

Implementers of the Government's Smart Meter Initiative

Distributors remain the vital link between customers and the province's electricity system, just as they have for over a century in communities across Ontario. Not surprisingly, the distribution sector, with its expertise and experience in metering, has assumed a central role in implementing the government's smart meter initiative - an initiative that will see the installation of smart meters in all residential homes and small businesses in Ontario by the end of 2010 and the transition to Time-of-Use tiered pricing by the summer of 2011.

The province's electricity distributors are the industry players responsible for purchasing, owning, and installing smart meters. Local distributors will also continue in their role as billing agents and will carry on their responsibilities as the operators and maintainers of the meters.

A New Way to Manage Electricity Usage

Smart meters provide the technology that allows low volume consumers to not only track how much electricity they use at different times of the day, but the cost implications of using electricity during on-peak, mid-peak and off-peak hours. Armed with this information electricity consumers will be able to better regulate their usage when prices are highest during on-peak hours and take advantage of lower rates in off-peak hours.

On-peak: This time period represents when demand for electricity is highest. On-peak can represent a number of time ranges during the day, depending on the seasons. Pricing rates are adjusted and change according to the summer and winter seasons.

Mid-peak: This time period represents when demand for electricity is moderate. Mid-peak represents two time ranges during the day, depending on the season. Pricing rates are adjusted and change during summer and winter seasons.

Off-peak: This time period represents when demand for electricity is lowest. All weekends and holidays are priced using the off-peak rate. On weekdays in the summer and winter, off-peak periods occur in the overnight hours.

TOU pricing better reflects the way the electricity market works. Prices rise and fall over the course of the day, and tend to drop overnight and on weekends, based on the amount of supply available and the levels of demand. Until now, the more expensive (daytime) and cheaper (night time) prices of electricity had to be captured in a single rate, simply because our meters could not report when electricity was used.

The smart meter initiative supports key aspects of the GEA legislation. Ultimately, it will play a critical role in helping the province achieve its conservation and demand management goals – providing both customers and distributors with the tools they need to engage in load shifting and electricity usage management. Additionally, it represents an initial step towards creating smart local grids - grids that will transmit user information freely between customers and distributors.

A smart meter automatically records when electricity is used. Smart meters record total electricity consumption hour by hour, and send that information automatically through wireless technology. Smart meters make Time-of-Use (TOU) prices possible with the ability to measure when electricity is used, and allow for different prices to apply at different times of the day.

Smart meters will provide consumers with the tools and information they need to help them reduce their peak demand and more effectively manage their electricity usage and costs.

- Distributors have already installed close to 4 million smart meters in homes and businesses across Ontario.
- The government's target is to transition 3.6 million customers to Time-of-Use (TOU) tiered rates by the summer of 2011.
- It's expected that one million customers will have made the transition to time-of-use pricing by the summer of 2010, with the remaining 2.6 million customers targeted to make that transition over the coming year.
- Data analyzed to date from distributors whose customers have migrated to Time-of-Use (TOU) rates indicate that the switch to the new pricing regime has resulted in minimal/negligible bill increases. Those customers are now using TOU rates as a tool to help them better understand and manage their electricity use and costs.

The Meter Data Management and Meter Data Repository (MDM/R)

Ontario's provincial government passed legislation in February 2006 to enable the implementation of smart metering in the province. Bill 21, the *Electricity Conservation Responsibility Act*, provided the government with the flexibility to determine the best options for the governance, ownership and regulatory structure of Ontario's smart metering initiative. The legislation also created a new Smart Meter Entity (SME), authorized to manage and aggregate data related to consumers' electricity consumption.

In the summer of 2006, the government entered into an arrangement with the Independent Electricity System Operator (IESO) to take on the responsibility for program management of the Smart Meter Infrastructure (SMI). The IESO's main objective was the establishment of the MDM/R functions and its successful system integration into the end-to-end SMI and customer information systems.

The development and delivery of the MDM/R, including procurement, technical specifications, standards and integration with the metering infrastructure and customer information systems owned by local distributors are all being managed by the IESO.