HYDRO OTTAWA CUSTOMERS: Wise to Smart

For one hundred years electricity meters have connected utilities with their customers. In many ways, the meter is the heart of the electricity business. Now, in the world of Smart Meters and Advanced Metering Infrastructure, the meter is taking on even more significance. It now has a brain.

Hydro Ottawa, under the direction of the Ministry of Energy and the Ontario Energy Board, has replaced more than half of the electricity meters in its service territory with new Smart Meters. Quite a feat in a little more than a year given that prior to this period, it was standard business practice to replace approximately 8,000 meters per year. The company is well on its way to helping the province achieve its goal of having 800,000 Smart Meters installed in homes and small businesses by the end of 2007, with the entire province converted by 2010.

Hydro Ottawa has replaced more than half of the electricity meters in its service territory with new Smart Meters (photo courtesy of Hydro Ottawa).

The success of Hydro Ottawa's Smart Meter deployment is due to more than just the actual meter exchange. The company forged new partnerships and shared expertise and experiences with new stakeholders throughout the province. In addition to working with political and regulatory partners, Hydro Ottawa exchanged knowledge and information with other local distribution companies (LDCs) in the early stages of Advanced Metering Infrastructure (AMI) procurement and deployment planning, working closely with industry associations such as the EDA and the Ontario Utilities Smart Meter (OUSM) working group.

Working alongside five of Ontario's largest electricity distributors (collectively known as the Coalition of Large Distributors) Hydro Ottawa participated in a rigorous selection process, with oversight from the Ministry of Energy, to select five Vendors of Record for AMI, including Smart Meters and their related systems. The Energy Axis system, manufactured by Elster Metering, represented the best business case from a total lifecycle cost and technical performance perspective for Hydro Ottawa. "We were looking for a reliable AMI system that could accurately measure and track consumption based on future seasonal time-of-use pricing using wireless radio-frequency communication. These features are essential for Hydro Ottawa to achieve its Smart Metering objectives," said Owen Mahaffy, Hydro Ottawa's Program Manager, Metering Systems. "The technology enables us to have greater control and communication with the meters in our service territory. It enhances our service connect/disconnect capabilities - adding additional reports such as meter errors, warnings and statuses. It offers load profile recording, tamper detection alarms, and enables GIS capability for network visualization and meter diagnostics."

As the Ontario government continues to work to establish a "conservation culture" in the province, utilities like Hydro Ottawa have become key partners, pro-actively communicating with their customers and quickly becoming stewards of the environment. LDCs are now industry leaders when it comes to conservation initiatives, and Hydro Ottawa knows that the Smart Meter Initiative will play a defining role in this culture shift.

"Our experience has shown that Smart Meters and time-of-use pricing make people more aware of their electricity use. Once people know how their actions can impact their bill and the environment, they will be able to make more informed choices about when they will do the laundry or run the dishwasher."

Between September 2005 and September 2006, Hydro Ottawa conducted a Smart Meter Pilot project, with approximately 200 customers participating. The goal of the project, in addition to testing AMI functionality, was to introduce

Meter Technology

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customers to time-of-use pricing in order to learn if and how they would react. Participation included the receipt of monthly statements detailing electricity usage data and the commodity cost at both the current tiered and time-of-use rates. Although customers were not exposed to the real costs of a time-of-use billing regime, it certainly prompted them to learn more about their consumption habits.

The Pilot provided valuable information about the willingness and ability of Hydro Ottawa's customers to make positive changes in their electricity use. Participants showed a high level of awareness of their consumption patterns, understood what action they needed to take, and responded by shifting or reducing load. They not only made the connection between conservation and the environment, but also better understood the impact of supply and demand. Even without a price incentive to participate, eighty-eight per cent of participants made changes to their electricity use as a result of being equipped with a Smart Meter. Seventy-seven per cent time-shifted and used appliances during off-peak hours. Ninety-two per cent said that they are more likely to take steps to use less electricity during on-peak hours.

Building on the success of Hydro Ottawa's Pilot project, the OEB enlisted Hydro Ottawa to help facilitate their Ontario Smart Price Pilot between August 2006 and February 2007. The key difference was that this Pilot included actual price driven results. The program was over-subscribed within a week, forcing the utility to turn some customers away. Results showed that customers felt time-of-use pricing and periods were easy to understand. Seventy-eight per cent of participants said they would recommend time-of-use pricing to others, which isn't surprising given that seventy-five per cent of participants paid less on time-of-use compared to current rates.

It has become clear that the LDCs and their ability to garner customer uptake will be an essential element of making the Smart Meter Initiative a success. Based on the positive results from both Pilots, Hydro Ottawa customers appear ready to embrace change. "Ultimately, it will be the customer who determines the true success of the Smart Meter Initiative. They are looking to their LDCs for information, guidance and the means to forge ahead in conservation efforts. With the help of Smart Meter technology, Hydro Ottawa is ready to answer that call," said Mahaffy.

Hydro Ottawa Limited, a wholly owned subsidiary of Hydro Ottawa Holding Inc., is the second largest municipal electricity company in the province. Hydro Ottawa is responsible for the safe, reliable delivery of electricity to more than 282,000 residential and business customers in the city of Ottawa and the village of Casselman. ■