

Northwest Power and Conservation Council Minutes of the January 13, 2021, Council Meeting

Council Chair Richard Devlin brought the meeting to order at 9:03 a.m. Council Members Jeffery Allen, Bo Downen, Ted Ferrioli, Guy Norman, Patrick Oshie and Jim Yost joined by phone. The meeting was held as a webinar. The next Council Meeting is scheduled for February 9 and 10, 2021.

Reports from Fish and Wildlife, Power and Public Affairs Committee chairs

Fish and Wildlife Committee

Council Member Guy Norman, Fish and Wildlife Committee chair, reported on three items:

- There was a report from staff on the Anadromous Fish Habitat and Hatchery Review. With 134 projects, it's the largest category review and the last review of the most recent review cycle. Projects include maintenance of salmon and steelhead hatcheries and fish-diversion screens, habitat restoration, artificial production activities, and monitoring and evaluation projects. It kicks off February 2nd and will be completed by April 2022. There will be some flexibility due to Covid.
- Casey Baldwin, senior research scientist for the Colville Confederated Tribes, shared information about cultural and educational salmon releases above Chief Joseph and Grand Coulee dams. These activities are on a parallel path with the Council's phased approach to reintroduction. There are several objectives: to reconnect the people with the fish and the fish with the habitat, to have ceremonies and keep the salmon culture alive, and to provide harvest opportunity in areas that have not had fish for 60 to 110 years. Scientific studies tracked a number of fish after their release. Fish traveled up and down the reservoir. Surveys looked for spawning activity and found some redds in one group.
- The Regional Coordination Forum meets Jan 21, the first time it's met since August 2018.

Power Committee

Council Member Pat Oshie, Power Committee chair, reported:

- The timeline for releasing the 2021 Power Plan has not changed. The model analyses should be completed by May and there will be a draft in July, followed by public comment.

- Steve Simmons, principal analyst, led a presentation on hydrogen gas, looking at the prospects for its use in electric generation, transportation, onsite fuel cells and its integration with natural gas. They discussed its use in the U.S., Europe and Asia, and its potential as a cleaner fuel.
- There was a discussion on electricity imports and exports, and their impact on resource load balance and the cost of electricity. Member Oshie said there's an issue of how much can imports and exports be relied upon.
- Staff further discussed RPM baseline conditions output. The model's initial runs are continuing to indicate a very high renewable resource buildout, with limited natural gas, and a surprisingly small buildout of energy efficiency and demand response. When the model sees a resource deficiency, it boosts renewables due to their cost, speed of development and reduced emissions profile. The model views renewables as being less expensive than other resource options due to their lower build costs, low operating costs and the added value of economic incentives that are associated with those technologies, such as production tax credits and RECs.

Public Affairs Committee

Council Member Jeffrey Allen, Public Affairs Committee chair, said the committee reviewed its draft workplan for 2021, which looks to continue a “no quarter” approach to letting the public know what the Council does. They are looking to produce 140 articles, expanding the use of social media, and enhancing the use of video to explain the Power Plan. The Council now has 10,000 followers on Facebook. They also want to introduce the region to the Council's new executive director, Bill Edmonds.

1. NOAA 5-year status review update for ESA listed salmon

Leslie Bach, senior program manager, introduced panel: Mike Ford, conservation biology division director, Northwest Fisheries Science Center; and Rob Markle, protected resources division, NOAA West Coast Region.

Ford said this is a progress report of the 2021 five-year status review under the ESA. The final status review will come out later this summer.

Markle discussed the review process timeline and said the review includes:

- Science Centers report on biological status
- West Coast Region findings report (expected Fall 2021).

Ford talked about the definition of status under the ESA and listed recovery/viability goals.

Ford talked about the National Marine Fisheries Service (NMFS) listing decision framework, which consists of two components, the ESU viability assessment and the evaluation status of statutory listing factors.

Ford talked about the Science Center Report, which will:

- Update and summarize abundance, productivity, spatial structure and diversity for all Pacific Northwest listed salmon and steelhead;
- Summarize large-scale environmental (FW and marine) trends for context; and
- Summarize trends in exploitation rates and hatchery/wild composition and hatchery releases.

