Northwest **Power** and **Conservation** Council



April 1, 2014

**DECISION MEMORANDUM**

**TO:** Council Members

**FROM:** John Shurts

**SUBJECT:** Sixth Power Plan litigation: Ninth Circuit remand: decision on "methodology for determining quantifiable environmental costs and benefits" after public comment

To remind you, in September 2013 a panel of the Ninth Circuit issued an opinion remanding the Sixth Power Plan decision to the Council. The Court issued its final mandate on November 14, 2013. The Court remanded the Sixth Power Plan to the Council "for the limited purposes of (1) allowing public notice and comment on the proposed methodology for determining quantifiable environmental costs and benefits, and (2) reconsidering the inclusion in the Plan of the BPA's estimate of the 2009 Program's cost to hydrosystem operations."

This decision memorandum concerns the first remand issue -- allowing for public comment on the Sixth Plan methodology for determining quantifiable environmental costs and benefits. In January the Council released for a 45-day public review and comment period what is Appendix P to the Sixth Power Plan, "Methodology for Determining Quantifiable Environmental Costs and Benefits." http://www.nwcouncil.org/media/6338/SixthPowerPlan_Appendix_P.pdf. The comment period closed on March 5. The Council received four comments:

**Northwest Resource Information Center, Inc.** (NRIC was the petitioner in the Sixth Power Plan review)
**Public Generating Pool**
**Public Power Council**
**James Adcock** (electrical engineer in Bellevue, Washington)

We made the comments available to the Council members and relevant staff by email on March 6, 2014.

After review of the comments, the methodology described in Appendix P, the Sixth Power Plan as a whole, and the administrative record of the power plan, our recommendation for how the Council should proceed is as follows. At the April Council meeting, the Council should decide to:

- Re-approve Appendix P as the statement of the methodology for determining quantifiable environmental costs and benefits for the Sixth Power Plan.

- After further review and consideration of the methodology and comments, make no changes to the Sixth Power Plan's resource strategy adopted in February 2010 or any other element of the power plan; and

- Approve a statement explaining the reasons for the above actions and responding to the comments, as a supplement to the Sixth Power Plan's Statement of Basis and Purpose/Response to Comments approved by the Council in April 2010.

**Attachments**

- Sixth Power Plan, Appendix P, "Methodology for Determining Quantifiable Environmental Costs and Benefits"
- Sixth Power Plan, proposed Supplemental Statement of Basis and Purpose and Response to Comments

# Northwest Power and Conservation Council

## Sixth Northwest Conservation and Electric Power Plan

## Appendix P: Methodology for Determining Quantifiable Environmental Costs and Benefits



## Background

Section 4(e)(3)(C) of the Act requires the Council to include in its power plan a "methodology for determining quantifiable environmental costs and benefits." The purpose of this Appendix is both to describe the Council's methodology for determining environmental costs and benefits and to explain how the Council has assessed environmental costs and benefits in its resource cost estimates.

The Council's Power Plan is based on the most cost-effective resources to meet the electricity needs of the region. The Act specifies priorities for types of resources. Energy efficiency is first priority and it receives a 10 percent cost credit compared to other alternatives. Efficiency is followed by renewable resources, high-efficiency resources, and finally, all others. With the exception of efficiency improvements, the other priorities are only tie breakers. It is cost that determines the most cost-effective resources for the Council's Plan.

The Act specifies that the costs of a conservation or generating resource are to include an estimate of "all direct costs" over the effective life of the resource, including "quantifiable environmental costs and benefits ... directly attributable" to the resource. More precisely, Section 3(4)(B) provides:

> For purposes of this paragraph, the term "system cost" means an estimate of all direct costs of a measure or resource over its effective life, including, if applicable, the cost of distribution and transmission to the consumer and, among other factors, waste disposal costs, end-of-cycle costs, and fuel costs (including projected increases), **and such quantifiable environmental costs and benefits as the Administrator determines, on the basis of a methodology developed by the**

**Council as part of the plan, or in the absence of the plan by the Administrator, are directly attributable to such measure or resource.**[1]

An entire regulatory structure is in place at the national, state, and local levels to address environmental effects of various economic activities, including those related to the production and use of electricity. These regulations represent a collective choice of society about the desirable and economically efficient mitigation of environmental effects. Where policies exist and are considered up to date, the Council assumes that policy makers have balanced environmental damage against mitigation alternatives and costs to determine the desirable levels of mitigation. However, regulatory policies evolve over time as better understanding of environmental effects is gained, previously negligible impacts become significant due to expansion of human activity, and the values of society change. Where policies have not been developed or are actively being considered for revision, additional mitigation costs should be considered in planning.

