How does PSE plan for a clean energy future?

Meeting details

- Thursday, July 17, 2025, 12:00 p.m. – 1:00 p.m. (30 participants)
- Tuesday, July 22, 2025, 5:30 p.m. – 6:30 p.m. (45 participants)
- Virtual webinars hosted by PSE and facilitated by Triangle Associates
- Links to:
  - Presentation
  - July 17, 2025 (session 1) meeting recording
  - July 22, 2025 (session 2) meeting recording

Questions and responses

The following table records participant questions and PSE responses from the public webinar. All meeting materials are available on the Integrated System Plan (ISP) website.

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

No.	Date	Question or comment	PSE response
1	07/17	Where does solar and battery storage fit in?	Solar is included in the "other" category in the energy mix. For battery storage PSE models storage really thinking about those peak instances. So, whenever demand is high we have a way to get some amount of that energy that has been stored.
2	07/17	Where is coal coming from?	PSE has historically received electricity from Colstrip in Montana and TransAlta in Centralia. Consistent with the Clean Energy Transformation Act, PSE will remove coal-fired generation serving Washington state customers by the end of 2025.

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3	07/17	If we need to get rid of coal and natural gas then what will make up the replacement of coal and natural gas?	PSE faces the complex challenge of replacing coal (which must be retired by the end of 2025) and natural gas (to achieve 100% clean energy by 2045) while simultaneously meeting growing electricity demand from electrification and new customers. PSE must "backfill" all fossil fuel generation by 2045 with renewable (e.g., wind, solar, and hydroelectric) and non-emitting (e.g., nuclear and geothermal) resources. This creates a multifaceted planning challenge where PSE must not only replace existing generation capacity but also ensure reliable power supply despite the intermittent characteristics of clean energy resources. The Integrated System Plan analysis will help us understand what resources we could use to help replace coal and natural gas, and as technology becomes available, we will continue to evaluate other opportunities.
4	07/17	How much actual power are we looking to replace?	Over 2,700 megawatts of thermal (coal and natural gas) by 2045.
5	07/17	Are you exploring nuclear energy to produce electricity?	Yes, PSE is exploring nuclear energy as a potential part of our electricity generation mix. The company has a dedicated team that is actively evaluating emerging nuclear technologies, including small modular reactors (SMRs), as possible sources of firm baseload capacity. Nuclear power could play a role as we work to replace fossil fuel generation with clean energy sources.
6	07/17	Do we have cost projections under different energy sources?	Yes, PSE has cost projections for different energy generation types. We have a dedicated team that analyzes costs for a variety of resources as part of their process for gathering input assumptions for energy planning. PSE shared details about this process during the Resource Planning Advisory Group on June 24, 2025.
7	07/17	Can PSE help building owners to install solar or ground source heat pumps locally as an option to transmission buildout?	PSE has a list of recommended energy professionals and energy advisors available to provide assistance on finding rebates and contractors.
8	07/17	Since newer electric technologies such as heat/cool pumps are actually more energy efficient, how much of the expected increase in demand is coming from other draws such as data centers and crypto processing?	PSE is monitoring and studying the impacts of data centers on our load forecast, but we do not yet have a specific number or percentage to quantify their expected contributions.
9	07/17	I would love to hear about geothermal power.	PSE considers geothermal power as an emerging technology that is not currently part of our generating resources. PSE is monitoring enhanced geothermal projects developing in other parts of the country to evaluate whether it would be a good fit for our system, potentially as a base load resource.