Ford mentioned the Science Center Report process and its database map.

He discussed the Upper Columbia spring Chinook, which was listed in 1998. He showed graphs of the spawning abundance for each population over time. Interior steelhead, Lower Columbia salmon and steelhead were covered as well. He also mentioned coastal fish populations.

Looking at environmental trends, ocean surface temperatures were graphed. In the last five years, the ocean has been experiencing record warm temperatures. A stoplight chart showed that in the last few years, there have been generally poor ocean conditions.

Ford said many populations have declined over the past five years. However, the Lower Columbia and Puget Sound have more variables among populations than the Interior Columbia. He said ocean conditions have been generally poor in recent years and the overall biological status has probably not changed dramatically in most cases compared to the prior review.

Markle said the report doesn't result in changes, it just makes recommendations. It's simply an evaluation. He listed what each report contains:

- Any recommended ESU/DPS adjustments;
- A summary of updated viability information;
- Recommended changes to ESU/DPS hatchery membership;
- Evaluation of Sec. 4(a)(1) listing factors;
- Listing classification conclusion; and
- Recommendations for recovery priorities.

He said the reports might be released in batches.

Member Norman asked about the definition of natural versus hatchery fish spawning in the systems. What constitutes natural? Is hatchery classified as first generation only? Ford said

they take a pragmatic approach: If it originates from the gravel, it's a natural fish originated from the hatchery fish.

Member Norman said it appears that the ocean temperature metric may even be worse than it was back in the nineties during listings. But he wondered if the downward trend hasn't been quite as drastic due to some of the interior work that's being done in terms of trying to improve productivity and juvenile survival. Ford replied it's possible, but he doesn't know for sure. There have been record ocean temperatures and there's a lot we don't know about the ocean and how that translates to the environment for fish. The fish might be demonstrating some resilience.

2. Presentation of Hatchery Story Map Web Tool

Mark Fritsch, project implementation manager, walked members through the final draft version of the Hatchery Story Map Web Tool. He discussed the process and timeline of gathering the information and receiving input. It will be posted on the Council website at the end of January. It provides links for the different hatchery programs, including maps, handouts, data and a library of resources.

The story section is the core of the website. There are eight:

- the need for hatcheries,
- the development of hatcheries,
- their importance to the region and culture,
- hatchery reform,
- Council Fish and Wildlife Program,
- Mitchell Act Program,
- Lower Snake Compensation Program, and
- salmon in the classroom.

It will evolve and be populated with more resources. Participants in developing the site placed importance on having handouts available.

John Harrison provided a lot of the content for the history of the hatcheries.

Member Norman praised the work by Fritsch and his development team. He said there is a lot of interest in this product. There is useful information for scientists, regulators, educators and public officials.

Member Ferrioli said this project far exceeds expectations. This is a tool incorporating an entirely different approach to learning. Heavy on graphics, a person can drill down as far as

they want, getting into the scientific details or just skim along the top. He expects other agencies to look at this and want to replicate it.

3. Annual Greenhouse Gas Emissions from the Power Sector (2019)

Gillian Charles, senior policy analyst, provides the Annual Greenhouse Gas (GHG) Emissions from the Power Sector report every year. It looks at regional and national emissions for 2019, and likely 2020 emissions.

Charles said the dominant GHG is carbon dioxide (CO₂). Methane and Nitrous Oxide are other emissions. This presentation focused on CO₂.

Charles showed a graph of annual carbon emissions from Northwest electricity generation. Following three years of stable emissions, emissions increased from ~49 million metric tons in 2018 to ~56.6 million metric tons in 2019. Contributing to that is the fact that 2019 was one of the worst hydro years since 2001 (2010 and 2005 were very close). Hydro abundance sets the dispatch of other resources in the region. Energy efficiency helps lower emissions. Wind also makes a contribution and, starting next year, solar performance will be charted.

Chair Devlin asked if the chart include imports. Charles replied it did not, except for coal that the region is contractually obligated for. It doesn't include the spot market.