Most regulatory policies do not require full abatement of impacts, but rather seek the balance between the cost of mitigation and the damages of residual impacts. Environmental effects that remain after regulatory solutions are implemented should not be ignored, however they may not be quantifiable. In addition, some resource choices have accompanying environmental benefits that should be considered.

The Council's methodology for consideration of environmental costs in developing its power plan is described below. Bonneville also should follow this methodology, in addition to applicable existing requirements and regulations, when considering expenditures related to resource acquisition.

## Methodology

There are four components to the Council's methodology for including quantifiable environmental costs in planning. These are: 1) including the cost of meeting existing environmental regulations into the capital and operating costs of conservation and generating resources; 2) where possible, quantifying the potential costs of new regulations under consideration; 3) accounting for the environmental benefits that may be associated with specific resources, usually associated with improved efficiency, and 4) recognizing additional environmental effects that may remain after compliance with existing regulations even though they may not be readily quantifiable.

### *Cost of Existing Regulations*

[1] The language can be read to apply only to potential Bonneville resource acquisitions and only following a particular determination by the Bonneville Administrator. Still, the Council takes this as instructive for evaluating the costs of all new resources considered in its Power Planning. In addition, Section 4(e)(3)(C) of the Act requires the Council to include in its power plan the "methodology for determining quantifiable environmental costs and benefits." Thus the purpose of this Appendix is both to describe the Council's methodology for determining environmental costs and benefits and to explain how the Council has assessed environmental costs and benefits in its resource cost estimates.

The Council's planning assumes that all new generating resource alternatives meet existing environmental regulations. The costs of emissions reduction equipment and operations are included in resource costs, state limits on new power plant emissions are enforced, and various siting limitations, such as rivers and streams that fall in protected areas, are recognized. The Council also includes the cost of meeting existing regulations affecting conservation measures, such as PCB disposal from replacement of transformers, and mercury disposal from replacement of linear fluorescent lamps. In addition, hydro operations consistent with the Council's Fish and Wildlife Program are considered a constraint on the operation of the hydropower system. These reflect the cost of policy choices that have already been made.

### *Potential Cost of New Regulations*

Some environmental policies are still evolving or are being reconsidered. In some cases these are certain enough to include the costs in the plan directly. For example, mercury emissions limits have been assumed to become requirements and the cost added to new coal plants costs.[2] Similarly, the cost of recycling compact fluorescent lamps which contain trace amounts of mercury has been included in this measure's cost.

In other cases increased regulation is likely, but details have not been settled. In the Sixth Power Plan, this is the case with carbon control policies. While many states have renewable portfolio standards and limits on emissions from new power plants, carbon pricing policy is being actively discussed but is still highly uncertain in terms of its level and structure. Renewable portfolio standards and new plant emissions limits are included in the Council's analysis as existing regulations. However, carbon pricing policy is quantified as an uncertainty. Several scenarios explore the likely effects of different levels of carbon pricing on resource costs and choices.

