

**Northwest Power and Conservation Council  
Conservation Resources Advisory Committee  
April 3, 2019**

Charlie Grist, NWPCC, began the meeting at 9:30 am with introductions. He read “A History of Weather” by former U.S. poet laureate, Billy Collins. He then reviewed the agenda

**PLAN Development & Scope**

**Charlie Grist, NWPCC**

Shani Taha, UCONS LLC, recalled that the Seventh Power plan had action items, like working towards penetrating hard-to-reach markets [Table of Contents.} She asked how the 2021 Plan will address action items still unfinished beyond the mid-term update. Grist said there will be an opportunity to develop new assessments of remaining potential and focus from there.

Danielle Walker, BPA, asked where the Action Plan is. Kevin Smit, NWPCC, pointed to “Slimmed down and high-level Action Plan” in Section 1 saying this indicates that there will be fewer action items this time around. Jennifer Light, NWPCC, suggested that some action items, including items for BPA, will be sprinkled throughout the Plan.

Nicholas Garcia, WPUA, asked if any thought will be given to the locational values of resources or if the analysis will be strictly regional. Grist pointed to West/East nodal analysis and locational costs for transmission, but said that further granularity is still up for discussion. Garcia referenced WA’s probable move to a Clean Energy Standard and potential problems meeting peak and non-peak loads if the eleven thermal resources west of the Cascades close. He felt that this will change the locational values of resources. Grist stated that this is a topic for the Systems Analysis Advisory Committee.

**Quantifiable Resource Cost Framework**

**Jennifer Light, NWPCC**

Jeff Harris, NEEA, noted that Public Health is important under the Power Act and asked why Indoor Air Quality is excluded [Slide 12.] Light said IAQ doesn’t meet the definition of “environmental” which relates more to fish, wildlife and greenhouse gas particulates.

Garcia moved back to [Slide 11] saying the middle boxes about transmission address his earlier locational value question. He asked if there will be any cost curve to represent these differential benefits. Light stated that T&D values are not location-specific but broadly spread throughout the region. Tina Jayaweera, NWPCC, added that the utilization factor is meant to average values over the region. She said that the Plan will include narrative language to stress that that locational values could be quite different than regional values.

Walker noted that particulates are defined as quantifiable environmental costs yet the Council did not move forward with them on the Seventh Plan. She asked if the same will hold true for the 2021 Plan. Light stated that staff is addressing this but was not sure where the work would

land. Walker then said the workbook has old T&D numbers. Light answered that staff is updating the workbook.

Gurvinder Singh, PSE, asked if there will be more detailed discussion to come. Grist stated that there is a lot of judgement around “direct” versus “indirect.”

Kurtis Kolnowski, AEG, asked when Program Administrative Costs methodology will be discussed [Slide 16.] Light said it’s planned for the next meeting and called for approaches and data. Kolnowski referenced work he did for clients in six different states that found an average of 20%, adding that the measure mix is important.

Whitney Rideout, Evergreen Consulting, inquired where the baseline for this work comes from. Light explained that baselines are measure-dependent and lost-opportunity measures look at current market data and other factors. Rideout asked about plans to explore where technology is on the adoption curve, citing high and low adoption of LED lights as an example. Grist said he would appreciate input on lighting baselines, noting the Seventh Plan’s method of bundling by application. Light said the RTF has leveraged BPA’s non-residential market model, calling it a good starting point.

Singh moved back to [Slide 11] saying the environmental costs and benefits are not on [Slide 16.] Light said water savings are the environmental benefit seen for clothes washers. Jayaweera added that some environmental benefits and costs will come out of the Regional Portfolio Model and not the measure. She moved to [Slide 9] to illustrate.

Rich Arneson, Tacoma Power, asked if capacity will be modeled during normal or extreme weather. Light said that is the next discussion topic. Grist added that extreme weather impacts are picked up by the Resource Adequacy analysis with the GENESYS model which are then input in the RPM. Grist said a measure’s capacity contribution during a peak hot or cold day is something that they are still trying to pick up.

James Vanden Bos, BPA, referenced the BPA-specific part of the 2021 Plan, asking if there will be multiple sets of assumptions or the same set for BPA and the region as a whole. Light said if data shows differences in supply curve costs it should be reflected and called for data to inform this.

Singh asked what the resource value delta is between the Seventh Plan and the 2021 Plan. Light said there is nothing new here but this is a better way to communicate between teams. She also felt this approach will be very valuable for the RTF.

