Ontario Energy Board
P.O. Box 2319
2300 Yonge Street
26th Floor
Toronto ON M4P 1E4
Telephone: 416 481-1967
Facsimile: 416 440-7656

Commission de l'énergie de l'Ontario
C.P. 2319
2300, rue Yonge
26e étage
Toronto ON M4P 1E4
Téléphone : 416 481-1967
Télécopieur : 416 440-7656

Ontario

Backgrounder

January 26, 2005

The Ontario Energy Board's Smart Meter Implementation Plan

Background

The Government of Ontario has established targets for the installation of 800,000 smart electricity meters by December 31, 2007 and installation of smart meters for all Ontario customers by December 31, 2010.

In July 2004, the Minister of Energy asked the Ontario Energy Board to provide a plan to implement smart meter targets. The plan released today outlines a basic smart meter system in Ontario to measure how much electricity a consumer uses each hour of the day.

The proposed plan identifies the mandatory technical requirements for smart meters and the support systems distributors will require; sets priorities for implementation in order to meet the government's targets; identifies regulatory mechanisms for the recovery of costs; and identifies how barriers can be mitigated. In addition, the report addresses competitiveness in the provision and support of smart meters and the need for and effectiveness of non-commodity time of use rates.

The scope of the proposed plan will make Ontario the first jurisdiction in North America to:

- automate all meter reading and reprogramming read periods using two-way communication within a region with multiple distribution service areas;
- ensure the system can record hourly data for every customer; and
- provide information on the previous day's electricity use to all customers, so they can review their actual electricity use and understand how the amount they use and when they use it affects what they pay.

The Board submitted its final implementation plan to the Minister following an extensive public consultation process that involved representatives from local electricity distributors, meter suppliers and meter service companies, consumer groups and members of the public. Stakeholder working groups developed content for the Board's consideration in the areas of meter specification, data and communications interfaces; planning and strategy; and, cost considerations. The

Board also issued a draft implementation plan and received over 80 submissions from stakeholders in response.

During the various consultation phases, the Board very seriously investigated several alternative options, including taking metering out of distributors' regulated functions and making it a competitive service.

Highlights of the Final Smart Meter Implementation Plan

Through wireless communication or other technologies, smart meter data would be transferred daily to the local electricity distributor. Following the adoption of Ontario's pending electricity-pricing plan, distributors would use that data to charge customers an energy price that varies depending on when the electricity was consumed. Customers would have access to their data by telephone or Internet the following day. Distributors would transmit customer consumption data to retailers for those customers who had signed with retailers.

The smart meter system proposed by the Board is based on two-way communication (data transferred to and from the meter to the distributor). This does not necessarily mean the system will be able to provide functions such as customer display, integration with load control systems, interface to smart thermostat, voltage monitoring, earlier payment, load limiting and remote cut-off. These functions depend on the availability of supplementary devices at additional cost.

The Board expects that retailers and other energy services companies will be prepared to offer such enhanced services for a fee as they become available.

The proposed smart meter system would support current methods of charging all customers. Some larger commercial and industrial customers pay delivery charges based on their maximum electricity demand or based on their power factor (rather than on total consumption, which is the basis used to determine the delivery charges for residential and smaller commercial customers.)

The implementation plan does not mandate a specific system or a particular vendor. The type of system that is best for any distribution territory depends on many factors, particularly customer density and geographic factors. Each electricity distributor will have to determine what works best in its territory, as long as the system selected meets the minimum technical standards proposed by the Board.

In all areas of the province, large customers that have peak demands over 200 kW (maximum electricity use at any point in the month) will get interval meters first. These meters, which measure consumption in 15-minute intervals, can be installed quickly because the meters will be the same as the ones already installed for many industrial customers.

For all other customers, the Board proposes a two-phased plan that focuses on large, urban distribution companies until the end of 2007 and the remainder of the province starting in 2008. This approach focuses efforts in such a way that the 2007 target of 800,000 meters installed is achieved while minimizing technology or implementation risks that could threaten the overall success of the initiative.

