

**Northwest Power & Conservation Council
Generating Resources Advisory Committee
June 18, 2024**

Annika Roberts, NWPCC, welcomed the group at 1:30. She announced that Dyan D'Souza, NWPCC, will be leaving Council staff and welcomed new staff member Joe Walderman. Roberts called for introductions and pointed to the March meeting minutes for review.

Generating Resources in the 9th Plan

Fred Heutte, NW Energy Coalition, noted that the solar resource in southeast Washington to southeast Oregon is different, a bit sunnier, than other areas [Slide 20]. He called this a big untapped resource with quite a bit of transmission constraints. Heutte approved of the areas mapped in Idaho and Montana.

Heutte admitted that solar and wind capacity factors don't vary much in the region, except for gorge wind versus Montana wind. He added that the University of Oregon found that southeastern Oregon is a surprisingly good solar resource.

Rick Williams, PSU, stated that hydrogen is also considered a long-duration storage resource as well as a fuel [Slide 24]. Roberts agreed, noting that the Fuels Advisory Committee is thinking about that as well.

Rob Diffely, BPA, admitted that coal to gas conversion is happening in real time, pointing to work by Idaho Power and PacifiCorp, but doubted that staff were planning to analyze it. Roberts said that announced conversions will be in the Plan but will not be a reference plant. Diffely approved of this path.

Heutte approved of the proposed categorization but did not want to constrain batteries to just four hours. He called battery storage stackable, pointing to one- and two-hour batteries that made sense in their particular context.

Heutte then called Iron-Air Batteries an analytical problem as there are so many categories of long duration batteries, and other technologies like compressed air storage, that it's hard to keep up. He called for further unpacking of long-duration storage. Roberts said this will be explored further.

Heutte suggested giving more thought to geothermal, pointing to the fast accomplishments of [Fervo Energy](#). He thought their approach finally broken through as compared to the 50 years of work at Newberry Crater in southeastern Oregon.

Finally, Heutte addressed reconductoring, calling it a transmission strategy and not a generating resource. He suggested thinking about the transmission system as more of a capacity asset, noting that Idaho Power does this in their most recent IRP. He added that

there are more ways to think about enhancing the existing grid, calling that an important factor for the 9th Plan. Roberts agreed, saying it's on staff's radar.

Nora Hawkins, WA Dept of Commerce, asked why distributed resources are in the light green box as they were considered Secondary resources in the 2021 Plan. Roberts answered that they will be treated with a different process than the reference plant methodology.

Hawkins then asked how DERs are distinguished from community storage/solar. D'Souza answered that staff are planning to model solar and solar+storage. For the residential rooftop and other behind the meter applications (e.g., commercial, Industrial) we may include that with our conservation/EE methods and supply curves. For the community solar, we will likely treat that as a small reference plant. But we do hope to cover as many of the distributed solar options as possible. More to come on this in the future, in the chat box.

Max Greene, Renewable NW, stopped at [Slide 27] referencing Heutte's comments on long-duration storage. He said there may be a case for moving them to the secondary boxes. Greene noted that Puget Sound Energy and Idaho Power are proposing long-duration storage pilots, and the technology seems to likely be commercially viable. Because of this Greene thought some proxy should be included in the modeling and called for more insight from the utilities.

Roberts clarified that any emerging tech options would end up with reference plants in the Plan, but the variable is how many staff choose. She said the first option (multiple proxies) would include long duration storage and keeping it in the emerging bucket allows staff to capture the breadth of technology options within the category.

Heutte generally approved of the multiple proxy approach, calling it a role approach. He said the last Plan taught the region to not pick a single resource, particularly SMRs. Heutte said constructing the proxies will be challenging and thought putting something in the model that can be defended as representing the possibilities for system needs is best. He said pinning down costs will be difficult and will have a major influence on model picks. Roberts called these comments a reasonable summary of the complications that come up when thinking about emerging technology.

Hawkins asked if only the resources in the "yellow box/long-term" are considered emerging. Roberts answers yes, encouraging members to send her more if she missed any.

Williams wrote, as an "emerging scenario set", for Hydropower Reference Plant scenarios, the Columbia River Treaty potential outcomes span several effects such as increased impacts of regional flooding (already an issue), reduced flows, and reduced flexibility, How will the Council conduct a sensitivity analysis of reasonable scenarios? in the chat. He

then said the Columbia River Treaty is upon us and will impact hydropower and wondered what sensitivity analysis Council staff is planning.

