

**Northwest Power and Conservation Council
Resource Adequacy Advisory Committee (technical)
December 1, 2020**

John Fazio, NWPCC, began the meeting at 9:00. Chad Madron, NWPCC, reviewed the best way to interface with the Go-to-Webinar platform. Fazio asked members to review and approve minutes from the October 6th meeting and reviewed the day's agenda.

Preliminary 2025 Resource Adequacy Assessment

Fazio reviewed previous reference case assumptions and proposed revisions; reviewed the preliminary RA studies run to date, including two reference cases and a number of sensitivity studies (one reference case used proposed reference case assumptions and climate change based flows, wind and loads, and the second reference case used proposed reference case assumptions with historical based flows, wind and loads).

Scott Levy, Bluefish, called the 9am to 2pm range on [Slide 4] a conservative estimate of hours and suggested a sensitivity that increases this range, calling it possibly worthwhile, if not too difficult. Fazio said he ran that sensitivity and will present results shortly.

Rob Diffely, BPA, asked how the MT and WY wind projects are rate based [Slide 6] saying that he sees 2200MW of wind under construction for PacifiCorp while Council staff has 1462MW. John Ollis, NWPCC, responded by writing in the Chat: staff includes 100% of PAC bundled (in terms of REC allocation) renewables anywhere and unbundled renewables in the region. Additionally, we include 38% of Wyoming unbundled renewables, and 0% of PAC unbundled renewables elsewhere. Also 31% of Northwestern Energy projects are included. This aligns as well to what we are assuming in the RPM, and with what is being accounted for by regional customers (rate-base.)

Fazio offered to further explore reasons behind the 1461MW input.

Levy asked about the BPA's estimate of 3400 MW, asking if the work is based on historic data or on physical limitation of the power lines. Levy then says BPA historical data shows exports above 4,000 MW and up to 4800MW every year in 2006-2015. He added that it seems that the export capability would match the import capability in a physical limitation.

Fazio clarified that that is power coming in from the south. He rebutted the idea of export capability matching import capability, explaining the physical limitations on the transmission system. Fazio then dug deeper on the 3400MW number, explaining that it came from an assumption of one line out and severe conditions. He offered to send Bonneville's work on this issue to Levy for more clarity.

Spencer Gray, NIPPC, called this a fairly major change from previous reference case assumptions for both out-of-region and in-region market resources. He added that converging on the same five-hour limited availability window for both types of resources is also new. He

agreed that some limitation on in-region availability may be valid, but pointed to NIPPC's survey of IPPs that does not support assuming in-region IPPs will be limited to five hours in the summer. He asked if the Council is relying on information other than this daily summer price shape for the assumption.

Fazio pointed to a linked document that details sensitivity studies and shows Gray's comments along with other RAAC members. Fazio noted that there is more information that goes into the daily summer price shape, like surpluses and reserve margins. He reiterated that if he relied on expected energy and capacity there would never be an adequacy problem. Fazio explained that he limited summer market between 9 to 2 because of the price curve, reserve margin and discussions around BPA's comfort with relying on summer market.

Ollis added that there's a question around how much IPP energy might already be purchased ahead and unavailable outside of those hours. Fazio asked if Gray recommends that the IPPs be fully available all year.

Gray did not think that 24-hour availability was an appropriate model input but wasn't sure why the previous assumption (reduce availability by a gigawatt) no longer holds. Gray thought market changes would mean that IPPs were now *more* available than before.

Fazio answered that previous shortfalls were in the winter, so summer availability really didn't make a big difference. He then stressed the difference between looking at expected market availability and using it as a random variable. Fazio said it is a fixed amount that he can run sensitivity studies around and he doesn't have the information to use expected market as a random variable. Fazio said because of these reasons the group was comfortable with limiting imports to those five hours for resource adequacy.

Gray said this underscores the limitations of calculating resource adequacy. He said the proposed assumptions for in-region IPP availability goes against the grain of IPP operators. Gray acknowledged that there may be some self-interest involved but stressed that the assumption is very different than what he is hearing from operators.

Fazio asked if there could be other sensitivity studies, like not limiting summer hours, that he would like to see. Gray thought that might be a good way to handle the issue, as well as limiting availability during ramping hours. Fazio asked Gray to send specifics for one or two other sensitive studies and he will run them.

Gray then noted the trend of contracting changes as IPPs, trying to recoup lost spot market earnings, are moving to capacity contracts. Fazio said year-long capacity contracts might solve economic issues for the IPPs and lessen costs for expanding the NW power supply.

Ollis wondered about the time-of-day capacity contracts going to California, as they would have higher need and pay higher prices. Gray thought contracting changes in the next five years would make conditions difficult to foresee but, if Power Pool predictions are correct, 2025

would be the third or fourth year of binding, forward-showing requirements for participating utilities. He thought that process will show a shift toward multiyear commitments to otherwise uncommitted resources.

Tomás Morrissey, PNUCC, asked if there will be a scenario without the Montana/Wyoming resources. Fazio said yes.

Steve Johnson, WA UTC, asked what is driving the change in assumptions. He noted that prior assessments assumed that if a resource was not committed, prices in the NW would bring those resources' outputs to the NW. He wondered if this is a change in uncommitted external resources. He asked if the change is because formally non-committed resources are now committed in hours other than 9-2.

Fazio answered that the change is based on a number of reasons, including a changing mix of in-and out-of-region resources. He noted that past, somewhat generic assumptions have changed and forward-looking climate change data shift need to summer as opposed to historical data which puts need in winter.

Johnson asked if the formally-extra summer capacity is now committed to external load, calling it a different definition of committed. Fazio said this is spot market and not committed by contract. He said it is a policy call of how much uncommitted summer resource to rely on but using expected amounts is incorrect.

