PNUCC Council REPORT

Northwest Power and Conservation Council

April 7 & 8, 2015

The Council's road trip to Helena was highlighted by an address by Montana's Governor Steve Bullock and an examination of low-income energy-efficiency programs in rural areas. It also featured a persuasive appeal from Montana utilities not to implement "one-size-fits-all" policies. Next meeting: May 5 & 6 in Portland, Oregon.

In This Issue

The Agenda

Governor Bullock sees need to address transmission challenges

Montana Governor Steve Bullock helped the meeting get off to a prestigious start by complimenting the Council on its work, and stating that his state is keenly following the progress of the Seventh Power Plan as the energy landscape evolves.

"Profound changes are taking place in the world, the nation and our region in energy consumption and production," Governor Bullock said. "New technologies are emerging at a rate faster than seemed possible. The lowest-cost resource, energy efficiency, has contributed to the flattening of load growth, which is a good thing for consumers. More renewables are entering the grid and that is causing integration challenges."

"Currently, half of Montana's generation is exported," Bullock said. "We're proud of our role in powering the Northwest. Montana generation creates thousands of jobs, it is important to our tax base and to our state's economy. We see that role continuing. However, with 90 percent of Colstrip generation and Montana wind generation owned by out-of-state companies, we know that Montana by itself doesn't define the future. Montana must position itself for the future, and we'll look to Seventh Power Plan to help us understand what that future is."

Council Member Tom Karier said that as the Council works on the Seventh Plan, it is looking to Montana wind as a great, high-capacity resource, but he lamented the lack of transmission.

"I hope that if we build it, they will come," Bullock replied. "We need to address our transmission challenges, and we're talking about one of the most antiquated systems cobbled together by human beings." He also said that he recognizes that these aren't issues that one state can solve alone, and it would be helpful to incentivize our opportunities going forward.

> *"I hope that if we build it, they will come."*
>
> *– Governor Steve Bullock on Montana's transmission*

Council Chair Phil Rockefeller said that many legislators are looking forward to a day when Montana is more characterized by renewable energy than fossil fuels. "Maybe you have some thoughts on how to call out the best of our potential in the Northwest," he said.

"Any time we get polemical on either side, we're failing to recognize that our energy future is going to change," Governor Bullock said. "You won't flip a switch tomorrow. That gets lost in all sides of the discussion. The one certainty is that in 40 years, things are going to look different in technologies, transmission and applications. What occurs in one state will have broader implications than what is confined in that state's borders."

The puzzle of low-income energy efficiency without growth

A panel comprised of low-income energy efficiency program administrators, and representatives from Bonneville Power Administration and Lincoln Electric Cooperative, briefed the Council on program operations and impacts in Montana.

Jim Morton, executive director District XI (Missoula) of the Human Resources Council, explained how energy-efficiency services are allocated in the state. It contracts with the community action agencies in Montana, and there is a priority list of those with a higher energy burden. Bonneville's funding to Montana uses that same list. Morton said that an income criterion prevents them from installing energy-efficiency measures in as many homes as they would like. "Sometimes that sends a mixed message," he said. "If you're a few dollars over, you don't get those services. So we promote conservation, but we won't help unless you're low income."

Morton added that indoor air quality has reared its head as an issue, since a lack of air exchange has caused some harmful effects.

Diego Rivas, Montana policy associate with the Northwest Energy Coalition, briefed the Council on Low Income Home Energy Assistance Program's (LIHEAP) activities. This program reaches less than 25 percent of eligible households in the U.S. The American Recovery and Reinvestment Act funds for low-income energy efficiency are drying up and LIHEAP funding is down 35 percent from 2010. In the Northwest, BPA's low-income program is working well, he said, but it suffers from a lack of funding. States say they could spend twice as much and still have a long waiting list of customers unserved. The Energy Coalition has been pushing BPA to increase LIHEAP funding, and encouragement from Council would be helpful, Rivas noted.

