



FACT SHEET

Summary

On Thursday August 6, 2009, the Western Electricity Coordinating Council (WECC) — in collaboration with public and private partners throughout the U.S. portion of the Western Interconnection — submitted an application in response to the U.S. Department of Energy's (DOE) Funding Opportunity Announcement (FOA) DE-FOA-0000058 to facilitate investment in "Smart Grid Technology." The application for Smart Grid Investment Grant Program (SGIG) funding to deploy a large-scale synchronized phasor measurement system with selected smart grid functions involves investment in synchrophasor infrastructure and software applications and will improve situational awareness, system-wide modeling, performance analysis, and wide-area monitoring and controls for the Western Interconnection. The program's estimated cost is \$107.8 million, which includes a matching funding request from the DOE for 50 percent of the total cost (\$53.9 million). On October 27, 2009 WECC was notified that it has been selected for full award negotiations for \$53.9 million.

The Western Interconnection Synchrophasor Project (WISP) will deliver significant reliability enhancement, economic growth, and job creation through vendor-partner involvement and increased staffing requirements as well as financial benefits for WECC, WECC's partners throughout the Western Interconnection, and the nation's power industry. This interconnection-wide synchrophasor system will also enable smart grid functionality such as improved integrated system operations, enhanced energy loss reduction, more efficient asset use, knowledge-based real-time advanced warning systems, improved market efficiency, and more reliable and efficient integration of intermittent renewable resources.

WECC is submitting its proposal in collaboration with partners throughout the U.S. portion of the Western Interconnection, including: Bonneville Power Administration, California ISO /California Energy Commission/Electric Power Group, Idaho Power Corporation, NV Energy, PacifiCorp, Pacific Gas & Electric, Southern California Edison, and the Salt River Project. Also included in the proposal is a variety of industry vendors and the academic community, working closely with each of the interconnection partners on the implementation of synchrophasor systems.

WISP Benefits

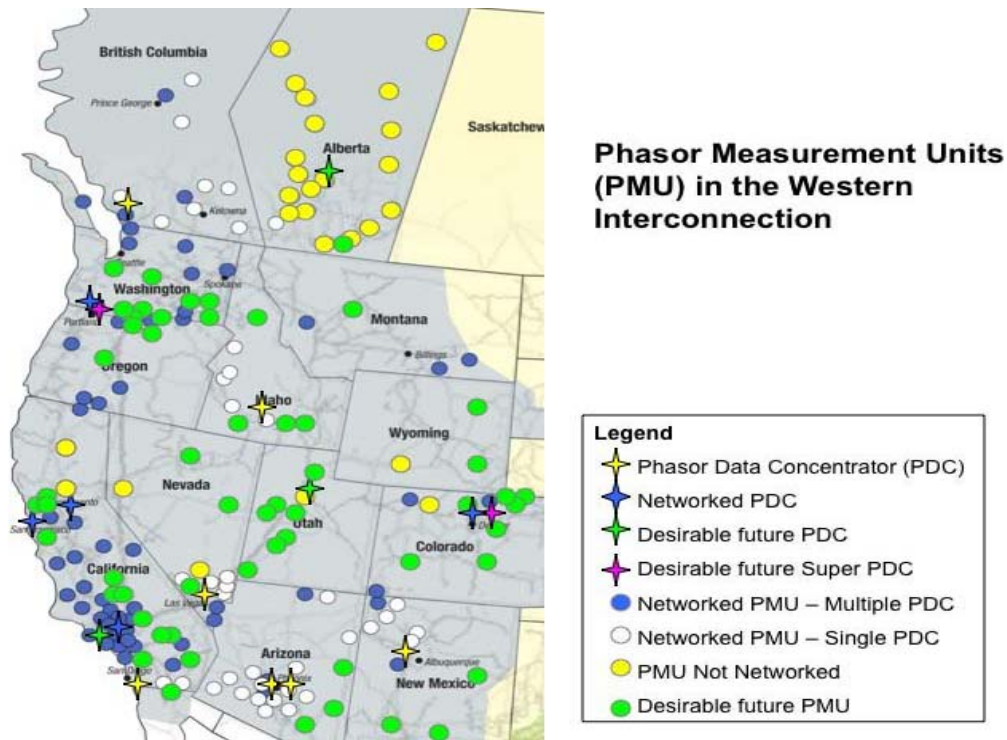
1. Large-scale outage avoidance and faster system restoration as a result of the improved situational awareness of operators in the Western Interconnection and the use of wide-area control and protection
2. Increased transmission transfer capability and better congestion management
3. Improved utilization of intermittent renewable generation
4. Reduced capacity cost for supporting intermittent renewable generation

WISP will enable smart grid functions in the Western Interconnection. It will upgrade existing phasor measurement units (PMU) and deploy new PMUs, phasor data concentrators (PDC), Super PDCs, and historical data archival systems. The network architecture to connect these

measurement devices is included, as is the deployment of both real-time and off-line tools to provide visualization for operators, event and system performance analysis for operational and planning engineers, model validation, the implementation of real-time control and protection, and system restoration.

WISP will deploy PMUs, PDCs, and Super PDCs in a general interconnection infrastructure as depicted *Figure 1*. All PMUs and PDCs will be networked to multiple PDCs. Although infrastructure for the Canadian provinces British Columbia and Alberta are shown, they are not part of this application for matching funds.

Figure 4-1: PMU and PDC Deployment in the Western Interconnection



Projected Economic Benefits

WECC engaged the consultants Energy and Environmental Economics Inc. (E3) to quantify the project benefits in the Western Interconnection. Their forecasts indicate the project has the potential to provide numerous economic benefits by improving reliability, operating efficiency, asset utilization, system planning, and environmental impact. Forecast economic benefits associated with the project over 40 years include:

Benefit	Minimum Value
<i>Large-Scale Outage Avoidance</i>	\$1,220,540,494
<i>Increased Transmission Utilization on a Major Transmission Path</i>	\$34,748,816
<i>Increased Utilization of Intermittent Renewable Generation</i>	\$323,755,442
<i>Reduced Capacity Costs for Intermittent Generation</i>	\$307,735,069