### *Consideration of Environmental Benefits*

For some resources, primarily efficiency improvements, there are associated environmental benefits. Where quantifiable, the Council counts these as a cost savings. For example, high efficiency clothes washers not only save energy, they also reduce

[2] At issue here are the costs of existing coal units w/o flue gas desulphurization (Boardman is the only remaining regional example). The Council assumed costs regarding mercury abatement based on the Clean Air Mercury Rule (CAMR), issued by the Bush EPA in March 2005. CAMR established Hg emission limits for new coal units but exempted existing units. For most new pulverized coal-fired units, the CAMR limits could be achieved through "cobenefit" Hg removal (~90 percent) by required sulfur and particulate control equipment. Activated carbon filters would be required for IGCC plant compliance. (So in practice CAMR represented "business as usual" for most new and existing pulverized coal units though touted as new mercury control regulation.) Our new coal-fired power plant costs are consistent with CAMR (activated carbon filters for IGCC units; no equipment in addition to FGD & particulate control for new PC units, no new costs for existing units w/o FGD (i.e., Boardman)). However, CAMR was challenged in court and vacated by the DC Circuit Court in February 2009. The EPA withdrew its petition for review and is now developing new standards in accordance with the DC circuit court opinion. The new standards will likely require compliance by existing as well as new plants.

water and detergent use. These are treated as positive environmental externalities in the Council's planning. The direct environmental benefit of reduced electricity use is not credited as an environmental benefit against the cost of conservation, but is instead reflected as reduced costs of avoided generation technologies.

### *Residual Environmental Costs*

The regulations set through policy making are assumed to be acceptable levels of mitigation by society as discussed above. Also, where serious policy discussions are underway to change regulations, the Council attempts to reflect the potential changes in its planning. However, regulations seldom completely eliminate the environmental effects of electricity production and use. To the extent possible, the effects of residual emissions or other environmental effects should be considered in resource decisions.

In some cases, the Council has included unregulated mitigation requirements and cost into its planning. For example, the Council takes into account concerns about indoor air quality in homes that are highly sealed and insulated. In its first power plan and all subsequent plans the Council's Model Conservation Standards required that heat exchangers be installed to provide adequate ventilation in such homes to prevent indoor air quality problems. Ventilation requirements are now included in building codes. Other potential problems of a similar nature should be considered and mitigated where cost-effective.

The Council has not usually considered the effects of residual emissions to be reliably quantifiable. However, there have been extensive efforts to quantify such environmental costs, many undertaken for the purpose of balancing the cost of mitigation and the cost of residual damages. A recent example is from the National Research Council.[3] Other examples include USDOE/Commission of European Communities (1992)[4] and European Commission (1995)[5]. The Council methodology recognizes such effects and acknowledges these costs in evaluating resources, but in an unquantified manner. Bonneville, in making resource decisions, should list residual environmental effects and consider the possible costs when considering alternative resource choices. The magnitude of the costs should be considered based on credible literature such as the National Research Council and the others referenced, but this methodology recognizes that the residual environmental costs related to a particular resource very often cannot be explicitly calculated.

[3] "The Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use." The National Academies Press. 2009. http://www.nap.edu/catalog.php?record_id=12794#description

[4] U.S. Department of Energy and the Commission of European Communities. *U.S. - EC Fuel Cycle Study ORNL* (Reports No. 1 through 8). 1992 through 1998.

[5] European Commission. *Externalities of Energy EUR 16520-25* (Volumes 1 through 6). 1995.

# Northwest Power and Conservation Council

## Sixth Northwest Conservation and Electric Power Plan

## Supplemental Statement of Basis and Purpose and Response to Comments

### April 2014

The Council approved the Sixth Northwest Conservation and Electric Power Plan in February 2010. The Council then approved a Statement of Basis and Purpose and Response to Comments to accompany the Sixth Power Plan in April 2010. http://www.nwcouncil.org/energy/powerplan/6/plan/. This is a supplement to that statement.

Section 4(e)(3)(C) of the Northwest Power Act of 1980 requires the Council to include in each regional conservation and electric power plan a "methodology for determining quantifiable environmental costs and benefits." When the Council released the draft Sixth Power Plan for public review and comment in September 2009, the Council inadvertently neglected to include a separate statement describing the environmental cost and benefit methodology the Council used in developing the resource strategy for the draft Sixth Power Plan.

Public comments on the draft alerted the Council to the absence of the statement describing the methodology. Even absent a specific description of the methodology, however, the Council received significant public comment about how the Council quantified environmental costs and benefits for the resource cost estimates in the draft, especially whether and how to quantify the environmental costs of carbon emissions in absence of a carbon emissions regulatory regime, one of the central issues in the Sixth Power Plan.

