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

Thursday, May 28, 2026 | 1:00 – 3:30 p.m.

Meeting materials

- Presentation
- Meeting recording
- Meeting agenda

Meeting objectives

- Explore gas and electric reference case portfolio challenges and results
- Develop shared understanding for assumptions adjustments required to achieve successful model runs
- Respond to initial questions from RPAG members on the reference case results
- Provide an opportunity for public comments

Introduction and agenda review

Follow along: This information is on slides 1-8 of the presentation and 0:00 – 11:01 in the meeting recording.

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

Introduction - reference case

Follow along: This information is on slides 9-15 of the presentation and 11:01 – 22:14 in the meeting recording.

Presenter: Kara Durbin, Director, Clean Energy Strategy, PSE

Highlights:

- The reference case is the starting point for the preferred portfolio for the 2027 Integrated System Plan.

- The reference case includes generation, transmission, distribution, and customer programs.
- The electric supply optimization model did not produce a solution (reference case) without manual workarounds.
- We have significant needs over the 10-year planning horizon and are facing constrained transmission in addition to increasing electric and gas rates.

Reference case customer programs

Follow along: This information is on slides 16-20 of the presentation and 22:14 – 36:58 in the meeting recording.

Presenter: Mark Lenssen, Manager, Strategic Planning, Evaluation & Research, PSE

Highlights:

- Customer programs included in the reference case results are conservation and energy efficiency, demand response, distributed energy resources (DER) solar, DER storage, and net metered solar.
- Using the reference case as a starting point, PSE will use sensitivities to assess customer programs to see if we can feasibly achieve 2% (percent of annual electric load) conservation and 10% demand response targets.
- Achieving the 2% target will be virtually impossible with voluntary programs; achieving the 10% target is potentially possible.

RPAG members provided the following questions and feedback:

- RPAG member: It would be nice to see the Effective Load Carrying Capability (ELCC) version of this chart on slide 18.
  - PSE response: Please see the feedback report for this meeting for the requested version of this chart.
- RPAG member: How is PSE doing the conservation potential assessment (CPA) differently in the 2027 ISP than in the past? How will the CPA address the integrated intent of the ISP?
  - PSE response: The main difference in this analysis is that each of our scenarios (low, medium and high electrification) require a corresponding CPA. As customers reduce gas use in these scenarios, electric potential increases, which means we assess energy efficiency and demand response potential to a greater extent.
- RPAG member: I would like to second the request for the ELCC version of the chart on slide 18. Where would PSE pull the ELCC information from? Is that calculated internally or externally?

- PSE response: We run our modeling through resource adequacy analysis to produce ELCC values on distributed energy resources (DER) and demand response (DR) resources. We look at hourly load shapes net of conservation and how it can reduce our loads in addition to the various adjustments within the hours.

Electric supply reference case

Follow along: This information is on slides 21-37 of the presentation and 36:58 – 2:05:35 in the meeting recording.

Presenter: Elizabeth Hossner, Manager, Resource Planning & Analysis, PSE and Shaun Foster, Director, Electric Transmission, PSE

Highlights:

- In the electric supply modeling process PSE analyzes effective peak capacity, Clean Energy Transformation Act (CETA) compliant renewable and nonemitting resources, and energy demand in order to identify resource requirement shortfalls.
- Effective peak capacity requirement is projected to grow significantly, particularly after 2045. There appears to be a significant deficit for winter peak capacity.
- PSE's need for CETA-compliant generating resources is significant beginning in 2030.
- The electric model could not solve based on the initial reference case modeling assumptions; PSE needs a reference case that can solve in order to iterate towards a preferred portfolio for the 2027 ISP.
- Potential solutions that allow the model to solve are:
  - Reference A: Initial reference case + unlimited battery storage. This requires an unrealistic number of short-duration batteries and manual workarounds for build limits and transmission constraints.
  - Reference B (PSE's recommendation): Initial reference case + emerging technology. This assumes certain CETA-compliant emerging technology in the form of flex fuel peakers and nuclear power will be available starting in 2035.
- Current modeling challenges may create additional challenges as PSE models various electrification scenarios with increasing electric demand for the 2027 ISP.

RPAG members provided the following questions and feedback:

- RPAG member: What planning reserve margin (PRM) are you using?
  - We use a 20% PRM for winter and 12% PRM for summer.

