

Richard Devlin
Chair
Oregon

Ted Ferrioli
Oregon

Guy Norman
Washington

Patrick Oshie
Washington



Northwest Power and Conservation Council

Bo Downen
Vice Chair
Montana

Jennifer Anders
Montana

Jim Yost
Idaho

Jeffery C. Allen
Idaho

Council Meeting Minutes
Council Central Offices
851 SW Sixth Avenue, Suite 1100
Portland, OR 97204
May 12–13, 2020

Tuesday, May 12, 2020

Chair Richard Devlin called the meeting to order at 1:02 p.m. Council Members Jeffery Allen, Jennifer Anders, Bo Downen, Ted Ferrioli, Guy Norman, Patrick Oshie and Jim Yost joined by phone. The meeting was held as a webinar due to the coronavirus health emergency. The next meeting also will be a webinar, scheduled for June 16 and 17.

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:

- The Committee reviewed the latest draft of the Addendum to the Fish and Wildlife Program, which will be on today's Council agenda. The Committee recommended that the Council release the Addendum for public review.
- Mark Fritsch, Fish and Wildlife Division staff, reported on what is known about COVID-19's impact on implementation of the Fish and Wildlife Program. There is uncertainty around whether habitat projects will be implemented. At hatcheries, essential activities of feeding and marking fish have continued. Research projects have been delayed. Essential operations and maintenance have continued. Columbia River fishing was reopened last week. Sea lion capture and removal did not occur this year.
- The Committee received a status update on sturgeon from the Oregon Department of Fish and Wildlife (ODFW), Columbia River Inter-Tribal Fish Commission (CRITFC), and Washington Department of Fish and Wildlife (WDFW). ODFW reported that in the Lower Columbia, larger fish are trending upward, but recruitment for juveniles is down. According to CRITFC, John Day populations continue to decline, a strong candidate for

hatchery supplementation. WDFW reported concerns about slow growth and recruitment failure.

- Asset Management Strategic Plan priorities for FY2021 for hatcheries and screens will go before the Council in June. The recommendation is for \$397,000 for screens and \$104,000 for hatcheries.
- Mark Fritsch provided an update on the informal hatchery work group. The group began a year ago and is working to update the hatchery story in the basin using a story map. There will be a report to the Council next month.

Power Committee

Council Member Pat Oshie, Power Committee chair, reported:

- The Committee received a Power Plan progress report from staff. In June, the Committee will be covering the generation resources summary presentation, the emerging tech reference plant for scenario analysis and BPA scenario supply curves. In July, they'll move to system adequacy and electricity price forecast. Emerging tech reference plant work will be covered by the generation resource adequacy committee on May 21.
- John Ollis, planning and analysis manager, presented the new version of GENESYS, which assesses resource adequacy for hydro operations. The updated model reflects hours of work by staff and other stakeholders. It does a better job at simulating hourly hydro capability, and looks hard at the economics and adequacy of the electricity market. The new version adds a higher level of granularity than the prior GENESYS model and it will provide more important key information for developing power plans. This level of granularity wouldn't be workable without the availability of cloud computing.
- Staff presented the final results of its assessment of regional conservation potential for the Draft 2021 Power Plan. Staff received 1,500 comments. Staff several items, and new ones have been added. Information indicates the region has 2,000 MW of technical achievable potential at less than \$40 a MWh of levelized cost, most of that potential in commercial savings. Most residential savings potential falls in the \$40–\$80 per MW bin. Commercial savings drops off as you shift away from lighting. HVAC represents the largest potential for savings for commercial and residential. In the under \$40 per MW cost bin, there is about 2,500 MW of winter capacity availability and 3,300 MW of summer capacity.

Public Affairs Committee (delivered later in the meeting)

Council Member Jeffrey Allen, Public Affairs Committee Chair, reported that normally the Council would be in the midst of planning the annual Congressional staff tour. Planning is on hold, waiting on Congress to set schedules in the wake of the pandemic disruption.

1. Regional Technical Forum 2019 Annual Report

Jennifer Light, Regional Technical Forum (RTF) manager; and Annika Roberts, RTF assistant, presented the 2019 RTF Annual Report to the Council. The purpose of the report is to inform the Council and stakeholders about the RTF's activities in the previous year and to provide an update on the ongoing work in the current calendar year.

The RTF was formed following a 1996 directive from Congress to serve as a forum to develop standards for energy savings in order to improve program quality and reduce energy costs.

