

## Iowa Association of Municipal Utilities

### Smart Grid Thermostat Project

#### Abstract

The Iowa Association of Municipal Utilities (IAMU) Smart Grid Thermostat project involves the deployment of advanced metering and customer systems for eight participating municipal utilities. The project aims to reduce peak demands and utility operating costs. The project deploys about 5,450 smart meters, 5,400 programmable communicating thermostats, and direct load control devices to: (1) allow customers to view and control their energy consumption at their convenience through a Web portal, and (2) allow the participating utilities to manage, measure, and verify targeted demand reductions during peak periods.

#### Smart Grid Features

**Communications infrastructure** includes an advanced network system for smart meter communications and future integration with other smart grid technologies. The communications systems are being selected by IAMU and participating utilities in a competitive solicitation. These communication systems provide participating utilities with two-way information feedback capabilities to collect data from, and send signals to, smart meters in the project. A separate wireless network supports communications between the utilities and direct load control devices and programmable communicating thermostats.

**Advanced metering infrastructure (AMI)** includes deploying smart meters to about 5,400 residential, commercial, and industrial customers. These meters provide capabilities for a variety of current and future customer electricity price and service options. Operational cost savings come from the automation of meter reading and customer service tasks.

**Direct load control devices** deployed by the project include approximately 200 direct load control switches and approximately 5,200 programmable communicating thermostats. These devices provide direct load control options for utilities and customers to reduce electricity consumption of heating and cooling equipment during periods of peak demand. The load control activities enable the participating utilities to better manage peak loads, lower wholesale power costs, and reduce the need for peak generation units.

#### At-A-Glance

**Recipient:** Iowa Association of Municipal Utilities

**State:** Iowa and Kansas

**NERC Region:** Midwest Reliability Organization

**Total Budget:** \$12,531,203

**Federal Share:** \$5,000,000

**Key Partners:** Algona Municipal Utilities, Atlantic Municipal Utilities, Cedar Falls Utilities, Rockford Municipal Utilities, West Point Municipal Utilities, Kansas City Board of Public Utilities, Maquoketa Municipal Utilities, Breda Municipal Electric System

**Project Type:** Advanced Metering Infrastructure  
Customer Systems

#### Equipment

- **Approx. 5,450 Smart Meters**
- **AMI Communication Systems**
  - Meter Communications Network
  - Backhaul Communications
- **Customer Systems for Approx. 5,400 Customers**
  - Customer Web Portal
  - Approx. 200 Direct Load Control Devices
  - Approx. 5,200 Programmable Communicating Thermostats

#### Key Targeted Benefits

- **Reduced Truck Fleet Fuel Usage**
- **Reduced Greenhouse Gas and Criteria Pollutant Emissions**

**Iowa Association of Municipal Utilities** *(continued)*

**Advanced electricity service options** offered through the project include a customer Web portal that enables the customers to better manage their electricity use through remote control and setting of programmable communicating thermostats.

**Timeline**

Key Milestones	Target Dates
AMI deployment begins	Q4 2010
Customer systems deployment begins	Q4 2010
AMI deployment complete	Q4 2013
Customer systems deployment complete	Q4 2013

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