Feedback report

RPAG Meeting

Meeting details

- Friday, May 31, 2024, 10:00 a.m. - 1:00 p.m.
- Virtual webinar hosted by PSE and facilitated by Triangle Associates
- Links to:
  - Presentation
  - Meeting recording

Feedback

The following table records participant questions and PSE responses from the public comment opportunity and comments submitted via online feedback form or irp@pse.com. Meeting materials are available on the IRP website.

Note: PSE aims to provide clarity in responses but subsequent follow-up may be required at times. Please direct any follow-up clarifications to irp@pse.com.

No.	Date	Interested party	Submitted via	Question or comment	PSE response
1	5/31/2024	James Adcock	Public comment	Mr. Adcock submitted a written transcript of his public comment, which is shown in #3 below.	Thank you for your comment.
2	5/31/2024	James Adcock	irp@pse.com	I really think Puget needs to increase the roster of RPAG participants from a "Small Cozy Group" if the people from the organizations that Puget itself hand-picked are not going to show up on a "Sunny Friday" – because there were lots of other people who have shown up including on "Sunny Fridays"	Thank you for your comment.

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				for the last 15 years of this or so which Puget are currently actively excluding.	
3	5/31/2024	James Adcock	irp@pse.com	Comments by James Adcock, Electrical Engineer, MIT -- a 15-year participant in Puget's IRP processes Puget is not allowing enough real Participants i.e. "a small cozy group" -- for any kind of meaningful "Public Participation" and a fair representation of public interest. This Puget restrictive action is not fair to ratepayers and does not meet the "Public Participation" requirements of IRP law. I do thank UTC Staff and Public Council for their intelligent questions and comments. Washington State Law: ""Every ... electrical company ... shall furnish and supply such service, ... and facilities as shall be SAFE, ... and in all respects JUST and REASONABLE." Destroying the Human Race is not Safe, Just, nor Reasonable. Slide 39 Puget is not in fact engaging with Interested Parties such as myself, rather Puget is actively avoiding such engagement. Slide 27 That Social Cost of Greenhouse Gas is not currently directly imposed on Puget dispatch today doesn't mean that it won't be imposed in the future, leaving Puget with stranded resources, such as new Natural Gas Peakers. And in any case these are real damages which Puget is unfairly imposing on Human Society, including Human Deaths i.e. Bressler Mortality Cost of Carbon.	WAC 480-100-630 and WAC 480-100-625 support the implementation of advisory groups to support the development of integrated resource plans (IRP) in addition to public participation outlined in WAC 480-90- 238 and WAC 480-100-625. PSE is confident that our current engagement process meets these regulations. We continue to welcome members of the public to participate in RPAG meetings by providing public comments and submitting questions or comments one week before through one week after each RPAG meeting via irp@pse.com or the online feedback form. Members of the public may also participate in our virtual public webinars. These webinars include the opportunity for Q&A as well as public comment. Interested parties are also encouraged to submit written feedback or questions to PSE via irp@pse.com or the online feedback form. PSE catalogues responses to each piece of public and RPAG feedback in our Feedback Reports and shares those with RPAG members and the PSE resource planning team. Slide 39: Please see above. Slide 27 and 35: PSE follows the rules set forth in WAC 480-100-620 with regard to the application of the Social Cost of Greenhouse Gases (SCGHG). The Reference scenario will incorporate the SCGHG as a fixed cost adder, however, a sensitivity will be analyzed which applies the SCGHG as a dispatch cost. The value of the SCGHG is set forth in RCW