In 2019, the RTF continued to focus on its core efforts of developing consistent and reliable energy savings estimates and methodology. Much of this work in 2019 focused on savings from residential heating and cooling through equipment upgrades and weatherization. The RTF also continued to explore how it could add more value to utility demand side management efforts. This included focusing resources on efficiency opportunities in commercial buildings and exploring demand response potential for technologies that provide both energy efficiency and demand response opportunities. 2019 also marked the last year of a five-year funding agreement supporting RTF work.

Light reported that the RTF highlighted residential HVAC in 2019. Its cost-effective potential represents an important resource for utilities and BPA. The RTF worked to make sure that the models represent real-world savings. It updated and developed 23 different measures in 2019.

The RTF also updated its lighting savings estimates. In the Council's Seventh Power Plan, lighting accounted for over 20% of the cost-effective potential in the residential sector and 40% of the cost-effective potential in the commercial sector. Savings from more-efficient lighting is an important part of the RTF's portfolio.

Light noted that the RTF has not developed HVAC measures for commercial buildings to the same extent yet as for residential. The commercial sector is more complex, and so more work is needed to develop reliable cost and savings estimates for commercial HVAC, shell measures, and window upgrades/films. She reported that RTF has invested in complex building models to evaluate 17 different types of commercial buildings.

The RTF had 15 active subcommittees in 2019 supporting a range of topics. She singled out the Irrigation Hardware Working Group for its efforts. Led by Idaho Power, this group developed a survey this spring to address some questions around measure savings. BPA and Pacific Power are working with Idaho Power to implement the survey in the field.

The RTF spent most of its budget, coming in a little under by \$160,000. One analyst left and a new one came aboard. Light listed the different areas where money was spent.

To ensure continued work, the RTF Policy Advisory Committee developed a new long-term strategic plan for the RTF and collectively agreed to funding levels in support of that Plan. In 2020, the RTF is now starting the work of that new plan, which includes continued emphasis on

electric energy efficiency savings analysis while also expanding to evaluated natural gas efficiency opportunities. The RTF will also provide advisory support for the 2021 Power Plan, supporting measure development directly such as the development of supply curves.

This is the first year the RTF will have natural gas efficiency measures in its workplan. It established the analytical tools needed to support analysis. The first measures with natural gas savings will be discussed at its May meeting, including the weatherization of gas homes. The RTF anticipates addressing at least 16 measures with a natural gas savings component this year.

Looking at measure development, the RTF's work plan anticipates updates to 23 existing measures and developing six new ones.

The RTF funders agreed on a five-year cycle. Any money not spent in 2020 will be allocated to next year's budget.

Information item – no Council action.

2. Council decision to release for public comment the revised draft of Part I of the 2020 Addendum to the Council's Fish and Wildlife Program

Council Fish and Wildlife staff presented for Council consideration the revised draft of Part 1 of the 2020 Addendum of the 2014 Fish and Wildlife Program. Staff presenters included Patty O'Toole, Fish and Wildlife Division Director; Leslie Bach, Division staff; John Shurts, General Counsel; and Karl Weist, Oregon Office Fish and Wildlife Policy Analyst. Chair Devlin introduced the item, noting that a lot of work has gone into this document, as we're two years into this process. Fish and Wildlife Committee Chair Norman reported that the Committee recommended the Council release the revised Part I for public review and comment. Chair Devlin asked for other committee member comments. There were none.

Staff reported that the revised draft of Part I of the 2020 Addendum is devoted to improving how the Council and others track, assess and report on Fish and Wildlife Program performance, and includes a reorganized and updated statement of program goals and objectives; reference to a preliminary set of performance indicators (which will not be formally adopted as part of the program); and other related provisions. The materials before the members included a revised draft of Part I staff had sent the members by email in the week before the meeting plus an updated section on salmon and steelhead biological objectives related to the targets for salmon and steelhead adult abundance by stock and subregion developed by the NOAA Marine Fisheries Advisory Committee's (MAFAC) Columbia Basin Partnership Task Force.

The Council began this amendment process in 2018, and then delayed its decision schedule on Part I to allow more interaction with especially the fish and wildlife agencies and the region's Indian tribes, at their request. The Council held eight workshops since December 2019 with significant participation. The revised draft is the result of this effort and of further staff work with the Council.

Patty O'Toole, Fish and Wildlife Division director, reported that the Council started this process in 2018. They extended the Addendum Part I approval process and have stuck to the revised timeline. Part II was completed in January. She asked for the Council to review revisions to Part I and release it for public comment.

