

Bonneville Power Administration Sponsors Wind Forecast Competition

Local News

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Portland, Ore. - In a Northwest twist on the X Prize, two research teams are about to begin competing to see which can best predict changes in the region's shifting winds as much as 36 hours ahead. The unusual technology contest is sponsored by the Bonneville Power Administration. The team with the most accurate predictions will be in line for a BPA contract to develop a full-scale wind forecast model for the entire fleet of Northwest wind projects. Better forecasts benefit the booming wind energy sector and electric customers by anticipating sudden shifts in wind energy so power managers can smoothly incorporate it into the grid. The Northwest forecast model would be the first created specifically to foresee sharp changes, or "ramps," in wind energy, with wide potential to help utilities meld wind with other power sources. BPA hopes the competition will help promote wind forecasting the way the X Prize advanced aerospace technology.

"Wind power is a great energy source, but we could make even better use of it if we could anticipate big changes," said John Pease, the project manager overseeing the initiative for BPA's Technology Innovation Office. "By fostering this friendly competition, we're getting some of the best wind forecasting brainpower in the world focused on developing an important new tool." One team from the United States and another from Germany will begin this month projecting winds at four Oregon and Washington wind projects based on 2007 conditions. Oregon State University researchers will assist a national peer review team in assessing the predictions against actual meteorological data. "This is an exciting project with potential to support the growth of wind power in the Pacific Northwest and really around the globe," said Phil Barbour, a research meteorologist at Oregon State's Energy Resources Research Laboratory and member of the peer review team. "Winds are often very localized and difficult to predict. It's even harder to predict these specific ramp events. This is a huge challenge for the competing teams." Wind power in BPA's service area nearly doubled in the last year and keeps growing fast, but Northwest weather and topography can make breezes volatile. Wind generation in BPA's system can vary over an hour by close to 1,000 megawatts - roughly the output of a major nuclear plant. BPA maintains energy reserves to fill gaps when wind unexpectedly slows, and must charge wind producers for the service. Better forecasts reduce the need for reserves, minimizing costs for both BPA and wind energy producers. BPA is also taking other steps to improve forecasting, such as installing 14 new meteorological stations around the region. The competition is a collaboration with the California Independent System Operator, which manages much of California's power grid. Some Northwest wind energy helps California fulfill its aggressive renewable energy standards. BPA sought bids from wind forecasters interested in the competition, and selected two: AWS Truewind of Albany, N.Y.; and Energy & Meteo Systems of Oldenburg, Germany. Both companies must use the same publicly available meteorological data, including records from BPA wind measurement sites managed and quality checked by OSU. The competing companies will deliver forecasts through December. BPA will select the winning forecast model in early 2010, and could decide to contract with both teams depending on their strengths. BPA's wind website (includes maps and real-time graph of wind energy output): www.bpa.gov/corporate/WindPower/index.cfm *BPA is a not-for-profit federal electric utility that markets more than a third of the electricity consumed in the Pacific Northwest. The power is*

produced at 31 federal dams owned and operated by the Corps of Engineers and Bureau of Reclamation and one nuclear plant in the Northwest and is sold to more than 140 Northwest utilities. BPA purchases power from seven wind projects and has more than 2,000 megawatts of wind interconnected to its transmission system. BPA operates a high-voltage transmission grid comprising more than 15,000 miles of lines and associated substations in Washington, Oregon, Idaho and Montana.