

2023 Electric Progress Report: PSE webinar with IRP stakeholders

March 22, 2022

Overview

On March 22, 2022 Puget Sound Energy (PSE) hosted an online meeting with Integrated Resource Plan (IRP) stakeholders on assumptions for the 2023 Electric Progress Report, and to specifically:

- Share about the Climate Commitment Act (CCA)
- Discuss and provide feedback on electric supply-side resource alternatives, regional assumptions for electric price forecasts, and carbon prices and the social cost of greenhouse gases.

Additionally, participants were able to ask questions and make comments using a chat box provided by the Zoom platform.

Below is a report of the questions submitted to the chat box. Answers to the questions were provided verbally by PSE staff during the meeting. Please note that questions were answered in order of relevance to the topic currently being discussed. Questions regarding other topics were answered at the end of the meeting.

To view a recording of the webinar and to hear responses from staff, please visit the project website at pse.com/irp.

Attendees

A total of 68 stakeholders, PSE staff and facilitators registered for the meeting.

Registrants included:

Aaron Tam, Alexandra Karpoff, Allison Jacobs, Andrew Hooper, Anne Newcomb, Anthony O'Rourke, Austin Nnoli, Bill Pascoe, Bill Will, Bob Williams, Brett Rendina, Brian Grunkemeyer, Brian Tyson, Chelsea Talbert, Christopher Doyle, Cindy Vu, Claire Wendle, Colin Crowley, Corey Corbett, Cuong Nguyen, Daniel Handal, David Branchcomb, David Meyer, David Tomlinson, Deepa Sivarajan, Diann Strom, Don Marsh, Doug Hart, Elizabeth Hossner, Fred Heutte, Gurvinder Singh, Heather Mulligan, James Adcock, James Doone, Jeffrey Larsen, Jennifer Coulson, Jennifer Snyder, Jesse Durst, Jessica Zahnow, Jim Schretter, Joel Carlson, John Fazio, Jon Lange, Joni Bosh, Kara Durbin, Kasey Curtis, Katie Ware, Kelly Xu, Larry Becker, Lauren McCloy, Lauren Batalias, Laxman Subedi, Leslie Almond, Lorin Molander, Lorna Luebbe, Marc Alberts, Markus Virta, Michael M., Michael Berry, Michele Kvam, Michelle Wildie, Monica Blakeslee-Kish, Nelli Doroshkin, Niece Weatherby, Nora Hawkins, Patrick Leslie, Paul Lekan, Phillip Popoff, Ping Liu, R.Court Olson, Rachel Clark, Randy Hardy, Renchang Dai, Rosemary Moore, Ryan Frazier, Sachi Begur, Sara Leverette, Semra Riddle, Sheri Maynard, Stacy Vynne McKinstry, Stephanie Imamovic, Stephanie Chase, Thor Angle, Tracy Furutani, Tyler Tobin, Virginia Lohr, Villamor, Gamponia, Wendy Gerlitz, Will Henderson, Willard Westre.

Questions Received

Questions from attendees are posted in the order in which they were received. The meeting began at 9:00 AM PDT and ended at 12:00 PM PDT.

