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Response to RP-2004-0196 – Implementation Plan for Smart Meters in Ontario

Thank you for the opportunity to comment on the draft implementation plan for smart meter deployment in Ontario.

As a leading developer of hardware and software for the automatic meter reading (AMR) industry, Hunt Technologies believes that in its current form, the draft plan does not provide the necessary flexibility. Some of the standards set too rigid a course for implementation by focusing on how systems operate instead of how objectives can be met.

The ultimate objective for Ontario's power delivery system is to use data gathered by smart meters/endpoints to help manage customer power consumption. This is a realistic and very achievable goal. A variety of existing technologies, including our own, can meet this objective and provide even greater value to the residents of Ontario. But, as the plan currently is written, many vendors would not be able to bid, and currently no vendor would realistically be able to meet all standards.

The challenges Ontario faces in delivering power to a mix of highly concentrated and sparsely dispersed populations are quite common. At Hunt Technologies, we have a decade of experience building our proprietary AMR systems to fit a variety of similar applications. Our electric AMR solution is the most advanced and has the widest deployment. In North America, Europe and elsewhere, we service more than 450 utilities with both one-way and two-way AMR systems.

It is our belief that Ontario power customers will be best served by some mixture of wireless data transmission and power line carrier technology. Hunt Technologies offers both, and is one of two viable power line carrier (PLC) system providers. Neither leading PLC system could represent that they meet the criteria in the draft plan.

In fact, we may be precluded from bidding on this project, despite the fact that our systems could effectively be used to meet the ultimate OBE objective.

As a result, we question these specific standards in the current draft plan:

4.4.1 Minimum Technical Requirements

- **The minimum technical requirements favor a very specific implementation technique when describing the support for the time-of-use feature of the specification.**

The draft plan favors the method of having the meter return hourly data. While on the surface, having the meter return 24 hourly intervals per day may appear to be the most obvious means to implement time-of-use, there is also no proof of, nor data supporting, its effectiveness. And, this method is not without its disadvantages.

One of the disadvantages of this technique is handling time-of-use periods that do not begin and end at the top of the hour. Once a utility has established a set of load profiles and the relationship of these profiles to the overall capacity of the utility energy delivery system, it would be unfortunate if the AMR system did not support starting and ending the time-of-use pricing periods at non-hourly intervals. For example, it would be an extreme coincidence if the average peak time-of-use period for a particular customer profile started at exactly 4 p.m. and ended exactly at 7 p.m. Giving the utility the flexibility to start and end time-of-use periods at non-hourly intervals (i.e., 15-minute intervals) would allow the application of time-of-use periods that more accurately represent the actual load profiles of the various utility customer types.

Secondly, AMR systems that rely exclusively on communicating with each meter multiple times per day, with no-provision to recover if communication is interrupted, cause an unhealthy reliance on the practice of estimating hourly data to fulfill the time-of-use billing requirement.

Hunt's system handles hourly data in a more effective manner, compressing the time-of-use data in the AMR device. This has many distinct advantages, the foremost one being data reliability. The Hunt system uses smart endpoints that continue to log energy consumption into the appropriate time-of-use periods during extended times of communication system interruption. Our endpoints capture data in 15-minute intervals that are summarized and delivered to the utility in a user-friendly manner. Data redundancy is provided at the endpoint, substation and utility office to ensure the best accuracy.

And with two-way communication capability to remotely reconfigure the time-of-use periods on a real-time basis, these systems give the utility a dynamic pricing capability to support even the most demanding time-of-use requirements, without the heavy reliance on estimating.

It is our opinion that many utilities in Ontario will consider this implementation technique to be superior for logging time-of-use, rather than the proposed 24 hourly interval data captured only on the hour.

- **This section specifies that a meter must return information in an hourly interval for at least the first four months after the Smart Meter is installed. But there is no indication as to why this is important to the OEB objective.**

If this four month period is intended to verify system accuracy and usability within the 24 hourly interval data approach, then we would suggest there are other alternatives. For instance, a trial period or pilot demonstration could be conducted to verify accuracy.

Similarly, if the intent of this standard is to allow a utility to establish a set of load profiles during the process of establishing time-of-use rate periods, there are many techniques to accomplish this that may or may not involve the AMR system that would be deployed to implement the time-of-use billing option.

The conventional approach to establishing load profiles across a residential group of 10,000 utility customers would be to deploy 300 interval data recorders (15 minute or 1 hour) to collect the data. A statistically equivalent alternative approach would be to use the time-of-use functionality available in the Hunt system across a broader sample of 1,200 customers.

RLW Analytics, one of the leading load research firms, recently conducted an in-depth study of load profiling that showed the Hunt system yields accurate and reliable results for this application. Results of this study are available upon request.

- **The requirement that data be returned at 8 a.m. each morning for the benefit of consumer action is without proof or supporting data.**

We question how and why the 8 a.m. figure was chosen? It appears arbitrary and, in our view, unrelated to providing the data necessary to make informed power usage decisions. Systems vary on how and when data is returned. Our smart endpoints collect and analyze data on a continuous basis, rather than on an on-call basis. This information is transmitted to the utility within 24 hours. We feel the standards for timeliness of data are best left to the power distributor.

Furthermore, the only scenario we foresee where customers will take the time to monitor this information on a daily basis and make an immediate change is with a severely punitive pricing structure. That scenario would seem to require an in-home monitor for reporting real-time pricing data to the consumer.

- **Finally, how will the rule requiring a minimum of 10,000 units in the field be applied?**

When would vendors need to hit this number in order to participate in bidding? Is there a need to have 10,000 interval data/TOU equipped devices installed and operational or just AMR devices?

4.5 Customer Information

The absence of load control from this section is curious (although later mention is made in Appendix D-3). It would seem more realistic for customers to look to their distributors for tools to automatically control loads, than to expect those customers to do an early morning evaluation of their previous day's power usage before heading off to work. In fact, the report states that some customers already meter electric heat separately from electric lights. Off-peak load control for heat, water heaters and air conditioning units would seem a practical solution for residential customers.

Appendix D-1. System Requirements

- **We are not sure from reading this section what the responsibility of the smart meter vendor is in resolving the legacy issues listed in this section.**

Appendix D-2: Minimum Functionality Specification for Meters

- **As we understand it, Measurement Canada must recertify products when changes are made. Products certified at the beginning of this process will most likely have been upgraded by the time deployment begins and certainly before it ends. Are any considerations given for upgrades and new product development?**

This is not a complete list, but highlights our primary concerns.

In summary, we believe the OEB's bottom-line is the delivery of usable and accurate data about power usage that will allow more conscious management of energy use by customers. We believe there needs to be more flexibility in dictating how power usage can be communicated in a timely fashion to both the distributor and customer.

Each system has a different way of doing it and these differences create variances in how the data is delivered. By focusing on *how* a vendor achieves a particular objective, instead of the larger objective itself, the draft plan will unintentionally eliminate some excellent vendors and proven technologies from the process.

In place of standards that in effect impede a competitive bidding process, we propose that power distributors be given as much leeway as possible in deciding the strongest solution for their particular service area as long as the final objective is met.

Thank you for considering these concerns. If you have any questions or would like to discuss any of these issues further, we would be pleased to accommodate at your convenience.

Sincerely,

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