

Puget Sound Energy Resource Planning Advisory Group (RPAG) meeting summary

Tuesday, July 28, 2026 | 1:00 – 3:00 p.m.

Meeting materials

- [Presentation](#)
- [Meeting recording](#)
- [Meeting agenda](#)

Meeting objectives

- Discuss the 2027 Integrated System Plan (ISP) modeling process to date, how we are using feedback, and next steps in the process
- Provide an overview of PSE's first Targeted Electrification Potential Assessment (EPA)
- Present the draft scenario demand forecasts for the 2027 ISP
- Provide an opportunity for public comments

Introduction and agenda review

Follow along: This information is on [slides 1-7](#) of the presentation and [0:01 – 10:55](#) in the meeting recording.

Presenter: Hilary Wilkinson, Facilitator, Maul Foster & Longi (MFA)

Where we've been and where we're going

Follow along: This information is on [slides 8-12](#) of the presentation and [10:55 - 21:17](#) in the meeting recording.

Presenter: Jennifer Coulson, Director, Resource Planning Analytics, PSE

Highlights:

- Although reference case modeling presented challenges, PSE is confident that assumptions used for Reference B is a realistic starting point for developing the preferred portfolio for the 2027 ISP; scenarios and sensitivities will provide additional nuance as we move forward.
- PSE is incorporating feedback into modeling for the ISP, including:
 - Addressing concerns about a “middle-ground reference case” through sensitivity analysis
 - Expanding the definition of “commercially available” emerging tech resources; this will also be explored through sensitivity analysis
 - Incorporating comprehensive costs associated with flex fuel peakers, to include fuel acquisition, transport, and storage costs
 - Modeling varying success rates of non-wires alternatives to avoid a system investment
- Near term milestones for the remainder of the ISP cycle include filing an updated work plan in August, drafting the ISP executive summary in December, and continuing RPAG meetings focusing on scenario and sensitivity analysis and building a preferred portfolio through the end of the year.

RPAG members provided the following questions and feedback:

- RPAG member: Are you going to model a new reference case that leaves out flex fuel peakers in alignment with the WAC definition of commercially available resources?
 - PSE response: We will explore this through sensitivities in future modeling iterations.

Targeted Electrification Potential Assessment

Follow along: This information is on [slides 13-45](#) of the presentation and [21:18 – 1:20:47](#) in the meeting recording.

Presenters: David Landers, Director, Planning, PSE; Dan Aas, Energy & Environmental Economics (E3); and Niece Weatherby, Manager, Gas Systems Integrity, PSE

Highlights:

- ISP rules require PSE to assess infrastructure investments and non-pipeline alternatives (NPA) for the gas system, including electrification. Assessment results inform scenario and sensitivity analysis for the 2027 ISP.
- PSE contracted Energy & Environmental Economics (E3) to perform a Targeted Electrification Potential Assessment (TEPA) focused on geographically targeted electrification feasibility. This is the first study of its kind for PSE.

- The TEPA includes evaluations of NPAs for seven specific large planned PSE gas infrastructure projects, replacement of 165 miles of 1970s vintage DuPont¹ pipeline, and other smaller gas infrastructure project types.
- The TEPA conclusions included:
 - For planned DuPont pipeline replacement projects, terminal DuPont mains with few connected customers present a potential starting point for targeted electrification projects, especially the ~4.5% of potentially cost-effective and hydraulically feasible DuPont mileage with fewer than five customer conversions required.
 - For specific projects, NPAs increase ratepayer costs and require unprecedented customer electrification adoption.
 - Pipeline replacement project NPAs in the near-term present a relatively stronger opportunity to PSE in the near-term to successfully scale targeted electrification
- This analysis advances PSE's tools and methods used to evaluate NPA cost-effectiveness, and is as inclusive as possible given current data in assessing electrification potential, feasibility, and system impacts.

RPAG members provided the following questions and feedback:

- RPAG member: What does first order approximation mean in the context of no downstream customers?
 - E3 response: From a hydraulic perspective, a terminal branch is a very strong indication electrification would be hydraulically feasible, but further, detailed hydraulic modeling would be required to confirm feasibility for each site.
- RPAG member: When you go through the assessment framework from technical potential to cost effectiveness, are you looking at all the potential system impacts?
 - E3 response: That is correct.
- RPAG member: Why does your assessment not include places with more than five customers?
 - E3 response: The analysis includes all planned gas investments identified by PSE. E3 analyzed all such investments, including many that include more than five customers. The five-customer threshold was used as a screen to identify which "zero-gas" segments are most likely to be feasible to electrify. That five-customer threshold is a reasonable heuristic based off existing industry experience with targeted electrification. The analysis does not assume that targeted electrification for sites with more than 5 customers cannot be achieved.
- RPAG member: Can you explain how the seven projects were selected?

¹ DuPont refers to a type of pipe and not the City of DuPont in PSE's service area.

