Renewable Northwest Project

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July 22, 2011

BY EMAIL (*to records@utc.wa.gov*)

David Danner, Executive Director
Washington Utilities and Transportation Commission
P.O. Box 47250
Olympia, WA 98514-7250

Re: **Docket No. UE-100514**
Renewable Northwest Project's Comments on PacifiCorp's 2011 Integrated Resource Plan

Dear Mr. Danner:

Renewable Northwest Project (RNP) appreciates the opportunity to comment on PacifiCorp's 2011 Integrated Resource Plan (IRP). RNP is a coalition of public interest and industry groups that seeks to promote the implementation of environmentally responsible renewable energy resources across the Northwest.

RNP shares PacifiCorp's view that electric sector regulation will continue to prefer clean, renewable energy resources. (See, *e.g.*, IRP, pages 82, 225.) Planning for a regulatory environment that values low-carbon, renewable, clean and safe generating technologies is in the best interests of the Company's customers. Short-term political shifts notwithstanding, national political leaders will continue to respond to the desire to lead in the clean energy economy and to avoid environmental and safety issues associated with risky and polluting technologies. In some parts of the IRP, the Company ultimately makes a number of sensible decisions to plan toward that regulatory future by favoring investments in transmission modernization (see IRP, page 82) and renewable energy resources (see IRP, pages 225-228).

In particular, RNP applauds the Company's use of sophisticated transmission investment analysis in Chapter 4 of its IRP and its recognition of the diverse benefits of transmission investments (IRP, page 49). Given that the Company's analysis shows that "economics do not drive a clear selection" (IRP, page 82), careful planning for a robust, efficient transmission system will be a good bet for customers in any future—and especially in a future that prefers clean, renewable energy sources.

Yet, in other areas of the IRP analysis, the Company's path diverges from that regulatory vision: coal retirement, natural gas additions, and renewable energy modeling.

Future Coal Plant Upgrades vs. Retirement

The IRP's coal retirement analysis is not a fully comprehensive, forward-looking evaluation of continued pollution control upgrades to aging, inefficient coal plants.[1] According to parent company MidAmerican's testimony to Congress, PacifiCorp spent $1.2 billion on such upgrades from 2005 to 2010, with a total of $2.7 billion expected by 2022:

> "Total costs that will have been incurred by our customers to pay for these pollution control projects during the period 2005 through 2023 are expected to exceed $4.2 billion, and by 2023 the annual costs to customers for these projects will have reached $360 million per year."[2]

Those sizeable investments will become a liability for customers as diverse forms of regulation of coal plant pollution advance (see IRP, pages 30-36). In this context, piecemeal justification of pollution control upgrades in rate cases is not sufficient. The Company's IRP should be required to discuss these expenditures clearly and demonstrate that customer dollars spent today are still a good investment when viewed along with a reasonable forecast of the compliance costs associated with likely future regulation. The coal retirement analysis in the IRP, a "proof-of-concept" evaluation of *currently planned* pollution control upgrades assuming various CO_2 and gas prices (IRP, pages 168, 180-181, 236-40), does not evaluate the full picture of the potential ratepayer investment required to keep individual coal plants compliant with future regulation.

We recommend that the Commission request a robust analysis to evaluate whether continued investment in each of the Company's oldest coal plants makes economic sense for ratepayers, on a plant-by-plant basis, when compared to alternatives. This should include a risk analysis that comprehensively compares the regulatory compliance costs for each of these units with alternative power supply options and examines the possibility that regulatory compliance costs will be greater than those forecasted. If the planning process does not give regulators a broader, forward-looking context within which to view continued requests for cost recovery for pollution control upgrades, it will be more difficult

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[1] Several PacifiCorp plants appear on a Western Grid Group/Synapse Energy study's list of the bottom 25 percent of economic merit within the western coal fleet, as compared with both new and existing gas generation: Carbon 1-2 (UT, 172 MW), Dave Johnston 1-3 (WY, 437 MW), Naughton 1-2 (WY, 370 MW). Jeremy Fisher and Bruce Biewald, Synapse Energy Economics, Inc., "WECC Coal Plant Retirement Based On Forward-Going Economic Merit" (January 10, 2011), available at http://www.wecc.biz/committees/BOD/TEPPC/TAS/SWG/10March2011/Lists/Minutes/1/WECC%20Coal%20Retirement%20Criteria%201-10-2011%20Final.pdf. Western Grid Group commissioned Synapse to develop a model that generates a list of possible coal plant retirements based on forward-going economic merit. More background is available in a WECC staff presentation available at http://www.wecc.biz/committees/BOD/TEPPC/TAS/SWG/10March2011/Lists/Presentations/1/WGG%20Carbon%20Reduction%20Study%20Case.pdf.

