

**Northwest Power & Conservation Council
Systems Analysis Advisory Committee
January 30, 2024**

John Ollis, NWPPCC, began the meeting at 1:00pm by asking for introductions. He reviewed the afternoon's agenda and offered people a chance to edit/add to the last SAAC minutes. Ollis then explained how to best interact with the Go-to-Webinar platform.

**Discussion on 2024 Market Study Assumptions, Process, and Scope
John Ollis, NWPPCC**

Nicholas Garcia, WPUA, confirmed that the 2024 methodology referred to on [Slide 2] is for 2029 analysis. Ollis said the market study goes out 20 years and the 2029 snapshot informs the market supply used in the adequacy assessment.

Garcia then asked if the WECC-wide forecast includes developing public policies in the region. Tomás Morrissey, NPWCC, said mostly yes adding that this will be further discussed later in the day. He added that the CA forecast has gone up because of rules around EV standards. Ollis added that they try to incorporate policies as best they can but there has been a lot to absorb.

Ben Ulrich, EWEB, asked if there any production tax credits associated with the negative bid adder [Slide 7.] Ollis clarified that both RPS and clean resources have negative bid adders. He said two considerations drive negative costs: trying to meet the policies on an operational basis and the push and pull of realities like curtailing renewables and keeping thermal on to meet the evening ramp.

Ulrich asked for a sense of the order of magnitude of the negative bid adder. Ollis said it's low until around 2030. He said it starts at -\$2 and builds to -\$50 in the out years, due to many factors including transmission. Ollis also said that more resource diversity will help tamp the adder.

Ulrich said EWEB is talking about limiting the number of resources they apply the negative bid adder to. Ollis thought that was a good idea, saying he applied the negative bid adder to hydro, but more research is needed as the laws around the Production Tax Credit change.

Scott Levy, BlueFish, noted that there seems to be little effort to remove natural gas in Idaho and wondered what that meant for the studies. Ollis said they do not model future retirements and are contemplating resource conversions .

Levy wondered if the models would realize that natural gas can be built in Idaho. Ollis pointed to clean energy goals from Idaho Power and Avista, adding that the model allows natural gas builds until 2030. Ollis said this topic requires further discussion.

Fred Heutte, NW Energy Coalition, noted that the prospect of dual fuel generation, or switching fuels, is real. He thought the future assumptions around this will require some thought. Ollis agreed.

Garcia noted that WA and CA are part of a carbon allowance that tends to add costs to fuel prices, asking how that is handled [Slide 13.] Ollis said it depends as some aspects of the carbon price go through AURORA and reflect through to the market price of resources while GENESYS will reflect it directly in the dispatch of the fossil fuel resources inside the region.

Morrissey added that carbon pricing doesn't show up in the natural gas price forecast as we assume it is applied at the burner tip.

Heutte asked how aggregating solar farms affects run time versus disaggregating [Slide 14.] Ollis said it moves from 30 hours to 50. Heutte agreed that was a long time. Ollis said increased forecast error captures uncertainty but adds time to the run. He said it can be done but is working on finding out if it is worth it.

Heutte wondered how much more granular you could get without extending the run time too much. Dor Hirsh Bar Gai, NWPCC, said [Time Series Lab](#), by PSR, allows us to generate any renewable shape we want. He explained that he takes AURORA renewables from outside the region and clustered them, creating dozens of stations. He said this creates multiple wind shapes per area. Hirsh Bar Gai wondered if they should have one station per resource, as that would add lots of time. He also noted that the shapes are not climate-change based but they are working on that as well.

Heutte added that transmission topology is important as well.

External to the Region Load Update

Tomás Morrissey, NWPCC

Heutte pointed to disagreeing perspectives on how to approach the issue illustrated on [Slide 6.] He suggested having a CEC representative present more background on this. Morrissey agreed that would be a good idea.

Aliza Seelig, PNUCC, said they are also thinking about the CEC and was wondering if the slide is a draft or final forecast. Morrissey said this is 2022 with an update from April 2023 and their 2023 forecast will be finalized soon. Seelig said the finalized version will be helpful to understand. Ollis added that there may be a vintage/timing question if we want to get the adequacy assessment out in time.

