building_electrification.pdf

Responses of the Advisory Group (AG) to
ODOE's Follow-up Questions

April 28, 2025, email from Michael Freels (introduction and questions repeated below with AG answers to questions in blue.

Michael Freels follow-up email:

Thank you for meeting with us on Friday to discuss development of the Oregon Energy Strategy. We deeply appreciate you sharing your knowledge with us about some of the challenges facing the energy industry and barriers to meeting our state's energy objectives. We found the discussion helpful and it aligned with several themes we heard in the working groups around barriers and challenges to meeting the directional starting point of the modeling results: increased costs of electricity, affordability and increased rates, reliability and duration and magnitude of outages, and concern around optimistic assumptions on costs, energy efficiency adoption, solar, and transmission build out.

As discussed, we are in the process of collecting feedback and ideas to inform development of policy recommendations and actions. We hope you will consider continuing to engage with ODOE on this topic by submitting answers to the following questions or other suggestions for potential policy actions that will help Oregon reach its decarbonization targets while maintaining affordability and reliability. The Oregon Energy Strategy Comment Portal is here.

Introductory Response of the Advisory Group (AG):

The AG offers the following comments in response to your questions. We wish to emphasize that our experience is primarily in the electric industry and we may have blind spots. Also, we do not have the capability to perform modeling or data collection. These are views and opinions based on our experiences.

Question 1 - What specific ideas do you have to ensure the strategies and actions (under development) reflect consideration of reducing cost and increasing reliability and safety?

AG Answer: Economy wide carbon emissions pathways have been built around the paradigm of achieving widespread energy efficiency, decarbonizing the electric sector, electrifying other sectors primarily buildings, transportation, and industrial processes where possible and addressing the remaining carbon emitting energy sources on an ad hoc basis. A current significant challenge is making the transition from step 2 to 3 while we lack a cost-effective carbon free dispatchable source of generation that can address

extended temperature excursions. Any strategy addressing aggressive carbon reductions must address the affordability and reliability issues that arise until technology advances can offer reliable, affordable, carbon-free electric service during peak loads, especially cold weather events.

The cold weather challenge is exacerbated by the risk of distribution system outages (icing in particular) that become more impactful due to greater reliance on a single source of energy.

It appears to us that the ODOE modeling work has focused on achieving carbon emission reduction goals. Models tend to focus on solving a single variable. We recommend the use of two scenarios that will help ensure reliability and cost will be fully considered along with carbon emission reduction goals: (1) modeling a least cost planning for reliability scenario adopting the assumptions we previously provided and (2) modeling a scenario for achieving carbon reduction goals adopting the assumptions we previously provided. The latter will provide a scenario for consideration based on what are commonplace assumptions in the electric utility industry. The former will provide a basis for a reasoned discussion about how to balance cost, reliability and carbon emissions reductions when combined with analysis performed to solve for only the carbon emission reduction goal.

The use of these models will mean judgment will need to be applied to balance the places where reliability, cost and carbon emission reduction goals are not in alignment. We view this as an appropriate use of judgment as models cannot always provide clear answers to addressing various public policy goals.

Although we have not gone into the load assumption details of ODOE's work, we would advise ODOE to carefully examine the peak winter demand and reserve margin used by natural gas utilities versus electric utilities, especially if we are examining shift of residential heating load on a large scale from gas to electricity. Ensuring reliable supply to serve residential heating load is a major public health and safety matter.

Any decarbonization strategy needs to take into account that it is unlikely the electric system will be fully decarbonized until technology advances to produce cost-effective, carbon-free dispatchable generation. It is impossible to accurately predict when such a resource will become commercially available, but we would recommend considering running additional scenarios that assume the "mystery resource" will emerge in 10 or 20 years. This would provide a reasonable array of scenarios that reflect the current state of technology opportunities.

It would also be important to consider scenarios using historical records of icing conditions limiting the use of the electric distribution system to understand the risk of extended neighborhood outages.

The use of the scenarios we have proposed would allow an informed discussion of risks and trade-offs to various decarbonization strategies leading to least regret options. We believe it is extremely unlikely to identify no regrets strategies.

While we do expect substantial reductions in carbon emissions can be achieved, our instinct is that strategies that eliminate the use of natural gas to produce electricity and/or for retail consumption within the next decade will not have acceptable cost or reliability impacts. Scenario analysis as we have described helps to identify the public policy tradeoffs that elected officials will need to make to balance consumer preferences for carbon reduction, reliability, and affordability.

It would not surprise us if there are significant cost and reliability impacts that rise at an exceptionally rapid rate as large reductions in gas usage are projected to occur. It is quite possible that the marginal cost and reliability risk significantly rises while the marginal carbon emissions actually increase at high levels of electrification. This is due to the current challenge of meeting extended duration peak electric loads without some use of natural gas for electric generation which is exacerbated by increasing loads.

Question 2 - How could existing planning processes change to incorporate more joint resource planning to mitigate cost, reliability, and safety issues?

AG Answer - We do not believe it is possible in a short timeframe to make the giant leap to a single integrated resource plan for gas and electric systems. It is possible to perform scenario analysis addressing cost, reliability and energy system wide carbon emissions reductions that compares strategies such as full electrification of gas systems with hybrid strategies. The development of such scenarios would benefit from joint workshops between gas and electric planners.

The region faces a growing risk of serious energy supply disruptions that could result in blackouts during periods of peak demand. As natural gas and electricity systems become increasingly interdependent, heightened awareness and stronger coordination are essential to safeguard the reliability of the region's energy infrastructure. To that end, PNUCC and the Northwest Gas Association are supporting an effort to improve coordination between natural gas and electricity providers in the Pacific Northwest. The group has set four priorities: 1) a third-party review of regional energy reports to

identify common themes, 2) unified messaging on resource adequacy and resiliency, 3) winter readiness and 4) a regional symposium for education. The third-party review is complete and is incorporated in the Guideposts document that NW Natural has shared with us. The symposium will likely take place in fall of 2025. We encourage ODOE to follow, support and utilize products from this process.

Question 3 - What challenges (with existing infrastructure) do high levels of electrification present?

AG Answer - The challenges likely apply to every facet of the electric utility system, distribution, transmission, and generation. The electric system was simply not sized for a winter peak load that does not include retail use of natural gas. There may be some reduced impacts to sub-regions that have summer peaks substantially higher than winter, but these are rare in the NW Natural gas service territory (a bit more common on the east side of the Cascades).

Question 4 - Are there actions or policies that might mitigate these challenges?

AG Answer - Our previous submission to ODOE describes the challenge of building new generation and transmission already necessary for growing loads which would be increased by electrification. The single most important strategy the state could adopt to address reliability, affordability and carbon reduction goals would be accelerated permitting for new generation and transmission. But we acknowledge that this would have trade-offs in terms of citizen participation and land use impacts.

There is an opportunity to consider something less than 100% elimination of the retail use of natural gas, much like the approaches to electric system planning that seek high carbon reduction while also managing for reliability and cost. There are likely opportunities for reducing gas usage through efficiency and some use of electrification but while retaining gas infrastructure capability for peak needs. Finding the right balance point will take a significant modeling effort and the application of public policy judgment.

Question 5 - What would be the cost and/or reliability implications of the levels of electrification for particular utility service areas?

AG Answer - This is a modeling question that requires an understanding of the existing BTU usage in individual utility service areas. While we do not have data readily available, we would expect electric space heat to be more prevalent in

consumer-owned utility service territories due to the historical and current rate differentials between utility service areas.

Question 6 - What are your ideas for reducing or mitigating the costs and reliability challenges of electrification?

AG Answer - Same answer as question 4

Question 7 - In determining the energy supply needed to meet the demand at least cost, there are certain emerging technologies that will hopefully mature over time and be needed to further reduce emissions, such as nuclear, floating offshore wind, enhanced geothermal, and low-carbon fuels like hydrogen, biofuels, and thermal energy networks. What policies at the state level would help overcome the cost, timeline, or other barriers to maturation of these emerging technologies?

AG Answer - Moving the cost curves for carbon free generation options is very difficult because of the global scale of these industries. Oregon would be unlikely by itself to have the financial resources to move a generation source cost curve.

We have seen estimates that the IJAA and IRA dedicated something in the range of $75 billion to R&D on these types of technologies (PNLL is a good source for R&D data). There are, however, expectations that much of this funding is on hold and may not be allocated. Yet it still seems that some joint partnership with the federal government would provide the greatest value.

We would encourage focus on carbon free generation that is dispatchable and has the greatest potential for creating value in the Pacific Northwest. Value would be determined by geographic potential combined with matching the needs of the Pacific Northwest electric system. In the near-term that would seem to be geothermal if fracking technology can be appropriately applied. In the longer term it may be nuclear but likely only if the federal government or deep-pocketed investors are willing to take the first mover financial risk. A consortium of West coast states guided by an entity like PNNL could help focus efforts on the most viable cost-effective alternatives designed to meet the needs of the Pacific Northwest.

Responses of the Advisory Group (AG) to
ODOE's Follow-up Questions

AG Closing Remarks

In closing, in reviewing ODOE's material and during our conversation we got the impression that the that the future strategy is intended to achieve the carbon reduction policy goals at any cost. In reviewing the legislation, we observed (in Section 2) that the Legislature was seeking guidance and recommendations on what it would take to achieve the stated carbon goals and at what cost to reliability and affordability. We believe the carbon policy goals are aspirational meant to be tempered by rational practicality.

We hope that as ODOE develops the strategy and legislative recommendations that you are able to facilitate legislators' understanding of the practical constraints and realistic cost impacts to ratepayers' pocketbooks of achieving the stated carbon goals, especially on a fast timetable.

The Pacific Northwest Utilities Conference Committee (PNUCC) and Northwest Gas Association (NWGA); Dan Kirschner

Energy emergencies during extreme weather events are increasing in frequency and threatening reliability. The multi-day cold snap in January 2024 is the most recent in a string of examples. Through PNUCC and NWGA industry leaders came together after the January 2024 cold snap to address the need for enhanced coordination of the gas and electric systems. Although several studies examining the changing regional landscape have been conducted in recent years, the leaders asked a third-party, Guidehouse, to synthesize these studies to identify a common understanding of how the region is planning to meet demand and assess risks. Guidehouse identified commonalities and gaps between nineteen different regional energy-related studies and developed recommendations that can serve as an essential foundation for improving coordinated strategies for regional energy system planning. NWGA and PNUCC submit the Guidehouse report to inform ODOE's development of the Oregon Energy Strategy and what needs to be done to secure a more sustainable and resilient energy future.

3rd PARTY REVIEW/SYNTHESIS OF REGIONAL ENERGY STUDIES

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Guidehouse
Outwit Complexity

January 30, 2025

The Pacific Northwest energy landscape is evolving rapidly, with more frequent extreme weather events and increasing energy demand placing new pressures on reliability and resource adequacy. The January 2024 cold weather event revealed the Pacific Northwest's energy system is dangerously close to having insufficient supply and highlighted enhanced coordination between electric and natural gas systems is critical to ensuring a resilient and reliable energy supply.

Industry leaders came together in May 2024 to address the need for enhanced coordination of the gas and electric systems. Although several individual studies examining the changing regional landscape have been conducted in recent years, we identified a need to synthesize these studies to identify a common understanding of how the region is planning to meet demand and assess risks. This bird's-eye view across the analytical landscape could provide insights and recommendations to enhance gas-electric planning and coordination.

To execute on this vital task, we asked Guidehouse to conduct a thorough literature review. Guidehouse synthesized the key findings from relevant studies, including regional forecasts, adequacy assessments, and extreme weather retrospectives. Guidehouse developed gaps and recommendations based on the findings that serve as an essential foundation for improving coordinated strategies for regional planning.

The stakes are enormous – the reliability of energy supply to our customers, the achievement of our clean energy goals, and the continued economic vitality of our region require us to work together on the transition to a clean energy future. By proactively coming together to support this literature review, we are taking a crucial step in building a clearer understanding of what we need to do to secure a more sustainable and resilient energy future for the Pacific Northwest.

With thanks to and on behalf of the work group,

Steve Andersen, Clark Public Utilities and Shawn Hill, FortisBC
Work Group Co-leaders

Guidehouse

NWGA/PNUCC Literature Review Findings Brief

Danielle Vitoff
Darek Imadi
Kaavya Malhotra

outwit complexity™

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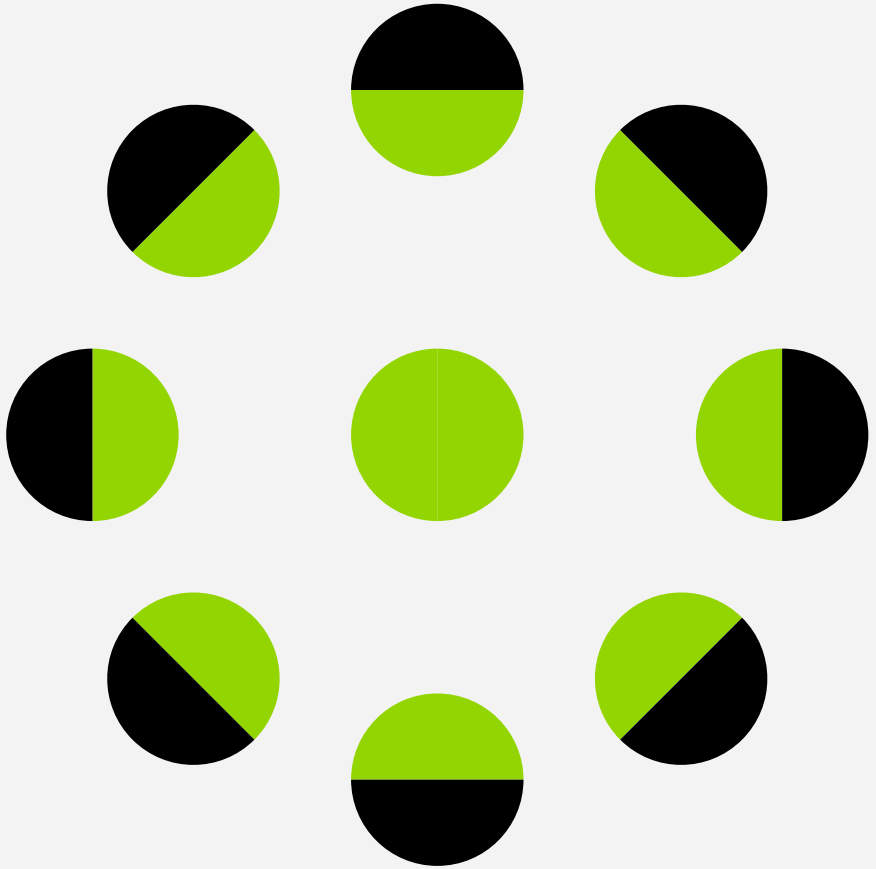

Scope and Purpose

Helping inform improvements in gas and electricity sector coordination with the goal of enhancing reliability and resilience at a time of rapid change.

The literature review analyzed 19 studies published by gas and electric organizations to identify common themes and risks associated with rising energy demand and the increasing frequency of extreme weather events in the Pacific Northwest and the broader Western U.S.

Based on this analysis, and input from utility planners involved in the NWGA/PNUCC joint working group, we have developed recommendations aimed at enhancing coordination between gas and electric systems.

The key findings and gaps and recommendations are summarized in the following findings brief for regulators, policymakers, and utilities to better understand the issue.

Table of Studies Reviewed

#	Title	Author	Year
1	2024 Pacific Northwest Loads and Resources Study	BPA	2024
2	Winter Conditions Report for January 2024	CAISO	2024
3	Net-Zero NW: Energy Pathways Technical Report	Clean Energy Transition Institute	2023
4	Northwest Regional Forecast of Power Loads and Resources	PNUCC	2024
5	Pacific Northwest Gas Market Outlook	NWGA	2023
6	Pacific Northwest Pathways to 2050	E3	2018
7	Pacific Northwest Power Supply Adequacy Assessment for 2029	NPCC	2024
8	Analysis of the January 2024 Winter Weather Event	Powerex	2024
9	Assessment of January 2024 Cold Weather Event	WPP	2024
10	2024 Summer Reliability Assessment	NERC	2024

#	Title	Author	Year
11	2023 Long-Term Reliability Assessment	NERC	2023
12	2023 Western Assessment of Resource Adequacy *(Note: Weblink Archived)*	WECC	2023
13	Resource Adequacy in the Pacific Northwest	E3	2019
14	National Gas Reliability: Issues for Congress	Congressional Research Service	2024
15	2023-2024 Winter Reliability Assessment	NERC	2024
16	Year 10 Extreme Cold Weather Event Report	WECC	2023
17	EPRI AI Powering Intelligence	EPRI	2024
18	Kelowna Electrification Case Study	Fortis BC	2023
19	PNW Electric Utilities IRP Comparison Table	Fortis BC	2020

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Literature Review - Key Findings

The studies reveal insights into energy demand projections, resource adequacy, system resilience, and the impact of extreme weather events in the Western region. They reveal the need for gas/electric coordination and regional planning to adapt to a changing landscape.

Theme 1

Key Findings: Demand and Load Growth

1

A significant driver of load growth in the Western Interconnection and the Northwest is the expansion of data centers

Data centers consume large amounts of electricity due to their cooling needs, leading to substantial increases in electricity demand. This expansion is projected to continue in the Northwest, with load increases ranging from 50% to 200% depending on the specific Balancing Authority.

Data center expansion is also being considered and forecast to grow in other areas, such as the Desert Southwest, which could result in a doubling of the share of data center demand by 2030.

2

The projected load growth in the Western Interconnection over the next ten years is almost double the rate reported in the previous year's assessment

The 2023 assessment predicts a 16.8% increase in demand in WECC over the next decade, compared to a 9.6% increase reported in 2022. The PNW is forecasting an increase of over 30% in the next 10 years.

This surge in demand is a primary factor contributing to the growing resource adequacy risks in the region. Data centers, as mentioned in #1, are the major contributor to this increased growth and steep revisions of past projections. High-tech manufacturing and the trend towards electrification are also cited.

3

Electrification policies and trends are contributing to the increase in demand – limited analysis considering implications of direct use of natural gas

The transition to electric vehicles and the electrification of heating in buildings are contributing to the increasing need for electricity. While energy efficiency measures help to offset some of this increased demand, utilities are still forecasting significant load growth in the coming years.

The switch from gas to electric in residential homes will also have a significant impact on peak demand. The value of the direct use of natural gas during extreme weather events and the impact of attachment policies for new customers is an important topic that was not discussed in the studies reviewed.

Theme 2

Key Findings: Resource Adequacy/Reliability

1

Resource adequacy remains a critical risk - planned resources may be insufficient to meet future demand

This risk has increased compared to the previous year. The Western Interconnection faces challenges in meeting future energy demands under various system conditions. The most significant risk factors include substantial load growth, extreme weather, uncertainty in forecasting, and the integration of non-dispatchable resources like solar and wind power.

While short-term projections (2024-2025) for WECC show a minimal number of demand-at-risk hours, the magnitude and frequency of these hours significantly increase from 2026 onward, indicating a shortfall in resource plans.

2

System flexibility is significantly impacted by the increasing integration of variable renewable energy (VRE).

Renewables pose challenges for maintaining a reliable electricity supply. The Variability Margin Index (VMI), a metric used to assess the variability in the resource and load mix, showcases this trend in system flexibility. The VMI has increased substantially between 2022 and 2023 in the WECC due to higher renewable resources, highlighting the growing need for dispatchable flexible resources in the Western Interconnection.

Increasing drought conditions are also responsible for 23% lower hydro generation in the NW, demonstrating heightened risks of climate change on this critical regional resource.

3

Increasing variability coupled with baseload retirements and an increasingly constrained natural gas system pose a challenge to resource adequacy.

Traditional resources can be readily dispatched to meet demand, while variable resources like solar and wind power cannot. The increasing reliance on variable resources, coupled with the retirement of traditional baseload resources, makes it challenging to ensure a consistent energy supply under diverse conditions.

As coal plants are retired natural gas is increasingly being relied upon as a flexible generation resource. However, existing natural gas infrastructure, such as interstate pipelines that are at times reaching 95% utilization, are becoming increasingly constrained. New natural gas infrastructure will need to be developed in coming years to accommodate new generation.

Theme 3

Key Findings: System Resilience and Flexibility

1

Natural gas generation flexibility is critical in maintaining grid resilience

The Western Electricity Coordinating Council (WECC) modeled a simulated extreme cold weather event in 2033 to understand the impacts on the system, determining that the Western Interconnection experienced load shedding when natural gas derates were modeled signifying the reliance on natural gas during extreme events.

2

Natural gas generation will be a needed resource for system resilience and flexibility even under a decarbonized grid

Natural gas is required to provide firm capacity not met by variable renewables, even under up to a 98% decarbonization scenario in the NW. As variable renewable energy use increases, gas generation will become crucial in avoiding loss-of-load events.

Natural gas generation capacity factors are forecasted to decline over time in these decarbonization scenarios but remain cheaper than relying on other forms of firm generation or energy storage.

3

Enhancing system resilience requires addressing vulnerabilities related to natural gas fuel supply

The critical role of natural gas generation hinges on a functioning natural gas system. The 2024 cold snap and Winter Storms in Texas underscored the need for more resilient natural gas infrastructure. Fuel assurance is vital for grid stability and reliability during extreme weather events. To mitigate fuel-related risks, proactive emergency planning, infrastructure hardening, improved gas-electric communication, and increased natural gas supply resources are essential.

Theme 4

Key Findings: Gas/Electric System Interdependence

1

The increasing interdependence of systems necessitates enhanced coordination to mitigate the risk of cascading failures.

The growing reliance on natural gas-fired generation to meet peak demand and compensate for the intermittency of renewable energy sources necessitates increased coordination between gas and electric utilities to ensure the reliability of both systems. Emerging technologies, such as hybrid-heating systems, should be jointly explored especially in infrastructure-constrained areas as they can yield significant cost savings through peak shaving.

2

Gas-Electricity Coordination is hindered by regulation misalignment

Misalignment between natural gas and electricity markets poses significant challenges to efficient coordination and reliability.

Incompatibilities in contracting practices, scheduling discrepancies, and insufficient infrastructure investment incentives hinder the ability of power generators to secure reliable gas supplies, and natural gas companies from making necessary midstream infrastructure investments, underscoring the urgent need for market reforms in certain energy markets.

3

Siloed planning in gas and electric systems, has a detrimental effect on overall energy reliability

Planning often occurs in isolation from considerations related to natural gas supply and transportation.

Similarly, efforts to electrify building heating and other end uses that traditionally rely on natural gas must consider the capacity limitations of existing gas infrastructure for delivery to power.

Theme 5

Key Findings: Extreme Weather Events

1

Natural gas played a vital role in maintaining electricity supply during extreme cold snaps

During the January 2024 cold snap, the natural gas system satisfied 70% of end-use energy demand during the peak hour of this event in the PNW. The Western Electricity Coordinating Council (WECC) modeled a similar extreme cold weather event ten years in the future (2032) and found that natural gas generation was needed to meet load. When natural gas derates were modeled, load shedding occurred, demonstrating the reliance on natural gas during these events.

2

Improve the quality of forecasting load during extreme weather is critical for ensuring resource adequacy

Extreme weather events, especially those involving extreme cold, can cause electricity demand to deviate significantly from historical forecasts. This is partly due to the growing electrification of the heating sector, which makes demand more sensitive to temperature changes. Underestimating demand ahead of extreme weather events can lead to insufficient resource scheduling and potential reliability issues.

Theme 6

Key Findings: Regional Planning

1

Prioritize collaborative regional planning efforts

Numerous studies highlight the critical need for improved regional coordination and collaboration to tackle the complex challenges related to resource adequacy and grid reliability, especially considering the increased interdependence of gas and electric systems following the significant rise in natural gas generation capacity over the past two decades.

Current planning processes are inadequate given the evolution of the energy system.

2

Incorporate extreme weather and fuel security in planning

With increasing frequency of extreme weather events, cold and hot, the supply and demand for electricity and natural gas is disrupted, leading to reliability challenges.

Planners must incorporate better scenario planning and robust strategies to enhance resilience to these events including weatherization and hardening, fuel assurance plans especially for natural gas, and emergency response capabilities between gas and electric systems at an operational level.

3

Address uncertainties forecasting load growth – in particular, data centers

Data centers and electrification of buildings and transport represent a significant and rapidly growing source of electricity demand in the region. This growth and the uncertainties forecasting it adds to the pressure on the grid and presents challenges for resource adequacy planning.

Regional planning must proactively address the implications of data center expansion and electrification by implementing better data sharing, coordinating planning, and encouraging energy efficiency, demand management, adequate transmission infrastructure, and strategic siting.

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Planning Implications for Gas-Electric Utilities

Gaps, and Recommendations

From these studies, we have identified gaps in electric and gas sector planning and highlighted corresponding recommendations to improve coordination and preparedness.

