

Jennifer Anders
Chair
Montana

Bo Downen
Montana

Guy Norman
Washington

Patrick Oshie
Washington



Northwest Power and Conservation Council

Richard Devlin
Vice Chair
Oregon

Ted Ferrioli
Oregon

Jim Yost
Idaho

Jeffery C. Allen
Idaho

October Council Meeting Seattle, Washington October 15 & 16, 2019

Tuesday, October 15

Council Chair Jennifer Anders brought the meeting to order at 1:34 p.m. All Council Members were in attendance.

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

Fish and Wildlife

Council Member Guy Norman, committee chair, reported on four items:

1. The committee heard a review of resident fish and sturgeon projects from Lynn Palensky, project review manager, and staff. They are tracking funding allocations and site review with the science review board. There is an emphasis on a crosswalk with the Addendum to the Fish and Wildlife Program, consistencies on reporting for sturgeon, learning about fish habitat RM&E, tracking research components, establishing a Council planning budget and meeting quantifiable biological objectives. This starts in November and will conclude with Council recommendations in August.
2. There was a report from Urban Eberhart, from the Kittitas Reclamation District, and Wendy McDermott, from American Rivers, on the Yakima Basin Integrated Plan. There is a full coordination of various interests, from irrigation to fish and wildlife. It's a great example of the coordination of partners looking for common goals.
3. Justin Bush, Washington Invasive Species Council, and Jesse Schultz, Washington Department of Fish and Wildlife, reported on an early detection program and a rapid response program if invasive species are detected. This includes a mapping

program. There are four priority species: zebra quagga mussels, white nose syndrome, feral swine and northern pike.

4. Dr. Michael Ford, Northwest Fisheries Science Center, reported on their research programs. It is one of six such science centers in the U.S. They advise NOAA on its policy decisions. They work on threats and analysis with prey stocks, killer whales and the protocol for hatcheries to improve compatibility with wild fish. They do some interesting work with EDNA to quantify juvenile abundance in various tributaries. It could be a more economic way to measure abundance.

Power

Council Member Richard Devlin, committee chair, reported on four items:

1. There was a review of the GENESYS Model redevelopment, which plays a key role in the Council's planning process. They're working to improve its accuracy, usability and ability to serve multiple users. There are questions about how the Council works with BPA in using the model. BPA runs its own simulations using the model. The committee was told that work is going well.
2. There was an overview on policy changes at the state level and in some Canadian provinces. Many states have RPS requirements. Two states Oregon and Washington prohibit coal from being in their energy mix after a certain date. Other states are going further with an almost complete elimination of carbon. California will have a major impact on our region as it moves toward zero carbon.
3. There was a discussion on determining load, an important factor in developing the plan. Staff is looking at population growth in the region and how much solar behind the meter will be used. They're also looking at electric vehicle (EV) penetration and its impact on load.
4. The committee reviewed reference plans for solar, battery storage, and solar and storage together.

Public Affairs

Council Member Jeffery Allen, committee chair, said they did not meet last month, and it has been decided that Montana will be hosting next year's Congressional Tour in August 2020.

1. Presentation by the Orca Task Force

Stacy Horton, policy analyst/biologist, introduced Dr. Les Purce and Stephanie Solien, ORCA Task Force. In 2017, the southern resident killer whale population declined to a 30-year low of 74 animals. Washington's Governor Inslee issued an executive order in 2018 requiring state agencies to take immediate action to protect the remaining orca population, and a two-year task force was formed to make recommendations. The task force is made up of 49 members representing tribes, businesses, agriculture, nonprofits and Canadians.

Purce said the problems facing orcas are not enough food, too much noise, runoff waste and the effects of farming. They prefer a diet of Chinook salmon.

The task force came up with 36 recommendations: 16 relating to prey, 10 on noise and 10 on contaminants. Purce said regarding prey, the task force calls for improving salmon habitat, increasing hatchery production and reestablishing Chinook runs. This includes reestablishing runs above Chief Joseph and Grand Coulee. The task force wants spill to be increased for smolt, and to increase the ability to have habitat for bycatch. It also made recommendations on predation, particularly pinnipeds.

Purce said the task force proposed a variety of noise-reducing strategies aimed at boats and fishing processing facilities in the sound. In addition, they listed recommendations to prevent oil spills and other types of contamination. The task force recommended around a billion dollars to address the identified challenges. The Washington Legislature approved more than \$1.1 billion for oil transportation, increasing the numbers of chinook, reducing noise and toxic pollution prevention.

