CHATHAM-KENT HYDRO INC.

SUBMISSION

TO THE ONTARIO ENERGY BOARD

RP-2004-0196

IMPLEMENTATION PLAN FOR SMART METERS IN ONTARIO

August 13, 2004

1 INTRODUCTION AND PAPER OVERIVEW

1.1 Directive

The implementation plan for the achievement of the Government of Ontario's smart meter targets is an aggressive schedule that can be accomplished. The schedule may create exceptionally higher Operating & Maintenance (O&M) costs in the future for the Federally required meter reverification program, as the installation period will not be equally spread across the current meter seal life. If Measurement Canada does not address the rules, the future workloads will be pooled and will increase at an exponential rate with new E-26 initiatives. The industry would also be well served to have a temporary dispensation for all meter reverification during this period to allow a more structured approach to the installation of smart meters.

1.2 Scope

The scope of the project as outlined in the discussion paper is consistent with the Minister's directive even though the details about time-of-use rates, technical standards, cost recovery and implementation are yet to be developed. One item that we believe is crucial is the role and the need to change the current standards and requirements by Measurement Canada. Though section 7 in the Discussion Report does mention Measurement Canada, we believe direct involvement by them in the working group would be crucial.

Net metering is also one of the Government of Ontario's initiatives and has not been mentioned in the discussion paper but may be an additional item to consider in the scope of smart meters.

2 BACKGROUND

Dynamic Price

Chatham-Kent Hydro (CK Hydro) would support a Regulated Price Plan (RPP) and feel it would be consistent with our suggestion on page 9 of our submission to the Ontario Energy Board (OEB) in RP-2004-0020 regarding the efficiency consultations that a method to use a commodity pricing similar to the Quarterly Rate Adjustment Mechanism (QRAM) that is used in the Ontario's gas utility industry could be used in the electric industry.

Fixed rates with periodic changes to reflect the actual cost of the commodity is important to smooth the impacts of volatile market, especially for our fixed income residential customers.

Price Response

Though it is understood that the Minister is directing our industry to install smart meters for all customers the primary benefit will likely be seen where industry and even some smaller commercial customers can shift some load to off peak periods. There may not be as great a benefit to the system from residential and smaller loads as these customers have fewer opportunities to shift load. CK Hydro believes an awareness of the customers' consumption may be the most important tool for residential customers.

CK Hydro points to studies like the "Sarah Darby study from the Environmental Change Institute, University of Oxford" that demonstrate that by using devices that provide consumers with information on their consumption and make them more aware of their consumption habits. The consumers will change their habits and will reduce consumption in the order of 10%. This awareness can be achieved simply by installing monitors that will provide the customer with current consumption or provide more information on their bills rather than expensive time of use metering.

2.1 Current Requirements

The Distribution System Code (DSC) code requires distributors to install an interval meter when it requested by customers, at their cost. If interval / time-of-use meters becomes mandatory amendments to the code will be required. The DSC will have to also include what the customer will be required to pay for. More comments on cost recovery are provided in Section 4.
Changes to the DSC may also be required to have consistency between Local Distribution Companies (LDC) in having the customers responsible for any associated phone line and maintenance costs.

CK Hydro recommends changes in the Retail Settlement Code (RSC) are required in sections 11.1 & 11.2. CK Hydro does not believe direct access to the meters is necessary. By allowing direct access and the right for a customer to interrogate their own meter inhibits the type of communication technology a LDC may implement for economic and efficient operation. CK Hydro believes that access to the metering data is what should be required in the RSC.

2.2 Advanced Metering Considerations

2.2.1. Benefits for Customers

Though we agree that the benefits of interval/time-of-use meters will be realized in customer classes where load can be shifted to off-peak times, we continue to believe that cheaper monitors of the consumption may provide the same affect for the small users such as the residential customers.

2.2.5 Benefits for Distributors

CK Hydro agrees that the electric industry will benefit from customers who are using energy wiser and shifting more demand to off-peak periods. Distribution systems are currently designed to withstand peak loads. By shifting peaks, there may be opportunities to maximize existing system capacities and delay requirement for increased capital. Other operational benefits could potentially be realized by implementing a technology that would allow for earlier response to outages, management of crew activities, engineering data as well as supporting CADI, SADI statistics.

However these benefits will be offset by additional costs in metering, meter reverification and stranded costs.

CK Hydro customers receive a joint bill for electric and water services. If the water companies are not in a position to take part in the new technology, synergies currently experienced in the billing and collecting activities will be lost, therefore increasing costs to the end use customers.

