Customer case study

The smart grid done right: Phoenix's Salt River Project

SRP improves efficiency and reduces costs

Opportunity

SRP, the largest provider of electricity to the greater Phoenix metropolitan area and third-largest public power utility in the nation, needed to eliminate costly truck rolls, improve employee safety and increase operating efficiency.

Solution

SRP selected the Elster EnergyAxis® Smart Grid solution and Elster smart meters to be deployed at nearly 1 million residential and commercial locations, enabling the utility to perform remote connect/disconnects, drive down operational costs and improve response times to customer service requests.

Results

- Completed more than 1 million service orders remotely without field visits
- Saved more than 341,000 hours in labor hours
- Avoided more than 1.7 million driving miles
- Conserved 169,000 gallons of fuel

Taking the lead on smart grid deployments

SRP is the third-largest public power utility in the United States, serving more than 935,000 electricity customers in the greater Phoenix, Arizona metropolitan area through a variety of resources, including solar, wind, biomass, geothermal, hydroelectricity, natural gas, coal and nuclear. The utility operates or participates in 11 major power plants, and provides electricity to residential and commercial customers across more than 2,900 square miles.

Truck rolls related to meter readings, meter connects/disconnects and general services represent significant operational costs to SRP. The utility hoped to automate these processes and offer expanded customer services such as time-of-use (TOU) pricing by deploying one of the nation's first advanced metering infrastructure (AMI) smart grid projects.

"We didn't want to learn about AMI by reading about what other utilities were doing with the technology, so we began working with the Elster EnergyAxis solution in 2004. We saw such significant benefits to cost-savings and operations, we doubled our EnergyAxis deployment in 2010," said Scott Trout, Manager of SRP's Federal Stimulus Program. "We have a long-standing relationship with the Elster team and are completely confident that its technology will enable us to achieve our desired goals."

The Phoenix area has a large transitory population, with a significant number of apartments, condominiums and other rentals. This made a connect/disconnect feature for specific meters a critical component of the SRP AMI Smart Grid project. SRP currently possesses one of the largest single deployments of disconnect meters in the world today. In addition, SRP relies on the Elster EnergyAxis solution to perform daily remote readings on all of its smart meters.

The Elster EnergyAxis solution provides SRP with a reliable network that uses multiple WAN technologies and a two-way radio frequency (RF) communications system to retrieve meter data and grid monitoring information directly from the smart meters and grid sensors. The communication network also enables SRP to remotely send control messages to various grid and metering devices, further eliminating onsite visits.

Each smart meter is programmed to collect data for TOU pricing, sending this information over Elster's IP-based, secure wireless mesh network to data collectors, known as gatekeepers. The collected data (including voltage and outage data) is reported back to SRP according to the schedules and priorities the utility has established. SRP uses this information to

> The Elster EnergyAxis solution has helped make our Smart Grid deployment a reality, driving significant cost savings related to truck rolls and labor hours.
>
> SCOTT TROUT, MANAGER OF SRP'S FEDERAL STIMULUS PROGRAM

improve energy management, monitor energy consumption, enable demand response and to enhance customer service.

"By performing remote, two-way communications directly with our electricity meters, SRP is realizing new operational efficiency benefits every day," said Trout.

Improving Operations across the Board

SRP has installed more than 582,000 Elster smart meters for residential and commercial/ industrial applications. Nearly 300,000 of the residential meters are equipped with remote connect/ disconnect functionality. Since the initial smart meter deployment, SRP has recorded a number of operational efficiency improvements from the Elster EnergyAxis solution.

The EnergyAxis Smart Grid deployment enables SRP to complete more than 25,000 service orders every month and SRP has completed more than 1 million service orders remotely without field visits since implementing the Elster EnergyAxis solution in 2004. These service orders are conducted on a 7x24 basis for the utmost in flexibility and responsiveness while providing the utility with significant savings in cost and labor hours.

By remotely monitoring and controlling energy consumption at the meter, SRP has avoided more than 1.7 million driving miles and conserved 169,000 gallons of fuel. "When you consider fluctuating oil prices, the reduction in truck rolls has been a tremendous cost saver for SRP," added Trout.

The reduction in onsite field visits has saved SRP more than 249,000 labor hours. SRP has re-deployed some of these labor hours toward the installation of the EnergyAxis network and smart meters. SRP is rolling out approximately 14,000 new smart meters every month.

By automating many services, SRP has significantly improved efficiency and reduced costs. "With the savings we have seen from our automated daily reads and being able to remotely handle service calls from the office, the system has virtually paid for itself. Since implementing Elster's EnergyAxis, our operational expenses have continued to decrease as we expand the number of meters in the field," said Trout.

An important benefit of the reduced number of field visits is the increased safety of employees. Spending less time in the field has helped protect SRP service personnel from potential hazards such as dog bites and vehicle accidents.

SRP plans to finish the installation of the Elster EnergyAxis smart meters to all of its nearly 1 million customers by the end of 2013.

Salt River Project location

- Phoenix, Arizona, USA

Ownership

- Public

Installation

- August 2003 – 2013 (projected)

Infrastructure Summary (November 2010)

- Residential: 525,000
- Commercial/Industrial: 18,000
- Projected Total: ~ 1 million

Key applications

- Residential disconnect/reconnect
- Residential TOU

Status

- In production
- Rolling out 14,000 meters per month

Integrations

- Batch connect/disconnect integration tool
- Operational reports

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