

PRIVATE AMI NETWORK KEEPS COSTS IN LINE

CASE STUDY

“TUNet provides both advanced functionality and cost predictability. It’s giving us fresh perspectives on how to better manage our distribution network and deliver first rate customer service.” Eric Marr, President & CEO



CHALLENGE

As a non-generating municipal utility facing rising wholesale rates, Saint John Energy sought new ways to stabilize costs and consumption. A “Lighting the Way, Save Every Day” conservation campaign encouraged its 35,000 customers to reduce usage. But PR can only go so far. The utility also turned to its Engineering & Operations group to initiate programs that would result in more efficient operations and, ultimately, better use of staff, resources and finances. Advanced metering offered the remote reading, customer profiling, load control, overall system performance and decision support tools desired, but SJE was not prepared to incur the heavy cost of a full roll-out nor pull staff from other pressing projects.

SOLUTION

Tantalus offered SJE the right combination of functionality, flexibility and guaranteed cost containment. It commissioned TUNet® in late 2006 with a goal of having the system operational by the new year. The fast track timeline ruled out AMR technologies requiring substation build-outs or poletop collectors, which can add 40% to the start-up cost and lengthy delays. With TUNet, a city-wide wireless network was established in just three days. The rapid and reliable two-way AMI network enabled SJE to automatically collect interval reads, monitor power quality and instantly detect outages. By the year-end deadline, close to 1000 meters were deployed at 40 distinct locations. The utility could then build a business case for smart metering on a statistical sample representing the full range of residential, apartment and end-of-line accounts.

RESULTS

TUNet is a private communications network that provides SJE with unvarying costs. Unlike cellular or pager networks, there are no monthly line lease fees or unexpected rate increases. A low fixed annual license fee for the 220 MHz spectrum ensures cost stability; a big plus for utilities like SJE that keep a close eye on the bottom line.

The North Atlantic brings fierce gales and ice storms to this coastal city. The ability of TUNet to precisely locate outages and anomalies helps SJE prioritize response. Service crews can be dispatched to the most pressing problem first and are armed with important details. Furthermore, TUNet does not become congested during crisis periods as is often the case with public networks and, unlike PLC, communication does not cease when lines go down.

TUNet helped SJE resolve several prickly issues through access to real, not inferred, endpoint data. In one instance, a customer blamed the utility for a power surge that resulted in a blown television tube. By reviewing the power quality report, SJE verified that supply was not a factor and thus avoided an insurance dispute. Similarly, after a car crash caused two phases to slap together and create a spike, SJE referenced voltage readings and blink counts at homes in the general area and determined which were affected and which ones experienced no damage.

The territory-wide network gives SJE the freedom to introduce advanced metering anywhere within its service area. In order to increase its knowledge of consumption patterns from a cross-section of customer types, it enlisted the help of statisticians from a local university. They identified candidates for the initial deployment using qualifiers such as family size, electric or gas heat, commercial center, urban or rural location. SJE now uses this information to analyze consumption habits. With TUNet, the utility is well on its way to finding better ways to predict peaks, flatten daily usage curves, implement load control programs, and optimize rate structures for particular residential and C&I customers.

SAINT JOHN BRIEF

- Saint John, New Brunswick
Municipal electric utility; 98 employees
- 35,000 customers
31,000 residential / 4,000 C&I
- Service area: 323 sq. km. (125 sq. mi.)
- 13 substations / 75 distribution feeders

ADVANTAGES

- Private utility RF communications network provides reliability, cost stability and no unexpected rate increases
- Single radio tower enables SJE to place smart meters anywhere within its distribution network
- Easy and economical expansion of TUNet to support additional endpoints and the potential to automate water & gas metering
- Data interface with SJE’s CIS and GIS applications
- Immediate outage reporting allowing for a more timely response, as well as better data about service disruptions for more accurate SAIDI and SAIFI reports
- System in place to introduce new money and labor saving programs:
 - virtual disconnect/reconnect
 - shorten time between meter reads and automate billing
 - locate line losses and meter inaccuracies
 - improve load factor/reduce peaks
- Provides interval data needed for dynamic pricing, e.g. time-of-use billing
- Create load profiles of targeted consumers