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

Council Meeting
Portland, OR

October 15, 2014

Minutes

Tom Eckman, Director of the Power Division gave an overview of the process of developing the regional power plan. He described the major components of the power plan and described how each component is developed. He also identified the major analytical models used in the development and explained how the models are related and their role in the development of the plan.

Council members Jennifer Anders, Bill Bradbury, Tom Karier, Phil Rockefeller, Pat Smith and Jim Yost participated via phone/web.

Tom Eckman presented a power point "Overview of the Northwest Power and Conservation Council's Power Plan Development Process" and talked through the slides. Council members asked questions during the presentation. Other participants were requested to hold their questions until the presentation concluded so the phone lines could be muted so as to eliminate audible background noise during the presentation.

During the discussion of the Council's authority to recommend Bonneville impose a surcharge if the model conservation standards are not achieved. Member Anders asked whether a surcharge is imposed on a state or some other entity. Eckman responded that if a surcharge were to be recommended to Bonneville, it would more likely be on a service territory where the standards have been imposed as opposed to state-wide. The surcharge is intended to be a cost recovery mechanism to recover costs imposed on Bonneville's other customers for not achieving savings. Member Karier asked whether the surcharge methodology could be applied to residential exchange customers. Eckman was not certain but because the surcharge applies when customers are actually buying power and residential exchange settlements have been put in place, it is unlikely that the surcharge mechanism could be applied to exchange customers.

During the discussion of a methodology for determining quantifiable environmental costs and benefits, Chair Bradbury asked for clarification as to whether the Council is required to quantify the cost of proposed regulation such as proposed Clean Air Act rule 111(d)? Eckman responded in the affirmative but clarified that the proposed rule would have to be finalized. Eckman noted the proposed rule 111(d) is supposed to be final in June 2015 in which case it would become final during the development of the 7th Power Plan.

Member Smith asked whether the Council had attempted in past plans to quantify environmental costs in situations where a rule had been proposed but not finalized. Eckman responded that the Council did not estimate what the potential regulation (such as a carbon tax or carbon trading scheme) would cost in terms of a single point estimate to add to the cost of potential resources. Rather, the Council considered the risk as speculative and included it as a consideration in the risk analysis or as part of a sensitivity study.

Member Rockefeller inquired about the component of the Council's current environmental methodology that recognizes there may be environmental effects that remain unaccounted for even after compliance with existing regulations. Would that include situations where there are no existing environmental regulations but there may be certain environmental impacts? Yes. One example of this is the Council's protected areas decision restricting hydro development in certain areas. In establishing protected areas, the Council made a policy call that existing regulations were inadequate to protect those fisheries in certain areas from development and that the cost of allowing resource development in those areas was essentially infinity in the sense that the environmental cost of resource development in those areas was too large in terms of fisheries resources to allow development.

Chair Bradbury asked for an example of what it means for the Council to "Establish values for Key Input Assumptions" mentioned on the Plan Development Process slide. Eckman said examples include forecasts of employment and population growth in the region.

Member Smith asked what the history of the Council is with putting a preferred alternative in the draft power plan. Eckman answered that typically there is a preferred alternative the Council comes to agreement on for the draft plan, but there also have been ranges of alternatives in the draft plan that the Council then solicits public comment on.

Member Karier asked about the use of FuelMod and whether the output of the model is vetted by an advisory committee and the Council before using it in any of the power plan analysis. Both the fuel price forecast and the natural gas price forecast are vetted first by the advisory committees and the Council decides on the appropriate range to use. So, the output of the model could change based on the expert opinion of the advisory committee and/or the Council.

With respect to the Genesys model, Member Smith commented that as a member of the Sovereign Review Team, he was briefed by folks who said to take the 80-year historical

water year data with a grain of salt as to relevancy going forward. Does the Council adjust the historical record of water years for climate impacts at all? John Fazio said no, the Council does take into account things like irrigation withdrawals and evaporation but the Council does not make any adjustments to the historical record for change in climate. The Council has done climate change studies with the University of Washington climate impacts group that involves taking the 80-year historical water year record and modifying it for potential climate change scenarios in the future and will continue to ask during the plan whether the current historical record should be adjusted in any way but we have not done so yet. Member Karier inquired whether the Council will have options along the way to run some of those data sets with University of Washington to see if it changes the results or explore climate impacts in more detail. Fazio responded that we are planning to run those types of scenarios and as in the last plan, the results will appear in an appendix.

