

September 20, 2021

Registrar  
Ontario Energy Board  
P.O. Box 2319  
2300 Yonge Street, 27th Floor  
Toronto ON M4P 1E4

Reference #: EB-2019-0207/ EB-2021-0117

Dear Registrar:

**RE: Distributed Energy Resources (DER) Connections Review,  
Reference #: EB-2019-0207/ EB-2021-0117**

We are responding to your request for submissions relating to the “Distributed Energy Resources (DER) Connections Review”.

Stem is a global leader in AI-driven energy storage services with over 970 systems and software platforms installed or under contract across six U.S. states, Ontario, and Japan delivering energy bill savings with utility and grid benefits. Based upon our experience, we believe energy storage can offer significant advantages to Ontario electricity consumers.

Stem continues to be supportive of the DER Connections Review process. We are supportive of the OEB’s commitment to modernize regulation to keep pace with the sector evolution. More specifically, we are in alignment with the OEB’s goal to improve connection timelines and provide clarity and consistency in the process for connecting a generation or storage DER. It is with this in mind that we have prepared the following comments responding to the OEB’s Notice of Proposal to Amend the Distribution System Code regarding connection of distributed energy resources (DERs) to local electricity distribution systems:

**Appendices A and B: Notice of Proposed Amendments to the Distribution System Code**

**1.2 Definitions:** We support the addition of definitions including, but not limited to: storage facility, exporting connection, emergency backup generation facility, and so on. We, however, recommend that the definition of “Distributed Energy Resources” more closely align with the IESO definition. This will help avoid confusion and misinterpretation at the transmission and distribution levels. For ease of reference, the IESO definition is as follows:

“DERs are electricity-producing resources or controllable loads that are connected to a local distribution system or connected to a host facility within the local distribution system.

DERs can include solar panels, combined heat and power plants, electricity storage, small natural gas-fueled generators, electric vehicles and controllable loads, such as HVAC systems and electric water heaters. These resources are typically smaller in scale than the traditional generation facilities that serve most of Ontario demand.”

#### ***DSC 6.2.1 Responsibilities to Generators:***

**6.2.1** Section 6.2 does not apply to the connection or operation of an emergency backup generation facility ~~or an embedded generation facility that is used exclusively for load displacement purposes at all times.~~ When connected in parallel with the distribution system, an emergency backup generation facility must have a transfer switch that isolates it from the distribution system within 100 milliseconds.

**Comment:** Stem agrees with the removal of the exemption of load displacement reference in 6.2.1. It is critical that s 6.2 apply to all load displacement (exporting and non-exporting) projects without limitations in the DSC.

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#### **Cost Responsibility for Connection of Generation Facilities and Storage Facilities**

**6.2.31** The provisions of Chapter 3 of the Distribution System Code are applicable to all generation facilities and storage facilities, connecting to a distributor’s distribution system and are also applicable to non-exporting connections.

**Comment:** To be absolutely clear, the OEB may want to consider adding “exporting” so that the sentence reads as “and are also applicable to all exporting and to non-exporting connections”, so everyone clearly understand Chapter 3 applies to all projects.

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**6.2.3** A distributor shall promptly make available a generation connection information package to any person who requests this package. The package must be made available electronically on the distributor’s website. It must also be available in hard copy at the distributor’s premises for customers who request it. The package shall contain the following information:

(f) the sample Protection Philosophy as provided in the *Distributed Energy Resources Connection Procedures*; and

(g) a list of “restricted feeders” by name and feeder designation that the distributor operates that are known not to have any short circuit capacity to accommodate a distributed energy resource connection. The list must be updated as necessary to capture system reconfiguration or expansions and shall be updated at least every 3 months

**Comment:** Stem strongly supports having this enhanced package, with the addition of a sample protection philosophy and listing of restricted feeders being available in both hard copy and on the distributor’s web site. This consistent approach will eliminate confusion and reduce the amount of time needed to access this information.

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**6.2.3 Additional Comment:** As part of the Tranche 3 discussions, we recommend looking into transparency of available feeder capacity. We recommend that the cause (ie. thermal limits exceeded, minimum load in excess of feeder current ratings, etc.) of any restricted feeders should also be identified. This information should be made available online and updated every six months.

