Northwest Power and Conservation Council
Resource Adequacy Advisory Committee
January 30, 2024

Dor Hirsh Bar Gai, NWPCC, greeted the room at 9:00. Chad Madron, NWPCC, explained how to best engage with the Go-to-Webinar platform. Hirsh Bar Gai then called for introductions in the room and on-line.

Hirsh Bar Gai then further explained the two agenda items for the morning meeting.

Multi-Metric Adequacy Summary: Stakeholder Feedback
Dor Hirsch Bar Gai, NWPCC

Phillip Popoff, PSE, stopped on [Slide 6] to say he liked the multi-metric approach, but thought it might be helpful to have a higher-level, single "engine light" that either flashes or not. He thought a deeper dive into the flashing light could look at the metrics individually, but the key message should be alarm or no alarm. Popoff said policy makers need to see a clear message around a 46% LOLP. He proposed an alarm if one of the metrics is off.

Hirsh Bar Gai said he has heard this request before and staff are thinking about how to address it. He said in terms of the resources strategy and previous adequacy assessment there was risk without building resource. Hirsh Bar Gai then explained that this is why there is focus on mitigations like EE, renewables, or reserves.

Popoff said there are a lot of ways to avoid that outcome and the region may not be able to get to the strategy. He agreed that the strategy may be the best way to do it but there are barriers, and everyone needs to keep the lights on. He asked for better clarifications between "the best way to solve the problem" versus "there is a problem to solve."

Hirsh Bar Gai agreed that this is the focus. He then said the evolving power system creates issues with a single red, yellow, green engine light. Hirsh Bar Gai encouraged Popoff to think of each metric as its own engine light because if one is inadequate the whole system will be flagged.

Fred Heutte, NW Energy Coalition, voiced support for a simple indicator but pointed to the difficulty of representing future states without over or under doing it. As example of the risk, he referred to past Council work that showed fairly high Adequacy issues under some circumstances in the late 2020s that created misinterpretations.

Heutte then said the UC San Diego Scripps Institution, Centers for Western Weather and Water Extremes has a traffic-light way to look at atmospheric rivers, calling it a helpful way to look at events with complex underlying issues. Still, he thought that any work will still be up for misinterpretation even though it has value.

John Ollis, NWPCC, said the intent is still to have an engine light and the different metrics provide a recipe for finding the right resources. He said the old way was fairly simple, but these new metrics will be descriptive and allow more dynamic solutions. Ollis said this method will get more needed information out but agreed that will take some time for people to learn how to understand it. Ollis reiterated that the intent is to say the system is either adequate or inadequate.

John Fazio, independent, said as part of the Energy Systems Integration Group Task Force he has discussed the topic. He said the question of a binding metric came up and it was determined that one binding metric may work if the system never changes, but if the system or market changes that binding metric may change. Fazio said the muti-metric approach will help analysts find the solution.

Blake Scherer, Benton PUD, wondered if there has ever been a system that is adequate without implementing the Power Plan. Fazio said in his 45 years he has seen the power system go through ups and downs. He noted past assessments that showed an adequate system, so EE targets drove the Plan.

Hirsh Bar Gai said the drive for electrification and renewables add a lot of uncertainty on generation, supply side, and transmission. He said drivers are pushing us towards a flexible resources, which requires a more nuanced metrics.

Ollis added that the Power Plan is not the only way to create an adequate system, but it is the identified least cost/least risk way. He said there is a different toolbox today that needs different metrics.

Heutte stated that, when it came to the January 2024 storm, the Mid C market is obsolete [Slide 7] while the EIM was in the $200-250 range during gas prices. He said you can't compare them directly, but the EIM certainly provided value. Heutte agreed that we need a day ahead market as a companion to the EIM for diversity.

Heutte said that on January 13th for the first time in his memory all the power in the AC intertie was flowing South to North while the DC intertie was out of service for maintenance.

Fazio thought that market fundamentals are a better choice than an arbitrary fixed limit. He cautioned that the only way to get the fundamentals is to have the right market signals which requires stochastically modeling the entire west.

Heutte added that long supply lines come with risk as well so some of the capacity should be derated for analysis.

Nathanial Short, Snohomish County CCL, wondered if modeling took storage, placement of the storage, and GETs into account. Hirsh Bar Gai asked for clarification around "GETs." Short said

they are grid enhancement technology used to address congestions. Hirsh Bar Gai answered that GENESYS models transmission and explained the time scales and levels. He added that transmission expansion is not modeled.