Leslie Bach, senior program manager, outlined the revised document. She said this version began with more detail on the accomplishments in the 2014 program regarding hatcheries, habitat, passage, predator control and wildlife. She said the vision statement for the 2014 program was added to Part I as an important place to start the conversation around goals, objectives and indicators. Next, there is language about defining objectives and then the strategy performance indicators.

O'Toole said they spent time in workshops on strategy performance indicators. We heard that even if the indicators aren't adopted into the program, they're important pieces of data that change over time, she said. It's important to show how they link.

Member Downen asked for clarification on the goal of five million fish by 2025.

John Shurts, General Counsel, responded that the goal of five million anadromous fish has been in program since 1987. Total runs average around 2.5 million at that time, and the Council set a goal to double the number. The goal later became stated as 5 million, rather than doubling, as the run sizes declined later in the 1990s. It's been in subsequent programs, as loss assessment-based program goal. The program goal also emphasizes that the increase is to occur primarily in the populations above the Bonneville Dam. At one point, the goal got rewritten to say five million fish at Bonneville Dam. This was a drafting mistake, as there was no indication the Council intended to change the goal, and the Council reverted to the appropriate language in the next program, in 2009. Our response is we believe the goal has always applied to the whole system and that is reflected in this draft, Shurts explained.

Bach talked about the overarching goal for anadromous salmon and steelhead and then a transition into the objectives. Staff has been incorporating the NOAA Marine Fisheries Advisory Committee's (MAFAC) Columbia Basin Partnership Task Force's work to target and track adult abundance. There's the contribution of the hydrosystem, but it isn't totally responsible. Staff is still working on the MAFAC numbers. Those are not yet complete. They have numbers for hatchery origin, but not natural origin.

O'Toole said staff visited with the Fish and Wildlife Committee on this specific issue today. They still don't have the final numbers yet, and want to get the MAFAC numbers in this document. They have done everything possible to date, and expect those numbers in the coming weeks. We believe we can still release the document for public comment, she said.

Member Norman said they're not expecting major changes in the numbers. The next MAFAC meeting is June 2 and 3, when the numbers are expected to be approved.

Member Devlin asked what if MAFAC doesn't settle on the numbers?

O'Toole said they can still proceed. There's been a lot of participation in this document and they can fill them in later.

Bach added that workshop participants also wanted objectives in the blocked areas and wanted acknowledgement of meeting hatchery mitigation goals. Bach talked about how to organize goals and objectives.

Staff then discussed the goal statement for other aquatic species, found on page 12 of the Addendum, and then reported on the white sturgeon objectives. The objectives for abundance vary depending where you are in the system. There also are objectives for spatial distribution, genetic diversity and productivity. None of this has been assigned to quantified hydrosystem losses. Our program will contribute to achieving these objectives, but is not solely responsible for achieving these objectives, Bach said. She then noted the follow-on objectives for Pacific lamprey, resident salmonids and other native aquatic focal species.

O'Toole called attention to the "contribute to" language. It's not all hydrosystem loss. However, the sections on Hungry Horse and Libby Dams spell out those impacts, as they have had hydrosystem loss assessments. Finally, Part I does not include specific objectives for other native aquatic species.

Looking at the Wildlife section, Bach said this an area where there are specific loss assessments. A coding system is used to show the extent losses have been mitigated and where mitigation is still needed.

O'Toole said they have spent a lot of time on wildlife and dealt with a lot of comments on it. They used this to show progress and gauge program performance.

Karl Weist, Oregon Fish and Wildlife Policy Analyst, said wildlife is the most quantitative part of the program. It has been assessed and they are hydrosystem losses. He described the challenges of identifying which areas are complete, where Bonneville's obligation ended.

Bach said there was a discussion in a workshop about not only acquiring land, but helping it maintain its value. She discussed ecological objectives and listed others. She then talked about communication objectives.

Member Allen asked a question about the first two communications objectives on page 21. To report on progress, we may need establish a baseline on some of these goals, he remarked. O'Toole replied they will talk later about how we do this work in the future. There's a lot here we're committing to report on and we can work that in, she said.

Bach moved to habitat strategies and performance indicators. Patty talked about how 23 strategies relate back to the objectives. But it's not a one-to-one relationship between the two. You have to look at multiple strategies at times.

