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Mr. John Zych
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 26th Floor
Toronto, On
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Dear Mr. Zych

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

Please accept this in response to the Board's invitation to comment on the Staff discussion paper on Smart Metering.

The Provincial Government's goal of creating a conservation culture, in our opinion, is sound public policy and we support any initiative designed to achieve that end state. We believe, as does the Government, that a kilowatt-hour saved is every bit as valuable as a kilowatt-hour produced and actually better given the environmental impacts of electricity generation.

The Minister is correct in looking to the measurement and information components inherent in metering technologies to aid in creating the conservation culture. These components of metering combine, when used properly, to create a powerful conservation enabling technology.

Enabling, because the meter in of itself does not reduce energy use but the unit of measurement combined with cost information drives consumers to modify their behavior. We at Woodstock Hydro have a keen sense of the usage behavior of consumers who have a heightened awareness the value of electricity. Twenty-five percent of our residential customers have chosen to purchase their electricity on our “pay as you go” program. We have been offering this program to our customers for approximately 15 years.

The Staff Discussion paper requests that interested parties comment on the difficulty in applying critical period pricing to a pre-pay program. In doing so we have prepared the following to provide background and context in which the merits pre-paid programs can be judged.

Background

The concept of prepaid power has been around in other jurisdictions for more than 70 years. Electricity consumption meters with coin mechanisms much like parking meters were used in the past. The modern version of this application is much more sophisticated and provides all the data acquisition requirements to satisfy typical customer information system requirements.

Today there are millions of consumers worldwide using prepaid power. The United Kingdom, New Zealand, Australia, South Africa and many European countries have been using modern versions of pre-pay programs for many years. There are approximately 20 locations where the process is being used in North America.

The UK’s Centre for Competition and Regulation at East Anglia University, and the University of Warwick Centre for Management under Regulation, completed a major research project in March 2001 under the direction of Professor Catherine Waddams with the objective of identifying the benefits and costs to consumers of different metering and payment schemes.

Speaking at the research reports launch, Dr Tony Jackson, Director of Strategy and Regulation at SEEBOARD Energy said. “The conclusions on prepayment meters and the strength of customer loyalty to this form of payment provide a great deal of food for thought for those of us in the energy supply industry and policy makers”

Woodstock Hydro's pay-as-you-go system was established in 1989. Currently about 2,500 Woodstock Hydro customers choose this method to purchase their electricity. This represents approximately 25% of the residential customer base. The customer base on the system is growing at about 3% per year and is anticipated to increase at a higher rate as the cost of the technology comes down due to the growing widespread usage.

Enrolment in prepaid power is completely voluntary. Prepaid power is chosen as a payment option the same as an equal payment plan or pre-authorized bank account debit. Customers may enter or leave the plan at no charge. The additional costs associated with the equipment and software are paid by the customer through a monthly administration charge of \$7.50.

As an aside, this rate is currently an approved regulated rate under Woodstock Hydro's miscellaneous rate schedule. We would argue that due to the voluntary nature of the offering, the administration charge should not be regulated. This would allow us to promote the program with special introductory offers for example and judge the cost benefits of doing so like any other business offering. Woodstock's experience is that once someone chooses the pay-as-you-go plan they are very satisfied and they stay with it.

A typical purchase transaction of a prepaid power customer consists of the customer purchasing electricity with a power card at a sales location. The sales locations include the Woodstock Hydro main office along with convenience stores that are open 24 hours a day 7 days a week. The power card value is determined by the dollar amount of power the consumer wishes to purchase. The dollar amount of the purchase is encoded on the customer's power card and the customer takes it home.

Once home, the customer swipes the card through an electronic reader/display unit that transfers the amount purchased to the memory in a pre-pay meter and provides up-dated information on the display unit. The meter and the electronic reader/display communicate through the home wiring system utilizing power line carrier (plc) technology. As power is consumed, the consumption meter communicates back to the display unit and reduces the cash balance being displayed. The fixed charges including the monthly administration fee are programmed to reduce the balance on an hourly incremental basis.

There are a number of benefits for the customer on prepaid power. The main benefit is the method by which the prepaid power unit communicates consumption information to the customer. The unit provides information to the customer that is easy to understand. Generally, residential customers do not understand the pricing terminology used by the electricity industry. For example, when the electricity charge is presented on a ¢/kWh basis, customers typically do not fully understand what a kilowatt-hour represents.

The prepaid power unit converts the complex pricing information into terms that the customer can easily comprehend. Customers have a better understanding of their energy usage when they know how much they are spending on a \$/hour, \$/day, \$/week and \$/month basis. This real time awareness provides the information a customer needs to easily control their usage as well as their cost of energy. For example, the units provide enough information for a customer to manage the energy used by the appliances in their home. Studies have shown that customer's with this level of information reduced their consumption by as much as 20%.

