

Bill Bradbury
Chair
Oregon

Henry Lorenzen
Oregon

W. Bill Booth
Idaho

James A. Yost
Idaho



Jennifer Anders
Vice Chair
Montana

Pat Smith
Montana

Tom Karier
Washington

Phil Rockefeller
Washington

Council Meeting Boardman Oregon

May 7-8, 2013

Minutes

Council Chair Bill Bradbury called the meeting to order at 1:38 p.m. The meeting began with a welcome by Lisa Mettelsdorf, assistant manager of the Port of Morrow, the second largest port district in the state. She described the port and its activities, emphasizing the multiple modes of transportation the port offers and the activities undertaken to improve the infrastructure at the port. She that food products processed in local facilities are shipped to markets around the world.

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

Phil Rockefeller, chair, fish and wildlife committee; Jim Yost, chair, power committee; and Henry Lorenzen, public affairs committee.

Fish and Wildlife chair Phil Rockefeller reported on a four-hour committee meeting. He said the committee unanimously supports sending a letter from the Council chair to Representative Doc Hastings in support of legislation that would add quagga mussels to the list of harmful species under the Lacey Act. The listing would enable more effective enforcement against interstate transportation of the mussels, Rockefeller said. He also noted the Council is cosponsoring a conference on quagga and zebra mussels May 15.

The committee had a staff presentation on basinwide monitoring, including ISEMP, CHaMP and Action Effectiveness Monitoring (AEM), and decided ongoing RME projects should come before the full Council next month for consideration, Rockefeller said. The committee wants AEM to remain a pilot project with a review by the Independent Scientific Review Panel, he reported. The committee also discussed a draft charter for the Wildlife Advisory Committee, which will come before the full Council, Rockefeller said.

He said a discussion of the fish tagging recommendations was “the main event” at the meeting. The committee heard the consensus and non-consensus options for coded wire tagging, Rockefeller said, and he explained some of the CWT issues. We were in listening mode and no

decisions were made today, he stated, adding the committee will be studying the issues further, including a look at the Independent Economic Advisory Board review of tagging, he said.

Power Committee chair Jim Yost said the first item on the committee agenda was identifying the major issues for the Seventh Power Plan. Staff and committee members agreed the focus of the plan will be capacity and flexibility issues, and the committee gave staff the go-ahead to develop a work plan for exploring those issues, he said. There will be workshops and discussions on other issues as well, Yost added.

The committee also discussed the lack of progress on an end-use load research project, he continued. The project is delayed pending a determination of whether there is enough support for conducting and funding the work, Yost stated.

The charter for the Resource Adequacy Forum was also on the agenda, he went on. Staff will prepare a draft charter for the committee's review, which will also be circulated for feedback, Yost said. The consensus is that the adequacy process has been beneficial and has a lot of support and regional involvement, he added. Yost said Michael Schilmoeller made a presentation on the Flexibility Metric he is developing.

Public Affairs Committee chair Henry Lorenzen reported that the committee will meet after the Council meeting to review plans for a Congressional staff trip in August. Montana is in charge of planning the activities, he said. The committee will also view a public affairs video on the Council's major accomplishments and discuss releasing the 2012 draft report on BPA's fish and wildlife (F&W) costs for public review, Lorenzen concluded.

1. Briefing on regional energy efficiency implementation

Margie Harris, Executive Director, Energy Trust of Oregon, Steve Eldrige, General Manager and CEO, Umatilla Electric Cooperative

Charlie Grist introduced presentations on the successes and challenges of implementing energy efficiency programs in the Northwest. Margie Harris, executive director of the Energy Trust of Oregon, began with the history and accomplishments of her organization. ETO was created by the legislature in 1999 to invest in energy efficiency and provide access to renewable energy, she said. The ETO started with electric utilities, but evolved over time to include gas companies, Harris explained.

ETO is funded by a 3 percent public purpose charge paid by electric utility customers, but the funding has grown to be about 5 percent of utility revenues due to 2007 legislation that allows utilities to apply for additional funds, she said, adding that the funding is linked to utility Integrated Resource Plans. The ETO annual budget is now \$170 million annually, Harris stated. She described the ETO structure and how it relates to other agencies and utility customers.

Harris went on to describe ETO's mission to acquire all cost-effective energy efficiency and pay up to 100 percent of the above-market cost for new renewable energy projects that are less than 20 megawatts. ETO's renewable mission is not about cost-effectiveness but is about diversifying the future resource mix with solar, small wind and hydro, bio-power, and geothermal projects, she said.

ETO provides information, expertise, and dollars for energy efficiency, Harris continued. ETO has built “an energy efficiency power plant” for the region by providing 425 average MW of power and has grown the savings by double digits year after year, she stated. ETO has also saved 23.2 million annual therms of natural gas, Harris said. The savings have kept 7 million tons of carbon dioxide out of the atmosphere, the equivalent of removing 1.2 million cars from Oregon roads for a year, she reported. Harris also recapped the economic benefits ETO has delivered, including an added \$2.1 billion to Oregon’s economy through wages, small business income, and 1,800 jobs.

