

“peaksaverPLUS” Program Review by IESO

Comments to the IESO on OPTIONS FOR THE FUTURE OF “peaksaverPLUS” RESIDENTIAL DEMAND REDUCTION (DR)

These comments are provided as per IESO’s request at the conclusion of the IESO’s Stakeholder Engagement Webinar on January 27, 2016. The comments are from the perspective of a Ratepayer and the basic Regulatory Principles applicable to costs collected from Ratepayers.

1. For the purpose of these comments, “peaksaverPLUS” infrastructure refers to:
 - a. Residential load control devices meant to be controlled for system-required Demand Reduction (DR) at the request of IESO;
 - b. “peaksaverPLUS” Program thermostats, and associated portable displays;
 - c. Equipment and software that enable a residential customer to manage demand remotely; and
 - d. Various other LDC and IESO cost items including the hardware, software, communication systems, and staffing and management required to enable the above.

This infrastructure is installed for, and used by, a portion of Residential customers of some LDCs in Ontario, and the costs for this infrastructure are recovered from all Ratepayers in Ontario.

2. The “peaksaverPLUS” infrastructure has to-date resulted in **all** Ratepayers paying tens of millions of dollars without commensurate benefits to society. Considering their high capital and carrying costs, there has **not** been sufficient cost/benefit analysis of the “peaksaverPLUS” Program to-date.
 - a. The most that is known of the Program to-date, from the Stakeholder Engagement Webinar of January 26, 2016, is that¹:
 - i. Province-wide, 7% of households participate in the program, with 1/3 of the devices installed in Toronto Hydro territory.
 - ii. The average cost per Participant is \$344 per participant; however, this cost does **not** include all the cost items listed in (1) above.
 - iii. In 2014, there was 113 MW of demand reduction capacity *as indicated by tests*, but there is no assessment of the degree to which this DR capacity was actually utilized by the IESO in an emergency, or whether this capacity was indeed required for actual usage by IESO. Put another way, it is not known if the “peaksaverPLUS” demand was

¹ Aggregate, high level summary of data derived from the Webinar.

indeed included in the generation stack to meet peak demand, nor whether there were any economic benefits from the nominal “peaksaver”-derived DR capacity.

- iv. There is also no data about how many unique residential accounts actually used the features of the “peaksaverPLUS” Program such as accessing the meter readings remotely or modifying usage remotely (other than using it for initial novelty).
 - b. Understandably, and to be fair to the IESO, a primary reason for the absence of sound cost/benefit analysis is likely that the “peaksaver” program was initiated in the context of several Ministers’ Directives to the OPA between 2008 to 2011, during a time when it was thought there could be a capacity shortfall.
3. At this important juncture, in light of the new Minister’s Directive of March 31, 2014 and ongoing public concerns related to the cost of electricity, it is incumbent upon the IESO to ensure that the decision to continue with the “peaksaverPLUS” Program – whether under the umbrella of the IESO or by LDCs acting on their own – should be based on a vital Needs Assessment, Options Assessments, and Cost/Benefit Analysis including **all** costs, and an accounting for benefits based on the needs of the day. Some of the issues that need to be considered are summarized below.
- a. Needs Assessment: The overall (record) Ontario system peak demand was 27,005 MW in summer 2006. The peak demand (now) in 2016 is forecast to be 22,649 MW with an extreme of 24,649 MW *under low-probability “Extreme Weather” conditions*. Today, Ontario’s installed generation capacity^{2,3} is 35,221 MW, and an additional 1,123 MW capacity is committed – far in excess of the generation capacity during peak demand over the last decade. Further, Ontario can import⁴ approximately 5,200 MW (“coincident import capability”) with all its transmission elements in service. (This capability was reduced to 4,950 MW for some time due to an outage of an interconnection circuit; it is not certain if this circuit is now back in service). Therefore, there does not seem to be a need for a “peaksaverPLUS” type of DR at this time.
 - i. If system DR is forecast to be required in the longer term (e.g. during the rehabilitation of nuclear units), then the IESO can assess other options (refer to (b) below) on the basis of assessments for that period; it is not justifiable to incur capital and carrying costs for “peaksaverPLUS” infrastructure in the interim simply because some form of additional DR (in excess of DR capability available through the market) **may** be needed beyond 2020 under a low probability scenario.

² All Power System Supply and Demand data is from the IESO website.

³ About 6,000 ~ 8,000 MW of new generation capacity is *variable* wind & solar generation, but these have sufficient geographical and resource diversity so that a significant fraction of it can still be considered available during peak periods (e.g. solar during peak summer days).

⁴ IESO’s Ontario Transmission System Report IESO_REP_0265v23.0.

