

PNWCC Council **REPORT**



Northwest Power and Conservation Council

Meeting Notes
February 12 & 13, 2019
Portland, Oregon

As policymakers continue their quest toward decarbonization legislation, the region’s energy producers and utilities are working to piece it all together to ensure there is a reliable, affordable power system. The Council heard the results from a recent study that tackles that very question.

Another newsworthy moment came when representatives from Bonneville, Nez Perce, CRITFC, U.S. Army Corps of Engineers, Oregon Fish and Wildlife, and Washington Department of Fish and Wildlife gathered around the same table to announce an agreement on flexible spill on the Columbia River. The substantive agreement bodes well for future cooperation on matters important for fish mitigation and ratepayers alike.

Council Members Jennifer Anders, Tim Baker, Richard Devlin, Ted Ferrioli, Guy Norman and Jim Yost were in attendance. Member Tom Karier joined by phone. The replacements for Members Karier and Bill Booth have not yet been named. The next Council Meeting will be held in Portland, Ore., on March 12 and 13, 2019.

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The Agenda

Load, reliability and a changing resource mix

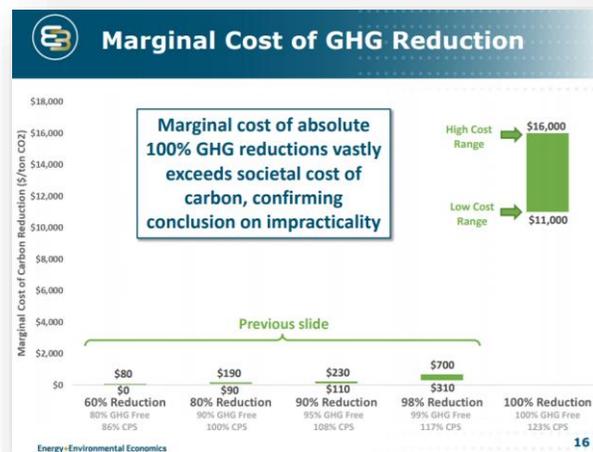
With the West hurtling toward more-stringent decarbonization goals and coal plant retirements in the near future, the question of how to maintain system reliability is top of mind for the region’s power planners. A study sponsored by the Public Generating Pool, in collaboration with Puget Sound Energy, Avista and NorthWestern, examined power system adequacy in 2018, 2030 and 2050 under different decarbonization levels.

Sufficient firm capacity needed to maintain resource adequacy

Arne Olson, E3 senior partner, told Council members the study found it is possible to maintain resource adequacy for a deeply decarbonized Northwest electricity grid, as long as sufficient firm capacity is available during periods of low wind, solar and hydro production.

Natural gas is the most efficient way to maintain that firm capacity compared to other resources. And new gas capacity is not inconsistent with deep reductions in carbon emissions, he said. Other energy resources such as wind, solar, demand response and short-duration energy storage can contribute, but they are limited in their ability to meet Northwest resource adequacy needs.

The most difficult conditions for reliable electric service are multiday, high-load, low-renewable production events. A power system that has to rely on wind and solar for a significant proportion of its energy is extremely vulnerable to low-production events.



To meet this, a massive overbuild of renewables would be required to serve load during these events. The study confirmed that removing the final 2% of carbon under a 100% reduction scenario would be extremely costly and impractical, requiring an additional investment of \$100 billion to \$170 billion, relative to the 98% reduction scenario.

Under this scenario, nearly half of wind and solar generation is wasted because it is not needed to serve load during most hours and the issue of finding adequate land to site new wind and solar facilities is not addressed.

New firm generation is needed in the near term

Olson pointed out that the region's system already is in a very tight load/resource balance and currently does not meet the Council's standard for Annual Loss of Load Probability of 5%. The region will need new capacity in the near-term to maintain an acceptable level of resource adequacy after planned coal retirements.