Charles drilled down into regional generation by resource type. She charted hydro's primary contribution, then coal. Natural gas has grown over the years. While fossil fuel (coal + natural gas) generation dispatches are based on hydro production, overall fossil fuel generation has increased. On average, coal generation has been declining while natural gas generation has been increasing. In 2018, gas surpassed coal generation for the first time. Gas has about half the CO₂ emissions of coal.

She reviewed a chart of new resources and retirements in the Pacific Northwest. Renewable Portfolio Standards spurred renewable development in the region.

She listed historical emissions in low water years: 2019, 2010, and 2005 were very similar water years, but emissions are ~9% less in 2019. Overall fossil fuel generation was greater in 2019, but less coal was generated. She said overall emissions have been decreasing over time across similar hydro years, primarily due to the dynamic between coal and natural gas generation.

Charles listed resource additions and retirements since the Seventh Power Plan. She included announced coal plant retirements.

Retiring coal plants account for about 46% of historical emissions since 2000. Colstrip 3 & 4 and Bridger 3 & 4 are the largest coal units currently operating in the region. They account for an average 32% of historical emissions since 1995. Since 1995, coal has accounted for ~80% of the region's overall power plant CO2 emissions, although that percentage has been decreasing. In 2019, coal accounted for ~60% of the annual emissions.

Chair Devlin asked about PacifiCorp's efforts to get out its commitments to Bridger 3 and 4, with Northwestern assuming more of the operation. Charles replied there are a lot of moving pieces and different objectives. Some of the owners are trying to abide by state policy and others have their own individual utility policies.

Member Ferrioli asked about transferring ownership of coal units from one operator to another — even though they're serving loads outside the region, aren't they still putting emissions into the regional air shed? Charles replied that both of the units are physically located outside of the region, and aren't serving the region, so we're not counting them towards our region's direct emissions from the production of electricity. But those two units are still operating, so nothing has changed there in terms of overall national emissions.

Charles discussed national emissions. She said 2019 emissions decreased overall (after a slight increase in 2018) as part of an ongoing, downward trend. Since a peak in 2007, emissions have fallen ~32%.

Nationally, hydro plays a small role. Coal accounted for half of the nation's generation. In 2016, gas overtook coal generation for the first time, providing 34% compared to 30%. In 2019, it was 38% gas and 23% coal.

Charles discussed the carbon intensity of electricity, which is calculated by the amount of carbon emitted per unit of energy generated. The Pacific Northwest has a much lower carbon intensity compared to the nation. She projects some dramatic decreases in both the region and national levels going forward. While there is a significant decrease in U.S. electric power emissions, emissions are flat or increasing in other sectors, such as transportation, industrial, commercial and residential. Regional coal retirements are planned over the next decade and we can expect a major drop off of coal by 2030. Overall, coal operating in the WECC falls from about ~34GW in 2019, to ~15GW in 2030 and ~12.5GW in 2036.

RPS and clean policies are accelerating the energy trends toward a decarbonized system.

Final data for 2020 will not be available until late Fall 2021. However, we know that:

- 2020 water year was above normal (2019 was well below normal)
- Covid-19 may have suppressed or shifted demand

- There will be more coal retirements:
 - Idaho Power ceased participation and divested its 50% ownership of North Valmy at the end of 2019
 - Colstrip 1, 2 – retired early January 2020
 - Boardman – retired October 2020
 - Centralia 1 – retired December 2020

Regional 2020 emissions will likely decrease due to the improved hydro year; it will also be the first year we see the effect of some of the region's major coal unit retirements.

Nationwide, emissions will likely continue to decrease nationwide as trends continue to show increase in national gas use and decrease in coal dispatch and retirements.

4. Council Business

Council approval of the December 2020 Council Meeting minutes

Vice-Chair Downen moved that the Council approve for the signature of the Vice-Chair the minutes of the December 16, 2020. Council Meeting held in Portland, Oregon via webinar, as presented by staff.

Yost second.

Motion passes.

Contract with PSR Soluções e Consultoria em Energia Ltda (PSR)

Vice-Chair Downen moved that the Council authorize staff to contract with PSR for continued maintenance and support services for the redeveloped GENESYS model for the remainder of the 2021 fiscal year and in an amount not-to-exceed \$64,800, as presented by staff.