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10	07/17	How will the shift to clean energy affect the electricity costs for consumers in the next few years?	Understanding the cost impact is exactly what we are trying to determine through this planning process. The clean energy transition involves not just new generation resources but also significant investments in grid infrastructure, distribution, and transmission systems. When all these components are considered together, they may cause an increase in customer bills and rates.
11	07/17	Is PSE looking at time of day pricing like Seattle is switching to this summer?	PSE is exploring time-of-use rates through a pilot. Although not the same as time of use, PSE Flex offers incentives to adjust energy use at peak times.
12	07/17	The electrification transition conceptually suggests the need for increased demand and infrastructure growth. A large part of the necessity for infrastructure growth can be offset by energy use regulation and utility incentives. When will you talk about such mitigating options to slow the need for infrastructure growth?	PSE will discuss customer programs and mitigating options in more detail at the next public webinar this fall. Modeling is examining these options and their potential impact.
13	07/17	What do you mean by "clean fuel conversion" in relation to natural gas? There are big limitations to the amount of RNG generation.	There are limitations of renewable natural gas (RNG), and we are exploring various options including renewable natural gas, renewable fuels, and hydrogen as emerging technologies. PSE agrees that these alternatives would only provide a fraction of what would be needed to fully replace conventional natural gas, and we are still in the study phase of evaluating these options as we work toward the 2045 clean energy goal.
14	07/17	What partnerships/learning are you engaged in with others (Canada, other US, Europe, RMI/CERES, etc	We participate in multiple forums to stay on top of emerging clean energy technologies and understand their implications, including the Pacific Northwest Hydrogen Association, PNWER, DOE grant applications to study enhanced geothermal energy, fusion energy and carbon capture via the CleanTech Alliance, SMR deployment though our collaboration with Energy Northwest as well as engagement in EPRI's Advanced Nuclear Technology program, memorandums of understanding with various clean energy companies like Form Energy and Modern Hydrogen, networking with peer utilities with similar clean energy goals, and use of various consulting and clean energy services firms.
15	07/17	How much are the fossil fuel companies engaging and assisting with the energy transition to lower-GHG power? Do you do life cycle assessments of alternatives?	PSE cannot comment on the actions or policies of other companies. Yes, PSE does assess the life-cycle cost of resources when evaluating alternatives. All resources are included in the model with expected life of the plant and any operations, fuel, and maintenance costs needed for continued operation through life. Each resource has different life expectancy. For example, a lithium-ion battery is expected to have a 20-year life and includes maintenance costs for maintaining capacity against degradation and battery augmentation in the cycling costs. Peaking facilities have a life expectancy of 35 years and include maintenance costs along with fuel costs.

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16	07/17	What does the timeline look like for planning to implementation phase for shifting to cleaner energy?	The implementation phase is already happening. PSE has been at the forefront of transitioning our energy portfolio and has already brought significant new wind and solar resources into our portfolio. This will continue as we work toward CETA's 2030 and 2045 clean energy goals, including both adding new clean resources and expanding customer programs.
17	07/17	Are there concerns with the Federal funding cut back? How much Federal funding does PSE rely on? Additionally, could we be looking at not being able to address our energy needs due to Fed funding cuts?	PSE is monitoring federal funding changes and will evaluate them in the modeling process. While funding cuts may impact the costs of resources, we do not anticipate it affecting reliability as we have an obligation to continue to serve gas and electric service to our customers.
18	07/22	I thought we were ending our dependence on coal?	PSE is ending use of electric generation from coal by the end of 2025, consistent with state law.
19	07/22	Do you see biodiesel in your future	PSE is considering biodiesel as one of the emerging technologies.
20	07/22	Are community based solar panels part of the plan for outlying communities like Glacier, Washington?	PSE has a community solar program and is actively looking to expand it.
21	07/22	I've heard that EVs V2L can actually be a net positive for the grid. Is PSE exploring these technologies? Where/How/When?	PSE is actively working to develop Vehicle to Everything (V2X) capabilities to leverage electric vehicle batteries to provide grid benefits, details of which can be found on our website. This is in addition to existing demand response and time-of-use programs that encourage customers to reduce or shift energy usage.
22	07/22	Can you speak on: While load growth may increase in the future, it can also be considerably mitigated through improved energy efficiency in existing buildings, including but not limited to transitioning off of resistance heating (like baseboard heaters).	Energy efficiency is indeed part of the planning process but not a focus of this agenda. However, a more detailed discussion of customer-side programs, including energy efficiency in existing buildings, is planned for the next public webinars in the fall.
23	07/22	Other countries are pairing solar and storage to create steady power 24/7/365 "baseload". In our area, it's a little more difficult, but the cost is attractive and decreasing rapidly over time. It seems like PSE isn't looking forward enough.	PSE is actively exploring advanced storage technologies, including having a memorandum of understanding with Form Energy to explore 100-hour long-duration storage batteries. PSE is looking at technologies that could enable solar plus storage to provide steady, baseload-like power.
24	07/22	Why is PSE focusing on Flex programming instead of Time of Use (ToU) rates (like Seattle City Light, PG&E, other utilities); what modeling do you have to suggest elective adoption will	PSE is pursuing both approaches. We currently have a pilot time-of-use (TOU) rates program running, though it's not yet a full program. Regarding the Flex programming focus, PSE has regulatory obligations to achieve certain benchmarks in demand response, so our pursuit of demand response programs like PSE Flex

