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BY COURIER

September 16, 2019

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
P.O. Box 2319
Toronto, ON M4P 1E4

Dear Ms. Walli,

EB-2019-0207 – Distributed Energy Resources Connections Review Initiative - Submission

On August 13, 2019, the Ontario Energy Board (OEB) issued a letter announcing an initiative to review the connection requirements of distributed energy rsources (DERs) by licensed electricity distributors. The OEB invited interested parties to provide comments on the proposed scope of the consultation.

Hydro One's submission on the issues and questions identified by the OEB in the letter are attached. As noted in its submission, Hydro One is interested in participating in the working group the OEB intends to form to develop recommendations in this proceeding.

An electronic copy of this has been filed through the Ontario Energy Board's Regulatory Electronic Submission System (RESS).

Sincerely,

ORIGINAL SIGNED BY FRANK D'ANDREA

Frank D'Andrea

Distributed Energy Resources Connections Review Initiative (EB-2019-0207)

Hydro One Submission

Introduction

On August 13, 2019, Ontario Energy Board (OEB) staff issued a letter announcing the commencement of an initiative to review its requirements in regard to the connection of distributed energy resources (DERs) by licensed electricity distributors ("the DER Connection Review"). The OEB's letter sets a proposed list of issues to be considered in the DER Connection Review as well as a series of questions for which it is seeking stakeholder feedback. Following initial comments on the proposed scope of review, the OEB intends to form a working group of representatives from the sector in order to develop recommendations on the issues identified.

Hydro One is interested in participating in this review and being member of the working group. Hydro One owns and operates 98% of Ontario transmission assets, is the largest local distributor and is a host distributor to the majority of other distributors in Ontario. Hydro One has already seen a high level of DER penetration with impacts on both its distribution and transmission assets. To date, Hydro One has over 1300 large DER distribution-connected facilities representing about 2500 MW of capacity, as well as, approximately 15,000 micro-sized projects (i.e. < 10 kW facilities). Approximately 65% of the total distributed generation capacity in Ontario is connected to Hydro One's distribution system. As such, Hydro One offers an important perspective on the issues raised in this review and can be a substantial contributor to the working group.

This document contains Hydro One's comments on the proposed list of issues to be considered in the consultation, as well as, the questions raised in the OEB's August 13, 2019 letter regarding the scope of this review. Hydro One's key recommendations are summarized below.

Key Recommendations

- The connection process and timelines, cost responsibility and associated technical requirements for the connection of DERs should appropriately consider the technology employed, the purpose of the DER and the point of connection of the DER.
- In addition to considering the utility's obligations to facilitate the connection of DERs, the consultation should consider any obligations that DER owners should have to the utility (e.g. responsibilities for data quality, operating characteristics).
- Consultation should provide clarity regarding the treatment of storage resources which can exhibit the characteristics of either loads or generators depending on the circumstances.
- The current scope of the DER Connections Review has the potential to significantly overlap with the broader review being conducted in the OEB's Responding to DERs consultation. The OEB should consider and map out the interconnections between the two DER-related policy proceedings to ensure that efforts are not duplicative and that both consultations are informed by the same overall strategic vision.

Background

The purpose and focus of the DER Connection Review is the connection of electricity generation and storage facilities to the distribution system, both in front of and behind the meter. The consultation will

address: connection process timelines, connection cost responsibility matters, and technical requirements both for the distributions system and any requirements of transmitters for connection of DERs.

The following key issues have been identified for consideration in the DER Connection Review:

- The need for standardization and clarity of definitions, terminology and regulatory rules in respect to DERs.
- The need for clear rules regarding cost responsibility for connection of DERs to ensure fairness to DER customers and all other customers of the distributor.
- More detailed and comprehensive timelines for the connection process to ensure the timelines are well understood.
- Appropriate standardization of connection technical requirements.

To address these issues the OEB intends to develop additional regulatory requirements to "standardize the connection process while ensuring reliability on the distribution system and fairness to customers in terms of cost sharing". The OEB intends to form a working group to review the issues and develop a set of recommendations which would be considered in amendments to the DSC and/or directions/guidance to the industry.

On July 17, 2019 the OEB issued a letter regarding another initiative to investigate how to enable DERs in Ontario ("Responding to DERs", EB-2018-0288). The OEB indicates that the Responding to DERs initiative will address broader policy questions regarding the value of DERs and new DER services. The OEB indicates that consultation for the two DER-related initiatives will be coordinated.

General Comments

Hydro One is supportive of the OEB's DER Connection Review initiative and agrees that the sector would benefit from a review of the connection-related provisions currently in the Distribution System Code ("DSC"). In its letter, the OEB indicates its view that there should be consistency across the province in terms of cost responsibility and process timelines. While there is benefit in consistency in processes and timelines between utilities, Hydro One believes that regulatory and technical requirements should be a function of the type of connection being sought.

