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By Courier

Ontario Energy Board

Mr. John Zych
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Dear Mr. Zych:

Re: Board File No.: RP-2004-0196
Minister's Directive on Implementing Smart Electricity Meters in Ontario

There is no doubt that the goal of installing 800,000 "smart meters" between now and the end of 2007 is going to be a daunting task. Moving forwards to the final government vision of having a "smart meter" in every home by the end of 2010 is an objective that will only be obtained through the cooperation of all involved including the Manufacturers, Customers, LDC's, Retailers, Contractors, OEB, and the Government itself.

Collus Power Corp. welcomes the opportunity to provide the following comments based on the discussion paper issued by the OEB on July 19, 2004. We also look forward to working with the OEB and others throughout the process as the vital questions are answered on the road to completing this goal.

In the Background section of the Discussion Paper, three key components are identified as conditions which need to exist in order for consumers to change the amount or timing of their consumption.

1. A price that changes over time
2. The ability of consumers to see and respond to a price signal
3. The ability to measure the response and apply prices as appropriate

In addition to the three conditions noted by the Board, there is an additional point that should be added, and that is: The willingness of a consumer to change. Without the willing participation of the consumer, all three of the other conditions could be met without any action being taken. It is important to remember that the provision of "smart meters" does not guarantee the participation of the consumers, and therefore has a direct impact on the planned conservation reductions.

The Board is developing a "Regulated Price Plan" for residential and small business consumers without retail supply contracts. Currently there are over 1 million consumers (25% of the residential market) who have signed contracts with Retailers, many of which will expire between now and the end of 2007. The importance of this is underlined by the fact that if these same consumers renew their supply contracts, they will not be subject to the variable pricing which has been identified as a key component to influence consumer change. This becomes even more relevant when we consider that an average capital cost for a "smart meter" has been quoted at around \$200. In real terms, the industry could be spending over \$200,000,000 purchasing new metering technology for a customer base that will likely not have the ability to benefit from their use.

This issue can be addressed through a variety of methods including but not limited to:

- a) legislation requiring Retailers to offer varied pricing that is time sensitive
- b) installing “smart meters” for these consumers only after their contracts expire
- c) insisting that either the Customer or the Retailer pay for these new costs, as they have “chosen” not to be part of the solution

It is true that in general, advanced metering technologies can enable a consumer to practice conservation even with a stable fixed price. Only through knowledge of how one uses a product, can an individual begin to change their use of that product and start conserving. This was proven over the years across Ontario when ‘Ontario Hydro’ worked with the ‘Municipal Utilities’ to help customers conserve through education programs and wide dissemination of generic conservation information. Education will therefore be an integral part of the implementation of “smart meter” technology across the Province.

Benefits

It is also important to recognize that Ontario has already undergone a very intense push on the wise use of electricity and energy conservation. The discussion paper quotes an EA Technology paper on the benefits of advanced metering where it is stated that “better billing feedback produced savings of up to 10%”. Keeping things in context, this study was performed in homes across the UK, where the building codes and housing construction standards have only very recently adopted many of the conservation measures that Ontario home builders have embraced for years. Realistically therefore, we should not expect to see the same opportunities for results across the province, and ensure that other opportunities for Demand Management and Conservation efforts are not pushed aside in order to implement this directive.

The discussion paper suggests a variety of benefits for the Provincial Grid, Distributors, Retailers, and even Generators. In some ways it may seem tempting to use these potential benefits as a means to assign who should bear the costs for the “smart meter” procurement and installations. It would seem premature however to begin assigning costs based on perceived theoretical savings which to date have not been proven in any market. Even the various jurisdictions around the world that are quoted in the discussion paper are only in the infancy stages of mass deployment. When reviewing the benefits for Distributors as listed in the discussion paper, savings are attributed to the following:

- Lower meter reading costs: Depending on the type of infrastructure used to read the meters, the costs could in effect be higher than current reading costs for basic electro mechanical meters. With most “smart meters” the data is actually captured and stored with a time stamp within the meter. The component storing the data is by its design limited in capacity. This fact alone would dictate that the meter needs to be read more often, thereby increasing rather than decreasing meter reading costs for that site. Additionally, due to the fact that the new meter data will be tied more directly to pricing schemes that are time sensitive, all meters will have to be interrogated more often to ensure that no significant loss of data occurs due to a failed communications path at the time of billing. The additional costs of possibly installing and maintaining a communications infrastructure could far outweigh any cost saving seen from current meter reading costs.
- Fewer Estimated Bills: At present electro mechanical meters can be read at any time given the fact that one is merely comparing the present read against a previous read, with the resulting difference representing the consumption during the period between reads. In actual fact, a meter could be read once per year to calculate the variance between estimated consumption and actual consumption. Many utilities often use estimates as a means to manage the costs of meter reading. In fact meter reading cycles for cottages, traffic signals, street lights, billboards, telephone booths, and other similar loads are often established to minimize costs through the use of estimates. Perhaps leaving these types of loads to the end of the conversion process would be something to consider during the implementation planning.