Name	Time Sent	Comment
Claire Wendle	9:06 a.m.	Agenda: https://oohpseirp.blob.core.windows.net/media/Default/2022_meetings/2022_03/2022_0321_IRPStakeholder_ElectricAssumptions_Agenda.pdf
Claire Wendle	9:06 a.m.	Presentation: https://oohpseirp.blob.core.windows.net/media/Default/2022_meetings/2022_03/2022_0321_IRPStakeholders_ElectricAssumptions_031522.pdf
Claire Wendle	9:14 a.m.	Link to Jan 20 feedback report: https://oohpseirp.blob.core.windows.net/media/Default/2022_meetings/2022_0120/2022_0120_IRPFeedbackReport_Final0224.pdf
Deepa Sivarajan, Climate Solutions	9:15 a.m.	Slide 11: How is the timeline for the gas IRP working past the 3/31 meeting? And given that the electric side is on a different schedule with Electric Progress Reporting vs. full IRP, why are both IRP processes still being combined?
Deepa Sivarajan, Climate Solutions	9:18 a.m.	yes!
Sophie Glass, Triangle Associates	9:28 a.m.	We will have a discussion about all this information in a few minutes (after slide 20)
Deepa Sivarajan, Climate Solutions	9:28 a.m.	Slide 19: Will the supply/demand and cost burden forecasts for allowance allocations be part of PSE's IRP, or will it be a separate or separate filing to UTC?
Sophie Glass, Triangle Associates	9:29 a.m.	Thank you, Deepa. We will address that question. And we welcome everyone to add questions in the chat as well.
Deepa Sivarajan, Climate Solutions	9:29 a.m.	thanks! one additional question on this slide: how is PSE planning to demonstrate to the UTC that 65% of no-cost allowances will be "consigned to auction for the benefit of customers, prioritizing the elimination of the burden on low-income customers"?
Sophie Glass, Triangle Associates	9:30 a.m.	Thanks for this follow-up question. We've noted it as well.
Katie Ware	9:36 a.m.	Could PSE explain the rationale of potentially selling the "free" consigned allowances in the first compliance period vs. "banking" them for a compliance demonstration?
Deepa Sivarajan, Climate Solutions	9:39 a.m.	the question was about the prioritization for low-income customers (more than the consignment to auction process, sorry for not being clear) but I think it was answered thanks
James Adcock	9:52 a.m.	Slide 25: Raise Hand
Sophie Glass, Triangle Associates	9:52 a.m.	Thanks, Jim. We will get to your question in a bit.
Sophie Glass, Triangle Associates	9:55 a.m.	Hi Joni - I see your hand as well.
Deepa Sivarajan, Climate Solutions	9:56 a.m.	Slide 25: Why is SCGHG not also applied as a direct cost, which would then impact energy dispatch decisions as well? Do you see any unintended consequences of applying as part of dispatch?
Sophie Glass, Triangle Associates	9:56 a.m.	Thank you, Deepa. We will get to your question after Joni's
Deepa Sivarajan, Climate Solutions	10:03 a.m.	thank you!

Name	Time Sent	Comment
Solutions		
James Adcock	10:03 a.m.	Raise Hand
Sophie Glass, Triangle Associates	10:05 a.m.	Hi Joni - I see your hand.
Sophie Glass, Triangle Associates	10:20 a.m.	We will resume at 10:22
V. Lohr	10:24 a.m.	If what you are planning to do with the Social Cost of Carbon and the CCA carbon pricing is different than what you did in the last IRP, would the new methodology potentially change the outcome in the next IRP? If so, please explain how.
Sophie Glass, Triangle Associates	10:24 a.m.	Thanks, V. Lohr. We will get to your question when we take our next break for discussion
Sophie Glass, Triangle Associates	10:26 a.m.	Hi Don - I see your hand. We will get to your question soon
Deepa Sivarajan, Climate Solutions	10:29 a.m.	The cost breakdown spreadsheet is linked here included some older sources – for example, the source named for offshore wind is a 2016 NREL report, and for onshore wind from a 2019 NREL report. These both seem too old to be relevant given how fast the technology changes for wind. Why are newer numbers not being considered?
Sophie Glass, Triangle Associates	10:29 a.m.	Thanks, Deepa.
Sophie Glass, Triangle Associates	10:29 a.m.	The question stack is: V. Lohr, Don, and then Deepa
V. Lohr	10:30 a.m.	Waiting on my question makes sense, since it's a question based on the section before the break.
James Adcock	10:30 a.m.	Slide 32: Raise Hand
Claire Wendle, Triangle Associates	10:30 a.m.	Link to Excel Files: Generic Resource Cost Assumptions https://oohpseirp.blob.core.windows.net/media/Default/2022_meetings/2022_03/2023_ElectricProgressReport_GenericResourceCostAdjustments.xlsx
Sophie Glass, Triangle Associates	10:30 a.m.	Sounds good, V. Lohr. We will return to your question before our next presentation.
Claire Wendle, Triangle Associates	10:30 a.m.	Generic Resource Cost Breakdown: https://oohpseirp.blob.core.windows.net/media/Default/2022_meetings/2022_03/2023_ElectricProgressReport_GenericResourceCostBreakdown.xlsx
Claire Wendle, Triangle Associates	10:30 a.m.	Regional New Builds and Retirements: https://oohpseirp.blob.core.windows.net/media/Default/2022_meetings/2022_03/2023_ElectricProgressReport_RegionalNewBuildsAndRetirements.xlsx
Claire Wendle, Triangle Associates	10:30 a.m.	2019 HDR Generic Resource Assumptions Report: https://oohpseirp.blob.core.windows.net/media/Default/2022_meetings/2022_03/2023_ElectricProgressReport_RegionalNewBuildsAndRetirements.xlsx
Sophie Glass, Triangle Associates	10:35 a.m.	Thanks, Katie. We will get to you after Deepa.
Joni Bosh	10:36 a.m.	The point is to use the most recent data possible when comparing resources. PSE has responses from the All Source RFP and will soon have the results from the DER/DR RFP, which would yield current costs for specific technologies bid in.
Fred Heutte	10:36 a.m.	Have a follow up on battery cycling.

