



OPTIMIZE COMMUNICATIONS CASE STUDY

Dairyland Power

Rural Electric Cooperative Optimize Communications with FreeWave Wireless M2M Solutions

La Crosse, WI – Dairyland Power (<http://www.dairynet.com/>), an electric power cooperative, services more than 600,000 customers within a 45,000-square-mile area in four Midwestern states (Wisconsin, Minnesota, Iowa and Illinois), comprised primarily of rural homes and farms. It provides wholesale electricity to 25 member distribution cooperatives and 17 municipal utilities. Dairyland strives to provide exceptionally reliable energy and services to its customers at competitive prices, and aims to exceed its members' expectations.

In 2000, Dairyland identified the need for a M2M communications system to monitor critical field data and streamline power delivery. At the time, wireless M2M communications in the utilities industry was a relatively new concept, and Dairyland's existing infrastructure was complicated, expensive, inefficient, and cobbled together offerings from about 30 different technology providers. Specifically, Dairyland needed an integrated M2M solution tailored to meet the needs of electric power distributors that enabled high-speed, reliable, and cost-efficient communications in remote locations under harsh weather conditions and line-of-sight challenges from hilly terrain.

FreeWave Usage and Applications

Dairyland Power learned about FreeWave Technologies in 20xx, starting with a small installation of FreeWave's FGR series radios to test before purchasing the entire system. After conducting a distribution automation study that compared various types of communications technologies operating in similar environments, Dairyland made the decision to implement the FGR series radios exclusively across its distribution network. During the study, Dairyland found that while other equipment similar to FreeWave was reliable, it lacked the required internal system performance.

After deployment, the FGR wireless network performed to Dairyland's expectations and FreeWave radios eventually replaced the majority of its former technology (lead circuits, analog cell phones, etc.). This upgrade to FreeWave's wireless industrial M2M solutions helped Dairyland achieve real-time data collection and fullsystem integration across its network.

Outcomes

Today, FreeWave's FGR series radios are being used for a variety of distribution automation applications within the Dairyland data communication network including: AMI backhaul, transmission capacitor

bank control, transmission line sectionalizing, and fault detection and isolation. The cooperative also uses FreeWave's HTPlus radios for applications that require more effective throughput. The radio network features a single-system design that is easily maintained. Much of the maintenance is credited to FreeWave's diagnostic software ToolSuite and 24/7 technical support.

As a member of Midwest-ISO, Dairyland participates in the energy market by bidding its generation and load into the market. Dairyland now uses the SCADA data provided by its real-time communication networks to accurately calculate these numbers. Having an internal communications network comprised of FreeWave wireless M2M solutions helps control costs, provides

system reliability, and ensures network security. While Dairyland Power's current network is nearly complete into the market. Dairyland now uses the SCADA data provided by its real-time communication networks to accurately calculate these numbers. Having an internal communications network comprised of FreeWave wireless M2M solutions helps control costs, provides system reliability, and ensures network security. While Dairyland Power's current network is nearly complete as far as communication needs, it plans to continue incorporating FreeWave's wireless M2M solutions as its needs grow in the future.

HIGHLIGHTS

- > Consolidated disparate, inefficient, and expensive former system into an integrated, fast, reliable wireless FreeWave M2M communications network.
- > Improved network performance and overall data communications reliability using FreeWave's FGR series radios.
- > Added FreeWave's HTPlus Ethernet solutions for industrial grade, high-speed Ethernet communications tailored to harsh environments and noisy RF conditions.
- > FreeWave deployment has increased effective throughput, link performance, and noise immunity



CONTACT US

5395 Pearl Parkway, Boulder, CO 80301
 TF 866.923.6168 T 303.381.9200
 For more information, visit www.freewave.com