

## Entergy New Orleans, Inc.

### *Advanced Metering Infrastructure Pilot*

#### Scope of Work

Entergy New Orleans, Inc.'s (ENO's) advanced metering infrastructure (AMI) pilot included deployment of smart meters, in-home displays (IHDs), programmable communicating thermostats (PCTs), and a web portal for low-income customers. ENO worked with local community outreach organizations to help solicit and enroll low-income customers in the SmartView pilot program.

#### Objectives

The project evaluated customer acceptance of the new energy management technologies and the impacts of peak-time rebates, air conditioning load controls, and enabling technologies on low-income customer electricity usage and peak demands.

#### Deployed Smart Grid Technologies

- **Communications infrastructure:** A tower-based, licensed frequency communications network was installed to collect 15-minute interval meter readings, support customer notification of peak-time rebate and air conditioning load control events, and communicate usage and cost information to the customer.
- **Advanced metering infrastructure:** The project deployed approximately 4,700 smart meters equipped with ZigBee radios to enable communication with the IHDs and PCTs. Customers were presented with interval usage and load profile data, which enabled more informed energy management.
- **Customer system devices:** ENO deployed approximately 3,000 IHDs and 400 PCTs. Air conditioning load management (ACLM) utilized the PCT, smart meter, and a control strategy—i.e., in exchange for monthly rebates, customers agreed to ENO's shutting their air conditioning compressors off for 20 minutes per hour for three consecutive hours during peak periods. The project also provided 3,700 customers with web portal accounts. The IHDs, PCTs, and web portal displayed month-to-date and projected month-end usage and dollar amounts, as well as graphs of electricity usage for the previous 24-hour and 30-day periods.
- **Time-based rate programs:** Approximately 400 customers participated in four-month peak-time rebate pricing in 2011 and 2012. Participants received notification by 5:00 PM on the day before a peak event, allowing them to adjust their usage accordingly. Peak-time rebate customers were compensated for their reduction in electricity usage based on a comparison with their average consumption two days before and after the event day.

#### **At-A-Glance**

**Recipient:** Entergy New Orleans, Inc.

**State:** Louisiana

**NERC Region:** SERC Reliability Corporation (SERC)

**Total Project Cost:** \$9,709,019

**Total Federal Share:** \$4,854,510

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

#### Equipment Installed

- 4,700 Smart Meters
- AMI Communications Systems
  - 5 Tower Gateway Base Stations
- Enhanced Web Portal
- 3000 In-Home Displays
- 400 Programmable Communicating Thermostats

#### Time-Based Rate Programs

- Peak-Time Rebate

#### Key Benefits

- Enhanced Customer Control over Electricity Usage
- Peak Load Reductions

**Entergy New Orleans, Inc. (continued)****Benefits Realized**

- **Enhanced customer control over electricity usage:** Low-income customers were provided with trending load profile data coupled with month-end bill projections, giving customers the information they need to adjust their usage patterns and exercise more control over their energy bills. A majority of the participants stated that they will continue to use the energy conservation techniques they learned during the program.
- **Peak load reductions:** The SmartView peak demand treatment groups, ACLM and peak time rebates (PTR), achieved 11%–16% peak event load reduction, as good as or better than comparable all-residential pilots at other utilities. Although the ENO pilot targeted a relatively small population of low-income customers, ENO realized reductions in peak load during called events where customers were presented with incentives (PTR) to conserve energy or shift consumption activity. SmartView pilot findings are quite positive and compare very favorably to other smart grid pilots. Energy reductions were statistically significant for some technologies (PTR, IHD) and were quite large for certain subgroups who received face-to-face training (those receiving IHDs who participated in ACLM).

**Lessons Learned**

- The program provided ENO with valuable information on its low-income customers and evidence that the low-income population felt empowered and enabled to better control their energy usage. According to a post-pilot survey, approximately 91% of SmartView participants would be interested in participating in the program on a permanent basis.
- ENO's low-income advocate community engagement approach to solicitation and education during the SmartView pilot strengthened the Company's relations with community partners and raised awareness throughout the New Orleans community of the capabilities and benefits of AMI technologies.
- The SmartView pilot contributed to building technology and customer support expertise at ENO, enabling the Company to test and explore the benefits of new smart grid technologies.
- Control of air conditioning via a PCT requires significant customer training and support. Additionally, customers experiencing air conditioning unit problems called ENO first to resolve the issue. ENO contracted with a certified air conditioning vendor to assist with after-hours and urgent requests.

**Future Plans**

ENO will leverage this pilot along with other industry programs in its evaluation of additional smart grid investments through forecasts of future program participation, updates of smart grid technology, program performance and costs, and additional energy and non-energy benefits analysis.

**Contact Information**

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