



MILTON HYDRO DISTRIBUTION INC.

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February 18, 2016

Independent Electricity System Operator
120 Adelaide Street, Suite 1600
Toronto, Ontario, M5H 1T1

Attention: Mr. Ryan King, Account Manager

Re: peaksaver PLUS Residential Demand Response Program
Feedback from Stakeholder Engagement Session

This letter is to provide formal and specific feedback to the IESO's stakeholder engagement webinar of January 27th, 2016 entitled: *Options for the Future of peaksaverPLUS® Residential DR*.

Milton Hydro's peaksaver PLUS Program:

Milton Hydro has followed the philosophy of providing the customer with as much convenience, information, and opportunities for energy conservation as possible. Pursuant to this philosophy Milton Hydro did not offer the pager controlled load control switch device with a programmable thermostat. Milton Hydro's peaksaver PLUS offer includes an ecobee programmable communicating thermostat (PCT) controllable through a smartphone app or other internet connected devices. The PCT also includes an integrated In-Home Display (IHD) that allows Milton Hydro to "push" such things as hourly pricing to the PCT.

Milton Hydro has provided data to the IESO for evaluation of our program with respect to energy savings but as of yet has not been informed of the results. Studies have been done in the U.S. that show that there are significant cost savings for PCTs such as those offered by Nest and ecobee.

The following section is organized to respond specifically to slide #13: *Questions for Stakeholder Input*:

- ***What issues do you foresee with transitioning peaksaver to a market-based structure? What barriers would need to be addressed to accomplish this?***

The predominant application of peaksaver in Ontario is to control central air conditioning units in residential dwellings (during heat-waves when there may be a generation shortfall or to provide short-term load relief on certain transmission system elements when the predicted loading could exceed the seasonal load limits of that circuit or substation) either by temporarily adjusting the set-point on a programmable communicating thermostat (PCT) or by intelligently adjusting the cycling of the air conditioning unit itself (via a load control switch).

If other auction-type demand response programs are used as a model some possible barriers could be:

- The existing capacity marketplace has a minimum six-month (6 mo.) resource availability requirement (i.e. May – October) whereas realistically residential demand response programs can only be considered a resource during heat waves that (in southern Ontario) typically occur only in late June, July, August and perhaps early September. *Peaksaver* would need to be confined to this range to provide expected demand savings.
- The capacity market has requirements concerning metering that couldn't be fulfilled with normal residential Smart-meters (that measure the hourly electricity consumption of an entire home). A method will need to be found to ascertain the number of load control switch-fitted air conditioners that actually participate in an event to calculate an estimated DR contribution. PCTs, such as those offered by Milton Hydro, are able to confirm through two-way communication that they have been temporarily adjusted. The demand contribution could be estimated by multiplying the established kW savings per device times the number of activated devices.
- Under the former provincial saveONenergy DEMAND RESPONSE program, unless the participating customer was able to provide DR capacity beyond some minimum threshold, it was necessary to enrol with an aggregator. Milton Hydro acts as the aggregator for the *peaksaver* program in its territory but does not have the *peaksaver* installed base to be able to deliver say a 5MW minimum. Minimum thresholds for participating LDCs will need to be calculated at say .5 kW per device times an assumed participating factor. The estimated DR contribution will increase as the participant base is expanded.
- The funds estimated to be available per MW from a DR program will not be enough to fund a PCT based *peaksaver* program. However, if kWh savings can be attributed to PCTs (as has been shown in some studies) then there should be funds available through the CFF funding model to help offset the *peaksaver* program costs. Depending on the level of measured PCT kWh savings, it may also be necessary to ask customers to contribute to the cost of the PCT.
- ***Recognizing the limited value of existing technology, should the IESO fund LDC's to update the peaksaver offer to customers to allow for new technology options?***

If evaluation studies prove that new generation PCTs with proximity sensors, etc. can generate savings levels that have been found in other studies, then the IESO should fund LDC's to update the *peaksaver* offer. Since it appears that significant heating savings can also be realized, this is an opportunity to involve the natural gas industry in a joint program.

Distinct IHD devices, based on EM&V studies done, do not offer sustained or demonstrated energy savings and individual IHDs should be discontinued as an element of the *peaksaver* program. No data is available to verify the contribution of the IHD to the energy savings of the PCT, however it is expected that there would be value of an imbedded IHD within the PCT.

- ***Do you have existing inventory of devices that have not been installed? How much inventory and how do you believe this should be handled?***

Milton Hydro has inventory of approximately 300 ecobee residential smart thermostats and 109 ecobee smart commercial thermostats along with 300 related power extender kits. The cost value of this inventory is \$91,760. The thermostats were purchased in minimum order quantities from the supplier and were purchased pursuant to Milton Hydro's interpretation of the Minister's Direction to continue to make the program available. Unlike some other *peaksaver* technologies, the ecobee smart thermostat is state-of-the art and provides wifi connectivity, smart phone apps for customer interaction, and learning behaviour for greater energy savings. Milton Hydro used best practices in procuring the PCTs used in the program and does not believe it should be financially liable for existing inventory. Accordingly, Milton

Hydro would like to see funding for thermostat installations continue until inventory is exhausted (as opposed to leaving them on a shelf wherein the sunk cost of the thermostats provides no value to the electricity marketplace).

- ***What related opportunities do you see in the rapidly evolving connected home / home automation space?***

New generation PCTs include features and ad-ons such as proximity sensors and room sensors for individual room temperature control. Combined with automated vent controls, the potential exists for energy savings for space heating and cooling (primarily electricity in summer and gas in winter).

These new PCTs can also be used, often in conjunction with smartphones, to control other home automation applications. Interoperability standards between the devices do not presently exist and, until they do, it should be left to the customer to fund and acquire devices that communicate with their PCT. If interoperability standards, and specifically the Smart Grid standard known as *Open Automated Demand Response* (OpenADR), are adopted, then it may be possible to enhance the *peaksaver* offering to include other devices.

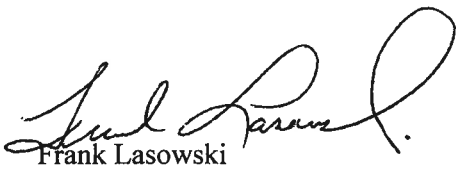
- ***Other considerations -***

Home energy use for space heating and cooling makes up a major component of a home's energy bill. Many homes would benefit from improved insulation and/or windows and doors. If governments decide that subsidizing homeowners to upgrade these components to lower carbon emissions then it would be reasonable to support a *peaksaver* technology solution that can help homeowners maximize savings.

I trust you will find this feedback useful to the overall objective of developing a *peaksaver* PLUS transition plan pursuant to clause 9.2 of the Ministry's directive.

Yours truly,

MILTON HYDRO DISTRIBUTION INC.



Frank Lasowski
President and CEO