Planning Implications: Gaps

Varying gas and electric sector approaches to forecasting loads from electrification, data centers, demand side resources, and evolving consumer behavior drive uncertainty in planning

- Current load forecasting methods used by PNW utilities often fail to adequately account for the impacts of electrification. Only 40% of PNW Balancing Authorities directly incorporate electrification assumptions in their forecasts.
- Differing planning assumptions, data inputs, and granularity between gas and electric utilities in the region hinder effective coordination and comparisons of forecasts.
- Utilities differ in how they forecast demand response programs and customer participation, not just passive load. Some consider demand response as a supply-side resource while others treat it as load modifying. This lack of transparency limits broader alignment amongst entities.
- The direct use of natural gas in buildings is a key factor in meeting baseline demand and peak loads but is often overlooked in studies. Current approaches do not fully account for its impact, creating gaps in demand projections. Electrification efforts must better consider how transitioning direct-use gas customers affects total load growth, peak forecasting, and grid reliability.

Insufficient understanding of peak demand and how gas/electric entities can jointly manage peak events

- Electric and gas utilities lack a clear understanding of how both sectors interact during peak events, in addition to how electrification and extreme weather will impact peak energy demand in each respective system.
- Peak events manifest differently and have distinct resource needs for gas and electric systems. For example, the gas system may experience a sharp single day peak driven by space heating demand while the electric system may face a multi-day capacity challenge during a prolonged cold weather event. Analyzing the varied nature of peak demands and how they are mitigated across the sectors is important for understanding the most efficient mitigation solutions. Gaps also exist in quantifying and incorporating such solutions into planning processes.
- Electric and gas system planners don't have a way of looking at coincident peak impacts on their systems under both extreme weather and end-use changes, and thus how to invest in different kinds of technology.

Planning Implications: Gaps

Planners have obscured visibility of gas-electric interdependencies

- Gas and electric system planners often lack detailed visibility and data into the constraints, performance, and interdependencies of the other sector, making it difficult to accurately assess resource adequacy and identify potential risks.

Traditional planning metrics are insufficient in capturing new risks

- Metrics like planning reserve margins (PRMs), which measure the amount of capacity above forecasted peak demand, fail to account for the energy limitations of VERs, fuel supply risks, and the impact of extreme weather events on resource availability.
- Traditional resource adequacy models, often based on a loss-of-load event (LOLE) of 1 day in 10 years, may not adequately capture the risks associated with more frequent and severe extreme weather events. These events can simultaneously impact both demand and resource availability, leading to extended periods of high risk.

Lack of a framework to measure and optimize the full value and affordability of energy services that customers receive

- There is a lack of an integrated perspective on how to best serve customers' total energy needs across all sources. When gas and electric planning are siloed, the focus on optimizing overall delivered energy value to customers is often lost. Separate gas and electric planning processes, often governed by distinct regulatory models, typically aim to maximize value for either gas or electric ratepayers rather than the total cost and quality of energy services delivered. This leads to suboptimal resource choices and missed opportunities for synergy.
- Current planning approaches and regulatory constructs are not well suited to comprehensively evaluate tradeoffs and complementarities across the gas and electric systems.

Planning Implications: Recommendations

Facilitate better coordination and collaboration between gas and electric entities by establishing cross-sector platforms and forums that actively develop and recommend planning assumptions or methodologies

- Regular forums that convene gas and electric utilities, pipelines, ISOs/RTOs, and other stakeholders to share information, align planning assumptions, and develop solutions can meaningfully advance coordination. Existing forums like the PNUCC/NWGA working group should be leveraged and expanded to serve this function. Leverage regional bodies, conferences, and other forums as venues to recommend and implement enhanced gas-electric coordination initiatives.

Promote enhanced operational data sharing between gas and electric utilities to improve system resilience

- Promote routine operational data sharing through joint platforms, regular coordination meetings, and standardized data formats/protocols. One notable example is in the Northeast where the NE-ISO decided to provide day-ahead hourly dispatch data from power plants to gas system operators to help them better plan for loads and ensure natural gas system integrity.

Engage stakeholders on benefits of assessing overall energy value instead of siloed gas vs. electric perspectives

- Partner on developing accessible tools and guides that empower stakeholders to evaluate holistic energy value. Dialogue should be facilitated with consumer groups, environmental advocates, and policymakers on integrated value frameworks.
- Articulate customer, reliability and cost benefits of more holistic gas-electric planning to regulators and policymakers. Fact-based, data-driven case studies and whitepapers that quantify benefits can build support. Examples could include peak demand reduction, consumer savings, improved grid resilience from backup fuel capability, and gas and electric rate stability from coordinated infrastructure build.

Planning Implications: Recommendations

Jointly plan and collaborate on understanding load growth and peak mitigation options

- Planners and policymakers need to better consider a range of peak mitigation options like hybrid heating across gas and electric sectors. For example, hybrid gas-electric heating systems, if aggregated and dispatched effectively, could provide significant peak reduction value for the electric system while creating more manageable gas demand. Developing a shared understanding of these options and their associated infrastructure needs, operational coordination requirements, and market structures can unlock significant value.
- Inputs used for load forecasting should be improved and better aligned across entities to more accurately account for the impact of load growth.
- Develop new techniques and utilize information beyond historical data to model decarbonization and increasing frequency of extreme weather.
- Improve point load forecasting techniques to anticipate future data center, manufacturing, and other large load growth.

Better integrate gas and electric planning processes by reducing barriers and designing new models

- Utilize or develop coupled gas-electric models to better understand system interdependencies. Modeling tools that can stress test gas and electric systems under a range of future demand and weather cases can identify key vulnerabilities and quantify the value of solutions like demand response, storage, and inter-regional transmission. Partnerships between gas and electric utilities, universities, national labs, and vendors should be formed to advance this research.
- Identify changes needed to regulatory models and planning processes to enable more holistic, integrated approach optimizing customer value. Potential evolutions could include aligning gas and electric utility revenue models, mandating joint gas-electric planning studies, creating new customer energy service metrics, and enabling co-optimized gas-electric operations. Regulators should engage stakeholders to assess barriers and design new models.

Planning Implications: Recommendations

Establish tools and frameworks for quantifying the full value of gas-electric interdependencies

- Develop metrics to quantify reliability and resilience value of gas-electric coordination. Candidate metrics could include probability of coincident gas-electric system failure and customer outage costs. Standard calculation methodologies should be developed and benchmarking efforts undertaken.

Adopt more robust reliability indicators that go beyond traditional metrics

- Loss of load metrics and planning reserve margins need to evolve to better reflect energy limitations of renewables, fuel supply risks, and weather impacts. New techniques such as effective load carrying capability for wind and solar and convolution of fuel disruption probabilities are needed. Scenario-based planning that captures correlated outages across resources should complement traditional Monte Carlo simulations.

Align planning and regulatory approaches to mitigate policy whiplash

- Policymakers should strive for durable, long-term policy frameworks that reduce investment risk. Varying policy approaches at different government levels (i.e. city, county, state) and lack of long-term clarity is a key planning challenge. Abrupt shifts in federal, state or local policies around issues like building electrification, renewable tax credits, and gas hookup moratoriums create significant uncertainty for utility planners.
- Explore approaches to de-risk and depoliticize energy system planning to improve investment certainty. Potential strategies include formalizing long-term resource and reliability targets in legislation, using independent expert panels to set planning assumptions and study methodologies, and creating accountability mechanisms. Best practices should be researched and socialized.

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Demand and Load Growth

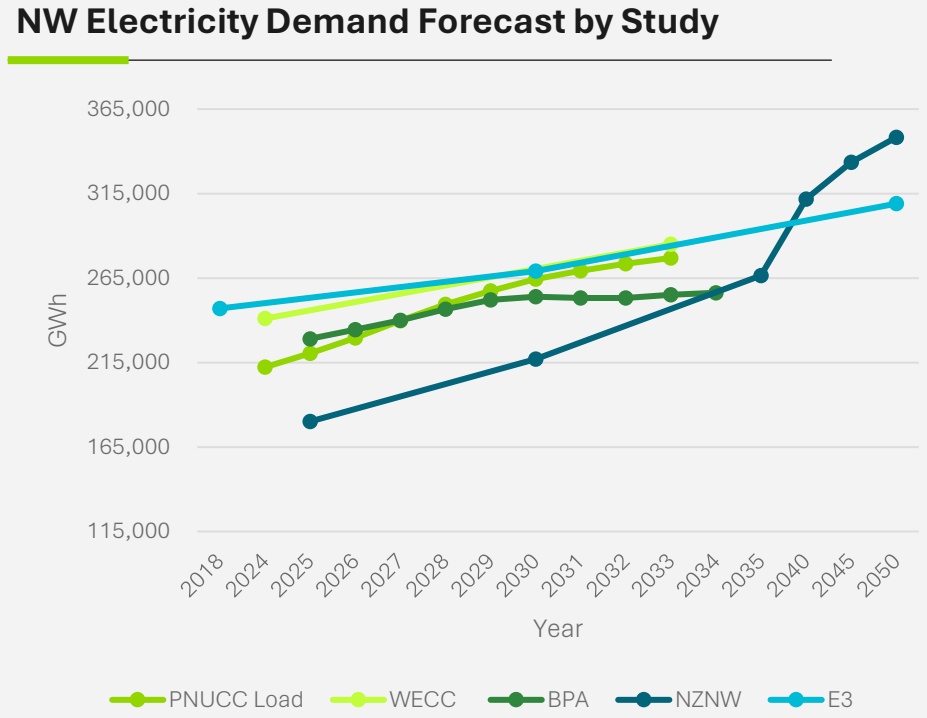
Electricity demand growth has outpaced estimates and magnitude of future increases are uncertain. Demand uncertainty is a challenge for energy planners.

Electricity demand is set to more than double previous projections

- Studies anticipate significant increases in both annual energy demand and peak demand, though total demand will increase at a faster rate.[1, 3, 4, 6, 12]
  - WECC projects a 16.8% increase in total energy demand over the next 10 years, nearly double the growth projected in 2022.[12]
  - In the NW, specifically, aggregated utility forecasts show demand could rise by over 30% in the next 10 years, from 23,700 aMW in 2024 to 31,100 aMW in 2033.[4]

- Data center expansion is identified as a primary driver of the increasing future load growth projections between 2022 and 2023, with the Northwest region experiencing the most substantial increases.[4, 7, 12, 17, 13]
  - Northwest Balancing Authorities (BAs) project potential load increases of 50% to 200% depending on the specific BA. [12]
  - The NPCC adequacy assessment highlights a scenario where higher data center loads result in exceeding 41,000 MW at peak system needs.[7]

- The push toward electrification is another significant driver. Electrification of transport expected to add more load than buildings in the short-medium term.
  - New projections reflect electrification policies such as Washington's updated energy codes.
  - Increased demand from charging EVs is projected to approach 4% of total load in the NW by 2034. [4]
  - Forecasting impact of electrification is a challenge across the board. Utilities in WECC have different planning process to estimate impact of electrification on load growth.[12]
  - Only 40% of BAs in the West incorporate electrification assumptions directly into their load forecasts. Another 40% consider electrification as a separate forecast.



- *Differences in total demand can be attributed to varying definitions of "Northwest" geography and forecasting approaches*
- *Evolved Energy and E3's forecasts assume scenarios in which long-term decarbonization goals have been achieved with heavy electrification, whereas PNUCC/WECC/BPA examine 10-year projections*

Case Study:

Data Centers

% of total state electricity consumption attributed to data centers

Region	State	2023	2030			
		Present	Low	Moderate	High	Very High
Pacific Northwest	Idaho	0.57%	0.68%	0.74%	1.03%	1.40%
	Oregon	11.39%	13.39%	14.43%	18.93%	24.14%
	Washington	5.69%	6.77%	7.34%	9.88%	13.00%
Desert Southwest	Arizona	7.43%	8.81%	9.53%	12.73%	16.58%
	California	3.70%	4.43%	4.81%	6.54%	8.70%
	Nevada	8.69%	10.28%	11.10%	14.75%	19.07%
	New Mexico	1.48%	1.78%	1.94%	2.66%	3.60%
Rocky Mountain West	Colorado	2.66%	3.18%	3.46%	4.73%	6.34%
	Montana	3.71%	4.43%	4.81%	6.54%	8.71%
	Utah	7.68%	9.10%	9.84%	13.13%	17.08%
	Wyoming	11.26%	13.24%	14.27%	18.73%	23.90%

Sources: EPRI

- Data center electricity consumption has reached approximately 5-11% of total electricity consumption in PNW state in 2023 and under a high growth scenario share of demand could grow to more than 13-24% of demand by 2030.[17]
- This emphasizes the already significant contribution of data centers to regional electricity demand, and uncertainty of future scale of growth.
- High data center load growth is a major risk in the projected energy shortfalls in the Northwest.[7]
- Data centers are a major driver of increasing load growth in all demand forecasts, especially in the Northwest
  - The expansion of data centers will cause greater electricity usage in the next several years (17% load growth according to NERC), with recent assessments being much higher past predictions.[11]
  - NPCC predicts 2,400 aMW-4,000 aMW of new load in the NW due to data centers and chip fabrication, much higher than the 261 aMW predicted by the 2021 Plan.[7]
  - NPCC data center reference forecast falls between EPRI's moderate and high load growth scenario.[7]
  - Data centers are identified as the primary cause for the increase in demand projections between 2022 and 2023 WECC Resource Adequacy assessment
- **The relatively flat demand profiles of data centers mean they have a greater effect on annual energy than on peak demand**. While data centers consume a lot of energy throughout the year, their demand remains relatively stable and insensitive to changes in temperature. This contrasts with loads like building electrification, which have a more pronounced effect on peak demand.

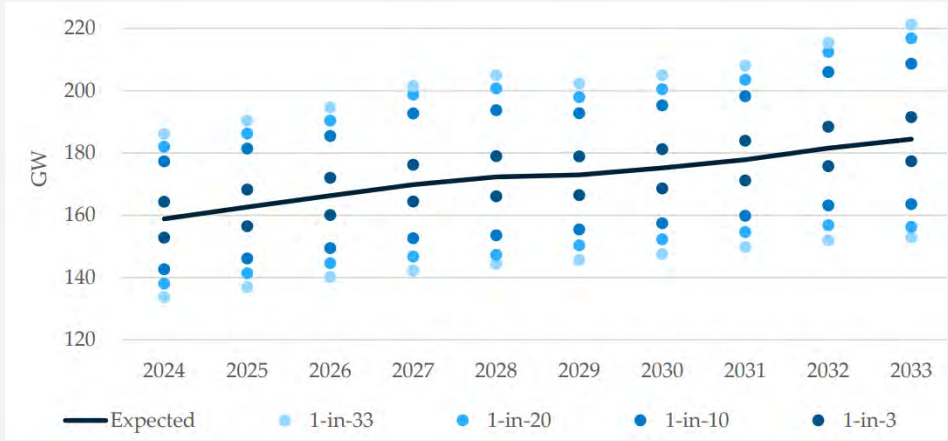
Uncertainties in expected peak demand and the pace at which demand will grow makes it difficult for entities to plan system adequately

- In the summer, the Western Interconnection's peak demand is projected to be 159 GW, but under a heat event, it could be as high as 186 GW. By 2033, this variability only increases, with peak demand expected to be 184 GW, but a 3% chance it is above 221 GW.[12] This increasing uncertainty means that entities need to be prepared for far higher peak demands.

- **Extreme weather conditions, which are likely to increase the coming years, are changing the peak demand profile of the region, which increases the risk of resource shortfalls.**
  - They will increase uncertainty in peak demand forecasts, which will make it more difficult for entities to prepare for future loads. From 2024 – 2033, the uncertainty range in summer peak demand will increase from 27 to 37 GW.[12]
  - Summer and winter extreme weather events will shift the shape of electricity consumption profiles away from peak periods.[7,11]
  - Extreme summer conditions are also increasing in frequency and are expected to change the NW from a traditionally winter-peaking area into a dual-peaking area. [12]

- **There are large uncertainties regarding the pace at which demand will increase, making it difficult for entities to plan accordingly to prevent resource shortfalls. Adequacy threatened under specific scenarios.**
  - If data center load growth accelerates faster than current projections, demand will surpass available resources and all reliability metrics measured by the NWPCC will be violated. The region will be at risk during both the winter and the summer. [7]
  - If energy efficiency improvements do not occur as expected, there will be higher risk of resource inadequacy during the winter region. [7]

Western Interconnection Summer Peak w/ Uncertainty Ranges



Source: WECC

Guidehouse

Resource Adequacy and Reliability

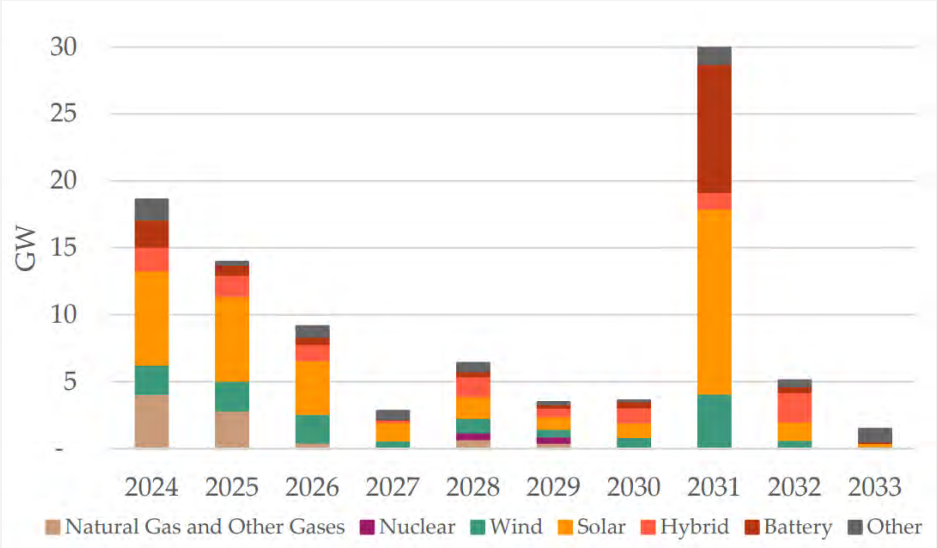
Planned resource additions may be insufficient to keep up with the expected increases in load. The anticipated increase in variable resources will also create more unreliability on the system.

Renewable additions and coal retirements lead changes to the resource portfolio in the coming years, although these plans may be impacted by resource adequacy concerns

- Northwest utilities plan to add 29 GW of new resources over the next decade to keep up with increasing demand, most of which are wind, solar, and battery resources.[4]
  - This pattern matches additions from 2020-2025. Wind has accounted for 36% of new additions, solar 25%, and storage 16%.[4]
  - Battery energy storage system (BESS) capacity in the WECC (excluding CAISO) is projected to reach 18.8 GW by the end of 2025, a 38 % increase from the 13.6 GW at the end of 2024 according to S&P.
  - These plans may be disrupted by the long interconnection queue, supply chain delays, and project approvals.[4, 12]

- Planned coal retirements are also projected to continue, although they are slowing down due to resource adequacy concerns
  - In the NW, 730 MW of coal is expected to be retired in the near-term (2024-2025) and 660 MW in the long-term (2029-2033). 100 MW of natural gas is expected to be retired by 2033.[7]
  - To reduce resource adequacy risks, some retirements are being delayed. A comparison between 2023 and 2022 resource plans for WECC entities shows that there was an increased delay in coal and natural gas retirements.
    - In 2022 IRPs, for example, nearly 8,000 MW was planned to be retired in 2025, whereas in 2023 IRPs, only 4,000 MW is planned to be retired in 2025.[12]
  - In some cases, coal plants are being converted to natural gas plants which are helping to provide an adequate system such as Jim Bridger 1 & 2 and Valmy 1 & 2 in the NW.[12]

Resource portfolio of the WECC



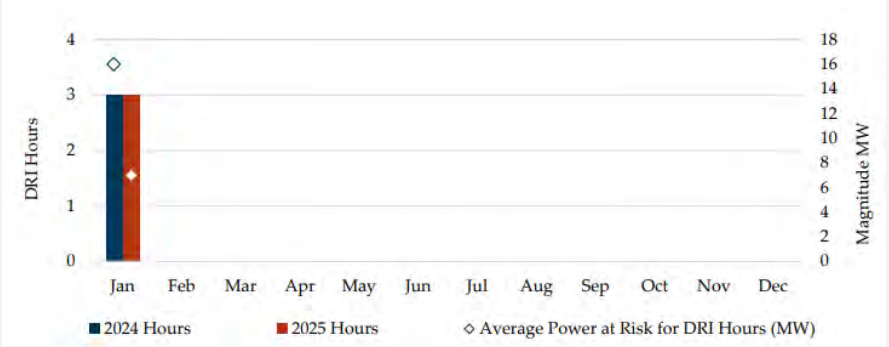
Source: WECC

With high renewable penetration projected, low generation events are more likely to occur, increasing the likelihood of loss-of-load conditions

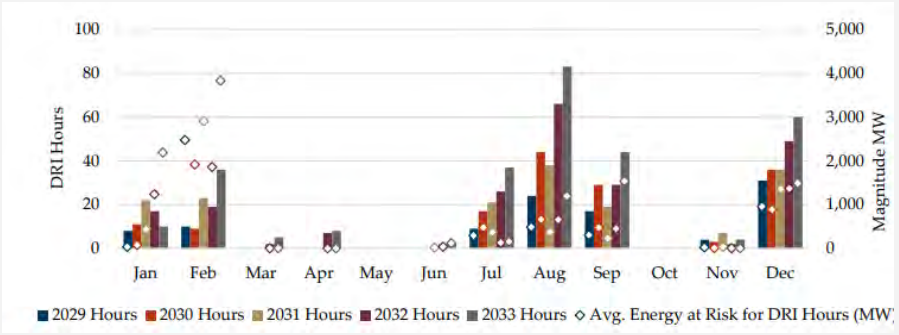
- Renewable resources are limited by weather patterns and have much higher capacity than actual energy produced. With bad conditions, over 100 GW of installed capacity can produce less than 10 GW.[12]
- **As variable resources like solar and wind become primary sources of electricity, low generation events are more likely to occur**. If these events are not considered during resource planning, variability in weather patterns will cause multiday loss-of-load. **With high renewable penetration, low generation will usurp drought hydro conditions as the biggest threat to loss-of-load events.**
  - The number of demand-at-risk (DRI) hours in the WECC is expected to greatly increase In the coming decade. This indicates that planned resources will be insufficient to meet the expected levels of demand and demonstrates the higher likelihood of loss-of-load events. In the NW, specifically, resources will need to keep up with high levels of demand growth expected in the next two years.[12]
  - The variability margin indicator (VMI) was found to increase over the next 10 years. The WECC Resource Adequacy Assessment found a much greater risk in variability in the WECC in 2023 compared to 2022 due to increases in planned variable resources from roughly 20% to 27% until 2030. Although capacity is expected to increase by 95 GW by 2033, the energy from these (mostly) variable resources is expected to increase by 15 GW. [12]
- Some studies modeled that it would be expensive to rely on renewable overbuild to increase capacity and decrease the chances of loss-of-load events occurring. Instead, coordination with natural gas can allow for more reliable energy production.[7, 13]

Demand at Risk Hours (DRI) for WECC

2024-2025



2029-2033



Source: WECC

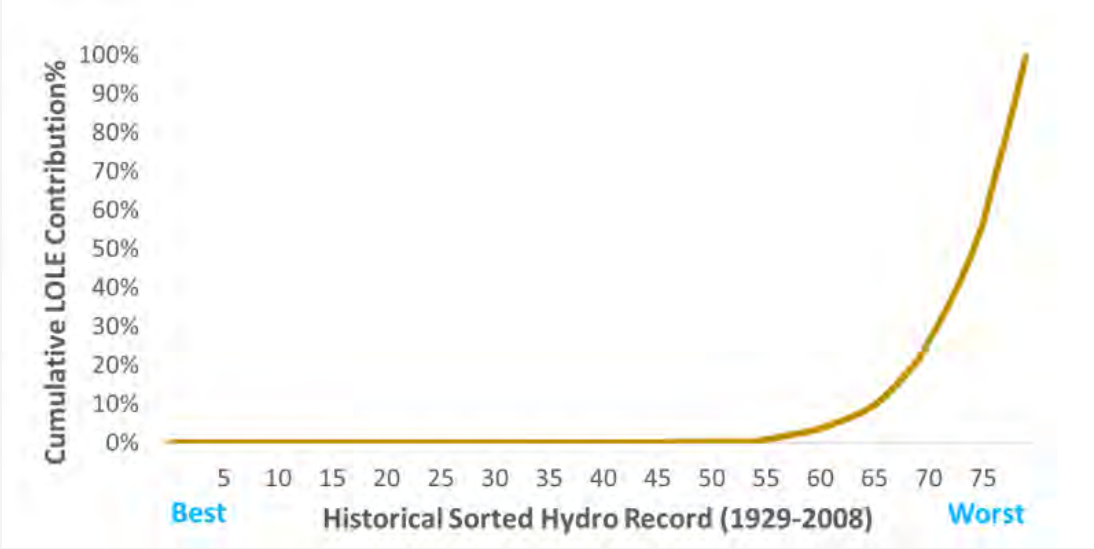
Increasingly unreliable hydropower due to droughts

- The impact of recent droughts in the NW on electricity generation is a warning of lower generation that could occur as drought conditions increase due to climate change
  - According to the EIA, the NW relies on hydropower generation for 43% of its electricity needs. With the region experiencing a drought, water supply at dams has reached less than 75% of normal levels in several counties this year.
  - Recent drought conditions have caused reservoirs to have limited capacity and have lowered hydropower generation in 2024 to 23% lower than the 10-year average.
  - Water at The Dalles Dam, an indicator of water supply conditions in the Columbia River, was 74% of the 30-year normal at the end of September 2024.
  - Reservoir storage at the end of September was at 48% of capacity in OR, 67% in WA, 76% in MT, and 60% in ID.

