



Northwest Power and Conservation Council

Meeting Notes

July 12 & 13, 2016

Olympia, Washington

No less than three segments this month were devoted to electric vehicles (EVs) and the benefits that the region could derive from investing in recharging infrastructure. The concept that EVs could help boost loads in the region, and reduce the amount of money that leaves the region for gasoline, provided a compelling argument.

The Council also heard about North America's wealth of natural gas supplies, which could make the U.S. a net exporter for the first time in more than half a century. Bonneville Power revealed its timeline for developing a plan to meet the *Seventh Northwest Power Plan's* energy efficiency goals, and Washington State's fish and wildlife professionals painted the need for more investment in habitat restoration to spur salmon recovery.

The next Council meeting will be in Polson, Montana – August 9-10th.

In This Issue

100 years worth of natural gas: United States poised to become an exporter	2
Keeping the lights on - nothing to be alarmed about, unless we do nothing	2
Greater funding for habitat needed to boost salmon recovery	3
Focus on electric vehicle and infrastructure investment	4
Eye-opening forecast suggests infrastructure investments a smart return	4
Seattle City Light leads by example powering new generation of clean cars	4
Electric vehicle panel calls for incentives and infrastructure to spur growth	5
BPA's share includes 569 MWa of energy efficiency toward Seventh Plan goals	6
Council approves creation of Demand Response Advisory Committee	7

The Agenda

100 years worth of natural gas: United States poised to become an exporter

North America is enjoying the eighth year of a “Shale Gale,” where natural gas production from shale has surpassed that of conventional and tight gas. Technological advances in horizontal drilling, hydraulic fracturing, and seismic imaging has opened up these vast new natural gas supplies.

According to Steve Simmons, Council staff’s senior economic analyst, the supply base is large and the estimate for the U.S. alone is 2,500 Tcf, which is nearly 100 years worth of demand. With this supply surplus, the U.S. is on the verge of becoming a net exporter of natural gas for the first time since the 1950s, he told Council members.

Council Member Pat Smith asked about capacity constraints. Dan Kirschner, executive director of the Northwest Gas Association, said that the best way to characterize capacity is that it’s sufficient to serve existing needs. “There was a spike in 2013–2014, during a cold snap, where the capacity of the BC Pipeline was tapped out,” he said.

Kirschner said the problem occurs when everyone needs capacity on the same pipeline on the same day. The region likely won’t see outages as interruptible customers would shut down, however there may be some price spikes. “We have backup fuel, but when you add a load the size of methanol plants, we’ll have to add capacity. But just the organic growth in demand for natural gas probably won’t catalyze a boost in infrastructure,” he said.

Simmons said the Natural Gas Advisory Committee is being reconvened to develop a new price forecast and look at further analysis of greenhouse gas inventory and upcoming regulations toward the end of 2016.

Keeping the lights on - nothing to be alarmed about, unless we do nothing

Timing is everything and just as John Fazio, staff senior power systems analyst, presented the Final Resource Adequacy Assessment Report for 2021 to the Council for approval the announcement that Montana’s Colstrip units 1 and 2 would be closing by 2022 was released.



Prior to the announcement, at a high level, the *Assessment* revealed a 10% loss-of-load probability in year 2021 which is a prediction of failing to meet load if no actions are taken other than the 7th *Plan* assumptions for energy efficiency plus new demand response and utility

scale solar as found in utility integrated resource plans. Since this is higher than the Council's adopted adequacy standard of 5% loss-of-load, the *Assessment* concluded that between 1,000 MW to 2,300 MW of new capacity resources are needed to maintain adequacy due to the shortfall.

Fazio said, "The obvious question for the Council is –should we be concerned? And the answer is - No. A lot of activity is going on and it is the right order of magnitude to keep the system adequate." According to PNUCC, there is about 550 MW of planned (but not sited and licensed) new resources in the region, he said.

The Council paused though to consider the announcement on Colstrip. They concluded it was appropriate to consider scenarios with this new information included prior to adopting the *Assessment*. Staff will present the updated *Assessment* at the next meeting where the Council will take action at that time.

Greater funding for habitat needed to boost salmon recovery

According to a panel of Washington fish and wildlife leaders, more needs to be done to avert a negative trajectory in habitat and fish.

