August 12, 2004

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

Re: File # RP-2004-0196
The OEB Staff Discussion Paper – Implementation Plan for Smart Meters in Ontario

Elster Metering appreciates the opportunity to provide comments on the OEB Staff's Implementation Plan for Smart Meters in Ontario. We have reviewed the discussion paper and found it to be a very good summary of the issues that are facing Ontario. The staff of the OEB are to be congratulated on clearly presenting the options and issues that present themselves as Ontario works to meet the targets set out by the Minister of Energy.

Elster Metering is a leading supplier of electricity and water meters and related AMR equipment and systems in Canada. Elster Metering (formerly ABB Metering) is a division of Canadian Meter Company, Canada's leading gas meter supplier, and part of E.ON's Ruhrgas Industries. Elster, along with Ruhrgas Industires' other metering divisions, offers integrated, cost-effective solutions including advanced electricity meters, communication solutions and metering automation systems for residential and commercial and industrial applications. Designed to meet the diverse electricity metering requirements of a global customer base, Elster's metering products include high accuracy ANSI and IEC electricity meters featuring the ALPHA meter line, and the EnergyAxis System with intelligent two-way communications.

As much as possible our response is structured to follow the order of the discussion paper and references the corresponding section numbers. However before we comment on the separate sections we would like to make two points.

First, the OEB should recognize that both time of use (TOU) and interval data can be used to accomplish the government's goals. Each has it advantages and disadvantages. Interval data provides more granularity and is more useful for load studies, etc. It also can be manipulated into whatever time periods are needed. It however requires more complex communications and computer systems to collect, store and processed to create the billing information.

TOU does not provide the granularity of interval data but has the advantage of a lower cost solution and much simpler for distributers to implement. The amount of data that will have to be processed is much lower. For example to create a monthly bill for an interval metered customer (based on 60 minute intervals) will require the collection and

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processing of 720 pieces of data. For a TOU customer (assuming 2 time periods and a total) 3 pieces of data will have to be read and processed.
Secondly Elster believes that the definition of a Smart Meter should be expanded to specify that the meter not only be capable of "reporting usage according to predetermined time criteria" but that it also be capable of storing that data in internal registers or recorders. This ability is necessary to minimize the risk of lost data. It also then defines a Smart Meter as opposed to a Smart System.

Section Comments

2 Background – Price response
The definition of what a price signal is should be clarified. Our suggestion is: "A price signal is a message sent to customers in the form of a price charged for a commodity with the intent to produce a particular result."

Definition of a Smart Meter

The definition of a Smart Meter should be expanded to include the capability of storing TOU and/or interval data. Smart meters measure, record and store energy consumption. They also dispaly same usage values on the meters that it reports up to an AMR System.

2.2.1 – Benefits to Customers

The collecting of energy usage as interval data is the only way to ensure that customers pay the actual price for the electricity at the time that they use it. TOU will require some kind of "true-up" between the price charged for the particular time period and the average HOEB for the period.

In the third paragraph of this section it states that "When individual use is interval metered, a consumer..." Elster notes that TOU can accomplish the same goal and should be included in the statement.

2.2.2 – Benefits for the System and the Market

There are additional benefits when the system peak is lowered. Much of the generation that is used to supply peak requirements is coal fired. Lowering the peak demand then lowers the pollution caused by generation. Other benifits include:

- Lower energy prices
- Lower operating costs
- Fewer system failures

2.2.4 – Benefits for Retailers

Retailers will also have the opportunity to provide value added services. These could assist consumers in reducing and shifting their consumption and might include:

- Posting usage patterns on the internet
- Providing consulting services aimed at assisting consumers in reducing their demand

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There may also be opportunities for meter services providers to own and operate AMR systems for utilities. This may be of particular benefit for small utilities that may not have the resources to operate their own systems.

2.2.5 – Benefits to Distributors

This section appears to assume that the introduction of Smart Meters will necessitate the introduction of Automatic Meter Reading systems. Elster agrees with this assumption. The increased amount of metering data can only be efficiently collected through an AMR system.

Depending on what AMR system a distributor chooses they may realize benefits that go beyond those listed. These could include:

- Fewer meter reading errors
- Fewer missed reads, requiring additional site visits or estimated bills
- On demand reads for move in/out
- No site visits implement new TOU rates
- Energy diversion and tamper detection

3.1 – Procurement Strategy

Elster has no objections to a comprehensive procurement strategy. However, based on our experience with existing buying groups in Ontario we note that there may be limited benefits for distributors.

In order for suppliers to offer volume discounts there has to be conformity of requirements. Our experience has shown that each distibutor has different programming requirements for their meters, particularly commercial and industrial meters. The need for distributors to negotiate common specifications may be difficult.

Should the OEB decide to implement aomprehensive procurement strategy, Elster believes that it should be optional for distributors to participate. This will not prevent distributors from choosing the meters and AMR systems that best meet their needs.

3.2.2 – New Homes

As noted earlier the introduction of smart meters will likely make it necessary for utilities to also purchase new AMR systems. As stated in section 2.2.5 the introduction of these AMR systems will also give the distributors benefits beyond just meter reading.

