



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 modeling and technical analysis for the Oregon Energy Strategy. It reflects all comments received between September 11 and October 11 through the Oregon Energy Strategy comment portal and email. The Oregon Department of Energy solicited feedback throughout this time period to inform the selection and design of Alternative Scenarios. October 11 was the deadline for input on the Alternative Scenarios.

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. Incorporating feedback on the Alternative Scenarios and executing the modeling represents the end of Phase 1; the Oregon Department of Energy will release the modeling results and responses to comments in advance of Phase 2 policy discussions.

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/>

Table of Contents

Better Energy LLC - Tracy Farwell	3
Better Energy LLC - Tracy Farwell (2)	4
David Collier	5
Diane Meisenhelter	7
Eric Strid	9
Jennifer Krauel	10
LineVision - Eli Asher	11
Nikki Mandell	12
Oregon Citizens' Utility Board - John Garrett	14
Oregon Department of Land Conservation and Development - Alexis Hammer	17
Oregon Hunters Association - Mike Totey	19
Oregon Municipal Electrical Utilities Association - Jennifer Joly	20
Oregon Physicians for Social Responsibility - Ann Turner	21
Pacific Ocean Energy Trust - Bill Henry	22
Portland General Electric - Greg Alderson	26
Renewable Hydrogen Alliance - Erin Childs	28
Renewable Northwest - Emily Griffith	30



9 October 2024

Before the Oregon Department of Energy

Solicited Public Input – Oregon Energy Strategy, October 2024

Best Science

Our Oregon State Energy Strategy must be properly informed by climate, environmental and geologic threats as guided by best science. Moreover, until this State energy policy is in place, US DOE will not likely release Infrastructure funding or Inflation Reduction Act resources to Oregon like other states are already qualified for (e.g. WA).

If and when the 41st known Cascadia catastrophe arrives, oil and gas infrastructure will need to be rebuilt. Why? Because the needed non-emitting energy grid will not be available to suddenly take the load, following its own repairs. This is a way larger challenge if Cascadia shows up sooner. The story we are getting from OregonLive is that there was a 50/50 chance in 1946 since the historical average interval between seismic disasters is now known to be 246 years. Add 246 to the last big one in 1700. This simple non-statistical data suggests the risk today, 78 years later, is greater than 50%.

<https://projects.oregonlive.com/maps/earthquakes/timeline>

Nature is about to draw down NW fossil fuel infrastructure without any policy action. NW geophysics is well known to those who invest in such research for a living - the very fossil fuel entities at risk. Not known for truth-telling (consider Exxon since the 1970's) we still do not see them trying to tell us THEY are not at increasing tectonic risk. Oregon needs an energy strategy that considers an early, an interim, and a late seismic subduction disaster intervention.

The Sellwood and Tillicum bridges seem to be seismically current. The Burnside is under design for completion in 10 years. The big blue NW Natural LNG tank on the Willamette is reported as nearing its end of design life, while its foundation and soil characteristics are just now being investigated. How many CEI Hub storage tanks are without anchors or known foundations? According to operator reports filed with DEQ, virtually all come up short. We know this because the consultants describe such tanks as “self-anchored” by their own weight. Most reports do not describe the fill levels that assure “self anchoring,” nor the procedures relied on to assure this claimed .safety factor.

Portland is looking compromised by multiple factors.

1. Electeds like Council members Ryan, Rubio and Gonzalez, plus 100 years of Mayors, accepted the Hub public safety risks they did not know about (though more recently they clearly could have)
2. The public safety risks are now known.
3. Recent research by ODOE energy consultants have identified community “islands” that will become isolated during natural emergencies.
4. Although Emergency Management planning is in place, there is no planning to mitigate the known inescapable consequences ahead of time. Emergency Management is not the same as Public Risk Management.

Prepared and submitted by

Tracy Farwell, Sustainability Desk
[Better Energy LLC](#)

Math is important. When the overdue Cascadia M8/M9 seismic disaster comes back, it will produce a peak oil event in the NW due to the loss of the CEI Hub infrastructure and all of its backups that are in even worse shape today: Puget Sound refineries built 50 years ago on sandy shoreline looking toward the tsunami front, and the single rickety pipeline also 50 years old that looks nothing like the seismic design serving the North Slope. Here is what Oregon Live reports: <https://projects.oregonlive.com/maps/earthquakes/timeline> Would you hop on a bus with a 50% chance of rolling over? An Energy strategy informed by current geophysics would acknowledge a wild card in the mix. Maybe three strategic responses with Cascadia events 10 years, 20 years and 30 years out, factoring the transition to fuel-free energy sources - hydro, solar, wind, etc. Please reserve a model of refineries east of Oregon based on current excess capacities if any. Your interest in adding even more worries is admirable. All Ahead Full. Best regards, T

Oregon Department of Energy
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To: Janine Benner, Director
Alan Zelenka, Division Administrator, Planning & Innovation Division
Jessica Reichers, Energy Technology & Policy Manager

Dear ODOE,

Comments Regarding - Oregon Energy Plan. Need to include returning 21st century nuclear power generation to Oregon as one of the Oregon Energy Plan “What-If” Modeling Scenarios

In every sector of our lives and economy Oregon’s demand for clean electricity is soaring. To deliver that future we need the means to produce vast quantities of affordable and reliable clean electricity for heating, cooling, transportation, commercial and industrial scale economic activity and growth. We need a source of power that will lower energy costs to consumers, serve our business sectors, enhance our energy independence, and meet our state’s extremely ambitious climate goals for 2050. Large scale build-out of solar, wind, geothermal, wave energy, and other complementary policies will play an essential role in our clean energy future, but to truly meet the overwhelming energy needs of Oregonians we will need to evaluate every option for new and transformative technology that provides sustainable, reliable, affordable, and clean energy on the massive scale necessary to serve our state. Technologies that can truly end our dependence on fossil fuels for energy production. That transformative path forward may very well include returning 21st century nuclear power production to Oregon.

The U.S. Department of Energy and private sector investors such as Bill Gates are charging full speed ahead to evaluate the potential benefits and cautions of new technology small-scale modular nuclear power. Oregon has always been a leader in embracing new clean energy and environmental technologies and now is the time for Oregon and the Oregon Department of Energy to be leader in evaluating this possible “What-If” scenario for the current Oregon Energy Plan update.

Of course nuclear power has its history and Oregon would certainly be wise to learn from the past. However, fear and decades old animosities should not guide or obstruct the evaluation of the potential for 21st century nuclear power in Oregon. A younger generation of environmental activists unfettered by their grandparents anti-nuclear history and bias are very open to honestly evaluating the pros and cons of small scale nuclear as a potentially game changing strategy to significantly reduce our dependence on fossil fuels, fight climate change, and provide more affordable energy, especially for environmental justice communities. In this next energy plan and report to the governor and 2025 legislature ODOE should make clear that the mandates of HB3630 require ODOE to include and evaluate optimized pathways to achieving the state’s energy policy objectives. In my view, this mandate cannot be fulfilled without evaluating the option of returning 21st century nuclear power generation to Oregon.

