Northwest **Power** and **Conservation** Council

Council Meeting Summary
August 16-17, 2022
via Webinar

This a summary of the agenda items that came before the Council at its August 16-17, 2022, public meeting and, where appropriate, the actions the Council decided upon. The summary is intended to provide a general synopsis only for each agenda item. For further details, the complete set of information for the meeting includes the meeting agenda, the packet and presentation material for each item, the recording of each agenda item during the meeting, and subsequent documentation of any decisions by the Council. These meeting materials are posted with this summary at https://www.nwcouncil.org/calendar/council-meeting-august-16-2022/.

Tuesday, August 16, 2020

Council Chair Guy Norman brought the meeting to order at 3:01 p.m. Council Members Jeffery Allen, Doug Grob, Ginny Burdick, KC Golden, Jim Yost, Louie Pitt Jr., and Mike Milburn were in attendance via webinar. The next Council meeting is scheduled for September 13-14, 2022, in Portland, Oregon and via webinar.

Council Meeting Agenda Items

1. Energy Strategies Lower Snake River Dams (LSRD) Study sponsored by NW Energy Coalition

Jennifer Light introduced NWEC's Executive Director Nancy Hirsh and Keegan Moyer, Energy Strategies, to discuss their latest analysis of the four Lower Snake River dams power replacement study commissioned by the Northwest Energy Coalition (NWEC).

Nancy Hirsh explained that the observations should be combined with the Coalition's broader regional impact analysis, which the Energy Strategy completed in 2018. Both studies conclude that a portfolio of demand and clean supply side resources should be used to replace the Lower Snake River dams' energy services while maintaining reliable and affordable service for the region and that those technologies are available to meet the needs when the dams are removed.

Keegan Moyer described briefly what Energy Strategies does for the energy sector and for whom they work. Moyer provided an overview of the study, which included identifying an optimal and least-cost set of specific investments required to meet or exceed the current services needed to replace the Lower Snake River dams in late 2020. Viable portfolios were tested to ensure they could be dispatched to match the high-ramp days observed in historical dam data.

The key findings are consistent with the previous study. A diverse mix of wind, solar, demand response, and batteries at a net annual cost of $309M - $277M would be sufficient to replace the dams' historical energy, capacity value, and ramping. Morgan explained that replacing the dams one-for-one could increase annual replacement costs by $32 million annually compared to scenarios that assume a planning objective based on future regional needs. According to the study, Moyer emphasized that replacement portfolios will generate power when the region needs it the most, resulting in $69M - $143M in energy value over what the Lower Snake River dams provide for the same period.

Council Member Grob stressed the importance of dependability and inquired about the portfolios' confidence in meeting sustained winter capacity needs as weather conditions become more extreme due to climate change. Hirsch agreed with Member Grob regarding the importance of reliability challenges facing the region and explained the methodology used in the study as related to resource adequacy. Hirsh added that the analysis also assumes that technology will keep advancing to help meet longer-duration weather issues. Member Golden asked clarifying questions regarding the firm capacity needed to replace the dams. Member Yost inquired about ancillary services and how changes in the rest of the system would be evaluated if the Lower Snake River dams were removed. Moyer explained that the 2018 study had detailed contingency and operational reserve modeling when they modeled the entire regional hydro system.

Presentation materials are at: https://www.nwcouncil.org/fs/17854/2022_08_1.pdf.

Wednesday, August 17, 2022

Council Meeting Agenda Items (con't)

Council Chair Guy Norman brought the meeting to order at 9:02 a.m.

Reports from Committees

Fish and Wildlife Committee

The Fish and Wildlife Committee did not meet in July.

Member Allen, Fish and Wildlife Committee Chair, however, took a moment to mourn the death of Idaho Council staff Steve West, who died recently. Steve had a great working relationship with the Council and its staff.

Power Committee

Member Yost, Power Committee Chair, reported on the Power Committee Meeting held on August 16, 2022.

1. Update on GENESYS Model Assumption Refinement Process

Council staff met with the Committee to discuss the undergoing effort focused on revisiting GENESYS model inputs to better reflect the actual operations of the Northwest hydro system. The staff outlined and discussed the changes to the GENESYS model. This work is important for the Council's analysis of resource adequacy.