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		lead to effective peak shaving? What are your plans for commercial and industrial customers?	are also due to regulatory requirements. PSE is taking a multi-pronged approach that includes both TOU rates (in pilot phase) and Flex programming.
25	07/22	Why can't enhanced geothermal be used for peaking?	Enhanced geothermal systems are primarily designed as baseload resources because they do not ramp up and down as easily as gas plants or batteries. However, enhanced geothermal could potentially be used in some peaking cases. The main limitation is operational flexibility. Geothermal plants are better suited for steady, continuous operation rather than the quick on/off cycling needed for peak demand periods.
26	07/22	Have you looked into millimeter wave drilling for geothermal? Are there any concerns about the horizontal fracking parts of Fervo if implemented in WA?	PSE is monitoring enhanced geothermal projects developing in other parts of the country to evaluate whether it would be a good fit for our system; we do not have information to share on specific technologies at this time.
27	07/22	Doesn’t switching from gas to electric work in conjunction with adding more resources?	Switching from gas to electric heating and appliances does increase the need for electric generation. This is what PSE is studying and planning for in this integrated system plan process. When customers switch from gas to electricity, it increases electric demand, which requires PSE to bring in new resources to meet that additional demand. PSE is analyzing different electrification scenarios and planning the corresponding resource additions needed for each scenario.
28	07/22	Is PSE taking into account the progress on iron-air batteries (Form Energy) that can store energy for months across seasons? This is really a game changer compared to batteries with shorter duration.	PSE has a memorandum of understanding with Form Energy to explore using their 100-hour long-duration storage batteries within Washington state. PSE is currently monitoring the technology and exploring potential locations for deployment, but we are taking a risk-reduction approach by watching Form Energy's projects in other parts of the country reach full commercialization before making our own investment.
29	07/22	Is PSE involved at all in WSU’s Pumped Storage Hydro Siting research?	PSE is not directly involved in this research but is interested and considering the potential of pumped hydroelectric storage.
30	07/22	What awareness raising or impactful programs are you managing for the population? Many challenges await future generations	PSE has several teams dedicated to customer outreach and engagement efforts. They actively reach out to customers across all counties in our service territory, targeting various customer segments and diverse customer groups. The approach includes going to community-based organizations and various events throughout our service area to build awareness and understand the burdens and barriers customers face.
31	07/22	How do you think this tool (AI) could be used to improve not only awareness of energy use but also directly in the development of consumer prices, costs, new technologies, and even to be prepared with a contingency plan to protect us in the future in the event of a global collapse due to	PSE is exploring what artificial intelligence can offer, but we are still learning about how AI tools might be used for consumer pricing, new technology development, or contingency planning for various crisis scenarios.

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		excessive consumption or even in a possible war scenario?	
32	07/22	How to keep a home that we rent insulation it's so cold so we can not waste so much electricity?	PSE offers resources for renters concerned about energy efficiency and insulation. PSE also has a recommended energy professionals resource where renters can search for energy professionals for specific projects. Additionally, PSE offers a Bill Discount Rate program that renters can check eligibility for through a 3-question tool. Customs are also encouraged to reach out to customer service support available at 1-888-225-5773 for additional assistance.

Other participant feedback

During the webinars PSE engaged participants in a "waterfall" activity by asking questions and having participants type their responses into the chat feature. Below are the questions and a snapshot of common answer themes provided by participants.

1. What matters most to you about clean energy planning?
    - Cost and affordability
    - Environmental goals
    - Reliability
2. What tradeoff do you think we need to consider when deciding which large-scale energy resources to use?
    - Cost and affordability
    - Environmental impact
    - Reliability and performance
3. What would help your community feel supported or included if a large energy project (like wind, solar, or storage) were proposed nearby?
    - Communication
    - Economic benefits
    - Tribal and community consultation

Participants were also asked to respond to a survey question: **What matters most to you when planning our clean energy future?** Participants ranked their priorities as follows:

1. Keeping energy reliable
2. Cutting greenhouse emissions
3. Adding more clean energy sources
4. Keeping costs affordable
5. Making sure customers stay safe
6. Switching from gas to electric for heating and cooking