Solien discussed year-two efforts. The task force continued to meet in 2019 to assess progress made on implementing year-one recommendations and look at emerging threats, such as climate change and population growth. Hundreds of people did good work, she said, but this work can't stop. They need to find a home for the orca task force work beyond year two.

She said the orca captured public attention. In year one, they increased hatchery production to benefit orca, but it needs to be consistent with sustainable fisheries and stock management. They need to have available habitat and to follow recovery plans within the ESA. They were able to work with the whale watching community to create more space between boats and orcas. They looked at gaining authority to ban toxic chemicals from wastewater treatment plants and roadways. They looked at funding for fish barrier removal and protection for salmon habitat. They got some funding for salmon habitat, but not as much as they need. They also got action to reduce the possibility of oil spills using tug escorts.

Reading from her slide, Solien said they still need to fully fund salmon recovery plans and address pinniped predation in Puget Sound. They advocated for a study last session, but didn't get it, and are hoping to get that next session. They need to continue to reduce vessel noise from recreational boaters, shipping and the Navy. Also, they need to maintain funding through contaminant funding programs to help with toxic cleanup and stormwater infrastructure improvements. They are looking for funding to monitor effectiveness and to prevent northern pike expansion into the Columbia River.

Continuing, Solien read that among the lessons learned is that they need new technology for salmon and orca recovery. They need new, vessels-related considerations related to Navy operations. As methods are available, they want to reduce toxic runoff from state highways work. There needs to be funding for local governments facilities planning through 2070 to address wastewater, sewage and stormwater issues in relation to population growth.

Solien recommended that one or more entities be created with the authority and funding to recover and advocate for orcas. She read recommendations around reducing contaminants, addressing climate change, and managing population growth and land development.

The task force will hold its final meeting October 7, receive public comment on its final report and recommendations between October 14–25, and then deliver a final report to the governor November 8.

Member Norman said he was on one of the working groups and praised the leadership of the group, putting together these recommendations and securing funding from the legislature in a very short period of time.

Member Pat Oshie asked a capital budget question, asking for detail on what projects the budget was pointed to. Purce replied it went to habitat projects that the state had been investing in, and it went to construction, hatchery improvements and culverts (as part of reducing barriers). In the end, there was less money directed and it was more diverse. The issue of barriers ended up reducing the amount requested by the governor.

Member Devlin asked what the presenters considered in terms of immediate measures versus long-term efforts. Devlin cited birth statistics of the remaining orcas and noted that they're down to very few female whales in their reproductive years. Solien replied that the most immediate actions we could take is to get them more fish and get them to reduce the issue of contaminants and vessel noise. They all contribute. Noise reduction helps orcas find the fish that are there. If we don't get at toxics, those will impact the ability to have a live birth. Many salmon have toxins. Reducing noise 50 percent, increasing salmon 15 percent and reducing toxins will give us a fighting chance. Yes, the population is in crisis, Solien

said. Orcas are the canary in the coal mine. We have to address issue of protecting the orca, but it's bigger than that.

Purce said they have had these discussions about the numbers, their health and the birth pyramid. It's interesting what we're learning. We're finding the orcas ranging further away. For most of the summer, they're not in the area they normally are. They're off finding food. Stephanie's point is this is not isolated. This is the synergy between the conditions of water, climate, food availability and the impact on salmon.

2. Briefing on water resources in the Pacific Northwest as related to marine heat waves, El Niño, and climate change

Horton introduced climatologist Dr. Nick Bond to talk about climate variability in the region. He reviewed sea surface temperatures and the blob. He discussed what occurred in area streams in Summer 2015. Because there was no snowpack, water temperatures rose, and salmon had trouble getting to their salmon beds.

He reviewed what occurs under El Niño and La Niña conditions. Recently, conditions have become a little wetter in spring, but precipitation hasn't changed much. He's seen no real trend in precipitation. Temperature trends are a different story: In the summer, afternoon temps haven't warmed as much as the nights. Nights here are a little warmer and stickier. Higher elevations in the West are getting mostly snow in the winter. A lot of watersheds are getting more rain than snow, which leads to an increase in flooding.

Bond said that natural variability in the climate system (such as El Niño) will continue to dominate overall trends for some time. As for climate change, Bond said If we go along the path of no halt in greenhouse gas emissions, we're looking at a 2.5-to-3- degree increase by mid next century.

He said that scientists are getting better at forecasting temperatures out six-to-nine months, but forecasting snowpack is more difficult. Bond concluded that in the coming decades, the Pacific Northwest will feature warmer temperatures, as well as wetter winters and slightly drier summers. The region's stream flows are expected to be greater in the winter and lower in the summer.