ETO and the Council have “a strong and respectful relationship” and ETO considers the Council’s Sixth Power Plan a critical reference, she said. The plan influences utility Integrated Resource Plans and provides input to ETO benefit/cost analysis for electric efficiency measures, Harris said. The Council’s Regional Technical Forum is an important peer group and sounding board for savings analysts throughout the region, and ETO contributes annual funding for the RTF and serves as a member, she went on. ETO relies on the RTF as the primary source for savings and costs, measure life, and estimates of load shapes for energy efficiency measures, Harris said, adding that it is our “first choice” for such information, Harris said.

ETO encourages the RTF to look at new technologies for energy efficiency, she went on. ETO provides 8 percent of its budget in supporting the Northwest Energy Efficiency Alliance, and NEEA’s work on emerging technologies is important to ETO, Harris said. In 2016, we will need a pipeline full of new technologies to keep growing our savings, she stated.

ETO provides services to a range of consumers, including homeowners and renters, as well as commercial, industrial, and agricultural customers, Harris said. She described the types of services offered in each sector. For renewable energy projects, ETO offers development assistance and incentives, Harris said.

ETO provides “a proven clean energy platform,” she said, adding that the organization’s administrative costs are low at 5.6 percent of the budget. Harris noted that there are challenges to the ETO model, including that it does not serve state-wide and has limited options for oil, propane, and wood heat customers. There are no dual-fuel utilities in the ETO mix, she said, adding that the Oregon Public Utility Commission has taken up the question of whether ETO programs cause fuel switching.

Harris wrapped up by listing a number of innovations and opportunities that exist for efficiency. Among them, she said ETO is working with developers of public housing to assist moderate and low-income residential customers. ETO is also looking at how to increase the geographic representation and cultural diversity in its programs, Harris stated.

Tom Karier asked about the savings captured through efficiency relative to load growth. “We’ve bent the curve backwards on load growth,” Harris stated, explaining that efficiency has more than met load growth, which is now minus 7.4 percent in the area ETO serves.

Pat Smith asked about the ETO budget and staffing. Harris said ETO has a \$173 million budget and 97 staff members. She said most program activities are competitively bid out to companies in the private sector.

What is the reaction of utilities to your work? Rockefeller asked. “We have progressive utilities” that want energy efficiency, Harris responded. We have a contractual obligation to reach the goals they have in their Integrated Resource Plans, and we are dedicated partners to them, she stated.

Steve Eldrige, general manager and CEO of Umatilla Electric Cooperative (UEC), spoke next and told the Council electric cooperatives are owned by their customers, and our mission is to serve those customers. When you cross the Cascade Mountains in Oregon, “everything changes,” he said. For example, the average wage in the UEC area is \$35,000 annually; in Beaverton, it is \$56,000, Eldrige pointed out. The demographics are also different, he said, noting the average age in Hermiston, UEC’s headquarters, is 35.

Umatilla is the largest electric co-op in Oregon and Washington, and second largest in the region behind Flathead Electric in Montana, he said. UEC has 9,803 members and 14,339 accounts in three counties, with a total connected load of 111 average megawatts (aMW), Eldrige said. The co-op’s load is 36 percent industrial and 29.9 percent irrigation, he added. UEC’s energy efficiency programs have saved 162,815 MW-hours of energy over 10 years, Eldrige said.

He went on to talk about the importance of irrigated agriculture in UEC’s service territory, and the effects of limited groundwater on crop production and the economy. The co-op’s service territory is unique in that it is situated geographically such that “you can lift water” very economically from the Columbia to irrigate much of it, Eldrige explained. About 160,000 acres of cropland is under irrigation in the Umatilla Basin, with 25 crops, including corn, alfalfa, potatoes, wheat, and onions, he said. There is potential for much more, Eldrige added.

“The area is operating at a fraction of its economic potential,” he stated. In parts of the basin, the use of groundwater is limited, and much effort is being put toward recharging aquifers and innovating to bring in more irrigation water, and to reduce the amount of water it takes to grow plants, Eldrige explained.

More than 42,000 acres of high-value cropland are left dry each year because of the groundwater shortage, he pointed out. If more water were available, the value of the crops that could be grown would increase significantly, Eldrige said. When you add the value of local food processing, “the value is incredible,” he added.

UEC offers its customers Scientific Irrigation Scheduling (SIS) programs, which provide soil moisture monitoring, Eldrige continued. The monitors update the water requirements for crops daily, and with 45,857 acres under SIS in 2012, UEC saved 10,087 MWh of energy, he reported. Over 10 years, the co-op has saved 124,178 MWh through SIS programs, Eldrige said.

