Northwest Power & Conservation Council
Systems Analysis Advisory Committee
February 5, 2025

John Ollis, NWPCC, began the meeting at 9:00am. Chad Madron, NWPCC, explained the best way to interface with the Zoom Webinar platform. Ollis then called for attendance and reviewed the agenda.

Modeling Changes Between RPM and OptGen Part Three: Futures

Aliza Seelig, PNUCC, recalled past RPM discussions which stressed the option value of resources [Slide 5]. Seelig recalled that it defined a resource that provides some flexibility in the face of uncertainty, asking if her definition is correct. Ollis agreed, saying that option theory played a big role before, but now staff think that is not the best use of the tool. Ollis assured the room that they will still plan on searching for the option value of an investment strategy but with a different mathematical structure.

Seelig poked at that, wondering how to make good decisions when it takes a long time to build resources and there is a lot of uncertainty and risks in the future around demand. Ollis agreed, saying staff is searching for the option value of a resource strategy while also being smarter in how staff design and use the software.

Ollis reported that the RPM was fast but struggled with things like storage and renewable shapes. Ollis said Council members are interested in a more focused view of the risk space.

Rick Williams, PSU, asked about the new Columbia River Treaty [Slide 7]. Ollis said this will be discussed later in the presentation, previewing that staff are presently trying to better understand the Treaty. Ollis previewed that the plan is to model the current agreement, but a hydro flexibility scenario should shed further light.

Williams pointed to tail events, like massive flooding, that should be explored. Ollis agreed, saying staff plan to bring an updated flood control strategy forward at a future meeting. Williams asked for a briefing by the Army Corps of Engineers at that meeting. Jennifer Light, NWPCC, didn't think that possible but pointed to public briefings by the Corps.

Jason Sierman, ODOE, noted earlier discussion about the switch from generating data to the flow data, asking what that means for flexibility or other insights. Ollis said the RPM's understanding of dispatch was rudimentary, but OptGen better understands the short term uncertainties brought about by wind and solar resources.

Sierman summed up Ollis's answer by saying the prior method was a mask while this method lets us see behind the curtain. Ollis agreed that granularity is an advantage along with a better understanding of the drivers.

David Clement, NEEA, asked if there was a mechanism to address higher resource costs [Slide 8]. Clement pointed to tariffs, IRA claw backs, and tax credits that could affect risk levels. Ollis agreed, saying this will be discussed in the last presentation of the day.

Fuel Prices and the Ninth Power Plan
Tomás Morrissey, NWPCC

Clement asked if anything changes the supply of LNG to the northwest region [Slide 16]. Tomás Morrissey, NWPCC, said LNG Canada already has deals with producers in BC/Alberta to put supply on that pipeline. Morrissey said the bigger issue is Woodfibre LNG as they don't have a dedicated supply and sits close to Sumas. Morrissey was not as sure about pipeline capacity at Costa Azul LNG.

Williams pointed to uncertainty around Canadian gas and the fact that the US is a major natural gas producer to ask if staff should look at other hubs. Morrissey explained that most northwest gas comes from Canada [Slide 28]. Morrissey said there is a scenario where prices increase but are not curtailed, adding that 2/3 of the region's gas comes from Canada and cannot be replaced without new pipeline.

Williams thought this should be considered as a contingency. Morrissey doubted that would happen but said there may be some price impacts. Ollis added that the risk associated with increased pricing has been robust enough to get at fuel fundamentals.

Seelig confirmed the issue is not lack of supply but lack of ways to get to the Northwest. Morrissey confirmed this. Seelig asked how many forecasts were used to get to the median forecast. Morrissey reported that nine forecast were used for the Henry Hub forecast.

Seelig then asked about the vintages of those forecasts. Morrissey said the EIA is the oldest with 2023 data while the others used 2023 or 2024. Seelig asked about vintage weighting as entities use purchased forecasts. Morrissey agreed that the data is probably from purchased forecasts, saying staff doesn't do vintage weighting.

Seelig asked if staff will use fuel price scenarios along with volatility. Morrissey pointed to the strategy of high, mid, and low ranges for gas prices adding that there might be some price alterations and volatility in the Policy scenario. Ollis stated that instead of having specific scenarios, staff incorporate all as futures

Joel Nightingale, WA UTC, wrote, Sorry if I missed this. Could you say why the Woodfibre price bump in the forecast is three years (no more, no less)? In the question pane. Morrissey answered that 2027 is the facilities expected online date with the expectation that between 2028-2029 there will be a pipeline expansion to relieve the constraint on the Canadian side.

Eric Graessley, BPA, wrote: Sorry if I missed this, when adding volatility to NG hubs, is the volatility sampled independently by each hub, or are the relationships among hubs preserved (when Sumas is high Stanfield also probably very high, consistent with historical event)? In the question pane [Slide 18]. Morrissey said the volatility is assessed individually by hub and forecast two is shifted forward one year for all. Ollis added that the intent is to sample these, so the volatility is associated with a particular year/event.

Clement wrote, Is the volatility forecast coincident with gas supply constraints? in the question pane. Morrissey answered no, not really in the model, explaining historical excursions are usually due to cold weather or gas supply constraints. Clement thought there might be some inferred supply constraints. Clement said it also suggests a gas plant may be paying more but is not constrained by the amount of gas it can receive. Morrissey did not think staff would constrain the amount of gas available but would instead reflect volatility through pricing.

