



September 30, 2009

Bill Booth, Chairman
Northwest Power & Conservation Council
851 S.W. Sixth Avenue, Suite 1100
Portland, Oregon 97204

Dear Bill,

Congratulations for getting the draft 6th Power Plan out for review. A great deal of work and effort has gone into the last two years preparing for this. PNUCC has been involved for most of that time. We appreciate your openness and willingness to engage with us. The many face-to-face conversations with Council members and staff both in the PNUCC forums and at the Council table have greatly benefited the Power Plan.

In the spirit of continuing our dialogue, we offer the attached response well ahead of your deadline. We want to spend the rest of the review period engaging in more conversations with the Council as a group, individually and at your scheduled hearings to clarify and discuss our accolades and recommendations.

It has been our goal to work with you to have a Plan that recognizes that Northwest energy needs are growing; articulates that new resources and new technologies are key to meeting those needs; that our future power supply will cost us all more; and to have a Plan that clearly articulates the challenges and implications of maintaining our clean, reliable, affordable power system.

Our response is attached in two parts. First is our response to the questions you've raised in your letter and second are our thoughts regarding the Plan that further elaborate on these issues and underscores the conversations we have had to date. Our ideas about the analysis underlying the draft Plan and how that information is presented are based on the utilities' own experiences of doing their individual integrated resource plans. We have focused mostly on conceptual issues rather than offering specific language changes. That being said, it is our hope that our recommendations inspire you to make adjustments to the draft Plan.

Thank you again for your time and energy to build a Power Plan that provide insights to the challenges of providing affordable, reliable electricity to our consumers.

Sincerely,

Jim Sanders
PNUCC Chairman

Attachments

PNUCC Response

The Draft 6th Northwest Power Plan Key Issues

We offer the following summary response to each of the six issues the Council identified in your letter announcing the release of the draft Plan. The issues raised are the right areas for the Council to focus on in reviewing the draft Plan. In addition to responding to your six issues, we also highlight a few other key thoughts regarding the Plan. Overall we believe the draft Plan provides tremendous value to the region. It provides both comprehensive narrative and detailed analysis for many of the challenges our region faces. Our detailed response in the next section elaborates on this summary.

Rising Prices of Electricity

PNUCC agrees with the Council's conclusion that electricity prices are increasing and suggest ways to clearly communicate this message to the region. We recommend that the Plan graphically depict increasing electricity prices in a number of ways that are meaningful to customers. The data behind the Council's effort is included in tabular form and should be presented in a clear visual format to better communicate this message. Our detailed response includes examples of what this might look like.

Load Growth

The forecast of future demand in the draft 6th Power Plan seems reasonable. The Council's forecasts of the region's demand for electric power have undergone several iterations in the past year and we have shared our thoughts as they were developed.

Conservation

PNUCC recommends that the final Plan include an assessment of the inherent risk associated with achieving the expected conservation savings. Conservation is just like any other resource, and it has its own special sources of risk and uncertainty that need to be taken into account. PNUCC believes that energy efficiency is the highest priority resource and that all cost-effective conservation should be acquired. Because of the prominent role conservation will play in meeting future needs, the Council could help the region identify potential actions to be taken in the event the targeted amounts of savings are not achievable.

Capacity Analysis

Future plans need to include a comprehensive quantitative assessment of the capacity and flexibility needs of the region. The draft Plan does a good job of qualitatively highlighting the growing capacity and flexibility needs of the region. However, the level of technical analysis that is in the Draft does not adequately address the intricate operational challenges the region faces. The final Plan should identify a

strategy to explicitly assess the region's capacity and flexibility requirements for future power plans.

Wind Integration

The Plan should account for the likelihood that new renewable generation will be developed in the Northwest for use in California. The Council has identified that wind generation is being constructed and integrated at a record pace. However, a significant portion of that generation may be shipped to California to satisfy their renewable resource requirements. The Plan should account for this trend and the effect it has on the Northwest's ability to develop the wind resource to meet regional needs. The impact on the Northwest transmission grid should also be discussed in the final Plan.