- PSE response: The seven projects PSE identified are the largest projects that need to be addressed. Projects that did not require customer-sided NPAs were not included on the list.
- RPAG member: Have you quantified the potential incentives and net benefits in financial terms?
 - E3 response: Yes we have.
- RPAG member: Is the UCT cost effective test on slides 26 and 27 equivalent to joint utility cost effectiveness on slide 22?
 - E3 response: Yes. It includes incentives, electric system costs, and the avoided gas infrastructure cost as a benefit.
- RPAG member: It is worrisome that this is a first-of-its-kind study. How was this methodology developed? What other work have you and your firm done along this scope? Where can we look for other examples of where this type of study was done? Why did you screen out smaller projects?
 - E3 response: We published work on behalf of the California Energy Commission, NRDC, and Pacific Gas & Electric that we can share. We did not screen out small projects; the DuPont analysis presented focused on smaller, cost-effective projects with higher adoption feasibility. The seven specific large projects analyzed were not the limit of our analysis.
 - RPAG member: Cost test statutes specify that the social cost of greenhouse gas emissions (SCGHG) must be part of the decision framework for the ISP. We should consider including SCGHG and CCA costs in the utility cost test portion of this analysis.
 - E3 Response: E3 included the SCGHG in the modified Total Resource Cost test perspective. We chose not to include a SCGHG in the Utility Cost Test, which we intended to look at how targeted electrification projects would impact utility revenue requirements.
 - E3 response: For the purposes of this analysis, we only looked at electrification. Other NPAs like local area compressed natural gas injection or pressure reduction were not in scope for this study.
- RPAG member: Could you talk more about why the larger projects couldn't be broken down into smaller projects?
 - PSE response: Historically we take smaller steps, like cold weather injections, first to minimize costs while maintaining the system. The projects we are looking at now have grown into larger projects because we've already taken all the smaller steps possible. Now, with a declining customer count and new requirements, we are looking at this differently with an eye toward retirement opportunities.

- RPAG member: What is this assessment's estimate on electricity metrics (peak vs energy) impact? How can this assessment's results inform the electrification road ahead for PSE: what percentage of the total gas infrastructure/peak did you study as a whole?
 - E3 response: As shown on slides 22 and 36, we included electric energy and peak costs in the per-customer and per-project cost-effectiveness evaluation but didn't estimate or present aggregate impacts (as they would depend on the realization rate of the NPAs). As for the second part of your question, Niece's comments earlier spoke to PSE's process of identifying known projects and asset populations that were a good starting point for this analysis.
- RPAG member: Can you compare incentives and benefits from the other electrification studies mentioned earlier?
 - E3 response: The projects mentioned were studies and not deployed programs, so there aren't realized incentive budgets. Some other utilities have deployed such programs.
 - RPAG member: Can you show us the potential incentives and net benefits?
 - E3 response: This is an assumption driven exercise; we assumed a cost of \$20,000 per residential customer and \$150,000 per commercial customer. Slide 28 shows some cost benefits.
 - E3 provided this information in the meeting chat: Here are a few examples of NPA analysis we have conducted elsewhere that could be helpful to understand some of the methodology applied, though there are some differences to the approaches we took in this analysis.
 - CEC Targeted Electrification: <https://gridworks.org/wp-content/uploads/2024/07/Targeted-Electrification-and-Strategic-Gas-Decommissioning.pdf>
 - NRDC Targeted Electrification: <https://www.ethree.com/wp-content/uploads/2024/06/Gas-Decommissioning-Fact-Sheet-2024-06-18.pdf>
 - RIE retiring of LNG facility: <https://ripuc.ri.gov/sites/g/files/xkqbur841/files/2025-06/25-16-NG%20Old%20Mill%20Lane%20-%20Pre-filed%20Direct%20Testimonies%20of%20Aas%20and%20Gresham%20-%2006-02-2025.pdf>

Draft scenario demand forecasts

Follow along: This information is on [slides 46-62](#) of the presentation and [1:20:48 – 1:50:38](#) in the meeting recording.

Presenter: Lorin Molander, Manager, Load Forecasting & Analysis, PSE

Highlights:

- The demand forecast for the reference case has been updated to account for an adjustment to PSE's electric system average line loss factor; this reduces electric load and peaks by 2.7%.
- Load scenarios establish the range of gas and electric energy needs that any 2027 ISP candidate portfolio must be able to deliver.
- PSE is modeling four scenarios in addition to the reference case to further explore varying assumptions for large loads and building and transportation electrification.