If needed to address any existing statutory issues and empower the Oregon Department of Energy to act, I suggest the governor and legislature specifically clarify, require and fund ODOE to add a “What-IF” Planning Scenario to the state Energy Strategy that would dispassionately and comprehensively model and evaluate the pros and cons of an aggressive but achievable introduction of geographically disperse, small-scale modular nuclear power production within Oregon, including:

- The potential for small scale nuclear power to meet mandates in HB3630.
- The potential for small scale nuclear power to meet Oregon’s future energy demands by 2050.
- The potential for small scale nuclear power to help meet Oregon’s climate change goals.
- The potential for small scale nuclear power to work in concert with and complement Oregon’s other clean energy strategies.
- The impact on residential, commercial, and industrial energy costs.
- The pros and cons of regionally diverse small scale nuclear power generation on power transmission capacity and reliability, especially during times of disaster such as wildfire or extreme heat events.
- Issues surrounding public safety and any nuclear waste disposal.
- Public health, land use and citing issues, including environmental justice issues and impacts on local neighborhoods and communities.
- Impacts on demand response.
- Impacts on regional power needs and transmission.
- Changes to Oregon law needed to allow small scale nuclear projects.

Returning nuclear power generation to Oregon through 21st century technology may be the strategy that truly transforms Oregon’s energy future and in the long run makes fossil fuels simply unnecessary anymore to meet our electricity needs. Or the technology may prove inadequate. That remains to be seen. The only true error Oregon could make that this moment would be to exclude small scale nuclear power from the analysis of Oregon’s potential energy future.

Sincerely,



David Collier
Portland, Or
Oregon Environmental Policy/Regulator - Retired

cc: Governor Tina Kotek, through Chief of Staff, Chris Warner, Chris.warner@oregon.gov
Senior Natural Resources Advisor, Geoffrey Huntington, geoff.huntington@oregon.gov
Senator David Brock Smith, District 1,
sen.DavidBrockSmith@oregonlegislature.gov
Commissioner John Schafer, Chair Umatilla Board of Commissioners.
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I apologize for not seeing the Reference and Alternative Scenario drafts until just in the last couple days and have not had time to really work on an analysis or even get my thoughts straight, but hope to follow this process in the near future if I can be put on a list. Looking briefly at the Scenarios, I first want to applaud you on a daunting task. That said, without perhaps a full understanding, I want to draw attention to a few overall concerns. It is very critical to both limit and better define clean energy. While emissions are of utmost important, we cannot trade off public health and safety or other environmental concerns by including nuclear, out-of-state nuclear, and many types of so-called “renewable fuels” that are just as problematic and in many cases carbon intensive as fossil fuels. I’m also concerned that this draft while setting out an electrification strategy is not fully clear about drawing down fossil fuel infrastructures. You must be more specific about reducing electricity production from coal, gas, nuclear and other greenwashed problematic processes and begin to look at how we transition from places like the CEI HUB which comes with so many problems instead of just moving those problems around the state. It is also important to focus on local community solar and localized distribution and storage systems instead of long-distance transmissions. I have some concern about too much reliance on hydrogen energy as our ‘savior’ to the degree it is pushed in this draft when there are vast numbers of issues that must first be addressed, but agree only green hydrogen should be considered.

Working on sequestration zones like mature and old growth forests and wetlands, I’m concerned to see biofuels and biomass on the lists which to me should be red flagged and while heartened to see defined “protected areas” in the lands section do not see mention of national forests, BLM or other public lands as well as tribal lands and don’t want these utilized either for energy production or energy corridors for pipelines or anything beyond carefully full EIS electrical transmission lines. It is also important that Oregon not allow the export of fossil or “renewable” fuels that will just be burned in other places and still contribute to climate chaos. Nor should energy infrastructures be located on rivers or near other critical natural areas and particularly **not** in tsunami, CSZ or liquefaction zones. The state’s whole ‘renewable’ fuel model needs much more attention as research shows that the current modeling is problematic and that often these fuels over their life cycle and multiple other variables are just as carbon intense and damaging and thus need to be studied more closely on a case by case basis.

In looking at the targets being presented in various scenarios, it is critical that we must meet our emission reduction goals but that is going to require the State stepping up, developing, and enforcing stronger strategies. There must be a much greater reduction in VMT miles traveled (ODOT’s 20% is pathetic and must be increased) through electrified mass transit and limited state transportation dollars need to be prioritized with our emission reduction goals (along with safety) in mind and more evenly distributed throughout the state. Similarly, the state should enact stronger building codes, incentives and mandated efforts to coordinate and expedite municipal building decarbonization strategies to make as large a dent in the buildings sector emissions as the transportation sector since they are nearly equivalent. The state should consider tax incentive and other policies not to reward big energy users and polluters like data centers, chip makers, etc. but to foster quick transitions to energy conservation and clean energy infrastructure. Otherwise, we are working against ourselves. In addition, on the supply side the models must include the effects of increasing demand from higher temperatures and other by-products of climate fostered extreme weather as well as natural disasters.

I’ve run out of time to work on this, but do appreciate the chance to provide some feedback and wish you luck as you continue to work on these models. Given what we are seeing primarily in the Global South and just beginning to see here, this is possibly the most important task of the century. Do not be

persuaded by those with self-interests like NW Natural or others as we know what scientists say must happen as rapidly as feasible and we need to stay on a clear path towards that truly CLEAN energy future for all of our sakes. Thanks for your time and consideration.

You can submit comments at: [Oregon Energy Strategy - Public Comment Portal · Customer Self-Service \(powerappsportals.us\)](https://powerappsportals.us)

Hi again,

[These are my personal comments, not those of the Hood River County Energy Council.]

Considering the attempt by a solar developer to derail the T&D Working Group meeting, the recent formation of the Save Oregon Solar Coalition, and the limited storage options in the 5 scenarios to be modeled, I am concerned that DERs, VPPs, and V2G will get sufficient consideration in the Oregon Energy Strategy development.

Regarding V2G, California recently passed a law that allows CEC to accelerate V2G requirements in new vehicles, which could potentially triple their grid storage from just one year of EV sales. https://www.utilitydive.com/news/california-electric-vehicle-ev-to-grid-battery-capacity/726319/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202024-09-11%20Utility%20Dive%20Load%20Management%20%5Bissue:65754%5D&utm_term=Utility%20Dive:%20Load%20Management

Regarding VPP's, Energy Hub's recent VPP summary notes over 500 VPPs operating in North America, serving millions of customers. RMI's recent VPP flipbook illustrates various VPP pilots, including PGE, and summarizes key takeaways (pp. 64-66). https://rmi.org/wp-content/uploads/dlm_uploads/2024/06/VP3_flipbook_v1.1.pdf

All of these trends show that rapid adoptions are available and beneficial. ODOE, Oregon IOUs, and OPUC should be carefully planning for an exponential growth in VPPs and microgrids.

Thank you,

Eric Strid

I am excited that Oregon is working proactively on an energy strategy. As a scientist I can see the importance of an evidence-based approach to making the difficult choices ahead of us given the effects of climate change. Based on the published previous comments, I can see that many Oregonians have already contributed some fine ideas.

Please ensure that the models include, and properly show the benefits of, local renewable energy, clean fuels and smart grids. It will be more efficient to prioritize rooftop solar, community solar and storage, and other distributed energy made in Oregon, sized and located to meet our load demands and grid constraints, than to rely on inter-state grids and power generated outside of the state.

