

May 6, 2021

Chairman Dave Danner
Commissioner Ann Rendahl
Commissioner Jay Balasbas
Washington Utilities and Transportation Commission
621 Woodland Square Loop SE
Lacey, WA 98503

Re: Comments on PSE 2021 Final Integrated Resource Plan

Dear Commissioners Danner, Rendahl and Balasbas,

Please accept the following comments regarding Puget Sound Energy's 2021 Final Integrated Resource Plan on behalf of Sierra Club and more than 30 environmental, faith, business, and civic organizations and community leaders that collectively represent tens of thousands of concerned electric and gas customers in PSE's service territory.

The Puget Sound region is recognized globally as a center of technology and innovation. Cutting-edge businesses such as Microsoft, Amazon, Boeing, Starbucks, T-Mobile, and Costco are eager to demonstrate their concern for the environment. Many have aggressive plans to cut carbon emissions and reduce the risks of devastating climate change. Our region's citizens have also demonstrated a high level of concern for the environment and are eager to take steps to reduce the threat of climate change.

On a state-wide scale, the Washington legislature has passed bills designed to reduce and eliminate greenhouse gases. New limits on greenhouse gas emission passed in 2020 (HB 2311 / SB 6272) align with the most recent climate science, calling for a 45 percent reduction of carbon by 2030 and a 70 percent reduction by 2040. Washington's Clean Energy Transformation Act requires investor-owned utilities like PSE to supply 80 percent of all electricity from renewables or non-emitting generators. The goal is to become greenhouse gas neutral by 2030. By 2045, the new law requires 100 percent of electricity to come from renewable or non-emitting resources (no carbon emissions and no fallback on energy credits).

Ratepayers in the Puget Sound area support policies to reduce climate change and are hopeful that consequential environmental commitments will inspire world-wide change. City governments have banded together in the King County Cities Climate Collaboration (K4C) to set aggressive decarbonization goals. Outside King County, the cities of Bellingham, Bainbridge and Olympia have created ambitious climate plans. The Commission must recognize this high standard from the majority of local elected officials who represent PSE customers.

As citizens, businesses, and governments unite in these efforts, PSE's 2021 IRP falls short of our expectations. Not only does this long-range energy plan fail to align with the aspirations of our region, but its timetable for acquisition of clean energy resources on both the supply and demand side is inexplicably slow. While PSE's reasoning may be to assure reliability, we do not believe this strategy will significantly improve the overall reliability and resiliency of our regional grid. We also do not believe that this plan will result in the least cost for consumers.

This letter explains why PSE's 2021 IRP does not address our urgent concerns.