Other UEC irrigation programs include pump efficiency testing, low pressure hardware replacement, and mainline replacement, he went on. There are a number of benefits from irrigation management, including water and power savings, and UEC programs have reduced those costs by 10 to 15 percent for farmers, Eldrige said.

On a graph of UEC sales over the past 10 years, he pointed out that in 2009, industrial sales overtook irrigation. Industrial load has grown steadily since 2002, with only one downturn in 2006, and Eldrige said UEC expects industrial sales will continue to grow.

The “big change” for UEC has been the coming of data centers, he said. UEC now has three data centers in its service territory and is talking to a fourth, Eldrige reported. The data centers are built to accommodate the public’s demand for web-based activities, and they are drawn to Eastern Oregon by tax incentives, inexpensive power, and the climate, he explained. UEC has five energy efficiency projects under way at three data center complexes and estimates they will result in 31,980 MWh of savings, Eldrige said.

UEC’s industrial energy efficiency program has completed 45 projects with 16,916 MWh of energy savings, he said. The savings came from cold storage refrigeration system upgrades, hydraulic system conversions, and compressed air system, warehouse compressor, and lighting upgrades, according to Eldrige. Once these installations are made, they are there and will generate savings, he pointed out. They are “more durable” than conservation in residences, where human behavior comes into play, Eldrige added.

UEC offers incentives for a variety of residential measures, too, he continued. New measures include heat pump water heaters, ductless heat pump systems, and new manufactured home standards, Eldrige said. The most efficient way to capture savings in manufactured homes is to build them in, and “We should push on better building standards,” he stated.

Under Oregon’s renewable portfolio standards, by 2016, UEC will be considered a large utility and required to provide 25 percent of its energy from new renewables, Eldrige said. It will cost us \$4 million a year to meet the RPS, but “it does not change our carbon footprint at all,” he stated. We have to take into account the unintended consequences, Eldrige said. The framers of that law didn’t expect a non-generating utility to come under it, but we will, he stated.

In summary, Eldrige addressed the similarity between today’s push for renewables without regard for costs and the overbuilding of resources that took place decades ago in the region. In the 1970s, “we thought load growth was linear” and much new generation was planned and built because that is what the load forecasts called for, he stated.

“But we found out that price did matter,” Eldrige said. While we didn’t expect the oil embargo or 18 percent interest rates that occurred then, energy use collapsed, he said. Prices went up and people stopped using energy, Eldrige pointed out. The outcome showed the flaws in our thinking, he said. “We may be setting ourselves up for the same thing now,” Eldrige added. Least-cost planning, which was implemented well in the past, “has been all but discarded” and doesn’t apply today to the power decisions that are made, he said.

We now have 6,527 MW of wind in Oregon, Washington, and Idaho, and 20,000 MW are in the queue, Eldrige said. None of the wind was built to meet load or increase reliability and none is least cost, he said. The resources that are being built today are because of taxpayer incentives and subsidies, Eldrige added. In the WPPSS era, there was unlimited building, and now we have unlimited renewables and conservation, he said.

If we are to have a reliable, affordable, and adequate power supply in 2020, we must remember what we learned from the 1970s, Eldrige continued. We have to agree on “what we mean by planning for power supply,” he stated. My job is to keep the lights on, and “I can’t do that with 20,000 MW of wind and nothing else,” Eldrige said.

We should have learned by now that a diversity of input on planning will bring about a better outcome, he said. Asking for comments on a power plan you've already written is not the same as having others help you to develop that plan, Eldrige concluded.

I agree with you, Bill Booth stated. Politics are driving the current thinking on where we are headed and why we are headed there, and it's not just the states, it's the federal government, too, he said. The impetus and political incentives are so big, and the public is convinced this is the way to go, Booth added. I agree we are headed for a problem, he said. "But you are first guy who will come up to the microphone and say it," Booth added.

"It's salvageable," Eldrige responded. We would be better off if everyone got on the same page, and we are not there now, he stated.

Tom Karier asked about UEC's growth forecast and how the co-op will meet new load. Eldrige said UEC gets power from BPA's Tier 1 and a little from Tier 2. The new data centers are interested in renewable energy, and "they believe hydro is renewable," he said. They may ask us to buy power from Chelan PUD to serve their needs, Eldrige added.

Across Oregon, there are 18 electric co-ops, and due to the data centers, we are the only one with load growth, he said. If co-ops invest in conservation in this situation, rates have to go up, Eldrige said. To implement conservation, all co-ops could have a combined target rather than requiring individual co-ops to meet a goal, he suggested. We now have to go counter to our members' interests to meet the Council's target, Eldrige stated.

2. Briefing on state legislation that may affect power planning:

Council state staff.