The wind and solar we want to build to help us with carbon emissions doesn't help us with capacity to serve multiday winter events, said Olson. Solar helps meet peak in the Southwest, but the Northwest has a wintertime problem.

Other potential low-carbon firm capacity solutions such as new nuclear generation, gas or coal generation with carbon capture and sequestration, ultra-long duration electricity storage, and replacing conventional natural gas with carbon-neutral gas is out there.

When asked about conservation and demand response, Olson said the study assumes a large amount of conservation already, and demand response is another resource to turn to. We're trying to solve a multiday problem, and demand response is in the four-hour duration range.

Asked if a larger market would help, he said "There is value to combining larger markets across the West with the wind from the Rockies, the hydro battery in the Northwest and the sun in the Southwest – it isn't enough." Olson said baseload capacity is still needed for Resource Adequacy. Member Ferrioli added, looking at a wide variety of energy resources, including natural gas makes sense.

Parties forge an agreement on Columbia River flexible spill

Collaboration results in win/win for hydro and fish

Frequent legal adversaries found themselves together in front of the Council to share good news on the 2019-2021 Spill Operating Agreement, which calls for more spill during nonpeak hours and more generation during the more-profitable morning and evening peak usage hours.

Elliot Mainzer, BPA administrator, said he's never seen a better example of collaboration and problem-solving on issues that have been incredibly divisive and challenging. "It's amazing to me that we're sitting here today with this Agreement," he said. "The parties came together, listened to each other, built trust and established a set of joint criteria where they could look at ways to improve salmon survival and preserve flexible, affordable hydro."

Rob Lothrop, manager of policy development and litigation support for the Columbia River Intertribal Fish Commission, said that negotiations began a year ago to determine if there was a way to increase spill for fish without raising costs for BPA customers. Negotiators looked at a three-pillar approach, seeking to provide fish benefits, provide federal power system benefits, and provide operational feasibility. "We needed a win/win for hydro and fish," he said.

The parties to the agreement are the states of Oregon and Washington, the Nez Perce Tribe, the Bonneville Power Administration, U.S. Army Corps of Engineers and the Bureau of Reclamation. The states of Idaho and Montana reviewed the agreement and are supportive of the flexible operation. Credit was given to all the parties for buckling down and hammering out an agreement in a short period of time.

Ed Bowles, fish division director for Oregon Department of Fish and Wildlife, said the changing dynamics of energy sector and how the fish are performing has provided this opportunity. The three-year agreement is focused on spring operation, increases spill when hydropower demand and

value is lower, and reduces spill when hydropower demand and value is higher. Because of the integration of renewables, daytime hours are less profitable for hydro, Bowles said. For the flex to work, state water quality allowances for fish-focused hours will need to be modified.

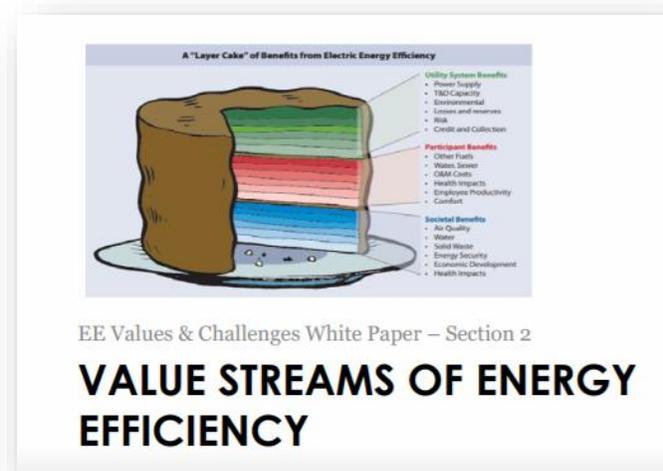
Dave Johnson, fish manager for the Nez Perce Tribe, said they have performed a lot of work in the Snake River Basin growing and tracking fish. “there are a bunch of areas we can’t do anything about, but they’re the bread basket for salmon in the Snake River Basin and the Columbia River. We just have to watch it.” He said they wanted to push on the hydro system to see if they could eke out a little bit more, including calling for higher spill and breaching to see if that could recover populations. They felt they had to be a part of this effort.