Bach listed different types of indicators. She said that a lot of climate change indicators are captured in the other strategies.

Mainstem hydrosystem flow and passage strategy indicators are a big part of the program. She noted that Member Anders wanted clarification added in this section about Kootenai white sturgeon and that needs to be added.

Bach discussed fish propagation and hatchery indicators. The numbers link back to the MAFAC process. The numbers have been revised since last week's version. The MAFAC numbers are used as a tracking tool, not necessarily an ultimate objective.

Member Norman said they'll make a clarification in the draft about hatchery indicators are juvenile production goals by stock, and natural wild fish indicators are adult spawning escapement goals by stock. Bach and Member Norman talked about making edits to the draft.

Bach listed additional indicators:

- Anadromous fish mitigation in blocked areas strategy ^[L]_[SEP]
- Resident fish mitigation strategy
- White sturgeon strategy
- Pacific lamprey strategy
- Eulachon strategy
- Public engagement strategy

In discussing the section on assessing, monitoring and reporting, Bach said we'll need to accomplish this with others in the region. The intention is to establish an ongoing workgroup. First, we need to set a baseline to establish where we are today, and then to update the indicators over time.

O'Toole reiterated the need for an ongoing workgroup. Also, it's critical to have information gathering and data management capabilities in this program.

O'Toole reported that next steps will be to initiate the public comment process by the end of the week. Staff proposes to have a public hearing by webinar on June 15. Consultations with the Council might be requested; more information on that will come later. June 22 will be the close of public comment. The Council will vote on approval in August.

Member Devlin asked for additional comments.

Member Ferrioli said staff already characterized the remarkable participation of managers and field staff. He mentioned how thousands of person hours went into this document. The product took longer than many hoped, but it is a valuable product. He hopes it's very well received by the public.

Member Norman thanked staff for its hard work and extra hours. It will enhance our ability to evaluate our progress and engage the region in our efforts, he said. Member Devlin gave credit to the Fish and Wildlife staff, which has fewer people.

Motion

Vice-Chair Downen moved that the Council approve the release of the revised draft of Part 1 of the 2020 Addendum of the 2014 Fish and Wildlife Program for public review and comment for a period ending June 22, 2020, as recommended by the Council's Fish and Wildlife Committee and presented by staff. Member Ferrioli second. The motion passed unanimously.

Chair Devlin recessed the meeting at 3:19 p.m.

Wednesday, May 13, 2020

Chair Devlin brought the meeting to order at 9:03 a.m.

3. Briefing on recent structural modifications for fish passage at the U.S. Army Corps of Engineers' dams

Leslie Bach, Fish and Wildlife Division staff, introduced Tim Dykstra, fish program manager, and Mike Langsley, fish biologist, U.S. Army Corps of Engineers, and Gordon Axel, research fisheries biologist, NOAA Fisheries. Dykstra, Langsley and Axel reported on structural upgrades over the last five years at Federal Columbia River Power System dams designed to improve juvenile and adult fish passage and survival, as well as allow for improved efforts at monitoring and evaluation. Specific projects discussed include Lower Granite and Little Goose Fish Ladder Cooling; Lower Granite Juvenile Bypass System Upgrade; Little Goose Adjustable Spillway Weir; and Lower Granite Spillway PIT Detection. Modifications have been funded via Congressional appropriations through the Corps' Columbia River Fish Mitigation Program. The power share of those costs is paid back to the U.S. Treasury by Bonneville. These projects close out the Corps' capital-based structural program. The Corps is transitioning to primarily an operations and maintenance program.

Dykstra outlined how the Corps has overhauled fish passage on the Columbia and Snake rivers. Prior to 2008, they made changes at the dams to benefit fish and provide better passage conditions. The 2008 NOAA BiOp set into motion for the Corps and other action agencies to take specific additional actions at all mainstem lower Columbia and lower Snake dams. A special focus was placed on improving passage conditions for juvenile fish. This includes big items, such as surface passage and removable spillway weirs. Also, they installed changes and overhauls to the juvenile bypass systems to make sure fish are being placed in locations to improve survival. The Dalles spill wall is helping fish pass that dam.

Dykstra said the Corps is now transition from a capital-based program to an O&M program. As they transition to a different paradigm, they're going to take advantage of their past investment to improve fish passage. He mentioned the flex spill agreement to take advantage of the infrastructure installed. The rest of the presentation summarized some of the changes made.

