

Pacific Northwest Smart Grid Demonstration Project

The Pacific Northwest Smart Grid Demonstration Project has been the largest regional smart grid demonstration in the nation. It was an unprecedented test of new technologies and capabilities that will move the nation closer to a more efficient, sustainable and resilient power system.

The project was designed to help spur a vibrant new smart grid industry and a more cost-effective, reliable electricity supply, both of which are drivers of U.S. economic growth and international competitiveness. Project results will help inform the business case and quantify the costs and benefits of smart grid technology in the region, and support integration of renewable energy.

The Project, by the numbers:

- · Five-year project; involved 60,000 metered customers across five states
- Led by Battelle, and included the Bonneville Power Administration, 11 utilities, and six technology partners
- · Budget of \$178 million; paid in half by U.S. DOE funds and project participants
- Included participation from the University of Washington and Washington State University



Contact Information

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Tim Ledbetter Communications Specialist (509) 375-5953 **Project objectives.** The Pacific Northwest Smart Grid Demonstration Project sought to:

- · Quantify smart grid costs and benefits
- · Facilitate the integration of renewable resources
- Validate new smart grid technologies and business models
- Advance standards for interoperability and cyber security approaches
- Provide two-way communication between distributed generation, storage, and demand assets and the existing grid infrastructure.

By ensuring that these outcomes can be readily and flexibly adapted and widely replicated, this demonstration lays the foundation for the future of the nation's electric power grid.

How it was accomplished. The project team implemented a unique distributed communication, control and incentive system designed to bring the electric transmission system into the information age. Coined "transactive control" by researchers at the Pacific Northwest National Laboratory, this new approach to energy management will combine devices, software and advanced analytical tools and test how to help consumers and producers of energy save money and support renewable energy integration. The project expanded upon the region's experience in the 2006 DOE-funded Pacific Northwest GridWise[™] Demonstration Project on the Olympic Peninsula, which successfully tested demand-response concepts and technologies.

The team. Battelle led a strong collaboration that included the Bonneville Power Administration and the following 11 utility representatives based in the Pacific Northwest:

- Avista Utilities Spokane, Wash.
- Benton PUD Kennewick, Wash.
- City of Ellensburg Ellensburg, Wash.
- Flathead Electric Cooperative, Inc. Kalispell, Mont.
- Idaho Falls Power Idaho Falls, Idaho
- Lower Valley Energy Afton, Wyo.
- Milton-Freewater City Light & Power Milton-Freewater, Ore.
- NorthWestern Energy Butte, Mont.
- Peninsula Light Company Gig Harbor, Wash.
- Portland General Electric Portland, Ore.
- University of Washington Seattle, Wash.

The demonstration also involved a diverse team of technology providers including: Alstom Grid, IBM, Vaisala, Inc., Netezza Corp., QualityLogic Inc., and Spirae.

