Andrew J. Sasso
Director, Energy Policy & Government Relations
Toronto Hydro-Electric System Limited
14 Carlton Street; Toronto, ON M5B 1K5
regulatoryaffairs@torontohydro.com

December 31, 2020

Independent Electricity System Operator
#1600 – 120 Adelaide Street West
MH 1T1

Submitted via email to: engagement@ieso.ca

Re: IESO White Paper Part II: Exploring Expanded DER Participation in the IESO-Administered Markets – November 19, 2020

Toronto Hydro-Electric System Limited ("Toronto Hydro") is the local electricity distribution company ("LDC") for the City of Toronto. It has nearly 770,000 customers and delivers approximately 19 per cent of the electricity consumed in Ontario. With respect to wholesale electricity markets, Toronto Hydro is a non-dispatchable load. The utility is responsible for settling with the IESO for its commodity electricity purchases and for billing its range of customers, from small residences to large commercial, industrial and institutional customers. It has over 2,000 various distributed energy resources operating within its service territory, including net-metering, energy storage, combined heat and power, closed transition, load displacement, and generation under various IESO programs.[1] As part of its obligations as a distribution utility, Toronto Hydro provides connection, metering, and billing services to DERs while maintaining the safety and reliability of the grid. Accordingly, Toronto Hydro has a keen interest in the IESO's exploration of options to expand distributed energy resources ("DERs"), and its most recent Innovation and Sector Evolution White Paper concerning "Exploring Expanded DER Participation in the IESO-Administered Markets - PART II: Options to Enhance DER Participation" (the "White Paper").

[1] Including Feed-in-Tariff (FIT), microFIT, Process and Systems Upgrade Initiative (PSUI), and Renewable Energy Standard Offer Program (RESOP).

Toronto Hydro's submissions on this topic are provided in detail below. In particular, Toronto Hydro highlights the following issues and concerns for the IESO's consideration:

- Toronto Hydro strongly encourages the IESO to consider matters that intersect with the purview of the Ontario Energy Board ("OEB"), and specifically with respect to ongoing consultations on Responding to Distributed Energy Resources[2] and the DER Connections Review.[3] The design of pilots undertaken pursuant to the White Paper should not constrain the options available to the OEB in those matters, and ideally be complementary to them.
- If and when the IESO does proceed, Toronto Hydro:
    - Recommends that pilots be carefully designed in a fashion that does no harm to ratepayers not engaged in the pilot. The White Paper is premised on the assumption that increased DER participation will lead to favourable customer outcomes. In many cases, this will be the case, but it is not a given. Policy design should at a minimum consider the potential for cross-subsidization and reliability and safety impacts. These implications should be considered for the pilot and at a level of at-scale implementation.
    - Cautions that the technical assumptions made with regard to distribution level accessibility within the White Paper do not account for investment costs that may be required, and that other policy choices may be optimal when considered more systematically. This underscores the need for the IESO to proceed with caution, and in alignment with the OEB, where these distribution side issues are currently being considered in several ongoing consultations.
- Finally, Toronto Hydro observes that the White Paper does not adequately consider the potential for DERs to produce value beyond IESO-administered markets. A central role for LDCs within this framework would create greater opportunities to unlock those value streams, to the potential benefit of the proponent, ratepayers generally, the LDC, and the IESO.

[2] EB-2018-0287 and EB-2018-0288
[3] EB-2019-0207

Consideration and Alignment with OEB Efforts

Since at least 2018, and in more tangential settings prior, the OEB has consulted with industry stakeholders to develop a more comprehensive and value-driven regulatory framework for DERs. It has also worked with stakeholders to review requirements for the connection of DERs to LDCs and to identify barriers to such connections, and where appropriate, standardize and improve the connection process.

As the intent of this White Paper seeks to increase participation of DERs in IESO-administered Markets ("IAM"s) with direct implication at the local distribution system level, Toronto Hydro urges the IESO to consider how to design pilots in such a fashion to be complementary to those efforts. Proceeding in parallel or in the absence of sufficient alignment could result in conflicting and administrative inefficient policy and operational directives to the detriment of all involved.

Need for a Customer-Centric Approach

While Toronto Hydro appreciates that the objective of this White Paper seeks to increase DER participation in IAMs, Toronto Hydro cautions that doing so is not directly correlated with better outcomes for customers. Future analysis would be more robust and authoritative through a value-driven approach aligned to the needs and preferences of customers (e.g. lower costs, improved reliability, reduced emissions, etc.). Increased DER participation can certainly be one possible step to this end, but the extent to which customers realize the projected benefits will depend on implementation decisions. Customer engagement is a core element of utility planning and the broader regulatory framework for LDCs, and that knowledge and experience will be imperative to the design of a robust and resilient DER framework in Ontario.

