

Northwest Wind Integration Forum  
Policy Steering Committee Meeting

Wednesday, January 6, 2010

Meeting Summary

Update on Pacific Northwest Wind Energy Development Jeff King presented this update, which showed Wind Energy becoming a major component of the Pacific Northwest power supply at a dramatic pace. From 2007 through 2010 the majority of all additions to installed capacity have been wind. Most of the remainder has been natural gas, with a small amount of geothermal and biomass. Cumulative committed and planned wind power in the four state WECC region will approach 7000 MW by 2013. Most of this capacity is in Washington and Oregon, with a relatively small but growing amount in Montana and Idaho.

More than half of this capacity is owned by IPP's, with the balance owned by investor and publically owned utilities. Early in the development of wind power in the Pacific Northwest, customers were more than half Northwest IOU's with most of the balance going to Northwest publicly owned utilities and BPA. By 2013 nearly half of Northwest production will go to California utilities either via long-term power purchase agreements or, increasingly, by equity ownership. Short-term sales of RECs to California by utilities owning or having rights to the output of other projects is also occurring. This result is heavily driven by the demand for RPS qualifying resources in California. California comprises about two thirds of the demand for qualifying RPS resources in the West, including British Columbia.

While a number of balancing authorities are integrating this wind power, nearly three quarters of Northwest wind capacity is interconnected to BPA's balancing authority, which will be integrating nearly 5,000 MW of wind by 2013.

Improvements in Grid Operations Many parts of the action plan involved potential changes to grid operations to facilitate the integration of wind power. In general these changes seek to share balancing reserves, more efficiently dispatch generation over a shorter time frame, and create a more dynamic, responsive system that can better accommodate the variability of intermittent renewable resources. The Steering Committee received presentations from NTTG, West Connect and Columbia Grid ( Charlie Reinhold, Sharon Helms, Kristi Wallis) on the Joint Initiative, WECC ( Michelle Mizumori ) on the Variable Generation Subcommittee, Columbia Grid ( Paul Arnold ) on the REC Impacts Work Team, NTTG ( Rich Bayliss ) on the Wind Integration Study Team, and BPA ( Elliot Mainzer ) on sub hourly scheduling and curtailment. These presentations summarized the landscape and the work underway by various groups on grid operation.

Discussion of this topic elicited a number of suggestions and conclusions:

1. Sub hourly scheduling holds great promise, but needs broader participation. Achieving this result requires a number of actions, ranging from adoption of appropriate and consistent business practices to training of balancing authority operational personnel in scheduling procedures. In addition scheduling systems need modification and additional staffing is probably required.
2. Committee members also suggested it may be time to look a bit farther to the future, and somehow, make the collective investments necessary to optimize the entire system for major presence and contribution of intermittent renewable resources. While large investments may be necessary to provide necessary systems and staffing, that investment could rapidly be recouped through more efficient system operation, and a marketplace that functions effectively on at least a 30 minute interval.
3. As the Northwest implements the suggested improvements in grid operations, it becomes increasingly important to consider interconnections to other regions, and WECC wide activities. Appropriate mechanisms need to be defined to extend collaboration.

4. It was recognized that significant progress is being made toward a “virtual balancing authority” in the Northwest, and it may be time to give consideration to balancing authority consolidation.
5. The REC Impacts Work Team is a appropriate forum for the analysis of technical issues associated with unbundled RECs. However the economic analysis of these issues and analysis of other issues unique to the Northwest may best be done by the Council with participation of others in this forum.
6. Analysis of unbundled RECs needs to include economic, technical, and CO2 implications.

Transmission Planning and Expansion At the time the action plan was adopted there were far more questions than answers about transmission additions potentially needed for wind energy development, and the necessary planning to support their development. The picture has changed dramatically. Many projects have been proposed, some are under construction, and individual utilities, grid entities, WECC, the WGA, and others are undertaking significant planning efforts. Presentations were made to the Steering Committee by WECC ( Tom Schneider) describing the WECC TEPPC planning process, and the related WGA WREZ process, and by BPA (Brian Silverstein ) summarizing BPA construction and planning activities. In addition other Steering Committee members described their construction and planning activities.

The Committee was supportive of the progress being made. Many of the action items in the action plan are now underway or complete. Committee members observed:

1. Siting transmission continues to be difficult. Siting difficulties might be eased by including linking this transmission to the general public support and priority for renewable resource development.
2. Large and expanding transmission planning efforts run some risk of slowing down or impeding the development of transmission additions that are needed in the near term.

Augmentation of Flexibility Elliot Mainzer and Jeff King provided a brief update of flexibility augmentation efforts, pointing out that improvements in wind forecasting, grid operations and strategic transmission additions have been highest priority in that they maximize the ability of the existing system to integrate wind power without investing in system augmentation. But, as anticipated in the action plan, the pace of wind energy development has been such that augmentation of balancing capability now deserves priority attention. A number of utilities – BPA, PGE, and Northwestern, for example, already have work underway to augment their system flexibility or evaluate alternatives for doing so. With completion of the Sixth Power Plan the Council can also turn its’ attention to this topic, and undertake necessary broad based analysis of alternatives, identifying the best regional prospects. Consequently:

1. The Council will undertake the comparative cost effectiveness assessment of the full array of flexibility augmentation options in the context of the Northwest system.
2. Evaluation of promising storage technology will be part of this work, including “smart grid” demand-side options, compressed air storage and advanced batteries – alternatives specifically discussed at the Steering Committee meeting.
3. As part of this work, an appropriate metric of flexibility is needed , as well as periodic assessment of flexibility adequacy.

Continuation of the Forum The Steering Committee discussed whether and how the Forum should be continued. Much of the original action plan has been implemented, many entities are now actively engaged in wind integration issues, new issues continue to emerge, and priorities must, of necessity, be revisited. There was a general view that collaborative executive involvement in these issues was important and should be continued. BPA and the Council will give thought to the matter and follow up with the Steering Committee in the future.

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