When reviewing the full list of benefits produced by Ofgem, it is also important that this information is taken in context and not simply at face value. Without truly understanding their cost issues in the UK, existing metering processes, and billing practices, it is difficult to draw a distinct parallel between their potential savings and those which may be applicable here in Ontario. The working group should make a careful review of these projected benefits specifically if these benefits are going to be used to apportion costs.

Procurement

The discussion paper raises a valid point that product procurement will certainly be a key issue as we move towards the implementation of the initiative. The installation of 800,000 meters in Ontario between May 2005 and December 2007 will require an installation schedule of approximately 25,000 meters per month. The other 3,400,000 meters installed between January 2008 and December 2010 would mean an installation and procurement schedule of over 94,000 meters per month. These types of numbers make one question the ability of the manufacturers to actually secure parts and meet production targets, without even reviewing the installation process. One concept may be to establish a Provincial pool of meters through the OPA from which LDC's could obtain their stock. This type of plan would require careful planning to ensure that we allow a full variety of manufacturers and communication platforms to ensure that LDC's could get the types of meters required to meet the demands of their systems, territory, and customer demands.

Installation

The installation of this many meters brings with it a significant number of challenges which will need to be addressed at a global level in order to ensure the most cost effective rollout for the Province. It has been suggested by many, that new construction regardless of customer class should be the focus of the initial installations. This is a logical step, as it limits the number of meters that will have to be taken out of service prematurely thereby reducing the impact of stranded assets. Additionally, the next group targeted should be the Commercial / Industrial class of customers. At the very least, this ensures that the customers with the largest potential impact are accommodated early on in the process. A method will have to be established to manage those that wish to be handled differently from the proposed plan. This could be customers that would rather wait until closer to 2010, as well as those who are scheduled in 2010 but would rather have the option sooner. It is critical that this issue be dealt with, for in order to meet the aggressive schedules required to achieve the 2010 target, there will be little time available for handling "special cases".

The discussion paper also asks the question about tracking of installations in order to ensure the goals are met. This tracking should be performed in the simplest way possible to ensure that the focus of the installation process is on installations, not reporting. Developing the tracking and reporting requirements and processes should be left until after the difficult issues of procurement and installation are settled. If the LDC's are responsible for their own installations, some minor additions to their current reporting requirements will be an easy change. However, if the installation process is contracted out to a central agency which will blanket the Province, then a different reporting system will need to be developed to accommodate the new entity.

Meter Selection

The definition of a "smart meter" also needs to be clearly outlined early on in the process. This fact alone will help streamline the discussions as we move forwards. One key factor that cannot be ignored is that whatever is decided at the Provincial level, still needs to meet Consumer and Corporate Affairs requirements, and any meter or meter component must be approved by the controlling authority prior to establishing any plans for procurement. Back in 1999, our utility purchased a product which would allow for the retrofit of existing residential meters, and through which we could remotely read interval data from a standard residential electro mechanical meter. The accreditation process through the CCA took over 12 months for the meter and communications components to be approved for use with our customers. CCA should be solicited to participate in any work groups and discussions regarding new metering technology. It is important to note, that the term "new" does not mean something that no-one has used in the past. In fact, the components we were attempting to get approved for use in Ontario had already been approved and in use across the Continental US.

The discussion paper touched on various technologies and in part questioned the applicability of pre-paid metering systems similar to what is widely used in some Municipalities in the Province. If the goal of "smart meters" is to increase customer awareness of their electricity consumption, pre-paid meters should not be discounted for they have been performing that function for quite some time. As people are forced to manually re-charge their pre-paid meter, their energy consumption becomes something they truly become aware of. During the weeks that they use Air Conditioning, the kwh's will be consumed faster than during the weeks when the weather is cooler and Air

Conditioning equipment is not required. This in itself forces a consumer to be more aware of their consumption as they are required to re-charge their meter more often during periods when consumption is higher. One could easily state that Pre-paid meters by their very nature force a consumer to take note of their consumption, while even intricate data collection from interval meters can be ignored by consumers. Detractors say that pre-paid meters do not allow for the addition of Critical Peak Pricing. Critical Peak Pricing is a method which can be used to influence not only consumer driven response, but also as a signal for centralized load response programs. Customers with Pre-paid meters are therefore not by default excluded from the opportunity to react. They merely would require another method to do so. This only means that the industry will have to address the method through which customers participating in centralized load control are recognized for their participation through some other form of rate impact.