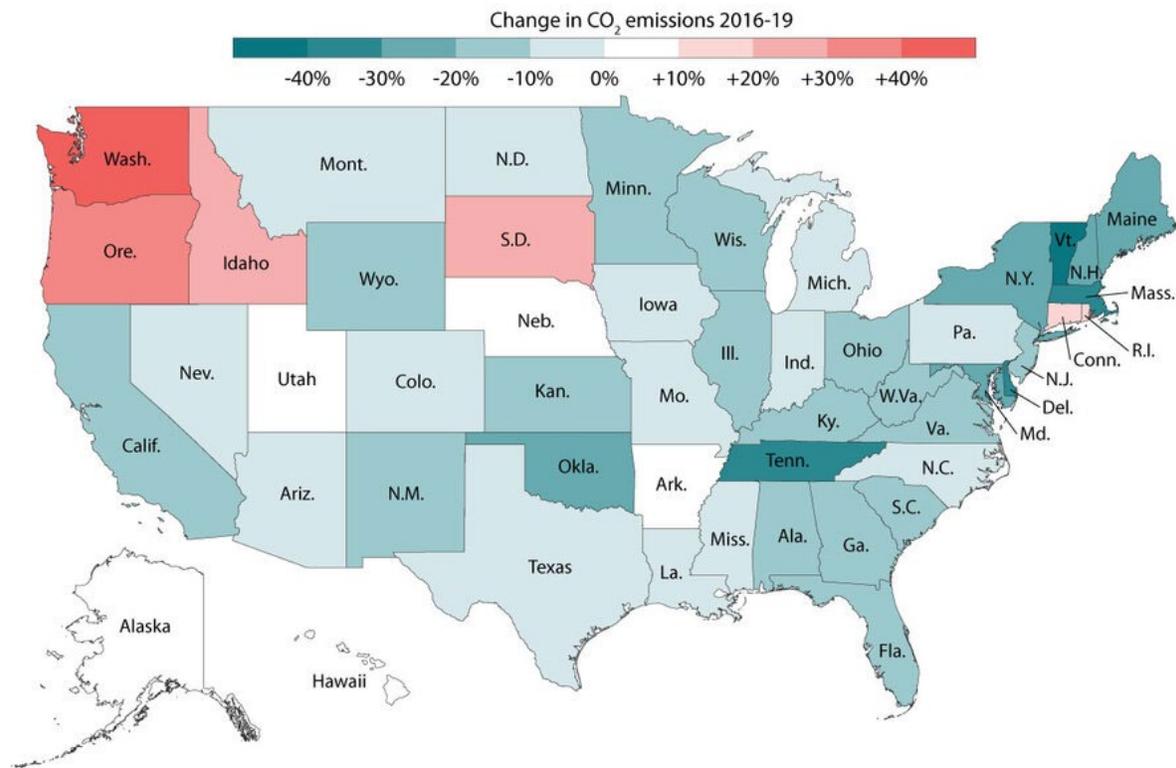
Washington is lagging behind

On April 5, 2021, the *Christian Science Monitor* published a short article showing that US emissions of greenhouse gases have declined about 4% from 2009 to 2019.¹ While the decline is encouraging, this pace will not deliver the scale of reductions needed to avoid catastrophic climate change that threatens future generations.

To our great chagrin, the state of Washington had the highest percentage *increase* of carbon emissions of any state in the US during the period 2016-2019, with emissions rising by more than 40%.

Good news: the greening of electric grids

Even under the administration of pro-coal President Donald Trump, many U.S. states migrated toward renewable sources or natural gas for electric power. But in the Pacific Northwest a drought curbed hydropower – a gap filled by coal and natural gas.



The article explains that one reason for the increase was that the Pacific Northwest suffered a drought during those years, curtailing the availability of hydropower. But another reason is likely the fact that the largest utility in the state, PSE, relies on fossil fuels for 2/3 of its generation portfolio.

We would like to see rapid investment in renewable resources and energy storage that could reliably and sustainably serve customers on hot summer days during an extended period of drought. Our understanding is that PSE's plan provides little cushion if hydro resources are constrained. PSE would likely fill the gap by cranking up its gas generation, putting PSE's service area at risk of continued

¹ <https://www.csmonitor.com/Environment/2021/0405/Carbon-score-card-Emissions-are-down-but-big-tasks-ahead-for-Biden>

emissions. We fear PSE’s actions will hamper our state’s ability to lead the nation in reduction of greenhouse gases.

