

# Fact Sheet

November 2011

## Smart Grid and BPA

The Bonneville Power Administration has long promoted smart grid technologies to improve transmission reliability, reduce operating costs, and to defer the need for new transmission infrastructure and power resources.

### Smart grid offers several benefits

- Smart grid can help meet increasing power demands, reduce greenhouse gas emissions, promote energy independence, enhance reliability, and help improve national security.
- Here in the Pacific Northwest, smart grid can help reduce demands on the hydro system, which is good for fish, ratepayers, and consumers. It can help integrate variable resources such as wind into the transmission grid. And it can help contain power system costs.
- Smart grid adds value by offering consumers choices, just as cell phones provide many more options and flexibilities than old-fashioned rotary phones.

### What is smart grid?

Smart grid uses technology to enhance power delivery and use through intelligent two-way communication. Power generators, suppliers and consumers are all part of the equation. With increased communication and information, smart grid can monitor activities in real time, exchange data about supply and demand, and adjust power use to changing load requirements. Smart grid technology includes everything from interactive appliances in homes to substation and distribution system automation and complex sensors on long distance high voltage transmission lines.

### Current projects

BPA is involved in two major American Recovery and Reinvestment Act, DOE-funded, Smart Grid projects in the region.

#### *Pacific Northwest Smart Grid Demonstration project*

BPA is a participant in this \$178 million project led by Battelle Memorial Institute, Pacific Northwest Division. The project includes 11 utilities and five infrastructure partners. The five-year project involves 112 megawatts of responsive resources featuring both load and generation, which will be coordinated by a transactive signal, scheduled to be up and running by September 2012. These include everything from home energy systems, distributed generation, batteries, and numerous other resources on a targeted list of Smart Grid assets. This project is a significant investment in our BPA Technology Innovation portfolio – BPA is contributing \$10 million with an additional \$10 million coming from DOE in the form of matching funds.

Project participants will use and test a variety of smart grid technologies such as smart appliances, smart meters, distributed generation, in-home displays, home area networks, voltage optimization tools, and electric vehicles. The project also will explore ways to improve the integration of renewable energy resources such as solar and wind.

Developing a business case is a centerpiece of the BPA participation in this project. In fact, the effort to show whether smart grid investments are smart economically in the long run was featured in a recent White House report. It states that the project is “validating the value



of smart grid technologies in the Pacific Northwest through the creation of a regional business case.”

The business case will show whether the benefits outweigh the costs so the region can know what technologies will be sustainable and best for long term capital investments.

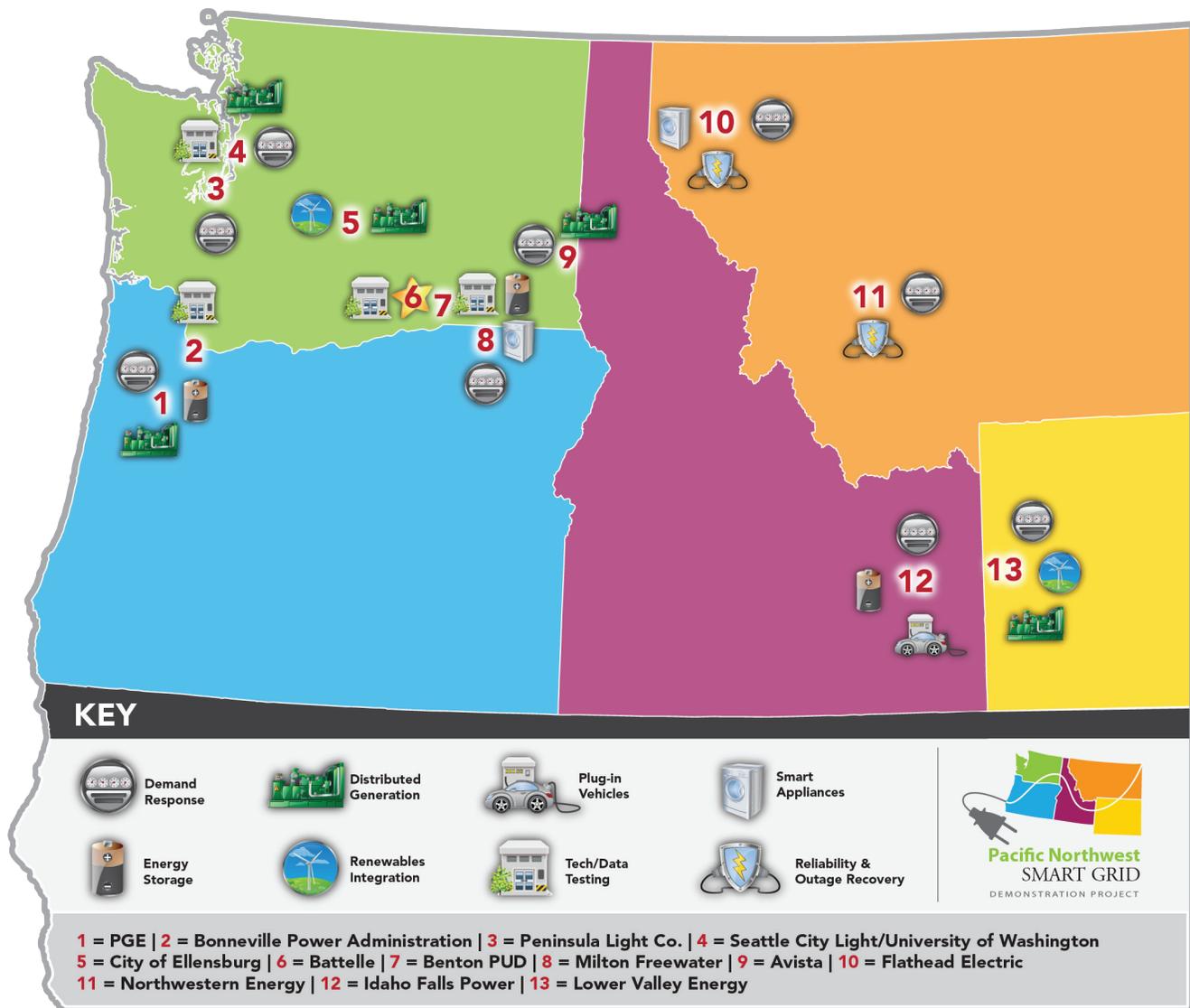
**WECC Western Interconnection Synchro-Phasor Project.**

BPA is a participant in this \$108 million project involving nine utility and technology partners. The objectives are to build a production-grade interconnection-wide

network of synchronized high-speed measurements and deploy real-time situational and control applications that use wide-area measurements. This will provide system operators with improved situational awareness, which can significantly enhance reliability.

**For more information**

Check out our website at [www.bpa.gov/Energy/IN/Smart\\_Grid-Demand\\_Response/index.cfm](http://www.bpa.gov/Energy/IN/Smart_Grid-Demand_Response/index.cfm) or contact the BPA Smart Grid Outreach Coordinator, Katie Pruder-Scruggs at (503) 230-3111, [kpruder@bpa.gov](mailto:kpruder@bpa.gov).



Project partners are testing diverse technologies that will deliver a variety of benefits in the Pacific Northwest Smart Grid Demonstration Project.