

May 6, 2010

Pete Warnken  
PacifiCorp  
825 NE Multnomah  
Portland, OR 97232

Dear Mr. Warnken,

We greatly appreciate PacifiCorp's work on the 2010 Wind Integration Study. As Utah Clean Energy (UCE) works to advance renewable energy and energy efficiency in Utah and the Western United States we have a keen interest in seeing the 2010 Wind Integration Study reflect the best practices in wind integration study methodologies. Please consider the following comments regarding the April 23, 2010 Project Method for 2010 Wind Integration Cost Study. UCE supports the comments already submitted by the National Renewable Energy Laboratory (NREL) and the Renewable Northwest Project (RNP).

#### **Wind Integration Costs and Benefits**

Utah Clean Energy recognizes the difficulty of conducting an integration study in a way that captures the benefits, as well as the costs, of integrating wind power into a comprehensive power system. Because most wind integration studies are used to isolate the additional cost of maintaining incremental Operating Reserves, they evaluate and quantify wind integration costs without recognizing or quantifying the economic benefits associated with integrating wind power. Integrating wind power has many associated cost-saving benefits, including fuel savings, reduced risk from volatile fuel costs, long-term price stability, fewer criteria pollutant emissions, reduced water consumption, less ash and sludge waste, and reduced greenhouse gas emissions and associated reductions in risk of carbon cost.

While Utah Clean Energy understands that analysis of the net cost and benefits associated with wind integration is outside the scope of this current study, we strongly recommend that PacifiCorp include analysis of the net costs *and benefits* of wind integration in future analysis. UCE urges PacifiCorp to establish a methodology for future dockets that facilitates more complete cost/benefit analysis. Several studies concerning the integration of renewable energy sources have utilized methods that meaningfully analyze both the costs and benefits of wind integration, including the recent Intermittency Analysis Project in California, the Eastern Wind Integration and Transmission Study, and the Western Wind and Solar Integration Study. In particular, the Intermittency Analysis Project utilized an integration study that allowed it to quantify the effects of integrating wind, not only with regard to added costs but with regard to broader system performance and operation issues. *See e.g. Intermittency Analysis Project: Final Report* at 19-21, available at <http://www.energy.ca.gov/2007publications/CEC-500-2007-081/CEC-500->

2007-081.PDF. PacifiCorp, their ratepayers, and interested stakeholders would all benefit from more complete understanding of the costs and benefits of integrating wind power.

### **Technical Review Committee**

We are sensitive to the fact that the time frame for this study is extremely short, preventing the formation and implementation of a formal technical review committee as recommended in our prior comments and by other parties. However, a number of the stakeholders engaged in this study have significant technical expertise and experience in this type of study or related matters. These stakeholders include, but are not limited to: Brendan Kirby, Consultant for NREL; Michael Milligan, NREL; Ken Dragoon, RNP; Joni Zenger, Utah DPU; a representative from Utah Association of Energy Users; and others.

In lieu of a formal technical committee, Utah Clean Energy strongly recommends an informal process of special topic conference calls to address some of the technical issues and questions that have been brought up in a number of stakeholder comments. Ongoing, if informal, input of interested parties with topical expertise would facilitate a beneficial exchange of ideas and a better final work product. For example, PacifiCorp could request timely review of working drafts from an ad hoc committee of experts or host conference calls to brainstorm methodologies. We encourage PacifiCorp to utilize such participation. PacifiCorp, their ratepayers, and the public would be well served by incorporating an informal review process that includes input from the aforementioned experts on wind energy integration.

### **Specific Technical Questions and Concerns**

UCE agrees with many of the concerns and questions that have been articulated by NREL, RNP and others. We believe that the informal technical committee described above would be useful in resolving these issues, including the following:

- Non-standard terminology and nomenclature
- Concerns with combining ‘regulation’ and ‘load following’ into a single reserve
- Concerns regarding the potential for ‘double counting’ Operating Reserves due to a disregard for the availability of conventional generation displaced by wind generation
- Concerns regarding the calculation of reserve requirements relating to the reserves needed when wind is at full capacity, reserves needed when the system is ramping up, and reserves needed when the system is ramping down.
- Wind data concerns

Again, thank you very much for your work on this analysis. We appreciate the opportunity to provide comments.

Sincerely,

Sophie Hayes  
Staff Attorney