Lower Granite and Little Goose fish ladder cooling

On the Snake River, there are two challenges to solve: 1. Cooling the river when the temperature gets hotter; and 2. Do it in a way that reduces the temperature differential.

The project was designed to cool the ladder and the immediate forebay area outside of the ladder exits with water drawn from depth. Dykstra discussed water temperatures before and after the project upgrade. Lower Granite was completed in 2016, and Little Goose was completed in 2018.

Lower Granite juvenile bypass system upgrade

Dykstra said it is a big project. They overhauled bypass systems at many core dams. The upgrades at Lower Granite consisted of:

- 14" orifices (enlarged from 10")
- Juvenile collection channel widening
- New transportation channel and flume
- Emergency bypass
- New dewatering system
- New Primary and facility bypass system
- Outfall moved further offshore into deeper, faster flow, where it's harder for predators to hang out

Dykstra discussed resulting survival rates of yearling Chinook, steelhead, and subyearling Chinook following completion of juvenile bypass system improvements at Lower Granite Dam.

	YEARLING CHINOOK	STEELHEAD	SUBYEARLING CHINOOK
JUVENILE BYPASS	99.6%	100%	100%
DAM	97.3%	99.6%	94.2%

Little Goose adjustable spillway weir

The original adjustable spillway weir could not be closed or changed from the control room. It required a crew of at least three to close it or change its height. It took a minimum of three days to make changes and required the use of a gantry crane.

The new design eliminated the closure gate, allowed the crest section to move vertically and has a dedicated hoist. It can be controlled from the control room and changes can be made within 30 minutes. Construction was completed in 2017 and was operational in Spring 2018.

Ice Harbor test turbine Units 1, 2 and 3

The goal is to develop a turbine that is safer for fish and more efficient in electrical power generation. The new turbines would become a safe fish passage route and increase operational flexibility. The project is to refurbish main Units 1, 2 and 3 with new turbine runners and generator rewinds. Unit 2 was replaced with a fixed-blade runner; and Units 1 and 3 are to be replaced with MGR adjustable blade runners.

Unit 2's direct survival was 98%. Visible injuries were reduced to 1.5%. Rapid decompression has been greatly reduced with this new turbine.

The installation of Unit 3's adjustable blade runner is planned for completion in Fall 2021; and Unit 1's is planned for completion in Fall 2023. The design, fabrication and supply contract costs for three units is \$41.3 million. The turbine installation costs total \$50 million. McNary and John Day dams are scheduled for 2025.

Lower Granite spillway PIT detection

Prior, they had no ability to detect PIT-tagged fish going over the spillway. The project was completed January 2020, and they are thrilled with its performance so far.

Gordon Axel said the original intent was to install the system at Ice Harbor Dam. He discussed the design challenges of the project and it is now fully operational and working better than anticipated. It currently is providing a 492% increase in overall project PIT-tag detection.

Downen asked if these projects are driven by BiOp goals. It seems like these improve fish passage and survival. Where are we in meeting goals for fish survival? What are outlying projects for fish passage improvements? At what level are you maxed out?

Dykstra said a lot of these actions are at the end of implementing the 2008–2018 BiOp. He said they accomplished them and are reporting on them today. In terms of survival, that BiOp did prescribe performance standard metrics: 96% for juvenile fish past our dam for spring Chinook, yearling Chinook and steelhead; and 93% for subyearling Chinook. They have conducted performance testing at the dams, and are meeting or exceeding those performance standard metrics. In terms of outlying projects, a lot of the low-hanging fruit has been plucked in terms of fish passage problems and dam improvements, he said. In the flex spill agreement, there's an acknowledgement that they have done what can be done concerning infrastructure improvements. Now the attention is on making operational changes to benefit fish.

Mike Langsly said the Lower Granite juvenile bypass system was implemented to increase subyearling Chinook survival. In the pipeline, when you look at the CRFM budget spreadsheet, it's mostly closeout work. Next biggest thing is the gatewell environment at Bonneville.

Member Norman asked about the Lower Granite PIT-tag array. In the spill agreement, one of the theories is that fish might experience less-delayed mortality. What's the feasibility of expanding PIT-tag arrays at other dams?

Dykstra said they're not interested in building more spillway PIT antennas for the sake of detecting new fish. What we want to do it learn and make sure we're informing the region on how we're doing on our operations, he said. Are we improving fish or not? Are we seeing benefits? We're keenly interested in learning. If it's critical to add more spillway detection, we're willing to explore it. In the EIS, we are putting out the concept we want to evaluate flex spill operation moving forward, but we're trying to avoid a Corps-centric plan on how we'll implement it. We prefer a shared, regional approach, he said.

