Potential for seasonal power oversupply in 2013

BPA has estimated the amount of wind generation that could be displaced with federal hydropower during the upcoming oversupply season, April through July 2013. BPA's analysis indicates there is a 50 percent probability no wind displacement will occur in 2013.

Methodology refinements
After the 2012 oversupply season, BPA validated its methodology for estimating the magnitude and cost of future oversupply conditions. The agency also identified several ways to update and refine the model. Before running the 2013 analysis, BPA made the following refinements:

- Updated modeling assumptions on nonfederal hydro generation and use of non-Treaty storage (storage space in the Canadian portion of the Columbia River Basin in excess of storage operated according to the Columbia River Treaty)
- Varied the amount of regional thermal generation, load and exports, rather than assuming a constant value for each variable
- Extended the analysis past June, since oversupply conditions occurred during July in both 2011 and 2012

In addition to these improvements, assumptions for the expected value of load, thermal generation, wind generation, exports and spill were updated to reflect the region's experience in 2011 and 2012.

BPA conducted the analysis for 2013 using an 80-year Hydrologic Simulator Model (HYDSIM) – a widely used computer model of federal and nonfederal hydro projects in the Columbia River Basin – with an average January-July volume of 103 million acre-feet at The Dalles, Ore.

The impact of these refinements to the analysis was small, with the exception of regional thermal generation, which is assumed to be over 500 average megawatts less in 2013 due to planned refueling outage at the Columbia Generating Station, and the inclusion of non-Treaty storage in the HYDSIM rate case study. The non-Treaty assumptions reduced regional hydro generation by hundreds of average megawatts in many water years because it allows additional storage capability during many oversupply conditions.

Study results
The study for 2013 lowered both the likelihood and the expected value of wind displacement costs in 2013 as compared to the 2012 study. Current analysis suggests that the likelihood of displacing wind is about 50 percent, as opposed to 65 percent in the 2012 study. The expected value of the costs incurred from displacing wind is $10 million in 2013, which is lower than the $12 million expected value cost from the 2012 study. However, there is still a chance that the costs of displacing wind could get very high if there is a convergence of a number of factors (such as high hydro and wind generation and low exports). This analysis shows that these events can occur, but they are not very likely. The chance that wind displacement costs will exceed $50 million is less than 5 percent.

Although the current volume forecast is below average for the 2013 water year, conditions can quickly change. BPA will continue to monitor forecasts throughout the spring and manage oversupply conditions with the most operationally feasible and cost effective means available.