



Organizational Overviews: The “Who’s Who” among Pacific Northwest GridWise™ Demonstration Project Participants

Department of Energy

The Department of Energy provided the primary funding for the GridWise Demonstration Project. The department is committed to leading national efforts to modernize the electric grid, enhance the security and reliability of the energy infrastructure, and facilitate recovery from disruptions to the energy supply. Through research, development, planning and analysis, the Department of Energy’s Office of Electricity Delivery and Energy Reliability (OE) works to create a future electricity system that is less vulnerable to disruption, more efficient, and is designed and operated to serve the new markets and new energy demands of the 21st century. When America’s energy system is disrupted, we provide energy experts to assist first responders and local utilities in bringing energy systems back as quickly as possible. And OE works to broaden America’s energy options by breaking down barriers to efficient electricity markets.

BPA

Bonneville Power Administration (BPA) was involved in the Pacific Northwest GridWise™ Demonstration from the beginning. The purpose of the project was to develop and host field demonstrations of smart energy technologies that contribute to an efficient and reliable electric power grid in the Northwest. The Pacific Northwest Gridwise Demonstration complements BPA’s investigative effort in an area that has come to be known as Non-Wires Solutions. Non-wires Solutions is defined as technologies and strategies that can defer or avoid the need to construct or upgrade existing transmission facilities. For the GridWise project, BPA contributed financial resources, staff expertise, and leveraged some of the existing assets from its non-wires pilot projects in the region. BPA also worked with some of its customer utilities to participate in the project, including Clallam County PUD and the City of Port Angeles.

Clallam County PUD

With ongoing and anticipated business and residential development throughout Clallam County, the demand for electricity – and the resulting need for energy efficiency – are continually on the rise. No matter how fast Clallam County PUD grows, we strive to fulfill our mission: To provide reliable, efficient, safe, and low cost utility services in a financially and environmentally responsible manner. Clallam County PUD’s telecommunications network was established to serve our customers with the added benefit of increasing efficiency of our electric distribution system. (Meanwhile, manufacturers are getting the “efficiency” message and developing more energy efficient “smart” appliances.) Clallam County PUD proactively pursues and adopts opportunities for energy efficiency and conservation to achieve optimal use of our existing electric infrastructure and lower rates for our customers; e.g., our participation in the Pacific Northwest GridWise Demonstration

program. Clallam County PUD serves 29,000 customers with electric service and has offices in Port Angeles, Sequim, Forks, and Clallam Bay/Seki.

City of Port Angeles, Wash.: City of Port Angeles, Washington: The City of Port Angeles Public Works and Utilities Department helped promote participation in the Pacific Northwest GridWise Demonstrations among its consumers. The City also exchanged our standard electric meter with a programmable meter provided by PNNL for each participating home. At the conclusion of the program the City left the programmable meters in service but discontinued use of their advanced features. The City is interested in learning more about smart meters to comply with the new Energy Policy Act as well as customer interest in time-of-use rates. The City of Port Angeles is a full service city and currently serves over 10,500 households and businesses in Port Angeles with electricity, conservation programs, garbage collection, recycling, solid waste transfer station, wastewater (sewer), stormwater, and water services at very competitive rates and in compliance with all State and Federal standards.

IBM

At IBM, we view our work on the GridWise initiative as a way to help shape the future of the North American electric grid to fully benefit from the advances in information technology. For the Olympic Peninsula Demand Response Demonstration project, IBM provided a WebSphere Application Server augmented with advanced 'Internet-scale Control Systems' software, developed by IBM's T.J. Watson Research Center, which enables the connections between the embedded 'smart' energy devices and the real-time market pricing data to facilitate real-time market pricing control. This innovative software 'translates' the data and communicates to the devices to tell them to turn on or off, depending on the market price sensitivity preselected by the end user. Simply put, IBM is the 'broker' which brings together different kinds of data and devices, and helps them 'talk' to each other for the market-based control system. In addition, IBM is serving as the overall system architect and integrator of real-time market pricing control system.

