

CenterPoint Energy Houston Electric, LLC.

Smart Grid Project

Abstract

CenterPoint Energy Houston Electric's (CEHE) Smart Grid Project (Project) consists of (1) advanced metering infrastructure (AMI) including the deployment of more than 2.2 million advanced meters across CEHE's entire service territory; (2) communications infrastructure which links the meters and facilitates the transfer of usage data from the meter back to CEHE's data collection engine and ultimately to customers through the Smart Meter Texas (SMT) Web portal; and (3) distribution automation system upgrades covering a portion of the service territory. This area encompasses a portion of the Texas Medical Center (the world's largest medical center), Houston's key business districts, the Port of Houston, petrochemical infrastructure facilities that are vital to the nation's fuel supply, and high reliability impact areas along the northern portion of the service territory. Project objectives include (1) automating meter reading, (2) eliminating truck rolls, (3) enabling residential and commercial customers to effectively manage and control their electricity usage, and (4) improving distribution system efficiency and reliability.

Smart Grid Features

Advanced metering infrastructure includes deployment of approximately 2.2 million smart meters. This infrastructure provides automated service connection and disconnection and meter reading, improved meter accuracy, enhanced outage notification and response, and improved tamper and theft detection. The availability of more detailed and timely data on peak electricity usage and distribution system conditions improves load forecasting and capital investment planning.

Communications infrastructure includes a combination of radio, microwave, and fiber optic technology to support AMI and distribution automation functionalities. This infrastructure provides CEHE with expanded capabilities for communicating customer information to retail electric providers and provides remote switching capabilities for improved control of the distribution system.

At-A-Glance

Recipient: CenterPoint Energy Houston Electric, LLC.

State: Texas

NERC Region: Texas Reliability Entity

Total Budget: \$639,187,435

Federal Share: \$200,000,000

Project Type: Advanced Metering Infrastructure and
Customer Systems
Electric Distribution Systems

Equipment

- 2,200,000 Smart Meters
- Web Portal Access for 2,200,000 Customers
- Distribution System Automation/Upgrade for 187 of 1,516 Circuits
 - Distribution Management Systems
 - Supervisory Control and Data Acquisition (SCADA) Communications Network
 - Equipment Condition Monitors
 - 187 Smart Relays

Key Targeted Benefits

- Improved Electric Service Reliability and Power Quality
- Reduced Costs from Equipment Failures, Distribution Line Losses, and Theft
- Reduced Greenhouse Gas and Pollutant Emissions
- Reduced Meter Reading Costs
- Reduced Operating and Maintenance Costs
- Reduced Truck Fleet Fuel Usage
- Reduced Frequency and Duration of Outages

Advanced electricity service options include Web portal access available for all 2.2 million customers receiving new smart meters, provided that they have Internet access and complete the registration process. This Smart Meter Texas Web Portal and Common Data Repository is intended to provide customers with information that, combined with the retail electric provider service offerings and behavioral changes, may allow them to better manage their energy usage and costs.

Distribution automation system upgrades include the installation of new remote controlled devices on up to 187 distribution circuits that encompass a large area of the service territory where much of the critical chemical, petrochemical, and oil refining infrastructure is located. These devices are expected to enable the ability to improve the reliability of distribution system as well as its overall operational efficiency. At a minimum, CEHE expects these system upgrades to reduce the extent and duration of service interruptions and minimize field operational requirements. These devices will measure and digitally communicate information regarding distribution line loading, voltage levels and fault data that will enable operators to remotely locate and isolate faulted distribution line sections so that they can be more quickly repaired.

Timeline

Key Milestones	Target Dates
AMI installation begins	Q1 2009
Communications infrastructure installation begins	Q1 2009
Distribution automation systems installation begins	Q4 2010
Installation of AMI completed	Q2 2012
Installation of communications infrastructure completed	Q4 2013
Installation of distribution automation systems upgrades completed	Q4 2014
Smart Grid Program complete	Q1 2015

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