Adequacy and Reliability

The final Plan should begin with an assessment of the region's need for power. This picture of regional need will create the foundation for the Plan and the future actions that are identified.

The Plan's recommended future power supply path should be assessed for system reliability. The draft Plan includes meeting future needs with almost 6,000 MWa of conservation, 2,000 MW of wind and options for gas turbines. It is not obvious from the draft Plan if that future maintains the current level of reliability. The Council should demonstrate that the future envisioned in the Plan meets the Power Act test of an adequate and reliable power supply.

Other Thoughts

The final Plan should assess a future that sets a specific carbon limit for the electric power industry. While the draft Plan evaluates a variety of carbon policies, it is based on the concept of a carbon tax at levels that affects decisions based on economics. The final Plan should assess the impacts of a mandated level of carbon emissions that ensures compliance for all futures.

The final Plan should include an action item to reevaluate the role of the Resource Portfolio Model in future plans. It is important for the analytic foundation of policies embodied in the Plan to be understood by the region. The complexities of the Resource Portfolio Model have added to the communication challenges of the Plan.

PNUCC Response

The Draft 6th Northwest Power Plan

Introduction

PNUCC very much appreciates the effort made by the Council and staff to work closely with utilities. You have made yourselves available to meet with the PNUCC Board and System Planning Committee and others on many occasions. This collaborative effort has produced a Draft that reflects our shared goals and will facilitate electric utility actions to preserve and enhance an efficient, reliable and affordable power system serving the electric power needs of the region's consumers.

In working with the Council over the last 18 months to develop the draft Plan our overarching goal has been to ensure that the final Plan adds value to the electric utility industry's resource planning efforts. And we believe the Council has achieved that. For us that means we reaching a point where:

- PNUCC members and the Council share a common view on the basics of the current Northwest power system and the future challenges.
- The sixth regional Power Plan describes the state of the Northwest power system and the future we face to maintain an adequate and affordable power supply.
- The detailed and complex issues associated with the power industry are well understood by customers, elected officials and policy makers.

The open and effective public involvement process you created has clearly benefited the Plan. Your efforts to involve the electric power industry have provided benefits to your Draft's data and analysis as well as enhanced your ability to effectively communicate the challenges facing the region's electric power industry. You have clearly articulated the key issues facing the electric power industry and have suggested strategic directions informed by, and aligned with, individual utility plans.

The Plan's basic recommendations for acquiring new resources are similar to utility plans – conservation as the resource of first choice; renewables to meet current mandates; and natural gas-fired generation to provide capacity, energy and to facilitate integration of intermittent resources. One difference PNUCC observes between current utility plans and the Council's recommendations is that utilities are generally acquiring resources at a faster pace than the Plan indicates for the region as a whole. The quicker pace of many of the region's utilities makes sense. Not every utility has the market access, resource diversity, transmission availability and risk tolerance assumed in the Council's regional analysis.

The Plan Adds Value

PNUCC's review of the Draft confirms what you will hear from many in the region, "this draft Plan adds value." As you know many of the region's utilities are engaged in integrated resource planning efforts patterned after the planning methodologies created by the Council. The Draft provides utilities with a wealth of useful information on loads and resources. The Council's analytic credibility and objectivity allows others to use your data for individual utility resource plans.

The Plan effectively assesses various state and federal carbon policies.

The spectrum of scenarios considered in the Draft assists in understanding the impact of existing state renewable portfolio standards, as well as national policies that would target dramatic reductions in carbon dioxide emissions. This scenario analysis helps to illustrate the likely effects of various state and federal carbon policies, as well as choices that have already been made by voters and policymakers such as renewable portfolio standards.