Thank you for specifying that only green hydrogen should be considered as “clean”. Blue hydrogen is generated from methane, is much more expensive, and blending it into gas should under no circumstances be considered clean. Reading the comments previously expressed, I am concerned that Northwest Natural and other companies profiting from fossil fuel production will not have the best interests of Oregon citizens at heart.

Finally, please ensure models include effects of increasing demand due to higher temperatures, as well as impacts of wildfires, earthquakes, and climate-change-related extreme weather events.

LineVision, Inc.

Eli Asher, Regulatory & Policy Manager, West

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Dear ODOE Energy Strategy team:

These comments respond to the request for comments regarding alternative scenarios, requested by ODOE via email on September 27, 2024. LineVision submitted initial comments on August 28, 2024. Much of the Transmission & Distribution Working Group session discussion centered around the lack of the existing transmission system capacity under today's constraints. The study leader noted that Dynamic Line Ratings (DLR), which can increase the capacity of the existing transmission system, are not captured in the initial proposed modeling approach, and according to the alternative scenarios published September 27, are still not incorporated into any scenario-based modeling.

Oregon-based utilities have already begun to deploy DLR, and will almost certainly increase their deployments in the coming years (Portland General has an active RFP to procure as of this writing, and are expected to select a vendor within weeks). DLR systems are typically deployed in a matter of weeks, and utilities can incorporate DLRs into their operations within months. Given the long time horizon of the study, the ability for DLR to deploy quickly and cost-effectively, and the time required to build new transmission, DLRs will be providing increased system capacity over the majority of the study period. If an alternative scenario does not capture the likelihood for DLR to be deployed across large swaths of the transmission grid in Oregon over the coming years, the results will not represent a likely reality, undermining the study's intent.

In 2024, RMI released a report called [GETting Interconnected in PJM](#). The study used a relatively simple approach to modeling DLR, among other GETs, in the PJM footprint. Specifically, the study applied "a conservative average of a 10% uprate from the attic ratings to all overloaded lines in geographies with wind speeds of more than 3 feet per second", which enabled new resources to come online in the locations where those lines are no longer overloaded. We recommend that ODOE utilize this or a similar approach to ensure DLR, and potentially the other GETs, are reasonably captured in its modeling efforts as part of its strategy to ensure the state aligns with likely policy and utility deployment outcomes that would occur regardless.

Thank you for the opportunity to comment, and please do not hesitate to reach out with any questions or for further discussion.

Eli Asher

LineVision

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Oregon Department of Energy:

Comments on: Finalized Reference Scenario and Draft Alternative Scenarios for the Energy Strategy Plan, as required by SB3630.

I have reviewed all the posted materials, related to the Energy Strategy planning meetings, and carefully read the Finalized Reference Scenario and Alternative Scenario plans. I have serious concerns about the direction and potential efficacy of the Energy Strategy Plan framework, as explained in the three sections below.

The basic scenario – and all alternative scenarios – should incorporate plans for the draw-down of fossil fuel infrastructure. The framework that you are proposing contemplates *the build-out of non-fossil fuel infrastructure*. But, it does not address or contemplate planning for the *necessary draw-down of existing fossil fuel infrastructure*. Moving forward with this flaw in the framework builds three serious problems into whatever planning takes place:

- Ignoring the draw-down side of the decarbonization equation is counterproductive to the goal of transitioning away from fossil fuels.
- The absence of a plan for fossil fuel infrastructure draw-down, will incentivize companies to walk away, leaving stranded assets to burden taxpayers and local communities with remediation.
- The failure to explicitly plan an equitable draw-down will leave frontline, vulnerable communities to the vagaries of the marketplace. Research demonstrates that the marketplace is most protective of highly resourced communities and most neglectful of poorly resourced communities. This violates the charge of both the executive order and SB 3630.

The categories of protected lands should include lands that are well-documented as hazard zones, including tsunamis, earthquake fault, and liquefaction soil zones. The current framework's three levels of protected lands (eg: wildlife refuges, state and national parks, critical habitat, prime farm and hunting land) is insufficient is too limited to protect human and environmental health and safety.

- Specifically, multiple local and state government reports document the dangers of locating any type of flammable or combustible fuels – including renewable, bio-diesel, ethanol, LNG – along the CSZ in north Portland and along the Columbia River (Critical Energy Infrastructure Hub and Port Westward).
- ODOE's Energy Security Plan, published Sept. 30, 2024, punted planning to address these CEI Hub dangers to the Energy Strategy Plan. The proposed scenarios, however, do not even acknowledge the need to do this. It is not safe, sane, or acceptable for ODOE to ignore this ticking time bomb. ([2024-Oregon-Energy-Security-Plan.pdf](#) pg 145)

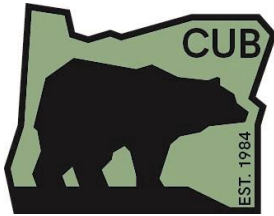
Electrification and “renewable” liquid fuels should be considered ONLY if they are produced, distributed, and used without adding to carbon emissions. The proposed framework fails this essential test.

- The absence of non-carbon-emitting definitions of “renewable,” “sustainable,” bio-“ fuels and “green hydrogen” opens the door for energy companies to claim they are meeting carbon-reduction/transition goals when they are not. Physics doesn't greenwash.

- For example, apropos of alternative scenario 6 calling for increased reliance on green hydrogen: The Sierra Club reports that “Industry groups are also using the term “green” hydrogen to include electrolysis powered by biomass or biogas, both of which harm the climate and public health. [Hydrogen: Future of Clean Energy or a False Solution? | Sierra Club](#)

Thank you for considering these comments. I look forward to a response.

Nikki Mandell



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October 11, 2024

Oregon Department of Energy
Public Comment Portal

RE: CUB Comments on the Oregon Department of Energy's Energy Strategy's Draft Alternative Scenarios

The Oregon Citizens' Utility Board (CUB) appreciates the opportunity to submit comments on the Oregon Department of Energy's (ODOE) Oregon Energy Strategy Draft Alternative Scenarios. We appreciate all the hard work that ODOE staff and its collaborators have put into this process and look forward to ongoing engagement; however, we note that it is difficult for stakeholders to meaningfully engage during what feels like a compressed timeline. Still, CUB also understands the urgency behind holistically examining decarbonization pathways and expects that ODOE is making every effort to create opportunities for meaningful engagement from a wide range of stakeholders who can provide helpful input and create benefit this process.

General Comments

In general, it is difficult to assess the assumptions of the reference or alternative scenarios without specific citations to the data that guided the assumptions. While the "Reference Scenario: Key Data and Assumptions" document provides some high-level data sourcing, it falls short of seamlessly directing stakeholders like CUB to the specific data that will guide the critical inputs for ODOE's modeling. Furthermore, several key assumptions "Reference Scenario: Key Data and Assumptions" are without references. CUB looks forward to examining not only the source data ODOE uses but also how ODOE uses it, particularly where there are multiple sources of data to reconcile. CUB hopes that opportunities to do so will exist in the future and that CUB's feedback could still influence meaningful changes once a more granular version of the energy strategy process is available.

