



U.S. DEPARTMENT OF
ENERGY

Electricity Delivery & Energy Reliability

CenterPoint Energy's Smart Grid Solutions Improve Operating Efficiency and Customer Participation

CenterPoint Energy Houston Electric (CenterPoint), a transmission and distribution service provider (TDSP) in Texas, is deploying smart metering technology and distribution automation equipment to make its operations run more efficiently, lower costs and environmental emissions, and provide the opportunity for consumers to better manage both their electricity use as well as costs. Along with other TDSPs in Texas, CenterPoint is uploading 15-minute electricity consumption data to a statewide web portal, helping consumers better understand their consumption patterns and electricity cost drivers. Thanks to \$200 million in funding from the U.S. Department of Energy through the Smart Grid Investment Grant program (SGIG), CenterPoint has been able to accelerate by two years the installation of smart meters for all of its 2.2 million residential and small commercial customers as well as enabling CenterPoint to deploy intelligent grid distribution automation technologies that will enhance system reliability for critical infrastructure facilities in its service territory.



Smart meters are generating vast amounts of data, enabling new customer products and services.

Smart Meters and Operational Efficiencies

By January 2012, SGIG funding enabled CenterPoint to install 2.0 million smart meters. As a result, the new meters are no longer read manually each month, nor does a technician need to visit the home to disconnect or reconnect service. "Since the beginning of the project, we have successfully executed 2.3 million service orders electronically. Each one of these automated remote activities translates into an avoided truck roll for CenterPoint, which means cost savings for our consumers," says Jeff Myerson, CenterPoint's Director of Smart Grid Integration.

Automatic notification of outages is another advantage of the new meters. This capability can reduce the duration of electricity outages by pinpointing outage locations faster so crews can make repairs and restore power more quickly. When fully operational, CenterPoint will no longer need to wait to hear from customers to know when outages occur or where trucks need

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to be dispatched. Smart meters also help CenterPoint to identify what type of an outage it is dealing with and how many customers are impacted. "We can get the right crew to the right location faster, which helps us to resolve the outage more quickly," Myerson says.

Smart Meters Enable Electricity Savings

TDSPs in Texas, such as CenterPoint, own and operate the electricity delivery equipment leading to customer premises, including the electric meters. More than 100 retail electricity providers (REPs) compete with each other to sign-up customers to sell them electricity. The REPs bill customers for electricity use, but they rely on TDSPs for electricity delivery and consumers' consumption data. The *Smart Meter Texas* (SMT) web portal enables consumers access to their detailed consumption data, provides REPs the ability to offer prepay or time of use rate programs, and enables both parties to connect home area network devices to the meter for real time usage data.

15-minute interval consumption data collected by CenterPoint is uploaded daily on SMT. By February 2012, more than 4.7 million electric meters from four Texas TDSPs were feeding data into the portal, and approximately 30,000 customers have registered an account with the site to view their own data directly, while more than 500,000 receive their consumption data indirectly from SMT. "Right now, the portal is allowing CenterPoint and other Texas TDSPs to work with 60 retail providers who are accessing the meter data daily," says Tom Olinger, Director of CenterPoint's Program Management Office. "Many of the REPs are further analyzing the data and sending the information out to their customers. All this value-added information helps customers understand and manage their electricity consumption and costs better."

For example, some retail electric providers send the data in an email directly to their customer. Having access to this detailed consumption data enables customers to take action to manage their electricity consumption and lower their electricity bills.

Reliant Energy Retail Services, a Texas REP, is also involved in the SGIG program. (View Reliant's SGIG project description on SmartGrid.gov for more information.)



**Smart Meter Texas web portal,
www.smartmetertexas.com.**

Distribution Automation Systems Protect Critical Infrastructure

SGIG funding is helping CenterPoint upgrade its distribution system by introducing “Intelligent Grid” infrastructure to its distribution grid. In the first phase of the project, these upgrades are being implemented in areas serving the Texas Medical Center—the world’s largest medical center—and petrochemical infrastructure facilities along the Houston ship channel that are vital to the nation’s fuel supply.

By December 2011, seven substations had been upgraded and more than 200 intelligent grid distribution switching devices had been installed. The new devices are being operated remotely to isolate faulted circuit sections, which will help CenterPoint restore service more quickly. This will help critical facilities to continue their operations with fewer and shorter outages. Once the new distribution management system is fully deployed, the system will have the capability to automatically operate the switches and isolate faults, resulting in even faster system recovery.

Paving the Way for More Innovation

CenterPoint believes its new technologies and the data from them make Texas ripe for even more innovations. For example, CenterPoint expects that various home energy management products and services will be offered to Texas consumers, making it even easier for them to manage consumption and costs. Data generated by smart meters and distribution automation devices are also expected to lead to more sophisticated tools to improve system reliability. “With the billions of pieces of data we get, we hope to develop predictive engines that will help us anticipate areas of failure. Such tools would help us maintain the system more intelligently and further improve reliability,” Olinger says. These types of enhancements and new products would not be possible without the investments CenterPoint is making in smart grid technologies.

Learn More

The American Recovery and Reinvestment Act of 2009 provided DOE with \$4.5 billion to fund projects that modernize the Nation’s electricity infrastructure. For more information visit www.smartgrid.gov or www.oe.energy.gov. There are five recent reports available for download:

- *Smart Grid Investment Grant Progress Report, July 2012*
- *Demand Reductions from the Application of Advanced Metering Infrastructure, Time-Based Rates, and Customer Systems – Initial Results, December 2012*
- *Operations and Maintenance Savings from the Application of Advanced Metering Infrastructure – Initial Results, December 2012*
- *Reliability Improvements from the Application of Distribution Automation Technologies and Systems – Initial Results, December 2012*

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- *Application of Automated Controls for Voltage and Reactive Power Management – Initial Results, December 2012*