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				Slide 32 I am happy to see Puget honestly and openly discussing the full range of possible resource addition they are considering including Fossil Fuel Peakers and Nukes. Slide 35 I am disappointed that Puget is not yet considering the real social cost of greenhouse gas as best understood by modern science, which is about $230 / ton currently, rising to about $300 / ton in 2045, according to EPA. About three times higher than Puget is currently considering. If these much higher real greenhouse gas costs are used, then Puget would end up with extremely different resource results. Slide 38 I do not consider "Renewable Hydrogen" to be a realistic fuel choice because the renewable electricity used to make that Hydrogen can be used better less expensively for example to power heat pumps and electric vehicles. Slide 34 Transmission choices should include the possibility of reconductoring, sooner, and at lower costs. It need not be as hard, time consuming, and expensive as Puget, and BPA, are making it	80.28.405 and is the value used by PSE in our analysis. Slide 32: Thank you for your comment. Slide 38: Thank you for your comment. Slide 34: Please see response #2.
4	5/31/2024	Meghan Anderson	Feedback form	Greetings RPAG and PSE: Meghan Anderson, PSE customer and net metering customer. First, Elizabeth indicated that PSE was NOT considering reconductoring in their modeling work. I'd like to know why? Reconductoring - can be installed in 1-3 years - uses the same workforce and infrastructure (except needing upgraded transformers) - FERC (Federal Energy Regulatory Commission) has recently (I believe) green-lighted reconductoring specifically in new rulemaking. If the reason why PSE isn't modeling reconductoring is because it doesn't own any high transmission systems, then I would suggest a PSE team begin	1. PSE mentioned in a previous feedback report that we recognize the value of maximizing existing transmission corridors and evaluates reconductoring when identifying potential solutions to address system capacity needs. BPA has also committed to moving forward with their Evolving Grid projects, which include measures to increase capacity on the West of Cascades North path. This portfolio of projects includes reconductoring two lines on this path in addition to other measures to increase path capacity. These reconductors

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				talks with Bonneville to encourage them to reconductor as soon as possible. Second, Tyler indicated that PSE is about 100% clean power right now. This can't be the case, can Tyler clarify what he was trying to say and/or correct his statements? Current mix from this webpage: https://www.pse.com/en/pages/energy-supply/electric-supply. Current electricity mix (2022) is: Hydro 27%, Natural gas 23%, Coal 23%, Wind 16%, Unspecified 10% and other. Finally, these 3 hour meetings are too long. I would encourage you to have more meetings that are limited to 1.5 hours. Thanks for the opportunity	were identified in 2022 with an estimated in-service date of 2030. It is important to note that there are many types of constraints the system can experience, including thermal limits for lines, or voltage or stability limits for load areas. Reconductoring may increase thermal capacity while not fully addressing other types of constraints, resulting in a reduced capacity benefit. To clarify, the transmission sensitivities are focused on increased transmission capacity for regional generation. 2. Tyler Tobin indicated that in the Electric Price Model, Washington state, not PSE, is approaching 100% clean power generation in the near term due in large part to the hydroelectric system. We use generation targets to enforce clean energy policies because the AURORA model is good at tracking where energy is generated, but poor at tracking where is used. This can obscure some nuances in cases where energy is not used where it generated, as is the case for a sizable portion of the state's hydroelectric generation. At the coarse resolution of the Electric Price model, Washington state looks like it's approaching 100% clean energy because it generates a lot of clean energy, but that energy often gets used elsewhere. That's one of the reasons we use a separate Portfolio Model which looks at just PSE and its clean energy goals to determine what actions PSE needs to take to reach its clean energy goals. 3. Thank you for your feedback. We designed our Resource Planning Advisory Group meeting format to meet our needs of

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					discussing highly-technical topics at greater length than our public webinars and will consider this feedback going forward.
5	6/7	Aliza Seelig		How do the regional builds presented May 31 relate to the builds used in the E3 Resource Adequacy work done for PSE? In an earlier meeting Jenn spoke about using the 2024 Northwest Regional Forecast (NRF) builds for the RA work. I admit that I have some concerns about lack of consistency with the regional load forecast there too. Second, in response to the request for a sensitivity, would it be possible to increase the regional load. I want to highlight that for load there is the 2024 NRF load forecast for the region. Could you scale up regional load? I am curious if regional load was higher, would the type of resources added by the model change (how do transmission constraints impact the builds)? Also, would power prices be higher in a higher load scenario? Since you have been working on the model since last summer, you may have some tests that answer this question and that could be valuable to share. Or you could explain your judgement in this case a little more deeply particularly around the conclusion that its better to stick with the 2021 NPCC plan load because of the consistency with the climate change scenario data that involves load. Finally, as an example, I'm wondering if RPAG members would be more effective at weighing in if you gave us options. Such as saying if we scale up regional load to the 2024 NRF, the impact could mean the climate change relationship would [overstate] hourly peaks because XYZ.	1. The regional builds presented on May 31 for the Electric Price Forecast were selected based on AURORA's long-term capacity expansion logic using the inputs described during the meeting. With regard to Resource Adequacy, the E3 RA ELCC values are only applicable for PSE's portfolio and are therefore not used in the electric price model which must represent the entire WECC. Instead, we relied on the resource peak credit developed by Energy Exemplar. This results in a consistent RA framework for all resources across the WECC. Use of the 2024 Northwest Regional Forecast (NRF) was specifically mentioned to help in development of a Western Resource Adequacy Program (WRAP) sensitivity in our portfolio model. 2. Thank you for the thoughtful questions and considerations. We had given many of these points some thought during development of electric price model development. We realized that loads in the Pacific Northwest are now forecast higher than represented in the 2021 Power Plan due largely to transportation electrification, building electrification and data center loads. As a company, PSE has some good insight into how transportation and building electrification impacts our own service area, but less insight into how trends are developing across the region. For example, there is a large difference in electric vehicle