Staffer Charlie Black introduced state staff members to report on legislation in Montana, Washington, and Oregon that may affect power planning or implementation of the Council's power plan. Pat Smith introduced new Montana staff member Brian Dekiep.

Howard Schwartz began the presentations, noting that Washington's legislature adjourned but was called back into special session to finalize the state budget. Four bills were passed that will have an effect on the Council's power plan, he said: SB 5802, the governor's climate change bill; HB 1154, which allows renewable energy credits (RECs) for biodigesters; and SB 5297 and SB 5400, which amend the state's RPS. Schwartz explained what each bill would do and why it could affect the Council's power plan.

Dekiep recapped five bills from the Montana legislative session: SB 327, which exempts electric suppliers with four or fewer customers from the state's RPS; SB 164, which exempts public utilities with 50 or fewer customers from the RPS; SB 106, which allows additional resources to be considered renewables; SB 325, which allows treated wood products to be considered as biofuel; and SB 45, which allows new hydro to be eligible as a renewable resource. Bills that did not pass, he said, included a proposal to consider all hydro as a renewable.

Leann Bleakney noted that the Oregon legislature is still in session. She updated the Council on bills that are in process, including SB 242, which relates to greenhouse gases; SB 692, which sets

energy efficiency standards for some appliances and devices to mirror CA standards; SB 844, which directs the PUC to establish voluntary greenhouse gas emission reduction programs for IOUs. Bleakney noted that SB 306, which started out as a carbon tax proposal but devolved to a study on a carbon tax, did not pass.

3. Briefing on identification of initial topics for 7th Power Plan:

Charlie Black, director, power division.

Staffer Charlie Black briefed the Council on the topics staff will focus on for the Seventh Power Plan. Twelve topics emerged from the mid-term assessment, he said, and we polled Council members on their priorities. The response from members boiled down to four topics, Black said: regional needs for energy, peaking capacity, and system flexibility; development and integration of renewable resources and impacts on the hydro system; demand response as a source of peaking capacity and system flexibility; and intra-regional transmission constraints.

To analyze topics for the plan, staff is proposing to conduct a gap analysis for those resources and a needs assessment to address other topics, Black explained. The Power Committee discussed that approach and expressed support for it, he added.

Bill Bradbury asked if the intra-regional transmission constraints issue suggests the Council will get more involved in transmission. We are coordinating more with other transmission organizations, like Northern Tier Transmission Group, ColumbiaGrid, and the Western Electricity Coordinating Council, Black responded. While these groups generally operate in specific geographic areas, the Federal Energy Regulatory Commission is directing changes in their roles, he indicated.

ColumbiaGrid, for example, is modeling hourly dispatch and analyzing power flows on the system, Black said. Their modeling and ours are getting more similar, he added. ColumbiaGrid is doing studies that use data from the Sixth Power Plan, and we may work more closely with these organizations rather than duplicate their work in our modeling, Black explained.

Henry Lorenzen said the Council should consider constraints on the system's ability to provide VAR support. Black noted that system operators and short-term design people deal with that issue, but the Council could work with ColumbiaGrid on that type of question. Karier pointed out that staff is working on a creative way to measure flexibility in a resource.

4. Primer on Net Present Value and Levelized Costs:

Charlie Black, Steve Simmons, senior analyst; and Michael Schilmoeller, senior power systems analyst.

Black continued the briefings on power planning issues with a presentation on determining the levelized cost of energy. It is basically the lifecycle cost of energy from a resource that is compressed into one value, he elaborated. The levelized cost is typically expressed in dollars per MWh, with the dollars converted to a specific base year, Black explained.

The levelized cost is a metric that helps us to compare the costs of different types of resources, he continued. Various models the Council uses in planning calculate the levelized cost of

resources, Black said, noting that the ProCost model is used for energy efficiency costs and the levelized costs for candidate generating resources are an input to AURORA and the Regional Portfolio Model.

The equation for calculating levelized cost includes several key inputs, including the project life, energy production, capital and fuel costs, operation and maintenance costs, and a discount rate, he said. A discount rate is in the calculation to adjust today's costs and benefits compared to future costs and benefits, and it is a big factor, Black pointed out. The higher the discount rate, the more it devalues today's costs and benefits, he explained. The concept of net present value is also applied to calculating the levelized cost of energy, Black said. The net present value provides a way to value future streams of cash into a single dollar amount, and it allows for an apples-to-apples comparison over a period of years, he said.

The discount rate is one of the most difficult issues to resolve in determining the levelized cost of energy, according to Black. Over time, the Council has been "middle of the road" on choosing a discount rate, he said.

Using two disparate examples, a combined-cycle combustion turbine and a utility-scale solar photovoltaic project, staffer Steve Simmons explained how the levelized cost of energy for each resource would be calculated. The CCCT has relatively low upfront costs and high fuel costs, and the solar photovoltaic has high upfront costs and no fuel costs, he noted.