Specifically, Hydro One believes that the consultation should consider the extent to which the connection-related provisions, cost responsibility matters and technical requirements in the DSC should vary based on:

- the DER technology employed (e.g. synchronous or inverter-based),
- the purpose of DER (e.g. to provide a customer benefit only or provide a benefit for the IESO or the distributor), and
- the connection configuration (e.g. whether the DER is connected in front or behind the distributor's meter).

Hydro One sees value in establishing different streams of connection requirements that take in to account the nature of a DER and its impact on the distribution and transmission system which are then consistently applied throughout the province as a minimum standard applicable to DER proponents. Hydro One submits that these considerations should be specifically reflected in the scope of discussion in this proceeding.

The issues identified in the OEB's letter focus on the distributor's obligations for the connection of DERs. Hydro One submits that the DER Connection Review should also consider the obligations on DER proponents. Obligations could include data quality, visibility of behind the meter installations and level of control afforded to the utility to ensure effective system operation under different DER operating scenarios. Greater utility visibility and control of DERs can help improve employee and public safety and reliability (e.g. reduce restoration times after faults).

Hydro One is supportive of the OEB's indication that the review will also consider any requirements of transmitters for the connection of DERs. Consideration should also be given to the impacts on host distributors. It is important that any consultations related to DERs take a holistic view of the upstream impacts on the electricity system for DER connections.

Hydro One believes that the OEB should be cautious in any attempts to standardize DER-related technical requirements. DER technologies are wide-ranging (e.g. solar, battery storage, micro-grids, etc.) and many are still in the pilot or field trial stage of their development. A significant amount of work is already being undertaken to develop industry technical standards for DER connections by organizations such as the IEEE and CSA, who have specialized expertise in this area. In addition, there are differences in the physical systems of different distributors that may justify differences in technical requirements. If the OEB does mandate technical requirements for DER connections, it must ensure these requirements are consistent with and don't contravene industry recommended best practices. Otherwise, distributors would be prevented from implementing best practices that serve the interests of utilities and their customers.

Hydro One is currently in the process of reviewing and updating its own technical interconnection requirements ("TIR") standard to ensure that it incorporates current industry best practices and reflects Hydro One's operating requirements. Hydro One would be happy to share its work with the OEB and the DER Connection Review initiative working group. Hydro One's TIR are an example of the ongoing efforts being voluntarily undertaken by utilities to ensure the adoption of best practices.

The current scope of the DER Connections Review has the potential to significantly overlap with the broader review being conducted in the OEB's Responding to DERs consultation. For example, the DER Connection Review seeks to address connection cost responsibility while the Responding to DERs consultation will consider the value of DERs. Hydro One suggests that the value of DERs is a key consideration for connection cost responsibility and that the two issues cannot not be explored separately. Similarly, changes to the role of the distributor (e.g. acting as a load-serving entity or distribution system operator) could impact the distributor's obligations to DER owners and vice versa. Hydro One's understanding is that these types of issues would be explored within the Responding to DERs consultation however, these are foundational issues/questions which should inform the regulatory changes required in both consultations.

Specific Comments on OEB Questions

Hydro One's specific comments on OEB staff's questions are provided below.

1. **Are the objectives for the DER Connections Review initiative clear?**

Broadly speaking, Hydro One believes that the objectives for the DER Connections Review initiative are clear. What is not clear is how the DER Connection Review and Responding to DERs consultations will be coordinated. There are key foundational discussions and decisions that are relevant to both proceedings that should be addressed prior to developing recommendations in each workstream.

As an example, a formal regulatory definition of DERs is required to ensure a common understanding in both proceedings. The OEB states that the review will focus on connection of "electricity generation and storage facilities connected to the distribution system, either in front or behind the distributor's meter." This description is sufficiently broad to cover a broad range of technologies (e.g. battery storage, microgrids, net-zero homes) and applications (e.g. both resources that displace customer load and those that export power to the distribution system). Hydro One believes that the DER Connection Review should consider a broad range of technologies and applications. The OEB may wish to clarify if this is not the intent of the proceeding.

As indicated in Hydro One's comments in response to question #4, the OEB should consider and map out the interconnections between the two DER-related policy proceedings to ensure that efforts are not duplicative and that both consultations are informed by the same overall strategic vision.

Hydro One is supportive of the OEB's indication that the review will also consider any requirements of transmitters for the connection of DERs. In addition, the upstream impacts on host distributors should also be considered. It is important that any consultations related to DERs take a holistic view of the impact to the electricity system.

