



M2M Solutions

Utilities Industry Case Study

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PPL Electric Utilities distributes electricity to approximately 1.3 million commercial and residential customers in eastern and central Pennsylvania.

Its parent company PPL Corporation—formerly known as Pennsylvania Power & Light Co.—generates, markets and delivers electricity to customers throughout the United States and several foreign countries.

Objective

PPL Electric Utilities needed a better way to retrieve data from the commercial electrical meters in the field. The company also wanted to automate data reporting to improve business processes, system reporting, and customer response time.

PPL Electric Utilities had outgrown its legacy CDPD system and relied heavily on a manual system to check its meters in the field. The company wanted to be able to interactively communicate with its remote electric meters to check power quality and usage patterns via an automated system. The company also wanted to access real-time data to troubleshoot customer problems and enhance customer service.

A concurrent objective was to make sure the wireless solution wasn't a short-term fix. As John Yanek, the director of the AMR project put it, "We wanted a technology that had a guaranteed long-term future and a solution that was flexible."

Solution Description

PPL Electric Utilities deployed 6,200 automated meter reading (AMR) devices across 70% of its largest commercial and industrial electricity customers. The AMRs use machine-to-machine communication across a CDMA2000® 1X network to both read and query the meters, employing packet mode operation on the Verizon Wireless NationalAccessSM network using Kyocera modules.



PPL Electric Utilities

Allentown, PA

Company Description

- PPL Electric Utilities distributes electricity to approximately 1.3 million customers in eastern and central Pennsylvania

Objective

- Improve retrieval of data from remote meters and automate data reporting to facilitate business processes, system reporting, and customer response time

Solution Description

- Wireless solution that automates electricity meter reading in the field using machine-to-machine communications
- Phased deployment of 6,200 automated meter reading devices using Kyocera telemetry modules embedded in gateway devices
- Processing power located at remote meter sites to broaden data capture and enable real-time interactivity and troubleshooting across the mobile network
- Migration from a legacy CDPD system to a CDMA2000® 1X wireless data system from Verizon Wireless
- One of the largest CDMA2000 1X data deployments in North American utilities to date

Results

- Reduced data collection lag time from 30-45 days to 30-45 minutes
- Allows PPL Electric Utilities to identify and troubleshoot problems using an automated system that provides more timely information on system reliability and meter set-up
- New access to real-time load profiling, voltage and pricing data



PPL Electric Utilities



Kyocera CDMA2000 1X modules are embedded into Comverge Maingate™ gateway devices. This architecture puts processing power at the meter site to broaden data capture and enable real-time interactivity and troubleshooting across the mobile network. Technicians can talk locally with the meter. Meters can also self-report exception alerts if something unexpected occurs with the voltage or current. Customer service technicians can then query the device for real-time information and up-to-the-minute status.

This enhanced functionality forced PPL Electric Utilities to migrate from CDPD to more robust CDMA2000 1X technology. The Verizon Wireless CDMA2000 1X coverage was more seamless than GPRS offerings from other network operators. And Verizon Wireless' pricing plan allowed PPL Electric Utilities to send a more than adequate amount of data at a reasonable cost. The availability of accurate time signals from the network was also a distinct advantage in this application. Compared with wireline alternatives, CDMA2000 1X wireless service offers much easier installation and a more rapid payback than dedicated analog phone lines.

Results

The PPL Electric Utilities project is one of the largest CDMA2000 1X data deployments in North American utilities to date, and the first utility deployment using telemetry communications over a CDMA2000 1X network.

The new implementation has reduced data-collection lag time from 30-45 days down to a mere 30-45 minutes. This solution allows PPL Electric Utilities to have real-time checks on its meters every time it queries a meter. The AMR implementation also enables the company to detect potential problems with meter set-up and system reliability with access to real-time load profiling, voltage and pricing data, which has resulted in improved customer service.

"We're very proud of what we did with our partners. We took a vision into a reality that will benefit our customers," acknowledges Yanek.

"We wanted a technology that had a guaranteed long-term future and a solution that was flexible."

*John Yanek,
Director of the AMR Project
PPL Electric Utilities*



PPL Electric Utilities was the winner of the A-List Innovation Award for the Large Company category. The 3G cdmaA-List Awards program honors leading enterprises, public agencies and non-profits for their successful wireless data applications. To learn more about the A-List, please visit www.qualcomm.com/enterprise.

Supporting Partners
The A-List also recognizes supporting partners for their enabling role in assisting winners with their respective wireless data deployments.



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