



***Business Consulting Services  
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Mr. Peter O'Dell  
Acting Board Secretary  
Ontario Energy Board  
P.O. Box 2319  
26th Floor, 2300 Yonge Street  
Toronto, Ontario  
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Dear Mr O'Dell,

**Re: Comments on Board staff discussion paper on the implementation of smart meters in Ontario (RP-2004-0196)**

We at IBM appreciate the opportunity to provide input to the Board on this important initiative. We are committed to helping Ontario meet its smart metering targets in the most rational and beneficial way possible.

### **Our Credentials**

We have been actively working with electricity industry participants around the world in the assessment, design, implementation, and operation of similar metering initiatives. Most notably, we have exclusive global rights to the business case, technology, and implementation experiences of Enel SpA in its ongoing rollout of 30 million automated meters in Italy. This is the only large scale rollout of advanced bidirectional metering technology in the world. Our staff have also worked closely with Ontario industry participants and have held leading roles in Ontario's other recent large, provincewide industry initiative—the implementation of the competitive wholesale and retail markets.

### **Our Comments**

Our comments focus on three areas indicated in the Board staff paper.

#### *Bidirectional Communication*

Being able to send information to the meter provides multiple short-term and long-term benefits to industries and consumers. These benefits include:

- **Improved customer feedback.** The staff paper highlights the value of feedback to customers on their energy usage and costs. As Ontario moves into more sophisticated pricing of energy and its delivery, the ability to provide feedback to customers on energy costs becomes nearly impossible without bidirectional communications. Technology is already in use that enables utilities to remotely update the pricing parameters on a customer's meter or other household display to reflect changes to fixed and time-of-use pricing, as well as the impact of more dynamic arrangements, such as peak or interval pricing.
- **Enablement of load control.** For instance, during emergencies, using bidirectional communications allows utilities to remotely curtail power at each meter point, thereby reducing generation and transmission capacity needs and the use of peaking plants. The same feature can also be used by the distributor to limit the load available to delinquent customers.
- **Extended life of the technology.** Electronic meters are more akin to remote computing devices than electricity network hardware. As such, they require regular IT maintenance to enable new features and fix errors. Bidirectional communications enable the remote installation of computer "patches" without a site visit.

In applying the business case behind the Enel smart metering initiative to other utilities, we found that a substantial portion of the benefits are derived from bidirectional communications. Only with the benefits created by the ability to communicate *to* the meter is the return increased to the point where the investment is warranted.

#### *Purchasing Power*

The Enel initiative is the best example of the significant savings possible from the large-scale purchase and implementation of advanced meters. Our preliminary analysis indicates that purchases of fewer than 500,000 meters cost a premium of up to 80% over larger block purchases. So, for example, while a large utility ordering over 500,000 meters may pay \$200 per meter, a smaller utility ordering fewer meters would pay \$360 each for the same meter. Using this ratio, in Ontario, combining the buying power of the province's small- and medium-sized distributors could save more than \$400 million in meter purchase costs alone.

Similar economies of scale are possible in the implementation and operation of the technology. Achieving significant savings in meter installation in Ontario will take more than separate, efforts focused within each distributor's territory. Enel is installing, on average, 40,000 meters per day (not 40,000 per month as noted in the Board staff paper). Given the size of most Ontario distributors, achieving similar-scale installation efforts in this province will require coordination beyond most distributor boundaries to ensure installations are scheduled for entire regions.

There are several different approaches to the procurement, purchase, installation, and operation of smart meters. When evaluating each option, it is important to recognize that to offer any substantial savings, suppliers will need predefined delivery quantities and schedules that maximize block quantities. It should do so without adversely affecting the local accountability and customer relationships inherent in Ontario's distributors.

#### *Interim Targets*

Meeting the government's smart metering targets is a significant task. For instance, compared to the implementation of the province's competitive electricity market between 1997 and 2002, the smart metering initiative will:

- **Cost more.** Meter purchases alone could exceed the combined money spent by the IMO and market participants in preparing for market opening.
- **Take longer.** Opening the market ultimately took four and a half years after the government's announcement. The 2010 target is five and a half years from now. Consistency and central coordination will be essential to successfully implementing the initiative on time.
- **Have a greater impact on customers.** When coupled with changes in rate structure, this initiative can provide instant feedback on energy use, support more complex and dynamic rates, and enable direct load control of household appliances. In comparison, for many households, the introduction of a competitive retail market brought about only a new monthly bill format and perhaps a contract with a retailer. Significant efforts in designing delivery and commodity rates, creating effective installations and operational processes, and educating customers are required to ensure that customers accept and desire the new meters.

The challenge in this smart metering initiative is not in meeting the pace of installations required. Achieving monthly installation requirements calculated in the staff paper has been proven possible. Enel, for instance, has been installing 10 times that number per month for over three years now. The true challenge is ensuring that the right environment is created to encourage action by all parties involved. The implementation plan must include interim targets to ensure that:

- A technical vision is defined that provides benefits to distributors and encourages their action
- Contracts that reward quality and on-time delivery are in place with suppliers.
- The necessary enhancements to codes, regulations, and other definition documents are in place for the core elements and all of the new features (such as third-party meter data access and remote load limiting of delinquent customers) that are enabled by the technology
- The necessary governance and management arrangements are in place to set direction, monitor progress, and identify and resolve issues

We appreciate the opportunity to comment on the Board staff paper. We look forward to the planned workshops. Should the Board have any questions or require any clarification, please feel free to contact me or another IBM representative.

Yours sincerely,



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