PacifiCorp

PacifiCorp believes that supporting the GridWise Demonstrations makes common sense because the electric utility industry in the Pacific Northwest is in the midst of a new investment phase for generating and transmission assets. The close of the 1970s ended the last major investment phase, and prudent investments made then continue to provide long-term value for the region's electric consumers. Today we have seen tremendous growth in consumer demand for electricity, and we've used technology to make existing resources work harder than ever, but the region's electrical resources and transmission lines that bring them to customers are often stretched to limits. As we site and build new resources, we need to do so in ways that continue to maximize value. Research conducted through the GridWise demonstrations shows how new technology embedded in home appliances promises to help stabilize transmission systems operating under stress. This potentially could help maximize new and existing transmission assets in the future.

Pacific Northwest National Laboratory

PNNL is one of the U.S. Department of Energy's (DOE's) ten national laboratories, managed by DOE's Office of Science. PNNL is providing science, technology and leadership to improving grid reliability and productivity through the development of interconnection-scale tools for wide area monitoring and real-time analysis of grid operations, moving control and operation timescales from minutes to seconds. Pacific Northwest National Laboratory teamed up with regional utilities and industry partners in the year-long Pacific Northwest GridWise™ Demonstration Project to test the notion that smart grid technologies and consumers can play an active role in managing the grid. The project, funded primarily by the Department of Energy, involved homeowners in two separate studies to test demand-response concepts and technologies designed to maximize the electric grid's ability to provide reliable, affordable and clean energy.

Portland General Electric

Portland General Electric (PGE) is committed to finding cost-effective technologies that improve power reliability, help the environment and save customers money. The utility supported the GridWise Demonstration Project with \$50,000 cash, in kind support and recruitment of 50 customers for the Grid Friendly Appliance portion of the study. PGE sees the GridWise project results as very promising, a great first step, that have potential to save money for our customers. PGE is grateful to its participating customers; they tried something new knowing it could ultimately help everyone who uses electricity. The company will pursue further studies that will show whether this type of technology is feasible on a wide scale. Headquartered in Portland, Ore., PGE is a fully integrated electric utility that serves approximately 804,000 residential, commercial and industrial customers in Oregon.

Whirlpool Corporation

Whirlpool Corporation shares with its customers a responsibility for environmental stewardship, leading the industry in developing innovative, high-performance appliances and technologies that allow homeowners to use energy and water more efficiently. The company's pioneering contributions to energy efficient appliances exceed 30 years and include nearly 150 awards for resource efficiency initiatives including the 2006 and 2007 Energy Star Partner of the Year Sustained Excellence Awards. In 2003, Whirlpool took its environmental leadership to a new level by being the first major appliance company to announce a global greenhouse gas reduction target, and recently announce a new global greenhouse gas emissions target reduction of 6.6% by 2012, with the understanding that we have a 17% increase in production. Whirlpool Corporation and Sears are furthering this commitment to energy and the environment through participation in the GridWise™ Northwest Demonstration. Whirlpool designed an innovative version of the Sears Kenmore HE2 dryer for the demonstration. "Whirlpool Corporation developed this new Kenmore dryer to conserve energy, stabilize the power grid, reduce peak power, and enable consumers to make responsible choices in their energy consumption," stated Hank Marcy, vice president of Corporate Innovation Technology at Whirlpool. "Having appliances that can quickly lessen the demand on the power grid for a few minutes while the system rights itself is a very significant step in ensuring secure power." Whirlpool Corporation is a global manufacturer of major home appliances with 2006 revenues of \$18 billion, 68,000 employees, and nearly 50 manufacturing and technology research centers around the globe. The company markets Whirlpool, KitchenAid, Brastemp, Bauknecht, Consul and other major brand names to consumers in more than 170 countries.