Rivas also said that no BPA customers in Montana have a low-income specific energy-efficiency program. Only 23 of the region's 144 utilities reported any savings attributable to low-income programs – meaning that only 23 ran their own low-income specific energy efficiency program. Those programs achieved one megawatt of savings last year. Rivas said that ideally, all utilities would have a Low Income Home Energy Assistance Program and run it in coordination with their local community action partnership.

Ray Ellis, manager of the Lincoln Electric Cooperative in Eureka, Montana, provided a different perspective on energy-efficiency operations in his service territory. Lincoln Electric is a small, widespread utility with 6,500 meters and 1,000 miles of line. "We have a lot of challenges," Ellis said. "When it comes to energy efficiency, we have a robust program. But I want you all to understand: When you require BPA to spend money, it's our money; it's not coming from some another place."

Twenty-five percent of Lincoln Electric's customers are at-or-below the poverty line, and another 25 percent just barely over. "We have a low-income, energy-efficiency program, but it's shifting," he said. "We spend $145,000 to $160,000 per year on energy efficiency. For us, that's a lot of money."

Lincoln Electric Cooperative, Inc.
Your Touchstone Energy® Cooperative

Most of Lincoln Electric's program in the past has been taking money from low-income members and using it to purchase appliances for relatively higher-income members. If they self fund the program, they have to raise rates. "As a co-op, we're nonprofit — all of our excess margins go back to the members, Ellis said. "Any time there's a rate increase, it comes out of their pockets."

Ellis also explained the problem of losing load. "We just lost our pellet mill," he said. "We're down to two industrial accounts. About 50 percent of our load used to be industrial, and now it's down to 5 percent."

Load projections are flat, if not negative, he said, but Lincoln Electric is still required through BPA to implement energy-efficiency programs. That means raising rates to low-income people.

"Where I need help is keeping the rates down," he said. "That's as important as any energy efficiency we could do."

Council Member Karier commented that if they didn't do energy efficiency year in/year out, BPA would have to buy the energy from somewhere else. "In our calculations, it costs more to buy the power than to save it," he said.

Ellis said, "We're losing load because of energy efficiency. If I require tier-two energy, energy efficiency makes sense, but I'm buying energy through tier one, so it's going somewhere else. It's not solving problems in my area — where utilities have no load growth. I desperately need a demand response program, but that costs money. With demand response, I could cut my wholesale power bill and lower my numbers."

> *"Where I need help is keeping the rates down."*
> *– Ray Ellis, Lincoln Electric Cooperative General Manager*

Ellis said he appreciates the idea of reducing conservation targets, but urged keeping that funding and shifting it to helping low-income customers.

Rockefeller concluded by saying, "You've shown us the vulnerabilities of our aspirations. It's a set of issues we've wrestled with for a long time. I don't know if there are easy solutions. There are issues with financing, access, and scope of effort. We need to devote more time at the Council level with community action agencies and utilities to think through this."

Montana utilities stress regional diversity

BPA's long-term competitiveness and the cost of power are largely driven by Council activities, asserted Joe Lukas, general manager of the Western Montana Generation and Transmission Cooperative.

"Energy efficiency, fish and wildlife, and the Columbia River Treaty are of significant concern," Lukas said. "But utilities are buying record amounts of generation at negative prices, and the infamous 'Duck Curve' in California is showing itself years ahead of projections. We're going to have some real challenges before us."

Mark Hayden, general manager, Missoula Electric Cooperative (MEC), said that any financial impact that future power plans have on BPA will be passed directly to electric customers throughout the region. Missoula Electric is a relatively small, rural electric co-op serving 12,000 in Montana and Eastern Idaho.