Popoff said he was torn as it was easy to not build when they were short in a long market, but things are changing. He stressed the need to be thoughtful about the market limitation. He said he has trouble finding firm contracts because the wind might blow somewhere in the WECC. Popoff said this makes him nervous as no one is willing sell a firm contract.

Hirsh Bar Gai agreed that GENESYS has limitations, and we need to keep having conversations.

Short said the type of technology he was talking about would be more firm as it improves the capability of a firm source. Hirsh Bar Gai said they model existing resources and planned along with a proxy resource strategy.

Heutte said the WRAP is important but wondered about the interaction between the WRAP and the Council [Slide 12].

Fazio referred to a GridLab report for long-term planners, saying a 0.1 LOLEV per season is not risk adverse for the WRAP is but utilities and the Council may plan to more stringent numbers which could create seam issues between long-term and short-term planning.

Heutte wondered if the Council and WRAP have talked about this and if so, what was said. Hirsh Bar Gai said they did meet and want to collaborate. Ollis added that the WRAP has a different footprint and time frames. He said the Council goal is to compliment not replace or emulate the WRAP.

Heutte noted the timelines, saying the Council and WRAP don't need to adopt each other's approach but do need to understand them.

Ryan Egerdahl, BPA, said the Council's metrics could push the WRAP to a more energy focus. He supported this but said the other metrics do not align with the WRAP. Fazio noted that the WRAP said they will consider other metrics in the future. Hirsh Bar Gai said this is the one metric they are trying to align with the WRAP.

Short wrote: Do these considerations of LOLEV, or LOLE, comply with the current FERC regulations. And is there any anticipation of upcoming FERC regulations in the chat. Hirsh Bar Gai said there is no required threshold for some of these metrics, but the metrics are FERC recognized.

Fazio said FERC has jurisdiction of transmission reliability with no resource adequacy standard. He said NERC is in charge of recommending certain metrics but are not mandated to set a standard across North America. Fazio relayed that NERC is discouraging the use of LOLE but likes LOLEV and others but doesn't have thresholds for those metrics.

Short asked if a NERC standard would be helpful. Fazio didn't think they had the mandate to do it as different regions have different thresholds for adequacy.

Fazio stopped at [Slide 13] to remind the room that they are discussing bulk system outage only. Nicholas Garcia, WPUDA, confirmed that the slide is discussing a continuous eight-hour disruption. He then confirmed that this means that 39 out of 40 years won't see an outage longer than eight hours. Garcia then confirmed that the smaller the number the more stringent the threshold. Hirsh Bar Gai agreed, adding that it's not "never" have but "expected to have."

Egerdahl said he personally was interested in adding value to this metric, be it human life or dollars. Hirsh Bar Gai said there are others interested in that as well.

Garcia agreed but cautioned that cost will increase exponentially with duration. He said no matter the number the cost for a 24-hour outage will have very different economic implications than an eight hour one. Hirsh Bar Gai agreed.

Heutte asked if Banks Lake is operational [Slide 15]. Ollis said he visited it, and it is. Ollis clarified that Banks Lake, and no other emergency resources, are reflected in standard modeling.

Garcia thought the metrics made a lot of sense [Slide 20]. He was concerned that this is for the region and sub regional areas would have different challenges. He was curious how these metrics apply to those smaller places. Hirsh Bar Gai said modeling enhancements will deliver a better representation of local value of resources, but the Council does not get into the backyard of utilities.

Ollis said the adequacy model is developed from a regional perspective. He said the key takeaway when considering least cost resource expansion to meet system needs should be thinking about frequency, duration, and magnitude more than we have in the past.

Short asked for a map of the region that is covered by Council analysis. He asked about analysis barriers that come from a lack of common metrics and reporting that should be improved. Hirsh Bar Gai answered that it is not a barrier, but utilities have their own approaches.

BREAK 5 min

Responding to Regional Adequacy Concerns: Extreme Temperatures & Renewable Droughts
Dor Hirsh Bar Gai, NWPCC

Garcia wondered how using a single temperature impacts analysis [Slide 11]. He noted that the big population centers in OR and WA are on the west side of the Cascades. Garcia was not sure that the low temperature and change in demand for those areas are well captured by melding temperatures across the region.

Ollis replied that we need a sophisticated load model to show this kind of granularity. He said GENESYS can deal with this, but they didn't have the data. Ollis said they are working on a new load model, but GENESYS will have the capability to have different loads/temperature shapes at each BA, but results depend on load model progress.

Tomás Morrissey, NWPCC, asked if Garcia was looking for a more station-wide comparison. Garcia said he wasn't sure how a modeling a region-wide event translates into more local demand, noting the extreme conditions between heavily populated Bellingham, WA to Eugene, OR. Garcia reiterated that he didn't want to see that load washed away by using an average.

