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Case study
Advanced metering in
Great Lakes, Michigan

Utility transforms operations with Xylem's Sensus advanced metering solutions

Michigan's largest electric co-op deploys AMI across 26 counties

Great Lakes Energy Cooperative (GLE), Michigan's largest member-owned electric co-op, is in the midst of a multi-year effort to modernize its operations. Serving over 130,000 members, the cooperative launched a project to upgrade its aging power line carrier (PLC) based system to the Sensus FlexNet® communication network in late 2022. With the new technology, the utility can access near real-time data that helps to proactively monitor the status of each electric service and alert their members to any potential issues.

A strategic shift from PLC to FlexNet

Facing the limitations of their two-decade-old PLC system, GLE sought a future-ready solution. "The old system was nearing its end of life, and it simply wasn't optimal anymore. We were receiving data at a slower rate, and maintenance downtime was affecting our operations," said Justin Chase, engineering manager, GLE.

This realization led GLE to issue an open RFP to source a new AMI partner. Ultimately, after narrowing the selection down from 10 responding AMI vendors, and an eight-month pilot competition phase between Sensus and a competitive RF mesh technology, they selected the Sensus FlexNet point-to-multipoint RF solution and Stratus IQ™ electricity meters, which provide greater visibility and control for their evolving smart grid.

Following the pilot's initial success, the cooperative deployed 2,000 meters, with plans to install 45,000 meters over the next year and eventually integrate 130,000 meters upon project completion. The new Stratus IQ+ meters further enhance reliability and efficiency, making the grid more adaptable as GLE grows.

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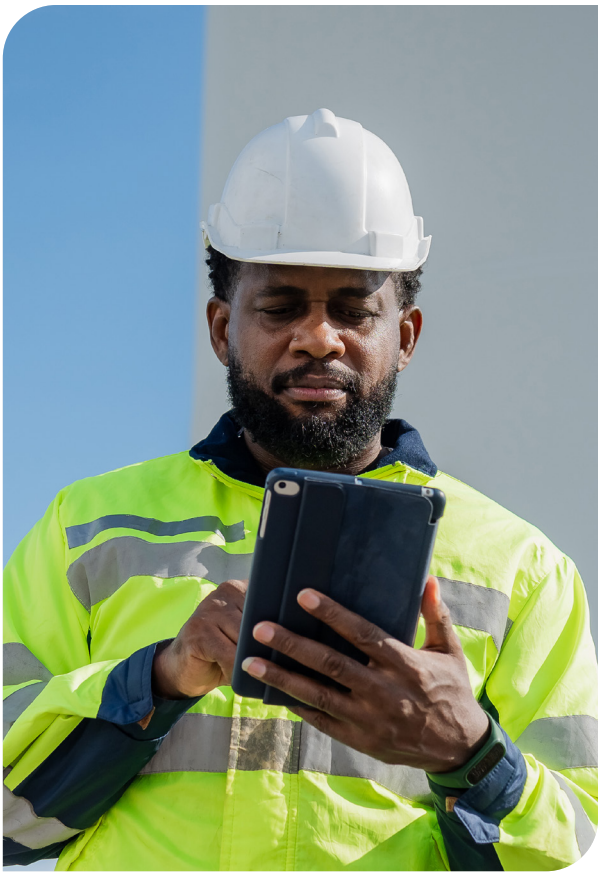
> “The flexibility and reliability of FlexNet allows us to scale up effectively,”
> said Cyndy Streasick, engineering analyst, GLE

> “With real-time data and streamlined outage management, the improvement is significant.”

Meter deployment also has been successful for the cooperative. The meters integrate seamlessly into their existing infrastructure, requiring no extensive reconfiguration while maintaining high performance. Unlike many competitive AMI meters, Sensus’ Stratus IQ+ meters don’t require batteries, nor do they require any configuration time upon meter power-up (or after an outage), ensuring reliability and reducing maintenance over time.



Reliable technology for seamless operations

GLE credited reliability as a key factor in choosing Xylem’s Sensus technology. Base stations are installed on existing poles for 98% of the locations to minimize disruptions. The network’s high level of redundancies and overlap provides reliable coverage, even in challenging conditions.

“The FlexNet system’s built-in redundancy ensures that if a signal is blocked—like when a large vehicle temporarily obstructs a meter’s signal in one direction—readings can still be captured from a base station in a different direction, or can even be forwarded to a base station from a nearby meter, maintaining consistent communication and data accuracy,” said Streasick.

“Having data that updates in near real-time is a game-changer,” Streasick added. “We can respond to issues before our members even have to call us. The incredible speed allows us to act on a meter in a matter of seconds.”

Another key benefit of this transaction for GLE is phase detection. Their previous system required power line communication, but with FlexNet, time-synchronized signals, accurate to the millisecond, can be broadcast to the meter population. Meter responses are then compared to reference points to detect any anomalies and balance the system efficiently.

Optimizing for the future

Ultimately, FlexNet's advanced data capabilities are opening doors to innovative billing structures like time-of-use and demand-based pricing, allowing the cooperative to better serve its members.

> "This technology empowers us to rethink rate structures and optimize operations,"
> said Chase.

> "It's an exciting leap forward for our cooperative and the communities we serve."

With more than 130,000 meters and 250 base stations planned, GLE is building a strong foundation for reliable service and future innovation across its 26-county service area.

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