CUB's primary critique of the Alternative Scenarios is that nearly all of them examine potential shortfalls affecting electric grid-based decarbonization strategies, whereas the alternative scenario for direct fuels seems to examine faster development of direct fuels, particularly, rapid deployment of renewable hydrogen. Without greater insight into how much renewable hydrogen ODOE expects to be available, by when, at what price, and for what applications, it is difficult for CUB to assess the reasonableness of the reference or alternative cases. High-level, CUB is concerned that the "what if's" being examined focus on the risks and uncertainties of electrification while minimizing the substantial risks and uncertainties surrounding renewable hydrogen. From what CUB has seen, there remains many questions about how renewable hydrogen would be produced, what it would cost and how it could be transported or stored. Green hydrogen would require substantial electrolyzer build outs and renewable energy to power electrolysis, in addition to new pipelines or retrofitting old ones, and storage facilities. Blue

hydrogen would entail carbon capture and storage technologies, which have a longstanding history of failing to come to market. Subsequently, CUB requests that ODOE consider at least modeling high-cost and or low/late availability of renewable hydrogen.

Draft Alternative Scenario 1: Lower Energy Efficiency and Electrification

CUB appreciates that the inputs for the Reference and Alternative Scenarios forecast significant uptakes of residential and commercial space heating, and in a sense model a difference in *when* rather than *if* the transition will occur. CUB has examined the viability of heat pump technologies in Oregon, particularly in the residential sector, and believes that given the sundry advantages of heats pumps— including federal and state subsidies for them, high and improving efficiency, the provision of air conditioning in addition to heating, and potential avoidance of indoor air pollution if an electric heat pump replaces gas appliances—presents compelling advantages for heat pump adoption.

CUB is curious to know more why commercial water heaters have low adoption rates in both the Reference and Alternative Scenarios. CUB is also curious about the source(s) of information for the inputs for Industrial Processes and Electrification and how the inputs were determined. In particular, we noticed that the Alternative Scenario slashes adoption by half in each case. This seems more extreme than the adjustments made to other Alternative Scenarios relative to the Reference.

Draft Alternative Scenario 3: Limited Demand Response

Regarding residential EV Managed Charging, CUB is curious to know more about how the assumptions of both the Reference and Alternative scenarios were determined. For example, does this assumption assume the capacity for managed charging for multifamily housing? Were the scenarios informed by Oregon’s electric investor-owned utilities transportation electrification plans?¹ CUB is also curious to know more about assumptions that led to the Demand Response – Households Participation. The margin between the Reference and Alternative Scenarios, 50% and 5% of homes adopting a program, seems like a larger adjustment relative to other changes from Reference to Alternative Scenarios.

Draft Alternative Scenario 6: Higher Hydrogen Availability

CUB believes more information is needed to determine whether the assumptions of this scenario are appropriate, but high-level, as we identified above in our General Comments, CUB is concerned that many renewable hydrogen strategies entail high risk and uncertainty, perhaps moreso than electric alternatives. For this reason, CUB is concerned that of the alternative scenarios which mostly focus on electric grid shortfalls, the only optimistic scenario examines faster deployment of renewable hydrogen. The details matter here, but generally, CUB is interested in examining a low availability and/or high-cost renewable hydrogen scenario too,

¹ See *In the Matter of PORTLAND GENERAL ELECTRIC COMPANY, 2019 Transportation Electrification Plan*, Docket No. UM 2033, available at: https://assets.ctfassets.net/416ywc1laqmd/2xv3CdVdbyaZuYVv3UFWkR/65122d294f36a14ee6514cab2cf6fb74/TE_P_2023-08-25_Full_Report.pdf; see also *In the Matter of PACIFICORP, dba PACIFIC POWER, Oregon Transportation Electrification Plan* Docket No. UM 2056, available at: <https://apps.puc.state.or.us/edockets/DocketNoLayout.asp?DocketID=22299>.

given the risks and uncertainties surrounding hydrogen, and to be consistent with other resource options.

Conclusion

Again, CUB appreciates the work ODOE has done to move this process forward. Developing a statewide energy strategy is a big task, but an important one. CUB supported HB 3630 and are looking forward to continuing to engage in this process. We are appreciative of the opportunity to not only provide comments, but to engage in the working group spaces. We are interested in hearing any responses to the questions and concerns we raised and are available to answer any questions.

Respectfully submitted,

/s/ John Garrett
Oregon Citizens' Utility Board
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Department of Land Conservation and Development

Comments on Oregon Energy Strategy Reference Scenario: Key Data and Assumptions
Submitted October 11, 2024

Authors: Cody Meyer, Land Use and Transportation Planner and Jeff Burrigh, Wind Energy Roadmap Coordinator

Regarding the VMT reduction policies:

- We appreciate the inclusion of VMT reduction policies in the reference case scenario.
- We support the sensitivity test of no change in VMT per capita in the alternative scenarios. Testing this change from reference will help demonstrate the importance of transportation-related energy conservation programs.

Regarding offshore wind:

DLCD and ODOE are currently both conducting processes to evaluate potential pathways for Oregon's energy future, and we are interested in exploring ways that the ODOE State Energy Strategy may provide critical information to support the state Offshore Wind Energy Roadmap. In accordance with HB 4080, DLCD intends for the Offshore Wind Roadmap to recommend standards to be considered in the development of offshore wind, including the attainment of the state energy and climate policy objectives. These objectives further include energy resource diversity, reliability and resilience of state and regional energy systems.

From our review of the baseline scenario and now the selected alternatives, it is not clear yet how the State Energy Strategy modeling will illuminate the potential role offshore wind can have in meeting state energy and climate policy objectives, nor what changes in policy structures and standards might help support responsible offshore wind energy development. We would appreciate the ability to meet with ODOE on a regular basis to better understand how our respective efforts can align.

We would also like to point toward an informal group effort from 2023 that preceded the development of HB 4080, and which included recommendations and expectations for the state to consider as it develops an offshore wind roadmap. In the [Roadmap Considerations Report](#), Section 3.1, there is a discussion of how offshore wind might interact with the state clean energy objectives. Section 3.1.1 lists key topics for the Roadmap to address, including:

- Describing the current energy generation mix in Oregon;
- Laying out various scenarios whereby FOSW can contribute to regional and/or Oregon clean energy mandates (scenarios are not prescriptive but rather a reasonable assessment of where energy generated by FOSW could go);
- Laying out various scenarios for transmission interconnection into the grid;
- Discussing possibilities for building energy resilience in coastal communities (e.g., energy offtake, microgrids, storage, grid optimization and hardening);
- Discussing possibilities for co-location of additional renewable energy production and storage;

- Addressing technical, financial, and logistical risks;
- Understanding the intersection with the Oregon Energy Strategy currently in development, including the role of potential FOSW in Oregon’s overall energy portfolio;
- Strengthening supply chains and manufacturing, including the feasibility of making component parts available, at a reasonable cost, and on time;
- Regularly updating FOSW cost projections, and identifying ways to protect against significant rate impacts; and
- Providing a realistic assessment of how much power offtake will go to California or Washington, and how much will go to Oregon utilities. Assuming there will be a competitive procurement and that developers will market power across the West, states will compete for the energy resource.