Ollis said staff is also concerned with this. He said past load models could not attach a temperature to the nodules, so they are now trying to get a more accurate picture. Ollis said GENESYS can handle it now, but they are working on improving the load model.

Heutte said that he has been looking at temperature data from all over the United States and found that the January storm was bigger than the region with cold temperature records set across the region. He said he is seeing weather events bigger than the region, so the geographic spread is really important as it drives demand.

Dan Hua, NWPCC, said the temperatures are weighted, so Portland and Seattle hold 75% of the weight while Spokane and Boise are 25%.

Short wondered how a regionwide model works with our balkanized system without a TSO [Slide 17]. He wondered what utility can do with this information as there's no body to mandate action based on Council recommendations.

Hirsh Bar Gai said broadening the conversation and sharing ideas are very helpful. Ollis added that the last Power Plan talked about the region holding out more reserves and acting conservatively and talked about regional collaboration. He said the Plan notes that if the Region doesn't act together there is a higher chance of coming up against challenges. Ollis said this is why they are promoting the message of the WRAP adding that Council work intends to be complimentary to the WRAP.

Short said he has high hopes for the market or the WRAP to get going on a voluntary TSO. He said the modeling is an excellent step forward.

Renewable Drought Analysis
Dor Hirsh Bar Gai, NWPCC

Heutte said he had very serious concerns about the framing of renewable drought on [Slide 19] as drought conjures a mental image of months-long time frame. He then said we have a hours-long solar drought every day. Heutte said the biggest question is around the scope, asking if it is the Region or the broader west. He thought it best to reframe the issue as a low-output condition with an RA component.

Hirsh Bar Gai said this is a good comment and will be addressed on the next slide.

Garcia asked about wind characteristics, saying you have to feather or shut it off completely when the wind is too fast or it's too cold out. He wondered how that fit into the definition. Hirsh Bar Gai said wind shape is determined by the climate change data using a combination of temperature, turbine height, and wind speed. Hua agreed, adding that NREL tools help pick the turbans and can turn off or feather as needed. He added that the data does not include temperature at the wind site so it cannot determine if it is too cold.

Heutte again noted how big storms are [Slide 26] and how arctic winds move. He said this is why we should look at the whole region. Hirsh Bar Gai said that should be defined in the geographies.

Short thanked the team for the presentation. He asked how this analysis compares with NERC analysis for the WECC. Heutte said this analysis is done with a different modeling approach but could find broad comparisons.

Hirsh Bar Gai ended the meeting at 12:00

Attendees

John Ollis	NWPCC	Dan Hua	NWPCC
Pat Byrne	BPA	Edith Bayer	ODOE
John Fazio	independent	Fred Heutte	NW Energy Coalition
Ryan Egerdahl	BPA	Nicholas Garcia	WPUDA
Tomás Morrissey	NWPCC		

Attendees via Go-to-Webinar

Dor Hirsh Bar Gai	NWPCC	Joel Nightingale	WA UTC
Jim Bloss	Snohomish CCL	Elizabeth Osborne	NWPCC
Frank Brown	BPA	Damon Pellicori	Northwestern
Nicolas Conley	independent	Phillip Popoff	PSE
Dylan Dsouza	NWPCC	John Purvis	Clallam PUD
A. Das Choudhury	PSE	Annika Roberts	NWPCC
Rob Diffely	BPA	Mark Rohde	Snohomish CCL
Christian Douglass	NWPCC	Blake Scherer	Benton PUD
Ted Drennan	OR PUC	Nathaniel Short	Snohomish CCL
Sean Ford	PPC	Steve Simmons	NWPCC
Max Greene	Renewable NW	Kevin Smit	NWPCC
Doug Hart	PSE	Matthew Stajcar	Northwestern
Joshua Haver	Idaho PUC	Jaime Stamatson	Montana
Edward Jakubowski	Boise State	Mike Swirsky	Crit FC
Sanjeev Joshi	Crit FC	Connor Tompkins	Tacoma Power
Stephanie Lenhart	Boise State	Hannah Wahl	PSE
Scott Levy	Blue Fish	Brian Dekiep	NWPCC
Douglas Logan	independent	Greg Brunkhorst	Tacoma Power
Ian Mcgetrick	Idaho Power	Kallen Paterson	Tacoma Power
Heather Nicholson	Orcas Power & Light	Steve Schmitt	Northwestern

Landon Snyder	Snohomish PUD	Danielle Szigeti	Tacoma Power
Alex Swerzbin	PNGC Power		