The scenario analysis is a very useful aspect of this Draft because our nation and region have been proposing and adopting policies to encourage renewable generation and to control carbon emissions without analysis of the potential impacts and benefits of these policy alternatives. The analysis helps inform the discussion on controlling carbon emissions and it should lead to policy choices that are more likely to achieve environmental goals while minimizing the likelihood of unintended consequences. For example, the analysis of the cost-effectiveness of wind power without the Renewable Portfolio Standard mandates are helpful in communicating with decision makers and consumers the future effects of their policies.

The Plan captures the many challenges associated with acquiring conservation savings.

Conservation has unique characteristics and the Council has done a good job of capturing the complexity and challenges embodied in this resource. The Plan acknowledges a number of areas of uncertainty including variations in the rate at which conservation is acquired and the pace of economic recovery. The Plan describes our regional diversity and acknowledges that small, rural utilities face additional challenges in acquiring conservation. PNUCC supports the Council's commitment to continuing the collaborative process with utilities, Northwest Energy Efficiency Alliance, the Bonneville Power Administration, and others to understand the challenges, ensure added value and avoid causing harm to the region's electric system.

The Plan recognizes the potential of new small, local renewable generating resource alternatives.

PNUCC is pleased that the Draft acknowledges the likely availability of smaller scale generation, including significant potential for small hydropower development. While these resources were not analyzed in detail it is important to encourage the development of these small and uniquely local sources of new generation.

The Plan does a good job of qualitatively describing the challenges of meeting peak demand.

The first step in addressing peak demand is describing the growing challenges associated with following load, meeting winter and summer peak demands, and the flexibility required to integrate intermittent generation. The Council clearly articulates these challenges in the draft Plan. And with the rapidly increasing amounts of wind power being added to the system it is important that the Council not drop this issue after the final Plan is adopted.

The Plan appropriately shows that power costs are likely to increase.

In several areas the draft Plan presents the expected costs for future electric power resources. In each of these cases it is apparent that the cost of electricity is increasing. It is important that policy makers and consumers understand the significance of this message and the implications of new resource development.

The Plan helps readers understand the significant investment needed in transmission and infrastructure to bring it into the 21st century.

The Draft provides useful information that helps policy makers and consumers to better understand the significant investment needed in the transmission system in order to maintain a reliable power system. Many policy leaders and consumers forget that a reliable power system is dependent on both sufficient generations that can be controlled to meet consumer demands on an instantaneous basis and the availability of transmission to be able to move that generation to the load centers. The Draft helps to identify the badly needed infrastructure investments to modernize the Northwest power system.