David Troutt, chair of the Washington State Salmon Recovery Funding Board, said that 16 species of salmon, steelhead and bull trout are listed under the Endangered Species Act in Washington State. "Washington is invested in salmon recovery," he said. "But where we aren't investing is in preserving habitat. We're losing it faster than we're restoring it. If we get ahead of this curve, the fish will respond. Although we've invested a tremendous amount, it's only 20 percent of the identified need to change the trajectory of loss. We need to find ways to increase that investment."

Finding funding is going to be tough, according to Kaleen Cottingham, director of the Washington State Recreation and Conservation Office. "The Supreme Court asked that money be prioritized for education, and we have trouble with the general fund," she said. "We've tackled the easy projects. But now we're looking at big estuary projects, which are big, expensive and take years to get approval for."



Cottingham, whose agency produces the *State of the Salmon Report*, said the results of recovery are mixed. They're seeing improvement in Hood Canal summer chum and Snake River Fall Chinook, and they might look to request delisting. They're also seeing increasing trends in the Mid-Columbia and in Snake River Spring Chinook. However, there are other areas where fish populations are low such as in the Lower Columbia.

Dave Fast, research manager for Yakama Nation Fisheries, said they're concerned that the about the pace of recovery isn't happening fast enough. "The tribe I work for is committed to the process, but the patience is thinning," he said. "We may have to explore other lines to move things along."

Focus on electric vehicle and infrastructure investment

Eye-opening forecast suggests infrastructure investments a smart return

Massoud Jourabchi, staff's manager of economic analysis, provided an eye-opening forecast of the positive impact to the Northwest by investing in electric vehicle (EV) infrastructure.

He said, as the number of EVs increase, the number of public charging stations needs to increase by a factor of 8-10. By increasing the number of public charging stations, the public's concerns about adequate range will be alleviated, and more EVs will be purchased.

Why should utilities care? EVs represent a growing load with good load shape, cost-effective carbon reduction and a return on investment for charging stations, he said.

He concluded by noting action may be necessary to amend building and electrical codes to require EV readiness across all residential and commercial buildings and offer incentives for installing of Level 2 and DC fast chargers in commercial and industrial facilities.



Seattle City Light leads by example powering new generation of clean cars

Seattle's aim is to be carbon neutral by 2050 and one step towards that goal is the electrification of its transportation system, according to Brendan O'Donnell, Seattle City Light (SCL) energy planning supervisor. Their analysis shows that electrification of passenger vehicles and light trucks would save \$2 billion a year and four million tons in carbon savings.

He said that twenty-five percent of carbon emissions across the U.S. come from public transportation. Another third comes from electricity production, with the remainder from buildings, agriculture and industry. In Seattle, 65 percent of greenhouse gas emissions come from transportation. That's because SCL is about 94-percent hydropower, and it is a carbon-neutral utility.

Electric vehicles in Seattle are big: it's the third-largest market in the U.S., all with little utility or government involvement. There's a real opportunity to further impact that, O'Donnell said.

While Seattle is booming, a look at SCL's load over the last 15 years shows that its load is actually declining. "There's been a tremendous achievement in energy efficiency, which is contributing to declining consumption," O'Donnell said. "But that shows an opportunity for transportation."

A year ago, SCL began a strategic plan to analyze the market potential for EVs. Its team found that there is a net benefit for vehicle charging in its territory. Encouraging the adoption of EVs to 35 percent by 2030 will add an additional \$58 million of ratepayer value, O'Donnell said. They found that SCL's distribution system could handle the increase in transportation load without capacity or service-related upgrades. They also discovered there is a strong customer demand for SCL having a transportation program.

The benefits include a reduction in carbon generation, gasoline cost savings, and federal and state tax credits. The costs include the small amount of carbon through electricity generation, energy transmission and distribution costs, and the incremental cost of the vehicle itself.

System upgrades are very small and the benefits extend to other opportunities such as buses and forklifts. Seattle City Light next steps include private charging stations at homes and businesses, and developing public charging networks.

"There's been a tremendous achievement in energy efficiency, which is contributing to declining consumption. But that shows an opportunity for transportation."

*Brendon O'Donnell
Energy Planning
Supervisor,
Seattle City Light*

Electric vehicle panel calls for incentives and infrastructure to spur growth

Automakers are 100-percent committed to the electrification of vehicles, said Steve Douglas, senior director of The Auto Alliance, a trade association of 12 car and light truck manufacturers. His association represents about 75 percent of EV vehicles sold in the U.S., including plug-in hybrid vehicles, battery, and fuel cell electric vehicles and light trucks.