Member Anders asked about how other dynamics that might be in play--such as the drop in natural gas prices that occurred as a result of fracking technology--are considered during the power plan development. Eckman replied that the RPM puts in a range of fuel prices. We don't pretend to know what the price will be; rather, we stress test a range of prices.

Chair Bradbury inquired during the discussion of the RPM model whether the term "risk" as related to the Council deciding what level of risk it is comfortable with -- whether that is just another way of saying loss of load probability or is LOLP just *one* of the risks. Eckman indicated that we maintain in the portfolios we run a certain level of reliability so that a resource portfolio will have to meet a certain minimum standard of reliability before it will even be considered by the RPM as an acceptable outcome.

Member Rockefeller commented that the concept of a "future" is an amorphous subject and whether there is a way to systematically grapple with different circumstances when power planning. The intent of running many different futures is to make sure we have robust inputs that would produce a range of stress tests against which to test the various resource portfolios. For example, if we limit the natural gas price forecast to only a certain small range of futures and get an issue with fracking or LNG exports or national security unexpectedly comes up that result in driving up natural gas prices such that the price falls outside what we expected, we've missed the opportunity to stress test that future. So the goal is to develop enough inputs to ensure a wide enough range of excursions that we can determine if prices don't meet expected value. The futures concept encompasses both manmade and natural events.

Questions from other meeting participants included the following:
1. What is levelized cost? Levelized cost includes all costs over the lifetime of that resource. Think of it as a mortgage payment per kwH.

2. Why didn't the Council use the U.S. Department of Energy's July 2013 forecast data related to climate change effects on various generating resources? Fazio indicated that data issues prevented us from using that particular study but we did review other global climate change models. We intend to also do sensitivity studies for different climate

scenarios to see how resources and action items might change when developing the 7th plan.

3. As you go from plan to plan and create the supply curves, is there a part of the plan development process that reconciles what actually happened versus the previous plan so that if there were assumptions built into supply curves that turned out to be less accurate the supply curves can be adjusted? We capture what has happened since the last plan in the energy efficiency resource potential assessment and electricity demand forecast. In that assessment/forecast, we incorporate, for example, Federal standards that weren't there in the previous plan, performance of programs where we've done weatherization or wastewater efficiency improvements, etc. We recalibrate our analyses in all areas where we have new data. Advisory committees such as the Conservation Resources Advisory Committee also assist in that effort in taking up discussions on adjusting ramp rates or achievable potential levels of development over the next 10 years.

4. Does the Council do performance testing of forecasting models to decide how accurate they are? No, because we don't have insights about the future; we only know what has happened. Work has been done on the Aurora model in terms of trying to see how well forecasts turned out after-the-fact (backcasting). But, in terms of the accuracy in going forward it's impossible to performance test that proposition.

5. What is the link between the Fish and Wildlife Program and the Power Plan?
The program largely determines what hydro operations can do in terms of running the Genesys model. Per John Fazio, the program impacts the cost and physical operations of the hydrosystem as well as the corresponding hydrosystem generation. For example, the BiOp hydro regulations become the basis for AURORA and RPM runs.

6. Where can we advocate for a zero net energy building code model conservation standard? The principal place to advocate for a zero net energy building code would be through the Conservation Resources Advisory Committee which assists the Council in analyzing whether measures and model conservation standards are cost-effective. Another option is at a Council meeting and asking the Council to reconsider any analysis that may or may not comport with where you want to go. A measure has to be cost-effective as compared to other resources and economically feasible for consumers. So if zero energy buildings are cost-effective then, whatever level that is reasonably cost-effective is where the Council can go.

Approved November 4, 2014

/s/ Jennifer Anders
Vice-Chair