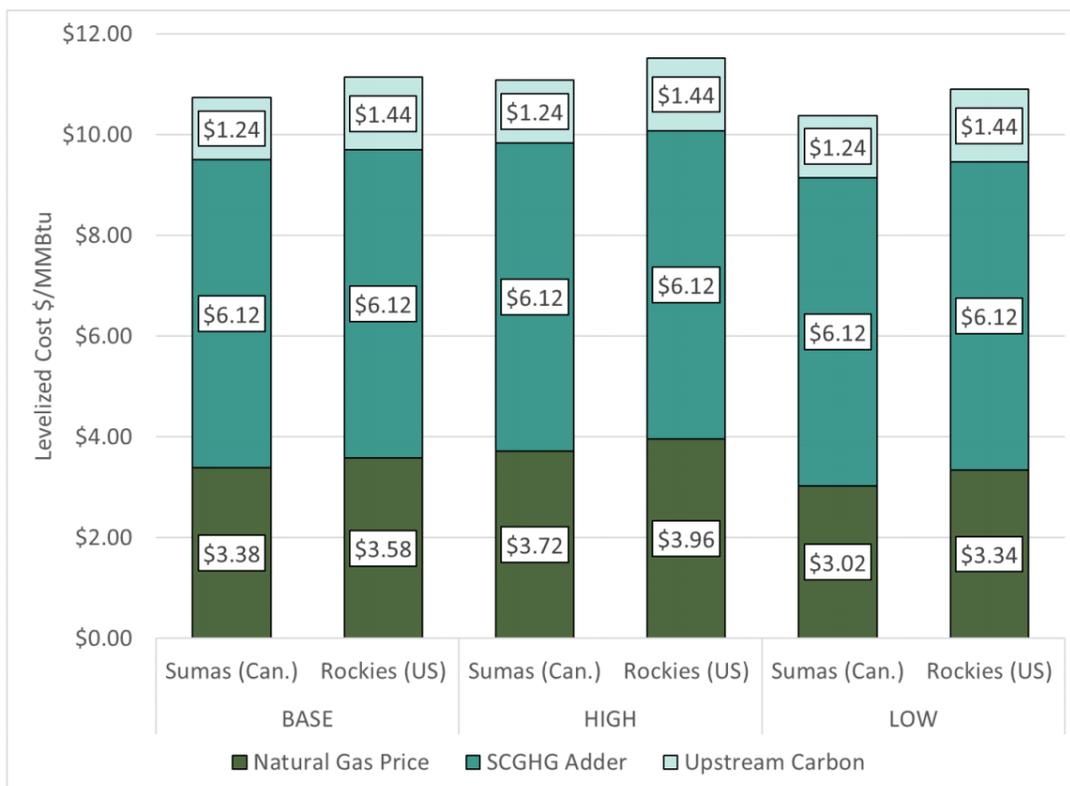
PSE proposes to expand our reliance on natural gas by building a new 255 MW gas “peaker” plant in 2026. PSE claims this plant could burn alternative fuels like biodiesel or hydrogen, but today neither fuel is available in sufficient quantities or at attractive prices. If other fuels are not feasible by 2026, PSE could justify burning natural gas for cost reasons, thereby extending problematic carbon and methane emissions.

The problem with gas

Through its industry lobbyist, Partners for Energy Progress, PSE markets natural gas as a relatively benign “bridge” fuel that will ease the region’s transition off coal.

Although combustion of natural gas emits approximately half the carbon of coal, the extraction, processing, transport, storage and distribution of natural gas leaks methane, a powerful greenhouse gas with a lifespan that may double natural gas’s lifecycle emissions. When methane leakage and its effects are accounted for, gas appears to be as damaging as coal for the climate. The high cost of gas is illustrated in Figure 3-27 of the IRP, which incorporates the Social Cost of Greenhouse Gases (SCGHG):

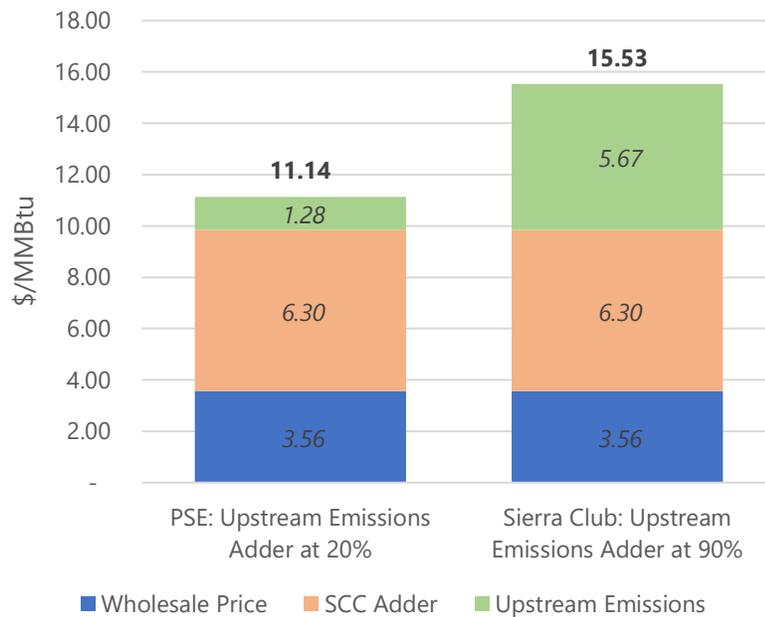
Figure 3-27: Total Cost of Natural Gas (Commodity + SCGHG + Upstream Emissions)



PSE calculates that natural gas is responsible for about two dollars of societal and environmental damage for each dollar of gas burned. However, neither PSE nor its investors or customers pay compensation to those who are harmed.