Oshie second.

Motion passes.

Contract amendment with QW Consulting, LLC for Story Maps

Vice-Chair Downen moved that the Council authorize staff to amend Contract C2021-30 with QW Consulting, LLC to further develop the artificial production web tool with the addition of supplementary hatchery data and associated story maps, to extend the contract term to September 30, 2021, and add 488 hours and \$46,360 to the contract budget for a total amended contract budget not-to-exceed \$66,690, as presented by staff.

Mark Fritsch explained the need for the funds to build out the website to incorporate more hatchery operations and information.

Ferrioli second.

Motion passes.

Approval of Annual Report to Congress

Vice-Chair Downen moved that the Council approve the Fiscal Year 2020 Annual Report to Congress, as presented by staff.

John Harrison is adding a letter from BPA Administrator John Hairston.

Motion passes.

5. H.W. Hill Renewable Natural Gas (RNG) facility in Roosevelt, Washington

Steve Simmons, principal analyst, explained what RNG is and how it's collected. 2021 will be the first power plan that includes RNG explicitly.

Bill Donahue, Puget Sound Energy manager of natural gas resources, spoke. Kevin Ricks, Klickitat PUD renewable energy asset manager, had a family emergency and could not appear.

Donahue gave Klickitat's presentation. The facility has 175 full-time employees. It was built as a power generating facility and converted to a renewable facility. It had to boost its output to pipeline quality. At one time, it was one of the largest landfill to energy facilities in the country.

RNG can produce 18 millions of gasoline equivalent fuel. It has a low carbon emission rating — a significant reduction in CO2 emissions compared to natural gas. The composition is primarily methane.

The Klickitat PUD H.W. Hill Renewable Natural Gas Project is the result of a partnership with Klickitat County, Klickitat PUD and Republic Services Roosevelt Regional Landfill. In May 2020, the Klickitat PUD signed a 20-year agreement with Puget Sound Energy to bring renewable natural gas to the State of Washington and PSE customers.

Donahue discussed the RNG process, reading from his slide presentation:

- Landfill gas is generated in the landfill by anaerobic (without oxygen) decomposition of organic (plant and animal) material. The by-product of this decomposition is methane (CH₄) and CO₂.
- Naturally occurring, sulfur-reducing bacteria that is widely found in our environment also produce trace amounts of H₂S (hydrogen sulfide). To collect the gas that is produced in the landfill, a vacuum is applied through a network of nearly 300 wells resulting in an intrusion of atmospheric air (N₂ and O₂) into the gas stream.
- The combination of all of these results in landfill gas that is 53% methane, 36% CO₂, 7% N₂, 3.5% H₂O and 0.5% O₂ (with trace amounts of H₂S).
- The H.W. Hill project removes water, H₂S, CO₂, O₂ and N₂ (in that order) and produces pipeline gas that is over 98% pure CH₄, exceeding pipeline gas quality standards.
- The H.W. Hill project also utilizes unique technology for use on landfill: Cryogenic Nitrogen Removal.
- Last, the gas is cooled to -280°F liquefying the CH₄, causing the N₂ to separate from the CH₄. This process results in reduced electrical load of the facility and saves up to 18 million kilowatt hours of electricity per year.

The project produces pipeline quality natural gas that is completely interchangeable with conventional natural gas.

Member Oshie asked, how do you incorporate RNG into PSE's distribution system?

Donahue replied that the NW Pipeline system goes right past the plant going east to west, at Washougal. PSE uses pipeline contracts to pick up the RNG from that point.

He said PSE is interested in RNG because it's the most cost-effective, readily available, technologically probable way of reducing emissions from natural gas use. Customers are interested and it's the right thing to do. PSE has been supporting RNG for 30 years.

Another reason is the Washington State Legislature passed a bill in 2019 requiring each utility to offer a voluntary customer program for RNG. We demonstrated we could put it into our system for all customers, he said. Most developers of these projects are seeking long-term commitments for the entire output. That's important in the development of that industry. The Legislature wanted to limit the impact to customers to 5% of their bills. A WUTC Policy Statement issued December 2020, provides guidelines for implementing compliance with HB 1257.