In calculating the CCCT costs, Simmons said he assumed the same carbon tax used for the Sixth Power Plan. The CCCT levelized cost is just over \$100 per MWh, with fuel as a big component of the cost, he said. Without the carbon tax, the levelized cost is \$85 per MWh, Simmons reported. The levelized cost for the solar plant is over \$160 per MWh, with capital as the outstanding cost, he said. The availability of solar radiation for energy output is a big factor in the calculation, Simmons pointed out.

Jim Yost asked if CCCTs have lower integration and transmission costs because they are generally built closer to load. "It's a mixed bag," Black responded. CCCTs also have to be close to a natural gas pipeline and a source of water, he said. Karier said the Council should pay more attention in the Seventh Power Plan to where wind should be built to optimize the resource and lower the costs.

The strength of the levelized cost approach is that it is simple and straightforward and allows for a direct comparison of costs across a range of resource types, Black said. On the other hand, levelized cost provides only partial information and does not give a value for the capacity or flexibility of a resource, he noted. It does not show if a resource helps to meet power system needs, Black said, adding that is why the staff proposes to do a gap analysis early in developing the Seventh Power Plan.

5. Update on the Geographic Review of fish and wildlife projects:

Lynn Palensky, program development manager

Staffer Lynn Palensky provided an update on the Geographic Review of ongoing habitat projects being carried out under the Council's Fish and Wildlife Program. The reviews started in 2009

and have covered wildlife projects, RME and artificial production, program coordination, data management, resident fish. The final area for review is habitat, she said.

Staff is conducting site visits to look at habitat projects that are being proposed for continuation, Palensky said. Areas that have been visited range from the Columbia River estuary to Asotin, Washington. The ISRP review of project proposals and responses will be completed June 6, she said. A preliminary report on the Geographic Review will be out in June, Palensky reported.

Karier asked if there will be an evaluation of what is working well and what is not. We are getting that information from sponsors, Palensky responded. They are making presentations that provide information and we are learning a lot about how things are evolving, she said.

6. Briefing on the legal framework for the Fish and Wildlife Amendment

Process:

John Shurts, general counsel.

Staffer John Shurts made a presentation on the legal framework for amending the Council's F&W program. Many Council members haven't been through this before, he said, adding that it is a very structured process that is outlined in Section 4(h) of the Northwest Power Act.

Shurts laid the process out in six steps. In Step 1, the Council calls for recommendations from federal and state F&W managers and tribes to amend the program. Shurts described other details of the call for recommendations, including the terms "measures" and "objectives" used but not defined in the Act. He said the Council ascribes "common sense" definitions to the terms. The Council asks for recommendations from everyone else, too, and the Act directs there be at least 90 days for recommendations to be submitted, Shurts explained. He gave other details about the form the recommendations are to take and the significance they have for amending the program.

Step 2 involves review and comment on the recommendations the Council receives, Shurts continued. He listed actions the Council is to take in the review, including consultations with agencies, tribes, and others. The Act is explicit that the Council will engage in consultations with a range of interests, Shurts said. While the Act does not specify how long the review is to take, the Council usually allows 60 days, he said.

In Step 3, the Council uses the recommendations and comments to develop draft amendments to the program, Shurts said. The process of drafting the program takes about two months, he said. Shurts said the Council tries to be consistent with the Administrative Procedures Act, and a notice of the draft is published in the Federal Register.

Step 4 is not specifically in the Act, but we provide opportunity for a review and comment on the draft F&W recommendations, he went on. The Council gives broad public notice of the opportunity, and engages in directed consultations with various agencies, tribes, and BPA customers, Shurts said. This process is often allotted 60 days, he added.

There are several elements in Step 5, which is to prepare and adopt the final amended F&W program, Shurts said. The steps are guided by Section 4(h)(5) and (6-8) of the Act, he said. The program is "to protect, mitigate and enhance" F&W affected by the hydrosystem, while assuring

the region “an adequate, efficient, economical and reliable power supply,” Shurts stated. The time to prepare and adopt the final program takes about two months, he said.

Once the recommendations are in, the Council has one year to act on them, Shurts said. Twice we have gone past one year, he added, explaining that the Council can make a finding that it needs more time. We have invited objections and never had any, Shurts added. When the Council makes its final decision on the program, it must be “a super majority” vote, he explained. A majority is okay if it includes one member from each state; if not, adoption requires six votes, Shurts said. If one state votes no, all others must vote yes, he clarified.

Karier asked about the requirement for using best available science. Shurts said scientific support for the program can come from many sources, and the staff builds a large administrative record from the information that is available.

A sixth step requires the Council to prepare and adopt findings, he continued. The findings must include an explanation in writing about any decision made not to adopt a recommendation, and there is a narrow criterion for rejecting a recommendation, Shurts said. He explained other elements of the findings, adding that it takes a couple of months to prepare them. The process has not officially ended until the Council adopts the findings, Shurts stated.