3. Tacoma Power update on transportation electrification

Chris Robinson, Tacoma Power's power superintendent, has been working on transportation electrification (TE) projects for 30 years.

Tacoma Power serves 180,000 customers, many in suburban communities. Tacoma Power is governed by a five-member public utility board. It gets its power supply from four hydro projects they own and from contracts with BPA. It has a strong focus on keeping rates as low as possible. They serve white-collar, blue-collar and low-income households.

“With transportation electrification, everyone wins,” Robinson told Council Members. “EVs perform well, they’re fuel-efficient, maintenance is low-cost and they’re better for the environment. As a fixed utility, we don’t see a lot of load growth, so added load is good for us.”

From a programmatic standpoint, TE has similarities to energy efficiency. TE is a new technology in the early stages of transforming the market. They are providing incentives and trying to get more people into the market. I think our role is providing objective information, Robinson said.

Last spring, Washington’s Governor Jay Inslee signed legislation authorizing a municipal electric utility or public utility district to adopt an electrification of transportation plan. There are some limitations in providing financial incentives since the constitution prohibits the gift of public funds. Plus, there has to be a net benefit to consumers.

Even before the legislation passed, Tacoma Power was engaged in TE projects, trying to get money from grants and elsewhere. A lot of our work around EVs is customer education and outreach, Robinson said. About half of Americans don’t know EVs exist, and can’t name a brand. Tacoma Power provides information on its website. They joined FORTH out of Oregon, and have helped build awareness through the ChooseEV.com website. They also host EV ride-and-drive events. Tacoma Power did the first EV discount program in the state of Washington. They publicize the event and dealerships provide limited-time discounts. It also helped educate dealers on EVs and spurred some sales, Robinson said. He added that EV charging studies are being conducted to measure charging and usage data to inform future product design.

Robinson said Tacoma Power was an early adopter of EV fleet vehicles in 2002. They have provided charging infrastructure to the public and is involved in the West Coast Electric Fleet Pledge. They have deployed eight PHEV commuter vans. In addition, the utility is working with Pierce County Transit, which has three battery-powered electric buses in their fleet with three more on the way. It’s also working with the Port of Tacoma to bring shore power infrastructure at Husky Terminal.

Charging is a concern, he said. Tacoma Power has worked to get as much charging in its service area without paying for it. There are two L3 and five L2 stations (30 dual head) installed. Another effort is a new rate that encourages companies to invest in public DC fast-

charging stations in Tacoma. Also, the utility plans to launch an EV charger program in 2020, and help establish a low-income EV carshare program with the help of state grants.

Tacoma Power plans to present the first draft of its TE plan to the Public Utility Board on October 23, make a presentation to the Infrastructure, Planning, and Sustainability Committee meeting on November 6, and then gain adoption by the Public Utility Board.

4. Briefing on methodology for quantifying the environmental costs and benefits of new resources for the 2021 Power Plan:

Following up to last month's presentation, Gillian Charles, energy policy analyst, is looking for confirmation that they're going in the right direction. She read from a slide outlining the environmental effects and the Power Plan process, and a slide summarizing the methodology for quantifying environmental costs and benefits of new resources.

Charles then read a summary of the proposal for the 2021 Plan:

1. Account for the financial costs of compliance with existing regulations in the cost of new resources.
2. Recognize that residual and unregulated environmental effects from resources exist but are hard or impossible to quantify in any systematic and consistent way; describe them qualitatively in the narrative of the plan and consider them when determining a resource strategy.
3. Address and consider costs of compliance with proposed regulations on a case-by-case basis.
4. Do not attempt to include quantified environmental benefits in new resource costs beyond the few historic examples, but recognize and emphasize in the resource strategy in other ways the value of certain resource choices in helping to mitigate other harmful environmental effects.

Charles then outlined activities since the September Council meeting.

Member Devlin said the Power Committee has reviewed this a couple of times. I think we're satisfied with what has been presented. We're going with qualitative statements.

Chair Anders recessed the meeting at 4:16 p.m.

Wednesday, October 15

Chair Anders brought the meeting to order at 8:33 a.m.

5. Seattle City Light update

Ben Kujala, Power Division director, introduced Debra Smith, Seattle City Light (SCL) general manager, noting that the Council was meeting in SCL's service territory. She has one year on the job. She provided an overview of the utility, which is the 10th-largest public utility in the country. It has 408,000 residential meters serving 900,000 people. It includes eight outlying areas.