Our concern is amplified because PSE’s calculation of upstream emissions appears to be low. The Sierra Club took PSE’s calculation for SCGHG, added a more robust assessment of upstream emissions, and translated this to cost per megawatt hour.

	PSE: Upstream Emissions Adder at 20%	Sierra Club: Upstream Emissions Adder at 90%
Wholesale Price	3.56	3.56
SCC Adder	6.30	6.30
Upstream Emissions	1.28	5.67
Total	11.14	15.53
Fuel cost for gas plant (\$/MWh)	\$ 77.98	\$ 108.71

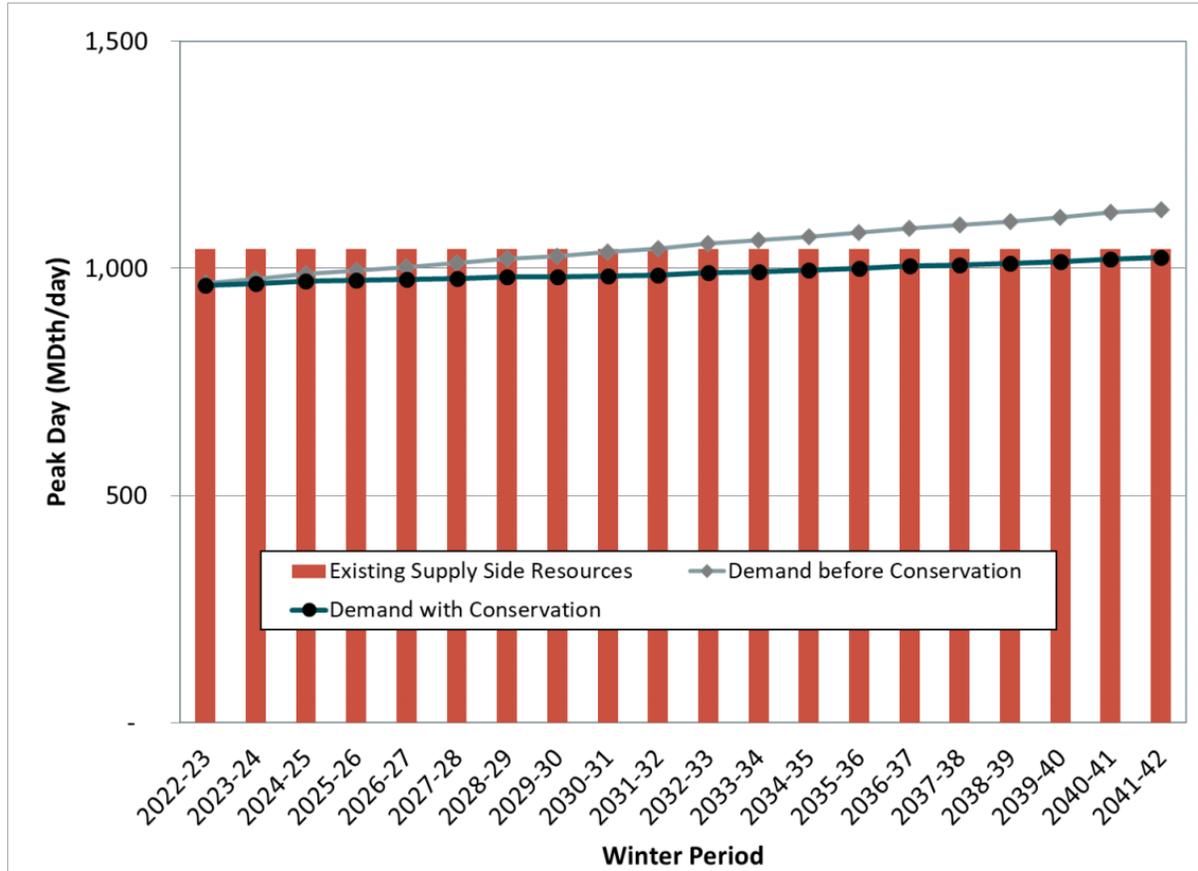


Until the Department of Ecology completes its rulemaking on upstream and downstream emissions (Gov. Inslee Directive 19-18²), we recommend the Commission require PSE to use a range for the cost of upstream emissions. Given the cost impacts are already nearly \$78/megawatt hour under PSE’s calculation, underestimating the true societal cost of gas is a disservice to both ratepayers and the environment.