Additionally, Section 3.1.2 lists a number of key questions that the informal offshore wind discussion group hoped the Roadmap process could answer, including:

- How much does FOSW energy help Oregon and the region meet clean energy targets? This could be considered for regional clean energy targets as well as just for Oregon (i.e., HB 2021).
- Is it feasible to achieve clean energy targets without integrating FOSW energy into the energy mix? This could be considered for regional targets as well as just for Oregon (i.e., HB 2021).
- What financial incentives should Oregon consider to make FOSW a viable option within the clean energy market for the state?
- What potential impacts might exist for ratepayers?
- What additional transmission infrastructure is needed along the coast?
- Is there a viable market for FOSW, and who are the likely customers?
- If the State moves forward with FOSW, how can it simultaneously achieve additional goals beyond energy, such as protecting cultural/archaeological resources; recreation; conserving birds, fish, and wildlife; habitat preservation and enhancement; maintaining productive fisheries; and promoting biodiversity?

In a future meeting between DLCD and ODOE, we would like to walk through these objectives and key questions together to better understand whether and how the State Energy Strategy effort can provide answers to inform the Roadmap development process. We would also like to formally invite close collaboration with ODOE to address together any of the topics above that are not within scope of the State Energy Strategy. We hope that together we can lead Oregon to make informed energy decisions and find the best path forward for offshore wind energy as a potential part of Oregon’s energy mix.

For the Alternatives scenarios, it seems the limited ability to evaluate differences would be better spent on scenarios that are more directed at delays in delivery, or transition to new products, rather than more ambitious goals that will be less likely to achieve or unrealistic.



October 10, 2024

Ms. Edith Bayer
Energy Policy Team Lead
Oregon Department of Energy
550 Capitol Street NE, 1st Floor
Salem, Oregon 97301

Dear Ms. Bayer:

Thank you for accepting comments on the Draft Alternative Scenarios, which will answer important “what if” questions and inform policy recommendations.

As we understand it, the Oregon Department of Energy (ODOE)’s contract with the consulting team working on the model limits consideration to five alternative scenarios. If that is the case, we urge to you to drop or alter one of the alternatives that you have outlined in your draft and model something we think, unfortunately, is much more likely in this era of rapid climate change—extreme weather events or disaster scenarios leading to energy disruptions. For example, hot and cold weather extremes (1 in 10- or 20-year events). Or a disaster scenario causing a major gas pipeline or transmission system disruption. Perhaps you could broaden the “constrained transmission” alternative to do this?

Oregon has seen devastating wildfires, heat domes, ice storms, and has been preparing for a Cascadia subduction zone earthquake. We know ODOE has had a keen focus on resiliency and system hardening. We note your recent filing of a State Energy Security Plan with USDOE. Perhaps that work could inform the modeling of such a scenario? Not including an alternative related to something that is becoming all too common would be a missed opportunity. Extreme weather and disasters seem far more likely than several of the other alternatives that have been outlined in the draft.

We appreciate that the reference scenario considers “weather” but think an extreme weather event leading to significant energy disruption is an important scenario to model. Thank you for your consideration.

We would be happy to discuss this suggestion. I can be reached at (971) 600-6976, jenniferjoly@omeu.org.

Sincerely,

/s/ Jennifer Joly
Jennifer Joly, Director
Oregon Municipal Electric Utilities Association

1201 COURT ST. NE, SUITE 102 • SALEM, OREGON 97301 • (971) 600-6976 • E-MAIL: jenniferjoly@omeu.org

My name is Ann Turner. I am a retired physician and the Co-President of the Board of Directors of Oregon Physicians for Social Responsibility. Guided by the values and expertise of healthcare and public health, Oregon PSR works to protect human life from the gravest threats to health and survival by striving to protect our climate, end the nuclear threat, promote peace, and advance justice.

We are an organization of health professionals and public health advocates working collaboratively with community partners to educate and advocate for societal and policy change that protects human health at the local, state, national, and international level.

We seek a healthy, just, and peaceful world for present and future generations. Our current work involves bringing a scientific and public health perspective to the following issue areas:

The Final Reference Scenario and Draft Alternative Scenarios are several serious problems. Although it emphasizes building out our electrification infrastructure--very important-, it does not address the huge issue of drawing down fossil fuel infrastructure. Think about the CEI HUB and the disastrous consequences of the predicted earthquake. In addition, there should be no provision for increasing oil and gas pipelines. We must continue to prohibit fracking.

We must protect our precious forests, especially old growth forests, and prohibit any use of forest lands for fuel itself, for pipelines or using forest products as biofuels. We must avoid hazardous zones like the CEI HUB and Port Westward.

Any plan must not include so-called renewable natural gas, biofuels and most uses of hydrogen.

We must continue to ban the building of nuclear power plants, including small modular nuclear reactors. Nuclear energy is not clean, is extremely costly, and absolutely not safe.

Thank you for the opportunity to comment.

Ann Turner, MD

OPSR

Co-President

Portland, OR 97211

Pacific Ocean Energy Trust (POET) suggests ODOE include an offshore wind scenario that is intended to make key insights available to Oregon policy makers and stakeholders on specific offshore wind elements. Because these elements are likely to come before decision makers and stakeholders in the coming years, ODOE’s current modeling efforts could be of great assistance in helping them make fully informed decisions in a timely manner. We suggest ODOE create an offshore wind-specific scenario, including at least one sensitivity, that models a future where all relevant offshore wind policies on the U.S. West Coast align to create a viable offshore wind industry. In this way the Oregon Energy Strategy will be able to inform interested parties of what the future could look like if Oregon, along with California and Washington, were to take a proactive approach to cultivating this new industry.

By placing the elements of a proactive offshore wind approach that we articulate below into a dedicated scenario, these outcomes may be compared to more passive approach reflected in the reference scenario where U.S. West Coast offshore wind policies do not achieve the same degree of alignment or ambition. At this point we do not believe there is sufficient justification to include high offshore wind ambition elements in the reference scenario and other alternative scenarios. However, because the purpose of the work is to inform policy decisions in future years, we wish to emphasize the importance of utilizing modeling capabilities available now to explore energy system insights of ambitious offshore wind policy choices.

Two of these key choices relate to the degree of integration and coordination between Oregon and California offshore wind buildout campaigns, and Oregon’s supply chain choices that will ultimately define the maximum possible installed generation capacity. The Alternative scenario description and sensitivity described below seek to explore factors related to these choices:

- **Primary Alternative Scenario.** In this scenario, Oregon and California will engage in close collaboration to optimally develop the area of greatest offshore wind potential on the West Coast. This area is bounded on the north end by the current Brookings Lease Area off the Oregon coast, and the already leased Humboldt Bay area on the south end near Eureka, California. In the middle lies the Del Norte area off the coast of California, which is expected to feature in California’s second leasing round in the 2027-2028 time frame. CAISO is planning for 7 GW for Del Norte and 2.5-3 GW for Humboldt Bay.¹ Brookings could contribute an additional 2-3 GW, for a total in this cluster of 11.5 – 13 GW. These numbers can and likely will change over time but represent a good starting place for modeling today. We believe offshore wind scenarios studied under Oregon Energy Strategy should include consideration of critical supply chain requirements and decisions for deploying floating wind at scale. Fortunately for the Brookings/Del Norte/Humboldt cluster, the gating supply chain decision (access to a staging and integration (S&I) port), has already been made for an S&I port at Eureka, California.² Therefore, we can assume the S&I port access constraint has been satisfied for this cluster. This constraint may not be satisfied for the remainder of Oregon as we describe below.