RPAG members provided the following feedback:

- RPAG member: Is this 2.7% reduction already reflected in the reference case, or does it need to be revised?
 - PSE response: Yes, it's reflected in the reference case. We do not need to rerun the models.
- RPAG member: Scenarios 2, 3 and 4 appear to have similar gas systems loads through 2038 before diverging significantly. Is that due to breakdown of customer appliances?
 - Cadmus Group response: In Scenario 3, the divergence is driven by equipment failure assumptions. Scenarios 2 and 4 diverge due to varying large load and EV assumptions.
- RPAG member: Has PSE looked at associated bill impacts? If there's an 80% reduction in customers by 2042, such as what's shown in Scenario 2, would that result in a fivefold increase in bill impacts?
 - PSE response: These are the demand forecast and not the results of the resource planning analysis. We will discuss the costs and impacts of the various scenarios in August. It's important to note that the effects are on both the gas and electric side of the utility, which is what the ISP looks at.
- RPAG member: Does PSE consider any alternative fuels like hydrogen or renewable natural gas as part of the portfolio, or is electrification the only path to meeting greenhouse gas emissions goals?
 - PSE response: This analysis is only looking at demand and not how we are meeting demand.
- RPAG member: Will there be future ISP scenarios where PSE looks at both decarbonization and electrification as a means of meeting state emissions goals?
 - PSE response: We factor in the effects of decarbonization when we do the portfolio analysis. This analysis is just to see how the gas and electric systems work together when gas demand decreases and electric demand increases.
- RPAG member: Is managed charging assumed in EV load?

- PSE response: That is correct.
- RPAG member: How is “equipment failure” defined? Does it incorporate voluntary heat pump installation, for example? What defines the timeline for failure? What are the incentives in “incentive-driven electrification”?
 - Cadmus Group response: Equipment failure is based on the effective useful life of various pieces of equipment. Our data is consistent with the Northwest Power and Conservation Council (NWPCC) data. This analysis takes into account a customer decision to upgrade an appliance or electrify. Scenario 1 incentives starting 2030 are as follows (incentives are not relevant for Scenarios 2-4 due to policy drivers):
 - Low-income incentive: 100% of full measure cost
 - Non-low-income incentive: \$3,000 per HVAC heat pump
 - 100% of incremental measure cost for other measures
- RPAG member: How does Scenario 2 achieve the same peak gas level by 2050 as Scenario 4 but does so with 10.7 GW instead of 12.5 GW?
 - Cadmus Group response: The gap is due to High vs Reference forecasts for large load connections and EV load.
 - RPAG member: So that is load that is not gas-to-electric load, right? Would be good to split forecasts in native load growth vs gas-to-electric load growth.
 - Cadmus Group response: That is correct.
- RPAG member: Is the system peak in slide 58 the 1 in 10 or 1 in 2?
 - PSE response: The electric system peak is the 1 in 2.

Next steps and public comment opportunity

Follow along: This information is on [slides 63-69](#) of the presentation and [1:50:39 – 2:02:15](#) in the meeting recording.

Presenter: Hilary Wilkinson, Facilitator, MFA

Highlights:

- August 4, 2026: Feedback form for the July 28, 2026 meeting closes
- August 25, 2026: RPAG meeting
- Two members of the public participated in the public comment opportunity.
- Participants were invited to complete a post-meeting feedback poll to share their insights and help improve future sessions.

Attendees

Attendees are listed alphabetically by first name. This list does not include viewers on [PSE's YouTube channel](#).

RPAG members

- | | | |
|--------------------|----------------------|-------------------|
| 1. Aliza Seelig | 7. Froylan Sifuentes | 13. Lauren McCloy |
| 2. Byron Harmon | 8. Jaime McGovern | 14. Mike Goetz |
| 3. Callie Moriyasu | 9. John Ollis | 15. Megan Larkin |
| 4. Dennis Suarez | 10. JP Carvallo | 16. Sophie Major |
| 5. Donald Williams | 11. Katie Ware | |
| 6. Fred Heutte | 12. Kelly Fukai | |

Presenters

- | | |
|---|--------------------------|
| 1. Dan Aas, Energy & Environmental Economics (E3) | 3. Jennifer Coulson, PSE |
| 2. David Landers, PSE | 4. Lorin Molander, PSE |
| | 5. Niece Weatherby, PSE |

Support staff and facilitators

- | | | |
|---|-------------------------|----------------------------------|
| 1. Ben Relampagos, Triangle Associates | 4. Jack Donahue, MFA | 9. Stephen Collins, PSE |
| 2. Chhandita Das, PSE | 5. Meredith Mathis, PSE | 10. Taylor Bettine, Cadmus Group |
| 3. Hilary Wilkinson, Maul Foster & Alongi (MFA) | 6. Ray Outlaw, PSE | 11. Vivan Malkani, E3 |
| | 7. Sean Smillie, E3 | |
| | 8. Stephanie Price, PSE | |

Members of the public

- | | | |
|----------------------|--------------------|-------------------|
| 1. Achille Steinhoff | 5. Elliot Carleton | 9. Kelly Hefner |
| 2. David Meyer | 6. Erik Olson | 10. Kyle Lucas |
| 3. Don Marsh | 7. Jason Verduzco | 11. Lian Arnst |
| 4. Ehsan Samani | 8. Kelly Kozdras | 12. Peter Newcomb |

13. Tom Darin