

**Northwest Power and Conservation Council  
Resource Adequacy Advisory Committee-- Technical  
August 26, 2019**

John Fazio began the webinar at 1:30 with introductions.

**2024 Resource Adequacy Assessment**

**John Fazio, NWPCC**

Steve Johnson, WA UTC, asked if the replacement capacity represented on [Slide 7] is gas generators. Fazio said they represent how much nameplate gas plants are needed to get the LOLP to 5%, adding that batteries would have a different number.

Fred Heutte, NW Energy Coalition, noted that this February proved we could get winter imports well above 3000MW.

Jim Litchfield, Consultant, approved of explicitly identifying the BAs and asked about the resolution of their transmission interconnection systems [Slide 8.] John Ollis, NWPCC, answered that presently the set-up resembles AURORA's stick-and-bubble with the capability to be more detailed.

Nicholas Garcia, WPUDA, presumed that the hourly simulation of individual hydro products has been tied together to reflect the Columbia's cascading nature. Ollis answered yes. Garcia then asked how explicitly the changes in out-of-region resources are being captured. Ollis said AURORA does that, agreeing that staying current can be challenging. He pointed to GRAC work that keeps the database current.

Garcia called forecast error dynamic and needed the acknowledgment of the dynamic political/policy forces that shape it. Ollis pointed to a study that showed this risk.

Tomás Morrissey, PNUCC, asked if retired resources will be replaced in a way that's reflected in AURORA. Ollis said the examples that will be shown later do not replace anything and only show sited and licensed resources.

Johnson addressed forecast error, asking about the logic behind a Loss of Load. Ollis said utilities don't always perfectly calculate reserves for forecast error. Fazio said this will be interesting enhancement to see.

Johnson asked what the model assumes prior to the hour and what it cues up to be available. Ollis said he puts in balancing reserves as per the planning level assumptions from the NW Planning Pool EIN study. Ollis agreed that some estimates are conservative and this is another input that will require regional weigh-in.

Johnson asked why the winter of 1950 was chosen for [Slide 13.] Fazio said it was the coldest on record. Heutte asked if the model is picking up DR. Fazio answered yes, it's picking up the maximum which is a small amount.

## **Redeveloped GENESYS**

### **John Ollis, NWPCC**

Ollis opened the model to demonstrate how transmission is represented. Garcia referenced a debate around shuttering all of WA's gas plants and wondered if this map could answer questions around that. Ollis said it could answer some questions and can get more or less granular. Garcia confirmed that the model is not good at determining localized effects of closing individual plants but good for regional effects. Ollis said the model could do it but this is tuned for the NWPCC's needs.

Heutte approved of reaching out to transmission planners as they know what happens when large power plants or lines off the system. He then asked if there is a South to North constraint, particularly on the DC intertie. Ollis showed a 720 MW? transmission constraint on the LA intertie.

Heutte then asked about North to South rating. Ollis said 1305 which represents the most restrictive month. Heutte said he didn't understand the adjustment as October/November is typically the time for scheduled annual maintenance. Ollis agreed that this is not the most realistic representation and he would recommend moving forward with different numbers after the establishment of a time series. Ollis said this exercise is to show that no matter how much he constrains the transmission system there is still a lot of market capability.

Heutte summarized how he thought the 3400 MW limit was derived. Ollis said we've been focusing on what's available in CA versus what's available and that includes transmission and generation. Heutte recalled that Energy GPS found far more CA generation than capacity. Ollis agreed that transmission is a limiting factor certain times of the year.

Litchfield said he thought AURORA was purely economic [Slide 5.] Fazio pointed to a funding reserve margin. Ollis noted that it has been improved to include RPSs and clean energy policy.

Litchfield pointed to [Slide 6] and asked why AURORA is building 40GW. Ollis answered that it's a result of a balkanized region.

Heutte said he didn't understand [Slide 4] wondering why we would need 31,000MW of gas to replace 15,000 of WECC retirements. Ollis said some regions may have not built enough to meet their planning reserve margin or may be experiencing growth. Ollis said these are preliminary results and he will touch base with the WECC.