Upon review of the comments and further review of the draft power plan, the Council concluded that it was clear from the draft and the accompanying analyses what methodology the Council was using for determining quantifiable environmental costs and benefits of the new resources. For that reason the Council decided at that time not to conduct a further public comment period on a proposed statement of the methodology before including the methodology in the final Sixth Power Plan. *See* Sixth Power Plan, Statement of Basis and Purpose for the Sixth Power Plan and Response to Comments on the Draft Sixth Power Plan, at 3-12, 22-25, 30. In the final power plan the Council included the statement of the methodology the Council used in developing both the draft and final Sixth Power Plan, as Appendix P, "Methodology for Determining Quantifiable Environmental Costs and Benefits."

A panel of the Ninth Circuit later ruled that the Council's failure to include the statement of the methodology in the draft plan for public comment was a procedural error. The Court remanded "the Plan to the Council for the limited purpose of adopting a methodology through the appropriate notice-and-comment process." *Northwest Resource Information Center, Inc. v. Northwest Power and Conservation Council*, No. 10-72104, at 20-23, 28 (9th Cir, Sept 18, 2013).

Pursuant to the Court's remand order, in January 2014 the Council released for a 45-day public review and comment period the proposed methodology for determining quantifiable environmental costs and benefits as described in Appendix P to the Sixth Power Plan." The Council explained in the notice why it was releasing this element of the Sixth Power Plan for public review and comment. The notice made potential commenters aware that at the conclusion of the comment period, the Council would consider any comments received on the Appendix P Methodology in deciding whether to revise the methodology or in any other way amend the Sixth Power Plan. http://www.nwcouncil.org/energy/powerplan/6/appendix-p-comment/. The Council received four comments:

**Northwest Resource Information Center, Inc**.
**Public Generating Pool**
**Public Power Council**
**James Adcock**

The Council then reviewed the comments received and the statement of the methodology, in the context of the rest of the Sixth Power Plan and its administrative record, including the original comments on how the Council quantified environmental costs and benefits in the draft power plan. Based on its review, the Council decided at its April 2014 meeting to:

- Re-approve Appendix P as the statement of the methodology for determining quantifiable environmental costs and benefits for the Sixth Power Plan.

- After further review and consideration of the methodology and comments, make no changes to the Sixth Power Plan's resource strategy adopted in February 2010 or any other element of the power plan; and

- Approve this statement explaining the reasons for the above actions and responding to the comments, as a supplement to the Sixth Power Plan's Statement of Basis and Purpose/Response to Comments approved by the Council in April 2010.

The four comments received do not alter the Council's conclusion that the methodology developed to determine quantifiable environmental costs and benefits for the Sixth Power Plan was reasonable, clear, and appropriate on the record developed by the Council for the draft and final power plans. The Council recognizes that there are

differing views as to how best to quantify the direct environmental costs and benefits of new resources when conducting the resource cost comparisons and selecting the least-cost new conservation and generating resource strategy for the power plan. The Council used a method supported in the record and supported by the Council's technical and policy expertise. The Council used a methodology it has consistently used since its very first power plan, although described at a different level of detail over the years.

Within this new set of comments, the two utility associations commented that the methodology the Council described in Appendix P as part of the final Sixth Power Plan accurately represented the methodology for determining quantifiable environmental costs and benefits that the Council applied in developing the draft and final Sixth Power Plans, and that this methodology was appropriate and reasonable in the context of the statute, the record before the Council, the technical work of the Council, and the state of the information as of 2008-10. The utility associations have qualms about whether it is truly possible to quantify resource costs outside of the regulatory framework -- an issue for further consideration in the Seventh Power Plan -- but even so they noted that the approach the Council did develop and apply in the Sixth Power Plan had a more than rational basis in the statute and record.