In order for distributors to realize these benefits they will have to devlop strategies for the introduction of the AMR system in their service territories. Typically this is done by mass deployment of meters in whole sections of the service territory. The requirement for smart meters in all new homes and businesses may hinder a distributor's ability to carry out their strategy.

If the new home is located in an existing neighbourhood that the distributor has not yet scheduled for deployment of the AMR system, the distributor should not be mandated to

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put a smart meter on that site until the AMR system is deployed in that area. It is likely that a meter removed from an area where the system is being deployed could be used for the new home, preventing the creation of a new stranded asset.

If the OEB decides to require smart meters on new installations it should liimit that requirement to areas (e.g. large new subdivisions) where the installation of a smart meter will not hinder a distributor in carrying out their AMR strategy.

3.2.4 – Self-selection

Elster has experience with self-selection program through our involvement with our water meter customers. Many cities, when introducing water meter programs have allowed their residents to request a water meter be installed in their home before their neighbourhood is targeted for mass deployment. These programs have typically had very low enrolment figures and have made it more difficult and costly to implement an overall deployment strategy.

As noted in our comments to 3.2.2 the need to install smart at request may also make it difficult for a distributor to implement a AMR deployment strategy. This may negatively affect the distributor's ability to realize the operational benefits outlined in 2.2.5.

4 – Cost Recovery

In the cost categories list, "Meter" should be "Meter material cost". This will differentiate the meter hardware costs from an additional cost not listed. That is the cost of integrating new AMR systems into a distributors business system. That could be a significant cost for distibutors and should be added to the list of cost categories.

In the 2nd paragraph the second sentence should be changed to ' time differentiated meter data'. There should not be an underlying assumption it will be interval data. It could be TOU data.

In the 3rd paragraph, while current policy under DSC is focused on commercial and industiral metering, cost recovery shouldn't assume interval meters. The paragraph should be reworded to be broader than just interval meters.

5 – Metering Functions

The definition of a Smart Meter should include at a minimum the ability to measure, record, store and report usage according to predetermined time criteria. Additional functionality should be market dirven.

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5.2 - Reporting

The Minister's directive "requires that a smart meter be adaptable or suitable, without removal of the meter, for seasonal and time of use commodity rates, critical peak pricing and other foreseeable electricity rate structures."

TOU meters can be used to meet this requirement. The newest generations of TOU meters that are available can record energy consumption in different registers for specific time periods but also allow for a critical tier over-ride that allows the retailer or distribution company to signal when a critical peak time will occur. The meter would then accumulate usage in a separate critical tier register. These meters and systems allow for CPP and dynamic TOU where tiers could be changed as needed. TOU meters also have the ability to display the energy consumed during each specific time period. Interval meters do not have that capability.

TOU also has the advantage of being more easily understood by residential consumers. When consumption is divided into large time periods, and the time based usage is clearly printed on bills, consumers will find their bills more meaningful.

5.3 – Data Storage

The OEB correctly indicates that one of the issues will be the amount of data that will have to be collected, validated, edited and stored with interval meters.

Using TOU meters for residential consumers instead would greatly reduce the amount of data storage reguirements. In addition, reading the TOU data directly from the meter registers reduces the amount of validation that is required. If a TOU meter is programmed with three bins (time periods) and an additional critical peak bin and billing is done on a monthly basis, 48 data sets would need to be collected and stored per consumer.

5.4 – Bi-directional Communication

For distributors to realize most of the benefits of an AMR system as detailed in 2.2.5, bi-directional communication is necessary. This will help offset the costs of the systems. Bi-directional comunications are necessary for a distributor to change the TOU switch times, implement CPP and send price signals to the meter. However the bi-directional communications should be transparent. The communications network should not perform metrology function but rather be a pipe for sending data.

6 – Ownership

The OEB should be carefull if they allow contestability of meter provision. As noted earlier the introduction of smart meters will likely make it necessary for utilities to also purchase new AMR systems to collect the increased amount of data. These systems require all meters within the coverage area to be compatible with the system to be cost effective. If individual consumers are given the right to purchase their own meters from independent suppliers mechanism should be put in place to ensure that the meter's type and function meets the conmpatibility requirements of the system. Otherwise operational benefits will be lost leading to increased costs to the distributor.

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The providing of meter services should be contestible. For example third parties could host AMR software and provide meter reading services to distributors.

7 – Measurement Canada Considerations

For some time now Measurement Canada has been reviewing its policy on time of use and interval metering. Recently they issued Bulletin GEN-31, their policy on Multirate Register Metering. This policy does not place any limits on the use of multirate register (TOU) meters or the use of interval meters used in multrate metering applications. It clearly acknowledges that the “setting and application of billing rate conditions” is a provincial matter and outside the jurisdiction of Measurement Canada.

7.2 – Production and Installation

There is adequate manufacturing capacity that manufacturers will be able to supply the volumes of meters given in Table 1.

Elster Metering would be happy to meet with OEB staff to discuss and clarify our comments. We welcome the oppurtunity to continue our involvment in the process of development of an implentation plan for smart meters in Ontario.

Yours truly,

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