Name	Time Sent	Comment
Anne Newcomb	10:36 a.m.	Are you looking at Gravity Storage like lifting and lowering bricks or mobile masses made from recycled and locally sourced materials?
Sophie Glass, Triangle Associates	10:36 a.m.	Thanks, Fred. We will get to your battery question.
David Tomlinson	10:37 a.m.	Battery are often designed (sized) on cycles per year, which might mean 2 times per day on some days and 0 times on other days.
Joni Bosh	10:39 a.m.	A clarification - The generic costs are for more than utility scale resources, correct?
Sophie Glass, Triangle Associates	10:39 a.m.	Question stack: Fred (on topic with battery), Deepa, Jim, Anne, Joni
Bill Pascoe	10:40 a.m.	Slide 31 - Is PSH operating range effectively from 100% charge to 100% discharge with no dead zones?
Sophie Glass, Triangle Associates	10:41 a.m.	Corrected stack: *Deepa, Katie, Jim, Anne, Joni
Deepa Sivarajan, Climate Solutions	10:41 a.m.	happy to have all the battery questions go before mine
Sophie Glass, Triangle Associates	10:41 a.m.	Okay thanks Deepa
Jim Adcock	10:44 a.m.	Jim is also "Batteries."
Sophie Glass, Triangle Associates	10:44 a.m.	hanks, Jim. We will get to you.
Joni Bosh	10:45 a.m.	My question/comments are more general, not battery related
Sophie Glass, Triangle Associates	10:46 a.m.	Thanks, Joni. We will get to the non-battery questions in a moment
Claire Wendle, Triangle Associates	10:49 a.m.	IRP@pse.com
Claire Wendle, Triangle Associates	10:50 a.m.	Link to feedback form: https://pse-irp.participate.online/feedback-form
Don Marsh, Sierra Club	10:54 a.m.	I agree that 5 miles of transmission for battery installations is too long. Even 1 mile seems questionable. Can we ask for no more than 1/2 mile? Or could PSE show us why a 5-mile average is reasonable for our energy grid?
Deepa Sivarajan, Climate Solutions	10:55 a.m.	yes, thank you!
Fred Heutte	10:57 a.m.	I have a comment on averaging . . .
Sophie Glass, Triangle Associates	10:58 a.m.	Thanks Fred. Noted.
Sophie Glass, Triangle Associates	10:58 a.m.	Thanks, Don. Noted.
Anne Newcomb	11:02 a.m.	energyvault.com looks like an excellent company to work with for innovative practical storage needs and has a CA location
Fred Huette	11:03 a.m.	My comment is that strict averaging is not preferable. PSE should use the most relevant and up to date data to assess resource costs, and might have different