Ollis opened the Study

Heutte asked how the 8000MW was removed. Ollis explained the process. Litchfield asked about a “lump in the renewable snake.” Ollis said that’s a windy day and the whole picture has an LOLP of 0. Litchfield asked why we are having this meeting. Dan Hua, NWPCC, said this is just one year. Ollis added that this is to show that even for a challenging event there is still a lot of market available in the classic GENESYS

Tomás Morrissey, PNUCC, said he’s having a hard time reconciling results from the two models when one calls for 31,000MW of gas and the other says we can lose 8000MW and still be okay. Ollis clarified that the 30,000 is to meet the planning reserve margin not have a reliable WECC.

Garcia asked what would happen in the Puget Sound area if some natural gas goes offline. He said there are significant peak load transmission issues and is worried about relying on extra generation and transmission. He asked if some parts of the region will see constraints in some of these scenarios. Fazio said the model looks at congestion issues and Puget has its own bubble so it would show up as a regional outage.

Phillip Popoff, PSE, asked if variability within the external bubbles is being tested. Ollis said no but they could. Fazio suggested taking a high load to the lowest possible amount of surplus available. Ollis agreed that an out-of-region stressful situation would be a good test.

Charlie Grist, NWPCC, asked about the scale of the one-week dispatch and how much import is needed during high-need situations. Fazio answered that it’s on the order of 5000-7000MW. Grist recalled that the last RAAC limited that to 2500MW. Ollis reported that the maximum amount exported was 7900MW while the max imported was 7650MW and the overall implied capability is 11,451 with coal, 8647 without.

Heutte concurred with this approach adding that the CAISO has 48,000MW of generation and a winter load that never exceed 32,00MW. Ollis agreed, adding that he was skeptical of these results at first but felt that while we couldn’t have access to all 8000MW we could probably get 5000 at some times of the year.

Rob Diffely, BPA, asked how much energy came from BC hydro in the Jan. 1950 study. Ollis said we were exporting and it could have been passthrough.

Popoff confirmed that the new GENESYS breaks the Pacific NW into bubbles which doesn’t necessarily mean that you could bring in more imports as there is still a problem moving power between the bubbles. Popoff asked if a localized shortage it would show up in one or more bubbles. Ollis said yes.

Popoff theorized that policy makers could make an RFP if they are not comfortable with short-term spot markets. Fazio agreed but cautioned that they looked at over 5000 futures and only 8% had issue and wondered if you could set up a buy-as-needed contract.

Garcia said if you don’t have access to transmission you are vulnerable.

Ollis said the new GENESYS has week, day and hour ahead but doesn't allow purchases in the true-up phase so most positions are locked in when you get to real time.

Fazio pointed to the upcoming RAAC Steering webinar and said he will pose using the classic GENESYS this year and bumping up imports while continuing investigation. He asked for more input. Litchfield said 2500 isn't magic but it's been there a while. He encouraged Fazio to look at what happened during late February/early March when the market went crazy.

Popoff said he long believed that 2500MW was too low but the alarm bells have been going off long enough that people think we're short. Heutte countered that the market showed up big time in February, but this proves you can get large amounts of imports into the region during peak.

Ryan Egerdahl, BPA, suggested using Heutte's recent history example as a new historical experience to back the model up. Garcia agreed, but cautioned that this is based on a sufficient amount of gas and that has its own challenges and risks that require acknowledgement.

Grist agreed that the gas system has its own constraints but the new GENESYS's bubbles seem to go a long way in revealing hidden issues and unforeseen risk. Ollis said you could limit fuel or generation to any resource so fuel accounting goes pretty far.

Fazio ended the meeting at 3:30.

**Attendees**

John Fazio	NWPCC
John Ollis	NWPCC
Jim Litchfield	Consultant
Pat Byrne	BPA
Charlie Grist	NWPCC

**Attendees via Webinar**

Aaron Bush	PPC
Adam Schultz	ODOE
Andrea Goodwin	NWPCC
David Howarth	National Grid
Ryan Egerdahl	BPA
Fred Heutte	NWEC
Gwen Shearer	Consultant
Jimmy Lindsay	PGE
John Ollis	NWPCC
Steve Johnson	WA UTC
Kate von Reis Baron	PGE
James Gall	Avista

Garrison Marr	Snohomish PUD
Nicolas Garcia	WPU DA
Paul Nissley	SCL
Phillip Popoff	PSE
Rob Diffely	BPA
Villamor Gamponia	SCL
Will Price	EWEB
Tomás Morrissey	PNUCC
Peter Schaffer	EnergyTrust