Information item – no Council action.

4. Briefing on impact of Covid-19 on the power system

Ben Kujala, Power Division Director, and Massoud Jourabchi, Steve Simmons, Jennifer Light, and Gillian Charles, Power Division staff, presented information on what is known so far about the impact of the COVID-19 and the response to the pandemic on the region's economy and power sector. They reported that it is too early and uncertain to report on long-term impacts, but staff has collected data to describe some near-term impacts.

Jourabchi reported that normal business activities have been substantially changed or suspended, and people largely confined to their homes. Preliminary information indicates a regional load shift from the commercial and industrial sectors to the residential sector, although the overall load impact has been minimal, about 1% for March 15 through end of April.

He showed a March 2020 map depicting the hardest hit areas due to the coronavirus and compared it to March 2009. He listed the business categories impacted by stay-at-home orders, such as loads shifting from commercial to residential customers. He listed what types of purchases were made when the virus hit. He mentioned the spike in unemployment. Before the virus, the region was on an upswing in employment. Then in March, it experienced the greatest drop in 44 years.

In the near-term, S&P Global is predicting a global recession this year, and estimates the United States economy will see a 6% seasonally adjusted second quarter contraction before beginning to recover in the second half of the year.

Jourabchi discussed the impact on the 2021 Power Plan. Currently available forecasts suggest a significant slowdown in Q1 and Q2 of 2020, and some recovery in 2021. The full 2022 forecast is not available yet.

He said there was a forecasted 2% decline in GDP in 2020 with a strong recovery in 2021. However, the information is old and the decline could be sharper. He said we see a similar pattern in manufacturing with a 4% decline.

Jourabchi said a decline in output is forecasted for 2020, but the decline is not as sharp as the 2009 recession. We had growth in January and February, and it was flat in March and April. In May 2020 – August 2021, we'll go through a period of contraction. Significant jumps are expected in the last quarter of 2021.

Jourabchi said PNUCC had webinar last March that asked utility forecasters to talk about the initial impacts of COVID on their areas. As expected, utilities covering residential loads saw increases. Snohomish is an example. Bonneville, initially saw lower loads but then they increased. PGE shared the impact on its different customer classes. There has been a significant reduction for hotels, restaurants, lumber, education and commercial buildings. PGE has invested in AMI, so they can tell which market segments are most affected. AMI does a lot more than reading meters, it also shows shifting loads, which helps forecasters.

Some segments had no impact, such as high tech, food manufacturing and construction. Jourabchi said construction is important because it represents new load. After gathering some preliminary information from the Grid Monitor database, Jourabchi said regional IOU loads had a larger change than POU loads in March and April 2020, compared to the prior year. But the net impact hasn't been that great due to COVID-19, where loads grew by 5% compared to last year.

He talked about all the factors that went in to evaluating COVID impacts. Regional temperatures have been close to normal.

He reiterated that residential load has increased and commercial/industrial has decreased. The decrease isn't expected to increase until late 2021.

This recovery will take time, more than just a few months or a couple of quarters, he said. The fear factor will play a big role in when people go back to normal.

Steve Simmons, principal analyst, reported on transportation and natural gas. For transportation, expect a significant drop-off in sales of both electric and gasoline powered vehicles. Firm projected sales of electric vehicles may drop by 43% due to the pandemic. Also, battery factories in China and the U.S. (Tesla) have cut back or have temporarily closed. The big three automakers are starting production again in the next three weeks, including auto parts. He said there's a lot of anxiety around reopening.

Past 2020, the oil supply glut should result in lower gas prices at the pump for traditional ICE vehicles. There is continued strong support for electric vehicles and future stimulus projects could focus on electric infrastructure buildout.

Natural gas prices have been historically low both pre- and post-pandemic. In 2019, production of natural gas hit an all-time high. Also, it was the warmest January on record. Prices have remained at historic lows nationwide. Futures are inching up, indicating that prices are expected to rise over the next 12 months. The number of active natural gas rigs have dropped from 123 at the start of the year to 85 today. And demand for gas is down, but it may be more weather-related.