- It is projected that the worst 25% of hydro conditions would be responsible for nearly all loss of load events in the region. If drought conditions continue to lower hydro generation, the risk of reserve shortfall and number of loss-of-load events (LOLEs) will increase.[11, 13]

- As electrification occurs, low hydro conditions should cause fewer LOLEs (low solar and wind generation, on the other hand, will cause more), but they will still lead to some unreliability. There is a heightened risk for resource shortfall in the winter, as cold weather could cause extended periods of low hydro, solar, and wind generation coupled with high demand.[12,13]

Loss-of-load under various hydro conditions



Source: E3

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System Flexibility and Resilience

Natural gas can be used as a firm resource to improve reliability and resilience, although further planning is required to ensure the system is able to support peak demand.

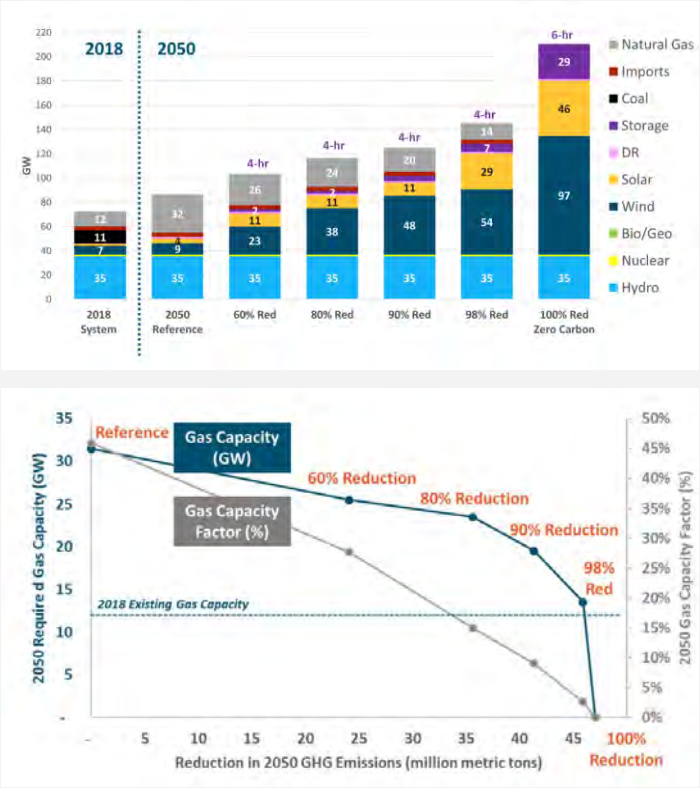
Natural gas will continue to be needed to provide grid flexibility even under deep decarbonization scenarios

- Across all modeled scenarios, renewables need to be accompanied by firm resources to serve the remaining incremental peak load. To ensure reliability, electricity cannot rely on a single system. **Even under scenarios with 98% decarbonization, natural gas is required to provide reliability, providing the bulk of firm capacity not met by variable renewables.** It is necessary to continue serving load and prevent load shedding.[13]

- **Natural gas is the most cost-effective solution to address capacity challenges, even under deep decarbonization.** It is a more cost-effective and reliable source than alternative options such as battery storage or pumped-hydro, especially during low variable generation and high demand events such as extreme cold events. It also was found to **be a more effective option than renewable overbuild**, which would be costly and could still be unreliable during extreme weather events.[13]

- **As electrification increases, it is modeled that natural gas will transition towards being primarily used to avoid loss-of-load events during low renewable generation events.** Gas will be used sparingly but will need high capacity to ensure reliability, leading to capacity factors as low as 3% under 98% decarbonization scenarios for natural gas plants. To create this high capacity, the addition of new gas generation capacity is necessary even under deep decarbonization. [13]

Generation portfolios and natural gas capacity for various stages of decarbonization

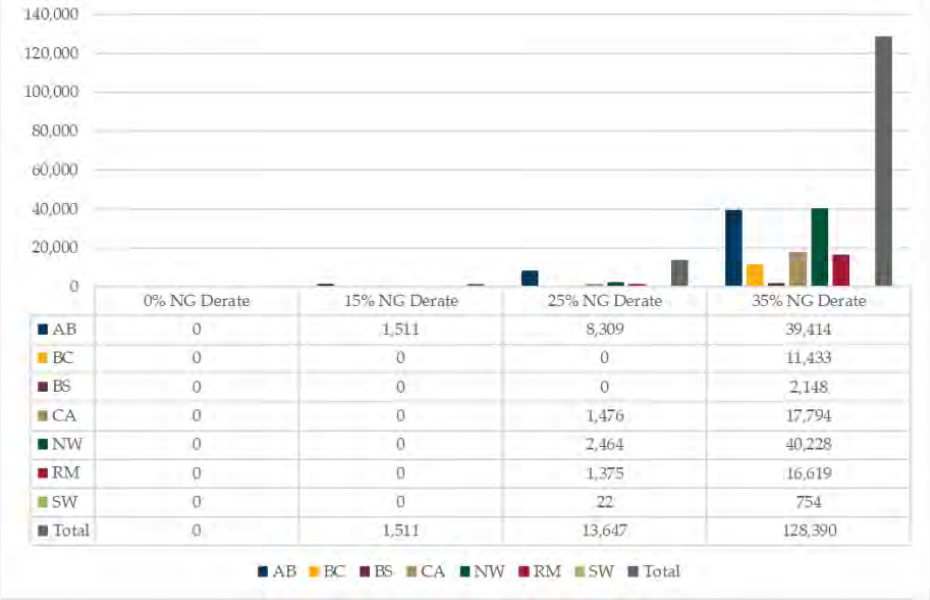


Source: E3

Natural gas generation will be a needed resource for ensuring system resilience and flexibility

- The reliability of the electric grid will continue to be dependent on the natural gas system during peak load events well into the future. The NW is the most vulnerable to loss of load. Southern WECC less suspectable.
  - WECC projecting out the 2022 Cold snap out to 2032 found that any loss of natural gas load would result in unserved load across the region.[16]
  - With all natural gas generators operating, there was no load shedding. However, when natural gas availability was reduced by 15%, 25%, and 35%, load shedding occurred in Alberta and other regions.[16]
  - Highest loss of load occurs in the NW at 40,228 MWh under a 35% natural gas derating scenario.[16]
  - While batteries helped to reduce unserved load hours, they were insufficient alone to mitigate natural gas derating.[16]
  - The study highlights the Western Interconnection's dependence on natural gas generation during extreme weather, even with the transition to renewable generation and energy storage.[16]

Total unserved load by region during simulated 2032 cold snap and NG Capacity Derating Scenarios (MWh)



	0% NG Derate	15% NG Derate	25% NG Derate	35% NG Derate
AB	0	1,511	8,309	39,414
BC	0	0	0	11,433
BS	0	0	0	2,148
CA	0	0	1,476	17,794
NW	0	0	2,464	40,228
RM	0	0	1,375	16,619
SW	0	0	22	754
Total	0	1,511	13,647	128,390

Sources: WECC

Increasing reliance on natural gas to meet peak electricity demand raises concerns about the adequacy of natural gas infrastructure - new vulnerabilities planners must consider

- The increasing use of natural gas for electricity generation, in response to the increasing deployment of renewables, raises concerns about whether the region has enough natural gas infrastructure to support the level of real-time flexibility needed to respond quickly to fluctuations in renewable energy supply. [7,12,13,14,16]
- In 2020, three Western states reported that growth in the use of renewable energy could add stress to the natural gas pipeline system if there is not enough pipeline capacity to transport the increased volumes of natural gas needed for power generation. [14]
    - **Average utilization of interstate pipelines in the Pacific Northwest has exceeded 95% in recent years** and is expected to grow during normal winters. [5, 14]
- **Disruptions in one system can cascade to the other**, as seen during Winter Storm Uri in Texas, where the **loss of electricity impacted natural gas production and distribution**, further exacerbating power outages.
- From 2010 to 2019, there were 1,800 reported disruptions on interstate natural gas transmission pipelines. These disruptions were varied in nature but highlight potential vulnerabilities in the natural gas system that need to be assessed. [14]
- The multi-day cold snap in January 2024 was aggravated by constraints in the natural gas system. A fiber optic cable failure at the Jackson Prairie Natural Gas Storage Facility led to reduced system inventory for gas companies in the NW and BC, prompting a curtailment watch. [2]

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Gas and Electric System Interdependence

To prepare for these changes to the system and avoid system shocks, there must be enhanced planning coordination between gas and electric systems.

Studies repeatedly highlight growing interdependence necessitates changes to current planning processes and commercial structures

- **Increasing interdependence can lead to failure cascades**: The electric grid relies on natural gas for reliable generation, especially during peak demand periods and when renewable energy output is low. This dependence is expected to grow as older thermal generators retire and are replaced with a mix of renewables and natural gas plants. However, the natural gas system itself relies on electricity for operation, particularly for powering compressors and other critical infrastructure. This creates a complex interdependence, where disruptions in one system can cascade into the other. [14]

- **Traditional metrics, such as Planning Reserve Margins, are insufficient for systems increasingly dependent on variable energy resources and just-in-time natural gas delivery.** To address this, gas and electric entities must collaboratively develop advanced planning tools and models. Key considerations include accounting for both peak and non-peak load hours, incorporating probabilistic assessments of energy risks like fuel supply limitations and extreme weather events, evaluating interregional transfer capabilities, and considering the operational flexibility of diverse resources, including natural gas generation, renewables, and energy storage. Moving to modeling platforms that co-optimize both the natural gas and electric systems is also recommended. [4,7,11,13]

- **Market misalignment:** The structure of gas and electricity markets can create barriers to efficient coordination. Differences in scheduling practices, trading requirements, and pricing structures can complicate gas procurement for power plants and hinder investment in new gas infrastructure. [14]
  - **Contracting structures** hinder power generators' ability to secure necessary pipeline capacity for reliable fuel supply. Power plants often need to quickly adjust their natural gas consumption based on fluctuating electricity demand. However, the lack of efficient **pricing mechanisms for intraday volumetric variability** makes it difficult for them to procure gas transportation services that meet this need. [14]
  - **Pipeline capacity expansion**: Conversely, the structure of competitive wholesale electricity markets does not adequately incentivize generators to invest in the capital-intensive expansion of gas transportation infrastructure which poses reliability risks. [14]

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Impact of Weather Events

Recent extreme weather events highlight the gaps in system planning that will limit gas and electric entities' ability to support higher demand with a changing resource portfolio.

Case study

January 2024 Cold-Snap

This extreme cold weather event provides an example of future system shocks that may occur if there is insufficient planning for extreme weather events.

- Near-record low temperatures across the PNW contributed to high demand requiring around 4900 MW of imports from the Southwest and Rockies during peak demand hours. Peak demand during this period was not exclusive to peak hours.[8, 9] These levels of high demand are an indicator of future unpredictable demand profiles that may be seen with increased extreme weather events.
- During the cold snap, low temperatures caused low hydro generation, which limited fuel supply and meant that utilities were not able to provide sufficient capacity to meet peak demand. [8, 9] This demonstrated the risk of heavy reliance on variable energy resources to provide capacity during moments of peak demand and highlighted the need for available dispatchable resources to avoid resource shortfall during these events.
- There was significant reliance on inter-regional imports to support the cold snap. Despite this, transmission was limited by a preplanned forced outage on the NV-OR border.[2] Congestion also caused outages and limited import capability. [2, 8, 9]

Observed load for 12 BAs during January 12 – 16 relative to peak loads during the last 10 years

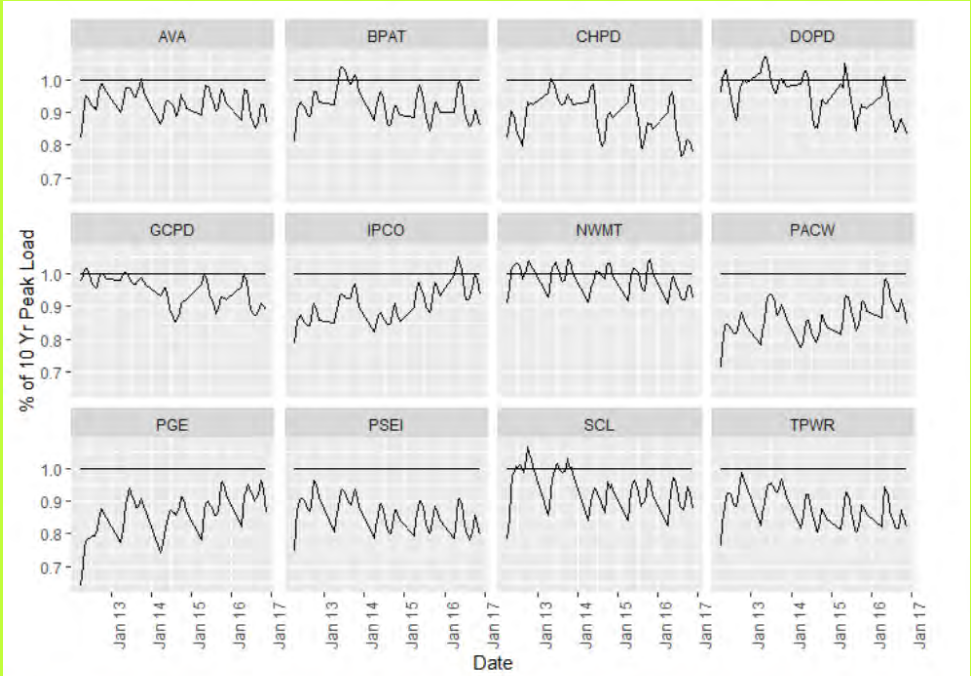

Figure 3 - The observed load for 12 BAs during January 12 – 16, 2024 (trend lines) relative to their peak loads (horizontal line at 1.0) during the winter for the last 10 years (Source: U.S. Energy Information Administration (EIA) - Real-time Operating Grid [select download data -> Balancing Authority/Region Files])

Source: WPP

During the event, peak demand was not exclusive to peak hours and came close to, or crossed, in some instances, the average winter peak loads for the last 10 years.

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outwit complexity™

NWGA
Northwest Gas Association

1914 Willamette Falls Drive, Suite 260
West Linn, Oregon 97068
t:503.344.6637 • www.nwga.org

May 7, 2025

Oregon Department of Energy, via OES comment portal

RE: Oregon Energy Strategy (OES) comments

To Whom It May Concern,

The Northwest Gas Association (NWGA) represents the natural gas utilities and transmission pipelines serving warmth and comfort to over 800,000 households and 86,000 businesses, institutions, and industries in Oregon. We respectfully submit the following feedback regarding development of the Oregon Energy Strategy (OES). Our comments are intended to enhance the OES process and to contribute to a comprehensive, responsible, and sustainable energy strategy for Oregon's future.

As the Oregon Department of Energy (ODOE) and stakeholders continue to work on the OES, two considerations must be paramount: 1) Energy decarbonization must be balanced with energy availability and energy affordability. Unreliable, unaffordable energy risks public support for decarbonized energy. 2) A successful strategy must incorporate a clear-eyed view of what is doable; of the current realities of the energy delivery system. Physics and economics will ultimately determine what can be accomplished.

NWGA has been engaged in an executive-led, regional gas-electric coordination initiative (Initiative) with the Pacific Northwest Utilities Conference Committee (PNUCC) over the past year. (PLEASE NOTE: these comments are NWGA's. We do not speak for PNUCC or its members.) One of the work streams of the Initiative was a 3rd Party review conducted by Guidehouse of nineteen different regional energy retrospective reports, forecasts and decarbonization studies.[1] The Guidehouse report is the analytical foundation for the following observations relating to regional energy adequacy and resilience.

The region is dangerously close to experiencing significant energy supply disruptions, which could lead to blackouts during peak demand events.

- Energy emergencies during extreme weather events are increasing in frequency and threatening reliability. The multi-day cold snap in January 2024 is the most recent in a string of examples.
- Meeting peak demand for energy during the multi-day cold snap in January 2024 required execution of emergency operations and procedures, careful

[1] PNUCC/NWGA, 2025 Guidehouse Literature Review

coordination between natural gas and electricity providers, customer response to energy conservation requests, and electricity imported from the Desert Southwest and the Rockies.

- The Western Power Pool (WPP) found peak load in many Balancing Authority Areas (BAA) during January 12-14, 2024 was consistently over historical peaks or at or near peak load for an extended period. The Pacific Northwest relied on nearly 5,000 MWs on average of electricity imports to maintain system reliability during the cold snap.[2]
- The region's electric and natural gas delivery systems operate at their limits during severe weather, with no excess capacity to serve increasing peak loads. When combined with unplanned infrastructure curtailments and depleted underground storage inventories, prolonged events test the system. While the Pacific Northwest has endured cold weather events by rapid emergency response coordination, these situations demonstrate how close the region is to exceeding deliverability capacity.[3]

Demand for energy in the Pacific Northwest is projected to surge.

- The Pacific Northwest Utilities Conference Committee (PNUCC) projected demand for electricity in the Pacific Northwest could grow by over 30% in the next decade. This surge of about 7,800 average megawatts equates to enough electricity to power seven cities the size of Seattle.. The increase in demand is attributed to the rapid expansion of data centers, high-tech manufacturing, and the trend toward electrification.
- PNUCC's 2025 Northwest Regional Forecast shows the region's utilities may need as much as 30 GW nameplate capacity of new resources in the next 10 years to meet this surge in demand.[4]
- The Western Electricity Coordinating Council's Assessment shows current resource plans across the entire Western Interconnection include 172 gigawatts of new generation capacity in the next ten years—more than double the generation capacity added in the last decade. Never has generation been built in the West at the rate called for in many current resource plans.[5]
- Overall demand for natural gas in the Pacific Northwest is forecasted to grow, as demand for electricity grows. However, existing pipeline capacity utilization is already maxed during peak events. Meeting this new energy demand can't be done without adding new delivery capacity including natural gas pipelines, electric transmission and storage in both systems.

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[2] Western Power Pool, Assessment of January 2024 Cold Weather Event
[3] NWGA, 2024 Northwest Gas Market Outlook
[4] PNUCC, 2025 Regional Forecast
[5] Western Electricity Coordinating Council, 2024 Western Assessment of Resource Adequacy

- Resource adequacy remains a critical risk—planned resources may be insufficient to meet future demand.

Regional assessments rely on capacity additions at risk of not being deployed

- Siloed planning in gas and electric systems has a detrimental effect on overall energy reliability.[6]
- Energy system failures are a public health issue. They also result in higher costs for consumers stemming from high market prices and the acquisition of emergency or unplanned capacity.[7] These unnecessary cost increases make investment in the energy transition even more expensive for ratepayers.
- According to WECC, between 2018 and 2023, approximately 76% of the proposed resource additions came online in the year scheduled. In 2023, only 53% of the new generation resources scheduled to come online that year actually came online; the rest were delayed or cancelled.
- Risks to planned resource additions include supply chain disruptions, uncertainty in the interconnection process, siting delays and increased costs. Each of those barriers introduces significant risks to reliability.
- Finally, in 2027 the Woodfibre LNG export facility in BC will come online and will require a significant amount of gas capacity, which will further strain the region's energy system capacity until any new contemplated capacity becomes available.[8]

The natural gas system delivers more than two thirds of the energy consumed during the coldest days of the year, as well as fueling a significant share of electricity generation at the same time. Because natural gas is the region's second-largest power source after hydro[9], its role will persist as electricity demand rises, and new generating resources are developed. The dependence on natural gas for power generation has never been higher[10], demanding more from the existing constrained pipeline capacity network and highlighting the need for adequate storage.

Increasing interdependence between natural gas and electricity providers demands greater awareness and enhanced coordination to mitigate risks to the region's energy system.[11] As demonstrated by the Gas-Electric Coordination Initiative, industry leaders recognize the need for enhanced coordination that emphasizes the importance of a shared understanding of regional energy planning and risk assessment.

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[6] PNUCC/NWGA, 2025 Guidehouse Literature Review, Page 8
[7] Joint Utility Comment Letter – Resource Adequacy, October 2024
[8] NWGA, 2024 Pacific Northwest Gas Market Outlook
[9] Northwest Power & Conservation Council, Power Supply
[10] U.S. Energy Information Administration, Oregon Natural Gas Consumption by End Use
[11] PNUCC/NWGA, 2025 Guidehouse Literature Review, Page 8

To ensure a resilient and sustainable energy future for the Pacific Northwest, stakeholders – including policymakers, utilities and customers – must collaborate on actionable solutions. This includes supporting clean energy projects at a realistic pace to balance affordability while also investing in the natural gas system. Here are a few specific suggestions to consider including in the OES:

- **Convene utility energy planners** – Identify similarities and differences between gas and electric planning (e.g. reserve margin vs design day; transmission and distribution system reliability and resilience criteria, etc.) and to identify action items that move us toward more integrated gas/electric planning (e.g. analyze a common scenario and compare notes for insights).
- **Convene stakeholders to develop solutions that accelerate energy infrastructure development** – Identify administrative and policy barriers that prevent or impede addressing energy system constraints. Propose changes that facilitate and expedite appropriate system growth. WECC warns if new resources are significantly delayed or cancelled, much of the Western Interconnection may not be resource-adequate over the next decade.
- **Conduct a literature review** – Identify common findings, differences and analytical gaps across a variety of energy-related studies and reports relevant to Oregon. Convene an expert stakeholder group to provide insight and guidance. Use the findings to identify administrative or policy actions that will contribute to improving energy adequacy.

Energy policy decisions must be made with great care. They shape not only the state's environmental future but also its economic health and the everyday lives of our residents. Fostering an equitable, reliable, and sustainable energy transition for Oregon will require balancing energy affordability, energy availability and energy decarbonization while adopting a sober-minded view of the capabilities of our energy delivery system.

Thank you for considering our comments and suggestions. We are committed to collaborating and contributing constructively to this important work.

Sincerely,

Dan S. Kirschner
Chief Executive Officer

Oregon Energy Strategy

Public Comment

Danelle Romain & Mike Freese, OFA, 4.8.25

Michael,

Thank you for the opportunity to comment here. Mike and I have been swamped with the Legislative Session, so unable to participate. But, based on what you sent, here are a couple of comments:

- The Oregon Fuels Association (OFA) is a big supporter of Oregon's Clean Fuels program. Our members have made huge investments in this program and are a big part of the transition to lower carbon fuels in the transportation sector, specifically from biodiesel to now renewable diesel and with ethanol blends in the gasoline space.
- We support reforming current permitting and siting of fuel production facilities, make it easier for existing fuel producers to expand their capabilities. Too often, there are NIMBY and other barriers to these facilities and upgrades.
- Generally, ODEQ does a great job of promoting the Clean Fuels Program. ODEQ Clean Fuels Program staff are knowledgeable and keeping up with industry trends and innovations. So, we want them to continue to be the lead here in any new policy development. However, there can be a disconnect between promoting clean fuels and permitting facilities that either store ore produce these fuels. This needs to be improved.
- There are people already in Oregon State Government who understand low carbon fuel utilization and application. There's no need for further research. Oregon has a big incentive for adoption of these fuels through the Climate Protection Program and Oregon Clean Fuels Program. So, we do not support ODOE research or other third party research here as it would be redundant and unnecessary. And we would be concerned with any specific recommendations from one state agency advocating for changes to regulations at another state agency.

Thank you,

-Danelle Romain & Mike Freese, Representing OFA

Oregon Energy Strategy

Public Comment

ORECA, Tucker Billman 5.9.25

Joni and ODOE team,

In addition to submitting joint comments with our fellow COUs, I wanted to share the below thoughts from myself as an advisory group member.

Thank you for the opportunity to submit these comments in response to the meeting of the Clean Electricity Generation & Transmission Policy Working Group.

A top-level concern that I have is the approach that has been taken by ODOE to develop a set list of potential policy pathways to be explored by the working group. It would appear that that ODOE has relied upon a PNNL study to develop these various pathways, rather than working with energy industry experts, locally elected officials, or land use professionals to methodically identify the major barriers that exist to developing reliable, clean, and affordable baseload resources and the transmission infrastructure necessary to move the electricity generated. The PNNL study should merely be a data point utilized to supplement on-the-ground expertise, not the other way around.