² <https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Rulemaking/WAC-173-445>

Considering the significant external costs and damage caused by gas usage, we are concerned about this forecast in the gas section of the IRP:

Figure 1-10: Natural Gas Sales Resource Plan



Even as our state, county, and city governments strive to reduce overall emissions, PSE predicts we will be burning more gas in 20 years than we burn today. This forecast is out of step with federal efforts to cut US emissions in half by 2030. Washington’s 2021 Energy Strategy commits the state to reductions of 70% below 1990 levels by 2040, including a “10-year market transformation approach that [transitions] from fossil gas to electrification.”³

Without PSE’s commitment to help our communities reduce gas consumption, it will be extremely difficult to achieve the environmental goals of our state, not to mention the counties and cities in PSE’s service territory.

³ https://www.commerce.wa.gov/wp-content/uploads/2021/01/WA_2021SES_-Executive-Summary.pdf

Bad math spells trouble

Over the year-long process of developing the 2021 IRP, stakeholders spent hundreds of hours struggling to make sense of PSE's IRP proposals without access to the underlying data and analysis. PSE's unwillingness to share modeling data is not justified. The lack of transparency has seriously undermined stakeholders' trust in PSE's calculations. Utilities in many other states allow stakeholders to access their models under non-disclosure agreements when needed.

On March 5, 2021, PSE presented the results of stochastic modeling of 27 possible portfolios, showing how different assumptions and portfolio designs produce different cost and performance outcomes. For example, a larger investment in renewables and energy storage might cut greenhouse gas emissions to zero by 2030 (sensitivity "N"). That looked like a positive option, but still raised the question of whether the strategy would produce affordable electricity for customers.

As part of its presentation, PSE shared a spreadsheet⁴ showing how each portfolio was evaluated and ranked, and how PSE chose its "Preferred Portfolio." This spreadsheet was the culmination of 13 webinars spanning ten months. Stakeholders were excited to see the results but were unclear how the ranking was determined. When we examined the details of the spreadsheet, we were astounded to find that the methodology had no mathematical rigor nor logical explanation. For example, PSE ranked each portfolio with respect to 14 different evaluation metrics, some of which are extremely important (like total portfolio cost), and some of which are of limited benefit (small amounts of energy generated from direct customer programs). PSE averaged the ranks earned in each category with no recognition of their relative importance, forming a composite score that informed PSE's final choice. (PSE explains its "Customer Benefit Analysis" and acknowledges its shortcomings on pages 8-16 through 8-21 of the IRP.)

On March 11, ten stakeholders signed a letter pointing out five significant flaws in PSE's methodology.⁵ In its subsequent "Feedback Report," PSE responded briefly, thanking us for our efforts:⁶

Thank you for your comments concerning the methodology used in the Customer Benefit Analysis. PSE will continue to work with customers and the Equity Advisory Group to refine the methodology used in the Customer Benefits Analysis. Your feedback will be taken under advisement during this process.

While we appreciate PSE's promise to consider our feedback in the future, the flaws which produced the IRP's "Preferred Portfolio" remain arbitrary and uncorrected. As a result, the 2021 IRP sets a course that is unlikely to be the most prudent option for either ratepayers or the environment.

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https://oohpseirp.blob.core.windows.net/media/Default/2021/meetings/March_5_webinar/Portfolio%20Summary_Comparison_clean.xlsx