[2] Testimony of Cathy S. Woollums, Senior Vice President and Chief Environmental Counsel, MidAmerican Energy Holdings Company, Committee on Environment and Public Works, United States Senate (June 15, 2011), page 2, available at http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=e8cdad57-4ef5-4a32-af5f-26f8e41118f1.

to make informed decisions when individual investments come before the Commission in rate cases. We also recommend that the Company analyze whether coal plant closures in transmission-constrained areas could provide additional capacity.

New Baseload Natural Gas Commitments

Another poor fit with the regulatory future is that the only significant near-term investments in new generating resources reflected in the IRP are two large combined cycle natural gas plants (CCCTs). We note that the use of a "stochastic production cost adjustment" predisposed the portfolio selection model (System Optimizer) to prefer CCCTs over single-cycle plants (SCCTs), which resulted in selection of more CCCTs of greater capacity than the SCCTs the adjustment was designed to replace. The difference offset more economical market purchases and apparently resulted in a preference for baseload plants (CCCTs) rather than flexible dispatch resources suited for a world of increasing variable energy and low market prices.[3] If PacifiCorp prefers CCCTs because it anticipates baseload need following future coal plant retirements, then this possibility and the appropriate replacement strategy should be discussed openly in the planning process. At minimum, the decision to bias the portfolio selection toward CCCTs should be explained more thoroughly.

Modeling Renewable Resources

Questionable modeling assumptions, still being examined, may have influenced the paucity of renewable resources in initial portfolio results and in the Company's plans for near-term investment. To arrive at a level of investment in renewable resources over the planning term that reasonably hedges regulatory risk, the Company had to adjust the preferred portfolio based on post-hoc policy and business analysis. RNP agrees with the Company that its initial modeling included too few renewable resources to hedge policy risk, and that adding more wind resources is likely an appropriate adjustment. Nonetheless, it is important to consider whether skewed assumptions about renewable resources prevented the Company's model itself from producing portfolios with appropriate levels of renewable energy resources.

Wind. For wind resources, capital costs were commensurate with those modeled in the 2008 IRP,[4] despite an explicit recognition that the cost of wind turbines has fallen (IRP, page 112). High capital costs for wind resources were adjusted further upward (by 50 to

[3] See IRP page 180 and fn. 59. More information on the stochastic cost adjustment approach can be found in the report for the April 28, 2010, public input meeting available at http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2011IRP/20100428-2011IRP_kick_off_MeetingSummary.pdf.

[4] In the 2008 PacifiCorp IRP, the Oregon wind's low cost estimate was $2378/kW in 2011 dollars. In 2011 those capital costs have risen to $2393/kW for Oregon sites that do not require new incremental transmission. "2008 Integrated Resource Plan Volume 1." PacifiCorp. Pg 103. Available at http://www.pacificorp.com/content/dam/pacificorp/doc/Environment/Environmental_Concerns/Integrated_Resource_Planning_3.pdf.

100 percent) by assigning additional construction costs without clear explanation or justification. (See IRP, page 130 [Table 6.10].) Capacity factors for wind resources appear low relative to other data.[5] In addition, the Company relied upon wind integration costs from a study that it completed without ever having responded to serious problems identified by a broad range of expert stakeholders.

Because of the WUTC's recent examination of PacifiCorp's prior wind integration study in the rate case, and the likelihood that the Commission will make a similar examination of the 2010 Wind Integration Study in future rate cases, we wish to provide more detail about the study's procedural and substantive deficiencies. We believe that many of those deficiencies could have been avoided had PacifiCorp worked with a Technical Review Committee of independent experts,[6] and we urge the Commission to encourage PacifiCorp to use such a committee for its next wind study.

On the procedural side, PacifiCorp gave stakeholders less than a month to comment on the results of the study, then ignored the serious concerns they raised. The Company first released the results of the study on August 12, 2010. Stakeholders were invited to participate in a conference call one week later, then to submit written comments two weeks later.[7] Five days after receiving those comments, on September 1, 2010, the Company filed the final study without addressing any of the substantive concerns. Despite stating that it would "investigate substantive issues raised by stakeholders and respond appropriately during the course of the remaining 2011 IRP development schedule," the Company has made no further effort to do so.

