

Wellsboro Electric Company

Smart Choices Project

Scope of Work

The Wellsboro Electric Company (WECO) Smart Choices Project involved the deployment of advanced metering infrastructure (AMI), a meter data management system (MDMS), and an energy management web portal and mobile device application made available to all customers. The project enables WECO to more efficiently monitor and respond to voltage irregularities, customer outages, and tampering alarms. Serving one of the poorest communities in Pennsylvania, WECO rolled out a large energy education campaign using radio spots and informational booths to teach customers how to use the new technologies to reduce their electricity consumption and lower their bills.

Objectives

The project introduced AMI-enabled tools to customers that encourage more informed energy management, which can lower monthly bills. WECO also aimed to reduce operations and maintenance costs while improving distribution system efficiency and reliability.

Deployed Smart Grid Technologies

- **Advanced metering infrastructure (AMI):** The project installed 4,913 smart meters, covering 76% of WECO’s residential customers, 86% of WECO’s commercial customers, and 100% of WECO’s industrial customers. The new meters provide the capability to deliver a variety of time-based rates and advanced service options as WECO begins to leverage the foundational infrastructure. All customers can currently view their energy use, billing information, and carbon footprint through web portals. The smart meters reduce meter reading and customer service costs, and new AMI features include outage and restoration notification and remote service switches that enable WECO to improve customer service while decreasing operational expenses. WECO has also integrated AMI with its existing supervisory control and data acquisition (SCADA) system, as well as its geographic information system (GIS), to expand its monitoring capability.
- **Communications infrastructure:** An advanced power line communications infrastructure enables two-way communication between the meters, substations, and control office. The system allows for future integration with distribution automation, smart appliances, and home area networks. This infrastructure also provides WECO with expanded capabilities and functionality to optimize energy delivery, system reliability, and customer participation.

Benefits Realized

- **Reduced meter reading costs:** The AMI system has automated meter reading capabilities and significantly reduces the number of trips into the field, resulting in reduced meter reading labor costs.

At-A-Glance

Recipient: Wellsboro Electric Company

State: Pennsylvania

NERC Region: Reliability First Corporation

Total Project Cost: \$974,002

Total Federal Share: \$431,624

Project Type: Advanced Metering Infrastructure

Equipment

- 4,913 Smart Meters
 - Communications Infrastructure (Power Line Carrier)
 - Meter Data Management System
 - Web Portal Access for 100% of Customers
 - Mobile Device Application (Tablet and Phone)
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Key Benefits

- Reduced Ancillary Service Cost
 - Reduced Costs from Theft
 - Reduced Meter Reading Costs
 - Reduced Operating and Maintenance Costs
 - Reduced Truck Fleet Fuel Usage
 - Improved Operational Efficiency
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Wellsboro Electric Company *(continued)*

- **Reduced ancillary service cost:** The newly deployed technologies reduce labor and expenses. The utility can now avoid bill variance checks and no longer needs to roll a truck to re-read a meter.
- **Reduced costs from theft:** The new AMI system supports the ability to detect when a meter is removed from its service base, triggering a service outage in the outage management system, followed by a service crew investigation.
- **Reduced operating and maintenance costs:** Significantly fewer truck rolls for service maintenance and meter reading activities translates into savings in vehicle fuel and maintenance.
- **Reduced truck fleet fuel usage:** Before this project, WECO made trips into the field to read just over 5,100 meters, with average mileage on meter reading vehicles of 1,100 miles per month. WECO is now manually reading 681 meters and averages 200 meter reading truck miles per month.
- **Improved operational efficiency:** WECO can now monitor voltage at the meters to identify problems and improve power quality across the distribution system.

Lessons Learned

WECO learned that ordering equipment in large batches can help reduce the risk of vendor delays. Also, the deployment of a limited number of remote connect/disconnect collars, along with customer education about the collars' capabilities, has been helpful in reducing late bill payments.

Time management is critical to the deployment schedule. WECO built schedule contingency into the project plan to cover delays in installation. For example, customer equipment failures during the meter installation process caused multiple trips to deploy meters and associated delays.

Customer courtesy is key to successful smart meter deployment. Thanks to Wellsboro's positive contact with customers during the meter installation process, there were few complaints if field personnel had to turn off the power. Giving customers sufficient time to shut down equipment helped ensure customer satisfaction during the project.

Future Plans

WECO plans to continue with the deployment of residential AMI meters and remote connect/disconnect collars, as well as the customer education and outreach effort. WECO is currently integrating the AMI system with the outage management system to fully leverage the real-time outage data from the meters. WECO will continue to purchase and install remote connect/disconnect collars for accounts with high tenant turnover rates, such as rental properties. When a tenant leaves, the utility can disconnect power remotely and re-connect when the next tenant moves in, eliminating the need for a truck roll to the location.

Contact Information

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