

October 16, 2017

IESO Stakeholder Engagement
1600-120 Adelaide Street West
Toronto, ON. M5H 1T1

Re: Demand Response Working Group
Comments in response to materials presented September 12, 2017

Thank you for the opportunity to provide feedback on the IESO's efforts to promote demand response in Ontario.

Powerconsumer helps customers reduce costs with energy market analysis and forecasts, automated software solutions, and project concierge services. We work with policy-makers, regulators, utilities, energy service providers and directly with energy customers to promote efficiencies and more sustainable energy systems.

The following comments are submitted in response to the topics discussed at the September 12 Demand Response Working Group meeting.

Hourly Demand Response program, utilization, program pricing parameters and components

In the presentation, slides 3 and 4 explain the IESO's decision to delay making changes until required for the 2018 DR Auction, and to run the 2017 auction under the existing rules. Can we have more detail on "data issues" mentioned in slide 3 that necessitated this delay? Maybe a review of the data and subsequent analysis would be a good topic for a webinar sometime soon.

The timeline for changes to HDR cannot be developed in isolation of the role of HDR (and its successors) in the future Ontario energy market. Critical paths for market renewal contemplate material changes in market design, changes that stand to deliver real benefits to customers. These changes are contemplated to be in place by 2020, and the DRWG ought to have its work done by then. The most important timeline for the DRWG is that over-arching critical path for market rule amendments as well as various other changes and consultation that will be required for ultimate convergence with future IESO markets.

Can we request that each DRWG meeting commence with a briefing on the current circumstances of that joint path for market development? i.e., how are the parallel paths in the various engagements progressing?

The IESO "commitment to increasing utilization" resists meaning until it is attached to specific, quantitative, measurable targets, just as the IESO should expect from its partners in conservation.

We strongly caution against relying on one-run simulations and constrained assumption sets to draw sweeping conclusions. Examples of arbitrary variables in the analysis include standby notice windows, activation windows, duration, hourly price limits, and bids, with established contract terms and capacity

payments. In effect, all the parameters of the HDR program are fabricated, and cannot be relied on as a proxy or even indicative of reasonable expectations of a more perfect market.

The IESO needs to acknowledge the presence of strategic bidding, i.e., one cannot conclude that a bid set at \$1999.99 is a proxy for marginal opportunity cost or any underlying utility of energy consumption. A bid set to maximum minimizes the frequency of dispatch. If the IESO were to raise the cap to \$20,000 and participants were to reset their bills at \$19,999.99, it could not be concluded that the marginal utility of consumption suddenly had increased ten-fold. The question of why market participants should seek to minimize participation needs to be addressed, if that is the outcome the current program design is inducing.

“Revisiting the criteria for improvements”

1. Effectiveness and efficiency must be quantified, measurable and reliable indicators of progress.

It is not enough to rely on anecdotes of “success”, or surveys of stakeholders as to customer views and likely outcomes of new market opportunities. The IESO needs to test its propositions in the market, working with real customers, to find the best way forward. The market cannot be effective if customers are presented only one option. If there is no choice to be made in terms of program parameters, we will not be able to understand how different customers and energy service providers might approach the market opportunity.

The intrinsic economics of the system, underlying the rationale for DR and other programs, are in fact consistent and ongoing, in terms of the need for capacity, energy, and operating reserve, well into Ontario’s distant future. We ought not presume how these services are to be procured, aggregated or contracted, but be open to innovations in business arrangements and new business models.

2. The “when economic” condition is paramount and not yet clearly established in terms of the value proposition for a customer to contemplate participating in the current and future IESO DR markets.

The program is a legacy of historical policy commitments. The transition is away from this model to an integrated, multi-part energy market participation opportunity for customers to see price signals as they are seen by generators and the system and to have equal rights of participation unfettered by arbitrary uneconomic regulatory and administrative restrictions.

3. Balancing stakeholder needs is subsidiary and unnecessary to market success, as measured in quantitative terms.

Stakeholder concerns deserve a response, and vested interests are to be considered as a transitional matter to be managed, but efficiency is the path to sustainability, not consensus. The majority interest in the matters being discussed is that of consumers. Their views mostly are silent in the current market; prices are regulated; real-time market signals are replaced by forecast averages and variance accounts.

Accessing data through the utilities is a chore for customers, is not standardized from one LDC to another, and utilities are not allowing customers easily to share their energy information with third parties. (We expect that the coming iteration of Ontario’s long-term energy plan will clarify the

government's policy intent with respect to implementation of a 'Green Button' standard for all customers in the province, and set a timeline to eliminate current barriers to meter data access.)

A significant marker of greater effectiveness and efficiency will be direct participation by customers in the market. Progress in the market is less signified by incremental MWs from existing market participants, and more by growth generally of customer participation in IESO-administered markets.