Smith has been in the industry 24 years. She spent 17 years at EWEB and then ran Central Lincoln PUD for five years before coming to SCL. Central Lincoln is a rural utility, but it shares similarities with SCL in that there are customers struggling with affordability. Smith lives downtown where she has to walk through one of the worst intersections in Seattle. There was a stabbing there yesterday, she said. If I didn't have that walk, it would be easy to distance myself from the problems Seattle is facing. Most of my employees can't afford to live in downtown Seattle, because housing is so expensive and there's a lack of affordable housing, she explained. So they have lots of commute time.

When Smith arrived, she inherited a strategic plan and a rate trajectory. SCL does a six-year strategic plan every two years. They're now in the midst of doing a new strategic plan.

Smith said the pace of growth in Seattle has been daunting. Seattle has done the right thing trying to manage fixed costs and people. They've tried to manage that by not allowing big growth. That means people have been stretched. She said at SCL, they're working to help customers manage their energy in whatever way they choose.

"That's kind of the same message we've been giving to BPA — it has to be around customer choice," she said. We're Bonneville's customers. There has to be that same sense of responsiveness. We're all working hard to change our mindset and we need BPA to do the same.

Smith said that Seattle City Light and the City of Seattle are working hard to build a respectful workplace. There's tons of diversity. She said rate redesign is a big deal and they need to do rate pilots. We're close to rolling out the first, equity program targeted at folks in the \$25k range having trouble making their payments. We're going to do a time-of-use (TOU) rate and we're looking at electrification of public transportation. SCL just stood up a new division to focus on transportation electrification and innovation.

"We just built the coolest substation," she said. "It had better be since it cost \$210 million. Denny Substation is located in a compact, urban environment."

SCL is the largest city department in terms of budget and second largest after the police in terms of headcount. She said that with a new mayor and a number of new department heads, they're working collaboratively to improve the experience of developers and customers in general. It's a concept of "one Seattle."

We've been raising rates faster than inflation, Smith explained. We have had declining load for a long time, despite the growth. The Denny substation was for Amazon, Google and other high tech stuff. More energy-efficient buildings are replacing older ones. So we're spending the money supporting growth, but we're selling less and less. With rate redesign, we need a rate structure that doesn't hinder electrification. Despite increases in EVs, it will be 2030 before things start to turn around. How do I get from here to there? It's about doing some rightsizing and doing all the things BPA is doing.

We are highly leveraged, but we're fortunate that the City has liquidity that we can fall back on, she said. I'm sending same message to City Light's employees that customers are sending to Elliot at BPA about living within our means. If Bonneville is passing on costs to us, it is not okay, and it's not okay for us to do it either. We need to focus on our core purpose, which is to provide affordable, reliable products to our customers in a way that is environmentally sustainable, consistent with our values.

Member Ted Ferrioli congratulated Smith on her first year. The Council has concluded that energy efficiency is the most cost-effective resource, but it also creates less demand, which means less revenue for you and Bonneville. So we're all engaged in this race to the bottom, he said. Lower loads mean higher unit costs for you and ratepayers. Do we need to figure a different way to monetize the value of energy? What conversations are happening?

Smith replied that energy efficiency is still the most cost-effective resource. We're talking a lot about capacity constraints, and we just had the resource adequacy meeting here last month. We are under-resourced in this region. We provide a 60 percent discount for customers who qualify. People want incentives for net metering, but it puts more pressure on customers who I'm already giving discounts to. It's all around markets and capacity. How do we effectively communicate to customers the value of baseload energy? I think we'll start pricing backup products. When I look at the future, I think about providing batteries, maintenance and backup power. How do I provide new revenue streams as people use less?

Member Devlin said older cities have aging infrastructure. What's the real status of your infrastructure? Where are your liabilities? Smith said their hydro is in really good shape. She said she knows it's an issue with BPA. SCL has 2,100 MW of capacity. They are at the front of the relicensing process for Skagit. There are no fish passage issues; it's around land preservation and culturally historic properties. Skagit will create rate pressures. They are at the point of deciding what form of licensing they'll use. I think our biggest issue is our poles,

she said. We have a fair amount of direct-bury. We see failures there. We had 26 poles come down, but no one was hurt. We were fortunate. It's been made clear to us that we're not replacing poles as aggressively as we used to. It has an ever-growing price tag with it. Utilities are struggling getting linemen. I lost 25 linemen last summer. They're going to California to get paid better. This piece clearly needs to be factored into our rate structure.