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					adoption between more urban and rural areas – but we don't know the specifics well enough to capture those differences in an adjusted load forecast. Furthermore, the details matter when adjusting load forecasts such as what time of day and year peaks occur and the relationship between average load and peak load. Given that these details are being developed right now, we thought it best to wait for experts to generate reliable forecasts which we can pick up in our IRP/ISP cycles, rather than taking a guess today. All that said, we do plan to run a stochastic electric price forecast which will include variation in the regional load forecast. We will definitely be using the stochastic electric price results to determine the risk around several PSE portfolio model results, but we may also be able to use a high-regional-load electric price forecast to develop a sensitivity for our portfolio model. 3. Thank you for your feedback.
6	6/7/24	Jim Dennison	Feedback form	Thank you for hosting the May 31 RPAG meeting and for considering Sierra Club's feedback. We share the strong skepticism that R99 prices will converge with distillate diesel prices in the next several years that was expressed at the RPAG meeting by Joel Nightingale and Ezra Hausman. Regarding IRP sensitivities, Sierra Club reiterates its feedback from the February 13 RPAG meeting that the building electrification scenarios modeled in the IRP should reflect a range of realistic potential futures where PSE invests in electrification as a decarbonization resource. All building electrification scenarios modeled for the gas IRP should be modeled as sensitivities in the electric IRP, to give a complete picture of each	Thank you for the feedback on the sensitivities. You are correct, we only listed the high and low electrification scenarios, but will also add the mid-electrification scenario to the list. The electric analysis will follow with the same scenarios from the gas utility IRP.

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				scenario's implications for the electric system. Based on slide 37 from the February 13 RPAG presentation, we understand that PSE intends to conduct low, mid, and high electrification scenarios. We strongly recommend that PSE conduct sensitivities for all three of these scenarios in the electric IRP, as opposed to only low and high electrification sensitivities (as indicated slide 42 of the May 31 RPAG presentation). Sincerely, Jim Dennison Staff Attorney, Sierra Club	
7	6/10/24	Joel Nightingale		General: 1. Slide 19: Staff appreciates PSE making this content more accessible by including relevant acronyms in the corner of the slide. 2. Staff understands that scheduling will naturally be complicated for a group as large as the RPAG, but given the relatively low RPAG member participation in the 5/31 meeting – especially during the discussion towards the end of the meeting – Staff suggests that PSE work with RPAG members to find times that allow for maximum attendance. Reference Assumptions for New Resources 3. Slide 38: Staff expects PSE to be transparent about its analysis and assumptions that go into its alternative fuel price forecasts even if they are conducted by an internal team as PSE notes on this slide. As mentioned during the meeting, Staff also requests more information around the assumption that the price of R99 will converge with fossil-based diesel fuel in the "long-term." Given the value that companies, consumers, and policies (CCA, CETA) assign to renewable	1. Thank you for your feedback. 2. Thank you for your feedback. We agree that participation by members is extremely important and will look for opportunities for improvement. 3. R99 – The California R99 market serves as a helpful resource as it is much more mature and faces similar climate policies and market pressures to Washington. Most of the R99 consumption in the US is in California due to the Low Carbon Fuel Standard (LCFS). The DOE Alternative Fuels Data Center provides a 7-year historic look at the price of R99 compared to conventional diesel (Alternative Fuels Data Center: Maps and Data - Average Renewable Diesel and Diesel Fuel Prices in California (energy.gov) This data strongly suggests that the price of R99 and conventional diesel will be in tandem moving into a mature Washington market. With California representing the strongest R99 market in the US, combined with a lack of R99 price forecasts for Washington, PSE feels that using a conventional diesel price

