# Eaton advanced metering solutions help Johnson County REMC improve customer service

**Location:**
Franklin, Indiana

**Segment:**
Utility

**Solution:**
Eaton's Cooper Power™ series Advanced Metering Infrastructure (AMI) and Yukon™ enterprise software platform, enabling smart grid capabilities, enhanced customer service, outage management, and remote disconnect capabilities

**Problem:**
Upgrade electric monitoring systems with two-way advanced metering infrastructure to improve reliability and offer customers insight into energy consumption and greater payment flexibility

**Results:**
Accurate, real-time electric system data along with extensive customer tools for payment, outage reporting, and energy usage review—enabling the utility to better respond to outages, reduce labor, and improve customer service

*"We're now able to provide better service to our customers while arming them with the data needed to make more informative energy decisions."*

*Shawn Frye, director of technology, Johnson County REMC*

**Background**

Located in Franklin, Indiana, Johnson County REMC is a cooperative electric utility that supplies electric service to more than 26,000 meters across Johnson County and portions of Morgan, Shelby, and Brown counties.

Throughout its history as a member-owned cooperative, the utility's mission has remained the same: to provide reliable and affordable electric service to its customers and the community now and into the future.

**Challenge**

In alignment with its efforts to continually enhance service for its members, Johnson County REMC began to install high-speed fiber optic communications lines in 2012. One of the most significant opportunities brought about by the new high-speed data transfer network would be the ability to implement automatic meter reading technology and two-way communication between substations and customer locations.

These new technologies would enable the utility to perform remote meter reading, monitoring and controlling from a central location rather than needing to send service workers

out to each member across its service area. Outage detection could also be performed in near real time to expedite repairs and increase system reliability.

Further, with the advanced metering infrastructure (AMI), Johnson County REMC recognized its customers could be provided with the benefit of individual energy usage monitoring and flexible payment solutions, including prepaid and time of use billing options.

"With AMI and real-time communications, we saw the opportunity to obtain much more than automated meter reading," explained Shawn Frye, director of technology for Johnson County REMC. "The new infrastructure would enable us to significantly improve customer service while freeing up our staff to achieve more long-range goals."

The utility used a thorough process to evaluate available vendors that could support the goals of its AMI and ultimately chose to move forward with Eaton's Cooper Power series AMI and Smart Grid solution.

Eaton was selected to support the project because of its successful history implementing similar projects, as well as its ability to ensure the needs of all departments were met, from billing to operations.

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## Solution

After a successful pilot program, Johnson County REMC began installing the RF infrastructure, electric nodes and digital meters across its entire customer base. The new meters serve as the point of communication between customers and the utility, providing accurate consumption data, system status and outage information.

Eaton's self-configuring, self-healing, and self-managing RF mesh network provides bi-directional connectivity to digital endpoints and the back office—enabling real-time support for electric meters and distribution automation controls all on one network.

Additionally, an advanced automation scheme is planned by applying Eaton's CBC-8000 Capacitor Bank Control (CBC) to operate the utility's distribution feeder capacitors. By using a combination of wide area network (WAN) technologies, including fiber and WiMAX wireless communications, the project team plans to support wireless communications backhaul with "failsafe" backup modes that will maintain grid stability even when systems are down.

The utility configured the meters and automation network to filter near real-time information into Eaton's Yukon AMI software platform for real-time data acquisition, logging, and management. To reduce complexity for staff and members, REMC also configured the Yukon software to feed data directly into its native management platform, customer portal, and billing systems.

As a result, users across all areas of the utility can take advantage of the new data acquisition and analysis capabilities. Through the integrations with native platforms, Yukon is providing usage data that is exported into Johnson County REMC's customer service portal—allowing customers to check usage, pay their bill, report an outage, stay up-to-date, and much more, all from a web browser, smartphone or tablet.

For the utility, the system quickly identifies outages and creates real-time maps of them for customer support. Operators can instantly reconnect or disconnect service directly from the central office to reduce fleet mileage and expedite business processes.

"When an outage occurs, restoration of service is our number one priority," said Kevin Shelley, director of engineering for Johnson County REMC. "The new AMI solution enables us to quickly pinpoint impacted areas and outage locations so we can restore power. There are even times that the outage notification from the AMI system allows us to restore the outage before our members know the power is out."

Further, the new system provides the utility with near real-time alarm system detection, so workers can be immediately made aware of system outages and voltage fluctuations or issues. This capability helps the utility avoid investigative truck rollouts across its service area and accelerate the time needed to restore power.

"With detailed information on usage, demand, voltage and outages versus monthly reads of consumption information, we finally have the analytics needed to proactively plan for future system improvements," said Frye. "Plus, our technicians are now able to focus their efforts on implementing these improvements, rather than the everyday tasks of meter reading and manual disconnects."



**With its new AMI system, Johnson County REMC can perform outage detection in near real time to expedite repairs**

**A Johnson County REMC communications technician installs the utility's new two-way advanced metering infrastructure**

## Results

The new AMI infrastructure, in combination with Johnson County REMC's high speed data transfer network, provides fast two-way communication to improve the reliability and efficiency of the existing electric distribution system, and offers greater choice to its members in terms of rate structure and payment options. The technology is providing the tools necessary to improve productivity and create efficiencies that improve customer service.

"We can't imagine going back to our previous monitoring and control systems," explained Frye. "We're now able to provide better service to our customers while arming them with the data needed to make more informative energy decisions."

The advanced metering and automation network is streamlining Johnson County members' ability to connect generation equipment to the electric grid—such as solar panels or wind turbines. In such instances where excess generation is produced, members will receive credits back to their accounts.

To summarize, the AMI infrastructure powered by Eaton is helping Johnson County REMC realize the following benefits:

- **Advanced reliability**
  The advanced metering infrastructure is allowing the utility to expedite power restoration by quickly and accurately pinpointing outage locations. The utility can also record power quality and correct problems before they cause outages.

- **Improved efficiency**
  With the new AMI system, Johnson County REMC can read and reconnect meters from its central office. This technology reduces fleet mileage and expedites business processes.

- **Reduced costs**
  Operating more efficiently helps the utility reduce overall costs, and energy costs for members as a result. The updated meters allow for daily usage data retrieval, so members may better understand and manage their own electric usage and costs.

- **Greater insight and access to energy data**
  The AMI infrastructure provides members with the opportunity to view hourly usage data and facilitate time of use rate options in electronic format from their home PC, tablet or smartphone.

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