

**Northwest Power and Conservation Council
Resource Adequacy Advisory Committee/Systems Analysis Advisory Committee
Joint Technical Meeting
December 4, 2018**

John Fazio, NWPCC, began the meeting at 9:30 with introductions and a review of the agenda.

Implementing the PNW Adequacy Standard into the Council's Seventh Power Plan

Tomás Morrissey, PNUCC, asked if Fazio added average MW of EE [Slide 9.] Fazio answered that it's 600 average, with an estimated 930 of capacity contribution.

Rob Diffely, BPA, inquired about the blue line on [Slide 10.] Fazio explained that he added 600 which was too far. Diffely asked if he added a flat block. Fazio said no, he added a shape.

Tyler Llewellyn, BPA, surmised that this implies that there is an energy component and this isn't pure capacity. Fazio agreed.

Morrissey asked if the model assumes that solar is selling off-peak to hydro users [Slide 11.] Fazio said he assumes "One Big Happy Family." John Ollis, NWPCC, added that this is just an example where it happens to go up and it could go down. Fazio clarified that the ASCC is not always greater than one but is usually greater than the stand-alone.

Villamore Gamponia, SCL, asked what is assumed about fish and/or flood constraints. Fazio said many STM constraints, i.e. fish and flood spills or borrowed hydro are end-of-month and they are not violated. Gamponia called that helpful.

Morrissey stated that in the last decade has seen a lot of added resources and BPA's hydro looks more like the blue curve. He asked if there was and an attempt to compare a hydro shape out of a GENESYS run to a recent BPA shape to see if it follows a similar pattern. Fazio answered yes, but not this year and further explained about the two examples, noting how hard it is to back cast.

Ollis added that the current version of GENESYS is an adequacy model and the new version will have more tracking. He added that the new model will have 16 nodes in the region and 34 outside.

Gamponia asked if there was a way to add resource to the model without changing hydro. Fazio said yes, if you gave it a really high price.

Aliza Seelig, SCL, asked if Fazio would review the changes in ASCC values over time for different resources. Fazio explained that for the Seventh Plan there was a fixed value and the proposal is to move to an ASCC that is a function of the resources.

Seelig continued, noting the different proposals on changing hydro storage capabilities presumes that there would not be a need for much for other resources. She cautioned that less hydro storage would impact the ASCCs. She suggested clearly stating to decision makers that this is one static view of the hydro constraints.

Philip Popoff, PSE, added that there's a climate change impact to changing the operation of the 0-emission hydro system for environmental reasons. Seelig said this speaks to the need of adding a cost of carbon and a value for the water to the analysis, pointing to several environmental proposals being floated. Popoff said he points to the Council's marginal emissions rate for proposals like removing Snake River dams. Ollis assured the group that this will be addressed in the second half of the meeting.

Diffely asked about a testing a standard just for Q1 [Slide 17.] Ollis said that approach might have been enough for the Seventh Plan but may not be true in general. Fazio said the resource needs over time show a general flip to summer-peaking in 10-15 years or sooner.

Gamponia [Slide 18] asked for an explanation of the use of a 10-hour 95% hydro example. Fazio explained his reasoning, adding that whatever value is used in the ARM must be used in the RPM. Diffely asked if there were any LOLP events in Q2. Fazio answered two, calling them a data artifact.

Gamponia surmised that Q2 hydro is probably much higher. Fazio agreed. Ryan Egerdahl, BPA, said there could be surplus on top of the 0 LOLP.

Diffely asked if all resources were added incrementally [Slide 19.] Fazio answered yes. Diffely asked if they were added plant by plant. Ollis said the Seventh Plan had a proxy new resource. Fazio added that he didn't adjust the ASCC in the case where resources were taken out.

Popoff wondered if calculating the ASCC in a more dynamic manner might also have an impact on the ARMs. Fazio said yes. Ollis pointed to the upcoming presentation for more information on this topic.

Seelig said if there are changes in the thermal dispatch it becomes important to look at emissions [Slide 24.]