The Minister has recently said that the LDC should be customer focused. An interpretation is for the LDC to provide superior service to both electric and water customer at a fair and reasonable price. CK Hydro believes that the electricity initiatives should not negatively impact the water companies and the end use customers.

3 ESSENTIAL ELEMENTS OF AN IMPLEMENTATION PLAN

3.1 Procurement Strategy

CK Hydro believes that it would not be necessary to have central procurement of meters. Economies of scale in the procurement of metering and metering devices

will be realized naturally due to the volume of meters being sold in Ontario. This would be similar to purchasing of transformers, poles and conductors. A central purchaser will result in additional overheads and administrative costs.

The focus must be that all LDCs use a common meter standard and protocol. Without a common standard there would not be the volume discount opportunities in Ontario. The use of similar technologies could assist in rationalization in the LDC sector easier.

3.2 Implementation Priorities

The implementation of the over 50 kW group initially along with new homes seems realistic provided the costs can be recovered in a consistent manner for all LDCs. The potential of stranded assets must be considered. CK Hydro feels retrofitting existing meters will eliminate most of the stranded costs issues, provided Measurement Canada approves the retrofit.

If retrofitting current meters is not an option LDCs should be able to accelerate the depreciation of the current meter population. CK Hydro would recommend that the current population be depreciated up to 2015, this is a 10 year period. This should reduce the impact to the customers as a shorter time period may create some larger rate impacts.

The OEB should review the depreciation rates for meters. Due to the new technology and the electronic components in the meters it is expected that these meters will not last as long. It is important to ensure that the depreciation rates that are used, reflect the useful life of the meters and the customers are paying an appropriate amount for the meter.

The focus should be on customers that have a greater opportunity to shift peak demand load to off-peak periods. CK Hydro agrees that concentrating on the 50

kW and above group should be the primary target. However if all customers in all classes are to be smart metered by 2010 the implementation needs to be started concurrently as the majority of the meter population lies in the <50 kW class. This would be a tremendous challenge to achieve in just a three year time frame as well as further complicating future O&M costs associated with reverification as outlined in 1.1 comments.

To demonstrate the challenge for CK Hydro, which would be similar for all LDCs, to have all customers with a demand of 50 kW and above with interval meters is a total of 400 customers in a 3 year period (2005 to 2007). To install smart meters or interval meters in the remaining customers, this represents 32,000 meters in a 3 year period (2008 to 2010).

During the installation period from 2005 to 2010 an issue will arise as to what rates the customers will be charged. CK Hydro recommends the societal cost approach for the distribution costs, to be shared amongst all customers in the class whether they have the interval meter yet or not. How should the commodity be charged to the customer?

3.3 Interim Targets

To achieve the over 50 KW customer target by 2007 as identified in the OEB paper, Chatham-Kent Hydro would be required to install 12 meters per month. This would be reasonable but would require additional staff or contractors to meet the objective which would require additional costs recovery from the customers.

3.4 Process Driver

Chatham-Kent Hydro believes the OEB should be the process driver similar to the role they played as LDC's prepared for Market opening. Periodic reporting to the

OEB on the distributors status of achieving the smart meter objectives would be required.

4 COST RECOVERY

The cost categories listed in the paper should also include deprecation of the existing meter population. The paper suggests that there will be savings realized through advanced metering. CK Hydro does not believe there will be significant savings, as the potential to saving in meter reading costs will be offset by additional communication and reverification costs. CK Hydro believes that retrofitting meters and accelerating the depreciation for the meters that cannot be retrofitted is the most prudent method to resolve the stranded costs issue. However, if there is stranded costs CK Hydro would recommend the stranded costs be recovered through to 2015 to reduce the rate impacts.

CK Hydro believes that the most effective and fair way to recover the distribution costs to meet the Minister's Directive is the societal method, which is to recover the costs from all customers in the rate class. All customers will share the long-term gain of not contributing to the expense of new generation facilities.

A user pay method as is currently defined in the DSC would be an appropriate way to fund new growth customers.

4.1 Meter Charge

CK Hydro does not favour a separate meter charge and should continue to be part of the regular distribution charges for some of the following reasons;

- Confuse the customers with more lines on their bill.
- The new format of the bills is to reduce the number of lines and charges on the customers' bills, adding a separate line will contradict that project.

- This is not a contestable (competitive) service and therefore should not be highlighted in the bill as if it is.
- The metering costs are a distribution cost and therefore should be included in the distribution charges.
- During the implementation period and using the societal recovery method, all customers would have the charge but not a new meter. This will cause confusion for the customers.

