Council Quarterly
Northwest Power and Conservation Council > Spring 2013

STRIKING A BALANCE BETWEEN ENERGY AND THE ENVIRONMENT IN THE COLUMBIA RIVER BASIN

Council Launches Revision of Fish and Wildlife Program

In March, the Northwest Power and Conservation Council began a once-every-five-years process of reviewing the largest regional fish and wildlife program in the nation, one that last year paid for nearly $250 million in habitat work, hatchery operations, hydropower system fish-passage improvements, research, and related activities in the Columbia River Basin.

The Columbia River Basin Fish and Wildlife Program, which is funded by the federal Bonneville Power Administration under authority of the 1980 Northwest Power Act, is designed to protect and enhance fish and wildlife that have been affected by hydropower dams.

Under the Power Act, the Council bases the program on recommendations from state and federal fish and wildlife agencies and Indian tribes in the Northwest, but anyone can submit recommendations. The Council will accept amendment recommendations through July 19. After that, the Council will develop a draft program by mid-December and make it available for public comment through mid-January 2014, adopting the new program in May.

The program has evolved over time from its initial focus in 1982 on improving hydrosystem passage for salmon and steelhead to the extensive and multi-dimensional planning document it is today. The last revision was in 2009.

This time around the Council is interested in encouraging a regional conversation about the future direction and oversight of the program. Among many questions for this conversation are:

- What should be the focus of the program over the next decade?
- How should the Council exercise its responsibilities to maximize policy and program benefits and minimize process costs?
- How can the Council and the regional program be more effective, efficient and streamlined, and generate more value?

More information is at www.nwcouncil.org/amend. ■

> In this issue

Council Hosts Symposiums Highlighting Energy Planning Issues

As part of an ongoing effort to encourage a regional discussion on important energy planning topics that will help in developing its Seventh Power Plan, the Northwest Power and Conservation Council hosted a symposium on greenhouse gas emissions by the electricity sector in June. The event brought utility, state and federal agency, and energy groups together to discuss the challenges surrounding this key planning issue.

Speakers included Elizabeth Kopits, an economist with the Environmental Protection Agency, who described the federal interagency approach to estimating the social costs of GHG emissions — something the Obama administration has made a priority. She provided an overview of the different models used to calculate costs, including updated analyses and cost estimates that were released at the end of May.

In terms of how the Council could use this information in developing the Seventh Power Plan, Kopits said it could help calculate the social benefits of GHG reductions on an incremental basis.

Panels addressed how state agencies and utilities are dealing with the GHG issue. While there are different perspectives and approaches depending on their respective responsibilities, common themes emerged: Retirement of aging coal plants and the growing role of natural gas-fired generation, as well as an emphasis on energy efficiency and development of renewable resources to meet renewable portfolio standards.

Clint Kalich of Avista noted in his presentation that "We're facing a different wholesale market with carbon costs." In his estimation, mandating renewable portfolio standard targets was the least efficient way to reduce emission levels. "Retiring coal plants is better," he said "but maybe we need to ask ourselves if there isn't a better way to do it."

As if to illustrate this point, Dave Clement of Seattle City Light said that his utility's lowest net cost portfolio included wind generation and natural gas. Although it had higher CO2 costs than the portfolio with renewable resources and energy efficiency, the ability to sell their surplus generation offset those costs.

The possible effects of climate change on the hydrosystem were also discussed. Reduced snowpack and earlier runoff, combined with warmer summers, have been forecast as potential consequences.

An earlier symposium last winter focused on emerging energy-storage technologies that could help integrate renewable resources. This is a topic of interest as renewable energy proliferates in the Northwest and across the country.

Over the last 10 years, almost 8,500 megawatts of wind generation has been added to the region's power system, presenting challenges to balancing the minute-to-minute changes in load and generation.

Steve Klein, general manager of Snohomish County Public Utility District, opened the event by stating that the biggest hurdle is the proprietary nature of the technology. In an industry that relies on standardized, interchangeable products to deliver electricity from generators to consumers, there's little standardization of battery storage devices. Until that problem is fixed, the technology won't flourish.

Batteries are beginning to enable smaller and more modular and scalable energy-storage systems, but cost and performance continue to be issues. As a result, the market for these products is still small.

To address this gap, Snohomish, in partnership with the University of Washington and others, is developing component-based energy-storage systems, with standards and specifications available in the public domain to help grow the market.

Tom Melling, vice president of Seattle-based 1Energy Systems, a project partner, said "With regard to grid-level, utility-scale energy storage, the most important thing you need to know is that the supply chain is dysfunctional." The lack of standardization, lack of a market, and lack of a supply chain all contribute to the problem. About a year and half ago, Snohomish solicited bids for a community energy-storage project involving a storage battery of about 25 kilowatt-hours in output. The low bid was around $95,000, three times the cost of a Toyota Prius hybrid electric car, which has a similar-size battery.