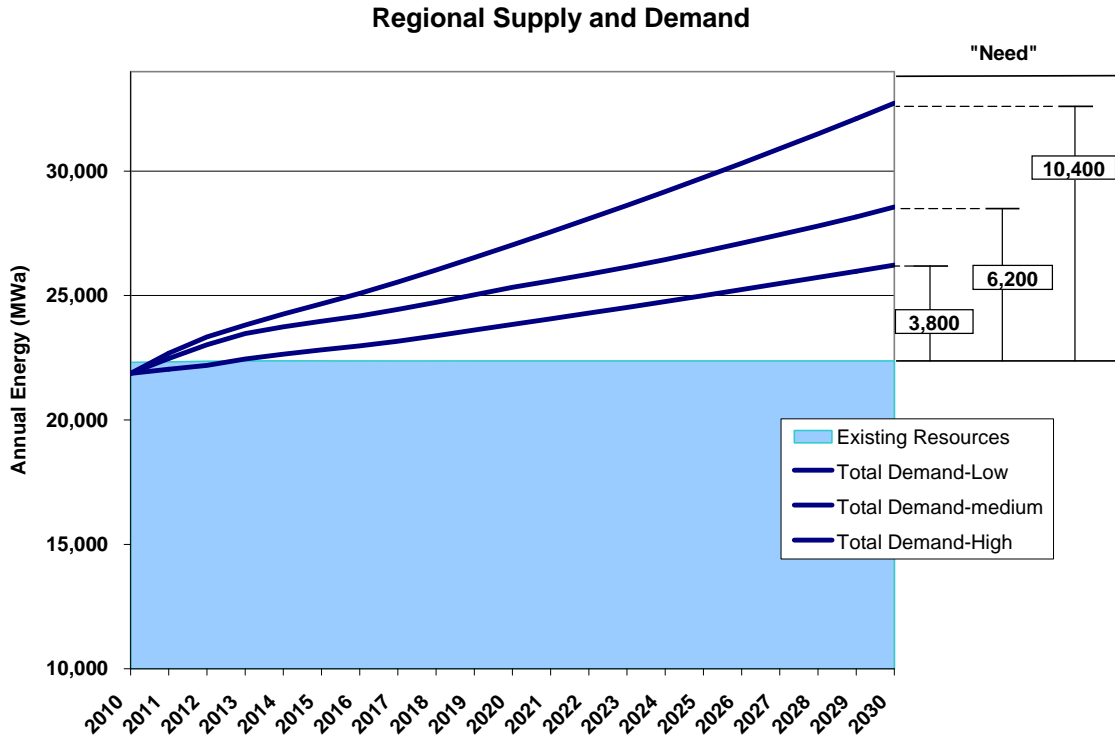
Needs Assessment

The final Plan should start with an assessment of resource need.

To improve communication of the Draft's key recommendations the Council should use similar planning approaches to those used by utilities. These planning exercises set the stage for future resource development by quantitatively evaluating the "need" for new conservation or generating resources. A needs assessment is the foundation for any power plan because it establishes the gap between current resources and future demands for electric power. While the Council's draft Plan cannot illustrate any one utility's need for resources, it is helpful to begin the planning process with a determination of the load/resource balance for the region. PNUCC recommends that the Council's needs assessment be clearly described in the Vision and Overview with more detailed data and analysis elsewhere in the Plan.

Basic information on the regional needs assessment is included in Chapter 13, and we recommend this be included earlier in the Plan to help readers understand the extent and nature of needs that must be served by utilities acquiring new resources. The firm load/resource balance (depicted in Figure 13-1 and several that follow) without new conservation or generating resources is a good illustration of annual energy need and

helps tell the story of increasing need for annual energy, and winter and summer capacity. However, these graphs are only based on the medium load forecast and should be expanded to illustrate how need changes as forecasted load growth varies across the range of the Council’s forecasts. We recommend that the Council illustrate the full range of uncertainty that the region’s utilities face when making future investment decisions. The following graph illustrates our recommendation.



Reliability Assessment

The Plan should clearly identify how it assessed reliability of the recommended resource strategy.

The Plan should provide an assessment of the reliability of the recommended future power system. The Plan envisions the growing need for power being met with almost 6,000 MWa of conservation, 2,000 MWa of renewables (mostly wind) and options for natural gas combustion turbines. It is not clear from the draft Plan if the anticipated mix of generating resources will reliably meet the projected demand.

The adequacy assessment provided in Chapter 13 inappropriately applies the 3 to 5 year adequacy assessment methodology to a 20 year plan. The resource adequacy standard was developed to assess the region’s near-term ability to keep the lights on, not to be used as a standard of adequacy or reliability for the long term. A deterministic load/resource balance or a probabilistic approach to meeting future demands is needed to ensure that the Plan’s resource strategy will meet the Power Act test of an adequate and reliable power supply.

For now the final Plan needs to provide at least an assessment of the future adequacy and reliability of the power system proposed in the Draft using currently available systems analysis tools such as GENESIS. It is not clear that the future envisioned in the Draft can maintain adequate levels of system reliability with the recommended resource strategy.

Peak Demand/Capacity Assessment

Future plans should include a comprehensive quantitative assessment of capacity and flexibility needs of the region.

