

PSE Gas Utility IRP Webinar with IRP Stakeholders

March 14, 2023

Overview

On March 14, 2023, Puget Sound Energy (PSE) hosted an online webinar with Integrated Resource Plan (IRP) stakeholders on the Electric Progress Report and Gas Utility IRP to:

- Present the final preferred portfolios for the 2023 Gas Utility IRP and Electric Progress Report
- Share how public feedback informed the final portfolios
- Share the action plans for each final document

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 103 stakeholders, PSE staff and facilitators attended the meeting.

Attendees included (alphabetical by first name):

Abhimanyu, Abhishek Dave, Alexandra Karpoff, Alicia Robinson, Alondra Regalado, Amy Wheelless, Andres Alvarez, Angela Nwude, Anthony O'Rourke, Ayla Pavelka, Bala Dodoye-Alali, Bill Pascoe, Bill Will, Bob Williams, Byron Harmon, Charlee Thompson, Chris Searcy, Christine Bunch, Cindy Vu, Claire Moerder, Claire Wendle, Corey Corbett, Court Olson, Daihong Chen, Daniel Catchpole, Daniel Handal, David Meyer, David Tomlinson, Don Marsh, Doug Hart, Elizabeth Hossner, Elyse Hammerly, Fred Heutte, Garret LaBove, Hannah Wahl, Hubert Liu, Jack Wellman, James Adcock, JD Hammerly, Jennifer Magat, Jennifer Snyder, Jenny De Boer, Jens Nedrud, Jesse Durst, Jim Dennison, Jim Schretter, Jisong Wu, Joel Nightingale, Jorge Sanz, Josh Jacobs, Justin Kotwicki, Kasey Curtis, Kate Brouns, Kelly Xu, Kim DeSante, Kim Zamora Delgado, Leslie Almond, Lorin Molander, Maggie Voigt, Mark Klein, Mark Lenssen, Markus Virta, Matt Larson, Matthew Doyle, Megan Larkin, Megan Partridge, Meredith Mathis, Michelle W., Nathan Critchfield, Nelli Doroshkin, Nick Gemperle, Patrick Leslie, Pete Stoppani, Phillip Popoff, Rachel Clark, Ray Outlaw, Renchang Dai, Roxana Vilchis, Sachi Begur, Seth Baker, Stacy Vynne McKinstry, Stephanie Chase, Stephanie Price, Steve Schueneman, Subramanian Vadari, Susan Christensen Wimer, Talysa McCall, Taylor Nickel, Tyler Tobin, Virginia Lohr, Virginia Winslow, Wendy Gerlitz, Willard Westre, William Henderson, Zeia Lomax, and 8 call-ins.

Questions Received

Questions from attendees are posted in the order in which they were received. The meeting began at 1:00 PM PDT and ended at 4:00 PM PDT.