Certain policy recommendations are vague and in many cases do not specifically and measurably identify a problem that needs to be solved and explain how the proposal directly addresses the problem.

- **Transmission Authority:** There is one proposal to create a state entity that looks eerily similar to the Transmission Authority concept considered by the legislature in the 2025 session. There is no clear explanation of what specific barriers to transmission infrastructure development this solution seeks to address, how quickly this may solve the problem, and what should occur if the new agency never does solve the problem – or creates additional issues instead. The goal should be to reduce existing agency burden – not create new forms of it.
- **Regional Collaboration:** I would encourage the state to remain focused on Oregon policy and Oregon actions. A suggested policy proposal would direct the state to work regionally as a piece of the state energy strategy. While the policy decisions of surrounding states must be understood for Oregon to make the best decisions for our state, we cannot control those policy decisions. We should react to them, rather than seek to influence them. I would strongly discourage any discussion around day-ahead market decisions in the region.

- **HB 2021:** The proposals recommend extending HB 2021 clean energy provisions to new large loads. This is bad for business and will be detrimental to rural communities who may already struggle to attract new job creators. Extending HB 2021 clean energy provisions to new large loads all but guarantees ***there will be no new large loads coming to Oregon*.**
- **Need for Baseload Resources:** Finally – the strategy must be realistic and acknowledge that without maintaining the generation from the four Lower Snake River Dams ***and*** incorporating small modular nuclear reactors, Oregon will struggle mightily to meet future electricity demands. Without such acknowledgement, any strategy will be incomplete and the policy proposals will not adequately meet the needs of the future.

Please let me know if you have any questions!

Tucker

OREGON CITIZENS FOR

Energy Security

PO Box 375, Walterville, OR 97489

February 24, 2025

THE OREGON ENERGY STRATEGY ADVISORY GROUP,

Submitted via on line portal

RE: Proposed removal of Leaburg Dam - FERC Filing P-2496-287

Dear Advisory Group,

In January 2023 the EWEB board decided to remove the Leaburg Hydroelectric plant after deliberations.

Since that time, the Oregon Citizens for Energy Security (OCES), has examined the decision, its basis, and consequences.

Oregon Citizens for Energy Security made a filing with the Federal Energy Regulatory Commission (FERC) on December 12th, 2024. We attach that filing.

This letter focusses on the impact of the decision to Oregon, locally and statewide.

The need for a decision by EWEB was spurred by the end of the license period in 2040. Standards required for the construction of Dams have been progressively raised by the Federal Energy Regulatory Commission (FERC). The standards required are now so onerous that a major upgrade is required. EWEB had addressed this directly with FERC and asked if a lesser standard might be used. The basis for this question is not without merit, since Leaburg Dam itself is rated as a low hazard potential, but the canal and forebay as a high hazard potential by FEMA.

The anchoring tool as a basis for decision was a triple bottom line study. There are many questions over the data acquisition and usage which will not be explored in this context.

Examining the decision support package, however, showed that the impacts and effects of such a decision had not been fully explored or understood when the decision was

made. Indeed, more than a year after the decision, surveys were still being made to determine potential routes for roads and spoil after removal of the dam.

Looking further into the economics presented, both to the board and the public, the numbers have been shown in a way which is not a true indicator.

From the perspective of the State of Oregon it was noted that the decision support package did not detail any discussion which addressed the needs of Oregon. This meant that resiliency was not considered, nor any potential reduction in reliability.

Since much of Oregon is served by relatively few lines from the Bonneville Power Authority (BPA), it is very exposed to any damage to those lines. Tremendous effort is put in to assuring the best reliability, and that the latest technology is used. It remains an inescapable fact that an earthquake, wildfire, mechanical impact or bad actors could defeat and topple the lines.

The Department of Energy is expending great efforts, together with many others, in assembling a crucial resiliency plan. The plan identifies resources which might be needed subsequent to a major event.

The ice storm of January 13th, 2024 toppled power lines unexpectedly over quite a wide area. The efforts made by the utilities in reconnecting was impressive, especially in considering men and women working in a hostile weather environment. It was notable however, that the entire McKenzie Valley was without power, and yet line damage was minimal. The Leaburg Power Station (not generating since 2018), had it been functional, would have easily been able to supply the entire valley. Indeed, located as it is, it is uniquely located well to supply both EWEB and Lane Electric customers. It would save thousands of portable generators running for potentially long periods. This is increasingly important with the large numbers of electric cars now on the road. The resiliency plan identifies critical fuel supplies, but electric vehicles would be challenged.

In considering the strategic plan, the cost of keeping Leaburg Dam would appear not be as onerous as indicated by numbers submitted to the EWEB board. That is primarily since keeping the dam would in reality be to 2080 - the end of the next license period. The EWEB numbers attempt to amortize costs within the present license period now at 15 years away. Amortizing the costs over 55 years is much less painful. EWEB also indicates that they would anticipate some grant money coming. We examined the costs and allocation centers for the Klamath Dams and applied similar weightings for Leaburg. The high level cost to remove the Dam is $200MM. If the example of Klamath held, then Federal funds would account for $50MM and Oregon $50MM.

Costs of $100MM would likely be passed on to EWEB customers, and State residents would pay taxes for the Federal and State funding. The question is why, when a viable buyer approached EWEB and was turned away without due diligence. Their acquisition to continue running the dam would have been cost neutral for the Federal government and State government.

The impact of removing the dam to the local economy was not a major part of the EWEB decision. Contributions to the “People” part of the triple bottom line were extensively taken some 40 miles away from the area impacted.

Pressure for a critical examination of the EWEB decision by the State from a more strategic perspective is mounting. Although EWEB assured all that no work would be done until many years from now, there are indications that is not so. We have had indications that the canal could be filled in very soon, compromising any ability to retain the generating plant operating.

Your most urgent attention is sought to retain Leaburg Hydro Electric plant as a significant generator, especially in time of Emergency - great reliability, and short lines.

Sincerely,

Capt. Robert Weeks

President

cc. rep Darin Harbick. Oregon State Legislature

OREGON CITIZENS FOR

Energy Security

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Oregon Department of Energy
Salem, Oregon
June 19, 2025

Oregon's Energy Strategy to include Offshore Wind Generation

Offshore wind energy along the U.S. West Coast was not an option until floating wind technologies were developed—an innovation adapted from proven floating oil and gas platforms.

Initial interest focused heavily on California driven by its; large energy market, potential for economies of scale, and long-term growth opportunities. For over a decade, the California Energy Commission actively promoted the merits of offshore wind, well before the federal government began to engage. Following California's successful offshore wind lease auctions, developers' interests naturally expanded northward to Oregon, drawn by its superior wind resources.

However, that early enthusiasm for Oregon began to wane due to several compounding challenges. Key obstacles included:

- **Lack of Political Support:** Unlike east coast states, Oregon's governors did not champion offshore wind, leaving the sector without strong state-level backing.
- **Transmission Constraints:** Delivering power to northern load centers depends on the Bonneville Power Administration (BPA), a federally directed entity operating on different planning timelines.
- **Community Resistance:** Some coastal communities expressed opposition, and a few coastal tribes showed concerns, partly influenced by misinformation campaigns from groups such as the Midwater Trawlers.
- **Broader Economic Headwinds:** Global supply chain disruptions from the Russia-Ukraine war, rising interest rates, and shifts in federal energy priorities under the new administration increased the perceived investment risks.

Collectively, these factors cooled developer interest in Oregon's offshore wind lease opportunities. Yet one constant remains: **Oregon's world-class wind resources**. If properly harnessed, offshore wind could significantly contribute to Oregon's and the broader Pacific Northwest's future energy mix.

If Oregon aims to participate in the electrotech revolution—transforming energy systems from fossil fuel dependency to an electricity-based framework—it will require bold infrastructure choices. The rapid growth of data centers, driven by demand for artificial intelligence (AI) in national security, manufacturing, transportation, healthcare, and education, will dramatically increase electricity needs.

Where will this power come from?
Sourcing electricity from out-of-state will likely require navigating complex negotiations over visually intrusive transmission corridors, while outsourcing job opportunities and economic benefits. By contrast, in-state generation—leveraging a mix of energy sources, including offshore wind—can support local economies and ensure more secure, scalable energy access.

Given these considerations, **offshore wind should be actively evaluated within Oregon's broader and future energy strategy**. While the current political environment may not

favor floating offshore wind, it is prudent to plan for future shifts. Fossil fuels are finite and prone to price volatility. Regions that rely exclusively on unstable energy sources risk undermining the resilience of their emerging electrotech industries.

Privately financed offshore wind projects require long lead times using various points in the development period to verify earlier assumptions and to ensure positive returns on investment . This preparatory period can be used to:

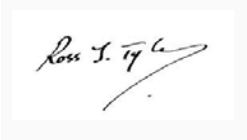
- **Validate environmental and technical data** through marine research buoys.
- **Engage with coastal communities and tribes, environmental organizations, and government agencies** to build trust and transparency.
- **Monitor and integrate technological advancements** that can lower project costs.

Supportive policies can also play a role. For example, executive actions such as President Trump's order to expand LNG exports could drive investment in U.S.-flagged, U.S.-built LNG vessels. Retooling U.S. shipyards for this purpose could, in turn, reduce the cost of producing floating wind platforms. Lower component costs from the outset would enable the development of smaller wind farms, for example, 500 MW each. This approach would create more competitive opportunities for projects in smaller sea areas and thereby support a phased growth schedule to meet Oregon's evolving energy demands. Developing eight sites of 500 MW each, spread over a number of years, would provide a total of 4 GW of new generation capacity for the state. Additionally, distributing smaller sites along Oregon's coast with adequate in between spacing could improve compatibility with other ocean users.

Uncertainty in today's energy policies and markets should not deter Oregon from exploring offshore wind. The northern winds will blow, and Oregon will need reliable, clean power. Offshore wind promises homegrown energy, climate benefits, and job creation—all financed by private capital, sparing Oregon and its citizens any risk.

Oregon should treat this opportunity not as a gamble, but as a strategic investment in its future.

Sincerely,



Ross Tyler
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Oregon Energy Strategy

Public Comment

Jana Jarvis, Oregon Trucking Association, 5.9.25

Jillian,

I appreciate being included in the TE workgroup and have some comments to the questions you ask below. This is not a comprehensive list of my ideas and concerns but will direct my thoughts to the questions you asked.

1) Additional suggestions:

    a. Vehicle electrification:

        i. ODOE needs to conduct a thorough analysis of the power demands and grid capacity required to move the commercial vehicle industry to electrification. There are competing analysis on the power required to charge small, medium and large fleets but it is certainly true that there is not enough grid capacity today to meet these needs. Commercial vehicles need rates that are not dependent on time of day charging and they need fast chargers located conveniently in order to be able to convert. Even with those capacities added, there needs to be an analysis of what the additional costs will be to the freight industry to move to electric. This analysis needs to go beyond a cursory review of power and charger needs – it needs to be inclusive of the inefficiencies that BEV trucks bring. More trucks to carry the same amount of product, more frequent down time and lost efficiency of frequent charging versus "filling up a truck", additional cost of equipment and charging infrastructure. For this strategy to work, Oregon-based carriers need to be able to compete with carriers not subject to the Advanced Clean Truck rule, so these costs need to be understood up front.

        ii. State funding support should not be burdened on the freight industry being regulated. If the goal of moving to electric to address climate and health issues, then this cost should be borne by those that benefit, i.e. the general public. Funding support should come from Oregon's general fund rather than new transportation taxes.

        iii. ODOE should develop a workable plan for the transition that the utilities can meet. Many of the trucking companies that have tried to add a ZEV truck to their fleet find unrealistic timelines for the installation of the chargers – and even more issues with power availability. The statewide assessment mentioned should be a first order of business for ODOE.

    b. Grid Integration:

i. Understanding the infrastructure needed to accomplish this goal should be one of the first pieces of analysis that ODOE performs. This analysis should be based on input from Oregon-based carriers and their projected needs to meet these goals, not on an arbitrary timeline where the regulation is enacted prior to infrastructure readiness.

ii. Utilities need to be open about grid capacity availability and what will be required to accomplish this goal. The Forest Park project is indicative of the issues utilities will face when trying to add capacity to meet these needs.

c. VMT Reduction:

i. There needs to be a general understanding that electric trucks cannot haul the same amount of product that internal-combustion engines haul. The batteries are heavier and reduce the payload so there will be at minimum an additional 25% increase in the number of commercial vehicles to meet today's freight needs.

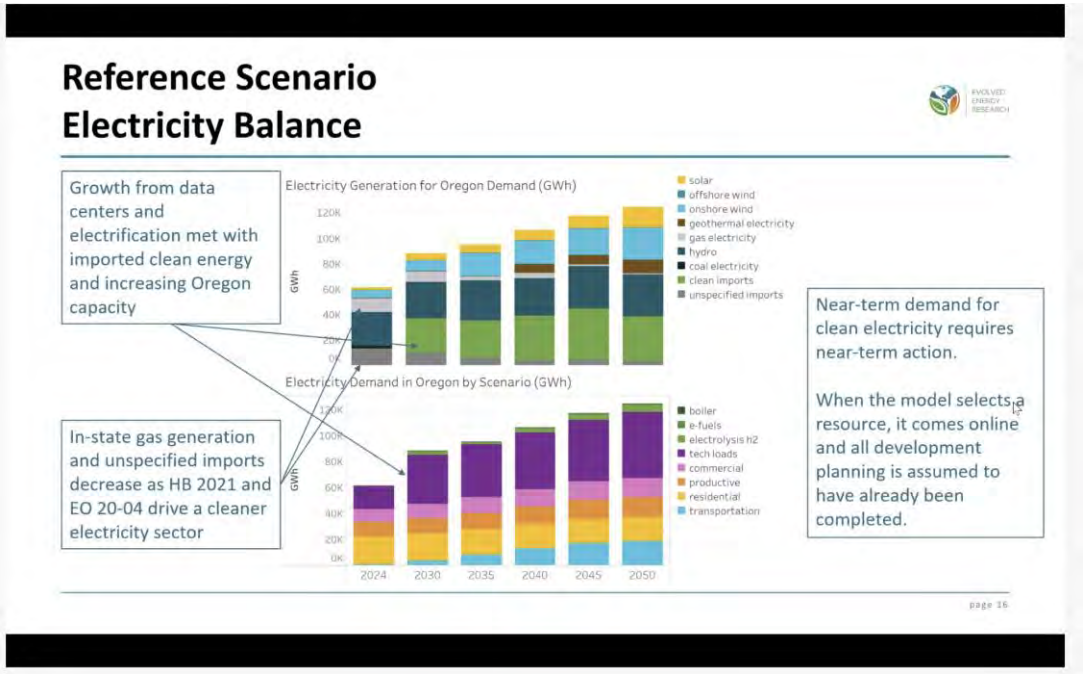
ii. VMT reduction in the freight sector is best accomplished by economic downturns. This should NOT be the goal for commercial vehicles.

2) This is a cursory list of trucking industry concerns when discussing electrification of the freight sector. New technology is being tested, such as hydrogen trucks that may prove to be a better solution than battery electric for the freight sector. However, these products are years off, so ODOE is in the position of offering more practical solutions to transitioning the industry than other government agencies. Hopefully, they will use their expertise to do just that.

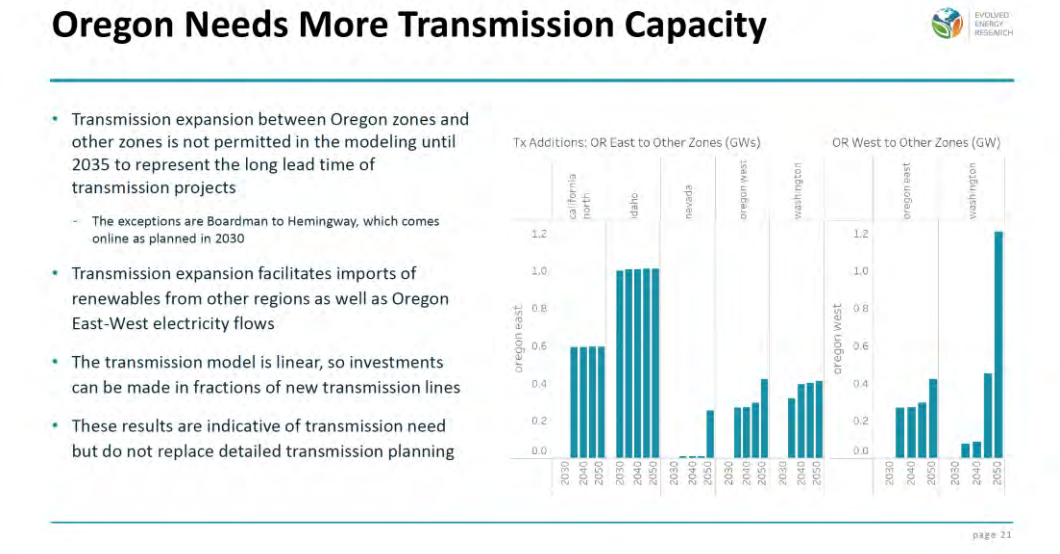
Oregon Energy Strategy Caucus

Questions, Comments, Requests on Modelling Results

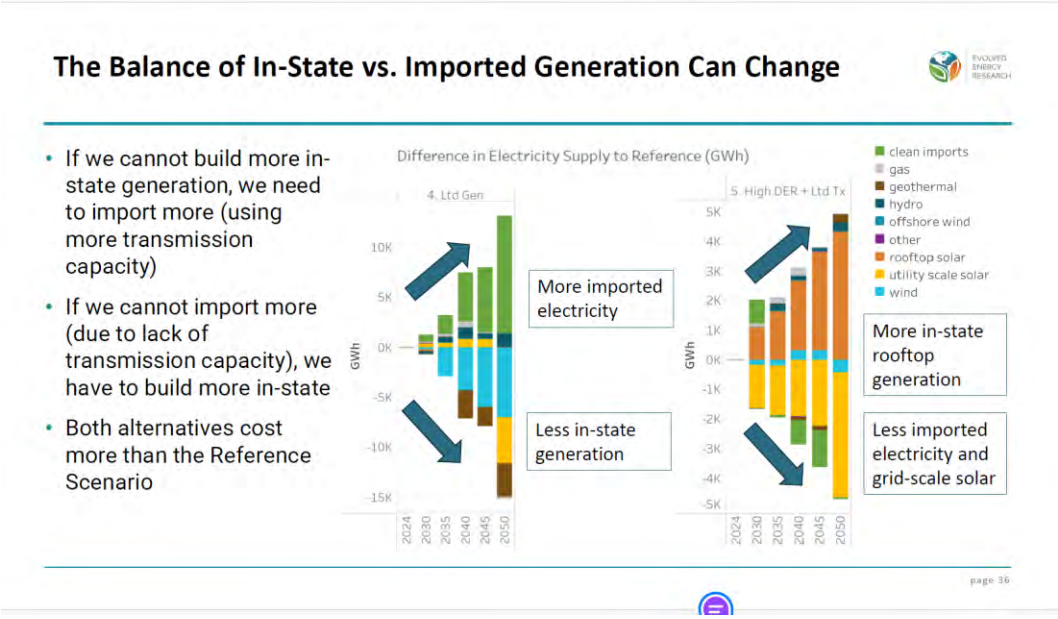
1. Can we get the data behind some of these charts, so we can do simple calculations to determine 2050 targets or shares, and technology growth rates.
2. How dependent are the Clean Imports on new transmission capacity, and of the new capacity what share is GETs vs reconductoring vs new right of way?



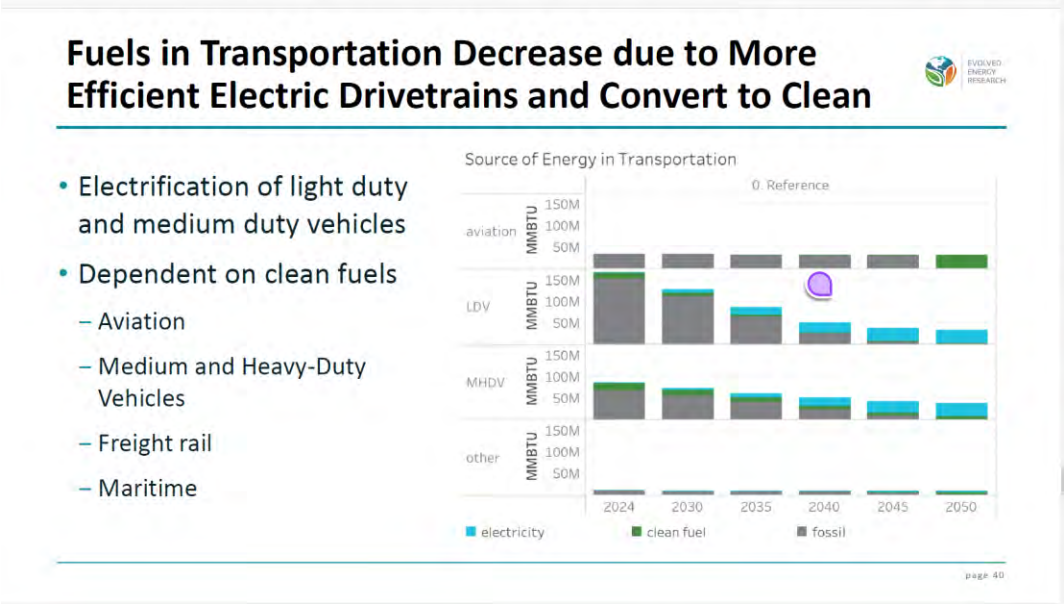
3. The slide below shows generalized expansion pathways for new transmission capacity.
   Is the 2030 Idaho build the Boardman to Hemmingway project? To what degree are these high-value Tx corridors for near term development? Which are GETs, vs reconductoring vs new right of way?



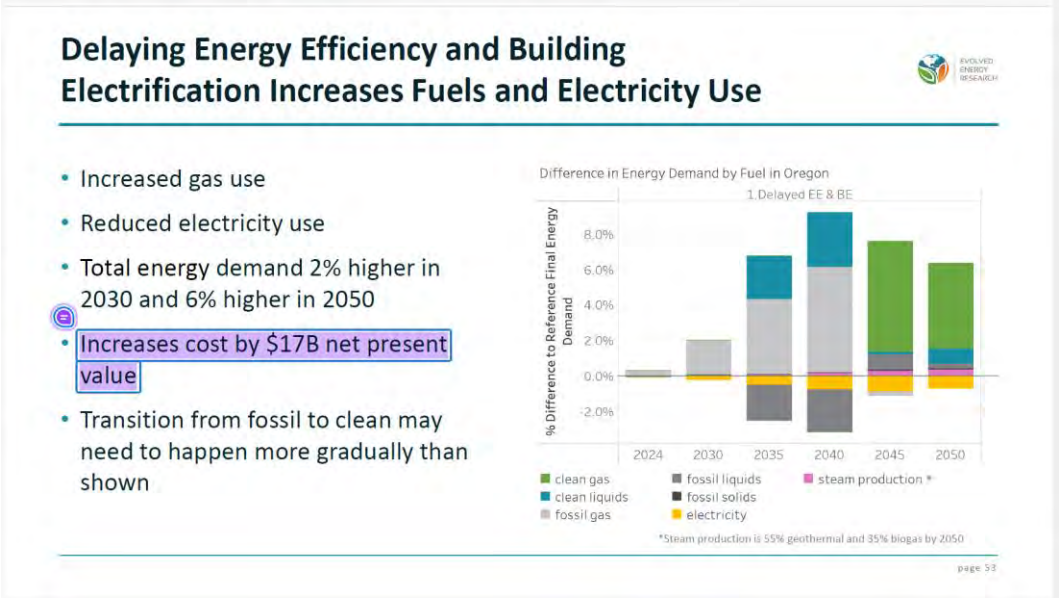
4. In the High DER case: Are the avoided Transmission costs included in the net scenario cost of about $7B in NPV?



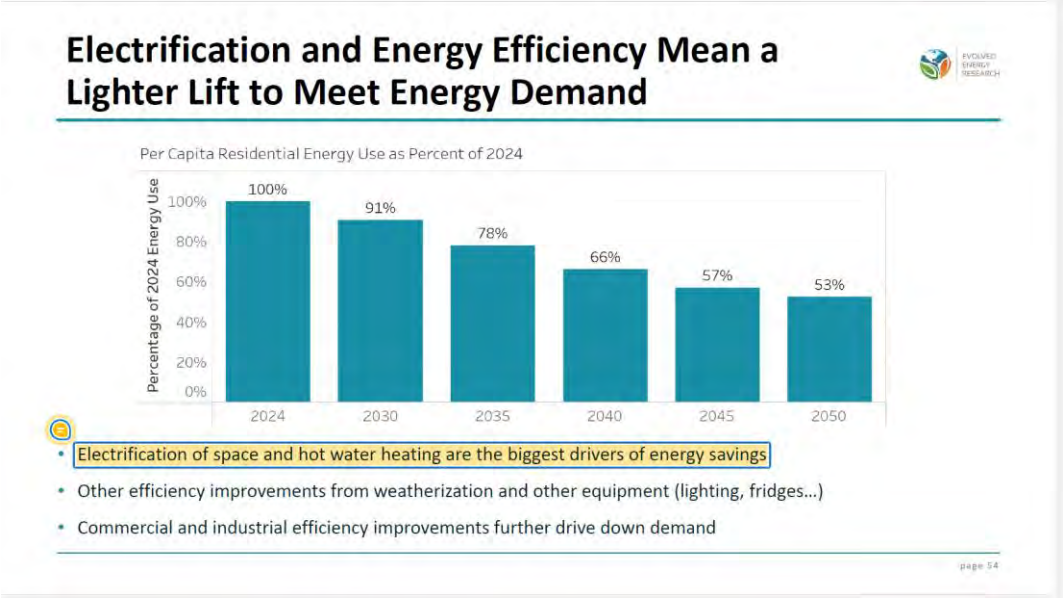
5. Ramp up from 0 to 15 million MMBTU is unrealistic. Using growth rate constraint on the clean gas would smooth out this transition. Can we get some new runs?