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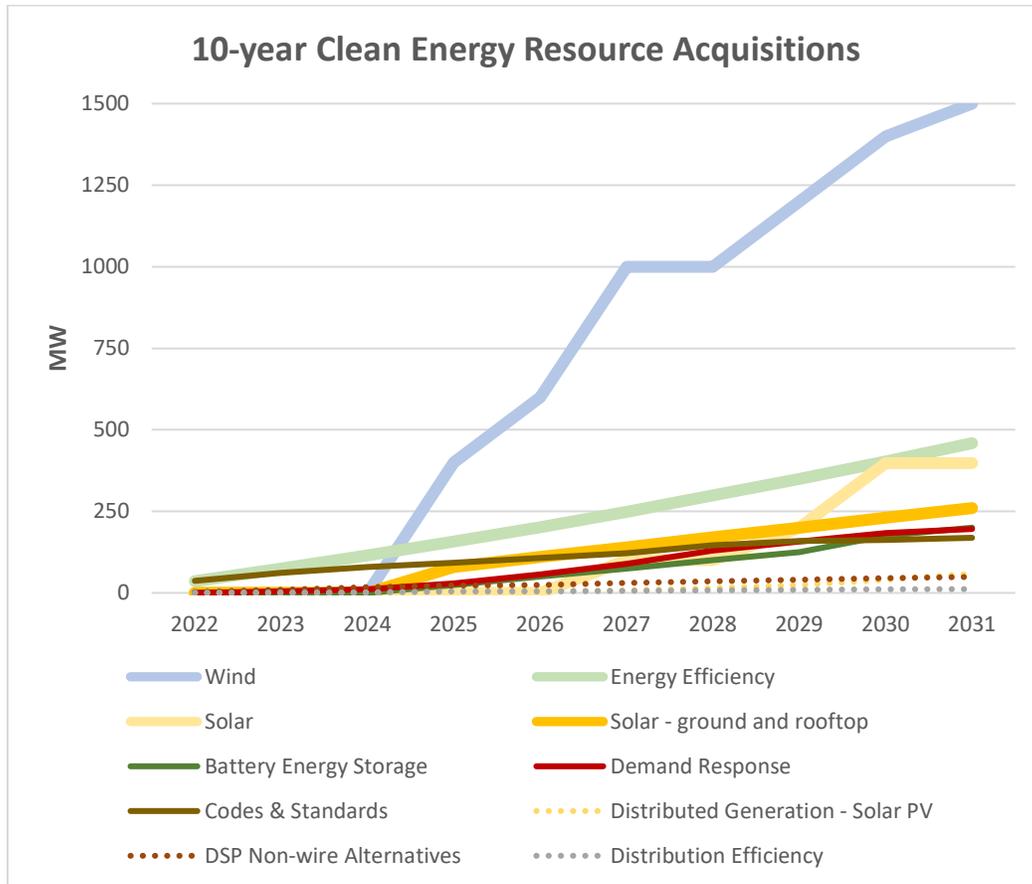
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Slow acquisition of clean energy

IRP Figure 2-1 shows PSE’s planned clean energy additions for its Preferred Portfolio over the next ten years. We created a graph to better understand the pace of these acquisitions and their cumulative contributions to the portfolio during this critical decade.



PSE’s top three additions will be wind, energy efficiency, and solar, in that order. If the category “solar” is combined with “solar – ground and rooftop,” then solar contributes more than energy efficiency. These investments appear to align with the goals of CETA.

However, the timing and quantity of these additions are perplexing. For example, the combined solar resources would provide 716 MW by 2031. That is less than 0.6 kW per customer if every solar panel produces at 100% of its rated capacity. This is not a bold step towards our clean energy future.

Investments in battery energy storage are almost inconsequential compared to the investments being made by other utilities nationwide. PSE’s first battery purchase in 2025 is for only 25 MW. By 2031, total battery capacity would be 200 MW, less than 0.17 kW per customer. Considering the falling costs of batteries and the multiple benefits this technology offers in terms of reliability, affordability, and sustainability, it is inconceivable that PSE’s customers will measurably benefit from such a meager amount of storage 10 years from now.

For context, the Northwest Power and Conservation Council previews the analysis behind its 2021 Power Plan (due to be published in July):

The revised modeling predicted thousands of megawatts of new renewable resources, primarily solar power, and energy storage, that, Kujala wrote, “far exceeded my expectation.” One reason the modeling picked renewables was that their cost has come down dramatically over the last decade or so, compared to other types of generation. Another reason was that the huge renewables buildout “represented the aggregation of public policy and a power system that moved beyond natural gas generation as a technology to replace retiring resources and support new load.”

