



power logic
solving the energy equations of our time

PNUCC 2010 ANNUAL REPORT

chairman's message

Change has been our reality in 2010. Whether it was the impact of a deepening economic recession, the failure of financial systems or the operational challenges of variable energy resources, change in a number of forms is driving our actions as an industry. And I believe that will be the case into the foreseeable future.

To help us address this new landscape, PNUCC—with the outstanding commitment of its members—has assembled some of the most knowledgeable resources in the industry. Through their efforts, they have helped us begin to build a common understanding of the ramifications of these challenges and guide our industry forward.

Our accomplishments in 2010 would not have been possible without your generous support. And as chairman, I want to express my gratitude. But the job is not done and the challenges have not been resolved.

PNUCC is an organization that enables us to pool our expertise and help each other on crucial issues, like maintaining the system reliability which our customers demand and depend on. Please join me in making a continued commitment to PNUCC in 2011.

Sincerely,

Jim Lobdell

executive director's message

Communicating the changes in our industry—that's the essence of what we did this year. PNUCC's System Planning Committee rolled up their sleeves to understand the new analytical challenges facing utilities, such as how to integrate wind resources, account for conservation and plan for capacity reserves. Our joint work on technical issues reminded me of earlier days in our industry, when planners huddled (without computers!) to chart reliable operation of the hydro system. In addressing new issues, we've re-established the value of sharing information in a complex, rapidly changing environment.

This year PNUCC set up face-to-face discussions with California and Canadian utilities to exchange perspectives and increase our knowledge about renewable resource and transmission development up and down the West Coast. And through our *Plan today. Power tomorrow.* campaign, we have worked to get our message out to customers and decision makers about how the utility industry is meeting the challenges of the 21st century. I see us expanding that campaign in 2011, while we continue to explore the technical nuts-and-bolts of operating in a transformed utility landscape. The PNUCC membership really stepped up their efforts this year. Thank you for contributing your time, energy and brainpower. We wouldn't have accomplished so much without your active participation.

Sincerely,

Dick Adams
Executive Director

the new math for utilities

This year PNUCC members set out to master the new methods and equations that define today's electricity industry in the Northwest. Renewable portfolio standards, integrating wind farm output into a hydro-based system, smart meter measures, conservation crediting, and analyzing capacity reserves—all these constitute “the new math” of the utility industry, and this complex of new factors requires us to think and act differently.



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PNUCC spent 2010 making sure its members understand the technical “sea change” occurring due to state and federal policies, shifts in the region’s demography and new technologies. As we work to address these challenges, we’ve revitalized the spirit of technical collaboration that characterized PNUCC in its formative years. Now we are pairing that with a concurrent emphasis on communications so our members are well-equipped to explain changes taking place in the industry to customers and policymakers.

SYSTEM WATCH 2010

Wind energy has transformed our landscape. Thousands of megawatts from wind generating facilities have been integrated into the Northwest power system, and more projects are being built. This new actuality, combined with other elements, such as a low water supply, hydro system operating constraints and growing transmission congestion, prompted PNUCC’s System Planning Committee to launch a real-time case study, *System Watch 2010*, to monitor operations.

The project included an assessment of how system operations are being affected by all the new variables. During our meetings, participants discussed any “noteworthy events,” such as unexpected changes in river operations or wind dispatch, to learn more about growing operational challenges and how to address them in future planning efforts. *System Watch 2010* will culminate with the delivery of a report to PNUCC’s board early next year.

CALIFORNIA CALCULUS

PNUCC spent time this year exploring the implications of renewable energy portfolio standards in Northwest states and also in California. With particular concern about the implications of California's aggressive renewables requirements, the System Planning Committee developed a white paper, *Understanding the Impacts of California's Renewable Portfolio Standard*. The paper explains how the Golden State's renewables requirements could affect the Northwest. It's a good example of how PNUCC pulls together information from research, discussions and analysis to help our members understand the ramifications of new or evolving policies.

In June, our board pursued this topic further by meeting with representatives of California utilities to share information on subjects of mutual interest, including wind generation, renewable energy crediting, and balancing services, as well as transmission. In October, we held a similar discussion with Canadian entities and government officials.

NEW AND NOTABLE FORECAST NUMBERS

In 2010, we revamped our *Northwest Regional Forecast* to include more information on capacity and planned energy-efficiency savings. The *Forecast* compiles Northwest utilities' views of the future for load growth and electricity supply, and the *2010 Forecast* says utilities expect to meet about half of the region's growing demand over the next 10 years through efficiency and conservation. It also points out that almost 600 megawatts of new wind capability were brought on line in the past year, and although electricity demand has been down due to the economic climate, it won't be long before loads start growing again.

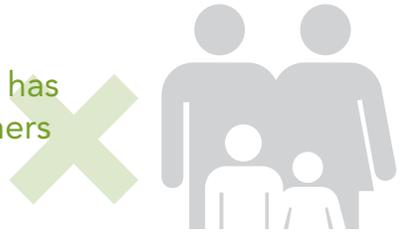
While Northwest utilities have typically planned for new resources with a focus on energy, integrated resource plans increasingly call for capacity additions. Some utilities cite the ability to meet peak loads as their biggest concern in planning.

Four utilities reported in the *Forecast* that they need additional peaking capability to reliably meet loads in winter, summer or both. While the wholesale market provides some solution, new resources will likely be needed.