Douglas said that manufacturers are providing more models, increased range, charger incentives and financial incentives to promote sales. "There's even billions being invested in research and development. But it's not enough," he said. "The auto industry can't change things by itself. There's still support needed from federal, state, local governments, utilities, NGOs and EV charging station providers."

Jeff Allen, executive director of Drive Oregon, explained how the region could plan for an electric vehicle future. The vehicle population is supposed to be 15 percent electric in a few years, Allen

said. “Just as we accommodate bikes in the public right of way, we need to accommodate EVs and charging. It’s about getting fast-charging stations integrated into the public space.”

“What drives sales is incentives and infrastructure provided by utilities,” Douglas said. “You can’t have that electric vehicle unless you have charging at home. People spend more hours at work than at home, so if you see them being charged at work, that helps create momentum. Multi-unit dwellings and workplace chargers is the way to go.”

“With hybrids you do the cost analysis,” Allen said. “If gas is cheap, you won’t buy one. With electric cars, it’s deeper. For most use cases, it’s only going to be cheaper if you drive a lot of miles and don’t go very far.”

BPA’s share includes 569 MWa of energy efficiency toward Seventh Plan goals

Since the Council published its Seventh Northwest Power Plan last winter, Bonneville has been working on its strategy to achieve its share of the Plan’s near-term conservation goals. Richard Génécé, BPA’s vice president of energy efficiency, and Allie Mace, energy-efficiency planning and evaluation manager, laid out the plan, which has a total forecast of 569 MWa in public power savings over the next six years.

“We have 108 passionate professionals committed to pursuing energy efficiency. Our plan’s budget is flat, but considering the spending levels in the plan, in light of the rate pressure, and BPA’s work to manage costs, a flat budget is a significant achievement.”

Richard Génécé
BPA Vice President of
Energy Efficiency

The estimated savings will be achieved with BPA and EEI-funded programmatic savings, utility self-funded programmatic savings, market transformation and momentum savings.

“We have 108 passionate professionals committed to pursuing energy efficiency,” Génécé said, noting that BPA exceeded its Sixth Plan targets by 100 MWa. “Our plan’s budget is flat, but considering the spending levels in the plan, in light of the rate pressure, and BPA’s work to manage cost, a flat budget is a significant achievement.”

BPA’s program staff, technical leads and managers took a bottom-up look at developing the strategies and setting the cost estimates, Génécé said. The plan’s contents include savings and cost forecasts, sector savings, emerging technology, momentum savings, evaluation, and demand response, which is a new feature in the plan.

The key strategic themes are to:

1. Identify and prioritize new technologies;
2. Focus on delivery and making programs accessible and easy to use for BPA’s customers; and
3. Leverage regional efforts, including partnering with NEEA and other utilities to achieve goals.

Mace said there would be a public review of the draft plan this fall, noting that in the last plan, BPA didn't have a full public comment period. Then BPA will finalize its Energy Efficiency Action Plan this December. The plan looks out six years, but BPA plans to update it and revisit it every two years, Mace said.

Génecé added that it's getting harder to achieve cost-effective energy savings. Many measures are more expensive now than what measures have been pursued in the past. Mace projects that the costs of acquiring conservation will increase as they go after harder-to-reach segments, such as commercial HVAC, etc.

Council Member Henry Lorenzen said that he hasn't heard of significant work identifying what cost-effective conservation potential is out there. "To what extent did BPA analyze the potential from its customers in developing a bottom-up approach?" he asked. Mace answered that they looked to the Seventh Plan. Génecé added that it's a strategy built sector by sector, and that they have understanding about what potential is on a sector basis, he said.

Council Member Bill Bradbury asked about demand response's role in the plan. Génecé said that while it is part of his department, it's shared among several different areas at BPA, including transmission and power. "We are aggressively pursuing it and determining how to commercialize it — moving it from the demonstration phase to implementation," he said.

Council approves creation of Demand Response Advisory Committee

The Seventh Northwest Power Plan called for the creation of a Demand Response Advisory Committee (DRAC). The group will help identify and review barriers to developing demand response resources be they technical, financial, environmental, institutional, contractual or political.

The Council took action to approve the charter for the committee after considering input and public comment from interested parties in the region.