Donahue said RNG is made from the decomposition of organic materials as a byproduct of waste disposal (e.g. waste water treatment facilities, landfills, dairy waste, etc.) then processed to pipeline quality. He said it is functionally no different for delivery and usage than conventional NG.

He said its drawback is that it's a high cost to produce. As the industry develops better equipment better suited to small volumes, we may see costs come down. Also pipeline costs are a factor.

The majority of RNG produced in Washington is supplied as a vehicle fuel to California to satisfy their low carbon fuel standard and EPA renewable fuel standard for refineries.

Washington consumes 300 billion cubic feet of RNG per year. Donahue estimates that until there's a development of crops or harvesting of wood waste in national forests, the available feed stock could replace 3 to 5% of natural gas production. It will not replace natural gas production — not even close. The highest estimates have said it could replace 10%.

He discussed the carbon intensity of RNG, which considers the impact of end-use and upstream emissions. He outlined the carbon intensity considerations gathering RNG from dairy, food/green waste, landfills and wastewater. RNG has lower carbon intensity, but the source matters.

There are four operating projects turning gas into pipeline quality in the region: Cedar Hills, Roosevelt Landfill, King County Wastewater, and City of Tacoma Wastewater. PSE has identified approximately 15 other projects in Washington and Oregon that may be economically feasible.

PSE plans to file a tariff schedule for a voluntary subscription product in early 2021 for expected April approval. The commitment-free, monthly subscription product will be open to commercial customers, but would be targeted at residential customers.

Continuation of Council Business:

Election of Officers

Chair Devlin called for nominations.

Member Oshie nominated Richard Devlin for another term.

Member Ferrioli second.

Chair Devlin appreciates the support and intends to do better the second year, and not to do a third year.

Additional nominations? There were none.

All Members voted in favor.

Motion carries.

Chair Devlin asked for nominations for Vice-Chair.

Member Norman nominated Vice-Chair Downen to continue as Vice-Chair. He has done a remarkable job in that role, he said.

Member Ferrioli second.

Additional nomination? There were none.

All Members voted in favor.

Motion carries.

Chair Devlin said committee membership will be the same, but there may be a change in who chairs.

Chair Devlin heard that a person has been named to replace former Council Member Jennifer Anders.

Public comment

Nina Sarmiento said she lives and works in Washington as a consultant on environmental campaigns. She said the Columbia and Snake wildlife programs have cost taxpayers and ratepayers over \$17 billion. It's clear that in 20 years, no run on the Snake River has recovered — they've declined. Prioritizing hatcheries is the wrong thing to do as they harm wild fish by diluting the gene pool. Scientist and federal agencies have said that damn breaching is a solution with the highest chance of salmon and steelhead recovery. Why are you wasting money? You are the problem. The solution is you will listen and act. You will support lower Snake River dam breaching to save salmon and orca, and save money for BPA. BPA cannot afford to lose more money on Snake River salmon recovery. These costs, along with the operation and maintenance costs, are greater than the revenue from these dams. Future generations are already burdened with climate change. Do not keep burdening them with the growing \$15 billion debt of our power provider. Please do not put these problems on future generations. I want you to pursue dam breaching as the most cost-effective way to restore fish.

Steve Levy, Bluefish.org, showed a graphic of Lower Granite fish passage and described fish passage activity. He referenced a letter written to the Columbia Basin Bulletin about the legal obligation of the Council. He said a recent EIS found that the Snake dams can be breached while still ensuring a reliable power supply. He said the Council should make a comment about the EIS in the next Power Plan. It's clear to the Council's mission.

Chair Devlin said after three years chair of the Fish and Wildlife Committee, Member Norman will step aside as chair. Member Allen will be the new chair. Member Oshie is in the middle of the Power Plan and will remain chair of the Power Committee. Member Ferrioli will chair Public Affairs. He added that it appears we'll be meeting virtually through June.

Chair Devlin adjourned the meeting at 1:37 p.m.