Technical Concerns

Safety, reliability and operations of the transmission and distribution system are important factors when considering DER participation in the wholesale markets. It is crucial to identify technical and operational challenges related to DER aggregations and the severity and difficulty to overcome them within any new framework. Given the complexity of technical solutions for some of these

challenges, coordination and communication among stakeholders will be critical to find the right solutions.

Furthermore, in order for stakeholders, particularly at the distribution level to understand the full impacts the proposed options may have on T-D infrastructure and give informative feedback, a clear understanding of technical and operational issues with respect to DER participants must be fully completed, including:

- DER eligibility requirements;
- Metering and telemetry requirements; and,
- Operational coordination among the distribution utility, the IESO, and third-party aggregators.

Moreover, some of the concepts that work well in a bulk power system with a small number of large, sophisticated customers, may not be as effective when applied to a distribution system that supplies hundreds or thousands of small, more diverse customers with specific needs. Distribution operators deal with significantly higher volumes of unplanned events, maintain assets in closer proximity to customers, and require significant flexibility to consistently meet customer expectations. Effective aggregation dispatch must be managed contemporaneously with planned work schedules and contingency assessments, among many other considerations. Toronto Hydro strongly urges the IESO to build these LDC operational needs into any actions pursued in response to this White Paper.

Incorporate Distribution Benefits within DER Framework

To make the most effective use of DERs for the benefit of consumers and ratepayers overall, pilots should be designed to unlock value streams beyond IAMs. LDCs have many years of experience with DER aggregation – a focal point of this White Paper – through programs such as peakSaver. By leveraging an LDCs ability to asses the impact of the DER, the location of connection, and the overall benefit of the resource, LDCs may be able to unlock localized components of the DER "value stack" that could further derive maximum benefits to customer, the distribution system, and the bulk power system alike. Toronto Hydro's Local DR project at its Cecil Transmissions Station, proposed and approved in its 2015 to 2019 Rate Application, is using resources including

peakSaver devices to defer tens of millions of dollars of capital investment that would otherwise be necessary to expand capacity.

Toronto Hydro appreciates the opportunity to provide its comments on the draft White Paper and would be pleased to speak more directly on any or all parts of its submission. Additional summarized responses to the IESO's Engagement Feedback Form have been attached as Appendix A to this submission.

Sincerely,

[original signed by]

Andrew J. Sasso
Director, Energy Policy & Government Relations
Toronto Hydro-Electric System Limited

Appendix A - IESO ENGAGEMENT FEEDBACK FORM

DER Participation in IAMs

Topic	Feedback
Which of the options would be most effective to encourage DER participation in the IAMs? Why?	• Reducing the minimum-size threshold and creating a participation model for aggregated non-dispatchable generation are the most effective options to encourage DER participation in IAMs. However, Toronto Hydro respectfully submits none of the options are mutually exclusive. Without addressing these two options, the majority of DERs will be excluded from participating in IAMs. • Toronto Hydro strongly encourages the remaining options be assessed in light of the proposed approach to implementation and expected net benefits to the bulk-transmission system, the distribution system, and most importantly, customers and ratepayers.

Potential Impacts to Stakeholders

Topic	Feedback
Are there additional potential impacts to stakeholders that have not been explored in the white paper?	• The specific impacts will depend on how the options are implemented, which should depend on the specific desired outcomes/benefits. Knowing the goal or outcome that the IESO desires would help stakeholders' comment on the best way to achieve it; without knowing it, it is difficult to gauge the effectiveness of the proposals. • Some of the concepts that work well in a bulk power system with a small number of large, sophisticated customers will not be effective when applied to a distribution system that supplies hundreds of thousands of small customers with diverse needs from the distribution system.

Implementation Considerations

Topic	Feedback
Are there additional implementation considerations that have not been explored in the white paper?	• There are concerns regarding the technical feasibility and administrative and operational challenges of aggregations that are not limited to a single node. • Regarding DER aggregation location rules, Toronto Hydro encourages further dialogue on whether they would be better established by the IESO or by LDCs.

Looking Ahead to Implementation

Topic	Feedback
Which wholesale products/services would DER owners/aggregators seek to provide in the IAMs if these options were implemented in the future? Using what technologies? Are there specific options that would allow these products/services to be offered?	

General Comments/Feedback