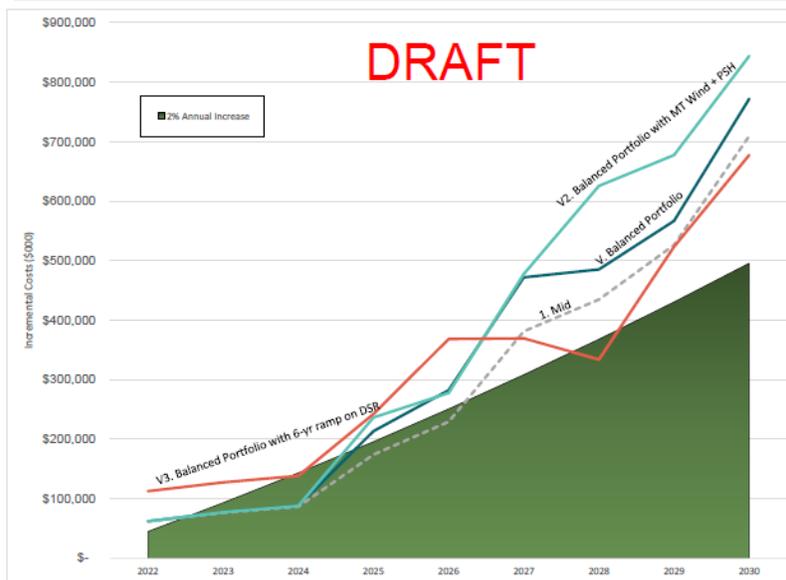
Building fewer renewable energy plants than the modeling suggested was either more expensive because of the mix of renewable and thermal technologies, or less adequate and thus degraded the reliability of the electric grid, he said.⁷

PSE projections are out of step with the Council’s plan, relying on new gas instead of rapid and robust investments in solar and storage. Why is there a discrepancy? We suspect that PSE has not updated its models and assumptions. **As the Council describes, older models do not accurately model the value of renewable resources and tend to favor natural gas.**

Risks for ratepayers and the climate

PSE presented the graph shown below at the February 10, 2021 IRP stakeholder meeting. The green wedge represents the cost of pursuing business as usual plus a 2% cumulative cost cap allowed by CETA. The lines above the green wedge show that PSE expected every possible portfolio to exceed these cost caps. According to PSE’s calculation, CETA was an impossible dream.

Incremental cost of CETA compliance



- Green area represents compounding annual 2% increase.
- Portfolio sensitivities revenue requirement is compared with Sensitivity T (No CETA with SCGHG adder).
- Annual portfolio costs only include costs associated with generating resources modeled in the IRP.
- Cost of compliance will be calculated based on the final preferred portfolio and available in the final IRP.
- All costs associated with CETA implementation will be available through the Clean Energy Implementation Plan.



This session is being recorded by Puget Sound Energy. Third-party recording is not permitted.

⁷ <https://www.nwcouncil.org/news/modeling-next-power-plan-indicates-revolutionary-changes-power-supply>

Two weeks later, PSE found new ways to adhere to the cost caps and yet still acquire a new 255 MW gas peaker plant in 2026, violating the spirit of CETA and the intent of the legislators who passed it. Given PSE's on-again, off-again cost calculations and questionable methodology for ranking portfolios, stakeholders have little faith in the accuracy of the 2021 IRP.

PSE's plan to invest in new gas generation puts PSE customers at risk for stranded assets. New peaker plants may become obsolete before being fully depreciated. With gas costing at least \$78/megawatt hour, PSE should minimize operation of gas plants. Limited use of the plants makes their long-term capital costs harder to justify. Investments in clean energy alternatives will deliver better value for ratepayers and the environment.

This is the most important IRP

We realize that an IRP is an aspirational document. The Commission cannot mandate changes and does not have the authority to reject PSE's plan. Many of the recommendations in the plan will become outdated in a just a few years. By 2040, continuing changes in the energy sector will render the plan obsolete.

However, the 2021 IRP is important because it sets a baseline for calculating cost caps to be applied during the Clean Energy Implementation Plan (CEIP). These cost caps allow PSE to stop investing in clean energy whenever the costs of complying with the state's Clean Energy Transformation Act would exceed 2 percent/year cumulative cost starting in 2022. By dragging its feet on renewable investments during the next few years, PSE is more likely to exceed cost caps in future years. This allows PSE to return to fossil fuel investments, such as the gas peaker plant the company wants to build in 2026.

If cost caps are exceeded in multiple years, PSE might not achieve CETA goals, but could not be held accountable. The company would say, "We tried, but we just couldn't make it work under those CETA cost caps... sorry!"

The fact is that many renewable investments are economically attractive right now. Even without CETA, PSE should be required to acquire these low-cost resources to honor its obligation to prudently spend ratepayer money.

If the CEIP is required to be based on this IRP, then the flaws in PSE's IRP carry forward into the company's actual plans for the next four years. That is why we recommend that PSE's CEIP not be based on its IRP.