The Plan does a good job of highlighting capacity and flexibility challenges during winter and summer peak periods, but the analysis of capacity limitations warrants more work by both the Council and utilities. PNUCC has worked with your staff and others to develop tools to evaluate capacity and energy reserve margins to maintain a reliable power system, but this work is far from complete. We commit to continue working with your staff in an effort to conduct a more detailed quantitative assessment of capacity, reserves and flexibility needs in order to maintain adequate levels of system reliability.

PNUCC recommends that the Council refer to BPA's Needs Assessment as an example of the more detailed analysis needed to assess the challenges facing regional utilities as they integrate increasing amounts of variable output resources like wind. BPA has provided detailed analysis of some of the challenges balancing authorities will face.

The final Plan should include a strategy to assess the region's capacity and flexibility needs.

The Plan should identify specific actions that will allow the Council and utilities to explicitly evaluate capacity, reserves and flexibility needs in future plans. We agree with the proposed action item that commits the Council to develop appropriate analytic tools to adequately address the questions that have not been addressed in this Plan. We also recommend that the Council continue to expand its capability to analyze and evaluate the reliability of the region's power system. In the future, analysis must better evaluate transmission constraints within the region, which greatly impact power system reliability.

The Council should join with PNUCC members in a commitment to working on these critical issues to ensure a more complete analysis in future plans. Development of better analytic methods and models are needed to evaluate the ability of the region's power system to follow loads and integrate variable output resources. In designing these new methodologies it will be important to address transmission constraints within the region and between the Northwest and other regions.

Analytic Tools

The Plan should include an action item to reevaluate the use of the Resource Portfolio Model.

The challenge for any of the Council's regional power plans has been to provide an effective communication tool between the Council and a variety of diverse audiences, including Northwest utilities and consumers. The communication challenge is always a difficult one, but the complexity of the Council's models has made communication even more difficult.

Despite considerable effort, we remain unclear about what the results of your Resource Portfolio Model analysis suggest. We find the basic model framework to be a "black box", and yet it plays a key role in the analysis underpinning the Draft. Results are difficult to interpret, evaluate and validate. In future plans we recommend that the Council clearly identify the region's electric power problems and then develop the necessary analytic capability to provide clear quantitative analysis of those problems. Through clear, transparent and replicable analysis the Council can provide results that are intuitive, justifiable and easily understood by others.

We encourage you to continue working with PNUCC's System Planning Committee to better define the challenges facing the electric power industry and to identify the needed analytic techniques to evaluate alternative solutions to these challenges. The current concerns over capacity, energy, flexibility, reserves and reliability issues are the starting point for these discussions. Together, we should also investigate the basic choice of an economic based model as opposed to a system reliability based model for determining future resource plans.