Name	Time Sent	Comment
James Adcock, Electrical Engineer	1:17 p.m.	I think stakeholders are concerned about getting stuck with the "results" of a catastrophic failure, whether that it a nuclear reactor accident -- which keep happening to electrical utilities with frightening frequency -- or whether it is an economic catastrophe such as WHOOPS aka WPPSS, with billions of dollars of cost overruns and ending in a failure mainly without operating reactors.
Sophie Glass, Triangle Associates	1:18 p.m.	Thanks Jim - we've noted this comment.
Jim Dennison	1:35 p.m.	Thanks for your commitment to clarifying explanations and sharing data with the final IRP. I imagine if people have questions or difficulty finding information once the final version is released, we can contact you with those questions?
Meredith Mathis, PSE	1:36 p.m.	You can email irp@pse.com
James Adcock, Electrical Engineer	1:37 p.m.	Slide 12 -- What happens if you don't get the "Green H2" which you are predicting?
Megan Larkin, Climate Solutions	1:37 p.m.	Slide 12- why did regional RNG change from the draft to final preferred portfolio?
Sophie Glass, Triangle Associates	1:37 p.m.	Thanks Jim and Megan, we will turn to these questions in a bit
Don Marsh, WA Clean Energy Coalition	1:39 p.m.	There are some recent concerns about hydrogen. Leakage in the system, which is hard to prevent, appears to slow the degradation of methane in the atmosphere, and that may undo hydrogen's climate benefits, depending on the rate of leakage. I have more information if PSE is interested.
Joel Nightingale, WA UTC Staff	1:39 p.m.	Slide 12 - it looks like in the updated portfolio Hydrogen was kept, but regional RNG was dropped. What is behind this change?
Sophie Glass, Triangle Associates	1:40 p.m.	Thanks for your comment Don.
Sophie Glass, Triangle Associates	1:41 p.m.	And thanks Joel for your question - stay tuned for responses in a moment
Andres Alvarez	1:42 p.m.	How does the updated 20 year leveled costs of natural gas (With the SCGHG and CCA Carbon adders) flow through the avoided cost of capacity calculation in PSE's IRP? Is a natural gas peaker still considered the lowest cost of capacity resource, even when incorporating these carbon fuel adders? Is this resource setting the capacity credit (\$/kW-mo) for other resources? If I recall correctly, in the 2021 IRP the lowest net cost resource (Frame peaker) was \$148/kW-year incorporating SCGHG
Sophie Glass, Triangle Associates	1:42 p.m.	Thanks Andres - we've noted this question and added to our queue
Christine Bunch	1:43 p.m.	Can you provide clarity on slide 11 - what allowance prices are you assuming? Given that the last CCA auction sold allowances at \$48.50 per allowance, how has this price influenced your analysis?
Sophie Glass, Triangle Associates	1:43 p.m.	Thanks Christine - we will turn to your question soon

Name	Time Sent	Comment
Pete Stoppani, WA Clean Energy Coalition	1:45 p.m.	Follow on to Christine's question, what are the projected allowance prices through 2050. Seems like a critical point given the large dependence on them (slide 11)
Sophie Glass, Triangle Associates	1:45 p.m.	Thanks Pete - we can follow up with this
Megan Larkin, Climate Solutions	1:46 p.m.	slide 12 question - Thank you for changing to a zero gas growth assumption. We would like to see electrification considered as a demand side resource in addition to energy efficiency. Given the new residential and commercial building codes, electrification as a DSR, and decreased gas use per customer -- wouldn't that result in not just zero gas growth, but a decline in gas demand?
Andres Alvarez	1:53 p.m.	That works! Thank you
Fred Heutte	1:53 p.m.	A question about the commodity price of gas -- if that goes up significantly -- for example from \$4/mmBtu to \$6 -- does that have much effect on the planning analysis -- on demand, the pace of electrification, the cost-effectiveness of EE and non-fossil methane (RNG, hydrogen)?
Christine Bunch	1:56 p.m.	Comment: following up on cost of allowances - I think you may be using too low of prices in your assumptions. As time goes by, allowance prices are more likely to go up as the number of free allowances go down and more competition for allowances. It would be great to see analysis with higher prices to see how it stacks against electrification, RNG, hybrid heat pumps.
Sophie Glass, Triangle Associates	1:57 p.m.	Thanks for the comment, Christine, PSE noted it.
Pete Stoppani, WA Clean Energy Coalition	1:58 p.m.	+1 for Christines concern
Don Marsh, WA Clean Energy Coalition	1:58 p.m.	Adding to Christine's comment, we worry about the size of the allowances PSE is expecting to buy in later years. They are so large, they might by themselves influence the cost of allowances. It seems unlikely that legislators were thinking it would work this way.
James Adcock, Electrical Engineer	2:01 p.m.	Slide 13 Raise Hand.
Don Marsh, WA Clean Energy Coalition	2:01 p.m.	Slide 13: What is PSE anticipating the total cost would be of the additional allowances for both charts? What is the cost of the allowance for just 2050 by itself?
Sophie Glass, Triangle Associates	2:02 p.m.	Thanks Jim and Don. We will pause for questions after Gurvinder wraps up his comments on this slide.
Pete Stoppani, WA Clean Energy Coalition	2:04 p.m.	It would be really useful to see cost on this graph. As you can tell there is a lot of concern about both the availability and prices of the allowances. Both seem to be great risk factors.
Don Marsh, WA Clean Energy Coalition	2:04 p.m.	Extending the Net Emissions line into the future at the rate from 2033-2050, we would be emitting for the next 150 years. Really?
Sophie Glass, Triangle Associates	2:07 p.m.	Thanks Pete for your request here
Sophie Glass, Triangle Associates	2:07 p.m.	And thanks Don for your question
Willard Westre	2:08 p.m.	What are the sources of the no-cost allowances. Do they include allowances from the electric side. If so how much?