- RPAG member: I appreciate the clarity on biodiesel falling in emerging tech. I would like to come back to slide 31 to talk more about what else is considered emerging.
    - PSE response: Elizabeth will likely touch on this today in her presentation. The full list of technology assumed can be found on slide 81 in the presentation. Here is the RPAG meeting we did in 2024 on emerging technology: http://www.cleanenergyplan.pse.com/rpag-meeting-march-25-2024.
- RPAG member: To what extent do large loads contribute to load growth?
    - PSE response: Our reference case load forecast includes moderate electric vehicle (EV) growth and minimal large loads. We will model various sensitivities that look at varying levels of EV adoption, large load growth, and building electrification.
- RPAG member: What is the differentiation between contracts and the rest of the resources on slide 25?
    - Our contracts shown on slide 25 are intermediate-term of five or less years; most of the other resources are contracted for 20 or more years.
- RPAG member: Some utilities are backing off from their clean energy commitments due to large load requirements on their systems. If a utility backs out of those commitments or can't meet their goals, what do those stranded costs look like and how does the utility address that?
    - PSE response: Our clean energy goals are more than a commitment; they are required based on the Clean Energy Transformation Act (CETA). We are obligated to continue to make progress towards our clean energy targets and fulfill the capacity need we've identified. The Washington Utilities and Transportation Commission (UTC) has a large load docket; they're wrestling with some of these questions.
- RPAG member: I'm looking for more specificity on slide 25 about what might be baked into the baseline generation assumptions in this planning period where there was no resource planning happening. Is the TransAlta tolling agreement included as an existing resource?
    - PSE response: Our baseline assumptions include all the resources that are currently online and planned for the next several years; this includes new tolling, wind, solar, and batteries, and all other resources expected to come online before 2030.
    - RPAG member: The 700 MW of peakers and combined cycle turbine (CCT) include both the TransAlta tolling agreement and other gas plants?
    - PSE response: The peaker CCT is included in the gas conversion agreement; that is 700 MW nameplate capacity. Short or intermediate-term resources are included in contracts.
- RPAG member: You talked about short-duration storage and long-duration storage saturating. Are you referring to its capacity contribution value? Could you elaborate on that?

- PSE response: This was part of our resource adequacy analysis to evaluate how these energy storage resources can contribute to peak events. We talked about saturation curves some in our September RPAG meeting. Batteries can help meet an immediate four-hour peak, but they can't sustain for the duration of a peak event longer than four hours. We cannot recharge batteries during a shortage event, so once they're used up, they are no longer contributing to a peak event.
- RPAG member: Can you remind me of those saturation curves?
- PSE response: The saturation curves incorporate what would happen as our portfolio changes, such as adding more renewables to our system. We worked with E3 to do saturation analysis of our region based on a balanced market then balanced our portfolio. They studied the saturation point of various types of resources to see how they could meet our peak contributions.

- RPAG member: Could you say more about why this battery result was not realistic aside from the high price?
  - PSE response: The primary reason is because of the unrealistic amount of land needed for the batteries. The second reason is that the system could not handle all of this generation and interconnection needs at once; these batteries are almost double what the current installed capacity is in the U.S. We also don't know if we could acquire this amount due to resource competition.
- RPAG member: Where does renewable natural gas (RNG) fit into Reference B. Are there potentially interactive effects between needing to decarbonize the gas system?
  - PSE response: RNG would not require upgrades or changes to natural gas plants in order to use it. The bigger uncertainty is about RNG availability.
- RPAG member: What exactly prevented Reference A from solving? Could you have built it differently or have found a middle of the road approach using other technologies like biodiesel or long-duration battery storage?
  - PSE response: The model struggled given the magnitude of energy storage needed to solve. The sensitivities we are going to model will help us build these "in-between" cases.
- RPAG member: Is there no transmission from California?
  - PSE response: There is no available long-term firm transmission from California. It has long been sold by the transmission providers that own the assets that connect to California. And there are no current plans to expand the southern intertie to California.

PSE initiated a round robin exercise to ask RPAG members about their initial responses to PSE's approach to the reference case. RPAG members provided the following feedback:

- RPAG member: Regarding building transmission capacity, is PSE considering date-driven gates to account for build-out lead times to achieve capacity for anticipated emerging technologies within the region?
- RPAG member: I understand why PSE recommends using Reference B as the reference case. Overall, I'm in support of going with this reference case.
- RPAG member: It would have been good to have more opportunity for input on the reference cases to make sure Reference A was represented as a competitor for Reference B. The way the slides drive the comparison between the two makes it hard to advocate for Reference A.
- RPAG member: I don't think going with Reference A makes much sense. We want the plan to reflect something that is feasible and reasonable. These planning exercises are important for looking long-term. We don't necessarily know what 2045 is going to look like so we have to make some assumptions that factor in that uncertainty. The important part of the plan are the near-term decisions that PSE is going to make.
- RPAG member: I agree that Reference B is the most effective. It would be nice to know a bit more about the specifics of the different types of technologies and their costs. There needs to be more details about 2, 5, and 10-year decisions so we don't make too many assumptions.
- RPAG member: We have found that if you don't include emerging technologies in your long-term studies you run into issues. It's best practice to have some assumptions about emerging tech in the further out years. Reference B is more desirable than Reference A. One of the key features of including emerging tech is that they tend to have more complementary attributes that fit in well with the commercially available resources. Part of the reason why they drive build costs down is they fit well in a portfolio. I have a little bit of concern about some of the storage capacity contributions. That being said, I think including emerging tech is a good idea.
- RPAG member: This PSE analysis should be supported by the state and result in a push for zero-emission dispatchable technologies before we reach 2045. We shouldn't rely on the market to suddenly come up with unicorn technology; there should be a concerted effort to make technologies happen.
- RPAG member: I would like to see information with build limits and price assumptions that were incorporated into Reference A and B. I'm surprised Reference A didn't solve; I want to reiterate what Katie said earlier about considering middle ground for the reference cases. Would Reference A plus some limited builds allowed for RNG peakers change the solution significantly?
    - PSE response: To clarify, Reference A didn't solve because of our build limits and transmission limits. We had to manually remove these limits and increase the availability