Popoff called why integrated solar effects hydro and thermal more than wind an important piece. He asked for an explanation of why solar is so different, pointing towards possibly more output when the weather is cold. Fazio agreed that solar is more predictable than wind. Popoff asked if there is a negative correlation between cold temperature and wind. Fazio said yes for Gorge wind.

Morrissey asked if the slide represents Southern Oregon. Fazio said no, it's Southern Idaho.

BREAK

Improving the Modeling of Flexibility in the RPM

Llewellyn asked if the RPM selects resources in a way that matches the ASCC [Capacity Contribution (4000 MW of Gorge Wind, X MW of Montana Wind)] Ollis said yes noting that the next slide illustrates the point.

Morrissey asked if the method illustrated on [Why Do We Need a Limit on Combinations] is done on the new GENESYS. Fazio answered yes. Popoff called this cool, and asked how long it will take. Ollis said if the redevelopment goes well it will just be the cost of cloud computing but it's unknown how it will roll out.

Popoff referenced taking a portfolio out of the RPM and testing for adequacy in GENESYS, assuming that this is done for just the current test year and the adequacy model is not built out for the whole 20-year period. Fazio stated that the Seventh Plan went to 2026. Popoff reframed, asking if the plan run through GENESYS is for just one test year. Fazio explained that they pick an early, mid, and late year. Popoff said it seems like you are building an enormous number of really fine dials. Ollis added that they know the data gets trickier at the end of the action plan.

Seelig noted that as some policy decisions effect the next 50 years so, we should talk about what we know well and recognize the uncertainty. Ollis called this a good point and reminded the room that the plan is revisited every five years. He acknowledged that there should be some actions to capture near-term policy issues.

Final Discussion

Morrissey called this a good direction with positive improvements. He cautioned that the old ASCC values have made their way into a number of other forums and may not have been interpreted correctly. He asked that this be acknowledged by putting caveats on the slides when sharing the data. Ollis agreed, noting that the Council focuses on the region and, while they are good directionally, individual utilities should not use them directly in their models unless their service territory looks like the region.

There was general agreement in the room on the proposal of how to incorporate flexibility into the RPM.

Gamponia asked if there was a plan to calculate the ask for energy. Ollis likened that ask to a kind of translation between energy and capacity, stressing that this is only reasonable for capacity. Gamponia stated that there might not be a one-to-one translation. Ollis agreed, but said the energy adequacy translation is a fairly old concept and a simpler calculation. Ollis said this model is not the be-all-end-all but giving the capital expansion model enough adequacy information so it can test resource strategies.

Gamponia said questions would have a different answer depending on which adequacy metric was used. Ollis agreed, but assured the room that this model is agnostic to metric and is calibrated to technique.

Morrissey requested seeing hydro curves and how hydro responds to the change in resources. Fazio confirmed that he's asking for the actual simulated dispatch. Morrissey said yes. Ollis called the request reasonable and spoke about the timeline for the redevelopment of GENESYS.

Michael Hill, Tacoma, noted the complexity of the presentation but liked where the process was going. Ollis asked that any comments or suggestions get back to him before the end of January.

Fazio ended the meeting at 12.

Attendees

John Fazio	NWPCC
John Ollis	NWPCC
Daniel Hua	NWPCC
Pat Byrne	BPA
Rob Diffely	BPA
Tyler Llewellyn	BPA
Ryan Egerdahl	BPA
Adam Schultz	ODOE
Tomás Morrissey	PNUCC
Michael Hill	Tacoma
Aaron Bush	PPC

Attendees via Webinar

Elizabeth Osborne	NWPCC
Eric Graessley	BPA
James Gall	Avista
John Lyons	Avista
Nora Xu	PGE
Garret LaBove	PSE
Phillip Popoff	PSE
Scott Levy	Bluefish
Shirley Lindstrom	NWPCC
Tina Jayaweera	NWPCC
Villamore Gamponia	SCL
Aliza Seelig	SCL