¹ CAISO [2023-2024 20-Year Outlook](#)

² A S&I port is where floating platforms, towers, nacelles, and blades are assembled using a very large crane, before being towed out to sea for deployment. All offshore wind projects must secure access to an S&I port, which should be located as close as possible. The Humboldt Bay Harbor District received a \$427 million [award](#) from U.S. DOT for an S&I port, which specifically contemplated providing service to Oregon offshore wind projects.

The Primary offshore wind alternative scenario also includes a robust campaign between Oregon and California to proactively build transmission infrastructure to serve the Brookings/Del Norte/Humboldt cluster. Proactive transmission planning and investment will be necessary to secure these projects on an earlier timeline than is possible in the passive approach and makes optimal use of transmission systems and existing corridors in both states, Figure 1 below shows topology suggestions for inclusion in the offshore wind alternative scenario and the reference scenario.

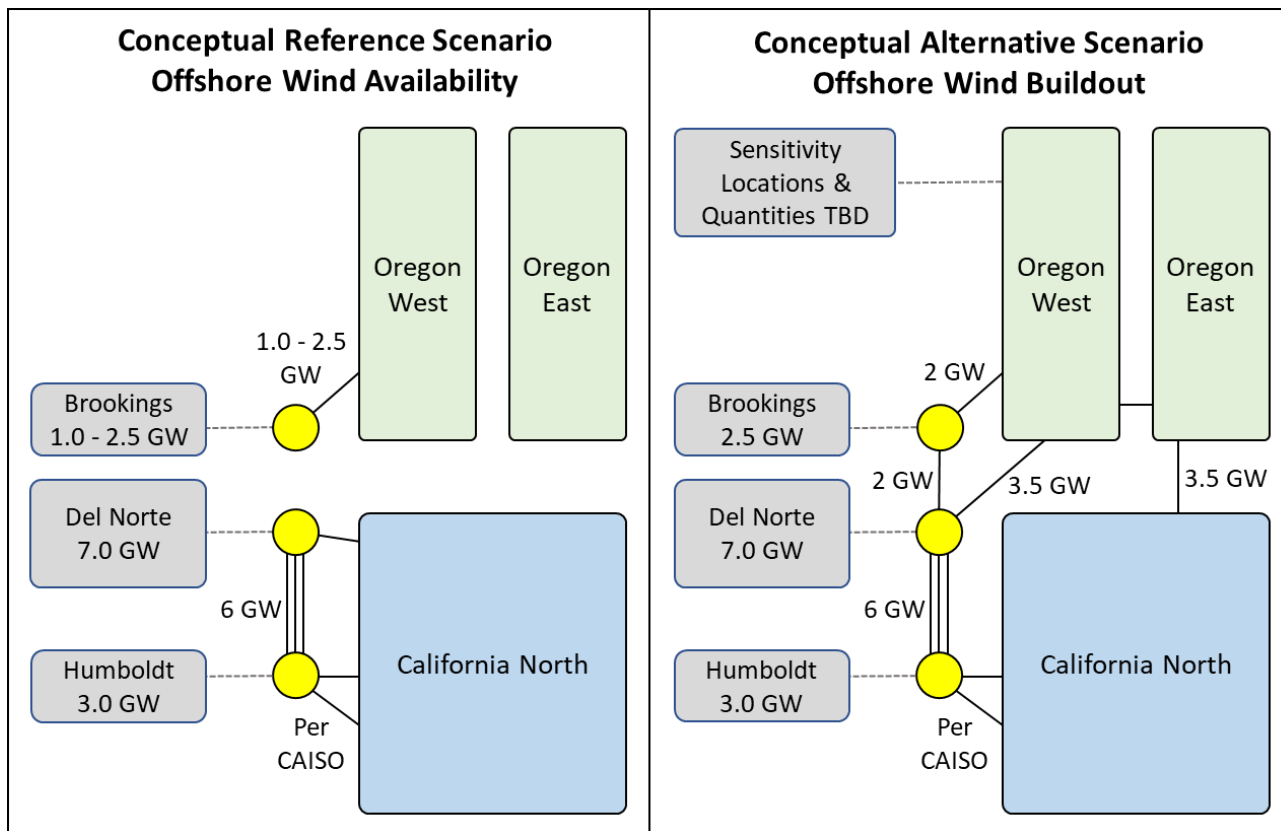


Figure 1: Offshore wind buildout and topology suggestions

The primary offshore wind scenario inputs and modeling assumptions should be constructed to realize a full buildout of Brookings with an integrated transmission informed by our suggestions above. This topology suggests utilization of a combined Oregon-California solution for Northern California offshore wind, which may yield advantages to both states compared to the radial approach.³ Transmission costs allocated to Oregon in this topology include an HVDC cable system from a Brookings node to a Del Norte node, where CAISO is planning to terminate multiple HVDC cable systems connecting with a Humboldt node. Conventional onshore transmission should be assumed to connect a Brookings node to the Oregon west zone.

³ This utilizes Del-Norte – Southern Oregon transmission as [evaluated](#) by PacifiCorp in 2022. This could provide an alternate path to the Del Norte to I-5 corridor line CAISO is considering as shown in the [2023-2024 20-Year Outlook](#). A Del Norte – Southern Oregon – California North project, as shown in Figure 1 above could utilize significantly more existing transmission corridors and provide additional benefits to both regions. Thermal ratings shown are assumed to be the same as CAISO [functional specifications](#) for the Humboldt – Fern Road project.

Generation cost estimates should utilize NREL 2024 ATB “advanced” data for floating offshore wind starting in 2036.⁴ The “advanced” scenario data is intended to be reflective of an ambitious policy environment where offshore wind technology development and deployment is supported by federal and state supply chain initiatives. In addition, the “grid connection cost” component of ATB estimates should be separated from the generation cost and included with transmission costs. For purposes of modeling at this point, simplified cost estimates should be created for facilities related to the nodes shown above, inclusive of grid connection costs. Ideally, a detailed Oregon-specific estimate of grid connection and transmission costs would be undertaken to inform future modeling efforts.

Alternate Sensitivity Scenario. We suggest ODOE consider exploring enhanced modeling capabilities to co-optimize offshore wind generation sea space and supply chain constraints for all generation beyond the current Brookings Lease Area. While we recognize this may be beyond the scope of ODOE’s current study, an initial inquiry into how to set up such a model in the context of the larger energy planning landscape may be valuable. Enhanced modeling capabilities of multiple types will likely become important in Oregon to pursue an offshore wind buildout beyond Brookings. This includes supply chain development and assessing Oregon’s practical ability to build these wind farms.

