Kansas City Power & Light

Green Impact Zone SmartGrid Demonstration

Project Description

Kansas City Power & Light and its partners are demonstrating an end-to-end SmartGrid —built around a major SmartSubstation with a local distributed control system based on IEC 61850 protocols and control processors—that includes advanced generation, distribution, and customer technologies. Co-located renewable energy sources, such as solar and other parallel generation, will be placed in the demonstration area and will feed into the energy grid. The demonstration area consists of ten circuits served by one substation across two square miles with 14,000 commercial and residential customers. Part of the demonstration area contains the Green Impact Zone, 150 inner-city blocks that suffers from high levels of unemployment, poverty, and crime. Efforts in the Green Impact Zone will focus on training residents to implement weatherization and energy efficiency programs to reduce utility bills, conserve energy, and create jobs. KCP&L's SmartGrid program will provide area businesses and residents with enhanced reliability and efficiency through real-time information about electricity supply and demand. It will enable customers to manage their electricity use and save money.

Goals/Objectives

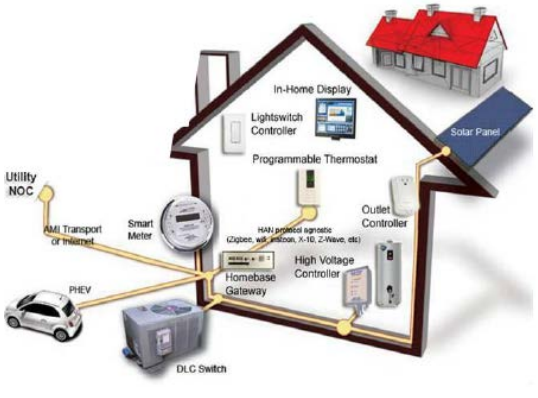
- Implement and demonstrate a next-generation, end-to-end SmartGrid
- Demonstrate, measure, and report on the costs, benefits, and business model feasibility of the demonstrated technologies
- Identify issues and gaps in technological standards

Key Milestones

- 14,000 Smart Meters Deployed (June 2011)
- Smart End-Use Implementation (June 2012)
- Complete Smart Distribution DMS and Smart Substation Implementation (September 2012)
- Test to Demonstrate Integrated System Operational (July 2013)
- Deploy Smart Generation, & Smart DR Management System (July 2014)

Benefits

- Energy efficiency improved
- Energy costs reduced
- Power reliability increased
- Greenhouse gases reduced
- Energy security strengthened



CONTACTS

David Szucs
Project Manager
National Energy Technology Laboratory
626 Cochrans Mill Road
Pittsburgh, PA 15236-1940
412-386-4899
David.Szucs@netl.doe.gov

Edward Hedges
Principal Investigator
Kansas City Power & Light
P.O. Box 418679
1201 Walnut
Kansas City, MO 64106-2124
816-556-2389
ed.hedges@kcpl.com

PARTNERS

Siemens Energy Inc
Open Access Technology International Inc
eMeter Corporation
Exergonix Inc
Intergraph Corporation
Landis+Gyr
Tendril

PROJECT DURATION

1/1/2010–1/31/2015

BUDGET

Total Project Value
$49,830,280

DOE/Non-DOE Share
$23,940,112/$25,890,168

EQUIPMENT

KCP&L Corporate LAN & Fiber WAN
DataRaker Meter Data Analysis SW license
Midtown Substation 12kv equipment
Distribution Grid 12kv poles, wires, and equipment

DEMONSTRATION STATES

Missouri

CID: OE0000221

Managed by the National Energy Technology Laboratory for the Office of Electricity Delivery and Energy Reliability