



NH Electric Cooperative (NHEC) Partners with Green Mountain for High Capacity IP Smart Grid Network



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CHALLENGE

New Hampshire Electric Cooperative (NHEC) sought to design and implement a microwave communications network that would support their new Smart Grid Project. The challenge was to develop a highly-resilient microwave backbone system to be installed at 22 tower sites across New Hampshire that would provide the backhaul function for communications with NHEC's 83,000 electric meters.

SITUATION

Green Mountain partnered with NHEC to develop and deploy an advanced plan for purchasing, implementing, and maintaining a microwave backbone system that would support the Smart Grid Project. This infrastructure network had to be capable of the transport of their NHEC core system traffic that included Advanced Metering Infrastructure (AMI), Land Mobile Radio (LMR), and Enterprise Data.

SOLUTION

The best solution was to engineer and implement a comprehensive licensed IP microwave network for the 22 tower locations across New Hampshire. The system design covers 100% of all the NHEC meters in the State of New Hampshire. Green Mountain strategically selected the best technologies and products to achieve the lowest overall cost of ownership combined with the best long-term benefits. The technology and products selected allowed for native enterprise packet-switched network traffic and native circuit-switched (T-1s) traffic integration between NHEC's offices and existing utility infrastructure across the State. The licensed IP microwave backbone system consisted of dual, high-capacity rings with lower capacity spur links that would connect mountaintop tower sites with NHEC district offices, including new and existing infrastructure.

RESULT

The immediate result was the client's satisfaction in having a fully developed turnkey microwave network that supports project objectives, provides an efficient procurement and contracting process, and enables a smooth transition into a multi-year

deployment. NHEC's new electric meters allow the end user to manage and monitor their energy use in real time and expedite information on power outages. The new meters also open the door to a number of potential cost-savings applications and educational tools including report readings, receive pricing, and the ability to obtain signals of usage from its members.

LONG-TERM BENEFITS

There are several long-term benefits for both NHEC and its members. For the members, the new meters will allow them to better manage their energy usage by giving them access to detailed records of their energy consumption in daily, weekly, and even hourly intervals. Members will benefit from automated outage reporting since each meter is equipped with a capacitor that issues a "last gasp" signal when power is lost to it. NHEC will be able to pinpoint the power outages and respond more efficiently and effectively. The Smart Grid network will allow for the possibility of new time-based rates that can save members money and energy. For NHEC, this system will do away with manual meter reading resulting in reduced OPEX costs and truck rolls for on-demand meter reads. This modern system can assure communications with NHEC's linemen regardless of their location and replaces a 40 year-old obsolete system that had large gaps in communications, potentially endangering employees.

"The work completed by Green Mountain exceeded our expectations. Their team was punctual, professional, and consistently delivered high-quality service throughout the duration of the project. For NHEC, the most important aspect of the Smart Grid Project is that the end users receive uninterrupted service at all stages of the multi-year deployment of the turnkey microwave network. As a result of the expertise and attention to detail delivered by Green Mountain, we are confident that we will be able to make this a smooth transition and meet our overall objectives of bringing better technology and cost savings to all of our New Hampshire members."

Fred Anderson, President/CEO of NHEC