***Connection of Micro-Embedded Generation Facilities:***

**Comment:** Stem has limited experience with the connection of Micro Embedded Generation, as such will not provide any additional comments on this section

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***Preliminary Consultation Information Request and Report:***

**6.2.9** A distributor shall make available a Preliminary Consultation Information Request form, in the manner specified in the *Distributed Energy Resources Connection Procedures*, to a person who is considering applying for the connection of a generation facility to the distributor’s distribution system. The Preliminary Consultation Information Request Form should be available electronically on the distributor’s website and in hard copy at the distributor’s address.

**Comment:** Development of a standardized initial contact form is a significant step forward. We support the proposed standardized forms and commend the OEB for advising all utilities of these new forms.

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**6.2.9.1** The distributor shall respond within 15 days of receipt of a completed Preliminary Consultation Information Request form with a completed Preliminary Consultation Report, in the form specified in the *Distributed Energy Resources Connection Procedures*

**Comment:** 15 days to complete the PCR report is a reasonable timeframe.

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**6.2.9.1** A distributor shall provide a Preliminary Consultation Report to a person without charge up to 3 times in a calendar year.

**Comment:** Stem needs clarification to the wording of “to a person without charge up to 3 times in a calendar year”, is this site specific or can Stem only submits 3 PCRs per calendar year to a local Utility after which charges “may apply”? In addition, “distributor may recover from the person the reasonable costs incurred by the distributor...” Further discussion is required and recommended regarding “cost recovery” provisions.

**6.2.11A** distributor shall make available a Connection Impact Assessment Application, in the form specified in the *Distributed Energy Resources Connection Procedures*, to a person who is considering applying for the connection of a generation facility to the distributor’s distribution system. The Connection Impact Assessment Application should be available electronically, on the distributor’s website where available, and in hard copy at the distributor’s address.

**Comments:** Stem fully supports this major step forward. A single industry wide standard application will improve the overall application process. We would like to acknowledge the work completed by Hydro One in preparing this document.

#### **Small Embedded Generation Facility**

**6.2.12** Subject to sections 6.2.4.1(b), 6.2.4.1(c) and 6.2.4.2, ~~the~~ a distributor shall follow the process as set out in the *Distributed Energy Resources Connection Procedures* to process a request for connection of a small embedded generation facility.

**Comment:** The development and implementation of the DER Connection Procedures document is an excellent step forward in improving consistency and transparency in the connection process.

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#### **Mid-sized or Large Generation Facility,**

**6.2.14:** If the distributor requires a transmitter or host distributor to complete a Transmission System (TS) review study or connection impact assessment, the distributor shall file an application with the transmitter or host distributor for such within 15 days of initiating a connection impact assessment study.

**Comment:** Stem supports this clarification: once an application is deemed complete and host (distributor or transmitter) assessment is required an application must be submitted within 15 days. What is not clear relates 6.2.13 which states CIA must be completed in 60 days. Some additional wording may be required that in order to provide a full completed CIA to the applicate both CIAs must be completed. The time frame would be 75 days from the initial CIA start date. This could be longer if you have a distributor, host distributor and transmitter. It should also be acknowledged that having the ability to have concurrent CIAs being completed, is a significant improvement.

**6.2.16** In the case of an application for the connection of a mid-sized or large embedded generation facility, once the impact assessment is provided to the applicant, the distributor and the applicant have entered into an agreement on the scope of the project and the applicant has paid the distributor for the cost of preparing a detailed cost estimate of the proposed connection, the distributor shall provide the applicant with a detailed cost estimate and an offer to connect by the later of 90 days after the receipt of payment from the applicant and 30 days after the receipt of ~~comments~~ study results from a transmitter or distributor ~~that has been advised~~ requested under section 6.2.14A.

**Comment:** Stem believes the order noted in section 6.2.16 may be incorrect. The current process is a completed CIA is issued, which includes a cost estimate to connect. Should an applicant wish to have a more detailed estimate completed, notice is provided to the distributor, payment issued and detailed estimate is provided with the timeframe noted. The next step, should the applicant wish to proceed, is to enter into a connection cost agreement or capital cost recovery agreement, in the case with Hydro One.

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**6.2.18 (b)** applies only to an exporting generation facility if the applicant does not have an executed ~~OPA~~ IESO contract which includes a requirement for security deposits or similar payments, a requirement that the applicant pay a capacity allocation deposit equal to \$20,000 per MW of capacity of the embedded generation facility at the time the connection cost agreement is executed;

**(c)** applies only to an exporting generation facility if the applicant does not have an executed ~~OPA~~ IESO contract which includes a requirement for additional security deposits or similar payments, a requirement that if fifteen (15) calendar months following the execution of the connection cost agreement the embedded generation facility is not connected to the distributor's distribution system, the applicant must pay an additional capacity allocation deposit equal to \$20,000 per MW of capacity of the embedded generation facility on the first day of the sixteenth(16th) calendar month following the execution of the connection cost agreement;

**Comment:** These provisions were developed in the early days of the *Green Energy Act*. As developers we need to better understand the rational for these provisions. In addition, why the second deposit 15 months later (applicants are expected to be connected in within 3 years or 5 years for water-based projects). In addition we need to better understand how the \$20,000 was established.