Salt River Project (SRP), a water and electric utility supplying over 700,000 electricity customers in the Phoenix Arizona area started installing pre-paid meters in the late 1990s. They currently have over 30,000 installed with plans to continually grow the program.

The reduction in consumption by pay-as-you-go customers observed by SRP is approximately 20% and comparable to the 15 to 20% reduction that Woodstock Hydro has observed.

Woodstock Hydro reviewed its residential consumption data over a period of time of deployment of the program. We compared the trend of residential consumption in Woodstock to that of the Province of Ontario as a whole.

We found that through the 1990s, as the percentage of Woodstock Hydro customers on the pre-pay system increased, our average residential consumption dropped as compared to the provincial average. In the early 90s we had an average residential consumption of 860 kwh/month, approximately 7% lower than the provincial average of 920 kwh/month.

By the end of the 90s Woodstock's residential average had dropped by 21% to 680 kwh per month while the provincial average had dropped by approximately 8% to 850 kwh/month. When we compare the actual average consumption of those on the system to those on conventional metering it reflects a 23% difference with the pre-paid customers using 560 kwh per month on average and the conventionally metered customers using 725 kwh per month.

Most of Woodstock's pre-paid customers selected the method of payment as they were moving to new locations or opening new accounts. It is therefore difficult to assess before and after on a one by one basis.

Salt River Project conducted a more comparative study to evaluate the conservation effect of prepaid power. The study consisted of 945 prepaid power customers being compared to a control group of 1,090 customers on regular post usage payment system. The two groups had comparable demographics and all customers remained at the same service address for the duration of the study period.

The results of the study are as follows:

- Prepaid power customers, on average, used 14% less energy than they did the prior year.
- Conventional service customers' average usage increased by 7.9% during the same period.
- 70% of all prepaid power customers used less energy than last year.

This method of analysis basically allows for weather normalization of the data. The actual spread between the two groups is 21.9% in year over year consumption.

Observations and Recommendations

It is our contention that both the information displayed indicating the cost of the electricity being consumed and the payment in advance contribute to the altering of the consumer's attitude about the value of electricity.

Paying in advance of use places electricity in the same category as other commodities such as gas for the car and groceries. Once you have brought the electricity home from the store you want to make it last as long as you can. You are more aware of its value because you start making choices in your desire to make your last purchase last as long as possible. We don't use the term pre-paid auto fuel or pre-paid groceries when referring to those commodities. The term pre-paid power is only used in reference to what has become the accepted norm of paying for electricity after we use it.

Having the advance knowledge of what consumption will cost due to the experience and education acquired with the display unit allows for intelligent decision-making. We believe that this consumer intelligence coupled with predictable time of use rates for instance would be a powerful tool to assist in flattening our daily demand cycles. Pre-payment systems are compatible with pre-scheduled time-of-use rates.

Electricity distribution with post use payment has been around almost 100 years. The value of electricity was not difficult to convey to the customer in the early years. The incredible changes to life style that electricity brought made it very easy for the customer of the early to mid 1900s to consider the worth of what they were purchasing. We have lost touch with the generation of people who recalled living without the convenience of electricity.

The following quote by D. G. MacKenzie, Executive Vice-President of Sunoco Inc. outlined in an advertisement for Ontario Hydro, The Toronto Star, 29 Dec. 1989, summarizes the problem with the conventional consumer appreciation of electricity.

"If you had to fill up with electricity every few days, you'd think about it a lot more."

Conservation of electricity has long been recognized for the many societal benefits that can be attributed to the practice. There are many things consumers can do to reduce their energy use but they must have an appreciation for their energy use on an on-going basis. The pay-as-you-go program, with its inherent information and replacement requirement methodology, supplies the on-going information and value connection required to sustain consumption behavior change.

We believe that an important factor in any successful conservation program is the full and meaningful participation of the consumer. This is ensured if a customer voluntarily selects the program in which they want to participate. We do not believe that pre-paid power is the payment option that all customers want. We do know that 25% of our customers have chosen this method and they use considerably less energy than their post-pay counterparts.

Critical Period Pricing schemes will undoubtedly demonstrate value in shifting usage off the anticipated peak demand periods. We agree that this will certainly assist matching demand to available capacity as we move to increase generation.

But if it is a conservation culture that we want to build, we then should want to lower consumption at least as much as alter when we consume.

In closing, it is worth commenting that the smart metering initiative is a mammoth undertaking and we applaud the careful consideration it is being afforded. We have restricted our comments to the area that we have most to offer. We have an experience that is unique in Ontario and feel strongly that it should be considered in the development of the implementation plan being prepared as per the Minister's directive.

Thank you for this opportunity to provide input to this very important undertaking.

Yours truly,

Ken Quesnelle, Vice president and Assistant General Manager
Woodstock Hydro Services Inc.