



October 5, 2010

Pete Warnken
PacifiCorp
825 NE Multnomah
Portland, OR 97232

Re: Incorporation of 2010 Wind Integration Study in 2011 IRP

Dear Mr. Warnken,

Renewable Northwest Project (RNP) and Utah Clean Energy appreciate PacifiCorp's willingness to discuss adjustments to the wind integration cost in portfolio development for its 2011 IRP. We believe that, given the number of serious technical concerns raised about the 2010 wind integration study, it is sensible for PacifiCorp to take steps to ensure that the challenged assumptions in the wind study do not affect the integrity of the IRP analysis.

We are not persuaded, however, that the limited adjustments discussed to date—i.e., using a lower wind integration cost in a handful of portfolios—will sufficiently insulate the IRP from the concerns raised with the wind study. Limited adjustments may provide important information for future IRPs, but they will not correct the biases in the present IRP analysis. We therefore respectfully recommend that the company use a lower integration cost in at least half of its portfolio runs and also that it adjust certain assumptions before running the PaR (Planning and Risk) model. This letter provides a more detailed discussion of our reasons for this recommendation, beginning with a summary of our concerns with the wind study itself.

1. Important issues with the wind integration study have not been resolved.

A variety of stakeholders identified material problems with the wind integration analysis as early as the first draft proposal. For example, from the outset, RNP and others pointed out errors such as attributing load forecast error costs to wind and the misapplication of mathematical formulas in deriving the joint wind and load reserve requirement. As various comments have noted, the study at least partially double-counts the cost of reserves and assigns to wind alone a "system balancing" cost that is equally attributable to traditional generation (and should not be a component of the wind integration charge unless a similar cost is calculated for competing generating technologies).

Although we appreciate the time that PacifiCorp took to provide written responses to these concerns, the responses did not provide a logical basis for rejecting all of these substantive concerns. Moreover, there was no opportunity for productive dialogue following publication of the final draft study, two weeks before it was finalized and filed with the OPUC. We understand that PacifiCorp may intend to continue to engage at some level with the many stakeholders who have concerns about the wind integration study. However, if PacifiCorp includes the \$9.70/MWh cost in its portfolio development and modeling before those concerns are resolved, it will have eliminated one major reason for continuing the dialogue at all: to ensure that wind resources are fairly considered in long-term planning.

In short, without providing more reasoned responses to and/or correcting the most significant flaws identified by stakeholders, the 2010 study cannot justify a wind integration cost that nearly doubles the cost that the company previously identified. The \$9.70/MWh cost implies that the opportunity costs associated with using existing generation is higher than the cost of building a new gas plant—a conclusion not justified by current market prices or gas plant acquisition rates.

2. *Long-term planning should reflect imminent changes in power markets.*

Changes in power markets will reduce the cost of integration over the next 20 years. Some of those changes are difficult to predict today, but others are imminent and quantifiable. Integration costs used in an IRP, a long-term planning document, should reflect at least those imminent, quantifiable changes.

For purposes of the 2011 IRP, PacifiCorp should account for one such change that will occur in 2011 and whose effect on the cost of wind integration can be reliably estimated. The Joint Initiative group of utilities, of which PacifiCorp is a member, expects to implement standardized half-hour scheduling business practices by July 2011. Half-hour scheduling can be expected to reduce hourly (“following” in PacifiCorp’s parlance) reserve requirements by approximately 20% according to one analysis,¹ and is not reflected in PacifiCorp’s wind study. Although we recognize that no study can stay current with all changes to power markets, it is reasonable to discount the study’s rate in a long-term planning analysis when changes in power markets become known.

Accounting for the effect of half-hour scheduling is particularly important because it represents just the first of many market changes likely to occur over the planning horizon. Additional reductions in the cost of integrating wind will come from more liquid trading among balancing areas (including the California ISO) and implementation of demand response programs to deliver balancing services. Because these effects of these changes may not yet be quantifiable, it is important to account for those—like half-hour scheduling—that are certain and quantifiable.

¹ See Figure 12.1, *Valuing Wind Energy on Integrated Power Systems*, Dragoon, 2010, William Andrew.

3. *Using a lower wind integration cost and revising associated modeling assumptions would give the IRP greater integrity.*

To ensure the credibility of the IRP as a long-term planning document, we recommend that PacifiCorp model a wind integration cost that takes the above concerns into account. Our rough accounting for the effect of some of the corrections to the PacifiCorp methodology results in a value of \$5.38/MWh. This estimate is based on removing the system balancing cost (\$0.86), adjusting the cost downward by 25% to account for the double-counting of following reserve costs, adjusting down by another 10% to account for the likelihood of at least some netting between east and west balancing areas (40% reduction likely if no transmission limitations—assumption here is that transmission is constrained no more than 75% of the time), and a further reduction of 10% to account for reduced reserve requirements due to half-hour scheduling.²

Although the wind integration cost is directly used only in portfolio development, some problematic assumptions from the wind integration study are propagated through the PaR model runs. To avoid bias in that portion of the IRP, we recommend that PacifiCorp remove the system balancing cost from the PaR model runs and base the PaR model on reserve levels adjusted for both half hour scheduling practices and the interaction between east and west side reserve dispatch.

Again, we appreciate that PacifiCorp has been open to adding limited portfolio runs with a lower wind integration cost. However, while a few additional portfolio runs can provide helpful information for future IRPs, limited sensitivities will not insulate the 2011 IRP analysis from significant concerns about the wind integration study. Going forward with the \$9.70/MWh cost and associated assumptions in the PaR model will impact the IRP analysis in ways that are not transparent to stakeholders. Therefore, we urge PacifiCorp to use a number no higher than \$5.38/MWh for purposes of the IRP, and perhaps equally important, to make the needed adjustments for the PaR analysis.

Despite these concerns with the wind integration study and its effect on the IRP, we understand it would be reasonable for PacifiCorp or other stakeholders to want to look at a range of wind integration costs in the IRP. If multiple costs are to be used, we strongly encourage PacifiCorp to make at least half the model runs using values not greater than \$5.38/MWh. Also, to ensure that the higher costs are not propagated through the PaR model, we encourage PacifiCorp to modify the PaR assumptions as well.

² The above accounting is a conservative estimate of the likely reductions, as it does not account for the as-yet unknown effect of the incorrect combination of wind and load variability used in the study, does not project any additional reductions in cost of providing reserves due to more liquid trading among balancing areas, and does not account for implementation of demand response programs to deliver balancing services at lower cost.

We thank the PacifiCorp team for its attention to these comments and for its continued willingness to engage productively with stakeholders in the IRP process.

Sincerely,

Renewable Northwest Project



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