

**Northwest Power and Conservation Council
Systems Analysis Advisory Committee
December 19, 2019**

John Ollis, NWPCC, began the meeting at 1:30 by calling for introductions and reviewing the agenda.

Review of Council's Modeling Portfolio for the 2021 Power Plan

Fazio noted that the Council uses an annual LOLP and while the ARMs are calculated quarterly and quarterly LOLPs can move around, the annual LOLP must be satisfied.

RPM Regional Portfolio Model Review and Enhancements

Heutte asked if the models count EE and DR in the load forecast or if they are subtracted out [Slide 3] wondering if DR's flexible demand can provide INCs and DEC. Ollis stated that existing EE and DR are modeled in the load forecast, acknowledging that this approach leaves a potential gap in DR flexibility. Ollis added that there is not a lot of DR regionally and existing DR will probably stay in the load forecast for this Plan. Ollis stated that new DR and EE will be modeled as dispatchable resources.

Heutte observed that all of the region's DR is unidirectional but flexible demand, like grid-integrated water heaters, can look like an INC or DEC. Ollis clarified that this attribute was modeled in the Seventh Plan, but the types of products the RPM sees depends on the DRAC's work.

Heutte did not want to see the value of flexible demand truncated in the 2021 Plan by failing to incorporate its characteristics. Ollis said there is capability to model that in the RPM but the resources to be tested come from the DRAC.

Dave LeVee, PwrCast, noted that DR is built into AURORA's supply stack and uses a price incentive to reduce demand. Ollis said it's in AURORA and to some extent in GENESYS and the RPM.

Sibyl Geiselman, Avangrid, asked how voluntary corporate contracts and green power programs are considered [Slide 4.] Ollis said the Generating Resources team is working to get the appropriate REC contributions from these resources. Ollis added that the goal is to not count RECs as available to meet state policy if all of the RECs are used by a load outside the region. Geiselman said it's also important to avoid double dipping, pointing to 8% of PGE's retail load served by a voluntary green program.

Ollis called this a good point saying it will be important to get the right obligation. He said he will bring Generating Resources work back to the SAAC for input.

Heutte noted that the Region and the Publics don't talk about a planning reserve margin while the IOUs do. He asked if the adequacy reserve margin is a substitute for a planning reserve

margin. Ollis said yes saying the adequacy reserve margin says we need to tune the load resource balance to meet our adequacy standard. Fazio added that the planning reserve margin looks at serving the single highest peak hour and some utilities have challenges during non-peak hours.

Heutte called it appropriate to look at other stressed hours over the year. He added that the planning reserve margin addresses forced outage and higher-than-expected demand asking if he is missing anything. Fazio said it also addresses contingency and balancing reserves adding that the ARM is different and could be negative.

Heutte said this is directly linked to the LOLP. Ollis and Fazio agreed. Ollis added that it might not be perfect but if it's close then the metric has done a good job. Fazio said they look for builds with LOLPs between 2-5% to avoid over or under building.

Ollis said this probabilistic approach allows you to cater to the risks you want to avoid. Heutte supported this approach.

Heutte asked what a "deficit" is. Fazio said sometimes the ARM is negative value, meaning there's a peak hour deficit but there is still an adequate supply.

Geiselman said it would be helpful to see how the LOLP is translated between the different models. Ollis said he can show how the adequacy standard is implemented in the models at a future meeting.

Heutte asked if the model could dynamically accommodate a change in products, like the number of Grid-Connected Heat Pump Water Heaters moving from 5% to 15% [EE/DR Interaction.] Ollis said yes and explained EE/DR elasticity.

Heutte pointed to the upgraded optimizer and asked if there will be any regression testing [Slide 10.] Ollis answered yes, adding that most of the work will be farmed out to the consultant that implemented the enhancement while he will conduct some higher-level testing.

Scenarios in the 2021 Power Plan

Morrissey asked for insight on the Council's view of the benefits of regional markets [Slide 22.] Ollis said we still don't know what an organized market would look like but he could still test the whole west within an ISO. Morrissey thought the Council's models already viewed the northwest as operating like an ISO. Ollis said they do from some perspective, but this opens a chance to take advantage of diverse systems for adequacy and reserves and potentially other things like a capacity price. Fazio added that the new GENESYS goes even further with 17 bubbles instead of two and the capability to have transactions between the bubbles. Fazio agreed that Council studies tend to be optimistic that everyone within the bubbles will share equally.

Ollis said we don't assume the rest of the west will share equally with us. Morrissey clarified that this isn't an organized northwest but an organized western connection. Ollis agreed. Fazio

added that an important question is how much we should rely on market. Ollis cautioned that the baseline for market reliance hasn't been established but different reliance levels will be tested.

Redeveloped GENESYS Update

Morrissey asked if renewables are linked to temperature as they are in GENESYS classic. Ollis answered that they can be but might not be in this case.

Morrissey asked how out-of-region loads are currently dealt with. Ollis said he has been able to get high/medium/low data for California that can be tested but not for other jurisdictions. Ollis said he was hoping to pick one to model as he is not going to model stochastic loads external to the region. Morrissey expressed nervousness around the Council doing a WECC-wide fundamental study using average data as a placeholder. Ollis asked if Morrissey was solely concerned about adequacy studies as everyone uses a fundamentals forecast for price studies. Morrissey said his concern was around adequacy. Ollis said he's recommending creating a difficult load circumstance for the WECC.

Ollis asked if any SAAC members have a high forecast for the rest of the region. There were no responses. Ollis said he will work to get a reasonable forecast but there will have to be more conversations around power system fundamentals.

Ollis stated that he will come back with more of the redesigned GENESYS and asked how the SAAC would like to see the progress. He summarized topics for the next meeting, called for ideas around enhancements and concluded the meeting at 4:30.

Attendees

John Ollis	NWPCC
John Fazio	NWPCC

Attendees via Webinar

Aaron Bush	PPC
Ahlmahz Negash	Tacoma Power
Cindy Wright	Seattle City Light
Dave LeVee	PwrCast
Elizabeth Osborne	NWPCC
Frank Brown	BPA
Fred Heutte	NW Energy Coalition
Eric Graessley	BPA
Jim Litchfield	Independent
Kathi Scanlan	WA UTC
Garrison Marr	SnoPud
Nora Xu	PGE
Rachel Clark	Tacoma Power
Rob Diffely	BPA

Sibyl Geiselman
Tomàs Morrissey

Avangrid
PNUCC