Garcia worried about the updated planning scenario being somewhat aspirational and politically motivate. He stressed the need to be as accurate as we can, calling the blue line a bit steep, especially as the demand for EVs is flattening. Garcia admitted that charging EVs during the

sunlight houses would be a benefit for CA and the region but said that is only part of the story. He wondered if managed charging is part of the load forecast.

Morrissey answered that the CEC does a good job with hourly forecasts and EVs have their own component. He said they shift charging load to night, so it's not on peak.

Heutte asked about the big difference around NV Energy on [Slide 7.] Morrissey said he saw other changes too. Heutte spoke about BPA and was glad to see Morrissey's work. Morrissey offered to look into the reason behind the NV Energy difference.

Garcia said he's heard that data centers are becoming more open to the idea of shutting down or tapering off during times of stress [Slide 13.] Morrissey wasn't sure if that could be incorporated as they don't have a breakdown of what part of the load is from data centers. He said the regional load forecast will have data center layers. Garcia is hearing the same, as people are looking for 100-200mw or more. Morrissey they will probably have to do ranges.

Ollis said this will probably be for the next assessment.

Seelig had more questions around the transmission system when it comes to data centers and loads. She called for thinking through transmission system limits as they impact load growth which also impacts what resources are kept around longer. She thought this should be explored further.

Heutte noted PGE's gigantic data center coming in Hillsboro. He said everyone is asking if data centers can do load flexibility. Morrissey said we are thinking about it too.

Natural Gas Price Forecast Update

Tomás Morrissey, NWPCC

Heutte talked about issues at Jackson Prairie [Slide 16.] He noted its large size, sending out one billion cubic feet per day, and concern about what would happen if it became inoperable for a time. He wondered about what happens at these hubs if something occurs on a weekend or holiday.

Heutte voiced concern about LNG Canada [Slide 20] calling it really big, even though the supply is not infinite. He said this will put on more demand pressure, resulting in higher prices especially on the west side of the region. He wondered how this will be modeled.

Ollis shared some thoughts about how that can be modeled, including how [OptGen](#) can be a useful tool. Morrissey added that the FAC should look at this too.

Garcia moved back to [Slide 16] saying it looks less like a saw tooth than he recalled. He wondered why the forecast on [Slide 21] looked so smooth. Morrissey said they tried that, pointing to the more "saw toothy" dark blue line that represents the Power Plan adding that the

topic is up for further discussion. Morrissey said he is more concerned with incorporation the monthly volatility than the yearly cycle.

Garcia asked if a higher degree of daily/monthly excursions would change resource acquisition decisions. Morrissey said it might make batteries look better. Garcia asked if it matters. Ollis said they focus on this more for the Power Plan, but it is not completely divorced from resource adequacy either. He said most of the Council's focus here is when staff is determining the resource strategy.

Steve Simmons, NWPCC, wrote, power plants & users also will hedge - the prices we are showing here are spot prices, not necessarily what the plant would see, in the chat in reference to [Slide 22.]

Heutte asked if there was much of a difference between spot and purchase ahead on an annual basis. Morrissey didn't know. Heutte didn't think they were that far apart. He said we should follow the Biden Administration's hold on LNG exports which would decrease US prices. Heutte said he can see a growing gap between west coast pricing and the rest of the country. Morrissey agreed adding that storage was low last year because of high prices.

BREAK

Potential Scenarios for 2024 Market Study (continued)

John Ollis, NWPCC

Garcia asked if the annual system cost is incremental to current costs or the total cost [Slide 17.] Ollis thought it was total but offered to check.

Heutte voiced support for running the Organized Market scenario [Slide 21] as a bookend. Ollis said past work showed less resource buildout, more storage, shared resources, and more.

Heutte then asked for a generic transmission scenario and one where there is a bigger buildout. He said this work could be for next year. Ollis agreed, calling it a great idea.

Garcia agreed on the need for a transmission study calling it helpful to understand how it affects overall costs [Slide 23.] He was not convinced that a study of the westside market would be helpful as there is no such thing as a perfectly traded market and there is a lot of concern on how the market will function. Garcia also noted that there are two competing markets with no plan to merge them.

Ollis noted his concerns, saying there is some interest in a market scenario. He offered to set a placeholder for a market scenario with some time to hash out the details in the near future. Ollis called for some ideas to be sent his way.