Name	Time Sent	Comment
Christine Bunch	2:12 p.m.	I appreciate what you have outlined - an analysis that is based on the most cost-effectiveness which is driving the preferred portfolio recommendation...however, I'm interested to learn how this all might look if there are strategies that could be included that are not as cost-effective, but that help PSE meet its corporate aspirational goal of "net-zero by 2045."
Amy Wheelless	2:13 p.m.	Agree with Christine
Don Marsh, WA Clean Energy Coalition	2:14 p.m.	I have a follow-up question on total cost. Thanks.
Sophie Glass, Triangle Associates	2:15 p.m.	Sounds good Don.
Pete Stoppani, WA Clean Energy Coalition	2:17 p.m.	What are the policy unknowns regarding consigned allowances? When will they be resolved?
Sophie Glass, Triangle Associates	2:18 p.m.	Thanks, Pete. We will wrap up this q and a with your question here.
Megan Larkin, Climate Solutions	2:19 p.m.	I believe the full effects of federal Inflation Reduction Act incentives on the demand side (i.e., more consumers replacing gas with electric appliances) will have a big impact on the most cost effective scenario and look forward to seeing that included.
Sophie Glass, Triangle Associates	2:19 p.m.	Thanks for the comment Megan
Court Olson	2:21 p.m.	This "snapshot" shows an assumption of increasing gas demand in the future which is a false assumption. Gas demand will be increasingly declining in the future. So the baseline assumption here is fundamentally flawed.
Christine Bunch	2:24 p.m.	+ Megan's comment. And not sure why there is no drop in demand since the IRA Home Rebates will start in 2024.
Sophie Glass, Triangle Associates	2:24 p.m.	Noted, Christine. We've added this comment.
Amy Wheelless	2:26 p.m.	@Christine - I understand (based on past IRP meetings - I was late to this one, so maybe it was covered...) that this IRP didn't incorporate any assumptions on the demand side based on the IRA
Sophie Glass, Triangle Associates	2:29 p.m.	Thanks Amy and Megan - I'll ask PSE to clarify
Phillip Popoff, PSE	2:29 p.m.	How the IRP rebates will be applied is not clear yet. When those rules are finalized, we will be able to incorporate them. We expect that to be clear for the 2025 IRP. Sorry, IRA, not IRP
Amy Wheelless	2:30 p.m.	Thanks Phillip
Amy Wheelless	2:31 p.m.	Does the final IRP include more detail on the possible implications of renewing or not renewing pipeline contracts? (e.g., some risk analysis)
Amy Wheelless	2:36 p.m.	Thanks Phillip
Pete Stoppani, WA Clean Energy Coalition	2:36 p.m.	Can you answer my previous question: What are the policy unknowns regarding consigned allowances? thx
Joel Nightingale, WA UTC Staff	2:37 p.m.	With regards to UTC's CCA-related proceedings, the Commission has opened a docket (U-230161) to facilitate a CCA workshop series. More information - including dates for meetings - will be available on the UTC website at https://www.utc.wa.gov/casedocket/2023/230161
Sophie Glass, Triangle	2:37 p.m.	Thanks for sharing this link Joel