## **BREAK**

### **Climate Baselines for the 2021 Plan**

**Charlie Grist, NWPCC**

**Northwest Temperature Data in the 2030’s (2020-2049)**

## **Dan Hua, NWPCC**

Singh asked for a clarification of GCM [Emission Scenario/MACA vs BCSD] Hua explained that GCM relates to the different parameters of each model. Grist said the Global Circulation Model tracks the circulation of heat and moisture in air masses and oceans in relation to the jet stream.

Garcia confirmed the possible three-degree daily difference [Slide 21] and asked if there was an average, systemic difference between actual and model estimates. Hua said he didn't calculate the numbers as the chart shows the similarities.

Singh asked if warming should be less for a coastal city [Slide 25.] Hua answered that some GCM predict a higher upper range and the data is due to the spread. He also pointed to annual time scale averages and picking annual versus daily.

Garcia [Feedback & Discussion] called the approach a very valid way to proceed as the method will be used throughout the model and not just for the conservation portion. He stated that changes in stream flow will lead to different wholesale power prices which are the base for valuing conservation.

Ted Light, EES Consulting, cautioned that there is a risk of missing more sustained heat waves when applying maximum and minimum temperatures to TMY data. He suggested giving longer periods of heat instead of shifting the temperature up. Grist said the TMY data can be analyzed for duration of events.

Harris said the min/max range for the Climate Change models is bigger than TMY [Slide 46] which he took as a sign of more uncertainty and variability. Jayaweera said the blue range represents the 30-years of the model while the orange line is one typical year. She said an overlay of the historical range would be much closer to the Climate Change model. Hua agreed.

Grist agreed that this methodology would not pick up more frequent excursions from normal. Jayaweera concurred, but said this method is the best blend of the available data and models.

Kolnowski called this analysis interesting but wanted to see how baselines and sensitivities are incorporated. He voiced concerns about the treatment of extreme events.

Brenden O'Donnell, SCL, understood the desire to reflect more cold and warm snaps but called this method pretty good absent of more granular climate data.

Aquila Velonis, Cadmus, asked if [Slide 30] was confirmed and verified. Hua said no because the purpose is to preserve the TMY shape and moved to [Slide 42] to illustrate. Grist agreed that the application could be tested across a threshold. Velonis stated that this information will be used in the SEEM model and asked if there will be other adjustments for cooling, solar gain, etc. Jayaweera agreed that SEEM focuses on winter and may not accurately reflect summer. J. Light pointed to recent cooling calibration work in SEEM.

T. Light moved to [Slide 34] to confirm that monthly A and B coefficients will be calculated and applied daily and asked why the coefficients are being solved for the month. Grist said it's to preserve the TMY shapes. Kolnowski suggested ranking historical data from hottest to coldest and not using the calendar month to give more granularity without changing the shape.

Garcia voiced concern over mixing temperature-sensitive conservation resources together and allocating them to locations with very different weather as the resources will have different values by location. Grist proposed different curves for different cities, as reflected in the RTF's use of climate zones. Jayaweera added that she has a limited number of cities with climate change downscale information.

## **LUNCH**

### **Energy Efficiency and Demand Response Interface**

#### **Tina Jayaweera, NWPCC**

Kolnowski asked if [What is this Interaction?] is about summer, winter or both. Jayaweera said both and pointed to the CTA 2045 study which looked at DR on HPWH and electric resistance water heaters that showed differences in availability.

O'Donnell asked about the DR benefit that comes with an EE measure [Staff's Thought Process...] wondering if the incremental costs would be borne by the energy savings and not the DR. Jayaweera replied yes adding that an enablement cost specific to DR would be borne by the DR. O'Donnell guessed that that capacity would be selected. Jayaweera agreed, if it was needed and costs were low. She added that all DR will be binned.

Kolnowski recalled methods that prioritize measures that bring more flexibility. He wondered if the model would pick a thermostat with a five-year measure life as it wasn't cost effective. Jayaweera said the challenge is valuing flexibility in the models, noting that GENESYS is hourly while the RPM is quarterly.

Harris asked if the RPM will exercise these resources for incremental load increase when there are excess renewables. Grist confirmed that he's talking about values going both ways.

Ben Kujala, NWPCC, said he sees a future where DR, energy storage and other are compared in the RPM for a dominant solution. He stated that the RPM solves for big effects. Kujala agreed that some DR can be used as storage but said the hydro system can store as well and all must be given equal consideration. Harris agreed that the scope of this kind of thermal storage is small today but at scale can swell to over 100MW and add flexibility when they hydro system couldn't respond.