of resources and remove transmission constraints to ensure there were enough resources to get the model to produce a solution. This is just a starting point; we will run multiple iterations of various scenarios.

Gas supply reference case

Follow along: This information is on slides 39-46 of the presentation and 2:05:35 – 2:10:50 in the meeting recording.

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

Highlights:

- Gas supply modeling inputs include demand forecast, gas price forecasts, existing resource and contracts, Climate Commitment Act (CCA) ceiling and social cost of greenhouse gas (SCGHG) forecasts, and resource alternatives and contracts.
- Gas supply costs have increased significantly since the 2023 Gas Integrated Resource Plan (IRP), mainly due to CCA ceiling prices.
- Renewable natural gas (RNG) is a resource alternative for the gas portfolio, though existing supplies and deliverability are constrained.
- Even without future gas growth, demand is projected to rely on existing natural gas contracts and storage facilities.

ISP reference case results

Follow along: This information is on slides 47-54 of the presentation and 2:10:50 – 2:26:07 in the meeting recording.

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

Highlights:

- Electric utility reference case costs increase over the planning period in order to meet peak capacity and CETA requirements. The reference case also shows increasing rate impacts.
- Gas reference case costs increase over the planning horizon due to CCA. The reference case also shows increasing rate impacts.
- The gas reference case shows near term gas and electric emissions are below the utility's proportional share of state-wide goals.

RPAG members provided the following questions and feedback:

- RPAG member: It appears that portfolio costs are driving the rate increases in line with policy deadlines, and the increases happen in the 2030-2044 range.
  - PSE response: The increases are based on the model solving for peak capacity, CETA requirements, and the demand forecast over time.
  - RPAG member: Does the model rank inputs to solve for CETA first and then meet demand?
  - PSE response: Everything is solved simultaneously and not in rank order; the model attempts to optimize everything to meet lowest cost options.
- RPAG member: As gas rates increase, who would be the most affected from an equity perspective?
  - PSE response: This is part of our challenge, especially for the latter half of the planning horizon which is very high level and without specificity. It's something we will consider.
- RPAG member: I'm interested in seeing what the chart on slide 52 would look like broken down into gas and electric.
  - PSE response: We can look at evaluating that.

Next steps and public comment opportunity

Follow along: This information is on slides 65-72 of the presentation and 2:26:07 – 2:38:29 in the meeting recording.

Highlights:

- June 4, 2026: Feedback form for the May 28, 2026 meeting closes
- June 23, 2026: RPAG meeting
- July 28, 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
2. Callie Moriyasu
3. Dennis Suarez

4. Donald Williams
5. Fred Heutte
6. Froylan Sifuentes
7. Jaime McGovern
8. John Ollis
9. JP Carvallo
10. Katie Ware
11. Lauren McCloy
12. Megan Larkin
13. Mike Goetz
14. Quinn Weber
15. Sommer Moser
16. Sophie Major

Presenters

1. Elizabeth Hossner, PSE
2. Jennifer Coulson, PSE
3. Kara Durbin, PSE
4. Mark Lenssen, PSE
5. Shaun Foster, PSE

Support staff and facilitators

1. Ashley King, PSE
2. Ben Relampagos, Triangle Associates
3. David Landers, PSE
4. Eleanor Ewry, PSE
5. Heather Mulligan, PSE
6. Hilary Wilkinson, Maul, MFA
7. Jack Donahue, MFA
8. Malcolm McCulloch, PSE
9. Meredith Mathis, PSE
10. Ray Outlaw, PSE
11. Ryan Lambert, PSE
12. Wendy Gerlitz, PSE

Members of the public

1. Amreen Papar
2. Chris Searcy
3. Cuong Nguyen
4. David Stewart
5. Don Marsh
6. Ehsan Samani
7. Elliot Carleton
8. Emily Gilroy
9. Erin Lynch
10. Francisco Humaran
11. Ian Brothers
12. James Adcock
13. Julia Millot
14. Kelima Yakupova
15. Mary Wiencke
16. Matt Wills
17. Melanie Coon
18. Michelle DeBell
19. Patty Cook
20. Paul G
21. Rachel Gates
22. Rae Brigham
23. Seth Baker
24. Sheryl Mayo
25. Victor Sullivan
26. Wesley Franks
27. Zach Atkinson