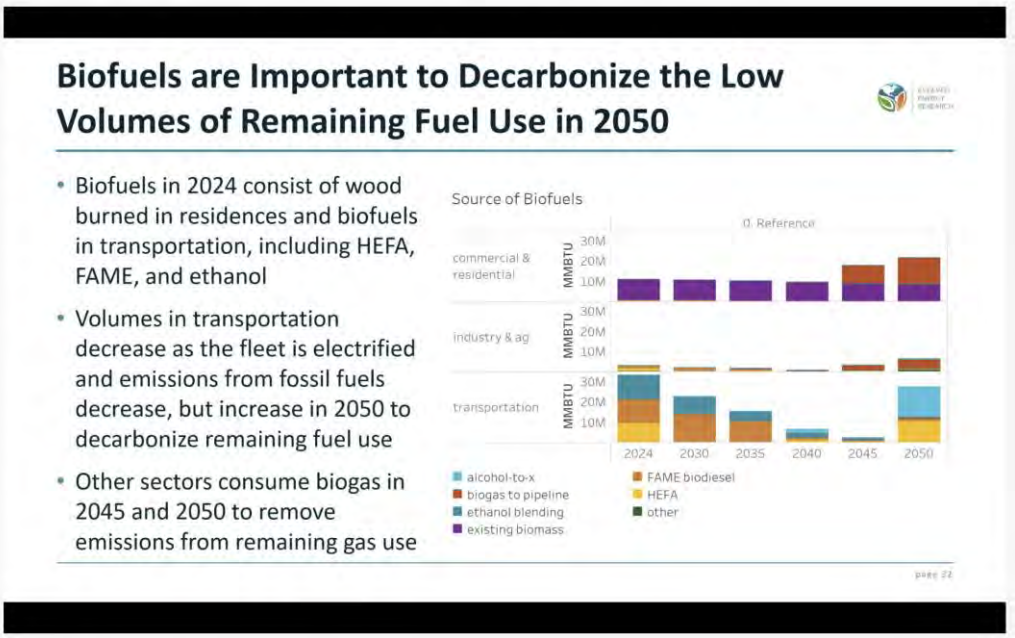
6. The chart below shows a Fossil Gas to Clean Gas transition that is to too abrupt. Using growth rate constraint on the clean gas would smooth out this transition. Can we get some new runs?



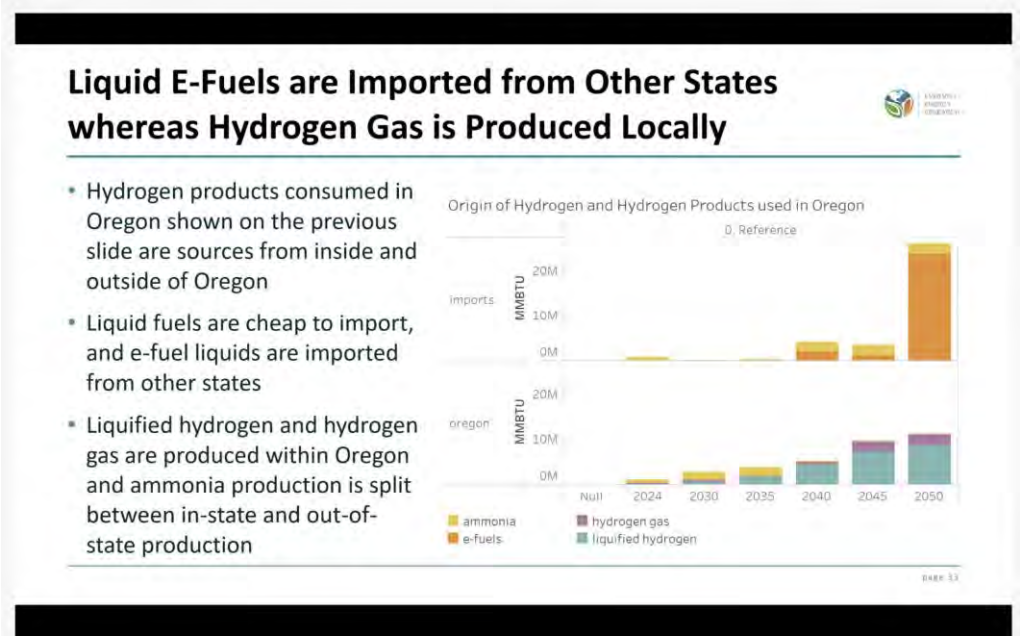
7. What are the relative shares of electrification to weatherization in the Residential sector, and what sector-specific policies are needed? Same for Commercial and Industrial (by IND subsector if available).



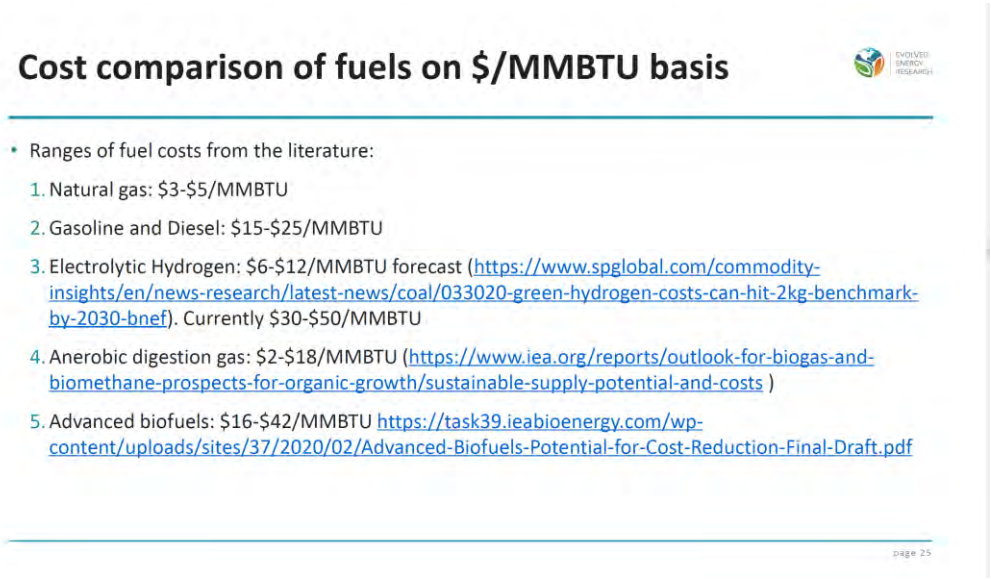
8. What is alcohol to x? Is it biomass based on H2 based? The sudden spike in consumption in 2050 is not realsitic. Some ramp is needed.



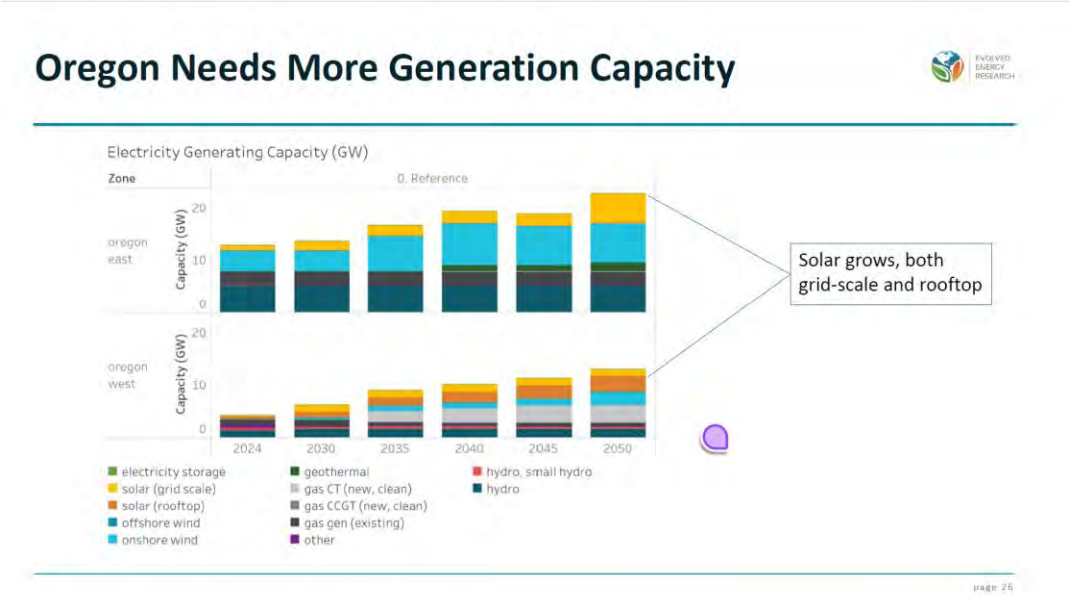
9. Results indicate that most hydrogen production and use is based on Oregon sources, while e-fuels and ammonia are imported. Where is the hydrogen being used?



10. What happens if the Hydrogen cost projections assumed below are not met?

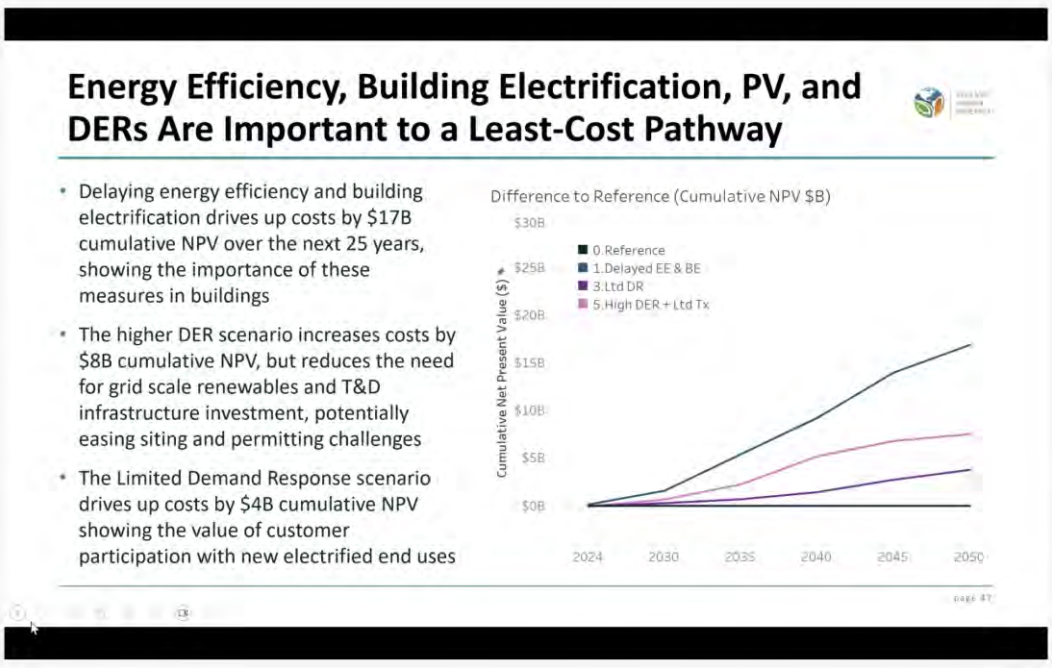


11. The chart below shows new generation needs in East and West Oregon. *Can you provide the data behind some of these charts, so we can do simple calculations to determine 2050 targets or shares, and technology growth rates.*

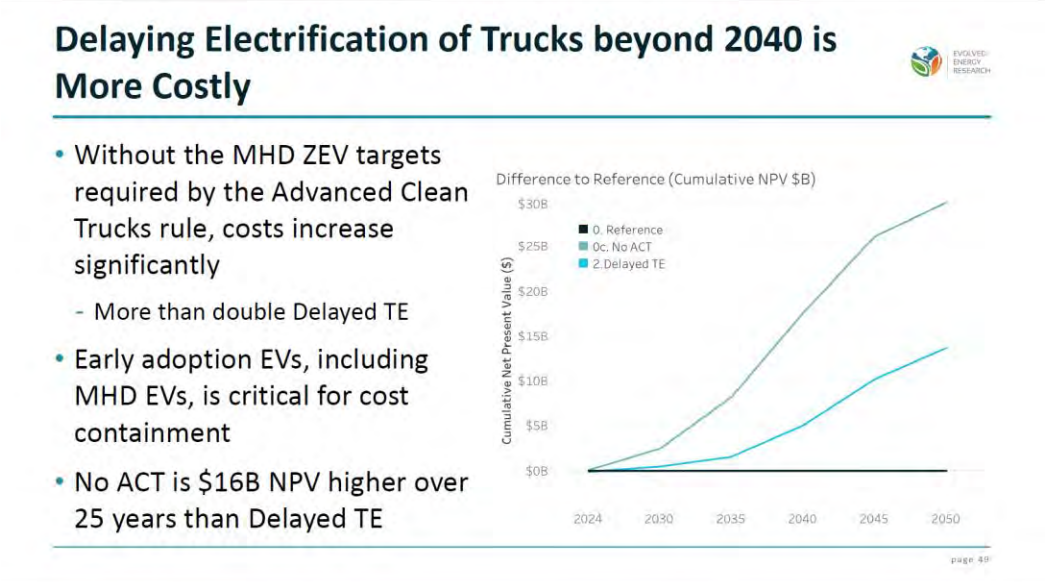


12. The chart below indicates that the societal breakeven value for incentives to speed building electrification is $17B in NPV between now and 2050; $4B for incentivizing the Reference amount of DERs. However, adding more DERs with limited new transmission increased system

cost by $8B. Is this value a good indicator of the value of new transmission capacity?



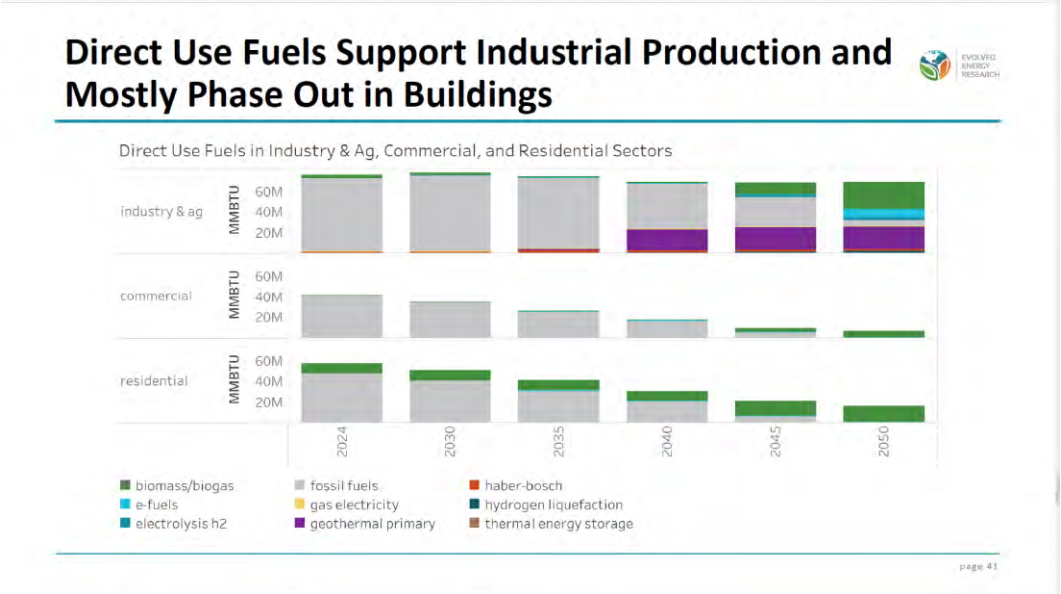
13. The cost of the No ACT scenario is $30B, and a question was raised in the Plenary session regarding how the different characteristics of heavy duty EVs were included in the modelling. The question focused on Class 7&8 heavy trucks. Please clarify whether or not, and assuming so – how, the Model accounted for the differences between EV models and their ICE equivalents in terms of vehicle capacity and range. It's not clear from the Assumptions document.



3.2. *Transportation: Key Assumptions*

MDV and HDV sales shares – post 2035	Post 2035: • 100% zero emission vehicle (ZEV) sales by 2040 for Class 2b-8 vehicles (excluding buses) • For long haul: 65% battery electric vehicles (BEVs)/35% hydrogen fuel cell vehicles (FCEVs) • All other classes: 100% electric
Transit Buses future	100% ZEV sales by 2036; 75% BEV / 25% FCEV sales by 2040 TIGHGER 2023 Biennial Zero Emissions Vehicle Report
School Buses future	100% BEV sales by 2036 (100% electric)
Rail future	20% electric, 70% hydrogen by 2050 (logistic growth starting in 2030)
Maritime Shipping future	• Domestic: 10% electric, 20% H2, 50% ammonia by 2050 (logistic growth starting in 2030)

14. Is it correct that the biomass/biogas category is currently modeled as having zero CO2 emissions but a small amount of combustion related CH4 and N2O emissions. *Would it be possible to get a sensitivity run that used a proxy carbon intensity for biofuels.*



DecisionWare Group
Policy Analysis for
Energy, Economy and Environment

May 9, 2025

Edith Bayer,
Oregon Department of Energy
energy.strategy@energy.Oregon.gov

Subject: Energy Policy Workshop Comments

My name is Dr. Pat DeLaquil. I am an energy system modeler and climate policy analyst, and I organize with **MCAT** (Mobilizing Climate Action Together), a community of volunteers working on advancing a healthy climate and a green economy for future generations.

I am submitting these initial comments as a member of the both the Building Efficiency, Electrification, and DERs Policy Working Group and the Clean Electricity Generation and Transmission Policy Working Group.

Clean Electricity Generation and Transmission Policy Recommendations

For this working group, the process of identifying Issue Statements, followed by Policy Strategies followed by Proposed Policy Recommendations for discussions purposes – was not fully absorbed. This resulted in a lot of misunderstanding and not a very meaningful discussion of how the policy might be implemented, what concerns that might raise, what guardrails might be needed, etc., Surprisingly, there was not even agreement that increasing collaboration with neighboring states and regional entities was a good idea. However, in general, I am very supportive of the proposed policy recommendations, especially the goal to: Facilitate responsible development of electricity infrastructure in Oregon. The need for more regional collaboration is only going to grow, and Oregon needs a state entity to spur planning and investments that will benefit Oregon ratepayers while supporting regional development of the Western area grid. We need to speed up the project development process while maintaining sound land use and permitting processes. A statewide land-use inventory, with new sub-categories to the current land classification would provide landowners and renewable energy project developers with useful information needed to achieve more successful projects with community and economic benefits.

Continued funding to promote resilience for local communities should focus on a program and funding mechanism to create *community benefit and resilience project plans* based on meaningful community engagement. This program should include public financing options, shared risk development models, and new tariff options for resilience-based resources.

The cross-cutting recommendation to integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels seems inconsistent with some of the policy recommendations in the Building Efficiency and Electrification policy area, as discussed below.

Building Efficiency and Electrification Policy Recommendations

Given the modelling premises regarding buildings electrification targets, and the modelling result that a 10-year delay in these targets will cost Oregonians an extra $17 billion, I expected to see clearer policy recommendations such as: Ban (or eliminate all incentives for) expansion of the existing gas distribution

network, in addition to, eliminating incentives for new natural gas space and water heating equipment. I believe ODOE should be clear that gas for space and water heating is not part of the long-term energy strategy, which means that most gas demand is going to be replaced by electricity and only the harder to electrify needs will be converted to "clean gas." This means that we need more than integrated electric and natural gas resource planning. ODOE and the Public Utilities Commission should cooperate to develop a long-term plan for selective electrification leading to the dismantling our current gas infrastructure in a planned and deliberate manner so as not to burden last-to-leave customers with high system costs.

Only within that context does the Building Efficiency policy recommendation 1.2 even make sense, and I would require that the alternate compliance pathway achieve equivalent GHG emission reductions as electrification.

DER Policy Recommendations

I strongly support the DER Policy Recommendations to:

- Create a state-based catalogue of DR ready devices installed through existing incentive programs and allow additional incentives to be paid for DR ready devices.
- Develop / adopt equipment standards requiring DR readiness for heat pumps, EV chargers and other consumer energy related devices.
- Direct investor-owned electric utilities to develop programs that demonstrate the value of distributed energy resources.

There's a lot more value in the DER space than most people realize. Our current distribution systems have a utilization rate of about 40%, so there's a lot of untapped capacity that we could utilize. New smart panels and devices will soon be providing potential control points that could allow our electric utilities to capture these savings and help keep rates low. I hope the utilities will decide to lead this transition as they have the technical capacity and expertise to compile and utilize the millions of data points such a control system involves.

I have concerns over the policy recommendation to consider changes to Oregon net metering laws. Much better data on the grid benefits of rooftop solar and battery storage, as well as its energy resilience benefits to rural communities, is needed before changes to the law should be considered. I would first recommend study to determine the locational and time-of use benefits before changing the current net metered valuation of rooftop solar.

Thank you for providing this opportunity to comment. We look forward to participating in the public workshops to come.

Dr. Pat DeLaquil
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May 9, 2025

Oregon Energy Strategy: Straw Proposal from Building Electrification, Energy Efficiency, and Distributed Energy Resources Policy Working Group

Comments by Portland General Electric (PGE)

PGE is generally supportive of the proposed policy recommendations, particularly those that address affordability. Customers have growing concern as utility rates have increased in recent years. We encourage strategies that lower long-term costs to customers while enabling reliable and affordable access to energy. to be included in the Oregon Energy Strategy and leveraged to inform the 2027 legislative session. However, there are some clarifications that PGE sees as useful to ensure state agency action serves to complement the roles and responsibilities of existing market actors.

- PGE observes that funding no-cost incentives and deferred maintenance for priority populations necessitates a trade-off between immediate cost per household and the breadth of customer participation. It is critical to design programs that include both upfront support for energy burdened customers and low-cost financing options that reduce bills over time for others. We request that ODOE consider merging recommendations 1 and 2 to put forth solutions that may scale to meet the need. For example, if the policy objectives are two-fold, to provide home comfort and promote affordability, then focusing on replacement of electric resistance heat by providing both no-interest loans and incentives will allow for scarce funding to be spread over more participants. Otherwise, there are likely unintended consequences, the result of proposed intervention, that increase customer bills.

- PGE supports a grant program for CAP agencies and other community partners; however, such a program should first consider how public purpose charge (PPC) funding is currently allocated and seek to evolve the administration and deployment of those dollars so as not to build a parallel and potentially duplicative process. For example, providing CAP agencies with more administrative dollars does not necessarily translate into increased participation and could place upward pressure on rates if not aligned with affordability outcomes. We recommend linking administrative flexibility to measurable customer bill savings or reduced energy burden. For this reason, the allocation of administration, delivery and incentives should be carefully considered.

- Demand response (DR)-ready devices play a crucial role in providing grid services. PGE currently designs and funds flexible program management and works with regional actors,

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like NEEA, to further end-use load flexibility. In this manner cataloging of DR-ready devices is already underway and PGE does not see it as within the purview of Energy Trust of Oregon to serve in this role without the contribution of utilities and NEEA. Also, with respect to recommendations 1 and 4, PGE favors the inclusion of CTA-2045 in state efficiency standards.

- PGE is supportive of demand response capacity targets, tariffs for reimbursement for grid services and development of time of use rates. Tariffs and demand response compensation structures should be designed with customer affordability as a guiding principle, ensuring participants see real, timely bill impacts from program participation. PGE does question the proposed NEM threshold of 200kw from 25kw as it isn't clear how ODOE arrived at this capacity. Regardless, PGE favors coupling of solar and battery storage. Changes to Oregon net metering laws should also consider the bill reduction potential for low- and moderate-income customers and avoid shifts that inadvertently increase cost-shifting to non-participants.