## **REGIONAL PORTFOLIO MODEL**

### **Ben Kujala, NWPCC**

Singh said [Slide 13] illustrates that some measures will not be offered in 2022. He asked how to create an input that allows the RPM to select EE every year. Kujala said this graph would be impossible in the Seventh Plan and the underlying factor is the ability to set a price target that's not based on market.

Harris asked if once the old RPM purchased EE it made a commitment to purchase it throughout the remainder of the analysis period. Kujala said that is *almost* correct, explaining that the RPM could adjust if market price crashes or spikes but the adder stays constant. Harris cautioned that EE programs can't be infinitely ramped up and down like a physical generating asset. He suggested a time element for ramping be added to the new methodology, particularly as the region moves away from lighting and towards more challenging measures. Kujala stated that the model puts out many numbers and analyst judgement and narrative will always be important.

Walker asked if the model will be given a "savings" amount or a "buy up to" amount. Kujala said it's a "buy up to" amount. Walker asked how many iterations are planned. Kujala said iterations are not analogous and a lot of information goes into it, but for stability it's between 500-**and 600 plus**. Walker added that having the bins reflect load shape really matter and asked if the type of savings is going to be applied. Kujala wasn't sure, saying careful thought is required to get a big, regional picture.

Wendy Gerlitz, NWECC, stated that the load shape does matter from a regional perspective and wouldn't support a method that doesn't take load shape into account. She called this an increasingly important question for the region.

Grist said what matters is how you bundle EE, noting that bundling by levelized costs combines shapes but bundling by cost of shaping bin would not. Kujala asked if load shape matters if all measures are under \$20. Gerlitz agreed that this is an issue with higher cost measures, particularly something that would save during winter peak. Kujala said work is continuing on the bins and analyst judgement will always be important.

Harris asked if the same constraints that ran in the Seventh Plan can be applied here so scenarios can be compared. Kujala said that depends on how much bundling logic the CRAC puts in. Harris said this was more about testing the system costs and benefits of a dynamic EE delivery mechanism versus a more static EE resource. Kujala said you bundle differently or with different costs the model will not run.

Grist said he thought this is about inertia which was accounted for in the Sixth and Seventh Plan. Kujala said this iteration will have limits. Harris agreed that the ramp rate methodology is sophisticated at the measure level but was concerned about inertia constraints around the macro level of bundling. Kujala stated that maximum ramp rate is bundled and again stressed that the model is a tool to help an analyst tell a story.

**BREAK**

## **Savings Shape Enhancements for 2021 Power Plan**

### **Jennifer Light, NWPCC**

Kolnowski responded to the ask for more data [Slide 18] noting that big utility customers often drive the load shapes which means the data might be confidential. Smit agreed, saying that's why he's asking for water/wastewater information. He added that the Council will sign confidentiality agreements if it helps.

Arneson suggested avoiding the issue by asking for a percent per hour. Smit agreed that would be good but might require some more questions.

### **NEXT STEPS**

Walker suggested adding BPA-specific work to the fourth-quarter CRAC meeting. Smit agreed

Grist ended the meeting at 3:30.

### **Attendees**

Charlie Grist	NWPCC
Tina Jayaweera	NWPCC
Kevin Smit	NWPCC
Jennifer Light	NWPCC
Anika Roberts	NWPCC
Amy Wheelless	NWEC
Torsten Kieper	BPA
Ted Light	EES Consulting
Aquila Velonis	Cadmus
Danielle Walker	BPA
Kurtis Kolnowski	AEG
Shani Taha	UCONS LLC
Whitney Rideout	Evergreen Consulting
Curtis Johnson	Benton REA
Wendy Gerlitz	NWEC
Gurvinder Singh	PSE
Kerry Meade	Northwest Energy Efficiency Council

### **Attendees via Webinar**

Adam Schultz	ODOE
Austen Terrell	Idaho State Dept of Agriculture
Bobbie Wilhelm	Idaho Falls Power
Brandy Neff	PNGC
Brian Dekiep	NWPCC
Cory Read	Idaho Power
Dan Patry	Oracle
Dave Moody	BPA

Brenden O'Donnell	SCL
Rich Arneson	Tacoma Power
Stephanie Pettit	BPA
Jeff Harris	NEEA
Ross Holter	Flathead Electric Co-Op
Ryan Finesilver	Avista
James Vanden Bos	BPA
Julia Shaughnessy	BPA
Nicholas Garcia	WPUDA
Jack Cullen	Energy Trust of Oregon
Jessica Mitchell	SnoPUD
Deborah Reynolds	WA UTC
Bob Davis	Ecotope