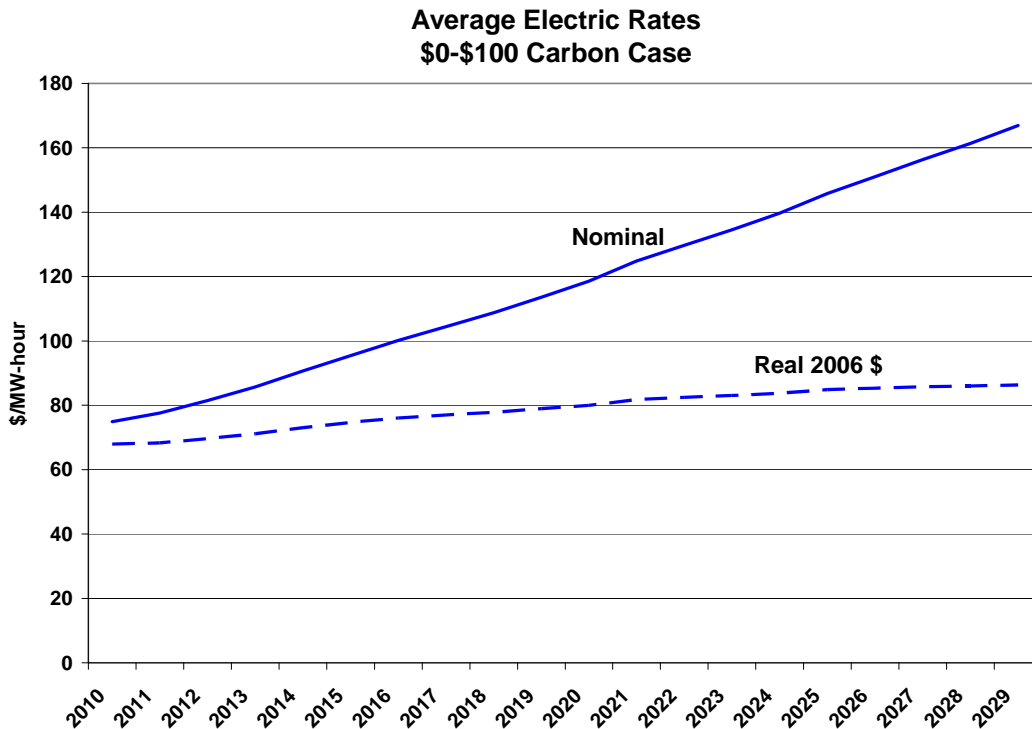
The Plan should provide examples of specific "futures" for the recommended resource strategy.

To help illustrate how the Plan will influence the electric power industry PNUCC recommends that you provide a few snapshots of the Northwest for a variety of "futures" given the Plan's recommended resource strategy. We know that the Draft includes a range of load forecasts, gas supply prices, and uncertainty of generation. However, the results are presented such that all the uncertainties have been collapsed into one expected value table that shows what is likely to occur. It would be valuable to present the resulting load/resource picture for different combinations of the uncertainties included in the Plan analysis for your recommended resource strategy.

Future Power Costs

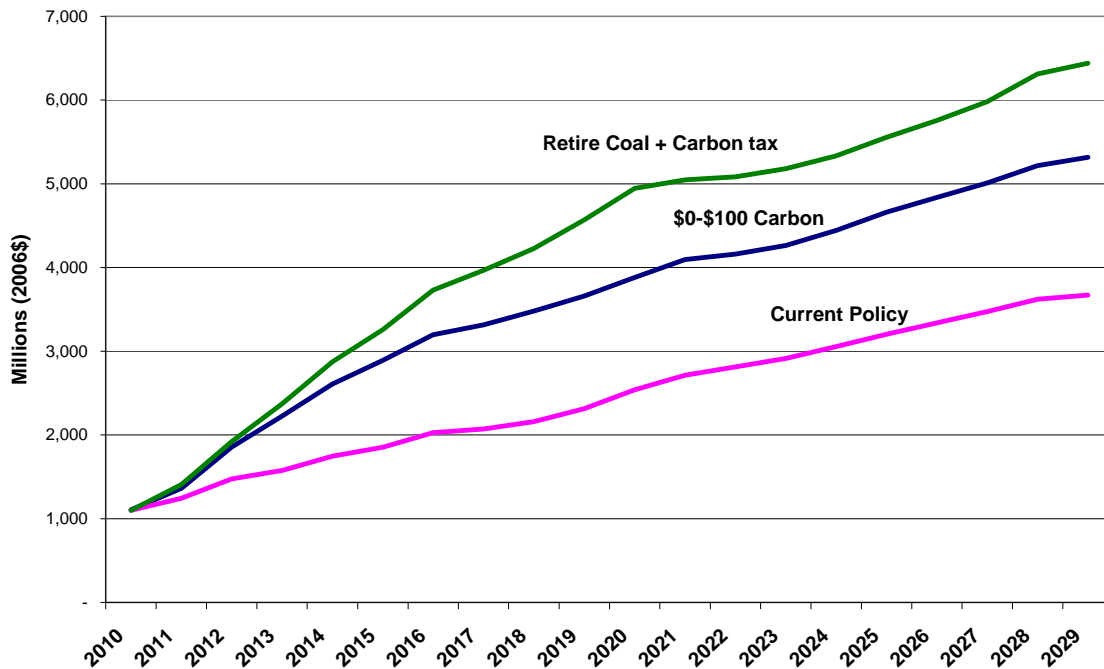
The final Plan should present projections of future costs to the region in several different forms.