A NEW EQUATION FOR CAPACITY PLANNING

In a region that has always been capacity-rich—one of the many advantages of our hydro system—concern about a growing capacity deficit spurred PNUCC’s System Planning whizzes to dig into the issue this year. A first step was a paper titled *Reserves in Capacity Planning: A Northwest Approach*.

the increase in intermittent resources has altered the equation for utility planners



Many new variables, including changes in the resource mix, new patterns of electricity use and the increase in intermittent resources, have altered the equation for utility planners, requiring them to more rigorously address capacity needs in their long-term plans.

The PNUCC paper, released in June, captures the role of capacity reserves in current utility planning. It starts with an overview of reliability and reserve obligations, and explains operating reserves, planning margins and ways to assess whether they are adequate. The paper also clarifies terminology and attempts to standardize the rhetoric of reserves in planning.

THE RESOURCES PUZZLE

Intermittent resources such as wind present a big-picture challenge for system operators and regional planners. Keeping the grid stable with a large fleet of intermittent generators on board poses a mathematical puzzle the region is diligently piecing together. And the brisk pace of these resources coming onto the grid has upped the ante for resource planning. Wind generation, like energy efficiency, does not provide the same flexibility as other resources to meet the minute-to-minute demand for electricity.

Our experiences with the region’s growing wind fleet and the array of new resource choices are at the center of two System Planning Committee efforts that will extend into next year. Studying the impacts of increasing amounts of wind in the power system using

detailed computer models and articulating what attributes different sources of electricity bring to the Northwest electric grid will give planners clues to unravel the puzzle of new resource opportunities.

THE CONSERVATION FACTOR

Most utilities include conservation/energy efficiency at or near the top of the list for future resources. In looking at how conservation factors into the regional picture, PNUCC's board had a host of questions about how to track our progress and savings. These concerns launched a PNUCC effort to better understand the role of conservation in the Northwest and to represent it appropriately in future resource plans, including how future savings are tallied in the Northwest Power and Conservation Council's *Sixth Power Plan* finalized earlier this year.

Our white paper, now under development, will cut through the abstractions. It will help members understand the roles of multiple regional entities involved in delivering conservation and provide an understanding of the variables in accounting for savings.

As we delve into these issues, we are finding common threads, as well as significant diversity among utilities, in terms of the cost-effectiveness and viability of conservation measures in their service territories. PNUCC's work is already illuminating the many layers and complexities of measuring the contribution of conservation to the region's electricity picture.

THE LOGIC OF EFFICIENCY STANDARDS

The Council and others in the region are rallying utilities to support new state and federal codes and standards, which drive the market for developing and introducing energy-efficiency products. According to the Council's analysis, codes and standards could go a long way toward achieving the region's conservation targets over the next 20 years, especially in the residential and consumer electronics sectors.

PNUCC is exploring topics such as how changes in codes and standards would affect utilities. Our conservation white paper will also recognize the potential for future savings from upgraded codes and standards and delineate the associated accounting challenges.

COVERING ALL COMMUNICATIONS ANGLES

The other major thrust of PNUCC's activities this year involved communications. We beefed up our popular *Plan today. Power tomorrow.* campaign, which is aimed at giving utility customers a better understanding of how the power industry is changing and utilities' plans to meet growing electricity needs. One emphasis this year is making sure utility staff members who interact regularly

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with the public, from customer service representatives to linemen, are well-acquainted with the three messages of *Plan today. Power tomorrow.*—our energy needs are growing; more resources and technologies are the solution; and rising costs are a challenge we all face together.

Our communications effort also aims to get these messages out to customers, policymakers and Congressional staff. We wrote and circulated the booklet, *Beyond the Light Switch*, which provides a snapshot of the utility industry's plans for the future. Another high priority is making sure decision makers and consumers understand how utilities are pursuing conservation and dealing with the opportunities and challenges of renewable resources.

Our *Council Reports* are another valuable communications service PNUCC members receive every month. They provide a succinct summary of discussions at Northwest Power and Conservation Council meetings. These reports not only make it easier for our industry to track implementation of the Council's Power Plan, but they also provide a clear picture of regional fish and wildlife recovery efforts, including the development of indicators that show how much progress is being made.

EXPONENTIAL CHALLENGES

Our work this year underscores the need for continued vigilance on system operations and the challenges presented by an evolution in generating resources. Big regional questions, like integrating more renewables, and local issues, like charging stations for electric cars, add up to new tests for our industry.

Conservation and its role as a major resource will remain a key piece of our 2011 agenda. And we will continue to be the place where utilities come together to develop common practices and discuss planning and operational issues as they arise. PNUCC also plans to ramp up and broaden its communications efforts, adding to the suite of messages that help promote understanding of the industry.

It's axiomatic, but it bears repeating: **PNUCC is the forum that brings the power of good ideas together.**



about pnucc

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Steve Kern, Seattle City Light		System Planning Committee Chair
Kathi VanderZanden, PNGC Power		Communication Committee Chair

2010 BUDGET

Staff Expenses	437,000
Overhead Expenses	151,300
Consultants	120,000
Total Budget	\$708,300

STAFF

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MEMBERS

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Idaho Power	West Oregon Electric Cooperative
Kittitas County PUD	Whatcom County PUD
Lane Electric Cooperative	

OUR MISSION

Bringing the power of good ideas together to assist PNUCC members in fulfilling their company missions in this ever changing electric industry.

PNUCC's mission is accomplished by providing:

- The searchlight for changes that will have a significant impact on how our industry does business in the future
- A catalyst for examining issues that impact a significant portion of its membership
- A forum for dialogue on policy issues of regional importance
- The hub for technical analysis and data on vital Northwest power industry issues



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