Member Bo Downen asked what the Council could provide that would be useful as SCL works on its IRPs or on the fish and wildlife side. Smith replied that they need to continue to grapple with the impact of energy efficiency on load. There are different views of it throughout the region. In the near term, we're in this process waiting for NEPA and the process to play out on the Columbia, she said. This is a place where BPA, PPC and SCL all align. I'm concerned about Washington's move to go to 125% spill without test results and finding out the impacts on juvenile and adult salmon. If that moves forward, there is some risk

Smith added, as far as the Power Plan, how do we take the next step around resource adequacy? I was encouraged that PacifiCorp said they're going to invest in new resources, instead of just going to market. We need to encourage new resources. Pumped hydro is another area we can take a step forward. On fish and wildlife, we need accountability. We need to make those investments that have clear results. I can't afford, and Bonneville can't afford, to just spend money.

Member Norman said regarding rate design, how mature is it? Smith said they've been working with their review panel. They have a path to rate redesign with an opt-in TOU rate in January 2021. It's not approved yet. We're working with Nancy Hirsch (executive director for the NW Energy Coalition), she said. We go live with the energy imbalance market in April 2020. We'll get some practice operating in the market. The thought is, with TOU rates, get more value with our long position. I had an interesting conversation with Clearing Up who said opt-in programs get low enrollment. I don't think that will be the case in Seattle with our high-tech population. The impediment is we need to complete the second phase of our integration with our AMI system. We're putting a portal in place that will allow customers to go online and price their products using multiple rate designs. It's a heavy lift, but we're focusing on that.

6. Council decision on 2020 Regional Technical Forum Work Plan and Budget, Charter, and new PAC Member Nominations

Jennifer Light, RTF manager, appeared seeking Council approval on three decisions: the 2020 RTF Work Plan and Budget, Charter, and RTF Policy Advisory Committee (PAC) Member Nominations.

Light discussed the development of the RTF, which started in mid 1990s. It was expanded in 1998 to tracking the region's progress against the Council's target. The RTF has five core objectives:

1. Develop and maintain measure library with savings, lifetime costs, and estimated value to power system;
2. Establish a process for updating list of resources and an appeals process for demonstration of different values;
3. Develop set of protocols by which savings and system value should be estimated;
4. Assist the Council in assessing measures, technology development trends, and effect of trends on future performance and availability of resources; and
5. Track regional progress toward meeting Council targets annually.

Light next shared the values of the RTF:

- Leverages the work across the region to reduce the individual burden on any one utility;
- Brings together 30, unbiased, technical experts to analyze the data and provide recommendations;
- Uses a public process to bring transparency, as well as additional ideas and expertise, to the analysis; and
- Removes some of the friction between utilities and regulators when estimating and claiming savings.

She said when people hear a number from the RTF, they know it's been vetted.

Light explained that 2019 is the last year of funding agreement and they are looking to secure funding through 2024. She talked about the work plan development process and the discussion around including natural gas in its scope. How to share funding costs was explored. There has been interest from dual fuel utilities to include natural gas in its evaluation. There are a lot of synergies around the work we're already doing, she added.

The five-year funding agreement calls for \$1.8M annually with 2.5% inflation. Light talked about subcategory expenditures. Getting ready for natural gas analysis will require some tools and regional coordination expenditures.

Demand response gets 3% of budget. We're looking at measures that provide energy efficiency and direct response, such as heat pump water heaters, Light said. Our analytical tools are geared toward energy efficiency and we could make them more robust to include demand response.

Northwest Power and Conservation Council Motion to Approve the 2020 Regional Technical Forum Work Plan, Budget of \$1,800,000, and Business Plan as

Recommended by the Regional Technical Forum and Regional Technical Forum Policy Advisory Committee

Member Devlin moved that the Council approve the 2020 Regional Technical Forum Work Plan, Business Plan and Budget in the amount of \$1,800,000, as presented by staff and recommended by the Regional Technical Forum and Regional Technical Forum Policy Advisory Committee.

Member Oshie second.

Motion passes without objection.

Light next discussed RTF Charter updates for additions to objectives and the scope of activity:

- Conduct technical analysis on technologies that provide both energy efficiency and demand response.
- Develop and maintain a list of natural gas energy efficiency resources, including methodologies for estimating lifetime energy savings and costs.

Northwest Power and Conservation Council Motion to Approve the Regional Technical Forum Charter as Accepted by the Regional Technical Forum Policy Advisory Committee and Adopted by the Regional Technical Forum

Member Devlin moved that the Council approve the amended Regional Technical Forum Charter, as presented by staff and accepted by the Regional Technical Forum Policy Advisory Committee and adopted by the Regional Technical Forum.

Member Norman second.

Motion passes without objection.