There were questions about court decisions related to the F&W program amendments, including the Judge Tang decision, which instructed the Council to pay close attention to the recommendations it receives. The Council discussed the ramifications of the decisions, and Shurts explained his view of the court actions.

Smith asked how the Council assures the best available science is incorporated into the program. Shurts said people will submit references and material on science and there are independent science panel reviews. It’s difficult to grapple with the question of “best available science” in the abstract, but it’s easier when there is specific issue, he added. The Council should concern itself with making the best decision with the information it has, Shurts said. He went on to address other provisions in the Act that the Council must meet and the relationship of the Mitchell Act to the F&W program.

Shurts said the Council’s program addresses all F&W in the basin, but there are special references to anadromous fish that have significance. Salmon and steelhead are very much why the F&W program is what it is, with its specific guidance for passage and water management for the benefit of salmon runs, he stated.

Staffer Tony Grover pointed out that the Council’s program makes a 70-15-15 split on funding, with 70 percent of the funding for anadromous fish and 15 percent each to resident fish and wildlife. BPA generally acts consistent with that, and it is part of the program, he added.

Smith asked how the Council’s plan deals with Biological Opinions. Shurts said the Council has largely deferred in the program to measures in the BiOps prepared under the Endangered Species Act. But the Council has also gone another direction at times, including with operations at Libby and Hungry Horse, he said. The F&W program was inconsistent with the existing BiOp for a time with regard to those operations, but the BiOp later incorporated them, Shurts added.

Bill Booth pointed out that in the last F&W program amendments, the Council addressed the BiOp. It was controversial, but we ended up with language that refers to the BiOp, he explained.

There was further discussion of the BiOps and how the Council's program relates to them.

Shurts said the Council adopts a F&W program that can be implemented while assuring the region of an adequate, efficient, economical, and reliable power supply. In 1995, we realized we needed a more substantial analysis of that so when we amend the F&W program, we model the hydro system and see how they fit together, he explained.

The idea that you could both implement F&W protection and preserve the power system is a hypothesis embedded in the Act, Shurts said. Altogether you can have salmon and steelhead runs rebuilt and protected, and also have the benefits of the hydro system, he explained. "It is a sense of optimism that is in the Act, Shurts concluded.

Staffer Patty O'Toole reported on the schedule for the F&W amendment process. The recommendations for amendments are due July 19. She said staff is available to meet with amendment sponsors and explain the process and timeline.

7. Presentation on CleanHydro:

Terry Flores, Executive Director, Northwest River Partners

Terry Flores, executive director of Northwest RiverPartners, described the CleanHydro campaign her organization is sponsoring, as a public education campaign that features TV ads and a "micro website" with additional information. The TV ads are currently being aired in Westside markets, like Portland and Seattle, she said.

The impetus for the campaign came from RiverPartners' polling and focus groups, where results indicated a lack of appreciation and understanding about the value of the hydro system in the Northwest, Flores explained. RiverPartners' research captured a cross-section of knowledge and opinion in the region, from Boise to the urban centers west of the Cascades, she explained.

We learned a lot in the research, Flores continued. People thought wind and solar could replace hydro, and we picked up that "the new kids on the block of renewables" were getting attention from the public, she said. We also have energy mandates in some states that don't recognize hydro as renewable, according to Flores. We looked at the polling and focus groups, and our board decided to do something about educating the public, she stated.

Television is the centerpiece of the CleanHydro campaign, and the tone is positive, Flores explained. We are trying to get the word out broadly and nationally, she added.

Flores showed the Council the two TV ads created for the campaign. "We need to bring hydro back into the discussion when we talk about renewables," Flores continued. A lot of people who now live in the Northwest didn't grow up with hydro, she said. We want to reach out to them and build support for legislation and policies that promote hydro, Flores explained.

Phil Rockefeller pointed out that the line "With great power comes great responsibility" in the ads is an optimistic expression that, like the Northwest Power Act, tells people that we think we

can have abundant hydro along with responsible stewardship of resources. Are you using the campaign as an opportunity to say that the Northwest is committed to stewardship, and we have made a significant investment in it? he asked. “We have great story to tell about hydro,” and but we also have a story to tell about the commitment that has been made to stewardship, Flores responded. Another ad may be in the works, and we are looking at that message, she added.

8. Update on the region’s wind development:

Ben Kujala, energy analyst; Gillian Charles, energy policy analyst; and Tina Ko, Bonneville Power Administration.

Gillian Charles provided the Council an overview of wind development in the Northwest. There are almost 8,500 MW of wind operating in the Pacific Northwest, she reported. Wind makes up 5 percent of the region’s average annual generation and represents 13 percent of the total installed generating capacity, Charles said. Fifty percent of the wind capacity is in BPA’s balancing authority, she added. In 2012, “a big year for wind,” 1,700 MW of new wind capacity was installed, according to Charles.