The advantages of this approach range from better project planning and control to the opportunity to test economies of scale and to prove technologies. Because this group represents more than 40% of customers in the province, it can achieve the 2007 installation target of 800,000 meters and also provide a diverse but controllable pilot deployment from which the Board and other distributors can learn.

The Ministry of Energy, the Ontario Energy Board and large local electricity distributors will work together to implement smart metering systems in Ontario. All three entities will help consumers understand the system and get the benefits. The Ontario Energy Board will put in place the regulatory framework to help the distributors and allow the systems to be purchased.

Customer Impact

When customers are charged based on time-of-use, they have an incentive to shift load or reduce load from peak periods when electricity costs more. Customers will be billed on their actual use and have control over their commodity costs. Customers will pay according to what they use and when they use it. And those who conserve will not subsidize those who do not. Their response to shifting or reducing their electricity consumption depends on newly planned commodity price plans, distribution rate structures and effective demand management programs.

Meters, once installed, can result in fewer estimated bills, accurate bill readings on customer moves, and verifying that service is restored after outages.

Distributors may also make business cases for functions that benefit them such as voltage monitoring, earlier payment, load limiting and remote cut-off.

Retailers can obtain more information on their customers' use patterns. They can manage their risk and offer better and more targeted price plans.

For more information on the Board or to view the proposed smart meter implementation plan or its executive summary, please visit our web site at www.oeb.gov.on.ca or contact the Customer Service Centre at 416-314-2455 or toll-free at 1-877-632-2727.

Estimated Costs

- The capital cost of installing smart meters for all customers in Ontario is estimated at $1 billion.

- The plan proposes that costs be included in the distribution rate as soon as a distributor starts to install smart meters. The proposed plan estimates that the smart meter cost for residential customers will increase gradually. When all smart meters are installed by December 2010, the incremental cost may be between $3 and $4 per month per customer including all capital costs and net operating costs.

- The amount distributors will be allowed to charge customers will be determined through a full and public rates process.

The plan proposes that distributors choose the type of smart metering system that best suits their regional conditions and customer mix. Distributors will continue to be responsible for the installation, servicing and reading of the meter just as they are now.

-30-

For more information please call Donna Garant at 416-440-8140.

APPENDIX A:

Major Revisions to November 9, 2004 Draft Implementation Plan

November 9, 2004 Draft Plan	January 26, 2005 Final Plan
One-way communication: Through wireless communication or other technologies, the data would be transferred daily to the local electricity distributor. The distributor would use that data to charge customers an energy price that varies depending on when the electricity was consumed.	**Two-way communication:** Data would be transferred to/from the meter to the distributor. Distributors would also use data to charge customers an energy price that varies depending on when the electricity was consumed. The newly proposed system also allows for possible functions such as customer display, integration with load control systems, interface to smart thermostat, voltage monitoring, earlier payment, load limiting and remote cut-off. These functions depend on the availability of supplementary devices at additional cost.

Proprietary standards: Vendor specific; details are not in the public domain. In addition, these standards are only used and accepted by a specific vendor.	**Open access:** Possible future applications to combine with gas and water meters. Also, for retailers and third-party applications manufacturer makes available, with or without a licensing fee, the information necessary for another manufacturer to communicate with a device (i.e. potential load control, to remotely access and locally process meter data).
Deployment: Large customers with peak demands over 200 kW will get interval meters. In addition to these priority installations, about 12% of the existing meters in the province will need to be changed to smart meters by December 31, 2007 to meet the government's target.	**Deployment:** As in the initial proposal, large customers with peak demands over 200 kW will get interval meters. However, under the revised proposal, large urban distributors, representing over 1.5 million consumers (provincial total of about 4.3 million), are to install the initial 800,000-meter deployment for small commercial and residential customers by the end of 2007. The results of this process allow the Board to provide guidance to smaller distributors in the second phase of the project (2008 start) and will eliminate the need for all distributors to form buying groups immediately.