- b. Options Assessment: If capacity constraints are indeed forecast in the medium or longer term, then it would be more prudent to execute other significantly more cost-effective, efficient, and market-based DR instruments already available to, or planned by, the IESO. Such more attractive options include, but are not limited to, Capacity-Based Demand Response, IESO Capacity Auctions, and taking opportunities from the recently signed Ontario/Quebec Capacity Sharing Agreement.
 - i. The current situation is **not** an emergency that calls for spending tens of millions of dollars in a Residential DR program that is costlier, less efficient, and more complex⁵ than several other DR options available to the IESO.
 - c. Cost/Benefit Analysis: For the purpose of Cost/Benefit Analysis of the “peaksaverPLUS” Program, if it is recommended to be continued in the future, consideration should be given to estimating annual LDC and IESO costs of all cost elements noted in (1) above, including the capital and carrying costs for refurbishments and installations; maintenance costs; and staffing cost for managing the program, operations, software development and maintenance, and so on. On the benefit side, an estimate of benefits of the “peaksaverPLUS” DR obtained can be assessed by determining system costs with and without “peaksaverPLUS” DR (assuming that the other less costly and less complex DR options available to IESO are scheduled ahead of “peaksaverPLUS” DR).
4. The Time of Use (TOU) Billing of Residential customers in Ontario is the most well-designed, efficient, accepted, fair, and effective instrument of demand management in the Residential sector. It is also market-based in that TOU rates reflect Wholesale Market Prices.
- a. Although TOU Billing is not specifically the subject of the current stakeholder process, it needs to be highlighted in this proceeding since:
 - i. It is a powerful tool that can be enhanced further, if required, to send an even stronger signal to reduce demand during peak periods (for example by more elaborate communication to customers and/or by adjusting the rates to further make off-peak hours more attractive);
 - ii. It is by far a more cost-effective and efficient method, from a system perspective, to extract additional, organic DR from the Residential sector compared to non-market “peaksaverPLUS” investments; and
5. The “peaksaverPLUS” infrastructure does not meet the basic Regulatory Principles⁶ of Cost Oversight and Cost Allocation applicable to costs affecting Ratepayers, as explained below.

⁵ For example, in real time, it would be much less complicated for the IESO to procure 50 MW DR, if required, from about two (2) of its direct market participants, compared to procuring it from 10,000 residential customers via the involvement of multitude of LDCs (assuming 5 kW of demand reduction per household, erring on the high side).

⁶ “Principles of Public Utility Rates” by James C. Bonbright, Albert L. Daneilsen, and David R. Kamerschen, published by Public Utilities Reports, Inc.

- a. There is hardly any oversight on total “*PeaksaverPLUS*” infrastructure costs incurred by various regulated utilities and the IESO. Indeed, it is unlikely that any provincial agency has an (even crude) estimate of total capital and carrying costs for this infrastructure.
 - i. Absent official data, anecdotal evidence indicates that these costs are of the order of millions of dollars per year (including depreciation, O&M, return-on-equity for LDCs).
 - b. Only a very small subset of end-use customers, if any, actually make use of highly-touted “*peaksaverPLUS*” features, and yet **all** Ratepayers have to pay for capital and operating costs of this essentially unaccounted IESO and LDC infrastructure. This does not meet the principle of ratemaking in the regulated distribution sector.
 - c. Some may argue that “*peaksaverPLUS*” DR is beneficial to all customers since it reduces system requirements; however, as noted above, it is uncertain as to how often the IESO actually uses the “*peaksaverPLUS*” DR where it matters – in generation stacking in order to meet demand.
6. In matters such as the review of the “*peaksaverPLUS*” Program, for which Ratepayers are the ultimate responders and payees, the Ratepayers need to be made aware more effectively about the stakeholder process.
- a. Most LDCs, if not all, participate in the stakeholder process primarily with a view to determine what they can install and maintain so that they would be able to recover those expenses, and with a view to engaging their customers about *the operational aspects of the program after the fact of design and implementation*.
 - b. As it stands, the Ratepayer does not get a fair/commensurate hearing in decisions about the evolution of the “*peaksaverPLUS*” Program.
 - c. The IESO mailing list, primarily having market participants as recipients, does not reach a minimally sufficient number of Residential Ratepayers.
 - d. Therefore, it is submitted that the IESO should issue media briefs and/or insert suitable notices in major provincial newspapers about stakeholder processes that directly impact Ratepayers.
7. Finally, it is submitted that the IESO is the most appropriate and well-placed agency to deal with the issue of the review of the “*peaksaverPLUS*” Program. Among the many efficiencies brought about by the recent merging of the OPA and IESO is the advantage that decisions regarding “*peaksaverPLUS*” can now be tailored more efficiently in a transparent, market-based manner, which is a key strength and the *raison d’être* of the IESO.

Thank you for the opportunity to comment.

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