We strongly recommend the removal of this section or allow for a more in-depth discussion by the Working Group in tranche 3 of the DER Connection consultation. In addition, s. 6.2.18 needs additional clarity. It will be important to understand how the fees were determined and why these fees will apply only to exporting facilities.

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**6.2.20** Once the applicant informs the distributor that it has received all necessary approvals, ~~provides the distributor with a copy of the authorization to connect from the ESA~~ and enters into the Connection Agreement, and the distributor receives a copy of the authorization to connect from the ESA, the distributor shall act promptly to connect the generation facility to its distribution system.

**Comment:** Stem agrees with these proposed changes.

S. 6.2.20 However, needs to be reviewed specifically with “and enters into the Connection Agreement”. In most cases the transmitter/distributor will not execute the Connection Agreement until facility commissioning is complete and a report issued. A Connection Agreement cannot be entered into until the site is connected to the grid for commissioning purposes, usually with a “temporary connection authorization”. We recommend that this section be updated and amendments to the Distributed Energy Resources Connection Procedures document will also be needed.

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**6.2.23** ~~Material on the process for connecting a generation facility to a distribution system is set out in Appendix F.1. A distributor shall follow the process as specified in the *Distributed Energy Resources Connection Procedures* to process a request for connection of a mid-sized or large embedded generation facility.~~

**Comment:** Stem fully agrees with this improvement.

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## **Review of the Distributed Energy Resources Connection Procedures**

Again, we support the creation of the Distributed Resources Connection Procedures document. This will help ensure consistency and transparency regarding the application of the DSC. In general, as key principles we strongly suggest that the OEB take an active role in approving deviations from the DERCP and engages in a thoughtful discussion regarding application costs.

In the spirit of continued collaboration, we respectfully submit the following comments for your consideration:

**2. Definitions:** We recommend adding, “for behind the meter and front of the meter applications” following “distributor’s system” to ensure clarity.

**3. Distributed Energy Resources Connection Procedures Overview:** For consistency of application, we recommend that this section wording be modified to better reflect project development :

### **c. Project Development**

- Project scope and cost
- *Capital Cost Agreement / Capital Cost Recovery Agreement (Hydro One)*

d. Build and energization

- Build, ESA Connection Approval Commission,
- Connection/Operating Agreements
- Permission to Operate

#### 4. Preliminary Consultation

**4.2 Restricted Feeder List:** We suggest that instead of using “short circuit” that “zero capacity” be used as a replacement. There could be other reasons a feeder is restricted. This will better reflect that status of the feeder.

**4.3 Preliminary Consultation Information Request, s. 4.3.1:** To ensure enforceability, consistency and transparency, we recommend that instead of advising the OEB that distributors will be required to “submit for review and approval of the OEB”.

#### 5. Connection Impact Assessment

**5.1 Description, 5.1.2:** Cost estimates is a key issue to be discussed in tranche 3 of this consultation. We believe estimates of +/-50% of the cost is unreasonable and creates financial risk as a result of this proposed requirement.

**Detailed Cost Estimate:** We suggest that the phrase “before signing a connection agreement” be replaced with more specific language such as “before signing the Connection Capital Cost Agreement”.

Regarding 5.1.4, we recommend that any proposals regarding costs should be included in tranche 3 discussions.

##### 5.2 Application Forms

With respect to “Small / Mid-sized / Large Embedded Generation Facility... If unique characteristics of a distributor’s system require the distributor to make additions s to the template form, then the revised form must be filed with the OEB.”

To ensure consistency and to avoid various templates, we would recommend if changes are required the those amendments be submitted to the OEB , reviewed and if necessary, that the OEB re-issue a revised template.

We appreciate the opportunity to provide these comments and report to you. We look forward to continuing this discussion with you, your team and participating in the DER Connections Advisory Group.

Respectfully,

A handwritten signature in blue ink, appearing to read 'J. Laine', with a stylized flourish extending to the right.

Jesse Laine  
Director of Deployments, Canada