"The driving force behind our local economies was linked to timber industry, and many of those jobs have been lost," Hayden said. "Names like Plumb Creek, Stinson and Smurfit-Stone are things of the past, and our communities are struggling to reinvent themselves." He added that at

MEC, they've felt the ripple effects. Since 2011, its growth — not adjusted for weather — has been just three quarters of one percent. During that time, Missoula Electric's members have realized a 39 percent power cost increase. Past power plans place greater emphasis on energy efficiency and conservation, Hayden said. MEC has done its part to meet those goals. "Nobody wants to pay their fair share, only to find that we're unable to fund those projects by the members who paid for them," he said.

"After the low-hanging fruit of energy efficiency is harvested, it's tough to find the time to administer those programs locally," he said. "It's much different than in urban areas. I hope the Council will consider this regional diversity and the challenges created by setting targets for energy efficiency when formulating the Seventh Power Plan. These across-the-board targets cause MEC to fund and acquire energy efficiency savings — without regard to our level of load growth or the revenue needed to cover those expenses."

A lack of load growth in MEC's service territory raises important questions about the appropriate level of energy acquisition in the Seventh Plan. A more appropriate use of those same funds would be better spent on demand response.

"Our weather in Montana can be quite volatile," he said. "Demand response could help smooth those peaks, especially as more emphasis is placed on system demand in a capacity-constrained system."

Ellis also joined this panel and addressed the Council: "I do a lot of whining to BPA and now I'm whining to you about the conditions at Lincoln. In the past, I've felt like all the programs are "Interstate-5 centric" — they deal with lots of energy savings and people. But when it's tailored to that, and not to western Montana, the two don't align at all.

"We're starting to see some 'regionality' on addressing issues," Ellis said. "One size does not fit all. I get frustrated talking to legislatures in D.C. and Helena, and to Bonneville; they think one thing is going to fix everybody. We need to tailor programs to different regions or utilities."

Lukas said that the uniqueness of the cooperative world is local solutions. "I have a member that is implementing a three-part rate," he said. "They're transitioning to a basic charge, a residential demand charge and a lower energy charge. Investments in new technologies, automated meter technologies, every one of the 130,000 accounts will have that capability of full demand information. Some just print it on bills. As we talk about the challenges, we're working on solutions locally."

Karier said it was a useful discussion, and that the Council can defend what they've done in the past at a regional level. But it's important to hear the impact on specific utilities. "This rate design can solve some of the problems," he said. "Regarding demand response, won't that raise many of the same issues? I think of it more as the large food processor that can adjust demand up and down."

Hayden replied, “The bread and butter of our demand response system in the Midwest was residential load control – water heaters, dryers and hot tubs. The savings were dramatic. There are models we can follow. This isn’t new territory.”

Existing resources’ environmental costs part of the equation

The Council’s task under the Power Act is to determine and compare costs, including the environmental costs, of new resources. The task is not to determine and compare the environmental costs of existing system resources or to make decisions about those resources.

However, the Council still needs to estimate the incremental costs of existing system resources to assess how those resources might operate and dispatch, in order to understand how new resources fit in, according to John Shurts, Council staff’s general counsel. One piece is to find out the incremental costs of the existing system and include them in the analysis.

“Once the Council gave us the nod in December to take this approach, we looked at the cost of every new final and proposed environmental regulation since the Sixth Power Plan,” Shurts said.

In addition to carbon emission regulation, in the last five years, staff has had to track a number of different regulations: a new regional haze rule, the new mercury and air toxic standard, and the final regulations for coal combustion residuals. Most apply to coal plants, but some apply to other generating resources as well.

A key issue is deciding which estimated costs to include in the analysis vs. costs that are simply discussed in the narrative. Shurts said that the first preliminary conclusion is that there has been a significant effort in the region to comply with some of these new regulations — such as a obtaining a good estimate on capital and operating costs, to comply with new mercury and air toxics standards.