"You could buy a 24-kilowatt-hour battery in a Prius for one-third the cost, and you'd get a car with it," he said. "The auto industry has standards, it's organized for scale, and the supply chain can deliver those kinds of products. The energy-storage industry isn't really organized yet to deliver the kind of end-use products that utilities want."

2013 Energy Symposium Schedule

The Council is hosting a series of symposiums on key energy topics in preparation for the Seventh Power Plan. Check www.nwcouncil.org for the latest information.

July 8

Pacific Northwest Energy Markets,
Seattle, Washington

Sept. 5

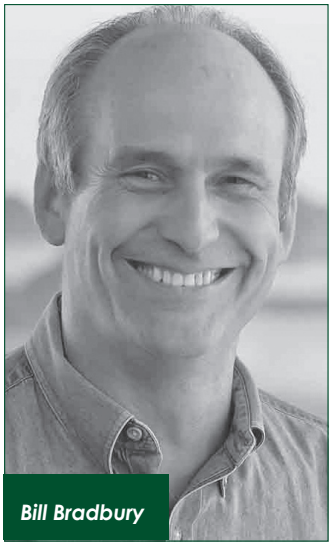
California Energy Markets,
Portland, Oregon

Nov. TBA

British Columbia Energy Issues,
Seattle, Washington

Other examples of energy storage technologies included Zinc Air of Columbia Falls, Montana, a company that makes batteries in modular units that can be sized from 100 kilowatts to 100 megawatts for energy peak-shifting and renewable power integration. ARES, a Santa Barbara company, is planning to build a storage system based on shuttles that run down a hill, generating power as they go and transferring power from the rails to the grid. With shuttles constantly running up and down the tracks, and with the system tied to the transmission grid by a connection through a utility, power could be supplied very quickly to address balancing needs. ■

Notes From the Chair



Bill Bradbury

This spring, the Council began the process to amend its Columbia River Basin Fish and Wildlife Program.

We're asking for recommendations to enhance fish and wildlife in the basin, but we'd also like to hear how we can improve and strengthen the program now and into the future.

As a companion to our cover story on the program, we interviewed Chris Wood, the lead scientist on the recent review of the program by the Council's independent science groups. It's a candid assessment of the challenges in restoration work, in part because our understanding of the ecosystem and how we affect it is never perfect. As Wood notes, "…we're emphasizing that success is a process, not a completed state."

Since finishing the mid-term assessment of the Sixth Power Plan, which helped the region identify issues to address in the Seventh Power Plan, we've tried to build on that understanding by creating opportunities to share information. One way has been through energy symposiums that we'll be hosting throughout the year, and in primers to help give people a basic understanding on energy topics that we'll be updating along the way. Expect more opportunities like these as we continue the conversation about how we should meet our future energy needs.

Council Chair Bill Bradbury

Northwest Q & A:

Chris Wood on the Independent Scientists' Review of Fish and Wildlife Efforts

Chris Wood

Chris Wood, who serves on the Council's Independent Scientific Review Panel and the Independent Scientific Advisory Board, talks about some of the key findings in the science groups' review of the Council's 2009 Columbia River Basin Fish and Wildlife Program. The Council has begun the process to amend the program, and the groups' report highlights the challenges ahead.

Dr. Wood, scientist emeritus with the Department of Fisheries and Oceans, Canada, is an expert in genetics and ecology of Pacific salmon and other marine fish.

Q. The review had some pretty sobering findings. Before talking about what to improve, what are we doing right?

In general, the 2009 Program has been a useful framework for dealing with the complexities of the basin. The program's emphasis on adaptive management is a good idea; it's an opportunity for learning. That foundation is really useful. The vision has merit—it's comprehensive, ambitious, yet still flexible. The biological objectives include many good ideas. As for specific actions, the hydrosystem mainstem plan is one of the most successful components of the program, especially for salmon passage. Monitoring and evaluation for projects has improved considerably, and we've seen progress in standardizing how we evaluate the effectiveness of habitat restoration activities. The investment in experimental monitoring programs is promising, and subbasin planning, which focuses on local planning, is consistent with a landscape perspective.

Continued on page 6

Q. Sustainability is an overarching concern, and the threats seem to be far-reaching, even global, in nature—from climate change to the spread of non-native species. So there's an emphasis on monitoring and evaluating these changes. Is there a tension between the M&E focus and on-the-ground actions?

I can understand decisionmakers experiencing that tension, the need to maximize investments. But we're taking a longer view. And we're emphasizing that success is a process, not a completed state. We can't expect the future to be the same as today, and we need to be able to adapt. We go to some length to explain the importance of sustaining benefits rather than maximizing benefits. What do we mean by sustainability? The likelihood that a system of resource use will persist indefinitely without decline in the social benefits it delivers. So, sustainability has two aspects: The resilience to absorb disturbance without shifting to some new state; and adaptability or the capacity to cope with changes and to avoid undesirable outcomes. Knowledge from monitoring and evaluation will be critical to protecting diversity and keeping our options open.