Ollis added that staff theoretically could model gas supply but have historically used prices for Power Plan exercises. Ollis said adequacy studies have examined what would happen if the supply was not there, adding that this is more of an operational question.

Clement thought that some gas plants might have constrained operations during a price spike, which might be picked up by coal or other plants. Clement wasn't sure if this was a big issue but was curious because of the independent way volatility is introduced. Ollis offered to think on it, adding that staff deal with some elements of thermal generation risk with forced outage rates, reserve margins, etcetera. Ollis said he will continue to muse over this and come back with more.

BREAK

Methodologies for Understanding Risk in the Ninth Power Plan

Rob Diffely, BPA, voiced surprise that there were no sensitivities around reserves as the last Plan showed a need for 6000MW [Slide 8]. Jennifer Light, NWPCC, said staff talked about operational flexibility, non-hydro scenario work but decided on model tuning instead. Light reported that this work delivered a better ability to do dynamic resource accounting.

Ollis agreed that the new capital expansion model understands reserves much better than the RPM, explaining the process further.

Shannon Souza, Obsidian Renew, wrote: For the changing transmission availability - are you modeling in Grid Enhancement Technology or is this strictly new transmission? in the question pane. Light answered that staff are looking at Grid Enhancements, particularly quickly deployable projects. Light pointed to exploring resource options as well, assuring Souza that staff are not looking strictly at new transmission.

Clement asked how staff build out the resource stack when there is no reference case. Light answered that all of the Council's Plans had more than one scenario building out options to inform strategies. Light said staff are moving away from the concept of reference case as it tends to anchor people's thinking while pushing the scenarios to the edges. Light said this gives Council members a better sense of risks and futures without anchoring them to the reference case.

Clement asked what staff use for the build out. Light answered that every sensitivity will have a buildout. Ollis agreed, adding there will be at least six buildouts, one aligning to each sensitivity.

Clement was still unclear on how a particular resource plan gets developed. Light offered to discuss this further offline.

Seelig wrote: This conversation makes me think wondering how the three demand forecasts described as represented in the futures will be taken into account in the build outs, in the question pane. Light said, on a high level, every sensitivity will be tested across the 300 futures. Light then said, in the constrained new resource and transmission options, for example the resource is constrained against all the uncertainty in all the futures.

Ollis added more, saying staff have tried to do a buildout over a deterministic future with the RPM, but OptGen can do this better. Ollis then explained using an example.

Seelig understood but asked to talk about the expected cost and the metrics sometime in the future. Ollis said he could bring up the math, but staff are still in the testing period and some of the subtleties are still being sorted. Ollis said a more formalized definitions are coming soon to this committee.

Seelig thanked Clement for his reference plant question as it sparked her thoughts about a starting point for a 20-year future. Light said there will probably not be a starting point run, but more of a way to align cross-cutting assumptions across the models. Seelig called this explanation helpful.

Seelig confirmed that the 150 to 300 futures would be run on every sensitivity [Slide 14] Ollis answered yes.

Clement expressed comfort with the futures but thought it was important to get the appropriate range of the key variables to ensure the scope of the futures is suitable. Ollis agreed that the range is very important, adding that he will be bringing each future to the SAAC for comment.

Clement wrote; Will you be talking about the objective functions used for the model buildout? in the question pane [Slide 17]. Ollis answered yes, the goal is talk about that in a later committee when things are more formalized. Clement thanked him for his answer.

Ollis ended the meeting at 12:00pm.

Attendees via Zoom Webinar

Dor Hirsh Bar Gai	NWPCC
Jennifer Light	NWPCC
Tomás Morrissey	NWPCC
John Ollis	NPWCC
Chad Madron	NWPCC
Devin Mounts	PGE
David Clement	NEEA
Mike Hermanson	Avista
Blake Scherer	Benton PUD
Mary Kulas	PPC consultant
Josh Haver	Idaho PUC
Ian McGetrick	Idaho Power
Aliza Seelig	PNUCC
Katie Chamberlain	Renewable NW
Rick Williams	PSU
Lori Hermanson	Avista
Joel Nightingale	WA UTC
Lisa Stites	GC PUD
Patricia Levi	Form Energy
Haley Ellett	Hood River
Landon Snyder	Snohomish PUD
John Purvis	Clallam PUD
Craig Patterson	independent
Ryan Bottem	Public Gen Pool
Jennifer Magat	PSE
Nora Hawkins	WA Dept of Com
Barbara Miller	USAE
Brian Dekiep	NWPCC
Mike Swirsky	Critfc
Jason Sierman	ODOE
Jared Hansen	Idaho Power
Robert Diffely	BPA
John Lyons	Avista
Brad Westmoreland	PGE
Eric Graessley	BPA
Laura Burford	BPA
Shannon Souza	Obsidian Renew
Jaime Stamatson	Montana
Alexandra Karpoff	PSE
Peter Jensen	NWPCC
Elizabeth Osborne	NWPCC
Heather Nicholson	Orcas Power & Light
Steven Simmons	NWPCC