While Brookings is expected to utilize Humboldt S&I capacity, it is not clear whether a larger buildout in Oregon would also do so, especially for sea space locations that may be too remote to economically use Humboldt. Therefore, we suggest exploring offshore wind capacity expansion modeling capabilities that include supply chain inputs and constraints, including access to S&I capacity. In addition to S&I capacity, access to installation vessels, and Oregon’s ports for supplying these vessels is a significant challenge that could be included. This is also an opportunity to take a fresh look at optimal offshore wind sea space off the majority of Oregon’s coastline, from approximately Cape Blanco north to the Columbia River. National lab studies are performing some elements of a combined generation sea space and supply chain expansion modeling.⁵ However, this work is not focused specifically on detailed planning for Oregon.

For purposes of modeling additional offshore wind sea space beyond Brookings prior to bringing new capabilities to bear, we suggest creating proxy generation projects with representative wind generation profiles at multiple locations along Oregon’s coastline. One or more combinations of these proxy generators could be included in a sensitivity scenario to explore how Oregon’s energy system functions with greater quantities of generation with different and diverse profiles.

⁴ See “scenario descriptions” section on the [offshore wind technology documentation](#) page of 2024 ATB

⁵ See NREL West Coast port network [study](#), and ongoing PNNL West Coast Offshore Wind Transmission Study.

The table below shows a summary of suggestions for offshore wind in the reference scenario and the proposed offshore wind alternate scenario.

Scenario	Offshore Wind Generation Location	Quantity (GW)	Resource Online Date
Reference	Brookings	1.0 - 2.5	2038-2045
Offshore Wind Alternate Primary Scenario	Brookings	2.5	2036
Offshore Wind Alternate Sensitivity Scenario	Brookings	2.5	2036
	Other Oregon locations TBD	TBD	2038-2045



Portland General Electric
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For submission via the Oregon Energy Strategy - Public Comment Portal

October 11, 2024

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

To the Oregon Energy Strategy Project Team,

PGE appreciates the opportunity to participate in the Oregon Department of Energy's (ODOE) efforts to develop a State Energy Strategy. Our comments below are specific to the Draft Alternative Scenarios released September 24, 2024.

Constrained Transmission Scenario

Oregon's clean electricity law¹ requires PGE to reduce the greenhouse gas emissions associated with serving retail customers by 80 percent by 2030, 90 percent by 2035, and 100 percent by 2040, based on historic baselines. This heightens the urgency to develop, permit, and build or upgrade transmission to ensure that non-emitting resources can be connected to growing population centers and industrial loads, providing value to PGE customers in the Pacific Northwest. To that end, PGE would like to better understand how the model will utilize transmission in its analysis, and understand the assumptions about the transmission projects listed, specifically electric transfer capacity, the resource generation geographies that the transmission projects enable, and the assumptions made regarding access to wholesale markets.

PGE encourages the inclusion of the delayed transmission scenario. The analysis is likely to reveal the importance of transmission to meeting statewide energy priorities in an interconnected energy system. Given the significant regional focus on transmission development, this analysis will be timely to support the streamlining of siting and permitting for transmission projects, which is presently a policy focus at both the state and federal levels. Significant benefits for reliability and the transition to clean energy would be expected if policymakers and stakeholders are successful in accelerating the process and timelines by which transmission projects are sited and permitted across the west. The State Energy Strategy should not discount the consequences of delayed transmission infrastructure as it pivots to the policy recommendation phase in early 2025.

¹ ORS 469A.400 to 469A.475



Portland General Electric

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Constrained Utility Scale Renewables Scenario

As the project team considers geographical constraints on energy permitting and siting due to protected areas, the model should not assume that resources are only built in Oregon. PGE is pursuing the reliability benefits of a geographically diverse range of resources. For example, wind resources in Montana are complementary to wind power in the Columbia River Gorge.

We look forward to continued engagement as the modeling assumptions are refined and scenarios are finalized.

Sincerely,

Jimmy Lindsay
Director of Resource Planning
Portland General Electric



October 11, 2024

Edith Bayer, Energy Policy Team Lead
Oregon Department of Energy
550 Capitol Street NE
Salem, OR 97304
Attention: Edith Bayer

RE: Public Comment on Draft Alternative Scenarios for the Oregon Energy Strategy

Dear Ms. Bayer,

The Renewable Hydrogen Alliance (RHA) thanks the Oregon Department of Energy (ODOE) for the opportunity to respond to its request for public comment on the draft alternative scenarios for the Oregon Energy Strategy (OES); RHA appreciates ODOE's continued dedication to seeking public input on the OES elements. RHA also reiterates its broad support of ODOE's approach of modeling pathways via scenario development and backcasting based on existing policy goals. This approach provides the best possibility of better understanding the trade-offs associated with different pathways of meeting our clean energy and climate goals while maintaining resiliency and affordability and increasing equity and environmental justice.

RHA is a non-profit 501(c)(6) trade association with over 80 members, including manufacturers of hydrogen production and fuel cell technologies, labor organizations, utilities, and project developers. RHA aims to promote renewable hydrogen and other clean fuels to replace fossil fuel consumption by engaging in education and outreach to environmental and clean energy advocates, utilities, legislators, regulators, communities, and others.

Scenario 5 – Higher Hydrogen Availability

RHA commends ODOE for including a scenario dedicated to investigating how the availability of hydrogen may affect Oregon's energy future, as renewable hydrogen has the potential to address areas of the economy that are challenging to decarbonize, like heavy-duty vehicles and industrial GHG emissions. However, given the scant details on this scenario, it is difficult to provide further feedback. Here we reiterate our concern stated in our earlier public comments that how ODOE addresses the Inflation Reduction Act hydrogen tax credits and calculating a levelized cost of hydrogen (LCOH) for the state and/or region will significantly affect the modeling outputs. The cost competitiveness of renewable hydrogen is considered one of the biggest challenges to its widespread adoption and so it is critical to understand better the relationship between LCOH and the speed of hydrogen supply chain infrastructure build-out envisioned in this scenario. RHA requests additional opportunities to comment on this scenario as additional design details are made public.

Electrolyzers as Flexible Loads

Electrolyzers can ramp up and down in a matter of seconds or minutes, depending on the type, and hydrogen developers have shared that they may be able to meet their financial goals with between 60-80 percent of their plants' capacity factors (depending on other market factors). As we transition from

the historic electric system operations of baseload fossil-fueled power plants to more variable renewable energy resources, flexible loads will be increasingly valuable for providing grid services and addressing peak loads. For this reason, RHA would like greater clarity on whether the model will treat electrolyzers as a fixed load or a flexible load and would strongly recommend the latter.

Assumptions for Generation Options

While the list of generation options for the final reference scenario and the alternate scenarios includes both hydrogen and natural gas, it is not clear whether and how the model includes dual-fuel turbines that would combust a mix of natural gas and hydrogen. As mentioned in our previous public comments, new 100 percent hydrogen turbines being designed and tested today will still require some natural gas blending for startup. Additionally, it is possible that thermal plants using 100 percent hydrogen turbines would still retain natural gas as a backup fuel when hydrogen is in short supply. Whether such facilities would meet the requirements for permitting in Oregon as new or repowered facilities is not entirely clear and RHA sees this as an important issue for discussion, both as a part of the OES and more broadly as how it may affect the Pacific Northwest Hydrogen Hub.

In closing, RHA recognizes the benefits that the OES will bring to meeting Oregon's clean energy and climate goals and applauds ODOE's use of working groups to garner feedback. RHA will continue to participate in the development of the OES and suggests that ODOE not hesitate in contacting RHA with any questions about these comments or about hydrogen in general.