2. **Have staff identified the right topics for the DER Connections Review and do stakeholders have any specific concerns that they want to identify?**

The issues identified in the OEB's letter focus on the distributor's obligations for connection of DERs. Hydro One submits that the DER Connection Review should also consider the obligations that DER proponents have to the distributor (e.g. data quality, control afforded to utility) to ensure that the connection process is efficient and that the distribution system can continue to operate effectively.

Hydro One believes that the DER Connection Review should consider the purpose of the DER in determining its recommendations. DERs can be broadly categorized as having two functional objectives; those that are connected to provide value for the customer only and those that are designed to provide benefits to the system. In order for a DER to provide system benefits, a utility may require direct control of the facility's operations or a commitment from the proponent that it operate according to certain parameters.

Similarly, the DER Connection Review should consider the degree to which the connection process and any technical requirements should be impacted by the DER technology employed and the configuration of the connection (e.g. in front of or behind the meter). It is Hydro One's view that connection requirements can be materially impacted by these factors.

With the exception of prescribing technical standards, Hydro One sees benefit in the objective of providing standardization of connection requirements across the province so that DER proponents have a certain level of predictability of outcomes. In addition to establishing a predictable minimum standard, the consultation should also consider affording flexibility in connection process/requirements where distributor and customer needs may be aligned. For example, customers could voluntarily allow utility control of their DERs in order to avoid the need to trigger additional investments in the distribution system and the capital contributions that would arise.

3. **Are there any proposed solutions that stakeholders wish to identify at this point?**

Hydro One submits that it is premature to identify proposed solutions when the scope of issues for consideration is not yet fully determined by the OEB. There are however some ongoing issues regarding current connection-related provisions which would benefit from consideration in this proceeding.

Hydro One recommends that the working group formed in this proceeding consider:

- Whether storage should be defined and treated as a unique type of resource. Currently, some storage facilities that provide ancillary services to the IESO grid do meet the definition of a generation facility in the DSC while storage facilities that serve other purposes may not necessarily meet the definition.
- Whether load displacement (or behind-the-meter) facilities should be treated differently than other exporting DER facilities and whether different connection requirements should apply to these facilities.
- Whether the capacity allocation process requires reconsideration. Should storage, or potentially other load displacement resources, be subject to the same capacity allocation process as other forms of generation? Can capacity be reserved for utility owned DERs that provide system benefits?
- Whether the Renewable Energy Cost Cap and REI subsidies described in Chapter 3 of the DSC, and which apply only to renewable generation facilities, remain appropriate.
- Whether the current size categories for embedded generation facilities defined in section 1.2 of the DSC remain appropriate for specifying connection requirements and whether these categories should be expanded to include energy storage and load displacement facility connections.
- Whether a new standard form DER connection agreement should be referenced in the DSC that provides sufficient flexibility for distributors to manage the operation of DERs. Currently, the connection agreements mandated by the DSC are for generators and loads.
- Whether any provisions should be made to limit the potential for "queue squatting" by DER applicants (i.e. the ability for proponents to hang on to allocated capacity and delay their in-service date, thereby preventing the connection of other resources which are ready to be connected).
- Providing clarification regarding the term "load management activities" in Section 3.5.2 (b) of the DSC. As currently worded, most load displacement facilities would satisfy the criteria and customers with these facilities would be exempt from bypass compensation, which would result in cross-subsidization to other customers.
- Providing clarification regarding the process and requirements for both collecting and returning expansion deposits from DER connection applications.
- Whether any changes should be made to the connection process to improve data quality from applications which is often a source of delay in processing applications.
- Whether the same timelines are appropriate for all types of DER applications.
- Whether there are circumstances where applications can be fast tracked or impact assessments reduced in proportion to the level of restrictions on operation accepted by the proponent.
- Whether existing connected facilities should be affected by any changes to requirements or obligations arising from this proceeding.

4. What is the best approach for development of solutions to the issues identified?

Hydro One agrees that the formation of a working group is appropriate given technical nature of the subject matter and is supportive of the commitment to invite industry organizations to present their work on the identified issues.

As noted above, the current scope of the DER Connections Review has the potential to significantly overlap with the broader review being conducted in the OEB's Responding to DERs consultation. There are foundational issues/questions which should inform the regulatory changes required in both consultations. These questions include the role of the utility and how any system benefits provided by DERs should be valued. At minimum, Hydro One submits that the OEB should make a determination on the formal regulatory definition of a DER prior to proceeding with both consultations. This is important so that both proceedings can proceed with a common understanding of the scope of the resources that are being considered.

Once the OEB has issued its scoping paper regarding the Responding to DERs consultation, it should identify the key decisions which will impact both proceedings. In addition, the OEB should consider which issues can be addressed immediately and which require a longer time horizon for consideration. Though it may introduce a minor delay to each consultation, Hydro One believes that such an approach would result in a more considered review of the overall regulatory framework related to DERs.