

## Connecticut Municipal Electric Energy Cooperative

### Connecticut Municipal Electric Energy Cooperative Smart Grid Project

#### Abstract

The Connecticut Municipal Electric Energy Cooperative Smart Grid project ("ConnSMART Program") involves the deployment of 35,000 advanced meters and interval usage web presentment to 24,000 customers of the four participating municipal utilities (Groton Utilities, Jewett City Department of Public Utilities, Norwich Public Utilities, and South Norwalk Electric and Water). The project will offer small pilot programs to introduce and test voluntary time-based rates and direct load control devices and will fully automate all substations located within Groton Utilities' two service territories. The project will develop a new business intelligence platform utilized to improve understanding and control of wholesale power costs. The project aims to increase reliability, staff and asset productivity and customer service as well as enable customers to understand and take action to control their own energy use. Together, these benefits are aimed at controlling and potentially reducing customer power costs while improving customer usage understanding, service level and communications quality.

#### Smart Grid Features

**Communications infrastructure** includes several advanced network systems for smart meter communications and future integration with other smart grid technologies. This infrastructure provides participating utilities with two-way information feedback capabilities to collect data from, and send signals to, smart meters in the program. This two-way capability allows utilities to optimize energy delivery and system reliability and develop the capacity for expanded customer participation in existing and new energy management programs.

**Advanced metering infrastructure** includes a roll out of single-phase smart meters to 33,000 residential and small commercial customers as well as 2,000 poly-phase smart meters to larger commercial and industrial customers. These meters provide capabilities to support a variety of current and future customer electricity price and service options and serve to reduce the costs of electricity delivery. Operational cost savings result from meter reading and customer service efficiencies and are enabled by automation and two-way communication networks. The AMI system is being integrated with existing outage management and customer information and billing

#### At-A-Glance

**Recipient:** Connecticut Municipal Electric Energy Cooperative (CMEEC)

**State:** Connecticut

**NERC Region:** Northeast Power Coordinating Council

**Total Budget:** \$18,376,100

**Federal Share:** \$9,188,050

**Key Partners:** Groton Utilities, Jewett City Department of Public Utilities, Norwich Public Utilities, and South Norwalk Electric and Water

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

#### Equipment

- 35,000 Smart Meters
- 3 AMI Communications Systems
  - Meter Communications Network
  - Backhaul Communications
- 4 Meter Data Management Systems
- Customer Web Portals for 24,000 Customers
- Pilot Customer Systems for 21 Customers
  - Programmable Communicating Thermostats
  - Direct Load Control Devices
- Distribution Automation Systems
  - 11 Substation Remote Terminal Units
  - 11,000 Automated Status and Control Points

#### Time-Based Rate Programs for 175 Customers

- Time of Use Pricing
- Real-Time Pricing

#### Key Targeted Benefits

- Improved Operational Efficiency
- Enhanced Customer Service Options

**Connecticut Municipal Electric Energy Cooperative** *(continued)*

systems as well as with new meter data management systems, enabling the utilities to respond to outages and customer requests more efficiently.

**Direct load control devices** includes the piloting of new voluntary load control programs and the deployment of direct load control devices to customers requesting to voluntarily participate in the new device trials. The load control programs enable participating utilities to better manage peak loads and wholesale power costs while offering greater cost control (and potentially cost reduction) opportunities to their customers.

**Advanced electricity service options** include additional information services and energy management options provided to customers. This program is undertaking widespread deployment of new time interval energy use website portals for customer access. This deployment facilitates two-way information feedback between participating customers and the utility while enabling these customers to better understand and manage their electricity use and costs.

**Time-based rate programs** include time-based electricity prices combined with information feedback communicated to the customers by advanced meters and customer systems. Time of use pricing and real time pricing options will be offered to a small number of volunteer customers after the AMI and meter data management systems are operational and integrated with utility information systems. These voluntary opt-in pricing options are designed to encourage participating customers to reduce and/or shift their consumption from on- to off-peak periods and thereby provide the customer greater cost control and potential cost savings along with reducing overall peak demand and peak power use.

**Timeline**

| Key Milestones                                     | Target Dates |
|--|--------------|
| AMI/meter data management system deployment begins | Q4 2010      |
| All AMI communications network operational         | Q3 2013      |
| All meter data management systems operational      | Q1 2014      |
| All pilot pricing programs underway                | Q1 2014      |

**Contact Information**

Gabe Stern  
 Director of Strategic Planning and Technical Services  
 Connecticut Municipal Electric Energy Cooperative (CMEEC)  
 gstern@cmeeec.org

Recipient Team Program Website: [www.connsmart.org](http://www.connsmart.org)