

Benton County Electric solves metering infrastructure connectivity in remote areas

BGAN M2M for Utilities

The Challenge

Benton County is in Northwest Tennessee, bordering the western branch of the Tennessee River and often referred to as the gateway to Middle Tennessee. Aside from the city of Camden, the only other largely populated areas are the agrarian communities of Big Sandy and Holladay.

The county's electricity requirements are met by Benton County Electric System (BCES), whose 38 employees work to deliver power to more than 10,000 customers. BCES's philosophy is to offer fair and equitable rates for all. To accomplish this, BCES began an initiative five years ago to install automated metering infrastructure that would collect meter data every 15 minutes. Having near real time access to this data would allow BCES to better respond to customer needs, expedite engineering analysis, and provide holistic data of the electric system for a cost-based rate design. The company would be able to remotely connect and disconnect services, monitor power outages across the county, and offer new services such as prepay. Moreover, reducing its reliance on manual meter checks with automated meters promised to save countless travel hours for BCES's staff. The company faced several challenges in rolling out its automated metering infrastructure due to the patchy and unreliable cellular coverage typical of rural and remote locations.

"We initially adopted a hybrid connectivity model for our meters, connecting our collectors on our fiber-optic network in certain areas, and private cellular networks in others. However, there were gaps in the network where neither of the two services were available or feasible, meaning that some isolated meters still had to be read manually, draining time and resources. We needed a connectivity solution that would enable us to fully utilize the integrated automated metering infrastructure."

Scott Owens, Director of Communications and Technical Services at BCES

CASE STUDY

Benton County Electric solves metering infrastructure connectivity in remote areas

BGAN M2M for Utilities

Key Benefits of BGAN M2M

Performance: standard IP at a rate of up to 448kbps with a low latency from 800 milliseconds.

Reliability: operates over the Inmarsat L-band global satellite and ground network, with 99.9% availability.

Easy to integrate: simple for field teams to set up, integrate and maintain without technical expertise or training.

Cost effective: low-cost terminal, low data rate plans with no reconnection fees.

Enhanced support: free firmware upgrade over-the-air.

Easy to manage solution: remote terminal management, debugging and configuration options.

The Solution

Mindful of fiber-optic and cellular network limitations along with reliability, availability and coverage considerations, BCES set about finding the right partners who could provide a reliable alternative to their existing connectivity methods. BCES chose Network Innovations, a key partner of Inmarsat, and a leading provider of BGAN M2M satellite communication services.

Powered by Inmarsat's global 3G L-band satellite network and optimized for lower bandwidth and throughput than the standard BGAN offering, with a minimum billing increment of 1 kilobyte, BGAN M2M provides a reliable, IP-based real-time connectivity service that seamlessly integrates into any network.

"The BGAN M2M service has given us the connectivity, security and cost effectiveness that we needed to complete this project."

- Scott Owens, Director of Communications and Technical Services at BCES

It supplies a reliable, always available service and connects monitoring and control applications in remote, unmanned locations, giving full visibility and management of dispersed assets across an entire operational area.

The Results

With a fully-reliable network in place, BCES has been able to complete the roll out of its automated metering infrastructure. This has enabled the successful implementation of a fair and equitable rate design for every customer. The network has also ensured the success of prepay services, which reads/disconnects/connects meters daily, giving BCES's customers more choices and information than ever before.

Scott at BCES concludes: "Connectivity is the key to everything we do. We don't need a super-fast service; we need a stable and reliable service. The customer service we received when implementing the BGAN terminals from Network Innovations was outstanding and appreciated in a small company such as ours. The service provided the foundation we need for our automated metering project, which has saved us time and money, and enabled us to improve the experience of our customers."

Inmarsat's BGAN M2M solution continues to serve reliably and efficiently, providing BCES with the peace of mind that meter data is always being collected. BCES plans to add to their number of BGAN terminals in Benton County, which promises to bring further benefits to the company and the county's residents, as it continues to develop its integrated intelligent grid.