The second preliminary conclusion is that there are three operation and maintenance cost estimates for environmental compliance:

1. Compliance actions recently completed, committed to or that are under construction. These cost estimates are relatively solid and will be included in the analysis.
2. Near-term compliance actions coming within the next five years, and these will be included in the analysis.
3. Long-term potential compliance actions have the most uncertainly — both in the accuracy of the estimates or whether they’ll occur at all. There could be some complicated regulations coming with regional haze regulations at two of the coal plants. There also is a whole set of proposed regulations. The costs and sources will be captured in the narrative, but they will not be included in the analysis.

The third preliminary conclusion is that capital costs for some compliance may be so significant that owners will have a decision point on whether to incur those costs. The potential costs are

not a factor or an input into the modeling effort. If one wishes to incur a capital cost for a coal plant, they need to create a scenario. Whether to incur capital costs or retire them has to be handled outside the analytics.

Council Member Jim Yost asked about coal plant reclamation, stranded, recovery and contract costs; and if the customer will be on the hook for those as well as new power costs.

Tom Eckman, Council's power division director said, "Yes, it's an expensive scenario; you can be assured of that." Rockefeller asked if this includes decommissioning costs. Eckman replied, "Yes, whatever site reclamation has to be done, as well as state and permit requirements. Plant closure is not zero costs."

After Yost wondered if retiring plants early is too expensive for customers, Eckman replied, "We'll find out," Eckman said. "By closing plants early that aren't fully amortized, we're building resources before retiring ones we already have, and that's an expensive proposition."

Pinning down climate change, demand response & conservation inputs

Staff sought Council guidance on input assumptions for examining different scenarios of the power industry's future.

For scenarios addressing reductions in greenhouse gas emissions, which social costs of carbon should be assumed? The Council agreed with staff's proposal to use the interagency working group's estimates based on a 3 percent discount rate.

For scenarios looking at future success of conservation what should be the range of the conservation resource uncertainty tested? The Council agreed with staff's proposal to assume that it could achieve 33 percent faster or 33 percent slower than the maximum pace of our base assumptions.

In respect to all of the analysis, the question is should the potential direct impacts of climate change be assumed in all scenarios or treated as a sensitivity study? The Council agreed with staff to treat it as a sensitivity study. Ben Kujala, staff system analysis manager, said that looking through the model, it's not enough to use temperature change's impact on load to reflect the impact of climate change. There are so many other impacts that have to be estimated and captured, that to put it in all scenarios would be misleading.

Eckman followed that staff recognizes that whole energy estimates would have to be changed because the winters would be warmer, there would be less heating demand, weatherization would be less, air conditioning would be higher, and they would have to use different load shapes for the savings. Prices would assume it would only happen in the Northwest, and that's not accurate.

The Council also discussed how to establish the cost of demand response resources. Council agreed with staff's proposal to use "incentive payments" as a proxy for the cost of developing

demand response resources that require load curtailment (this cost is in addition to marketing, administration and the hardware cost required to enable demand response).

Staff also walked through the modeling results of four different resource strategies regarding conservation purchase approaches to demonstrate what information will be available from future analysis. The analytic model tests resource strategies across 800 different futures, with each having a unique result. They showed the impact of conservation development on net system costs, the distribution of Resource Portfolio Standard development, the impact of conservation on other resources in terms of capacity to add to the system, and the impact of conservation development levels on CO_2 emissions.

Eckman explained net system costs as the cost of building and operating new resources, and operating the existing power system. "We net out the benefits and costs from selling or buying power outside the region," he said. "The penalties associated with not meeting system adequacy requirements (referred to as 'curtailment costs') are costs we impose."

Eckman said that a system doesn't get built because it's profitable; it's built to satisfy load requirements. "That's what's driving it," he said. "We have a low-priced market going forward. New resources get built on need."

Council Member Henry Lorenzen asked, "How do you encourage the marketplace to get them built?"

Eckman said that if you go to an organized market (we have a disorganized one) you get a forward capacity payment. That way, they get paid whether it operates or not. Prices don't stay high enough, long enough.

A webinar is scheduled for later in this month, where staff will present the results of one their first scenarios and provide further instructions on how to read the tea leaves.

###