Q. Is this a shift from wanting to control or manage nature? It sounds like a "less is more" strategy.

The command and control approach fails in the long term. It comes down to recognizing that when you try to fix things without full knowledge, you may suffer long-term effects that you hadn't foreseen. The best course is to keep your options open, with the goal to help keep what you have, rather than trying to maximize production in the short term. We need to think longer term in order to improve outcomes down the road. Don't engage in actions that close options, because you are likely to lose something in the longer term. There aren't many places in the world undertaking restoration studies on this scale; as a Canadian, I'm impressed.

"success is a process, not a completed state"

Q. The report couples artificial production with non-native species as a threat to natural populations. Are we unwittingly hurting the fish we're trying to preserve?

Yes, the ISAB considers hatchery production to be a long-term risk to natural populations, and that we may be foreclosing our options. We recognize that most hatchery production occurs outside the program, but the program has an opportunity to integrate hatcheries with harvest management and habitat restoration. We recognize that hatcheries can be an effective tool, but we feel that the artificial production strategies in the program aren't being adequately informed or implemented. Supplementation should be viewed as an uncertain experiment, and programs should be evaluated on their technical design, risk assessment, and monitoring and evaluation. In particular, more evaluation of the ecological effects on natural populations is needed. We're sensitive to the goal of using hatcheries to provide local harvest opportunities, but we're concerned about their cumulative effects. And we have yet to see documented evidence that supplementation has materially improved the status of a natural population.

Q. One of the fundamental recommendations in the report was to increase public engagement in the amendment process. How will this benefit the program?

Developing broader interests in the program would help to avoid costly delays through lack of support. For example, the tension between artificial production and protecting natural populations involves conflicting goals — abundant opportunities for harvest vs. the long-term health of natural populations. Resolving this issue and reaching consensus on priorities requires broader public involvement beyond the usual stakeholders. Sharing information, understanding the needs and concerns of communities and educating people about what's at stake are important if we want to keep our options open and reach a common vision for the future. ■

Council Decisions

March 2013

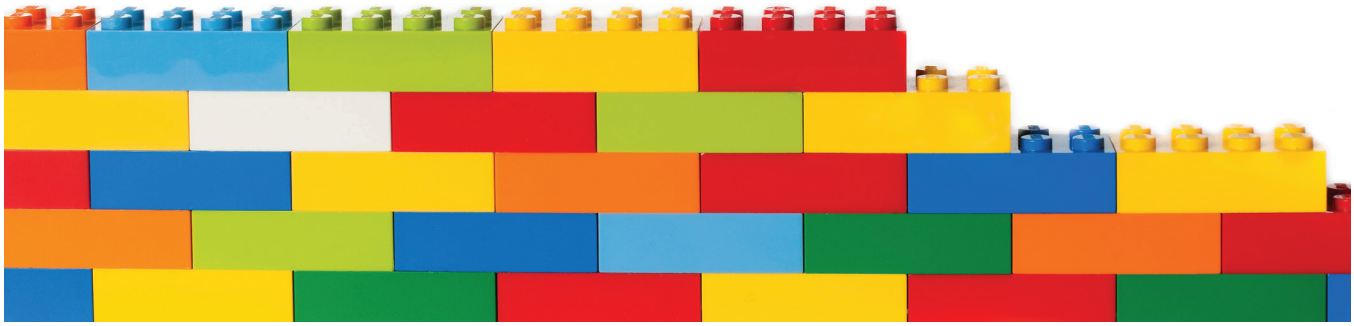
Council Renews Charter for Regional Technical Forum's Policy Advisory Committee

The Council renewed the charter of the RTF Policy Advisory Committee. Since its formation two years ago, the committee has advised the Council on the RTF's funding structure, annual work plan, and budget.

May 2013

The Council approved the charter for its Natural Gas Advisory Committee, which advises the Council in developing its electricity demand forecast.

How to Build a Power Plan: Begin With the Basics



Since arriving last spring as the Council's new Power Division director, Charlie Black has focused a lot of his attention on meeting people; to introduce himself, naturally, but also to listen to what they think. One of the biggest messages from people across the board was a desire for stronger communication and participation in the Council's power planning process.

"The mid-term assessment of the Sixth Power Plan, which we completed not too long ago, was successful largely because of our extensive outreach," said Black. The assessment was an opportunity to revisit the plan's assumptions, see what had changed over the last two years, and start to think about the next power plan.

One way the Power Division has sought to prepare Council members (a few who are new to their roles) for the task ahead, has been through primers on key topics.

So far, topics have included carbon emissions, power system capacity, and gas-fired generation. An early primer on power system flexibility, one of the key issues for the Seventh Power Plan to address, began by defining basic terms like "energy" and "peaking capacity," and then described how system operators keep load and generation in balance.

Almost 8,500 megawatts of wind generation has been added to the Northwest's system, and integrating this intermittent resource presents challenges, both in the need for more system flexibility, and capacity, to manage up and down fluctuations in its output.

Expect more information like this in the future to keep people updated and to encourage discussion on all the building blocks to developing the Seventh Power Plan. ■

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