Outside the scope of Policy Recommendations:

- As Oregon develops these new strategies, we recommend conducting a regular affordability impact assessment of major programs and policy shifts. This should include tracking average energy burden, low-income participation rates, and long-term cost curves for customers across income levels. Customer rate impact must remain central as we pursue ambitious decarbonization.
- PGE partners with Energy Trust to deliver incentives and works to identify co-deployment opportunities. These efforts can meet with a variety of constraints including fuel-switch, claimed savings, and utility funder allocation. To address these constraints PGE favors a revision to gas utility funded energy efficiency to fund electrification and avoided carbon.
- Where and when relevant PGE favors a holistic approach to energy wallet such that programs may be sequenced and bundled to ensure that beneficial electrification, from heat pumps and electric vehicles, is offset by solar and storage adoption, and affords both affordability and clean energy adoption. Coordination with utilities to ensure distribution system readiness will be necessary.

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ODOE Questions Posed on Policy Recommendations:

- Which of these would make the biggest positive impact if it succeeded?
- Do any of these create concern for you or the organization you represent?
- Which of these might create a domino effect of progress if addressed first?
- Do you anticipate any unintended consequences or implications for affordability and/or reliability?
- Which of these needs to happen now vs. later?
- Is there a window of opportunity for any of these items?
- Which of these can we realistically accomplish with current resources?

Policy Recommendation 1 (high level): Reduce the carbon intensity of residential and small commercial buildings while maintaining affordability and energy system resilience.

Potential Policy Actions:

1. Develop a revolving loan fund to support low interest loans for heat pumps, heat pump water heaters, and weatherization for households that are not income qualified. Support on-bill financing options. Support applications to USDA to fund programs in COU territories.
2. Establish an alternate-pathway compliance path in residential building code that requires increased envelope efficiency measures if electric resistance or natural gas is used for primary space or water heating systems.
3. Eliminate incentives for new natural gas space and water heating equipment.
4. Review and advance state equipment efficiency standards for primary space and water heating systems.

Policy Recommendation 2 (high level): Improve the energy efficiency and resilience of existing residential buildings. Prioritize programs to serve Oregon's communities with the greatest needs.

Potential Policy Actions:

1. Transition existing heat pump incentive programs to primarily serve low- and moderate-income households. Increase the incentives to cover a higher share of total costs. Prioritize funding for homes with electric resistance or fossil fuel primary heating systems. (Consider an exception for utility incremental costs-based programs to continue incentivizing highly efficient equipment selection.)
2. Establish grant program with flexible funding for statewide efficiency, weatherization and related deferred maintenance measures. Eligible entities should include CAP agencies and other community partners that provide energy-related services. Consider increased revenues from public purpose charge as a potential source of funding in IOU service

territories. Allow direct contribution to community organizations from funding partners such as data centers.

Additional Considerations:

Allow higher admin costs for CAP agencies and other community partners to implement programs to support program delivery costs which are often higher when serving disadvantaged communities, rural communities and when conducting quality assurance reviews (key to ensure energy savings).

Policy Recommendation 3 (high level): Evaluate and promote opportunities to Improve efficiency, transition to low carbon fuels, and / or electrify large commercial and industrial thermal processes.

Potential Policy Actions:

1. Recommend a study to identify leading energy efficiency and or fuel switching opportunities, including low carbon fuels and electrification, in large commercial and industrial sectors.
2. Establish a research, development and demonstration grant program to support electrification and clean fuel technology solutions for hard to electrify industrial and large commercial applications. Funding for this program could be supported by gas utility public purpose charge funds to support implementation of pilot projects completed in cooperation with Gas utilities.

Additional Considerations:

Develop a framework for data centers to be able to contribute to local CBOs or CAP agencies that administer efficiency, weatherization, and deferred maintenance programs (see policy action 1.2 above).

Policy Recommendation 4 (high level): Support adoption of distributed energy resources to advance energy resilience, enable demand response programs, and provide grid services and financial benefits for utilities and customers.

1. Direct ODOE, ODOT and Energy Trust of Oregon to catalogue DR ready devices installed through existing incentive programs. Allow additional incentives to be paid for DR ready devices. Develop / adopt equipment standards requiring DR readiness for heat pumps, EV chargers and other consumer energy related devices.

Portland General Electric
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portlandgeneral.com

2. Direct investor-owned electric utilities to develop programs that demonstrate the value of distributed energy resources. Programs should include demand response capacity targets, tariffs for reimbursement of grid services provided by customer sited DERs, and development of opt-out time-of-use tariffs for residential customers.
3. Consider changes to Oregon net metering laws to promote adoption of small-scale rooftop solar (up to 200kWdc) and battery storage to support energy resilience in rural communities.

Additional Considerations:

Include rooftop solar and battery storage in draft policy actions to direct rebate funding primarily to low-income households and establish a revolving loan fund for non-income qualified households.

Cross-cutting Ideas

1. Integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels that prioritize an equitable transition to explicitly include environmental justice communities.
2. Fund a consumer facing energy transition service program to educate and financially support residential and commercial building conversions from primarily natural gas, propane, or oil heat to efficient electric options owned or operated in low income, rural, and disadvantage communities.
3. Extend HB 2021 clean energy requirements to new large loads, including obligations regarding providing direct benefits to communities and minimizing burdens for environmental justice communities (HB 2021, Section 2)
4. Develop a grant program to fund HVAC technician and building-trades education programs at community colleges. Prioritize funding to rural parts of the state and disadvantaged communities.
5. Conduct a study to determine best practices for maintaining energy system affordability and resilience while conducting widespread electrification.

Oregon Energy Strategy

Public Comment

Nancy Bennett, PGE, 5.9.25

Comments from Portland General Electric
State Energy Strategy Draft Policy Recommendations on Grid Integration

Potential Policy Actions:

Require IOUs to publish and maintain interactive, circuit-level Hosting Capacity Maps (HCMs) showing available capacity for EV charging infrastructure, building electrification, distributed generation, and battery storage. The state should establish uniform standards for data formats and granularity, visualization tools, and public access protocols.

This should be defined as an EVSE interconnection location map, not a hosting capacity map, as hosting capacity typically refers to generation. EVSE represents load—distinct in nature due to variations in charger size, number, and usage patterns—which requires utility-specific analysis based on customer-provided information. We currently maintain an internal load capacity map, updated annually with the latest peak demands and newly connected and forecasted loads. Before making such maps a policy requirement, their effectiveness, usability, and maintenance burden should be carefully evaluated.

Open an investigation on how utilities can best engage in proactive planning for the electric grid and make upfront investments in grid infrastructure in anticipation of load growth (i.e., prior to load materializing) while minimizing the risk to ratepayers.

PGE supports the development of a regulatory framework that enables proactive grid investments. We are already actively planning for EV-related growth through efforts like load forecasting, feasibility reviews, fleet advisory services, and make-ready programs. Our AdopDER model forecasts EV adoption and charging demand using a bottom-up, site-level approach, supporting functions such as infrastructure planning and regulatory filings. This includes projections for both commercial and residential charging needs. To meet anticipated load growth, PGE routinely implements infrastructure upgrades—such as new transformers or feeders—based on standardized planning practices.

Provide technical assistance to help publicly owned utilities assess the load growth, DER, conservation, and demand response potential in their service territory and determine hosting capacity, distribution system needs and strategies for handling load increases.

PGE supports this policy recommendation and suggests developing a forum where we could share best practices.

Require IOUs to develop EV-specific rates for residential and commercial customers that better align the cost of EV charging with grid conditions. Commercial fleet rates should be designed to reduce or replace traditional demand charges and cater to varying demand levels.

It is our belief that rates don't need to be EV-specific to effectively support EV charging. PGE currently offers rate structures that benefit EV customers while aligning with grid needs. For residential customers, our Time of Day (ToD) rate encourages off-peak charging by offering lower prices during periods of lower grid demand. This not only helps manage system load but also reduces costs for customers who can shift charging to off-peak hours. Customers also have the option to install a second meter, allowing them to take service on the ToD rate for their EV charger while keeping their home on a standard cost-of-service rate. We are actively evaluating whether these existing structures are the best approach for supporting residential EV customers in the near and long term, particularly given their flexibility in charging behavior.

For commercial customers, PGE offers Schedule 38, a rate without demand charges. This rate also includes specific conditions and a carve-out to expand eligibility for EV charging applications. All other commercial rates have Time of Use pricing with differentiated pricing for on-peak charging versus other timeframes so fleets who have flexibility for when they charge can optimize their costs by shifting more of their charging to off-peak timeframes. These existing options demonstrate that targeted, flexible rate structures—whether or not explicitly labeled as EV-specific—can play a critical role in supporting EV adoption while aligning with broader grid and customer needs.

Establish average and maximum energization timelines for connecting new or upgraded electrical services, ensuring timely access to electricity for EV charging and clean energy projects.

Establishing rigid timeline requirements is a concern because much of the energization timeline is outside of the utility's control. Delays often stem from customer-driven steps such as business case or design decision-making, contractor selection, permitting, and site construction. Further discussion is needed on the best way to address these variables and promote the type of collaboration that will result in completed projects.

Complete a comprehensive review of charge management systems and their integration.

PGE currently has a qualified products list for commercial charge management systems that we maintain. However, it is important to stress that the CMS market is evolving rapidly, with frequent updates to functionality, standards, and vendor offerings. Any comprehensive state-led review conducted now could quickly become outdated and this policy direction needs to be fleshed out before it is considered further.

Oregon Energy Strategy: Low Carbon Fuels Policy Working Group: Summary of Potential Policy Strategies

Low Carbon Fuel Development

Production and Distribution

Build on/Adjust/Improve Existing Policy

- Reform current permitting and siting of fuel production facilities, make it easier for existing fuel producers to expand their capabilities.
- Greater flexibility and regulatory clarity on resource procurement, project prudence evaluation, and cost recovery for utilities.
- Expand Clean Fuels Program to provide credits for low carbon fuels used as direct use fuels and increase credit amounts to secure more fuel supply.

New Policy Needed

- Promote and fund the development of low carbon fuel production and distribution infrastructure while protecting water and air quality, and natural resources
- Allocate greater financial support for rural communities to reflect greater VMT and fuel uses
- Encourage Oregon transportation fleets use in state produced low-carbon fuels
- Fund industry tax credits that encourage innovation and development of pilot low carbon fuel projects
- Tax credits should be developed for low carbon fuel production and distribution to incentivize use in Oregon.

What do we need to better understand?

- Develop a low carbon fuel utilization and application strategy. Research and identify the best sector applications or opportunities for low carbon fuels.
- Evaluate the potential of developing fuel resources like biogas production, storage, distribution, and use in comparison to the potential impact to water and air quality and natural resources. Evaluate the economic and social impacts to the state and surrounding communities. Use a carbon intensity rating for potentially produced fuels to measure impact.
- Evaluate the potential to accelerate in state production of SAF and its use in Oregon aviation

- Evaluate the impact of adopting the City of Portland's Renewable Fuel Standard statewide
- Taskforce to identify potential low carbon fuel sites in Oregon
- Review of all low carbon fuels for various transportation modes and what incentive programs and policies are currently in place, and ways to expand them to be competitive in the PNW region.
- Evaluate steps that Oregon needs to take to be ready for the fuel transition, including but not limited to the regulatory inconsistencies across the supply chain that need to be addressed.

Feedstocks

Build on/Adjust/Improve Existing Policy

- Allow regulatory structures more flexibility in evaluating cost and risk to align with the changing low carbon fuel market
- Adjust Oregon Clean Fuels Program to require lower carbon intensity ratings to receive fuel credits.

New Policy Needed

- Develop an awareness building and facilitation program to help agriculture and industrial feedstock producers locate local resources and work together to collect, store, and distribute waste materials to fuel producers

What do we need to better understand?

- Evaluate the availability and access to fuel feedstocks to support low-carbon fuel production in Oregon

Innovation

Build on/Adjust/Improve Existing Policy

- Reform current permitting and siting of fuel production facilities to reduce delays and expand waste feedstock utilization.
- Expand utility regulatory structure to allow for greater innovation, pilot projects, and cost recovery
- Collaborate with states to support the development of a regional low carbon fuel market

New Policy Needed

- Oregon Public Utility Commission establishes a new regulatory framework for natural gas utilities allowing them to meet GHG reduction targets through new resource projects. Utilities would submit innovation plans to detail their investment in pilot projects and customer financial burden. https://mn.gov/puc/activities/economic-analysis/ngia/
- No longer allow investor-owed utilities to own or control energy generating infrastructure in Oregon
- Create a regulatory evaluation structure for any new investments in infrastructure, protecting consumers, and reducing the risk of new stranded assets.
- Grant funds, incentives, or tax credits for low carbon fuel or electrification pilot projects in industrial applications
- Direct public fleets to prioritize use of low carbon fuels produced in state

What do we need to better understand?

- Evaluate the ability to provide lifecycle emission scoring for all fuels used in Oregon to demonstrate the value of lower carbon intensity fuels

Need for Fuel Resources to Support the Electric Grid

Electricity reliability

Build on/Adjust/Improve Existing Policy

- Direct Use and Transportation sector incentives to promote the adoption of new technologies and low carbon fuels in operations.
- Adjust regulatory structure to promote natural gas and electric utility duel system resource planning
- Fund state pilot projects to develop and evaluate geothermal and thermal energy network projects as technical solutions

New Policy Needed

- Greater state commitment to developing and participating in regional energy markets

What do we need to better understand?

- Evaluation of the potential long term benefits, costs, and feasibility of maintaining existing natural gas electricity generation infrastructure and development of new capacity to support electricity system flexibility and resilience.

- Evaluate the potential of dual fuel appliances in buildings reducing the need for new clean fuel electricity generating resources.

Electrification

Hard to Electrify End Uses and Informing Investment Decisions

Build on/Adjust/Improve Existing Policy

- Create and enforce near term transportation sector decarbonization goals. Include transportation electrification date when ICE vehicles can no longer be sold in the state

New Policy Needed

- Create a new road use charge based on weight, efficiency, and vehicle miles traveled.
- Create legislative targets for low carbon fuel applications
- Fund and support development of pilot industrial centers/parks focused on symbiotic energy relationships between businesses to conserve energy and increase productivity.
- Create and fund an EV workplace charging program to increase awareness and incentivize installation of charging infrastructure

What do we need to better understand?

- Evaluate utility (gas/electric) business models and consider how regulatory framework needs to change to help utilities evolve and remain viable businesses.
- Conduct a gap analysis to evaluate how best to expand level 1 charging

Fuel Demand Declines

Decommissioning or repurposing existing infrastructure across the supply chain

Build on/Adjust/Improve Existing Policy

- Allow natural gas utilities to subsidize targeted electrification, thermal energy network, geothermal, carbon capture and storage, and energy efficiency projects through customer cost recovery

New Policy Needed

- Funding and technical support for geothermal, thermal energy network, and energy efficiency projects.

What do we need to better understand?

- Evaluate the impact and support needed for customers and businesses to electrify or transition to low carbon fuel applications
- Evaluate the ability to target specific areas for community scale electrification programs to gradually reduce natural gas demand. Including a process for natural gas and electric utilities to collaborate on the transition of services

May 9, 2025

Ms. Joni Sliger
Senior Clean Electricity & Markets Analyst
Oregon Department of Energy
550 Capitol Street NE, 1st Floor
Salem, OR 97301

RE: Public Power Comments on Clean Electricity Generation & Transmission Working Group Draft Policy Actions

Dear Ms. Sliger:

Thanks for the opportunity to provide comments on potential policy actions from the Clean Electricity Generation and Transmission Policy Working Group. Knowing that there will be future opportunities for written feedback once the entire draft policy actions are issued, these comments are narrowly focused on the highest near-term priorities for clean electricity generation and transmission only. We urge the Oregon Department of Energy (ODOE) to incorporate this input into future draft policy actions.

As a general observation, we think the straw proposals are too narrowly focused given the broad topic of "clean electricity generation and transmission" and the guidance in HB 3630 to develop a "comprehensive" state energy strategy with optimized pathways for achieving the state's energy policy objectives.

As you know, ODOE provided the structure to organize the Working Group's discussion of policy. This structure was set by ODOE without any input. Looking at the straw proposals that emerged, we are concerned that they are too narrowly focused and lack specific details that would make them measurable and achievable.

Here are some of the key elements or policies pertaining to clean electricity generation and transmission that have been omitted and should be included in the draft report:

- ***Importance of Retaining Existing Clean Hydropower Generation, particularly the Federal Columbia River Power System.*** The draft policy proposals do not highlight the importance of hydropower as a foundational resource for both the short and long term. Despite the contrary position of the State of Oregon, all modeled scenarios assume status quo power generation from the Lower Snake River dams. Accordingly, retaining the Lower Snake River dams needs to be highlighted as a policy proposal given that there is an "active Oregon State agency workstream" that contradicts the modeling assumptions. The State of Oregon needs to revise its position on the Lower Snake River dams. If ODOE is unwilling to propose a revision to this policy in the Strategy, at a

minimum modeling assumptions about the LSRDs need to be made explicit. Additionally, the implications for our State's clean energy future of breaching the LSRDs, particularly for affordability and reliability, need to be highlighted. This is our highest priority for the report.

- ***Besides Using Microgrids for Resilience, the Straw Proposals do not Name Any Types of Clean Generation that Oregon Should Pursue.*** If the draft policy is relying on modeling to pick resources, the policy recommendations need to reflect and discuss what those generation resource findings are. Should the state be doing anything to facilitate hydrogen, offshore wind, geothermal, small modular nuclear reactors, etc.?

- ***Proposals Lack Consideration of the Importance of Reliability.*** The working group discussions focused primarily on supporting in-state, intermittent renewable generation, but did not really discuss how delays in resource and transmission build outs could pose reliability threats, particularly in the face of unprecedented demand.

  For reliability, which must be our paramount concern, we need baseload generation. To avoid blackouts, the State of California has developed a "Strategic Reliability Reserve" as an insurance policy to safeguard the electrical grid during extreme and combined events driven by climate change (e.g. – heat events, wildfires). As Oregon transitions to clean energy and baseload resources are retired, we need to be prepared to meet electricity demand quickly through a reserve that could include diesel and natural gas back-up generation in the short term. As in California, these resources could be "hydrogen ready" when feasible and affordable.

- ***Study of Small-Scale Nuclear Reactors.*** While the modeling may not support the development of small-scale nuclear reactors in the near term due to costs and statutory prohibitions, given our need for reliable baseload power that can meet clean energy targets it is important that the Strategy recommends SMRs for future study.

With respect to proposed policy actions presented at the April 30th working group, here are some policies that are problematic and <u>should be omitted or significantly revised</u>:

- ***Item #1: Establish a new state entity to, at minimum, engage in statewide transmission planning, establish designated transmission corridors, and lead regional engagement efforts on transmission, all with a responsibility to explicitly utilize an environmental justice and energy justice lens and equitable processes through meaningful community engagement to prioritize environmental justice and impacted communities.***

As was raised at the April 30th working group meeting, while some working group participants suggested this as an idea, the description is not specific enough to evaluate. A State Transmission Authority concept has recently been rejected by both the Oregon and Washington Legislatures. While those particular concepts have not been put forward as

models during these discussions, it would be irresponsible to float an idea in the Strategy that is devoid of details. There has been no showing that a State Transmission Authority is the best means to advance Oregon's state energy policy objectives. The State lacks expertise in this area and we think it would be more productive to focus on fixing Oregon (and Federal) permitting and siting bottlenecks that often stymie transmission development under existing processes. Some key questions (not exhaustive):

- The Pacific Northwest National Laboratory (PNNL) memo discussing state transmission authorities describes North Dakota's authority as a "builder of last resort" when private developers or utilities are unwilling or unable to finance or construct projects. Would that be the case in Oregon? If so, why is it in the State of Oregon's interest to bear risk that private renewable developers or utilities can or will not?

- What type of state entity? Who has the discussion making authority? HB 3628 contemplated a Board that specifically excluded the electric utility sector, which is a total non-starter particularly since the authority is vested with the power to designate "transmission corridors of statewide interest."

- How would it be funded? HB 3628 proposed a charge on large industrial customers, including existing ones with transmission service and no expansion plans. Would existing customers be paying for newcomers that require additional transmission capacity?

- What level of transparency would the authority operate under? Would the budget be subject to legislative appropriation?

- How would consumer-owned utilities (COUs) benefit given our contractual arrangements for transmission with BPA? Could a COU jump into a faster, cheaper transmission development line via an Oregon transmission authority?

- How will a state-led identification process of state transmission corridors meld with the existing multi-state effort of WestTEC?

- ***Item #3: Conduct a statewide land-use inventory, update the current land use classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects.***

Discussion in the working group revealed that this proposal has already been achieved through the Oregon Smart Siting Collaboration (OSSC); this is unnecessary. Without more description, it raises more questions than answers.

- ***Item #6: Continue as practicable increased collaboration with neighboring states and regional entities.***

This appears under the heading of "Foster regional collaboration and efficient resource sharing." Because this proposal is lacking in any specificity, we cannot support it. It is unclear what this even refers to. Will this have implications for BPA's Day Ahead Energy Market decision, which was just announced today? SMR policy? Cap and Trade? This does not meet the test for "specific, measurable and achievable."

- ***Item #7: Study potential for shared risk development models to ensure large-scale investments, including long-lead time resources and emerging generation and storage technologies.***

Some specific examples are necessary to evaluate this. Does this only apply to investor-owned utilities? With COUs, BPA develops necessary generation and spreads the costs among public power utilities today. Transmission is often also developed with multiple utilities today.

At the April 30th working group meeting we learned that the PNNL memo was an internal document provided as background for the working group. Given that limited purpose, we have not provided comments here. However, we would have objections if ODOE opted to incorporate the memo into the Strategy—even as an appendix—given the narrow scope of topics addressed, the cursory manner of subjects addressed, and the conclusory way options are addressed. Please let us know if your intentions change regarding the memo and we will provide specific examples of the most problematic elements.

Thank you for your consideration. We are all happy to elaborate on or discuss any of these suggestions.

Sincerely,

Scott Simms, CEO & Executive Director, Public Power Council ssimms@ppcpdx.org

Jennifer Joly, Director, Oregon Municipal Electric Utilities Association jenniferjoly@omeu.org

Danelle Romain & Mike Freese, Lobbyists, Oregon People's Utility District Association dromain@RFlawlobby.com mfreese@RFlawlobby.com

Ted Case, Executive Director, Oregon Rural Electric Cooperatives Association tcase@oreca.org

cc: Ms. Edith Bayer, Energy Policy Team Lead

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May 9th, 2025

Dear Oregon Department of Energy Staff,

Thank you for the opportunity to participate in the Environmental Justice Working Group for the Oregon Energy Strategy process. It has been an honor to represent Rogue Climate in the space and advocate for environmental and climate justice throughout the process.

Rogue Climate is a community-based organization with offices in Phoenix and Coos Bay, Oregon with a mission to empower Southern Oregon and South Coast communities most impacted by climate change, including low-income, rural, youth, seniors, and communities of color, to win climate justice by organizing for clean energy, sustainable jobs, and a healthy environment.

Included here are additional comments on the draft policy recommendations and actions that build upon the working group's conversation on 4/30/25, in direct response to the questions shared following the meeting.

Environmental Justice Working Group Comments:

Do any of these create concern for you or the organization you represent?

- *"Promote development of low carbon fuel resources to increase overall supply, affordability, and availability to all Oregon communities"*
    - *"Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects."*
    - Comments:
        - All policy actions related to establishing statewide databases of suitable lands for clean fuels and low-carbon fuels development should be developed in collaboration with Oregon's Tribes, and account for the potential impacts to local communities and ecological and Tribal cultural resources.

- *"Reduce barriers to transportation electrification to ensure the state electrifies at the pace and scale necessary to meet state goals.*
    - *Establish a working group of state entities and others to develop regulations and standards for hydrogen refueling infrastructure, including station certification and testing protocols, as well as safety, fuel quality, and consumer protection standards."*
    - Comments:
        - Rogue Climate supports regulation around hydrogen development, and these regulations should include evaluating and implementing a mitigation hierarchy for environmental justice concerns. We share the concerns of the Climate Justice Alliance related to hydrogen. Hydrogen fuels are often produced with fracked gas, nuclear, or other fossil fuels and are reliant on carbon capture, which does not work. Blue,gray, and pink hydrogen emit more greenhouse gas emissions than coal. Burning hydrogen produces NOx, a pollutant that causes respiratory health impacts especially in environmental justice communities. Additionally, Hydrogen, even when produced using renewable energy, is very inefficient, losing 70% of renewable energy and consuming 9-18 tons of water per ton of H2. The Climate Justice Alliance does not support any form of hydrogen combustion. There is significant need for renewable energy generation to meet Oregon's HB 2021 goals, and therefore, green hydrogen is an inefficient diversion of renewable energy to expanding industrial uses, rather than meeting current necessary loads. All efforts should be made to stop the use of hydrogen generation that is not green hydrogen, and to avoid the need for hydrogen development at all by first employing electrification, energy efficiency, and other strategies.
        - Included in this action must be limits on the applications of any hydrogen development to ensure that hydrogen is not developed as a fuel source for homes or personal vehicles that could otherwise be electrified. The use of hydrogen for fueling homes and personal vehicles is costly, dangerous, and inefficient compared to electrification.