Michael Garrety, Columbia Basin mitigation manager for Washington Department of Fish and Wildlife, said that water quality standards for total dissolved gas caps will need to be adjusted by Oregon and Washington for the increased spill. Conditions this spring will be monitored to make sure it’s not harmful to the environment.

Responding to a question from Member Devlin on the need for monitoring and evaluation, Bowles replied that the evaluation and adaptive management components are already robust, so they won’t cost a lot of new monitoring dollars. It does require a commitment to the existing monitoring structure through the comparative survival study, the smolt passage program and the water quality investigations, he said.

There are offramps for the U.S. Army Corps of Engineers if operations are put at risk. And some uncertainty exists on the power side as power models are uncertain, but we’re confident BPA power employees will leverage the value of those eight hours, Bowles said.

White Paper examines energy efficiency values and challenges Open for public comment through March 29th



The Council voted to release a draft white paper on *Energy Efficiency: Values and Challenges* for a 45-day public comment period. The paper provides a broad overview of the value of energy efficiency and describes the short- and long-term impacts of the development of efficiency on utilities in different circumstances. The paper takes a look at the value stream of energy efficiency, and how the power system, society and end-use customers gain value.

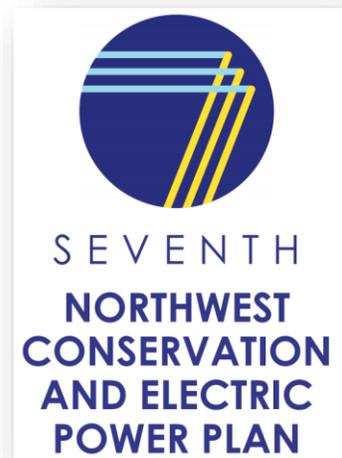
The Council has long heard from various Bonneville utilities on their different experiences with energy efficiency programs. While the *Seventh Plan* assesses the value of energy efficiency regionally, it does not look at distribution of the costs and benefits across utilities.

The white paper provides background information on Bonneville energy efficiency program structures and Bonneville rates. The paper also delves into two challenges associated with energy efficiency: structural impediments – rates and programs; and implementation challenges – small and rural, local market, hard-to-reach markets and split incentives.

Council releases *Seventh Power Plan* midterm assessment

The Council approved the *Midterm Assessment of the Seventh Power Plan* along with the Response to Comments from 11 parties on the Draft. According to Power Division Director Ben Kujala, substantial regional progress has been made since the *Seventh Plan* was approved and the region is on track.

Meeting conservation targets and GENESYS modeling redevelopment are on track. However, limited progress has been made on distributed energy and studying the effects of new resource development and associated transmission lines on wildlife and the environment, outside the direct effects of hydropower.



Key economic drivers show that population is increasing faster than predicted in the *Seventh Plan*, as more residential units are being built and commercial floor space is growing, while industrial sector output growth is flat.

The price effect load forecast shows that energy is within the *Seventh Plan* range, as is winter peak. Summer peak is in the high range of the *Plan*.

The report includes a discussion on progress toward acquiring cost-effective demand response or import capability sufficient to provide the region with an additional peaking capacity of 600 MW. While many utilities are putting demand response in their integrated resource plans, barriers remain – economic, organizational, infrastructure/technological and regulatory.

The *Seventh Plan* put forth a robust resource strategy, Kujala said, but changes including California's increased regional portfolio standards, larger than expected decrease in generating resource costs, higher summer peak forecasts and the retirement of additional thermal resources have occurred. Still, the Council does not anticipate a substantial shift in its resource strategy, he said.