100 Mason County Homes to Get "Smart" Power

Local News

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Posted on : August 17, 2010 at 5:22 am

Mason County - The Bonneville Power Administration and Mason County Public Utility District Number 3 announced today that they are partnering on a smart grid pilot project to help manage the electricity grid and use wind power more effectively.

The project address two fundamental bottlenecks in the power grid; congestion during times of high power use and the imbalance created when more wind-powered energy is being generated than is being used.

“Homeowners who choose to participate in this pilot project can help the region ease strain on the region’s electrical system,” said Bonneville Power’s Smart Grid Program Manager Lee Hall. “They will also make help the region make the best use of wind; a clean and renewable, yet variable power source.”

Mason County PUD 3 will install special devices on water heaters that will communicate with the electrical grid and tell the appliances to turn on or off, based on conditions of the regional electrical system and the amount of renewable energy available.

Homeowners can override the water heater device at any time, and with modern insulated water heaters, it is unlikely they will even notice a change in water temperature.

To thoroughly understand the benefits of the project, you have to understand a basic principle of an electrical system. That is, at any given moment, the amount of electricity consumed must match the amount that is generated. Otherwise, the grid can destabilize causing a blackout.

Shifting water heater energy use to a time when consumption is lower helps level out the peaks and valleys of energy use, which makes the balancing act of supply and demand a little easier. This is especially valuable when managing variable power sources like wind power.

“Reducing electricity use during peak hours can be a money saver for Mason County PUD 3 and our customers,” says Jay Himlie, Power Supply Manager for PUD 3. “It reduces the fees a utility has to pay for their peak power demand. It’s really exciting to help pioneer this technology in the Pacific Northwest.”

Another goal of the project is to see if the device can find out when wind power is readily available and fire up the water heaters to take advantage of it.

Wind power can only be produced when the wind blows, so using water heaters as energy storage devices gives the power system another tool to help balance out the variable nature of wind generation. When there is excess wind, the project can also help keep it from going to waste by turning on the water heaters that had been previously turned off by the device. The wind energy is put to use in heating up the water, which is stored for the family’s use. With enough of these “storage units” in place, the region can reduce the need to rely on the hydro system to maintain the power system balance of supply and demand. With increasing demands on the Northwest hydro system, this project provides a valuable additional source for system flexibility.

To goal is for the device to find the balance between making sure the homeowner has enough hot water, while making wise use of wind power in the system.

Installation of the devices in the 100 participating homes should begin in October 2010.

Mason County PUD No. 3 provides electricity to more than 32,000 customers in most of Mason County and small portions of Kitsap, Grays Harbor, and Pierce Counties. Mason 3 owns and operates 11 substations and has almost 1,600 miles of overhead and underground lines to serve its customers. The PUD also provides wholesale telecommunications services in its service area through a fiber optic network. There are approximately 400 connections to this system.

Bonneville Power, headquartered in Portland, Ore., is a not-for-profit federal electric utility that operates a high-voltage transmission grid comprising more than 15,000 miles of lines and associated substations in Washington, Oregon, Idaho and Montana. It also markets more than a third of the electricity consumed in the Pacific Northwest. The power is produced at 31 federal dams operated by the Army 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 2,800 megawatts of wind interconnected to its transmission system.