Light reviewed the new RTF PAC appointments. There are four new funders:

- PacifiCorp (Idaho)
- Chelan County PUD
- Cascade Natural Gas
- NW Natural

Member Oshie asked about the status of Intermountain Gas in Idaho. He knows we were seeking their input. Light replied that they just completed their first conservation potential assessment, and they're not ready to come and contribute. She said they hope to bring them into the fold via a natural gas working group. Hopefully they can come in on a future funding cycle.

Member Oshie complimented Jennifer on getting people to the table and working together.

Northwest Power and Conservation Council Motion to Approve the Staff Recommendations for Member Organizations for the Regional Technical Forum Policy Advisory Committee

Member Devlin moved that the Council approve the appointment of Cascade Natural Gas, Chelan County PUD, NW Natural, and PacifiCorp (Idaho) as member organizations to the Regional Technical Forum Policy Advisory Committee, as presented by staff.

Member Norman second.

The motion was approved without objection.

7. Update on key Environmental Protection Agency activities in the Columbia River Basin

Chris Hladick, regional administrator, U.S. EPA Region 10, said the EPA values the partnership they've had with the Northwest Power and Conservation Council, and they appreciate the Council's leadership in the Pacific Northwest and the recognition of water quality as a key issue for fish and wildlife recovery in the Council's Fish and Wildlife Program.

Hladick outlined his professional background before delving into the EPA's work in the Columbia River.

He talked about EPA's Columbia River toxics reduction work. He said the recovery of salmon, steelhead and other fish populations cannot be achieved without reducing toxics in water, fish and sediment. The Council has been a partner in their efforts and he traced the history of their involvement in addressing toxins. He thanked the Council for funding the 2018 PAH Toxic Contaminant Story Map.

Earlier in October, EPA solicited applications for a competitive grant program that will fund toxics reduction projects in the Basin. They will award the grants in the Spring of 2020, one to the Lower Columbia River Estuary and the second to the rest of the Basin.

He noted that the Council's Fish and Wildlife Plan recognizes water temperature as a key ecosystem indicator for salmon/steelhead recovery. In October 2018, the Federal Western District Court of Washington found that EPA should have issued a TMDL to address temperature impairments on the mainstem of the Columbia and Lower Snake rivers.

The EPA released their cold-water refuge plan. He said Oregon's Lower Columbia River Standards are likely to jeopardize the survival and recovery of ESA listed salmon and

steelhead. EPA estimates there are 65,000 steelhead and 5,000 fall Chinook salmon are in the eight refuges between Bonneville Dam and The Dalles Dam in August.

EPA identified 23 areas that provide cold water refuge to migrating adult salmon and steelhead when the Columbia River rises above 20°C. EPA identified 12 tributaries as the primary cold-water refuges because they have 97% of the total refuge volume and are known to be used by adult salmon and steelhead.

There appears to be sufficient cold-water refuges now, but they might not be there in the future. A key recommendation in the plan is to maintain the cool river temperatures and flows of the 12 primary refuges through protection and restoration measures.

The EPA has received NPDES permit applications and is finalizing the permits for the four Lower Columbia River Dams, four Lower Snake River dams and Grand Coulee Dam. Hladick said they have also recently received an application for Dworshak Dam, and they expect to receive applications for Chief Joseph Dam and Albeni Falls Dam.

Regarding spill, EPA has been working with the State of Washington and Columbia River federal dam agencies to address Ecology's proposed Total Dissolved Gas (TDG) criteria in order implement the Flex Spill Agreement. EPA plans to undertake ESA consultation and take Clean Water Act action on Washington's criteria in time for the April 3 start of the flex spill.

Hladick also summarized EPA activities dealing with transboundary pollution impacts from coal mining in the Elk River Valley, B.C.

In closing, they are working on a lot of issues in the Columbia River Basin. It puts the public process on steroids. Hladick credited his team working in the region.

Member Anders said the Council doesn't oversee contaminants, but it's an issue we pay attention to. Your success is our success.

Member Norman asked, regarding the TDG gas waiver associated with the flex spill, does the EPA have a process where they will consider the Oregon modification? Mary Lou Soscia said Yes, the Oregon Environmental Quality Commission issues a modification to their standards. They've been doing it for about 17 years. Dan Opalski said the processes are slightly different. There isn't a formal submittal from Oregon for EPA to act upon. Washington is developing their own criteria and will bring it to EPA for approval. Opalski said it will be done on time. Conversations are robust around this and everyone has their eye on it.

Member Yost asked for an explanation on the nexus between the total maximum daily load (TMDL) and the cold water refugia actions. Opalski said there isn't a direct tie. There isn't a notion of embedding refugia into the TMDL analysis. But there's a recognition that temperature is a real challenge in the basin, especially in the mainstem at certain times of the year. The TMDL is to establish the allowable loads from different sources of heat contributions to the river. There will be time and planning to hit those targets. The importance of the refugia is to give fish some place to be when temperatures hit troublesome levels.