Jennifer Light reported on effects on the implementation of energy efficiency measures. She noted that the health emergency has presented utilities with the opportunity to do projects that have been on hold, such as working in closed schools. They also can try new approaches to doing things for customers remotely or through do-it-yourself programs. She said that direct-install programs have been slowed or halted. Light said that the 2019 Regional Conservation Progress Survey will be collecting more information to help inform potential impacts on programs.

Gillian Charles, senior policy analyst, said it's too soon to know full impacts of COVID-19. She said the International Energy Agency predicts that global energy-related carbon emissions will fall 8% in 2020. However, early indications are that as industries resume, they'll climb up back to normal.

She said regional emissions may reflect a temporary decrease in load, however the effect will likely be minimal. She said the fact that 2020 will be a lower hydro year will have a much greater effect than the virus.

She said solar groups have been seeking amendments to investment tax credits and production tax credits. Construction delays are largely dependent on state guidelines and requirements for social distancing.

Charles added that it's too soon to forecast the extent of the pandemic's impact on regional, utilitywide renewable construction. However, developments at the rooftop and commercial level have slowed. PacifiCorp has a lot of proposals set to be released in July. This is a substantial amount of development the region could see and the utility doesn't anticipate altering its schedule.

Information item – no Council action.

5. Overview of Bonneville's Integrated Program Review (IPR) schedule and process

Patty O'Toole introduced Marcus Harris, Budget Officer and Manager of Financial Planning and Analysis, Bonneville Power Administration. Harris provided a high-level overview of Bonneville's financial status, the upcoming Integrated Program Review (IPR); some of the key considerations for this IPR; and the general timeline for the process. The IPR is a process in which Bonneville displays and interested parties may comment on relevant Federal Columbia River Power System capital and expense spending budget estimates. The IPR occurs every two

years, or just prior to each rate case, and the IPR process is the public review for the costs that will be recovered through rates the following two-year rate period.

The upcoming IPR will begin on June 15, and include virtual workshops on specific program areas, including generating resources, fish and wildlife, energy efficiency, transmission operations, and maintenance and asset management. A key driver in the IPR schedule is that Bonneville needs to set rates for 2022 and 2023 for both power and transmission, with a final rate decision in July 2021, which means a rate case process beginning in November 2020.

Harris also reported on the impact of the COVID-19 pandemic on Bonneville's finances, heading into this IPR. Impacts are uncertain, but Bonneville is expecting a significant slowdown on their transmission capital work, and some on the generation side as well. All nonessential capital work has been delayed. From a financial standpoint, they have people and supplies devoted to this work. When it's delayed, it shifts it from capital to expense.

On the revenue side, the most likely scenario is close to what happened in 2008, with a 2% load reduction, although Bonneville's loads and territories are diverse and impacts will be different in different areas. Bonneville will have some offsets in expense reductions in travel and training. On net, Bonneville is expecting a \$50 million reduction in revenues by the end of this fiscal year. Bonneville's overall expense budget is \$3.5 billion, so this reduction is about 1.5%. Bonneville is financially healthy still, expecting to have \$600 million in cash reserves at the end of the year to buffer any impacts from this short-term situation.

Harris said it is too soon to project how all this will impact Bonneville's rates for the 2022–2023 period; Bonneville is constantly monitoring and assessing the economic situation. Bonneville remains committed to holding its IPR costs at or below the rate of inflation from now through 2028.

Harris said Bonneville is in contact with its rating agencies, which are aware of the broader situation. They're looking at all sectors and there hasn't been broad rating action. The early indications are that the utility sector is somewhat insulated relative to other sectors. Bonneville was in the bond market when the emergency happened and it pulled a bond deal. It was too uncertain on what we'd get and it wasn't urgent, he said, so we pulled the bond pricing and scheduled it for later in the year. The bond market has stabilized and they are engaged with rating agencies on Bonneville's credit.

Bonneville is looking to see if there's payment relief options for some customers on a case-by-case basis. But they're aware that any flexibilities are borne by other ratepayers. Harris said they can use some of BPA's liquidity to spread out payments for customers most in need. We'll probably roll out some options in the next couple of months, he said.

With regard to the IPR Harris explained that Bonneville is being driven internally by its strategic plan. One factor is the rate competitiveness of its power business line. The other is the cost management factor. He said BPA is committed to holding its IPR costs at or below the rate of inflation from now through 2028. He said they beat that goal in the last IPR and had a real

reduction in cost. The driver was to maintain Bonneville's power rate competitiveness. We need to stay on a disciplined track so we can ensure we're competitive and can resubscribe power contracts in the coming years, he said.