Name	Time Sent	Comment
Associates		
Sophie Glass, Triangle Associates	2:49 p.m.	The meeting will resume in 1 minute
James Adcock, Electrical Engineer	2:53 p.m.	At least in my neighborhood, which I would think is a pretty easy neighborhood, the last thing PSE does is "Keep The Lights On". We lose power All The Time, and when we complain, no one does anything about it.
Sophie Glass, Triangle Associates	2:54 p.m.	We've noted this comment, Jim.
Don Marsh, WA Clean Energy Coalition	2:57 p.m.	Jim, I live in the neighborhood next to yours. I installed Tesla Powerwall batteries in August. Since then, my batteries have spared us from nine power outages. Many of my neighbors are very interested to get protection from these outages. PSE should incorporate all these batteries into a Virtual Power Plant. PSE seems to be continually studying VPPs, but we never hear about an actual plan.
Sophie Glass, Triangle Associates	2:58 p.m.	Thanks, Don, for your comment encouraging PSE to focus on Virtual Power Plants
Don Marsh, WA Clean Energy Coalition	2:59 p.m.	I would like my EV to participate in a VPP as well. Despite numerous requests, PSE says little about the possibility of Vehicle-To-Grid capabilities.
Sophie Glass, Triangle Associates	2:59 p.m.	Noted, Don. Thanks.
James Adcock, Electrical Engineer	3:00 p.m.	I just push back against the constant "Keep the Lights On" speech because we lose power all the time, and maybe PSE should actually fix that problem, rather than spending more and more money on more and more Peakers which PSE claims are necessary to "Keep the Lights" on with less than 1 in 20 years Loss of Power. Such more and more Peakers are just wasted money when we keep losing power all the time.
James Adcock, Electrical Engineer	3:01 p.m.	Raise Hand
Sophie Glass, Triangle Associates	3:01 p.m.	Hi Jim - I see your hand. I'll call on you after Elizabeth wraps up this slide.
James Adcock, Electrical Engineer	3:01 p.m.	Also Slide 21
Don Marsh, WA Clean Energy Coalition	3:04 p.m.	Tesla Megapack batteries now provide energy density of 300 MWh per acre, better than a gas peaker. Given all the other advantages of batteries for reliability, I don't understand why peakers continue to be such a focus for PSE. It is hard to imagine batteries won't be competitive in the time frame being considered in this IRP.
Megan Larkin, Climate Solutions	3:09 p.m.	Given PSE's corporate goal of carbon neutrality by 2045, how does it plan to meet this goal while potentially relying on a gas peaker in 2043 if hydrogen is not available as planned?
Don Marsh, WA Clean Energy Coalition	3:11 p.m.	A high percentage hydrogen peaker raises questions about hydrogen leakage. Does PSE have any plan to track and prevent hydrogen leakage? Those significant efforts could raise the price of hydrogen.
Fred Heutte	3:12 p.m.	I have a comment on technology assessment . . .
Don Marsh, WA Clean Energy Coalition	3:21 p.m.	Thanks for that answer, Steve.
Andres Alvarez	3:23 p.m.	What duration is the 1GW of stand-alone storage?
Sophie Glass, Triangle Associates	3:23 p.m.	Thanks, Andres - we will get to you question after Elizabeth wraps up this slide