Sincerely,



Erin Childs, Executive Director
Renewable Hydrogen Alliance
3519 NE 15th Avenue, #227
Portland, OR 97212
e.childs@renewableH2.org

October 11, 2024

To: Oregon Department of Energy

Re: Comments on Draft Alternative Scenarios of Energy Strategy

General Comments

Renewable Northwest continues to appreciate the opportunity to comment on and contribute to the Oregon Energy Strategy (“Energy Strategy”). We are excited about the learnings and recommendations it will provide in discovering what Oregon’s options and pathways are to reaching our clean energy goals. In this effort, Renewable Northwest (“RNW”) participates in the Advisory Group and three working groups.

In the introduction, ODOE notes that “Aggressive energy efficiency and electrification are key pillars of cost effective decarbonization.”¹ While it is likely already a key pillar to the modeling, we would like to emphasize that as we continue to electrify, it will require more of our electricity generation, transmission, and distribution system - emphasizing the need for expanded transmission capacity and infrastructure as well as significant additional renewable generation resources. ODOE also notes that “...clean fuels will play a key role.”² Again, Renewable Northwest would like to emphasize and ensure that the modeling of these options include their associated emissions. We question how and why clean fuels will play a key role should the model choose technologies based on reliability and cost, and knowing that solar, wind, geothermal, and hydropower are more cost efficient and non-emitting. Will clean fuel analysis be limited to specific sectors? Will there be consideration of how the use of these clean fuels compare with electrification of these sectors?

ODOE notes that they will be identifying “policy supports necessary to accomplish our goals.”³ Renewable Northwest would like to suggest consulting the recently published Oregon Clean Tech Task Force (“CTTF”) report⁴ as a resource for this analysis and identification of needed policies. The task force and the report aim to bring clean technology manufacturing to Oregon, so that Oregon communities and economies can reap the benefits of having more manufacturing of needed clean technology in state. The report goes a step further to identify policy areas and concepts that should be pursued in order to achieve these goals - many of which are shared between the CTTF and what is being analyzed in the Energy Strategy.

Renewable Northwest agrees with having a scenario to look at limited land use and “Constrained Utility-Scale Renewables” due to the narrowing of available locations for siting utility-scale resources and the nature of Oregon’s land-use system which does not prioritize renewable energy over existing land uses. We know that rooftop and small-scale renewable generation only gets us so far with energy supply - and often at a loss of economies of scale - meaning more utility-scale generation will be necessary to meet our growing energy demands

¹ Oregon Department of Energy Oregon Energy Strategy, pg 1

² Oregon Department of Energy Oregon Energy Strategy, pg 1

³ Oregon Department of Energy Oregon Energy Strategy, pg 1

⁴ [Oregon Clean Tech Task Force Report](#)

and clean energy mandates. This is why Renewable Northwest engages often in the siting and permitting space. Policy concepts that we propose could address issues in this space include amending the land use planning system to allow for the acknowledgment of the value of renewable energy for Oregonians and the preservation of Oregon's lands and resources in its key role in fighting the worst impacts of climate change. Currently, the only mention of energy in the land-use system is focused in Goal 13 which was written over 50 years ago - on the heels of the energy crisis which centered around a constrained global supply of fossil fuels and geopolitics - and emphasizes conservation, not generation nor the value of enhancing infrastructure. Our state is in a different reality.

RNW also proposes considering policies and concepts that would streamline permitting pathways at the Energy Facility Siting Council for both utility-scale generating projects and new transmission infrastructure - both of which are critical for maintaining a reliable electricity system as our state's energy demand grows.

Lastly, new technologies, like Offshore Wind ("OSW") and long-duration storage, will be important to incorporate into Oregon's energy supply. Oregon's OSW resource is among the best in the country and with high, sustained wind speeds is very complementary to land-based renewable energy generation. The Oregon Offshore Wind Energy Roadmap will establish state-led standards for responsible offshore wind planning and construction in the state, and it is critical to include this resource in our planning to help attract potential developers and to coordinate regionally for efficient supply chain development. Having a clear look at OSW and new technologies in the Energy Strategy, and how it will support Oregon's energy future will be essential. Supporting policy concepts may be necessary given the nascent nature of these industries in order to ensure that Oregon will have the ability to choose these technologies in the future.

Draft Alternative Scenario Comments

RNW agrees with having a **Constrained Transmission** scenario as an alternative scenario. Given the realities of the NW transmission system, this is unfortunately likely an accurate reflection of our transmission future. Will the 2045 build scenario expand to include more priority projects? For example, are there other out of state projects that could impact Oregon's system? RNW suggests consulting the recently released Connected West study⁵ which takes a Western Interconnect view of a 20 year transmission planning horizon. This study could identify other lines beneficial for inclusion in a 2045 scenario.

RNW is also aware that BPA should be announcing its next round of "Evolving Grid" projects⁶ at a workshop on October 17.⁷ We suggest closely monitoring BPA's transmission analyses⁸ for

⁵ <https://connectedwest.org/>

⁶ <https://www.bpa.gov/energy-and-services/transmission/business-model>

⁷ <https://www.bpa.gov/learn-and-participate/public-involvement-decisions/event-calendar/event-details?pageid={9DE10F12-3F37-4186-B0B9-8CF68B0DC474}>

⁸ This includes the Evolving Grid process which summarizes the current state and projects on the BPA system, but also BPA's Transmission Service Request Study and Expansion Process (TSEP) at <https://www.bpa.gov/energy-and-services/transmission/acquiring-transmission/tsep>

potential projects - even those that are not green-lit as they could be viable projects for a 2045 scenario.

For **Constrained Utility-Scale Renewables**, Renewable Northwest agrees with restricting Level 1 and 2 legally and administratively protected areas for the reference scenario and adding an alternative scenario with further restriction on land use. We have questions, for instance, on the definition of the category. It includes "... lands with social, economic, or cultural value." We would like to know how these three categories are defined, particularly economic. Does it refer to prime farmland as mentioned in the example or are there other factors?

Because ODOE is considering land-use restrictions and associated constrained utility-scale renewables buildout, we suggest including analysis of different generation and storage resources, as well. For example, wind and solar have different siting requirements and flexibilities to site based on land type. We continue to note that it will be important for the Energy Strategy to suggest land usage numbers - based on the latest studies for energy density for solar and current industry standards - for meeting the scenarios analyzed. Berkeley lab has recently published work analyzing this question.⁹

Lastly, in the **More Aggressive Greenhouse Gas Emission Reductions** section, we appreciate the addition of the OR climate action council's 95% GHG emission reduction by 2050 recommendation into the alternative scenarios.

Thank you for the continued opportunity to provide comments on the Draft Alternative Scenarios. We look forward to continuing to collaborate on the Energy Strategy and appreciate all of the hard work that the ODOE team has supplied.

Sincerely,

Emily Griffith
Oregon Policy Manager
Renewable Northwest

Diane Brandt
Policy and Legislative Affairs Director
Renewable Northwest

Casey MacLean
Offshore Wind Policy Manager
Renewable Northwest

⁹ [Land Requirements for Utility-Scale PV: An Empirical Update on Power and Energy Density](#)