He said they are looking at needed increases in its IT expenditures, but plan to offset those increases with reductions elsewhere. For transmission capital execution, Bonneville has a planning level in the transmission grid to sustain reliability and that will be a big part of the IPR.

Member Devlin asked about providing assistance to customers, i.e., consumer owned utilities. What's the principal area where you're seeing an issue?

I only have anecdotes, Harris replied. We have surveyed customers on this and we're working with them. There are issues around general unemployment. The broader industrial base will affect some customers more than others. We're sorting through how we can equitably provide relief.

Member Oshie asked for a brief description of what he's seeing in the money market for Bonneville's bond offerings. What rates are you seeing and what terms? Harris replied that in general, BPA's bonds are priced very competitively — AA stable from all three rating agencies. He said often, its bonds are priced closer to AAA. Bonneville has the commercial side but also the federal backing (implied, not explicit). He said now it is pricing more mid-term and typically stagger with a number of term years: 15, 16, 17, 18. Bonneville has an extensive debt portfolio and is looking at smoothing out the repayment of its debt over time. The bonds we're issuing now are medium term, and go out for a range of 5-to-10 years. I don't know the rates, but money is very cheap right now, he said, and we expect interest rates to be low on these issuances.

Member Oshie asked if he would have a better picture if he looked at AAA-rated companies. Harris replied the best comparison would be the MMD index, and recommended he look at the AA and AAA rates. As stock market got volatile leading into the downturn, the credit spread widened. It's a good reminder about the importance of our strong credit, he said.

Member Oshie asked if they're looking at the IPR 2 as a proceeding to update the numbers presented in IPR 1. Harris said they're probably going to scope narrowly in IPR 2 to items such as wage inflation assumptions. They were expecting healthy wage inflation before COVID-19.

Member Devlin asked if they plan to refund bonds where they'd be paying more for the debt than under the original terms? Harris said it's always a possibility. They have a policy against doing that except under rare circumstances. His expectation is that they would be kept on the books and paid, and not refunded at a higher interest rate.

Information item – no Council action.

6. Council Business

Approval of April 2020 Council Meeting minutes

John Shurts, General Counsel, noted that a revised set of minutes were sent to the Council members in the morning before this day's meeting.

Motion

Vice-Chair Downen moved that the Council approve for the signature of the Vice-Chair the minutes of the April 14-15, 2020, Council Meeting/webinar held in Portland, Oregon, and via webinar, as presented by staff with the changes made by Members at today's meeting. Member Anders second. The motion passed without objection.

Approval of amendment to Amy Milshtein contract for advisory committees note-taking

Andrea Goodwin, Senior Counsel, noted the staff is seeking authorization to amend the contract with Amy Milshtein, who takes notes for the Power Division's advisory committee meetings - to add 113 hours and \$10,000 dollars.

Motion

Vice-Chair Downen moved that the Council authorize the staff to execute an amendment to Contract C2020-05 with Amy Milshtein to add 113 hours and \$10,000 for a total amended contract budget not to exceed \$34,000, as presented by staff. Member Oshie second. The motion passed without objection.

Council decision to adopt the annual Fish and Wildlife Costs report

John Harrison, Council's Information Officer, presented the proposed final report, noting that the Council had released the report for public comment and received an editorial comment from Bonneville. Once the Council approves, the report will be sent to the governors' offices and posted on the Council's website.

Motion

Vice-Chair Downen moved that the Council approve the Fiscal Year 2019 Report to the Northwest Governors on Bonneville's Fish and Wildlife Costs, as presented by staff. Member Anders second. The motion passed without objection.

Council decision on release for public comment of the draft Council budget for Fiscal Year 2022 and revised budget for Fiscal Year 2021

Sandra Hirotsu, Council's Administrative Director; and Michael Osborne, Council's Business Manager, presented the draft budget for FY 2022 and the proposed revised budget for FY 2021.

Staff requested Council approval to release the draft for a 48-day public comment period. Final adoption will take place at the July Council Meeting.

Motion

Vice Chair Downen moved that the Council approve the release of the draft Fiscal Year 2022 Council budget and Fiscal Year 2021 revised budget for public review and comment thorough June 30, 2020, as presented by staff. Member Oshie second. The motion passed without objection.

Public Comment on any issue before the Council

None at this meeting.

Chair Devlin adjourned the meeting at 11:59 a.m.

Approved July _____, 2020

Vice-Chair