4.2 Third Tranche

If there are any funds available from the third tranche after LDCs meet their Demand Side Management requirements, these funds should be used towards this initiative.

4.4 Third Party Provision

CK Hydro does not favour third party investment or ownership in the meters. The meter is a key component of the distribution system and should remain with the LDC. The meter should not be a contestable or competitive service for the customers for some of the following reasons;

- There are Federal regulations that a measuring device that is used for billing purposes must be owned by a registered owner. The customers would not be registered.
- If owned by the customer or any other organization this will create issue when disconnect for non-payment is warranted. The LDC will no longer have the ability to disconnect the customer at the meter and will no longer be able to pull the meter. Therefore future disconnects will be required to be done at the pole which would require a line crew and larger vehicle, thereby the cost for disconnects will increase substantially.
- The meter is an unprotected device that directly connects to a LDC system with a tremendous amount of available fault current and for safety,

reliability and accountability reasons should remain within the ownership and control of the LDC. There will also be added administration functions associated a contested meter installation, as the meter would have to move with the customer, where existing devices are static

CK Hydro will consider partnerships where the LDC's communication to the meter can be used for other benefits. These would include load control devices, reading other utility meters (gas, water) etc.

5 METERING FUNCTIONS

5.1 Measurement

There is no significant difference in price between an interval meter and time-of-use (bin) meter. CK Hydro supports interval style meters in the smart meter initiative as this will allow much more flexibility in changing peak periods and pricing signals. These changes can be made at the data server rather than at the meter, decreasing the operating costs.

The time-of-use meter will also provide more pertinent data to the overall electrical system, such as coincidental peaks, weather impacts and more accurate load forecasting.

5.2 Reporting

CK Hydro agrees with the OEB's comments regarding pre-paid meter systems that they are not designed to meet the Minister's objectives of penalizing / rewarding consumers for when they use power. These systems are more in line with purchasing higher volumes during lower price periods to ride through the volatile pricing. The one item that pre-paid systems offers that the other products have not fully developed is the real time display modules to inform the consumer in order to make conscious usage decisions. These

devices should be made available to those consumers who want them at an additional cost as they evolve.

5.2.1 To Billing Entity (utility)

CK Hydro recommends that bi-directional communication be the technology used. CK Hydro also recognizes that there are some areas in Ontario that this technology may be impractical, however this should be the exception rather than the norm.

5.2.2 To Consumer

Providing the customer with daily information may be costly. Also providing the customer with direct access may limit the options for communications. It is recommended that the customer be given access to the metering data but not direct access to the meter.

5.3 Data Storage

Data storage will become a more significant part of the metering and billing process. Due to the amount of information that will be provided and required for billing purposes the costs for data storage and management would increase.

5.4 Bi-Directional Communication

CK Hydro agrees with bi-directional communication systems, however recognizes that there are different degrees of type of communication. Most bi-directional are closed systems that depend on either dial up, or a pre-established polling sequence. CK Hydro prefers an open concept of bi-directional communication that allows reporting by exception from the field. This allows for more effective response to situations that may occur in the field, minimizes downtime of meters for estimating purposes, provides a higher quality product and a higher degree of reliability to the consumer.

5. OWNERSHIP

CK Hydro does not feel that meters should be contestable, primarily due to our accountability through the Federal regulations. As provided for in 4.3 above, there are Federal regulations that a measuring device that is used for billing purposes must be owned by a registered owner.

Should meters become contestable this could create burdens to the LDC by handling additional inventories of meters in order to support the delivery of power to our consumers. This situation would also introduce a variety of communication systems that would inhibit the LDC to properly police their system regarding tampering and theft of power, which was previously identified as a LDC benefit in 2.2.5.

Referring back to 4.4 of this report, there are many operational and safety issues that if the meter was owned by any party other than the LDC, it could have serious repercussions.

7 OTHER CONSIDERATIONS

7.1 Measurement Canada Requirements

7.2 Production and Installation

In order to meet full implementation of smart metering by 2010, CK Hydro will realize a 55% increase in the volume of meters going through the verification program. Many LDCs will see even higher volumes due to existing established sample groups. This raises a concern that there may not be an adequate number of accredited meter shops to handle the volumes of meters required in the province. Another concern is that there may be some opposition from Measurement Canada regarding the data base used to calculate the volumes for billing purposes, although there is no clear documentation on systems in particular. It is our understanding that Measurement Canada has been involved in

developing a bilateral agreement on product approval of meters with the United States. This process should be pushed forward to allow more flexibility in product choice and acquisitions