Of the many substantive errors identified by those who reviewed the study, we highlight three here. First, use of an incorrect formula may have overstated reserve levels by a factor of two. The Company has acknowledged that reserves should be held to meet 97% of the combined ten-minute variability and inter hour scheduling error for load and wind. However, the Company calculates the 97% error level for load and wind separately. To combine the errors, the Company unfortunately relies on a formula that has been demonstrated by stakeholders as incorrect and that has a significant impact on reserve

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[5] For example, the BPA Wind-Only Bubble in Table 6.10 lists a capacity factor of 29 percent (though underlying data shows that the Company may actually have used 28 percent). Northwest Power and Conservation Council data demonstrate a historical average 30 percent wind capacity factor for projects connected to BPA from 2007 to 2010. Elliot Mainzer (BPA), Ken Dragoon (NWPCC), "Wind Energy Development in the Pacific Northwest: Checking Facts, Connecting Dots" (June 6, 2011), Slide 5, available at http://www.bpa.gov/corporate/windpower/docs/WIF_SC_Presentation_6-11.pdf.

[6] *See, e.g.,* Utility Wind Integration Group, Principles for Technical Review Committee (TRC) Involvement in Studies of Wind Integration into Electric Power Systems, available at http://www.uwig.org/TRCPrinciplesMay2009.pdf.

[7] Comments are available at PacifiCorp's Wind Integration Study website (http://www.pacificorp.com/es/irp/wind_integration.html), under "Comments on Draft Study (8-12-10)" and "Response to Michael Milligan Comments From 8-26-10 Meeting."

levels.[8] Second, synthetic wind data developed using a novel methodology was not adequately validated. Third, the regional power system is fast adopting half-hour scheduling practices, in large part to reduce reserve requirements for variable generation. Today, PacifiCorp has the ability to schedule intra-hour power sales with Bonneville Power Administration. Yet the Company's wind integration study assumes one-hour scheduling periods that dramatically increase load following reserve needs. This hourly scheduling modeling assumption is already obsolete, and is particularly inappropriate for long term planning purposes. Long-term planning should assume continued adoption of market mechanisms and technologies that reduce integration costs.

To approximate the effect of these and other deficiencies on the ultimate wind integration cost, RNP calculated an alternative cost of $5.38/MWh—nearly half the $9.70/MWh rate that the Company used in all but one IRP sensitivity and now seeks to pass on to ratepayers. Sensitivity Case 29, which used the alternative cost, resulted in the model selecting nearly 60% more wind resources than the case against which it was tested.

Had stakeholder concerns in these areas been evaluated seriously during development of the IRP, the Company may not have had to insert additional wind resources at the end of its modeling. Furthermore, wind resource additions may not have been delayed until the end of the planning period, when lower capital costs and federal incentives may no longer be available to the Company.

Geothermal. PacifiCorp has operating experience with geothermal resources, and they can add important diversity to the portfolio if found to be least cost, least risk. Indeed, most of IRP's initial portfolio results contained significant geothermal resources, averaging around 300 MW. (IRP, pages 207 [Table 8.1], 208.) Yet, because of a desire to obtain legislative cost-recovery guarantees, the Company eliminated all consideration of geothermal resources. (IRP, page 224.) This justification appears to assume that the utility is only considering a self-build resource, and not PPAs from geothermal developers. The Company's experience with geothermal resources makes self-build a good option, but it is not clear that it is the only option. Other utilities appear to have contracted for geothermal resources. In the future, PacifiCorp should be encouraged to make a strong effort to find least cost, least risk geothermal resources through both contracts and self-build opportunities.

Solar. RNP is pleased that the Company evaluated distributed generation resources, including solar PV and solar hot water. With its service territory in areas of rich solar resources, PacifiCorp should be encouraged to becoming a leader in moving solar into the generating portfolio. It is notable that, with certain cost assumptions, the Company's model selected both as economical resources for the Company's system. The preferred portfolio includes 30 MW of solar hot water heating resources by 2020, and we look forward to seeing the Company implement programs to capture this efficient resource. (IRP, pages

[8] Comments are available at PacifiCorp's Wind Integration Study website (http://www.pacificorp.com/es/irp/wind_integration.html), under "Comments on Draft Study (8-12-10), Renewable Northwest Project."

230 [Table 8.16], 254.) For distributed solar PV, when sensitivity cases 30 and 30a included only the utility's buy-down cost for a Utah solar PV incentive program (rather than the full installation cost, much of which is borne voluntarily by the customer), the model selected the full amount of distributed solar capacity it was permitted to choose (1.2 MW per year). (IRP, pages 243-44.) This suggests that incentive programs for distributed solar can be economical resources when utilities pay just a percentage of the installation cost.

RNP appreciates the opportunity to comment, and to work with the Company and its regulators toward achieving a diverse portfolio of generating resources that will position customers well for a regulatory future that favors clean, renewable resources.

Sincerely,

RENEWABLE NORTHWEST PROJECT

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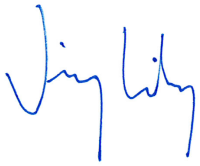
Megan Walseth Decker
Senior Staff Counsel



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