Member Yost asked, what are the maximum limits? How do you measure it at different points since different places of the river are warmer than others? Opalski replied it's a good and complex question. There's variability across the basin. There are years of records to look at average temperatures. What are the mitigation opportunities for fish? What times of day they can shelter themselves? The compliance question will be left to the states. There's an active monitoring program at each of the federal facilities. How do we take that information and come up with readings that take that variability into account?

Member Yost said the requirements for fish depend on whether they're spawning or not. When you look at mainstem, it's a movement corridor. When you talk about seasonal use are you saying it's up to the states? Or are we looking at meeting a standard year-round. Fish aren't there 24/7.

Opalski said the web of water quality standards is complex and based on when fish are. Yes, mainstem has higher standards. Our analysis will focus on the most critical times of the year when temperatures are up, and fish are present. That's the importance of refuges. Allowing those fish to travel.

Hladick asked, now that you have these cold-water refuges, who manages them? Dan Opalski replied what we are required to do is identify where those priority refuges are and what can be done to protect them.

Member Downen asked for details on Lake Kocanusa in Elk River Valley. A lot of pollutants seem to come out of Canada, so who's mitigation responsibility is it? Hladick said it's a function of the U.S. State Department to work with Canada. We have a close relationship with Environmental Canada. They have been cooperative in talking about it. But we work through State Department. When you bring something up, they might go "what about this?" There's a lot of issues, but studies that found Selenium in the lake raises it to a higher bar.

Member Downen followed up with a specific question about influence into the Flathead from that coal mine. They're not going in that direction, Hladick replied.

Anders: it's been awhile since we partnered with EPA and came up with the PAH Toxic Contaminant story map. It's gotten the most hits on the website. If opportunities for partnership arise in near future, we would entertain that.

Hladick said it's always good to talk about successes. We'll look to see if taking water temperatures is consistent across the basin.

8. Briefing on regional energy future from an independent power producer perspective

Gillian Charles introduced Orijit Ghoshal, Invenergy's senior manager of regulatory affairs.

Ghoshal said that when you think of resources, think of generating facilities that might be owned by independent power producers. Unlike utilities, independents are not a monopoly and they don't have eminent domain rights, so we have to come to voluntary agreements, Ghorshal said. Over past 15 years, Invenergy has 16,000 voluntary agreements with landowners. Invenergy is North America's largest, privately held clean energy developer working in wind, natural gas, solar and lithium-ion batteries. They operate worldwide, but are primarily in North America, owning half of their 23-GW capacity.

Ghoshal showed a map of 145 Invenergy projects. They had to raise \$33 billion to bring the projects to fruition. He listed some of their facilities, including the Vantage wind farm and Gray's Harbor natural gas generating facility in Washington, and the Judith Gap wind farm in Montana.

They're currently installing batteries for Arizona Public Service to shift some of their solar capacity to an after dark program. Ghorshal said they are seeing new uses for the deployment of storage beyond frequency response. The IRPs for Puget Sound, PacifiCorp, Avista and Idaho Power all include some level of storage. He said the cost of battery storage is about \$1,200 per kW, compared to \$1,500 per kW for wind and more for solar.

Invenergy has built 400 miles and 2k miles of distribution line. A buildout of merchant transmission is something you should be including in your plans, Ghorshal said. To meet all the clean energy targets, there will be some buildout of the transmission grid and other players should be considered.

Ghorshal said that with the failure of cap and trade in Oregon, it's unknown what we'll have next year. There are new clean energy laws in Washington and Oregon, which provides an opportunity for developers like us to build out the clean grid.

In the Northwest, we don't have wind and solar when there is the highest demand. That's when you need a Gray's Harbor generating facility. He mentioned BPA as having 70 percent of the transmission grid, which is why considering all interconnection options is important. Siting is going to remain a formidable challenge, however. There is high land cost, geotechnical challenges and the good wind sites are already taken —good solar sites are being taken now.

Member Devlin observed that nuclear plants are being closed because they're too expensive to operate. Coal retirements are occurring. Policies are being developed in the region to limit gas generation. Is there a reluctance to financing gas facilities in Washington and Oregon? Yes, Ghorshal replied. Grays Harbor can be built out. But they can't get the money to do it. It might be the next stranded asset. Even under current clean energy laws, it's going to be a fight.