Request for Commission action

Based on the above concerns, we ask that the Commission:

- **Acknowledge significant flaws in PSE's 2021 IRP.**
- **Conclude that PSE's CEIP need not be tied to this flawed IRP.**
- **Require that the data underlying PSE's CEIP analysis be shared with stakeholders (under nondisclosure agreements, if necessary).**
- **Require PSE to use a range of costs for its upstream methane emissions.**
- **Ask PSE to accelerate acquisition of renewable energy sources to reduce risk of increasing emissions during drought and exceeding CETA cost caps in later years.**
- **Require PSE to demonstrate faster acquisition of clean energy alternatives to avoid investment in new gas resources.**
- **Require PSE to clarify exactly how stakeholder feedback will be addressed in the CEIP.**

Thank you for this opportunity to share our observations about PSE's IRP process and its relevance to the upcoming CEIP process.

Don Marsh, *Sierra Club Washington State Energy Committee*

Sara Patton, Chair, *Sierra Club Washington State Energy Committee*

Anne Newcomb, *Washington Clean Energy Coalition*

David Perk, *350 Seattle Leadership Team*

Emily Powell, *350 Eastside Steering Committee Member*

Daniel Villa, Volunteer, *350 Tacoma*

Jill MacIntyre Witt, Organizer, *350 Bellingham*

Tom Crawford, Leadership Committee, *Thurston Climate Action Team*

Court Olson, Chair, *People for Climate Action coalition with authorization from local PCA city groups in Seattle, Bellevue, Kirkland, Redmond, Woodinville, Bothell, Kenmore, Lake Forest Park, Issaquah, Sammamish, Kent, Burien and Mercer Island*

Kevin Jones, Board Member, *Vashon Climate Action Group*

Steve Erickson, *Whidbey Environmental Action Network*

Fran Korten, *Climate Action Bainbridge*

Joe Deets, Council member, *Bainbridge Island City Council*

Anna A. Bean, *Puyallup Tribe*

Paul Chiyokten Wagner, *Protectors of the Salish Sea (Founder), Saanich nation of Coast Salish peoples*

Barbra Chevalier, *East King County Public Utility District campaign*

Kristi Weir, *Earth and Climate Action Ministry Team of East Shore Unitarian Church of Bellevue, WA*

Suzanne Greenberg, President, *Vashon Havurah*

Abby Brockway, Co Leader, *Faith Action Climate Team (with consent from their membership)*

Patricia Boiko, Clerk, *Quaker Voice Environmental Stewardship Working Group*

Jeanne DeMund, Vice President, *Coalition of Eastside Neighborhoods for Sensible Energy*

Gwen Hanson, *Citizens Climate Lobby Bellevue*

Drew Wilkinson, Founder, *Microsoft Employee Sustainability Community*

Mark R. Vossler, President, *Washington Physicians for Social Responsibility*

Robin Rothenberg, *Certification-International Association of Yoga Therapists*

Robin Gitelman, Advisory Team, *Indivisible Washington 8th District*

Steve Verhey, Chair, *Environment and Climate Caucus (ECC) of the Washington State Democrats*

Kenneth Tran, *Sammamish High School Environmental Activists*

Muhmoong Shiong, Director of Community Engagement, *Ground Zero Radio Leadership*

Thalia Jurgens, President, *Eco Club at Issaquah High School*

Norm Hansen, *PSE IRP Advisory Group (Bellevue Bridle Trails)*

Michael Laurie, Sustainability Consultant, *Watershed LLC*

Diane Emerson, Landscaper, *Emerson Gardening Services*

Terry K. Phelan, President, *Living Shelter Architects, Issaquah*

Sherry Dietz, Chair, *Kiwanis Club of Issaquah Environmental Committee*

Mark Griffith, Board Member, *Issaquah Alps Trails Club*

Lynn Fitz-Hugh, Leader, *One Sustainable Planet*

Cc: Governor Inslee

Lisa Gafken, Assistant Attorney General

Washington State Senate and House Energy Committees

King County Council

City Councils of Seattle, Bellevue, Redmond, Woodinville, Bothell, Kenmore, Lake Forest Park, Issaquah, Sammamish, Kent, Burien, Mercer Island, Olympia, Tacoma, Bellingham

Seattle Times