Which of these might create a domino effect of progress if addressed first?

- Four areas of policy action would create a domino effect of progress towards Oregon's climate and clean energy goals:
    - First, stopping the expansion of fossil fuel energy systems and mandating the retirement or phaseout of existing fossil fuel infrastructure. Policy recommendations related to the explicit transition away from coal, oil, methane gas are not explicitly named within the Energy Strategy. Especially given executive orders and other federal actions seeking to expand fossil fuel generation and exports, the Energy Strategy should specifically recommend bans on new fossil fuel power plants and export terminals, and establish retirement dates for the largest existing fossil fuel emitters in Oregon. These policy actions would have a significant ripple effect, encouraging the development of cleaner generation.
    - Second, investment in distributed renewable energy resources and policy actions reducing the barriers to microgrid development will have a ripple effect on both meeting HB 2021 goals and increasing reliability and resilience for communities across Oregon. These actions will be especially impactful if they prioritize rural communities that have been both most impacted by fossil fuel generation and are most energy burdened.
    - Third, prioritizing all new buildings to be smart from the start, without locking in more fossil fuel use in residential, commercial and industrial construction. Municipal policies like the Carbon Pollution Impact Fee we were able to pass in Ashland is one example of policy that incentivizes fossil-free construction to ensure that Oregon is not locking in unnecessary and unhealthy fossil fuel infrastructure in homes and buildings.
    - Fourth, expanding investments in incentives that reduce the barriers for energy efficiency technology and electrification in existing homes, prioritizing environmental justice communities, especially low and moderate-income households and renters.

Do you anticipate any unintended consequences or implications for affordability and/or reliability?

- *"Investigate and direct investor-owned utilities to implement microgrid tariffs."*
    - The existing draft policy recommendations fail to expand upon the need for microgrids as a critical resource for resilience and distributed renewable energy

generation. Further policy actions related to reducing the barriers to microgrids, especially for environmental justice and rural/coastal communities would further strengthen the Energy Strategy. Many of the barriers that utility-scale projects experience, including siting and permitting processes, inefficiencies in transmission, and ecological and cultural impacts to the land, can be reduced through distributed energy generation. Additionally, microgrids maximize the benefits of DERs and provide critical reliability and resilience in the case of disasters, especially for rural communities and Tribal communities. However, the investor-owned utility structure is often a barrier to the implementation of both DERs and microgrids. While tariffs could be a pathway towards IOU's investing in microgrids, the focus of this approach is cost recovery for the utility, rather than the affordability and reliability of energy for the residents relying on the microgrid. Ultimately, a just transition to a renewable and resilient energy system requires that the system is accessible, reliable, and affordable, while providing resilience to communities most impacted during extreme weather and climate disasters. Microgrid tariffs could result in unintended consequences, ultimately creating a dynamic where only the wealthiest communities have access to pay for their own energy resilience.

Which of these needs to happen now vs. later?

- **Now:**
    - *"Electrification and Strategic consumption: Protect existing critical Oregon businesses and energy consumers while overall fuel demand declines and transitions to low-carbon fuels in hard to electrify applications."*
        - *"Integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels while prioritizing an equitable transition to explicitly include environmental justice communities.*
        - *Investigate and implement performance-based ratemaking for natural gas and electric utilities*
        - *Fund a consumer facing energy transition service program to educate and financially support residential and commercial building conversions from primarily natural gas, propane, or oil heat to efficient electric options*

owned or operated in low income, rural, and disadvantaged communities."

- *"Facilitate responsible development of electricity infrastructure in Oregon"*
  - *"Establish a new state entity to, at minimum, engage in statewide transmission planning, establish designated transmission corridors, and lead regional engagement efforts on transmission, all with a responsibility to explicitly utilize an environmental justice and energy justice lens and equitable processes through meaningful community engagement to prioritize environmental justice and impacted communities."*
- *"Promote resilience for local communities"*
  - *"Continue and as practicable expand statewide energy and energy resilience funding opportunities, including a funding opportunity for creating a formalized community benefits plan that provides meaningful engagement in the process for Environmental Justice communities (HB 4077)"*
- *"Extend HB 2021 clean energy requirements to new large loads"*

- **Later:**
  - *"Funding and technical assistance for investments in fuel innovation pilot projects such as hydrogen, biofuels, thermal energy networks, and geothermal projects."*
    - Oregon already has access to technologies that can meet a significant portion of our energy needs through energy efficiency, and distributed solar. Hydrogen, biofuels, thermal energy networks are costly technologies that have significant externalities and unintended consequences. The Energy Strategy should prioritize the most accessible technologies that encourage energy democracy, efficiency, affordability and resilience, over technologies that are more costly and have fewer proven benefits. These technologies should be reserved for the hardest-to-transition sectors. Funding and technical assistance for these technologies diverts investment away from the solutions we know will most benefit environmental justice communities now and into the future.

Is there a window of opportunity for any of these items?

- Extending HB 2021 clean energy requirements to new large loads is a critical policy action to prioritize in legislative session in 2026 and 2027 as the expansion of data centers is creating significant strain on electric loads and Oregon's ability to meet HB 2021 goals. As legislators and advocates are working on passing the POWER Act (HB 3546) this session, there is a growing understanding of and motivation to address the impacts of data centers on Oregon's energy systems. In general, regulation of the energy needs and water impacts of data centers must be included in the Energy Strategy.
- As the Governor's office has prioritized housing in the past few years, many municipalities are expanding their urban growth boundaries and experiencing significant growth of housing development. This presents an opportunity to prioritize building electrification policy actions that will ensure further gas infrastructure expansion does not get locked in for future generations. Rather, this housing development creates an opportunity to save on building and energy costs and improve community health while meeting climate goals through building 100% electric and implementing energy efficiency measures from the start.
- Policy actions targeting incentives and affordability for energy efficiency are critical now, as federal programs are being revoked by the current administration. The dismantling of federal energy efficiency and clean energy programs creates an opportunity for the state of Oregon to meet this growing need. Already, many counties in Oregon have completely spent their Community Heat Pump Deployment funds, and in Jackson County we have a waitlist growing faster than we can respond. It is crucial that Oregon maintain and strengthen programs such as Community Heat Pump Deployment and Rental Heat Pump programs, and Community Renewable Energy.
- Rogue Climate supports the following proposed policy actions:
    - *"Building Electrification and Energy Efficiency"*
        - *"Modify existing energy rebate programs to primarily serve low-income households and disadvantaged communities including higher incentive rates and support from community partners*
        - *Transition non-income qualified households to programs that offer low-interest financing from revolving loan funds for high efficiency heat pumps and other energy efficiency measures.*
        - *Establish flexible funding grant program for statewide weatherization and related deferred maintenance measures. Prioritize homes with greatest needs."*

What additional suggestions (if any) do you have on the policy actions discussed?

- While studies and guidebooks are a critical first step for creating the data and public education needed to move forward policy actions, the need for immediate development of distributed energy sources and workforce development requires policy actions that will have a greater tangible impact in the near-term. The following policy actions should be taken further to ensure that Oregon doesn't miss an opportunity to take action and impact these important sectors. For example, investing in technical assistance to support the development of community-owned and operated microgrids and DERs would be very impactful.
    - *"Distributed Energy Resources"*
        - *"Develop a guidebook for community level DER and Demand Response – tie in resilience and microgrid optionality – aimed at supporting smaller municipalities, rural counties and other groups that cannot afford to participate alone, but could benefit from a collaboration*
        - *Support adoption of distributed energy resources to increase energy resilience, enable demand response programs and provide grid services and financial benefits for utilities and customers.*
        - *Conduct a study to assess the workforce implications of meeting Oregon's future energy needs, with the goal of identifying opportunities for new job creation, assessing potential job displacement, and informing strategies to support and expand workforce development efforts to promote a just transition."*
- For all policy actions relating to incentives, upfront discounts are more impactful and effective at reducing barriers to electrification, energy efficiency, and electric vehicle adoption than tax rebates for EJ communities. Often, low to moderate-income community members do not experience a significant benefit from tax rebates, and the immediate discount is a more powerful incentive. EJ communities have the most benefit to gain from in-home energy efficiency and electrification as community members are most impacted by fossil fuel pollution and related health risks. The implementation of scaled or sliding scale incentives based on income would also increase the benefits and accessibility of these programs. Additionally, these incentive programs must support fuel switching going forward. Currently, residents are actively encouraged *not* to switch away

from fossil fueled HVAC systems if they want to access the greatest incentives available. This is counterproductive to the health and climate goals of these programs.

Thank you for the opportunity to participate in the process and provide comments on the policy recommendations as drafted. Please feel free to follow up with any additional questions.

Sincerely,
Jess Grady-Benson
Organizing Director, Rogue Climate

Transmittal email

Hi Lauren,

Thank you again for your skillful facilitation of this group, and for the invitation to be a part of it. It's been a great experience and I have learned so much.

I added a few comments to the framework here, but feel good about the overall direction. A graphic or some type of visual could be a great way to make this digestible and help it to stand out in the rest of the strategy.

With gratitude,

Jess

Oregon Energy Strategy's Justice and Equity Framework

Background

The Equity and Justice Framework provides a tool to help implement the Oregon Energy Strategy with equity and justice at the core of how Oregon moves toward its energy policy objectives.

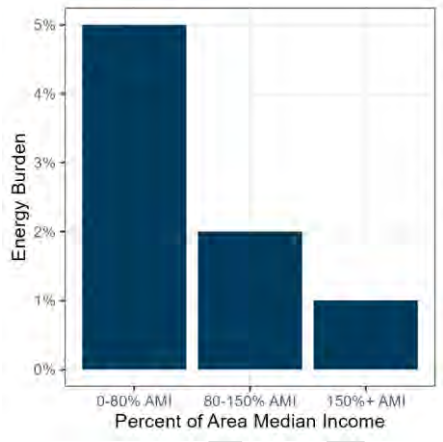
The Equity and Justice Framework aims to reduce the disproportionate costs of energy burden, negative health effects from energy-related pollution, and lack of resilience against extreme weather induced by climate change as the state adopts new programs, regulatory structures and business models to move the state toward cleaner energy sources. The framework is a tool to apply as you read the Energy Strategy. It can help determine what equity and justice methods could be used to move Oregon toward its energy goals.

To create equitable strategies for accomplishing our state's climate and energy goals, we first recognize there are disparities in how Oregonians experience benefits from or are burdened by our energy system. For example, Oregonians with lower incomes spend a greater proportion of their annual household income on home energy costs, see Figure 1.

The state is currently in the process of developing an Oregon-based Environmental Justice Mapping Tool to help identify communities underrepresented in government processes and harmed by environmental and health hazards. This tool, which is expected to be available in 2027, may provide more comprehensive insight into disparities affected by the

development and use of energy in the state vital for developing equitable policy. However, even as that tool is under development, there should be a concerted effort to meaningfully involve (as defined in Oregon House Bill 4077) those who have been historically and are currently excluded from decision making processes, and provide a framework that demonstrates how to create just and equitable practices when developing energy policies, actions, and outcomes.

Figure 1: Energy Burden by Household Income



Source: United States Department of Energy Low-income Energy Affordability Data (Archived in December 2024 by the Harvard Dataverse)
Notes: Energy burden is defined as the percent of household income that is spent on home energy costs.

Throughout the Oregon Energy Strategy, the terms environmental justice and environmental justice community are used, following Oregon HB 4077's definition of "communities of color, communities experiencing lower incomes, communities experiencing health inequities, tribal communities, rural communities, remote communities, coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including seniors, youth and persons with disabilities."

Additionally, HB 4077 defines "meaningful involvement" as: (a) Members of vulnerable populations have appropriate opportunities to participate in decisions about a proposed activity that will affect their environment or health; (b) Public involvement can influence a decision maker's decision; (c) The concerns of all participants involved are considered in the decision-making process; and (d) Decision makers seek out and facilitate the involvement of members of vulnerable populations. The report also adheres to this definition.

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The strategy employs~~employes~~ targeted universalism, which establishes a universal goal for all groups concerned and then sets targeted strategies to achieve those goals based on different groups' structure, culture, and geographies (University of California Berkley's Othering and Belong Institute). Targeted universalism is an approach that recognizes that while a goal may be universal, the solutions to achieve that goal across different communities must be targeted. The approach incorporates the idea that conversations, policies, and programs must be informed by the needs of different communities, and that decisionmakers must engage with communities to understand and co-create solutions. With this approach, we can better understand burdens, benefits, and barriers for communities across the state to help ensure an equitable energy transition.

Commented [2]: Clarify into more easily readable

An equitable energy transition must be rooted in energy justice, which is defined by the Initiative for Energy Justice as:

> "the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system. Energy justice explicitly centers the concerns of communities at the frontline of pollution and climate change ("frontline communities"), working class people, indigenous communities, and those historically disenfranchised by racial and social inequity."

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The Equity and Justice Framework has adapted the Initiative for Energy Justice's definition of energy justice to create accessible, affordable, reliable, and resilient energy strategies that work to maximize community benefits for Oregonians.

[THE FRAMEWORK WILL GO HERE IN THE FINAL DOCUMENT BUT IS AT THE END OF THIS NARRATIVE FOR EASE OF EDITING]

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Equity and Justice Framework

The Equity and Justice Framework is not a one-size-fits-all approach. Justice and equity meet the needs of communities and people where they are and the way the framework is

used must adapt. Often, there is not a simple answer or a linear process. There may be times when we need to consider multiple strategies within the framework to accomplish one action. For example, people may need more information, resources, and educational opportunities to meaningfully engage in any decision-making processes. This will require building relationships with trusted community organizations across many interests and industries.

Commented [4]: Note to self on placement of this example

The Energy Strategy's Equity and Justice Framework adopts the four pillars of energy justice from the University of Michigan's 2022 Energy Equity Project. These pillars work together to provide direction to achieving just and equitable outcomes in energy policies.

- **Procedural:** All groups who stand to benefit or are burdened are provided space to participate and their decisions should be taken seriously throughout the process.
- **Recognition:** No one group should dominate a process. Process understands and addresses demographic, social-economic and geographic variables, disproportionate burdens, and lived experiences of environmental justice communities.
- **Distributive:** Understanding of indirect and community benefits (health, jobs, environment, etc.) and intentional distribution of benefits to overburden communities.
- **Restorative:** Recognizing and reflecting on past harms and injustices caused by the energy system and actively working to prevent future harms and maximizing future benefits.

Using the pillars and community feedback, the Environmental Justice and Equity Working Group formed six methods for centering equity and justice in Oregon's energy goals. Each method has supporting metrics to understand if progress is made toward equitable outcomes.

Evaluating progress

Before a policy moves into implementation, metrics should be established and then continually be collected and analyzed throughout the program to understand if there are unintended consequences that need to be mitigated. Finally, when a program ends or moves into its next iteration, it should be evaluated to address any unforeseen risks, environmental justice communities who were not included, additional burdens, and any unmet metric goals.

The Equity and Justice Framework can be used as a lens to determine best practices, metrics, and equitable outcomes throughout the energy policy process.

[FRAMEWORK IS BELOW IN WORD FORMAT FOR EASY EDITING AND COMMENTING, IT WILL BE FORMATTED INTO A MATRIX FOR FINAL DRAFT]

"Potential metrics" are taken from or inspired by 220174_EEP_Report_8302022.pdf

EQUITABLE ACCESS TO DECISION-MAKING PROCESS

- All policies or programs to expand energy infrastructure are designed to ensure environmental justice and energy burdened communities have equitable access to meaningful involvement in decision-making bodies, including using plain language, language translations, and encouraging participation from non-experts.
- Policies and programs intentionally reduce barriers to participation in decision-making bodies for environmental justice groups, including evaluating the feasibility of a compensation process for participation, and incorporating the cost into agency program planning.

Potential metrics:

- Percentage of participants with economic, health, pollution burden or other energy-burden factors such as climate vulnerability score.
- Percentage of budget dedicated for meaningful involvement.
- Post-process survey on accessibility and transparency.

EQUITABLE ACCESS TO INFRASTRUCTURE DEVELOPMENT

All policies and programs expanding infrastructure to support technology adoption and energy reliability are designed to ensure environmental justice and energy burdened communities have equitable access to electric vehicle charging, reliable energy sources, and energy resilience.

Potential metrics:

- Reduced frequency and duration of power outages in environmental justice and medically vulnerable communities
- Number of public electric vehicle charging stations in under-resourced communities
- Number of charging stations in low to moderate income multifamily housing
- Diversity of electricity options, number of battery storage facilities

INVEST IN LONG TERM INCENTIVE PROGRAMS FOR ENVIRONMENTAL JUSTICE COMMUNITIES

- Develop statewide prioritization criteria for energy funding/assistance to reduce barriers for people with the greatest assistance need
- Provide increased and stable funding and assistance for those in low-income and energy burdened households
- Establish revolving loans with a beneficial timeline for repayment to minimize monthly loan payments for low or no interest loans to medium-income households

Potential metrics:

- Number of energy funding/assistance programs created specifically for or serving majority energy-burdened households within environmental justice communities
- Percentage of program participants who are part of an environmental justice community,
- Reductions in negative environmental-related health conditions (such as asthma, respiratory disease, ...) in environmental justice communities

Commented [5]: incomplete?

PROMOTE HOLISTIC WORKFORCE DEVELOPMENT IN UNDERSERVED COMMUNITIES

- Develop and expand trainings, apprenticeships, and continuing education programs for relevant incentive programs, cultural responsiveness, and technology specifics and benefits in underserved communities for sales, contractors, tradespeople, and landlords.

Potential metrics:

Commented [6]: Not exactly sure how to word this, but something that could be added here is also a percentage of workers who live in the community where the project is being built -- often on the coast and in southern oregon, workers are imported from urban areas, so the workforce development and jobs benefits don't impact the local community, even if other equity metrics are met

- Number of colleges and vocational schools offering energy-related training programs, incentives, energy-efficiency technologies, and apprenticeships to environmental justice communities and percentage of enrollment that identifies as an environmental justice community member.
- Percentage of new energy jobs held by members of environmental justice, frontline, and low-income communities and percent employment retained in the energy industry.
- Percent of environmental justice community-owned business in energy industry
- Percent of policies supporting hiring, training, and retention of people in environmental justice communities

DEVELOP PARTNERSHIPS AND RESOURCES IN ENVIRONMENTAL JUSTICE COMMUNITIES

- Provide community outreach and informational opportunities that include in-person engagement, and resources/tools that are in plain language and multiple languages

- Partner with community organizations who are trained and compensated appropriately to be trusted partners and community navigators in the field
- Consider opportunities to collaborate with city and county government and utilities to best support communities and consumers

Potential metrics:

- Number of people participating in processes and/or programs from environmental justice communities
- Number of materials that are culturally specific and relevant and percentage of program materials available in multiple languages
- Number of partner environmental justice organizations/trusted community organizations participating in or distributing program materials
- Percentage of meetings hosted with interpretation, translation services, and meetings wraparound services

CONSIDER THE INTERSECTION OF ECOSYSTEMS

- Balance energy needs — like access to affordable energy and economic opportunity — with the needs of ecosystems and cultural priorities.
- Make decisions that minimize harm to both communities and nature, and ensure that environmental burdens and benefits are distributed equitably, without disproportionately impacting marginalized groups.

Potential metrics:

- Improved outdoor air quality particularly in areas with disproportionately poor air quality
- Improved indoor air quality particularly in areas with disproportionately poor air quality
- Increased investment for wildfire risk management
- Increased salmon/wild fish populations / Increased endangered or culturally significant wildlife populations
- Reduction in heat islands

Commented [7]: with an emphasis on long-term funding, as we've learned with one-time funded programs it puts a burden on CBO's to start and stop programs if they don't have consistent funding beyond 1-2 years

Commented [8]: worth explicitly naming Tribal cultural priorities here?

Commented [9]: Maybe it could be stated more directly here that in order for Oregon's energy strategy / transition to be just and equitable, it must prioritize the improved health, safety and wellbeing of communities and ecosystems to survive and thrive in the midst of climate change. I am also curious if adding something here about considering and avoiding / mitigating for externalities and adverse impacts for EJ communities outside of Oregon also be considered - for example the impacts of mining and nuclear waste potential on WA, NV, and other areas of the country of certain energy choices.

Commented [10]: wording is a bit confusing - maybe something like increased populations of endangered or culturally significant wildlife?

Oregon Energy Strategy

Public Comment

Sarah Buchwalter, PGE 5.9.25

Joni,

Please find below initial thinking from PGE for ODOE's consideration in response to the draft generation and transmission policy recommendations shared last week. Any policy actions should seek improved efficiency and a streamlined process that results in straightforward, predictable transmission siting and permitting by: Implementing uniformity and consistency across jurisdictions; Avoiding duplication of work or information submittals across jurisdictions; Offering utilities more certainty about permitting process timelines and the level of detail required in information requested; Enabling opportunities to optimize and expedite permitting and land use processes where appropriate, including repurposing existing rights of way; Considering new transmission and substations when contemplating urban growth boundary expansion; and Protecting the opportunity for public input and community engagement.

In alignment with those principles, PGE suggests some clarifying edits and proposed additional policy ideas below. PGE's comments are in green font to hopefully help differentiate between our thinking and the draft policy recommendations ODOE provided.

Please let me know if I can clarify anything.

Thank you,
Sarah

Facilitate responsible development of electricity infrastructure in Oregon

- **Establish a new state entity to, at minimum, engage in statewide transmission planning, establish designated transmission corridors, and lead regional engagement efforts on transmission, all with a responsibility to explicitly utilize an environmental justice and energy justice lens and equitable processes through meaningful community engagement to prioritize environmental justice and impacted communities**

  There are already existing workstreams and regional organizations carrying out transmission planning including: WestTec, Western Transmission Consortium, Northern Grid, BPA, and utility IRP planning. Another body doing the same type of work is not needed and could further complicate and slow the process. These are significant duties in a

complex arena that require significant coordination with BPA, utilities across the region, and many stakeholders. From PGE's perspective, some of the duties outlined in the policy concepts could be useful in advancing new transmission projects, while others may create additional challenges in an already intricate process. We support establishing transmission corridors in Oregon, but this **must be** paired with action on siting and permitting to support the timely development of transmission. Siting and permitting are the most significant hurdles for transmission development.

- **Study barriers to project development, particularly barriers affecting projects that do not quickly proceed to construction following siting and permitting approvals**.

  We fear that the time taken to conduct and complete a study will delay the policy work that is already well understood. Changes are needed sooner and have been raised in existing policy discussions.

- **Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects.**

  It's not clear that, as described, the statewide land-use inventory would meaningfully impact the ability to site and permit transmission projects across the state since it is only focused on "renewable energy and low-carbon fuel development projects." "Transmission" must specifically be included because additional transmission capacity is needed to bring those generation projects online.

Promote resilience for local communities

- **Continue and as practicable expand statewide energy and energy resilience funding opportunities, including a funding opportunity for creating a formalized community benefits plan that provides meaningful engagement in the process for Environmental Justice communities (HB 4077).**

  In the utility space, there is already significant work underway focused on community benefits, including the Community Benefits and Impact Advisory Group (CBIAG) required by House Bill 2021. Additional efforts should not duplicate or overlap with these maturing processes.

- **Investigate and direct investor-owned utilities to implement microgrid tariffs.**

  Microgrid opportunities must be carefully evaluated and scoped to protect against cost-shifting to other utility customers and/or creating safety or operational risks for the grid. PGE is already engaged in microgrid work and details how microgrids provide value to the grid in the Distribution System Plan filed at the PUC. Therefore, we do not believe a commission investigation is needed, but any commission

investigation on microgrids should be balanced and carefully scoped to protect reliability and affordability for customers.

- **Foster regional collaboration and efficient resource sharing.**

  See below.

- **Continue, and as practicable increase collaboration with neighboring states and regional entities**

  Utilities across the west are planning for transmission in the integrated resource planning process and beyond. Significant regional planning work is also already underway under the Western Transmission Expansion Coalition (WestTEC) to finalize 10- and 20-year actionable transmission studies, along with coordination requirements outlined in FERC Order 1920.

- **Study potential for shared risk development models to secure large-scale investments, including long-lead time resources and emerging generation, transmission and storage technologies**

Cross-cutting Ideas

- **Integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels that prioritize an equitable transition to explicitly include environmental justice communities.**

  PGE does not support the policy recommendation to integrate electric and natural gas resource planning.

- **Extend HB 2021 clean energy requirements to new large loads.**

  If a new large load is a retail customer of PGE, then the electricity PGE supplies is already subject to HB 2021 requirements. Singling out specific customers for clean energy target compliance does not address the barriers to the clean energy transition, such as transmission constraints. Those customers are subject to the same transmission and capacity constraints as any energy supplier in the west.

- **Investigate and implement performance-based ratemaking for investor-owned utilities.**

  The Public Utility Commission already has the authority to initiate performance-based ratemaking (PBR), so additional direction and investigation is unnecessary.