Member Downen asked that when looking at developing new resources, where in the process do you work on having a buyer? Ghorshal said they do most of their development off of their balance sheet in-house. In this market, you need a long-term agreement before starting construction. He talked about some of the products Invenergy is offering.

Member Downen asked if he advocates for utilities to join the same transmission operator. Would a westwide true transmission operator be better for you and other IRPs? Yes and yes, Ghorshal replied. It's better for utilities and customers. We advocate for it through our trade organizations, who lobby for it. Renewable Northwest and the Northwest Energy Council are for it as well. We need a signal market.

Member Anders asked what factors are involved to hold or sell an asset? Ghorshal said it depends where it is, given transmission and other factors. Another consideration is what else can we do with that money. Utilities more comfortable owning an asset themselves.

Council Business

Northwest Power and Conservation Council Motion to Approve the Minutes of the September 17-18 2019 Council Meeting

Member Devlin moved that the Council approve for the signature of the Vice-Chair the minutes of the September 17-18, 2019, Council Meeting held in Corvallis, Oregon.

Member Norman second.

Motion approved without objection.

Northwest Power and Conservation Council Motion to Authorize Staff to Enter into a Contract with OMBU for Technical Support for the Council Website

Member Devlin moved that the Council authorize staff to enter into a FY 2020 contract with OMBU for technical support for the Council's website in an amount not to exceed \$40,000, as presented by staff.

Member Yost second.
Motion approved without objection.

Northwest Power and Conservation Council Motion to Approve the Council Response to the Department of Energy's Notice of Proposed Determination Regarding General Service Incandescent Lamps

Kevin Smit, senior energy analyst, said the Department of Energy is saying no update to incandescent bulbs is needed. It creates a lot of confusion. Staff drafted a response letter. Member Devlin moved that the Council approve the comment letter in response to the U.S. Department of Energy's Notice of Proposed Determination regarding General Service Incandescent Lamps, as presented by staff.

Member Norman second.
Motion approved without objection.

Northwest Power and Conservation Council Motion to Approve the Council Letter of Support to the California Public Utility Commission on a Pilot Test of a Conservation Transfer Agreement Between Bonneville Power Administration and Southern California Edison

Charlie Grist, conservation resources manager, said we need to fund commercial transactions for carbon free power. This agreement takes power saved by energy efficiency in one utility area and transfer it to another at an agreed-upon price. BPA has a pilot agreement with SCE to do this. The OPUC has sought input on this. We're proposing to send a letter of support.

Member Devlin moved that the Council approve the letter to the California Public Utility Commission in support of a pilot test of a Conservation Transfer Agreement between Bonneville Power Administration and Southern California Edison, as presented by staff.

Member Norman second.

Member Yost said he supports the motion, but he just finds it strange that we're going to require utilities to budget more for energy efficiency and allow them to peddle it somewhere

else. We need to look at the requirements we put on utilities in the Power Plan, he said, and need to do some soul searching on how we establish energy efficiency and the requirements.

Member Downen said he supports Member Yost's comments. He's excited to see where pilot goes, but we need to be careful with our messaging. Last month, we're told BPA is behind in meeting energy efficiency targets and now we support selling it. It's a mixed message.

Kujala explained that this is supporting a concept. We're not putting ourselves as an arbiter. We're supporting the exploration without being a party to the contract. It's about a broader idea of making transfers between utilities.

Member Devlin said he's not concerned about the pilot project, but the issue is worthy of discussion. We set targets for conservation. It might be a different conversation if they're not meeting the targets and we're counting on the energy. Some policy issues might need to be addressed. Kujala said that under the Seventh Plan, there are regional targets. I don't think we had individual targets. Some issues here are worthy of more discussion.

Member Ferrioli said when our most senior and junior members agree we should be careful, we should look at that. But we're encouraging BPA to find new markets. Let's look at the pilot and see where it goes.

Member Oshie said it's treating conservation as a resource, to put it into the market and get a market price. This is a better deal for BPA, otherwise they wouldn't do it. Maybe other utilities will do it as well.

Motion passes without objection.

Public Comment on the Fish and Wildlife Program

There was no public comment.

Public Comment

David Hortman, from Seattle, Washington, was formerly with Friends of the Earth. He talked about the history of power development in the region and talked about western water law. He said the Yakima River is over-subscribed and irrigation interests continue to lobby Congress. He said the Council could ask the Washington Legislature to perform a performance audit. He urged they abandon building more dams and instead focus on water

conservation and crop management. He recommends that public comment be taken before projects are approved, not after.

Chair Anders adjourned the meeting at 11:24 a.m.

Approved November _____, 2019

Vice Chair