For the report and the presentation materials, see https://www.nwcouncil.org/fs/17861/2022_08_p1.pdf.

2. Update on Annual Study Progress and Discussion on Direction

John Ollis, Manager of Planning and Analysis and John Fazio, Senior Power System Analyst provided to the Committee an update on the process of developing the Council's annual resource adequacy assessment. Council staff discussed the adequacy

study scope and advisory committee feedback, and the process to utilize the WECC wide buildouts from the market price forecast to support the adequacy assessment.

For the report and the presentation materials, see https://www.nwcouncil.org/fs/17859/2022_08_p2.pdf.

3. Offshore Wind Update

Council staff provided a high-level overview of the current state of offshore wind technology and timeline to develop offshore wind farms. Offshore wind could complement existing renewable resources and provide additional resources. Staff presentation to the Committee details the technology, limitations, costs estimate, and the regional implementation efforts.

For the report and the presentation materials, see https://www.nwcouncil.org/fs/17859/2022_08_p2.pdf.

Public Affairs Committee

Member Pitt, Public Affairs Committee Chair, reported on the Public Affairs Committee Meeting held on August 10, 2022.

The Public Affairs Committee discussed an update on the Council's Congressional staff tour in Washington DC delegation visit scheduled for the week of September 19, 2022. Other topics of discussion included the transparency of the Committee and the hiring process for the Public Affairs Division Director.

Council Meeting Agenda Items

2. Update on Federal Energy Efficiency Standards

Kevin Smit, Council's Senior Energy Efficiency Analyst, updated the Council on the status of the US Department of Energy's (DOE) commitment to revise and establish new appliance efficiency standards. Smit explained the difference between codes, which refers to building codes, and standards, relating to appliances and equipment. The program's core components are developing and updating test procedures, establishing national minimum efficiency standards based on those test procedures, enforcing the standards, and supporting the FTC's EnergyGuide labeling. The Council supports and participates in the US DOE's standards efforts due to its importance in

supporting elements of the Power Act, including the equitable distribution of conservation benefits and its cost-effectiveness. The influence of these standards has significantly reduced the energy use of appliances.

Smit provided an overview of how utilities are involved with the program. The involvement of Council staff also includes access to a wealth of technical data that informs our work as well as the work of the Regional Technical Forum. The key responsibility in this effort is to highlight priority items, particularly those related to the Power Plan. Smit explained that the test procedure defines the condition under which the appliance or system must be tested to demonstrate efficiency level. The Energy Policy and Conservation Act of 1975 established test procedures, labeling, and energy targets for consumer products, with the promise of standards to implement if voluntary targets are not met. Smit provided an overview of what the DOE must consider when determining standards and the revision process. He informed that savings from codes and standards represent 21% of the region's efficiency savings since 1978.

Smit informed on how the Council is involved with the program, including contribution of data and expertise. Act amendments and legislation have added new standards for over 60 various kinds of equipment and appliances. According to Smit, there is presently a large backlog of proposed actions. DOE has completed 53 of the more than 100 actions currently being considered. The primary objective is to update 48 standards by the end of the year. 38 standards are overdue for revision, with lawsuits pending on 20 of them.

Member Golden asked whether electrification is part of the process. Smit explained that electrification is not part of the standard process, and more research is needed due to interest in discovering new emerging technologies and new levels of efficiency

Presentation materials are at: https://www.nwcouncil.org/fs/17857/2022_08_2.pdf.

3. Status of Western Resource Adequacy Program

Council staff Jennifer Light introduced Sarah Edmonds, president of the Western Power Pool (WPP), to provide a high-level overview of the Western Resource Adequacy Program (WRAP) and an update on program development. Even though Edmonds has only been in her new role since April, she praised the work before she joined the organization and stated that her goal is to maintain communication and shared learning. She believes that the WPP and Council should collaborate and be fluent in the various approaches to resource adequacy.