Information about future costs is included in the Plan back in Appendix P and in a difficult to interpret tabular format. This information is useful to communicate with audiences looking to the Plan for indications of future power costs and how different future scenarios compare. PNUCC recommends you include figures that illustrate future power prices and/or costs in both nominal and real dollars. And to further help readers appreciate that the cost of electricity is increasing over time, compare future power costs to historic costs. Here is an example of future power costs for one scenario shown in both real and nominal dollars.



PNUCC also recommends you illustrate how power costs would change for the various scenarios you analyzed. See the sample graph below. The values plotted are the results from the Resource Portfolio Model and illustrate the timing and magnitude differences for power costs.

Regional Power Costs



The analysis in the Draft is shown for the region as a whole. This fails to adequately illustrate the impact on various parties in the region. The Draft should articulate how the cost impacts are not uniform across the region's utility customers. For example the future power costs for a customer of a utility that has exposure to a future carbon tax is different from one that has no exposure. If a carbon tax is imposed it will affect coal dependent utilities by significantly raising their cost of power. It will also raise wholesale power prices and thereby provide increased power sales revenues to hydropower dominated utilities. In this way most of the Council's scenarios will produce regional winners and losers. The final Plan should describe this effect and acknowledge that the Council did not attempt to estimate the impacts on individual utility customers.

Climate Change & Carbon Policies

The Plan does a good job of analyzing a range of policy alternatives that potentially impact the region's power system.

We appreciate that the Council undertook this scenario based approach in the development of this Draft. Many utility integrated resource plans use scenario based planning to illustrate the effects of differing scenarios that are outside of the planners' control. Your thoughtful quantitative analysis is useful to better inform the public debate by providing a systematic analysis of the potential benefits and drawbacks of each policy alternative.

The Plan should include one more scenario that targets a specific level of future carbon emissions from the electric power industry.

PNUCC recommends that your analysis capture the potential impacts of achieving a mandated level of carbon reductions. By providing analysis of the specific carbon emission targets from the electric power industry the Council's Power Plan will help to better inform policy makers as efforts are undertaken to achieve these goals.

Vision/Overview

The Plan Vision and Overview should include three basic messages.

The Vision and Overview in the Draft provide a concise summary of the strategic direction the Council recommends for the region. The draft Vision is a combination of recommended desired conditions in the region and what appear to be predictions of what conditions will unfold over the next 20 years.

PNUCC recommends that the Council revisit the Vision and Overview sections of the Plan to ensure that it includes the following three basic messages.

- **Northwest electric needs are growing.** In several places the Draft suggests that needs are growing and we believe it is a foundational condition of the Northwest power industry that sets the stage for the Plan to describe how these needs are met.
- **The region will meet future power needs with a mix of conservation, new renewable resources and new technologies.** The Vision discusses the future for conservation efforts, but lacks recommendations for renewable resources as well as the possibility of other resources.
- **Power costs for consumers will rise.** A statement about the Council's expectations regarding the increasing cost of power in the future should be added to reflect what is in the Plan.

We believe that these are fundamental aspects of your Draft too, but they are not articulated as such in the Vision or the Overview. For this reason we recommend that you include these to help inform readers about these three aspects of our energy future.

The Overview should emphasize the region's small carbon footprint.

