



Alliant Energy Weathers the Storm with Xylem

MIDWEST ENERGY UTILITY USES TECHNOLOGY TO QUICKLY RESTORE POWER AFTER DEVASTATING DERECHO



CHALLENGE

Improve outage response capabilities across large Midwest service territory

SOLUTION

Deploy a smart utility network to enable near real-time remote system management

REACH FARTHER

Leverage phase detection to improve mapping accuracy

When an energy utility serves nearly one million customers across a large Midwest service territory, they need to prepare for whatever Mother Nature has in store. From winter storms and intense summer heatwaves to tornadoes and floods, there's no shortage of possibilities for severe weather events to leave their customers in the dark.

Alliant Energy faced one of the biggest outages in their 40-year history when a derecho—a powerful, widespread windstorm—moved across their service territory in August 2020 and knocked out power for 260,000 customers in Iowa. The storm caused \$11 billion in damage to homes and businesses throughout Iowa and neighboring states. Among the affected areas was Cedar Rapids, Iowa's second-largest city.



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RANDY BAUER *Director of Operational Resources, Alliant Energy*

As soon as the dangerous winds passed, Alliant Energy sprang into action.

"It was all-hands-on-deck to get power restored as quickly as possible," said Randy Bauer, Alliant Energy's director of operational resources. "Thankfully, the technology investments we made previously helped provide a roadmap for where we needed to go and what we needed to do."

Storm-hardened infrastructure

The utility teams' forward-thinking is both a powerful example of the importance of planning ahead and a primer on how to best capitalize on scalable technology. In 2019, they deployed smart infrastructure to provide remote management capabilities that could aid in outage restoration.

"That was a big part of the business case for our investment," said Bauer. "We thought smart infrastructure could help automate the process of pinpointing outages and getting power back on faster, and we were right."

Alliant Energy deployed a [smart utility network](#) from [Sensus](#), a Xylem brand, for customers in Iowa. Their deployment included more than 490,000 [Stratus](#)®

residential electricity meters and the [Sensus FlexNet® communication network](#), a reliable, two-way system that enables near real-time meter data monitoring.

The solution ensured the utility was prepared when the 2020 derecho hit, and what a storm it was. The massive wind gusts took down trees, ripped apart corn silos and peeled the roof off an apartment complex. As the intense winds began to die down, an Alliant team used data from their smart network to execute the outage management and restoration process.

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Alliant Energy relied on the near real-time data from their smart utility network to make informed decisions swiftly and restored power for the majority of customers in just a few days. Dedicated crews continued working through the harder-hit areas, and power became available to all customers within 16 days.



The next phase

Alliant Energy did not rest between storms. They put their technology to work for meter mapping to prepare for the next adverse event.

The utility was using geographic information system (GIS) mapping to help understand the topography of their service area, but they found inconsistency in the data.

"Maps can get messy when you're focused on getting the lights back on quickly for so many customers," said Bauer. "The only thing you can be sure of with GIS mapping is that it's going to get out of date really fast."

This led them to conduct a pilot program with the Sensus phase detection application across 600 electricity meters in the town of DeWitt, Iowa. This extension of the utility's smart network proved capable of detecting the correct phase with 100% accuracy.

"We went out and field-verified those results, and it turned out we had 240 mismatched meters," said Bauer. "Resolving these types of inaccuracies moving forward will help us serve our customers better."

The Alliant team was so impressed with the results of the pilot program that they plan to extend the capability across their entire service area.

"It's a much more accurate map than the GIS system," said Bauer. "That means we're not spending a lot of time and money trying to maintain accurate mapping and can direct those resources back into services that provide more value for our customers."



The Midwest derecho this past August caused an estimated \$11 billion in property damage throughout Iowa and neighboring states. The AMI solution from Sensus quickly identified damaged transformers and homes without power.



Lighting the way forward

Alliant Energy continues to find ways to gain more value from their smart utility network, such as smart lighting. They plan to control area streetlights via the Sensus VantagePoint® solution. Regardless of where they go next, the utility team has accurate, reliable data to address future challenges.

“The data we receive helps us better understand what’s happening in our service territory,” said Bauer. “That allows us to make faster, more informed decisions, and we expect that to benefit our customers for years to come.”



Energy-saving smart streetlights managed by the Sensus VantagePoint Lighting solution can be brightened, flashed or dimmed to support public safety.

ABOUT SENSUS

Sensus, a Xylem brand, provides remotely-managed products and solutions that deliver the right data at the right time for investor-owned utilities, cooperatives and municipalities. As part of Xylem’s digital portfolio, our smart devices and advanced applications connect with a variety of communication technologies to help customers make timely decisions that optimize electric, gas and water systems. Learn more at sensus.com.