The WRAP program is an industry-driven initiative for a regional approach to help ensure resource adequacy in light of changing resource composition and increased

resource uncertainty. Edmonds explained that this approach is unique; no state law or federal mandate requires the program, and participation is voluntary. A resource adequacy program is typically part of a Regional Transmission Organization (RTO) or Independent System Operator (ISO). Without an organized market, the WRAP establishes a process to meet resource adequacy over a larger area than is currently possible in the region. The WRAP sends out a single picture of regional needs with the potential to send much more accurate signals about the actual depth of reliable market supply or the demand to build new resources. The program has the potential to reduce costs through diversity planning that is pooled together to provide participants with access to resources that they would not have otherwise.

Edmonds explained that they are currently in a non-binding period that will last until the winter of 2024-25, which includes the showing phase for the winter of 2022-23. From summer 2025 to winter 2027-28, there will be a transition period. Without transition provisions, the Binding Program will begin in the summer of 2028. Compliance will necessitate participant action and will be accompanied by significant compliance penalties. The intention is to send a signal that encourages participants to have sufficient resources. Edmonds further explains the program design overview, including the forward showing program, the operations program, the binding timeline, and the current phase of activities.

Member Golden expressed gratitude to Edmonds for the program's work and ability to enable smarter collective decisions. Member Grob added that the program's broad scope benefits everyone and emphasized the importance of resource adequacy as the weather becomes more extreme. Edmonds responded that a culture of continuous improvement is required for the program to build resiliency by identifying best practices and the ability to balance reliability with costs. Chair Norman asked if the non-binding period is a test drive. According to Edmonds, this transition provides a learning opportunity to understand and adjust the program without incurring any compliance penalties.

Presentation materials are at https://www.nwcouncil.org/fs/17855/2022_08_3.pdf.

4. Lower Snake River Dam (LSRD) Studies Presented by Energy GPS

Council staff Jennifer Light introduced Scott Simms, Executive Director of Public Power Council, and Kurt Miller, Executive Director of Northwest RiverPartners. They presented two studies related to the Lower Snake River Dams. The first study, "Impacts of Lower Snake River Dam Removal and Increase Spill Requirements on Cost, Carbon Emissions, and Reliability" commissioned by the Public Power Council, looks at the impacts from increased spill and potential breaching of the Lower Snake River dams on

energy and capacity, carbon emissions, and costs. The second study, "Lower Snake River Dam Power Supply Replacement Analysis" commissioned by Northwest RiverPartners evaluates the power supply-related cost and carbon emissions impacts of breaching the Lower Snake River dams.

Simms stated that Public Power Council commissioned an extensive quantitative study to analyze the impact on the region of removing the Lower Snake River dams. The study relied on actual historical generation and market data from recent extreme events and the role the dams played in those events and what could happen in the future without the dams' resources. Simms explained that the risk of extreme electricity prices and blackouts is the highest since the western energy crises took place 20 years ago.

Simms then introduced Tim Belden, Principal at Energy GPS. Belden began with a brief history of the northwest power industry and what has changed. He explained the study's critical questions, which included quantifying the lost production due to spill rules or the Lower Snake River dams' removal, the current state of the marker, and understanding where replacement energy will come from. Belden used historical data from 2017 to 2021 to calculate the average energy and maximum generation lost by month and hour as a result of proposed spill rules and complete dam removal. He also presented the various data and scarcity event case studies used. The study found that the 2023 one-year replacement cost for increased spill is $250M, removal is $655M and $791M for combined spill and dam removal. He emphasized that scarcity events are becoming more common, as evidenced by higher power market prices. The number of days per year when the Mid-C market price exceeds $100/MWh has increased in the region. Price spikes are becoming more common, and Belden demonstrated that the forward price for Mid-C peak power has more than doubled since April 2021. Member Grob asked a clarifying question about what the Lower Snake River dams were producing during the late February-early March 2019 event. Simms reported that the Lower Snake River dams produced 1500MW.

Miller acknowledged the important and excellent work performed by the Council members and staff as it is critical to the region's reliability and affordability. He introduced Dr. Steve Edburg, Director of Market Analysis of Energy GPD, to present the study commissioned by RiverPartners due to concerns that other studies assume the region has excess capacity and not fully replace what would be lost with dam removal. Miller emphasized that other studies overlook the fact that the northwest region has enacted stringent decarbonization legislation. Edburg explained that the study's overarching goal was to quantify the impact of removing the Lower Snake River dams by comparing two policy futures and measuring the impacts associated with dam removal. The study used a long-term production cost model with and without the dams to compare the cost, timing, and carbon emission impact of removal.