We think that it is particularly important for readers of your Plan to understand that the Northwest power industry has the lowest carbon footprint of any region's electric power system in the nation. While your Draft reports on the region's extremely low carbon footprint we suggest you bring this finding forward in the Draft so it has a more prominent place in the Plan.

Wind

The Plan should account for the likelihood that some of the NW renewable resources will be developed to meet out-of-region loads.

With the rapidly increasing amounts of wind power being added to the system it is important that the Council not drop this issue after the final Plan is adopted. The large electrical giant to our south, California, is in the process of significantly increasing their Renewable Portfolio Standard targets. In so doing California will put additional pressure on development of wind power in the Northwest to help meet these requirements. The Plan needs to account for the likelihood that some of the Northwest renewable resource will be developed to meet out-of-region requirements. As this occurs, California may acquire some of the most cost-effective wind power sites. This will leave the region with higher cost and poorer performing wind resources than assumed in the Draft.

The Plan needs to clearly identify that operating 8,000 MW of wind will require integration strategies that will go beyond those currently identified.

The Draft does a good job of articulating the challenges of integrating large amounts of variable output wind resources. The region's utilities are currently experiencing some of these problems with only about 3,000 MW of wind power operating. The Draft indicates that to meet the state renewable resource requirements, the region's utilities will acquire about 5,400 MW of additional wind resources for a total of over 8,000 MW operating in the region to meet Northwest requirements. This will take the Northwest power system into uncharted territory and will require new integration strategies.

Conservation

The Plan should reflect the uncertainty of acquiring conservation in its analysis, similar to the uncertainty for generating resources.

The Draft provides the region with a tremendous amount of data and analysis of the possible future energy efficiency improvements that are available and cost effective. PNUCC agrees with the Council that energy efficiency (conservation) is the lowest cost of all resources available for utilities and consumers to meet increasing demands for electric power.

PNUCC recommends that the final Plan include estimates of the likely uncertainties facing the region with conservation measures and program design challenges for acquiring the conservation savings you envision. It is especially important for the Council to recognize in your analysis that the amount of power actually "saved" from the region's conservation efforts is subject to a high degree of uncertainty. This uncertainty is not unlike the uncertainties and risks associated with acquiring future generating resources or in forecasting future demand for power. The Council could help the region identify potential actions to be taken in the event the targeted amounts of savings are not achievable.

The Draft appropriately recognizes that the Northwest's conservation efforts to-date lead the nation in actual, on the ground, energy efficiency, but we can do more. As the region's utilities continue with its effort to acquire energy savings, it is extremely important for the public and policy makers to understand the context for future savings. The region is not starting from zero and the draft Plan properly acknowledges that fact.

PNUCC supports the action item that directs the Council and the Governor's offices to lead efforts to see that more efficient building codes and national standards are adopted. As you know, changing codes and standards can be complex rulemaking exercises. The Council's willingness to utilize the credibility of your offices in combination with the support of the Governors makes it much more likely that the region will see substantial improvements in the efficiency of new buildings and appliances over the term of this Plan.

PNUCC applauds the Council's leadership in helping the region maintain an accounting system for the energy efficiency actually acquired by the region. The historical analysis provided in the Draft of energy saved over the last 25 years is very helpful in establishing where we have been and where we need to go. PNUCC encourages the Council to continue with a regional effort designed to maintain accounting of the conservation savings acquired by the region. This should be specifically identified as a Council Action Plan item in the Plan.

Role of Hydropower

The Plan properly advocates for using the hydropower system as efficiently and effectively as possible.

The Council should prompt more discussion and analysis regarding the effective use of the hydropower system. PNUCC continues to be concerned about river operations that reduce hydropower generation for little or no fish benefit. Given the increased interest in carbon-free generation, we recommend you continue to test the proper balance of river operation for power and other uses.

PNUCC encourages the Council to proactively look for opportunities to gain cost-effective generating capability from the existing hydropower system.