

# Smart Meters



Veridian's Aaron Goldman installs a residential smart meter. (Photo courtesy of Veridian Connections)



Veridian Connections Inc. is one of the largest municipally owned utilities in Ontario, servicing over 110,000 customers in a diverse, noncontiguous geographical service territory that includes the Cities of Belleville and Pickering, the Towns of Ajax, Gravenhurst, Port Hope and Uxbridge, and the communities of Bowmanville, Newcastle, Orono, Beaverton, Cannington, Sunderland and Port Perry.

The diversity of its territory has created some unique challenges related to technology, logistics and deployment in smart meter implementation. To assist in meeting these challenges, Veridian (one of the first eleven distribution companies designated by the Ontario Government to install Smart Meters) recognized that selecting the right partners would be key to ensuring the success of the initiative.

"Veridian is proud to be a leader in the Province's smart meter initiative together with the Coalition of Large Distributors. We understand that all the effort, from our first pilot to now working with the IESO to make our system Time-of-Use (TOU) ready, will be of great benefit for our customers to control their electricity demand and usage," says Michael Angemeer, President and CEO of Veridian. "And the smart meters are the first step towards a smarter electricity grid which will allow coordinated demand response programs, faster outage response and enabling of new technologies such as renewable power and electric vehicles."

To date 71,000 smart meters have been installed in Veridian's service territories. Work has also begun in establishing communication links and testing with the province's Meter Data Management Repository (MDM/R).

## The Pilot

Veridian's initial challenge was choosing a partner that could provide a cost effective, reliable system to meet the requirements of the majority of Veridian's service areas and the government's minimum smart meter specifications. As early as 2005/2006 the province's large distributors worked collectively to test and evaluate several smart meter technologies. As part of this important exercise, Veridian conducted a 400 point pilot of Elster's EnergyAxis mesh technology in the community of Sunderland. The pilot generated high customer interest.

Veridian recognized that customer acceptance of the new technology was critical to ensuring the success of the pilot and any future rollout. With this in mind, a comprehensive communication plan was put in place. Sunderland customers received a letter advising them of the pilot and were invited to a well-attended Town Hall session where they learned more about the Government's province wide initiative, the pilot itself, and the software that would allow them access to their consumption data. As part of the pilot, participants were provided next day access to their consumption data through a secure web portal (eCARE) that was created by Harris Computer Systems, a Customer Information System (CIS) vendor.

## Year One Implementation

After a successful pilot and an exhaustive evaluation and RFP process, Veridian moved ahead to deploy the Elster mesh technology in all of its service areas.

To facilitate this stage of implementation:

- A partnership with an installation contractor was established to assist staff with the installations;
- A work force management system, mCARE, was put in place to eliminate the paperwork associated with meter changes and to automatically update the meter records in the CIS ; and,
- mCARE was enhanced to provide the capability of GPS coordinates and bar code scanning for entering the meter information on the new meters.

Attention then focused on the next component of the project - Billing and Wholesale Settlements. The CIS was tested to produce a bill that would incorporate TOU rates. Electronic register reads were scrubbed against 'in-the-field' meter reads and anomalies were addressed.

As in the pilot, communication with customers continued to be a critical factor. Firstly, customers received advance notification that

# 'Mesh' Veridian's Service Territories

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Veridian would be in their area installing Smart Meters. Once the meter was installed, a package was left at the residence, containing the booklet developed by the Ministry to educate consumers about smart meters, TOU pricing and the government's initiative. In addition, a step-by-step guide to accessing eCARE was included.

By the end of 2007, 35,000 residential smart meters had been installed and Veridian was successfully communicating with 24,000 of them.

## Over 70,000 Meters Installed

Beginning in April 2008 electronic register reads gathered from Smart Meters were phased in for use in specific billing cycles. Once installation levels reached 95% saturation in a cycle and communication was confirmed and verified, manual reads were discontinued.

In its second year of implementation, Veridian installed 36,000 smart meters. The company also issued a WAN RFP for a wireless solution. Testing of the successful bidder's solution is expected to be completed by the end of the first quarter of 2009. The company has also identified that topographical differences that characterize its Gravenhurst service territory will require new or intermingled technologies. To this end, an RFPQ is being issued in the first quarter of this year to address the issue.

Throughout 2008, Veridian has continued its preparations in advance of IESO testing and transition to the MDM/R. After much research and discussion Veridian has also decided to bring the Advanced Metering Control Computer (AMCC) in-house.

## Looking Forward

The introduction of Smart Meters, communicating with the MDM/R and the introduction of TOU rates will have a profound impact on many of the business processes currently in place at Veridian. With this in mind the company is engaged in an in-depth review to determine what future processes might need to be implemented.

In addition, Veridian continues to work with the Ministry of Energy and other stakeholders to develop comprehensive communications materials for use when TOU rates are implemented. "Clearly, the quality of customer communications will be crucial to the success of TOU rates. And, we believe that we have to go well beyond informing customers of the mechanics of TOU rates. We also need to provide advice on some of the things they can do to use the new rate structure to manage their electricity costs," said George Armstrong, Manager, Regulatory Affairs and Key Projects.

Work is also underway to re-design Veridian's bill statement, so that TOU consumption and rate information is clear and easy to understand. Customer focus groups will be used to ensure that customers' needs are incorporated into the new design.

Veridian's success to-date has been the result of careful planning and four key elements:

- A comprehensive project plan
- Partnerships with key vendors
- Effective internal and external communication programs
- Recognizing the need for developing new business processes

In moving forward, Veridian will develop and release an AMI RFP for Gravenhurst in the second quarter of this year that will allow meter installations in the area to begin in January 2010. Veridian is also continuing to test the wireless WAN and hopes to deploy this solution in its Ajax and Pickering service territories by early summer. ■

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