The list of recent wind projects in Oregon includes Shepherds Flat, “a mammoth project” that at 845 MW was the largest wind facility in the world when it was built, she continued. The energy from Shepherds Flat is sold to Southern California Edison under a 20-year power purchase agreement. Other projects that recently began commercial operation include the 104 MW Palouse in Washington, where Avista is purchasing the output, and the 138 MW Mountain Air Wind Park in Idaho, where Idaho Power is purchasing the output, Charles reported.

Wind is the dominant resource being added in recent years to the region’s generating portfolio, she said. Wind development is driven by state RPS, which are being met largely by wind, Charles said. The rigorous RPS in California has also played a role in Northwest wind development, she stated.

The federal energy production tax credit (PTC) is “a huge driver” of wind development, Charles explained. The PTC was first passed in 2002 and has had a tumultuous history, she said. The PTC, which goes toward a developers’ corporate income tax, was renewed in 2013, Charles said. To demonstrate the impact of the PTC, she presented a graph of wind additions from 1998 to 2013 that showed development paused when there was no PTC in effect. The graph also showed state RPS led to “a big surge” in wind development, Charles said, adding that Oregon is number 5 in the country for wind development and Washington is number 6. There is a lot of potential for wind in Montana, but it will take transmission, she added.

Most of the wind generation in the region is being sold under long-term contracts, Charles went on. When California changed its RPS standard to 33 percent in 2011, it bolstered wind development in the Northwest, she said. The renewable energy credits (RECs) are sought after, but not all of the actual generation leaves the Northwest, she explained. Black pointed out that California has since limited the amount of renewable imports that can be used to meet RPS, which will slow wind development in the Northwest.

In response to a question about how wind exports are accounted for, Black said power is exported to California in two ways. The environmental attributes in the form of RECs can be

stripped off and exported, and the physical power sunk into the BPA balancing authority, he said. (The wind in BPA's balancing authority has been growing since the 1990s, and today is 4,515 MW, according to the presentation.) That sunk power can be sold in the spot market and is one reason spot market prices are so low, Black added. Second, there is a physical sale of power, with megawatts sent south on the Intertie to California to serve load, he explained.

As for the development outlook, Charles said there was a surge in 2012 followed by a lull in early 2013. There is no new wind construction going on in the Pacific Northwest right now, but there are lots of megawatts proposed, she said. There are 12,000 MW in the siting and licensing pipeline, but most "will never see the light of day," Charles stated.

Staffer Ben Kujala said in 2009, planners started to see a decrease in wind output, while new capacity was being added. BPA began investigating the issue and has worked on determining the actual variability of wind generation over longer time frames, he said. BPA's work suggests there could proportionally be as much variability with wind as with the federal hydro system, Kujala said. We could soon be talking about "wind years versus water years," he added. The longer-term wind variability is a huge issue for planning for reliability in the future, Kujala said.

Tina Ko of BPA said the conversation about long-term wind variability started with preparation of the White Book, BPA's study of Northwest loads and resources. While we were preparing the White Book two years ago, we found that using actual historical data was not appropriate for forecasting wind, she said. Ko went on to explain the magnitude of variability with wind generation compared with hydro generation.

BPA looked at whether other forecast methodologies, such as the critical-year planning used for hydro, would help with forecasting wind, she said. But we found it wasn't a good translation, Ko said. BPA looked at two dozen methodologies to determine the resource provided by customer-owned wind and found a methodology that could match up forecasts with actuals back to 2004, she stated.

BPA adopted the new statistical methodology for forecasting wind, Ko reported. Two years later, we are still looking for the best forecasting method, she acknowledged. There is significant variation in the energy generated by wind and there remain a lot of challenges on real-time integration, Ko concluded.

While wind and hydro may be equal in variability, hydro is more predictable on a short-term basis and you can plan day ahead, Lorenzen commented. Hydro is dispatchable, Kujala agreed. But you still have physical phenomena, like thunderstorms, that spike water, he added.

The PTCs present a disincentive to operate wind in a way that matches load, Lorenzen said. Will there be more opportunity in the future to operate wind differently if there are no PTCs? he asked. Yes, Kujala responded, but there is little opportunity to increase its generation short term.

We will incorporate more of this data into the model for the Seventh Power Plan, Black said. The amount of variability for wind was limited in the Regional Portfolio Model in the Sixth Plan, but we will do a better job of reflecting it this time, he said.

Rockefeller asked if all of the prime wind sites in the Northwest have been developed. There is a significant amount of remaining potential, Black responded.