Seelig referred to transmission expansion, wondering if [B2H](#) which is approved and soon to be under construction, should be put in the baseline and not in a scenario. Ollis said it doesn't matter for the adequacy scenario as it will not be done in time. He thought it belonged in the longer-term price assessment but was open to moving it to the baseline.

Seelig thought the Persistent Global Instability scenario was not that meaningful but might be for the long term. Ollis said that scenario did reveal higher prices. He said the world was probably between High WECC Demand and Persistent Global Instability and the committee could propose a hodgepodge if they want.

Garcia asked if new parameters from the court case around the Mid-Cs will be in the baseline. Ollis said they plan to incorporate them for the adequacy study. He admitted that it will be challenging.

Heutte said we have not discussed supply, which may change with tribal agreements. He then asked how this committee counts things in the pipeline. Heutte noted that traditionally we used resources that were operating or in the EE portion of the Power Plan, or under construction. He said it is time to dig into that more as IOUs are buying resources with high confidence of them getting built.

Ollis appreciated the comment but didn't know how to incorporate that. He said in the past ownership didn't play into the price assessment in the past, but it could be referred to. Ollis said then spoke about the difference between the adequacy assessment and the price assessment.

Garcia agreed that this requires more discussion. He said part of the challenge is the agreement has two distinct parts. One says the agreement does not bind Congress to spend any money while the other says money will be spent.

Laura Buford, BPA, wondered if there would be an effort to model the worst-case scenario. Ollis said he could, but the goal is to test a range.

Levy spoke about tribes building a 1-3 GW plant and wondered if GENESYS is available to PNNL. Ollis said the modified flows will be modeled but the dams might be outside the scope of this committee.

Jennifer Light, NWPCC, said removing resources will not be part of the adequacy assessment. She added that staff is starting to think about the next Plan. Light then let the room know that staff are in close coordination with both PNNL and the DOE so there is a lot of crossover potential.

Levy said the change in spill would be minimal but said it would be interesting if PNNL could not access GENESYS, the best model in the region and funded by rate payers. Light answered that PNNL will choose their model, the Council doesn't own GENESYS and can use it if they want.

Heutte said the Northwest Power Act requires the Council to make data available to all comers.

SLIDO Poll Results

Tracy Farwell, Better Energy LLC, wrote: sounds like COVID was factored as an abnormal condition. The Cascadia Subduction event is another abnormal condition. Is there a plan to factor this in future (2024+) adequacy assessments? Could drive an extra capacity margin (thermal infrastructure damage) in the chat.

Ollis said he will present results at the next meeting.

Preliminary Discussion on Use of OptGen/SDDP at the Council

John Ollis, NWPCC

There was no discussion.

Ollis adjourned the meeting at 4:00.

Attendees-on-Site

John Ollis	NWPCC
Tomás Morrissey	NPWCC
Eric Graessley	BPA
Nicholas Garcia	WPUA
Fred Heutte	NW Energy Coalition
Edith Bayer	ODOE
Aliza Seelig	PNUCC

Attendees via Go-to-Webinar

Frank Brown	BPA	Annika Roberts	NWPCC
Laura Burford	BPA	Kathi Scanlan	WA UTC
Pat Byrne	BPA	Mike Swirsky	CRITFC
Katie Chamberlain	Renewable NW	Danielle Szigeti	TacomaPower
John Crider	EWEB	Andrea Talty	PSE
Caity Du	PSE	Tyler Tobin	PSE
Tracy Farwell	Better Energy	Ben Ulrich	EWEB
Sean Ford	PPC	Dianne Baron	CRITFC
Sanjeev Joshi	Crit FC	Greg Brunkhorst	Tacoma Power
Massoud Jourabchi	Greenway Research	A Das Choudhury	PSE
Mary Kulas	independent	Blake Scherer	Benton PUD
Scott Levy	Blue Fish	Steve Schmitt	Northwestern
John Lyons	Avista Corp	Landon Snyder	Snohomish PUD
Ina Mcgetrick	Idaho Power	Matthew Stajcar	Northwestern
Heather Nicholson	Orcas Power & Light	Dor Hirsh Bar Gai	NWPCC
Joel Nightingale	WA UTC	Steve Simmons	NWPCC
Kaitryn Olson	PSE	Dan Hua	NWPCC
Elizabeth Osborne	NWPCC		
Kallen Paterson	Tacoma Power		