Fazio added that California's dire, late afternoon needs will make competition for that resource difficult. He added that the NW doesn't have that dire a need because of less solar and the flexibility of the hydro system.

Kelli Schermerhorn, NorthWestern, stated that, to further complicate the issue, not all NorthWestern projects are rate-based.

Kristine Raper, Idaho PUC, explained her concerns with rate-basing PacifiCorp's costs of projects in Montana and Wyoming [Slide 7.] She said PacifiCorp enters a multistate protocol that dictates who takes what expenses. Raper said that states are not bound by this protocol but the idea is to not leave PAC with stranded resources/costs.

Fazio said the RA assessment wants to count available resources and rate based is just one factor to consider.

Johnson said that PAC operates two BAs and no one knows which BA will have rolling black outs when PACs resource portfolio can't meet load. Fazio stated that the redeveloped GENESYS includes outside resources and looks at exchanges between BAs as best it can.

Johnson said the LOLEV on the C-ref case [Slide 9] screams for demand response. Fazio said yes and pointed to an upcoming slide for more detail and discussion.

Villamor Gamponia, SCL, asked about load side assumptions for post pandemic effect, electrification, and weather sensitivity changes due to climate change [Slide 19.] Fazio said the climate change is explicitly examined in the model but there are no assumptions around the pandemic or electrification.

Massoud Jourabchi, NWPCC, agreed that primary and secondary climate change impacts are accounted for but COVID is not. Jourabchi added that the DFAC will take up pandemic effects soon. Gamponia wrote that electrification might have a bigger impact.

Ben Fitch-Fleischmann, NorthWestern, asked about the distribution of summer events on [Slide 18] wondering if summer events are as deep and long as winter. Fazio answered that on average the summer events do not look like winter. Fitch-Fleischmann asked if the summer extremes look bigger than winter. Fazio said he hasn't looked yet but said the information is available.

Fred Heutte, NW Energy Coalition, commented that [Slide 19] will freak people out, but said this is the result of careful work and review. Heutte stressed that this must be discussed properly, highlighting that the expected flurry of future acquisition activities is not represented. Fazio agreed, outlining a way to calculate if future acquisitions will meet capacity needs.

Heutte pointed to PACs RFP which short lists solar plus battery, He said we don't yet know how to assess that resource with the available metrics and predicted much more future work around assessing these resources.

Johnson cheekily asked if Heutte supports IOUs that are short buying (long-term) gas fired generation output/plant to cover their load at this time. Fazio suggested he and Heutte discuss offline.

Heutte asked about the months on [Spreadsheet.] Fazio said it is a 14-month year starting with October and splitting both April and August in two.

Considerations for Revising the Council's Resource Adequacy Standard

Fazio reviewed the history of the Council's adequacy standard, explained the current standard (5% LOLP), its limitations, and recommendations for a more comprehensive approach with additional metrics. Fazio described LOLEV, LOLH, EUE and NEUE. Fazio recalled that evaluating these new standards is a Seventh Power Plan action item and that work will continue after the 2021 Power Plan.

Gamponia explained why SCL moved to the LOLEV metric as they are a mostly hydro utility with no plans to acquire thermal. Because of this, SCL thought LOLEV was a better metric than LOLP adding that SCL sets an energy target as opposed to capacity. Gamponia revisited his earlier comment about electrification, saying metrics and resource needs could change based on the uptake.

Heutte voiced interest in SCL's energy versus a capacity approach and asked for more detail. Gamponia said SCL has always relied on hydro and felt that hydroflex can meet some, but not all, peak events. He added that they depend on the market for 200MW and each utility will have different needs.

Heutte added that in August the ISO allocated rotating outages by LSE on the load share ratio, ensuring that San Francisco and Los Angeles were equally unhappy. Fazio was not sure about that comment.

Fazio asked that the RAAC email him questions, comments and suggestions and ended the meeting at 12:00.

Attendees via Go-to-Webinar

John Fazio	NWPCC
Chad Madron	NWPCC
Tanya Barham	Community Energy Labs
Leann Bleakney	NWPCC
Jeff Blend	Montana
Frank Brown	BPA
Morgan Brummund	
Aaron Bush	PPC
Pat Byrne	BPA
Dan Catchpole	Newsdata
John Chatburn	Idaho OER
Mike Dalton	Montana
Rob Diffely	BPA
Ryan Egerdahl	BPA
Ben Fitch-Flieschmann	Northwestern
Villamor Gamponia	SCL
Andrea Goodwin	NWPCC
Spencer Gray	NIPPC
Tom Haymaker	Clark PUD
Bill Henry	
Fred Heutte	NW Energy Coalition
Steve Johnson	WA UTC
Massoud Jourabchi	NWPCC
Tom Kaiserski	Montana
Torsten Kieper	BPA
Scott Levy	Blue Fish
Jim Litchfield	consultant
Verene Martin	SCL
Ian McGetrick	Idaho Power

Shauna McReynolds	PNUCC
Tomás Morrissey	PNUCC
Patrick Oshie	NWPCC
Kristine Raper	Idaho PUC
Selisa Rollins	BPA
Sashwat Roy	Renewable NW
Bill Saporito	Umatilla Electric
Kelli Schermerhorn	Northwestern
Adam Schultz	ODOE
Aliza Seelig	SCL
Tom Skiles	Critfc
Jaime Stamatson	Montana
Saul Villarreal	SCL
Joshua Weber	DVC Law
Zhi Chen	PSE
Brian Dekiep	NWPCC
Ahlmahz Negash	Tacoma Power
Mohit Chhabra	NRDC
John Cornwell	Oregon
Mike Hoffman	PNNL
Alison Jacobs	PSE
Douglas Logan	
Joni Zenger	Utah