Now as then, for most of the commenters the key issue in this regard has been how to deal with the costs of carbon emissions. The challenge has been whether it is possible to quantify (and if so, how to quantify) the direct environmental costs of carbon emissions in the absence of an established regulatory framework, compliance with which would help to define what are the costs of dealing with carbon emissions in resource development and operations. Within that uncertainty, and within a range of approaches by others to deal with that uncertainty, the Council modeled a range of possible "environmental costs" for the carbon emissions from fossil-fuel resources. The Council also developed several new resource scenarios to explore the likely effects of different levels of carbon pricing on resource costs and choices. This approach is noted in the Appendix P statement of the methodology and discussed in detail elsewhere in the plan. The Council approach to quantifying the carbon emissions was a reasoned decision on this record and fits well within the requirements of the statute.

Mr. Adcock commented that the Council errs in this methodology primarily by not using the "social cost" of carbon approach (and resulting costs) under development by the Obama Administration under the lead of the U.S. Environmental Protection Agency. That specific approach was not available to the Council at the time of the Sixth Power Plan. What was available to the Council -- a range of different ways agencies and economists and others were considering how to understand the costs of the carbon emissions -- resulted in a methodology and then a price range and median modeled price for carbon emissions for the Sixth Power Plan that compares reasonably with what results from this one later analytical approach now pursued by the EPA. The Council appreciates the comments of Mr. Adcock, as his views are sure to be part of the consideration of what should be the methodology for dealing with carbon emission costs in the Seventh Power Plan.

The comments from the Northwest Resource Information Center, Inc (NRIC) misunderstand what the statute calls for and allows in a power plan developed by the Council under the Northwest Power Act. Under the Act, the power plan is a scheme for implementing the most cost-effective new conservation and generating resources, so that Bonneville can continue to meet its contractual obligations for electrical power, even in the face of increasing demand, and also implement reliably the measures in the Council's fish and wildlife program. (Fish and wildlife measures determined *not* in power plan but instead approved by the Council in a separate and preceding process under the Northwest Power Act that results in the Columbia River Basin Fish and Wildlife Program). To develop this new resource scheme for the power plan, the Council has to determine what the "incremental system costs" are of the various conservation and generating resource options, so they can be reviewed on a comparable basis to determine which are most cost-effective. The methodology developed by the Council is the way in which the Council figures out how to quantify one element of the new resource costs estimates -- the environmental costs and benefits directly attributable to the new resources.

The statute does not allow the Council to determine, in the power plan, what should be the appropriate measures for fish and wildlife. The statute also does not allow the Council to include in the power plan a recommendation to remove or reduce the output of any existing resource, be it a hydropower dam or a coal plant or a wind turbine in order to benefit fish and wildlife or for any other reason. To the contrary, one factor the Council is required to consider in developing the new resource scheme is its compatibility with the existing system. Given the requirements of the Act, the methodology the Act requires the Council to develop is one that can best assign a dollar figure to the direct environmental costs and benefits of new resource choices. The statute is not asking, and does not allow, the Council to develop a methodology to quantify the environmental costs and benefits of *existing* system resources, nor allow the Council to decide in the power plan resource strategy whether to remove altogether or reduce the use of existing resources in the region. The Council and the power plan participants recognize that *others* may eventually make decisions to remove a resource, and if so, that fact will be taken into account as the Council recommends the least-cost new resource scheme. And so, for example, the Council in the Sixth Power Plan analyzed what the new resource strategy for the region would look like if coal plants are retired or if dams on the lower Snake River are removed. That is not the same as the Council developing the methodology to assess the costs and benefits of existing system resources and then making a decision about whether those existing resources should continue operating or be retired.

After reviewing the comments, and the record as a whole, the Council decided to re-approve Appendix P to the Sixth Power Plan, as the statement of the Council's methodology for the Sixth Power Plan for determining quantifiable environmental costs and benefits of new resources options. The Council sees no reason to alter any element of the Sixth Power Plan on the basis of the considerations here.

The Court also remanded the Sixth Power Plan to the Council "for the limited purposes of … (2) reconsidering the inclusion in the Plan of the BPA's estimate of the

2009 Program's cost to hydrosystem operations." The Council will take action on that remand order at a later date.