Other ideas for consideration:

- The state-level report should include a piece about the federal government's role, including in transmission siting and permitting (FERC and recent Orders), the impact of potential tariffs on the supply chain to build out clean generation and transmission infrastructure, how/if changes to federal tax credits impact projects viability and customer costs, etc.

- Clarify contested case timelines at the Energy Facility Siting Council and the pathway for appeals.
- Clarify the criteria for review of the Certificate of Public Convenience and Necessity (CPCN) process to align with PUC expertise. Clarify the timing of the CPCN process to reduce potential delays and uncertainties.
- State/local funding for and engagement in activities to attract climate and decarbonization-focused companies to the state to increase innovation, enhance local manufacturing of innovative tools to meet state climate goals, and further economic and workforce development priorities. Explore public-private partnerships, role of Portland's Clean Energy Community Benefits Fund (PCEF), state and local grants, etc.

The Nature Conservancy
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May 9, 2025

Oregon Department of Energy

Public Comment: State Energy Strategy – Draft Policy Concepts

Submitted by Lauren Link, TNC OR State Policy Advisor

Thank you for the opportunity to provide comments on the Oregon Department of Energy (ODOE)'s State Energy Strategy draft policy concepts. We are excited that we have reached the recommendations and actions phase (!) and want to ensure that the policy concepts identified are informed by the in-depth energy modeling undertaken by ODOE and that we are identifying and elevating the most optimized policy actions and pathways that will help Oregon meet both its growing energy demand and the state's clean energy goals, with the least impact to nature and communities.

As ODOE looks to identify and prioritize near-term policy actions, we suggest that ODOE create a visual (a matrix or table) that outlines not only the policy impacts, but includes the political, financial, and agency capacity constraints that could help decision makers and elected officials analyze, understand, and prioritize the policies and recommendations.

We have appreciated the opportunity to participate in the clean electricity generation and transmission policy working group to help identify barriers and solutions to responsible development of electricity generation and transmission across the state. We have focused our comments today on that workgroup's draft recommendations and actions:

- TNC supports the draft policy action to "Establish a new state entity to, at a minimum, engage in statewide transmission planning, establish transmission corridors, and lead regional engagement efforts on transmission...".

  We believe creating a statewide entity is a good start to addressing the challenges identified around siloed utility planning and coordination and the desire for more holistic energy planning that prioritizes energy projects that benefit Oregonians.

  The most important pieces we see for a statewide entity to focus on would be 1) pulling together and integrating utility by utility planning into a coordinated system; 2) prioritizing investments that make the most out of existing corridors and grid infrastructure to increase capacity, including reconductoring and co-location; 3) identifying funding opportunities to increase investment in new projects; and 4) identifying opportunities for this body to study and work to address additional barriers and opportunities related to transmission capacity expansion needed to meet clean energy goals.

An important function of a statewide entity should be identifying gaps in transmission needs after planned projects, reconductoring, grid enhancing technologies (GETs) and co-location options have been implemented to support optimal siting of new right of ways. This could also include looking for opportunities to coordinate capacity investments with lower conflict generation areas, as done through the California Energy Commission's Land Use Screens process.

- TNC encourages ODOE to identify policy actions that maximize our existing grid and provide co-benefits to Oregonians. An example of this is incentivizing the planning for and deployment of grid enhancing technologies (GETs). GETs have yet to be deployed at large scale in Oregon; they have the potential to not only expand grid capacity, but also increase grid resilience and reduce wildfire risk, all at a lower cost than the buildout of new transmission lines. It would be helpful to identify policy actions that can support utility adoption of GETs and new technology while reducing the risk to utilities in deploying a new tool.

- Permitting timelines, delays, and duplicative processes were identified by the workgroup as a challenge to responsible development of electricity generation and transmission in Oregon. From TNC's perspective, the draft policy actions presented by ODOE don't adequately address this challenge.

  From previous studies, it has been identified that the federal permitting process is 'process-based' and the state permitting process (EFSC) is 'outcomes-based'; these varied lens in which renewable energy is permitting and sited in Oregon has made it very difficult to streamline existing processes and/or to conduct these processes simultaneously. Statewide permitting reforms would require a "marrying" of statewide land use planning goals and state clean energy goals, that as of right now, are in conflict. TNC encourages ODOE to prioritize policy actions that would reduce and remove permitting barriers and create an expediated process to reconductoring in existing right of ways, which could also incentivize projects that maximize our existing grid.

- "Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects". We appreciate that this draft policy action is trying to address the conflicts that arise from trying to balance the varied land uses and competing state priorities, however we believe this current language is too broad. We agree with several of the workgroup members who flagged that this language could be interpreted several different ways and is currently written in a way that could inflame community members who are worried about this action calling for reclassification of land use zones in Oregon.

  We would prefer to see more specific language on how the Oregon Energy Strategy can work to address the existing conflicts between Oregon's land use planning rules and state siting regulations (EFSC) that have already been identified through energy project proposals and agency rulemakings (including the most recent DLCD Eastern Oregon Solar Siting Rulemaking). We encourage ODOE to prioritize policy actions that can continue to identify conflicts in existing land use laws and siting regulations as well as competing state priorities--uphold land use protections, protect areas of significance (ecological, cultural, archeological), promote clean energy development, reduce wildfire risk, promote economic growth—and identify ways to 'marry' or balance competing

priorities and develop pathways that can avoid, minimize, or mitigate impacts to communities and ecosystems.

Oregon Energy Strategy

Public Comment

Tom Pardee, 4.14.25

Hello all - I reviewed this and tried to think of another pieces that may be missing, but cannot. You've covered the gamut from my perspective. One question I did have, just out of curiosity, is why not allow ownership of energy generating infrastructure in Oregon? Is energy generating include RNG, H2, SM and other piped fuels or electricity generation specifically?

Thanks,
Tom

Oregon Energy Strategy: Straw Proposal from TE Policy Working Group

Vehicle Electrification:

- Establish a sustainable source of state funding to support the rapid deployment of charging and fueling infrastructure statewide.
    - Is there a potential for an Oregon state contract to support charging equipment and hydrogen fuel?
    - ZEV incentives, similar to California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), are included; however, these vouchers typically cover only about 20%–25% of the incremental cost of an electric bus compared to a diesel bus—roughly a $500,000 difference for a battery electric bus (BEB).
    - A program similar to the California Energy Commission's (CEC) EnergIIZE initiative (Energy Infrastructure Incentives for Zero-Emission Commercial Vehicles) could be considered, as it supports charging and hydrogen fueling equipment, charge management systems, and can include warranties and service level agreements for operations and maintenance.

    Other Funding Programs Similar to California:

        - Cap-and-Trade Funded Programs (e.g., California's Low Carbon Transit Operations Program - LCTOP)
            - California uses proceeds from its cap-and-trade program to directly fund transit operations and capital projects that reduce greenhouse gas emissions. A similar approach in Oregon could provide dedicated, climate-linked revenue to support expanded public transit service, especially for low-income and disadvantaged communities.
        - Transit and Intercity Rail Capital Program (TIRCP)
            - TIRCP funds large-scale, transformative transit infrastructure projects. Oregon could benefit from a comparable competitive grant program that prioritizes emissions reduction, ridership growth, and connectivity to housing and jobs. Such a program could support high-capacity bus corridors, electrification, and transit-oriented development.
        - Sustainable Communities and Affordable Housing Grants
            - California funds integrated housing and transportation projects through the Affordable Housing and Sustainable Communities (AHSC) program. Oregon could replicate this model to ensure that new housing near transit includes meaningful transit investments, helping reduce VMT while addressing housing affordability.
        - Local Tax Authority and Matching Incentives
            - California empowers local jurisdictions with greater taxing authority for transportation (e.g., sales taxes, parcel taxes) and offers matching state funds to incentivize voter-approved local investments. Amending Oregon's tax policy (e.g., ORS 267) to expand local district authority and provide state-level matching funds could strengthen local transit agencies' financial sustainability.
    - Redundant systems—such as micro-grids incorporating solar, battery storage, and backup generation—should be considered. A program modeled after California's Self-Generation Incentive Program (SGIP) could offer valuable support through rebates for qualifying distributed energy resources.

    - Incentivize the adoption of hydrogen fuel through tax incentives or fuel credits to improve its cost competitiveness relative to conventional fuels.
- Establish and fund a statewide technical assistance program for public and private fleets to support their transition to zero emission vehicles. The program should include support with the development of a fleet transition plan, an infrastructure assessment, and an electricity rate analysis.
    - A continuous, comprehensive review of technologies should be grounded in real-world data from vehicles, charging systems, and hydrogen fueling infrastructure, rather than relying exclusively on manufacturer-provided sales information.
    - Charging solutions should encompass a variety of existing options, including plug-in, on-route, overhead charging (inverted pantograph), and inductive charging.
    - Energy and load management strategies should be incorporated, including design techniques such as charge management systems and configurations like a 3:1 ratio of charge ports to a single power cabinet.
    - Hydrogen fueling solutions should evaluate both on-site production and delivered supply, in both gaseous and liquid forms. Each option presents unique challenges and considerations—for example, the significant power requirements for electrolysis, boil-off issues with liquid hydrogen tanks, and the need for robust gas and leak detection systems.
    - Redundant systems should be incorporated for both electric charging and hydrogen fueling infrastructure to ensure reliability and resilience. This may include backup power supplies, secondary fueling sources, and failover systems to maintain operations during outages or equipment failures.
- Develop a revolving loan fund to provide low- or no-interest loans for public and private fleets and middle-income households to purchase zero emission vehicles and infrastructure.

    Public transit agencies may be hesitant to use revolving loan funds or low/no-interest loans for fleet purchases, even though they already employ long-term financing tools like bond issuance. This reluctance stems from several factors, including the fiscal cliff many agencies are currently confronting, which amplifies concerns about incurring additional financial obligations. Key considerations include:

    Budget Constraints and Debt Aversion
    - While many agencies do use bonds for capital projects, they are still cautious about taking on additional debt—especially through loans that may impact annual operating budgets. Repayment obligations can introduce long-term financial pressure and uncertainty.

    Uncertain Revenue Streams
    - Transit agencies rely on fare revenue, local taxes, and government subsidies, all of which can be unpredictable. This variability makes long-term loan repayment riskier than grant funding, which does not require payback.

    Capital Funding vs. Operating Funding

- Most fleet purchases are funded through capital grants from federal or state sources. Since grants are non-repayable, they are generally preferred over loans or other debt instruments for major acquisitions like vehicles and infrastructure.

Procurement and Grant Alignment

- Transit agencies often align their procurement strategies with grant cycles and requirements. Introducing a loan structure can complicate timelines and may conflict with federal or state funding regulations.

Political and Administrative Barriers

- Although bond issuance is a familiar process for many agencies, new or additional loan agreements—especially those not part of established capital planning—can require separate approvals from boards or local governments, adding administrative burdens and delays.

Lack of Familiarity or Internal Capacity

- Some smaller or mid-sized agencies may lack the financial expertise or staffing to manage revolving loan programs, particularly if they are less standardized than bond financing.

Perceived Risk and Long Payback Periods

- Investments in zero-emission fleets often involve substantial upfront costs and longer timelines to realize savings. Without immediate financial benefits, agencies may view loans—even low- or no-interest ones—as less attractive or too risky compared to grant funding.

- Establish a working group of state entities and others to develop regulations and standards for hydrogen refueling infrastructure, including station certification and testing protocols, as well as safety, fuel quality, and consumer protection standards.
  - Include battery electric technology standards:
    - Standardization of vehicle technology, charging equipment and software systems:
      - Charging connection SAE standards: J1772, J3105 (this is still evolving), J2954 (brand new standard)
      - Interoperability: Ensure compatibility between charging equipment and vehicles, along with seamless integration of OCPP protocols for charge management and existing network systems.
    - Safety standards:
      - Battery Temperature Management**:** Lithium-ion batteries—particularly those using nickel manganese cobalt (NMC) chemistry—are highly sensitive to temperature fluctuations. Extreme cold or heat can significantly affect their performance, safety, and lifespan, and in severe cases, may lead to thermal runaway events.
      - Safety Certification**:** Zero-emission buses require specialized safety and security certifications to address the unique risks associated with their deployment. These include battery safety, fire risk management, and the safe design and operation of charging infrastructure.

        - Support efforts to integrate hydrogen fueling infrastructure into state building standards and codes, in alignment with National Fire Protection Association (NFPA) Code 2, to streamline the permitting process for hydrogen fueling stations and associated equipment.
- Complete a MHD ZEV Technology Readiness and Feasibility Assessment to evaluate ZEVs that can be deployed in the near, mid, and long term based on cost, availability, range, payload, and operational capabilities. The study should include a Deployment Strategy that outlines a MHD ZEV roadmap for Oregon policymakers.
    - Considering the challenges of fluctuating funding availability, potential volatility in government incentives, and the long-term financial sustainability of such investments (federal, state & local).
    - Reliability of technology:
        - Battery technology and management systems**:**
            - Energy storage systems and design
            - Cooling systems
            - Mid-life battery overhauls
            - Firmware updates and battery management systems
        - Range limitations and impact on operating profile
        - End-of-Life and battery degradation
        - Charge management system optimization and cost-effectiveness (cost-benefit analysis)
    - Standardization:
        - Vehicle-to-charger communication
        - OCPP charging equipment integration and interoperability
        - Commercial viability of vehicle types (e.g., cutaway minibuses, commuter buses, double-decker buses, and 60-ft buses)
    - Original Equipment Manufacturing (OEM):
        - Buy America compliance
        - Competitive market: limited number of vehicle and charging/fueling manufacturers (e.g., currently only two bus manufacturers for battery-electric vehicles and one manufacturer for hydrogen fuel cell buses in the U.S.)
        - Vendor sustainability**:** Consider the long-term viability of vendors, including the risk of a vendor going out of business. This includes ensuring the availability of ongoing technical support, replacement parts, and warranty services to prevent disruptions in operations or maintenance.
- Complete a statewide assessment of MHD charging and fueling infrastructure needs (public and depot) to meet the targets established by Advanced Clean Trucks.
    - This should address the unique challenges of public fleets, including limited space for infrastructure at depots, the high upfront costs of installation, the complexity of coordinating with existing routes and schedules, and the need for reliable, scalable solutions to meet future demand. Additionally, the assessment must consider the potential for service disruptions during the transition to zero-emission vehicles, as well as the variability of funding and policy support across different regions.

- Launch a public information campaign (including an updated webpage, educational video, and radio, TV, and social media spots) to educate consumers and dealers about the benefits of electric vehicles, including grid benefits such as the cost savings potential of participation in managed charging and demand response programs.
    - Recommendations:
        - The campaign should tailor messaging for different audiences, including specific content for public transit agencies that addresses fleet management, infrastructure needs, and vendor reliability.
        - Highlight both the benefits and the challenges associated with EVs and hydrogen, particularly for public transit, to provide a balanced perspective that helps inform policy decisions.
        - Ensure that funding opportunities, incentives, and regional variations are clearly outlined for public transit agencies to understand the financial landscape of EV and/or hydrogen adoption.
    - Overall Considerations:

        Target Audience Clarity
        - While the campaign may focus on consumers and dealers, public transit agencies might worry about the need for tailored messaging specifically aimed at transit operators and local government officials. These groups have distinct concerns, such as fleet management, operational logistics, and long-term cost-benefit analyses, which should be addressed separately from consumer-focused content.

        Infrastructure and Funding Needs
        - Public transit agencies may feel that while the benefits of EVs are well-highlighted, there is insufficient focus on the infrastructure and funding gaps for public transit fleets to transition to electric. Educational materials should also highlight the challenges related to the installation of charging stations, depot upgrades, and the cost implications of transitioning large fleets.

        Range and Charging Accessibility for Transit Fleets
        - Unlike personal vehicles, public transit buses often have specific operational requirements, including longer ranges and the need for fast, reliable charging infrastructure. A campaign might overemphasize the benefits of EVs without acknowledging the range limitations or the complexities involved in implementing a charging network for heavy-duty electric vehicles (e.g., buses).

        Long-Term Sustainability and Vendor Reliability
        - Public transit agencies may be concerned about the longevity and sustainability of the vendors supplying EVs and charging infrastructure. The campaign should address how these issues will be managed to ensure continuity of service, especially if a vendor goes out of business or faces other operational challenges.

        Local and Regional Variability

- The availability of funding for EV infrastructure and incentives can vary significantly by region. Public transit agencies may need region-specific messaging that aligns with local funding programs, state regulations, and available resources. The campaign should ensure it does not create unrealistic expectations or apply a "one-size-fits-all" approach, as some regions may face barriers that others do not.

Potential Service Disruptions during Transition

- Public transit agencies may worry that an overly optimistic public information campaign could gloss over the operational challenges of transitioning fleets to ZEVs. Acknowledging potential service disruptions or challenges in the rollout of new technology can help build trust with both the public and policymakers.

Cost Considerations for Agencies

- While the campaign may highlight cost savings through managed charging and demand response programs, it's important to also emphasize the initial costs and long-term funding considerations for public transit agencies. These agencies may face challenges securing the necessary upfront capital to transition to EVs, and a campaign that only highlights savings may overlook the broader financial hurdles.

Grid Integration:

- Require IOUs to publish and maintain interactive, circuit-level Hosting Capacity Maps (HCMs) showing available capacity for EV charging infrastructure, building electrification, distributed generation, and battery storage. The state should establish uniform standards for data formats and granularity, visualization tools, and public access protocols.
    - Recommendations:
        - Ensure that the HCMs are designed to meet the specific needs of public transit agencies, with detailed information on depot and route-level charging capacity and if technology limitation where can't operate then what alternative such as fuel cell electric bus for example.
        - Incorporate forecasting capabilities for future grid demand and the potential need for infrastructure upgrades.
        - Establish clear and accessible protocols for data sharing to allow transit agencies to easily access and use the maps.
        - Provide technical assistance and funding support to smaller or underserved transit agencies to ensure equitable access to this critical data.
    - Overall Considerations:

Integration with Public Transit Infrastructure Needs

- Public transit agencies rely on reliable and accessible energy infrastructure for their fleet charging needs. The Hosting Capacity Maps (HCMs) must be comprehensive enough to reflect the specific needs of transit agencies, such as depot charging, high-power charging for buses, and the integration of charging stations along transit routes. If the maps are only focused on residential or commercial needs, public transit

agencies could be left with insufficient information to plan for large-scale infrastructure deployment.

Granularity of Data and Localized Needs

- Public transit fleets may require very specific data about electrical capacity in particular locations, such as bus depots or high-traffic transit hubs. It's crucial that the maps provide a level of granularity that allows transit agencies to identify available capacity in these key locations. A lack of sufficient detail could create challenges in planning charging infrastructure without detailed knowledge of capacity at the circuit level.

Coordination across Multiple Stakeholders

- The introduction of uniform standards for data formats, granularity, and visualization tools is beneficial, but it also requires coordination among various stakeholders—transit agencies, utilities, local governments, and private companies. Clear protocols for public access and data sharing must ensure that transit agencies have the tools to effectively use the data to make decisions about fleet electrification. Any delays or gaps in coordination could hinder the timely deployment of necessary infrastructure.

Updating and Maintaining Accurate Data

- The maps must be regularly updated to reflect changes in grid capacity and infrastructure. Public transit agencies depend on up-to-date information to make decisions regarding fleet charging stations and other infrastructure investments. Outdated or inaccurate data could lead to misinformed decisions, resulting in delayed projects or undersized infrastructure that does not meet growing demand.

Impact of Grid Constraints on Fleet Electrification

- As public transit agencies transition to electric fleets, they may encounter grid constraints that limit the ability to deploy charging infrastructure. Hosting Capacity Maps should provide clear indicators of areas where grid upgrades are needed to support high-density EV charging loads, especially in urban areas with heavy bus and vehicle traffic. Without this information, transit agencies may struggle to assess whether existing grid infrastructure can support their needs or if additional investments are required.

Consideration of Future Growth and Load Forecasting

- Public transit agencies need to anticipate future growth in EV charging demand, not just current capacity. The maps should include forecasting capabilities to predict how grid capacity will evolve with increasing adoption of EVs, distributed generation, and battery storage. This would help public transit agencies plan for the future and avoid potential capacity shortfalls as fleet electrification progresses.

Cost and Funding Considerations for Infrastructure

- Identifying available grid capacity is only part of the equation. Public transit agencies must also secure funding to build the necessary infrastructure to utilize this capacity. While the maps may show available capacity, there needs to be a parallel effort to provide adequate funding, incentives, and technical support for the deployment of charging infrastructure. Without this, the maps alone will not be sufficient to drive the needed transition.

Impact of Utility Rates and Demand Charges

- The cost of electricity is a significant concern for public transit agencies, especially given the high energy demands of electric buses and fleets. HCMs should include information on utility rates, demand charges, and potential cost implications for transit agencies. This will allow agencies to assess not only capacity but also the financial viability of deploying large-scale EV infrastructure.

- Require IOUs to develop EV-specific rates for residential and commercial customers that better align the cost of EV charging with grid conditions. Commercial fleet rates should be designed to reduce or replace traditional demand charges and cater to varying demand levels.
    - Recommendations:
        - Work with public transit agencies to develop tailored commercial fleet rate structures that reflect the operational needs of large electric bus fleets, minimizing the impact of high demand charges.
        - Ensure that rate structures are predictable, equitable, and offer incentives for off-peak charging to align with grid conditions and reduce operational costs.
        - Provide incentives or technical assistance to support the integration of smart charging infrastructure to help transit agencies optimize charging schedules and avoid high-cost periods.
        - Align rate structures with state electrification targets for public transit to ensure the transition to zero-emission buses is financially sustainable and operationally feasible.
- Complete a comprehensive review of charge management systems and their integration.
    - Recommendations:
        - Scalability: Ensure that the charge management system can grow with the transit agency's fleet and adapt to future technological advancements.
        - Integration: Choose a system that integrates seamlessly with existing infrastructure, including various charger manufacturers and fleet management systems.
        - Optimization Tools: Implement tools that allow for optimization of energy use, including scheduling based on TOU rates, demand response programs, and route requirements.
        - Monitoring and Analytics: Provide transit agencies with real-time data and reporting to track energy usage and operational efficiency, helping to manage costs effectively.
        - Flexibility and Redundancy: Ensure the system provides operational flexibility and redundancy, allowing for contingencies when unforeseen issues arise.

        - Data Security: Ensure the system is secure and protected against cyber threats, safeguarding sensitive operational data.

VMT Reduction:

- Recommendation:
    - Any VMT reduction strategy should explicitly include the need for stable, long-term transit funding as a foundational element. Without it, the state risks falling short of its climate and equity goals, and public transit may not remain a viable or competitive option for reducing VMT.
- Key Considerations:
    - Transit as a Core Strategy for VMT Reduction
        - Public transit is one of the most effective tools for reducing VMT, particularly when service is frequent, reliable, and accessible. However, without adequate and stable funding, transit agencies cannot expand or even maintain the service levels required to attract riders, especially in suburban, rural, and low-density areas where VMT tends to be highest.
    - Need for Long-Term Operating Support
        - Unlike one-time capital investments, operating transit services requires ongoing funding. Many agencies are facing fiscal cliffs post-COVID and are struggling to maintain service, let alone grow it. Policies that aim to reduce VMT must address this reality by providing flexible, long-term funding sources that cover operations, not just infrastructure.
    - State-Local Partnership
        - Local jurisdictions often bear the burden of funding transit services, yet the benefits of VMT reduction—such as lower emissions, reduced congestion, and improved public health—are statewide. A coordinated funding strategy is needed where the state plays a more active role in supporting local transit systems through recurring appropriations, expanded transit tax authority, or dedicated funding streams.
    - Equity and Accessibility
        - Expanding transportation choice must include equitable access to transit for historically underserved communities. Sustainable funding ensures that service improvements and route expansions reach all Oregonians, especially those who are transit-dependent or live in areas currently underserved by the system.
    - Policy Alignment
        - VMT reduction goals must be aligned with other policy areas such as housing, land use, and climate. Transit-oriented development and Climate Friendly Areas will only succeed if robust transit options are available and funded.

Oregon Energy Strategy

Public Comment

Kelly Howsley Glover, Wasco County, 4.30.25

I think the proposed strategies language under "Faciltiate responsible"...is problematic because it suggests there isn't currently transparency of land use planning/permitting/siting. I think this is a mischaracterization of what the sticking point is. First, I think there are existing conflicts between state energy siting rules and land use planning rules that create challenges that should be addressed. The state, including EFSC, has been trending towards super siting, and if that is the direction the state wants to go, it needs to make it clear that it is uninterested in assuring compliance with local programs developed for consistency with statewide land use planning goals. I noted on the policy action document, references in this section suggest developing a statewide land use inventory. That has been done. ORESA is a developed tool that aims to achieve better coordination. I am not sure what "update the current land classification" means, but again ORESA's intent as well as the Eastern Oregon Solar Siting rule is to have a readily accessible database of lands available for renewable energy development. I recommend the language be more specific, and recognize these efforts as well as existing conflicts in ORS/OARs that give rise to permitting challenges, rather than use the broad sweeping language that suggests a complete overhaul is needed.