The high-level findings, according to Edburg, include significant capacity additions required to meet energy laws, 160 GW by 2045 in the Western Power Pool footprint, and replacing the four lower Snake River dams would require another 14.9 GW of new renewable capacity, estimated to cost $15 billion in net present value. Clean energy targets will not be met until the late 2050s to 2070s, according to the analysis, if historical installation rates of new renewables are doubled. Finally, dam removal in 2030 would increase emissions until replacement resources were built in the 2050s to 2080s timeframe. Edburg explained the clean energy targets and the approach used in the study. The production cost model used an optimization engine with the least cost solution to meet load subject to constraints which is widely used in the industry. Edburg explained the hydro modeling was calibrated to 60-dam, historical hourly hydro production database from 2010 to 2021. He explained the study differentiators with the studies conducted by EGPS, E3, and Energy Strategies. The study did not include new generating technology.

Member Golden thanked the presenters for filling in the larger content around the challenges the region is facing and reiterated the significant differences in the studies reviewed by the Council. He asked regarding the replacement higher cost estimate in this study. Edburg noted that while the E3 study included more emerging technologies such as small modular nuclear, hydrogen, and offshore wind, one of the E3 scenarios showed a 12 GW build to replace the Lower Snake River dams although the E3 study did not examine how reserves are met, he thinks the results are comparable. Member Milburn added that the Power Plan iterates that we must achieve a cost efficiency energy plan and must be reliable and available when the time is needed. He ensured that the Council would ensure such power. The Council members thanked the presenters to help the Council make the right decision.

Presentation materials are at
https://www.nwcouncil.org/fs/17875/2022_08_4_spillanalysis.pdf and
https://www.nwcouncil.org/fs/17874/2022_08_4_replacementanalysis.pdf.

5. Council Business

Approval of July 2022 Council Meeting Minutes

Motion

Vice-Chair Grob moved that the Council approve for the signature of the Vice-Chair the minutes of the July 12-13, 2022, Council Meeting held in Spokane, Washington, and via webinar, as presented by staff.

Member Yost seconded.
No discussion.
Voice vote – all in favor, none opposed.
Motion was approved.

The approved minutes of the July 2022 Council meeting and other materials from that meeting are at https://www.nwcouncil.org/fs/17862/2022_08_5minutes.pdf.

Council decision on End Use Load Scoping contract

Steven Simmons, Council's Principal Analyst, reviewed the proposed action for the Council to approve a contract with The Cadeo Group for the amount not to exceed $48,845 for an end use load forecasting scoping project to evaluate the Council's modeling tools. The project would be spread across the 2022 and 2023 fiscal years. The proposed project is broken into individual tasks. The initial tasks are proposed to be completed in fiscal year 2022. This would include a project kickoff and a completed outline of identified requirements. The remaining tasks would be completed in fiscal year 2023. These tasks include the identification and vetting of potential tool options and a suggested path or recommendation. The recommendation will be considered during following step of selecting and implementation an any end use load forecasting product.

Motion

Vice-Chair Grob moved that the Council adopt the Scoping for an End Use Load Forecast Model contract in an amount not to exceed $48,845, as presented by staff.

Member Yost seconded.
No discussion.
Voice vote – all in favor, none opposed.
Motion was approved.

Public Comment on any issue before the Council

Christina Wyatt
Power Manager at Big Ben Electric Co-Op Inc between Spokane and the Tri-Cities in Washington. Wyatt commented on the dam removal study presentation by Energy Strategies; on market assumptions vs real world market conditions; on solar and transmission availability and costs; on the work of Public Power Council in trying to find

solutions; and on the work of the Council in analyzing developments in the power industry.

Scott Levy
bluefish.org. Levy commented on the lower Snake River studies presented to the Council at the last meeting and this meeting; on the Council's analysis of dam removal in the Sixth Power Plan and on information in the Council's 2007 Carbon Footprint paper; and on the Council's current position on lower Snake River dam removal and analysis.

Chair Norman adjourned the meeting at 12:20 p.m.