Roberts replied that this is about new resources and that is a topic for the SAAC. Williams countered that he considers it emerging scenario set as the classic hydro system is established and static.

Jennifer Light, NWPCC, said scenario analysis will start around Q2 of next year, which will give staff time to learn what's happening with the treaty and think through hydro modeling scenarios. She then pointed to a scenario on resource and transmission risk that will include a range of sensitivities around resource availability, costs, and pace.

Williams approved of this and asked if there will be meetings with the Army Corps of Engineers, the states, the Bureau of Reclamation, and other stakeholders to look at potential impacts. Light said yes, these groups are invited to speak to the Council in August.

Ian McGetrick, Idaho Power, stated that his utility did Box 1 for their IRPs, saying it resulted in good outcomes. He noted that this approach showed usable information on clean peaking "something" or when and why long duration storage (beyond 8 hours) would be necessary. McGetrick called this consistent with many other utility model approaches.

McGetrick then addressed an earlier question about where to get information on clean peakers. He agreed that there is not a lot of great information available but ENREL, and other national bodies, has the best, and that's what his utility used for clean peaker costs. Roberts thanked him, saying staff will start with similar resources.

Alexandra Karpoff, PSE, admitted she hasn't run the 2025 IRP yet, so didn't have information on storage longer than 8 hours. She then echoed McGetrick's earlier comment on emerging tech, saying they are also using the Multiple Proxies approach. Karpoff added that they are also looking at mid-duration storage that runs from 8 to 24 hours and multi day storage.

Karpoff then talked about clean peakers, saying she is looking at different fuels for their peaker plans. She said they chose a specific technology that runs on multiple fuels as they didn't anticipate hydrogen to be available until mid/late in their planning period, so they are looking at renewable diesel.

Eric Graessley, BPA, also approved of using the Multiple Proxies approach. He wished the Council luck if they chose to go down the Reference Plants for All approach, admitting that he would appreciate all the research.

Roberts dubbed the next few months "Big GRAC Summer" and asked how members wanted to proceed with meetings [Slide 28].

Jaclynn Simmons, WA UTC, suggested more, shorter meetings as opposed to fewer, longer ones. John Lyons, Avista Corp, agreed, saying his organization is doing 1.5-hour meetings every two weeks. He called this a bit of a gauntlet but yields better outside participation. Lyons said half day/three-hour meetings are a good choice.

Roberts asked members to watch their calendar for the next GRAC and ended the meeting at 2:50pm.

Attendees via Go-to-Webinar

Annika Roberts	NWPCC	Tomás Morrissey	NWPCC
Dylan D'Souza	NWPCC	Bryan Neff	CEC
Jennifer Light	NWPCC	Kaitryn Olson	PSE
Kevin Smit	NWPCC	Elizabeth Osborne	NWPCC
James Adcock	independent	Arlene Sherrett	OR PUC
Edith Bayer	ODOE	Jaclynn Simmons	WA UTC
Frank Brown	BPA	Lisa Stites	GC PUD
Greg Brunkhorst	Tacoma Power	Andrea Talty	PSE
Nathan Critchfield	PSE	Terry Toland	Clark PUD
Rob Del Mar	ODOE	Joe Walderman	NWPCC
Rob Diffely	BPA	Brad Westmoreland	PNGC Power
John Goroski	Flathead Coop	Rick Williams	PSU
Eric Graessley	BPA	Brian Dekiep	NWPCC
Max Greene	Renewable NW	Nicolas Garcia	WPUDA
Nora Hawkins	WA Dept of Com	Christina James	HWNRE
Fred Heutte	NW Energy Coalition	Mary Kulas	independent
Dor Hirsh Bar Gai	NWPCC	Heather Nicholson	Orcas P & L
Alexandra Karpoff	PSE	John Ollis	NWPCC
Torsten Keiper	PNNL	Blake Scherer	Benton PUD
David LeVee	PwrCast	Landon Snyder	Snohomish PUD
John Lyons	Avista Corp	Tyler Tobin	PSE
Ian McGetrick	Idaho Power		