4. The proposed timelines are too modest.

The over-arching imperative is to transition existing MWs and engage broader market participation in the integrated IESO-administered marketplace of the future. This means short-term compatibility with the rules of existing initiatives such as the incremental capacity auction, but more fundamentally must be aimed at integration and alignment with the new market rules related to day-ahead markets for capacity, location-based pricing for energy and operating reserve, and broad participation in markets for ancillary services.

Slides 9 through 13 summarize historical observations, considering hours in which the PD shadow price exceeded \$100/MWh. This outcome is rare in Ontario's current market circumstance, occurring in few hours. Evidently the \$100 threshold is instrumental in limiting the frequency that HDR will be triggered.

Slide 14 is concerning given the directness of the assertions. We would dispute the suppositions put forward and submit not only is there no evidence to support the purported future limitations of demand resources generally, but that there is a growing body of literature which would refute the point. We would argue the inferences made cannot be justified in theory or practice, and certainly cannot be concluded from the program in its current form, given the extent of the fabrication and the peculiar outcomes which the IESO reports. The conclusions reached at a minimum cannot be sustained. The analysis errs in emphasizing the limitations of DR as a resource, and vitiating the merits of demand response generally in meeting system needs more broadly.

Slide 15 raises similar concerns. If the words "economic to be" and "still" were excised, the sentence might serve:

"While DR is only used in a few hours when the system is under most stress, it has significant value as a capacity resource."

Demand response is often significantly cheaper than an equivalent peaking generator that would only operate for a relative few hours a year. If only Ontario wasn't already exceedingly well supplied in the gas generator department, presumably the argument goes, there would be more value in DR.

The point missed is that, even with abundant peaking capacity in the form of gas generation, the fuel required to produce energy to serve demand during peak periods is a fossil fuel, and causes emissions of greenhouse gases and carbon. The fuel is imported, so Ontario is reliant and vulnerable to upstream supply and transportation risks that can, at times, expose Ontario consumers to excessively high and unsustainable prices. There is merit and value in the energy component of the demand-side system service offering. Even if the price is low, the value can be positive and should not be discarded.

If economics is the base for the argument, then demand response absolutely should be considered as an opportunity to "displace large volumes of energy", if doing so is cheaper, less risky, more efficient, and

more sustainable than the alternative, and not just during times of system stress. Arguably, the more demand response is relied upon, the more serviceable and reliable it will be to meet system needs, and not just during times of system stress. Full demand-side integration demands that consumers and producers compete at the margin, and not just in circumstances delineated as to be vanishingly rare. Generators are not restrained to operate only in times of system stress, except as their own operating costs and facility limits might require: neither should be consumers.

Considerations for change

The proposals for scheduling flexibility will be of more interest to contracted MWs, since they are variations on the status quo, rather than a future ideal. Given that existing participant arrangements are a starting point for those MWs, this makes sense for now.

For the future market, however, it makes more sense to talk about aligning events like standby notices, scheduling and activation for demand resources as they are for supply resources, for example by allowing distributed energy resources to participate in hourly energy and operating reserve markets, and allowing distributed demand side capacity to bid into a day-ahead market, aligning the market opportunity and price signals equally for system services at every node regardless the technology.

The energy system requires multiple services to operate, and generators and demand side resources equally can contribute parts of that joint service requirement. Utilities as well will fill this need, and distributor-administered markets (and market services) need the price signals coming from the IESO to operate aligned with local and system optimization needs.

The essential enquiry is how to get to multi-part pricing that effectively can induce the services be delivered the IESO requires to operate, in the most efficient manner, and so the value of those integrated services is transparent to all participants. Demand-side energy systems can be optimized to meet customer needs and system needs, but never will be unless the value of those system needs is made available to the customer as part of a comprehensive business case for investment. Sustainable energy system investments need to be optimized to provide the complete package of services a customer requires, which means looking at participating in a DR auction for example, as potential incremental value to a project, rather than in isolation, one in a stack of potential revenue streams to accelerate capital recovery and drive greater efficiency overall.

As a practical matter, considering the starting point of the 419 MWs already contracted, the IESO might consider, instead of trying to land on a single best model, to trial a number of options for existing and future market participants. Conceptually, it would be to segment the market to elicit actual market responses to different pricing structures and operating profiles. The best advice will come directly from the market, but only when meaningful alternatives are made available.

An effective change to induce greater utilization would be to reduce or eliminate the \$100/MWh PD price threshold. The number is arbitrary and marginalizes the utility of the demand resource under contract; this parameter possibly is the factor which most drives low utilization.

We look forward to reviewing upcoming reports on utilization payments. The IESO's own observations reveal flaws in the existing program, in terms of how the pricing structure and rules are incentivizing non-participation in the market. If the energy—and other system services—provided by a demand side

resource can properly be priced, then providers on both sides of the meter can fairly be compensated for services rendered.

Thank you for the opportunity to provide comment.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Adam White', with a long horizontal stroke extending to the right.

Adam White
Chief Executive Officer
Powerconsumer Inc.