Name	Time Sent	Comment
		weighting of cost sources for different resource types as a result. The ATB is an excellent starting point for both current costs and future trajectories, but where other relevant data indicates a difference, it should be considered, including from PSE's RFPs. However this is done, PSE should explain the approach taken. Perfect information isn't needed for modeling, but a sensible approach will identify best-available cost and performance inputs.
Joni Bosh	11:12 a.m.	Question about hybrids
Sophie Glass, Triangle Associates	11:13 a.m.	Noted, Joni.
Sophie Glass, Triangle Associates	11:13 a.m.	the 1-in-2 (P50) approach should get further discussion
Sophie Glass	2:57 p.m.	We will circle back to questions and comments in a moment
James Adcock	11:13 a.m.	Slide 38: Raise Hand.
Fred Huette	11:14 a.m.	I have several comments on this section.
Sophie Glass, Triangle Associates	11:14 a.m.	Thanks, Jim. Noted. If possible, can you put your question in writing? That will give PSE a moment to think and formulate a response that hopefully is satisfying.
Sophie Glass, Triangle Associates	11:15 a.m.	Thanks, Fred. We will get to you in a moment.
James Adcock	11:16 a.m.	Slide 38: Questions related to fuel sources, technology for those fuel sources, and what those fuel sources really mean.
Sophie Glass, Triangle Associates	11:17 a.m.	Thanks, Jim. We will get back to that question. Seems like Slide 38 generated a lot of questions.
Joni Bosh	11:17 a.m.	Sure, just confirming that the performance of hybrids will not be treated as two resources, as there are synergies available, but the costs are being considered separately?
James Adcock	11:18 a.m.	Battery Overbuild: Has PSE Confirmed with ATB that they haven't already applied the 20% overbuild in their pricing?
Don Marsh, Sierra Club	11:19 a.m.	Slide 39: It is very unlikely that cost efficiencies of Small Nuclear or Hydrogen will make them practical within the next 5 years. I would suggest that PSE pace yourselves on these investigations accordingly. Your resources should be targeted carefully during this critical time. It seems premature to spend much time on these in the 2023 Progress Report.
Willard Westre	3:20 p.m.	Are you evaluating non-hybrid heat pumps as well?
Court Olson	3:20 p.m.	On slide 56 what do the different colors represent?
Sophie Glass	3:31 p.m.	"Time Varying Rates"
Sophie Glass	3:33 p.m.	BCP - Biennial Conservation Plan
Bill Pascoe	11:20 a.m.	Slide 42 - What is the basis for the additional transmission cost for MT wind? s arsnmsision costs for source
V. Lohr	11:20 a.m.	PSE was a founding member of the Renewable Hydrogen Alliance. I believe that would be a better place to start finding information than a web search. (A comment, not a question.)
Bill Pascoe	11:22 a.m.	Slide 42 What is the basis for the additional transmission costs for MT wind? PSE CTS rate? Other?

Name	Time Sent	Comment
James Adcock	11:22 a.m.	PSE's Peer Utilities are indeed locating their utility-scale batteries right next to existing infrastructure to avoid the stub-line costs.
Bill Pascoe	11:22 a.m.	Slide 42 -
Bill Pascoe	11:22 a.m.	Slide 42 - Will you consider sharing transmission for MT wind & PSH?
Bill Pascoe	11:23 a.m.	Slide 42 - Is PSE's full CTS capacity considered to be available for new resource in 2025 assuming closure of Colstrip 3&4?
Anne Newcomb	11:28 a.m.	If we are talking about a large area opposed to urban/city, I would like PSE to explore the Gravity Energy Storage energyvault.com It looks like it will last longer, have greater capacity and be more environmentally friendly than Lithium Ion Batteries.
Sophie Glass, Triangle Associates	11:31 a.m.	Hi Katie - what slide (if any) is your question related to? That will help me get to you in the right order.
Christopher Doyle	11:31 a.m.	Will the design also include peakers operating on biomethane?
Katie Ware	11:32 a.m.	The hydrogen slide (re: Mitsubishi partnership)
Christopher Doyle	11:33 a.m.	The GE LM Series can be dual fuel, I built four of them. So biodiesel is not a stretch.
Katie Ware	11:45 a.m.	Re: the partnership with Mitsubishi for a "Green Hydrogen Standard Package," is PSE looking to source the energy directly through hydro or have it be grid-charged somewhere closer to load?
Anne Newcomb	11:47 a.m.	Following up with Bill's question...if renewable projects are complete will PSE bring the Clean energy online prior to the end of 2025 as Colestrip in required to go offline?
Katie Ware	11:49 a.m.	I'll also add to what Fred was saying re: hybrid resources. We hope to see PSE finding new ways to optimize its modeling tool, specifically by forcing it to select a suite of clean storage resources to meet peak needs (vs. comparing each resource individually). I understand PSE is considering new modeling tools for potential use in a future IRP to (in part) get at this issue.
Joni Bosh	11:50 a.m.	Slide 46 - Does PSE consider projects that are permitted and or permitted/underway, but not yet finished?
Anne Newcomb	11:53 a.m.	gravitricity.com looks great and promotes moving gravity storage underground, but may not have a local location.
Claire Wendle, Triangle Associates	11:57 a.m.	Feedback form: https://pse-irp.participate.online/feedback-form
Sophie Glass, Triangle Associates	11:59 a.m.	sglass@triangleassociates.com