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				fuels, Staff finds it surprising that there would be no premium on a fuel that comes with more beneficial environmental attributes. Scenarios/Sensitivities 4. Staff appreciates PSE including sensitivities that were suggested by interested persons in its 2025 IRP analysis as shown on slide 43. 5. Staff suggests PSE's IRP team review the Commission's request for quantitative analysis on cost and portfolio impacts of the draft "use" rules, posted to docket UE-210183 on May 30, 2024. 6. Staff commends PSE on its early success launching demand response programs. Staff understands that these programs have provided much-needed peak hour load shifting/shaving at capacities that were not thought possible just a couple of IRP cycles ago. In the 2021 IRP, PSE's CPA expected that just over 50 MW of demand response would be achievable by 2025, but after its first demand response RFP, PSE found that 86 MW would be cost-effective by that year. Further, Staff understands that PSE's 2023 Electric Progress Report chose nearly all achievable demand response as cost-effective in the reference portfolio. For these reasons, Staff suggests that PSE consider running a sensitivity that explores how much demand response would be chosen as cost-effective if certain limits (e.g., ramp-rates) were relaxed – within reason. Staff also suggest that PSE explore a sensitivity in which an "opt out" version of time-of-use (TOU) program is	forecast from the EIA as a proxy for R99 is the best approach for the 2025 IRP. <u>Hydrogen</u> – The price increase is primarily due to two factors, namely, the recent rise in power costs of clean energy in the wholesale markets, and the application of the draft 45V production tax credits in the Inflation Reduction Act. With regards to power costs, recent market prices for PPAs and other contracting mechanisms have shown that power prices have more than doubled in recent years, largely due to the demand for clean energy across numerous segments. The increase in interest rates as a result of the Federal Reserve's attempts to tame inflation have also increased the cost of capital for renewable developers and suppliers, making the equipment more expensive. In our modeling, we applied the draft guidance from Treasury to the 45V production tax credits, which, as written, severely limits the operating parameters of industrial scale electrolyzers if they are seeking full application of the tax credits. Our internal analysis, corroborated by others, indicates that this tax guidance results in a cost increase of at least 45%. 4. Thank you for your feedback. 5. Thank you for your feedback. 6. PSE appreciates the positive feedback from Staff regarding the results from our first winter Demand Response season. PSE will

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				implemented rather than an “opt in” version. Other 7. How does PSE’s IRP modeling process account for prices within the spot and day-ahead market?	begin to explore sensitivities regarding the impacts of how relaxed limits may enable more aggressive adoption of cost-effective measures. PSE is also encouraged by the feedback about continuing to explore additional opt-out programs after the demonstrated success of one of PSE’s existing opt-out behavioral Demand Response programs. PSE will begin to explore opportunities to design additional opt-out demand flexibility-enabling programs. 7. The AURORA electric price model produces a forecast which is intended to reflect real-time (i.e., hour ahead) wholesale electric prices at the Mid-Columbia market hub. This is accomplished through commitment and dispatch simulation for all generators across the WECC and market transactions to move power from surplus areas to areas of need across available transmission, hourly. This represents an efficient real-time market. The PLEXOS flexibility analysis (which is used to generate the flexibility benefit in the portfolio model) does include simulations to reflect differences in day-ahead, hour-ahead, and fifteen-minute transactions. These various timescales allow the model to resolve around forecast error, which may impact market transactions. Those impacts to market transactions are realized in the portfolio model as the fixed flexibility benefit of a given resource.
8	5/31/2024	Lauren McCloy	During meeting	Is PSE tracking the Council's change to this methodology? The Northwest Energy Coalition (NWEC) supports using the Council’s climate baseline for the modeling. If this is further	1. Yes, PSE is tracking and will be engaged in the Council’s Climate and Weather Advisory Committee.

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				updated, PSE should track the changes and update as necessary. Additionally, do any of the natural gas forecasts account for British Columbia liquified natural gas exports that are going to be starting this cycle in 2025?	2. The forecast we purchase from Wood Mackenzie includes demand from forecasted LNG exports from North America, including projects in located in British Columbia.