Name	Time Sent	Comment
Andres Alvarez	3:25 p.m.	Also, where is transmission assumed to be expanded from? Does this assume that the east to west BPA transmission availability issues get resolved or is PSE adding its own TX projects here?
Sophie Glass, Triangle Associates	3:25 p.m.	Thanks for the question - stay tuned for responses
Don Marsh, WA Clean Energy Coalition	3:25 p.m.	Agree with Phillip that storage is getting better compared to prior portfolios. Glad to see it. I wouldn't be surprised if we end up with more than 1,800 MW of storage by the time we get to 2045. We will see!
James Adcock, Electrical Engineer	3:27 p.m.	Slide 23 Raise Hand
Chris Searcy	3:29 p.m.	Just a curious question, what is the expected service life of storage assets?
Andres Alvarez	3:30 p.m.	transmission
Andres Alvarez	3:30 p.m.	Honest mistake 😊
Amy Wheelless	3:30 p.m.	It makes total sense! 😊
Jorge Sanz	3:31 p.m.	How flexible is the allocation of the Nameplate? Assuming there are some supply chain issues in something like Wind equipment (just an example), would there be a shift to more solar or storage? Or is this a hard commit to the capacity?
Sophie Glass, Triangle Associates	3:31 p.m.	Thanks Jorge - we've added your question to our list
Matt Larson, PSE	3:35 p.m.	So is it accurate to say that the goal is to have storage represent just under 15% of the new portfolio by 2030 and just over 12% by 2045?
Andres Alvarez	3:35 p.m.	Fair assumption for the 2030+ time frame on transmission. But I'd be cautious with the transmission expansion in the short-term (2023-2030). Those projects take a long time to build and get permitted as you are aware, and maybe the resources that are being assumed to be available suddenly are not in future RFPs due to transmission availability. Especially since other utilities will be in the same boat. An emphasis on hybridization (behind the same TX rights or interconnection) is a good start in the IRP. May need to consider that even more in the short term to fill in the TX availability gaps.
Andres Alvarez	3:35 p.m.	No need to respond. More of a comment
Fred Heutte	3:35 p.m.	again: I have a comment on technology assessment . . .
Sophie Glass, Triangle Associates	3:36 p.m.	Thanks, Matt. was this in response to slide 23 or 25?
Matt Larson, PSE	3:36 p.m.	23
Sophie Glass, Triangle Associates	3:36 p.m.	TY
Matt Larson, PSE	3:37 p.m.	Was not including DER Storage in my calculation.
Jorge Sanz	3:37 p.m.	Thank you!
Matt Larson, PSE	3:38 p.m.	17.5% by 2030 if incl WER Storage
Matt Larson, PSE	3:38 p.m.	DER
Matt Larson, PSE	3:39 p.m.	14% by 2045 if incl DER Storage
James Adcock, Electrical Engineer	3:41 p.m.	"Cold Outside" would have to mean less than 18 degrees F as measured at SeaTac.
Abhishek Dave	3:43 p.m.	can you please share the procurement plan and timeline for storage resources by type of technology?
Fred Heutte	3:43 p.m.	3rd time: I have a comment on technology assessment

Name	Time Sent	Comment
Andres Alvarez	3:44 p.m.	What is the peak capacity contribution (ELCC%) being assumed for long duration storage (8 hours) vs short duration (4 hr)? How is the risk profile associated with each of those technologies being considered?
Andres Alvarez	3:45 p.m.	Thanks
Jorge Sanz	3:47 p.m.	Who will be responsible for expanding transmission infrastructure?
Sophie Glass, Triangle Associates	3:47 p.m.	Thanks Jorge - we will turn to you soon
James Adcock, Electrical Engineer	3:47 p.m.	Slide 29 Why not also participate in battery research and development?
Don Marsh, WA Clean Energy Coalition	3:48 p.m.	Does the Action Plan provide any information on the status of VPP and V2G for our future? Can we ask for that?
Amy Wheeless	3:50 p.m.	It would be helpful for future versions of ourselves for the slide presentation here to have a summary slide of the major changes from the draft to now
Joel Nightingale, WA UTC Staff	3:52 p.m.	Staff agree with Fred Heutte's comment. Clarity on how PSE decides which technologies it does and does not include in its IRP analysis would be very helpful.
Sophie Glass, Triangle Associates	3:53 p.m.	Apologies Fred for missing your requests during the first 30 minutes of the meeting - I was clearly distracted!
Jorge Sanz	3:53 p.m.	Thank you
Andres Alvarez	3:55 p.m.	In the latest NWPCC system analyses, they are looking a different metrics beyond LOLP/LOLE to define system adequacy / peak need. I'd be interested in Puget taking a look at the additional metrics they are considering and providing those metrics for the various portfolios being calculated. We may find that the average ELCC values are leading to different metrics. https://nwcouncil.app.box.com/s/yivino3orq69epghul4hoiffelolpj
Abhishek Dave	3:58 p.m.	Thank you!