Kujala explained the challenges of integrating wind on a short-term basis. Significant factors in integration include forecast error, scheduling frequency, and market designs, he said. FERC ordered utilities to offer 15-minute schedules since the shorter the schedules, the more the accuracy increases, Kujala said. Efforts are under way in the Northwest to create a market structure, such as an Energy Imbalance Market, which would allow for clearing wind energy in short timeframes and at less cost, he said.

Bradbury asked when the requirement for 15-minute scheduling takes effect. Kujala said the California ISO is planning to implement it in 2014. BPA is moving to 15-minute scheduling, but the market may not schedule that way, he acknowledged. Right now, entities are making sure their systems can support 15-minute schedules, Kujala added.

The challenge of integration depends on the amount of load and the amount of wind resource on a utility's system, Yost pointed out. Idaho Power has 900 MW of wind, and its low load is 1,100 MW, he said. "A utility can be required to be oversupplied," and there is considerable expense to shedding resources, Yost said. Utilities have to deal with these issues, and we must consider them in our plan, he stated

9. Briefing on fish and wildlife land acquisition handbook:

Philip Key, Bonneville Power Administration

Staffer Peter Paquet introduced Philip Key of BPA to present a briefing on BPA's Fish and Wildlife Acquisition Handbook. Key said the handbook is an important step forward to laying out the procedures for the land acquisition process carried out under the agency's F&W program. This is "a good news update" from the BPA perspective, he said, adding that the handbook will help capitalize on opportunities to make purchases that further the region's habitat goals.

The handbook provides comprehensive guidance for buying land and easements with BPA funding, and it covers all steps related to land acquisitions, Key said. The need for a handbook became apparent last year, when BPA was involved in 40 acquisitions with 20 to 30 sponsors, he said. Key said it consolidates information needed to buy land, eliminates the need to negotiate detailed agreements, and reaffirms existing practices.

Key went on to describe information that is included in the handbook, such as forms, templates, and checklists. He laid out the 27 steps involved in an acquisition, and detailed the guidance the handbook provides. Key also highlighted issues that can cause problems in a BPA land acquisition, including unacceptable encumbrances, cost sharing, and water rights.

Council members asked questions about the protections included in the land acquisition deals and details of who holds the land in trust after a BPA purchase.

Key said BPA is moving ahead with the handbook and should have a draft out in the summer. In October, we will start referencing the handbook for our acquisitions, he said.

10.Update on May 15th Regional Quagga and Zebra Mussels Summit:

Jim Ruff, manager, mainstem passage and river operations.

Deleted from agenda

11.Council Business:

– Adoption of minutes

Jennifer Anders made a motion that the Council approve for the signature of the Chair the minutes of the April 9-10, 2013 Council meeting held in Spokane, Washington. Karier seconded the motion, which passed unanimously.

– Council decision to release draft Council budget for public comment

Staffer Sharon Ossmann offered background on the Council's budget and said it is ready to be released for a comment period. She said the 2014 revised budget is \$206,000 higher than the 2013 budget due to an increase in FTE in the Power Division. She said the draft 2015 budget is \$229,000 higher than the revised FY 2014 budget due to an anticipated increase in personal services and benefits costs.

Anders made a motion that the Council approve the release of the Draft Fiscal Year 2015 and Fiscal Year 2014 Revised Budget for a 51-day public comment period. Karier seconded the motion, which passed unanimously.

– Council decision to release the Council's draft 12th Annual Report to the Governors on Bonneville's Fish and Wildlife Costs for public comment.

Staffer John Harrison said the draft 12th annual report on fish and wildlife costs is ready to be released for comment. He said he would provide a new draft to the Council in June with the comments incorporated. Smith made a motion that the Council approve the release of the Draft 12th Annual Report to Northwest Governors on Fish and Wildlife costs of the Bonneville Power Administration for a period of 30 days. Karier seconded the motion, which passed unanimously.

– Council decision to renew charter for the Natural Gas Advisory Committee

Staffer Steve Crow explained that the charter for the Natural Gas Advisory Committee expires in June. There are no changes proposed to the charter, and the motion would renew it for two years, he said. Anders made a motion that the Council approve the renewal of the charter for the Natural Gas Advisory Committee for a period of two years. Karier seconded the motion, which passed unanimously.

Rockefeller reminded the Council of the proposed letter to Representative Doc Hastings regarding quagga mussels. The Fish and Wildlife Committee's unanimously supported sending it, he said. Rockefeller made a motion that the Council approve release of a letter to Doc Hastings of the U.S. House of Representatives that puts the Council on record in favor of House Resolution 1823, which would add quaggas mussels to the list of injurious species under the Lacey Act. Anders seconded the motion.

Karier suggested an editorial change to the letter that would strike the word “infested” from a sentence. Rockefeller accepted Karier’s friendly amendment to the letter.

The Council voted unanimously to approve the letter.

The meeting adjourned at 12:11 p.m.

Approved:

Vice-Chair

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