Cost Recovery

The discussion paper also asks the question about cost recovery. Generally speaking, this endeavor is not one that is customer driven, but driven by the visions of the Ministry. In that light, since participation is not voluntary and is targeted at every customer across the Province, the costs would be best borne by all customers through a common rate based approach. The costs facing the industry are not limited to the capital cost of the meters themselves. As pointed out in the discussion paper, there are also ongoing costs of meter reading, maintenance and repair, data storage, data manipulation, and settlements. Another category which should be included is the cost of the communications infrastructure. Many of the new technologies require radio communications which require repeaters at strategic points between the meters and the central data collector. Others require merely tapping into existing phone lines, but this alone may require an LDC to add new Bell infrastructure at their offices to handle the increased telephony traffic. Obviously the costs vary both on the capital and operating side of the equation. The methods used for cost recovery should be clearly laid out as they could become key decision factors when selecting the appropriate technology at each LDC.

Section 4.2 of the discussion paper suggests that some LDC's may be tempted to use their third tranche of MBRR to invest in "smart meters". Although this may be tempting, the net impact would be minimal. Currently it is estimated that there will be approximately 255 million dollars made available through this option. The overall expenditure required for just the capital cost of the "smart meters" alone is estimated at over four times that amount. When one considers the additional costs of installation, communications, software changes, training, etc... The costs could easily exceed 2 billion dollars across the province.

Ownership

The industry will be pressured by many private companies vying to gain access to these dollars which are about to be spent across the province. The OEB and the Ministry have no doubt already been inundated with suggestions to allow the private industries to take over the provision of metering, and make the project fully contestable. Beyond the requirement to establish and maintain the distribution structures across the province, distributors perform another very important and often underrated function. That of the settlements between the consumers and the suppliers. As long as it remains the responsibility of the Distributors to account for the flow of consumption information between Generators, the IMO, Retailers, and Consumers, they should remain in control of the primary tool used to perform that task. Distributors should however be allowed to contract that service out to whomever they see fit as this way they have control over providing the required services to the market place. LDC's are also charged with the responsibility for timely connections and disconnections, and adding a third party in the middle of this process has the potential for significantly increasing these response times. Additionally, the market is better served by ensuring that LDC's are not left with only the "undesirable" accounts due to location, access, or other issues which may influence a profit driven provider from dealing with a specific location. This in itself will increase the cost per customer at the default provider level, as the same infrastructure would still have to be installed whether dealing with all the consumers in a territory or only one third.

Access to the customer and additional services beyond the meter could still be left in the hands of the marketplace. If what we truly want is some method for consumers to see their consumption on a regular basis, or to be able to implement some form of energy management system internally, this requirement can be easily met through the provision of pulses from the actual meter. Pulse outputs from interval or even standard mechanical meters have been used for decades to provide real time access to energy consumption information. Each pulse represents a

specific amount of energy consumed, and is available on an instantaneous basis. Rather than focusing on bi-directional communications, perhaps an option to review would be the provision of pulses at the meter location. This would then enable unlimited numbers of entrepreneurs to develop ways of using the pulses and helping consumers with their energy conservation measures. Having a standard interface to the pulses would help ensure that people could take their conservation and/or load management systems with them from home to home. Pulses are actually more dynamic, and are not tied to any specific computer language, data stream, communications platform, or software platform as many bidirectional meters are. The simplicity of pulses strips the dependence on specific proprietary communications platforms and opens the doors to a variety of interfaces to the meter without sacrificing the integrity or security of the data.

Settlements

Integration of the technology with the Settlement Systems is also another issue which the work groups will need to carefully review. The addition of new pricing mechanisms alone will add new costs to the settlement Systems for both Distributors and Retailers. One thing that has not been tested to date is the ability of the existing systems to handle all the additional data that they may be required to process. For the following basic system impact analysis, we are assuming that the “smart meters” will generally be some form of an interval meter with a minimum ability to collect one hour interval consumption. (other jurisdictions are currently reviewing the use of ½ hour intervals). Currently a distributor with 20,000 customers may have 100 interval meters and 19,900 electro mechanical meters. For the purpose of this simple demonstration demand readings are being ignored. If the distributor read the meters monthly, their billing system would have to handle 19,900 reads per month from the electro mechanical meters, and $(50 \times 24 \times 30) = 36,000$ reads for the hourly interval meters. This works out to 55,900 records of consumption data handled by the existing system under the current market structure. If the existing 20,000 meters were all interval recording meters, they would be passing through significantly larger amounts of data. $(20,000 \times 24 \times 30) = 14,400,000$ reads per month. Systems will need to be tested and likely upgraded to handle this significant increase of data. It is true, that depending on the pricing structure designed by the OEB by May 1, 2005, it may be possible to build an intermediate system that takes the meter data and converts it into manageable packets that correspond to the pricing schemes and timelines. The costs of this additional processing will also have to be reviewed. It would be worthwhile to include the EBT HUB suppliers in the discussions as well, for the question needs to be asked if they as well can handle an increase in traffic of 600% without significant issues or costs.

Summary

COLLUS Power welcomes the opportunity to participate in the working groups as our industry continues to evolve. We realize that through participation in the work groups, many of the questions above will be answered, while new ones will arise. It is our commitment to be part of the solution while we work with the industry to find a successful method of meeting the daunting goals ahead of us.

Respectfully Submitted:

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