CONVERGENT

September 16, 2021

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

Submitted via email

RE: PROPOSED AMENDMENTS TO THE DISTRIBUTION SYSTEM CODE TO FACILITATE CONNECTION OF DISTRIBUTED ENERGY RESOURCES (EB-2019-0207)

Dear Registrar:

Convergent Energy and Power ("Convergent") appreciates the opportunity to respond to your request for submissions relating to the "Distributed Energy Resources (DER) Connections Review." Convergent is the leading independent developer of energy storage solutions in North America. We manage over 250 MWs / 500 MWhs of projects worth approximately USD$550 million that are operating or under construction. In Ontario, Convergent has commissioned over 50 MWs of energy storage projects, making us one of the largest operators of energy storage systems in Canada. Our pipeline of operating facilities includes the two largest behind-the-meter storage projects in North America – both 10 MW / 20 MWh – located at Shell and Arlanxeo's refineries in the Sarnia valley. We have also deployed energy storage systems in partnership with the IESO, Ford Motor Company, Pilkington Glass and Husky Injection Molding, and we have other facilities currently under construction in Canada and the United States. Convergent's experience in developing large-scale storage in Ontario is unrivaled.

Convergent is supportive of the DER Connections Review process and 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 transparency 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:

GENERAL COMMENTS

Inclusion of Energy Storage

Convergent fully supports the inclusion of Storage Facility within the DSC. As noted by many other jurisdictions and Ontario, energy storage is a unique resource that is neither a load nor a generator. Treatment of energy storage must reflect its unique attributes and characteristics. In addition to defining energy storage, Convergent

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recommends that the OEB consider providing guidance on the treatment of energy storage within connection cost agreements and cost allocation. Under the current distribution rate design, energy storage resources pay demand charges for peak consumption on a monthly basis. The DSC and OEB should ensure that the future payments by energy storage are appropriately reflected in cost allocation and capital contribution calculations during the connection process. It would be unfair for energy storage to fully fund a connection expansion and then be forced to pay monthly during its operating life for the same infrastructure beyond the amounts that load customers are expected to pay.

Pathway to Resolve Upstream Connection Constraints

An off-ramp and rejection of a connection request identified in the DERCP is no capacity at upstream distribution or transmission systems. It appears that the host distributor only needs to inform the connection request proponent that no capacity is available and to reject the connection request. It is not clear to Convergent what options are available to the proponent to resolve the upstream connection constraint. Convergent believes there should be a feedback loop to determine if the proponent is willing to fund upgrades to the upstream constrained equipment as part of their connection requests. In many cases the cost of upgrades will be uneconomic, but in limited cases there may be options that proponents would be willing to fund. The process for the upgrade of upstream equipment does not need to formalized; however, it could be completed on an ad-hoc basis. The DERCP should outline a pathway to resolve upstream connection constraints.

Standardizing and Improving the Transparency of Capacity Allocation During the Form A/PCR and CIA Process

As a matter of practice, Distributors and LDCs across Ontario have had different ways of handling Form A applications (and it is safe to assume this will carry over to the handling of Preliminary Consultation Reports). Some distributors allocate capacity on a "first come, first served" basis – meaning that, if capacity is available, it can be allocated by submitting a compliant CIA. Other distributors have adopted an opaque, unilateral strategy of "reserving capacity," whereby they refuse to allocate customers / developers the full capacity requested during a Form A / CIA, instead opting to reserve a prescribed amount of the available capacity for unspecified future use.

Regardless of which approach to handling capacity allocation is deemed appropriate, it is critical that the OEB explicitly define and regulate this process. As it stands now, the handling of capacity allocation varies from distributor to distributor with no oversight, essentially allowing distributors to dictate their own rules. This has led to a distinct lack of transparency, consistency and accountability in the capacity allocation processes across Ontario.

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CODE-SPECIFIC COMMENTS

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

1.2 Definitions:

Convergent supports 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: Convergent 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.

Cost Responsibility for Connection of Generation Facilities and Storage Facilities

6.2.3 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: In an effort to improve the clarity of this section, 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: Convergent 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 distributors' websites. This consistent approach will eliminate confusion and reduce the amount of time needed to access this information.

As part of the Tranche 3 discussions, Convergent further recommends that this enhanced package include a list of all feeders by name and feeder designation with stated short-circuit capacity available, to be updated at least every 3 months. This document will enhance the transparency of the capacity allocation process, and reduce the number of Preliminary Consultation Reports distributors receive to check available capacity.

Another issue to flag is that the definition of restricted feeders in Appendix A (Section 1.2) does not fully align with the definition included in the DER Connection Procedures (Section 4.2). DER Connection Procedures specifically discusses feeders that have zero short-circuit capability while the Appendix A definition discusses zero capacity in general. Convergent supports the definition of restricted feeders as feeders with zero short-circuit capability since short-circuit limitations are hard technical restrictions due to safety and equipment protection reasons. General capacity restrictions, such as thermal capacity, are more flexible constraints and can be addressed through additional investments funded by the connecting resources (e.g., re-conductoring of limited feeder portion, re-arrangement of normal operating conditions to lower thermal overload, new switching capability under reliability events, etc.).

Connection of Micro-Embedded Generation Facilities:

Comment: Convergent 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: The 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.

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.

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: Convergent does not understand the justification for limiting the access to Preliminary Consultation Reports. The Preliminary Consultation Reports appear to be a slightly adjusted version of the Form A that is shared with customers free of charge today. Further, the Preliminary Consultation Report is the only document that allows customers to link their connection location with the proposed restricted feeder list. Without a Preliminary Consultation Report, a customer cannot determine if their connection point is on a restricted feeder, creating an unfair and unjustified barrier to customers seeking to manage their electricity needs. The information provided in the Preliminary Consultation Report appears to be common and easily accessible data that should not be a significant cost for distributors to compile.

In addition, the DSC amendments provide no definition of person and therefore it is not clear if it is a corporate entity, individual, or developer. Distributor service territories come in various sizes, the standard limit of three for all distributors is not fair to customers within large service territories.

Convergent recommends that the limit of three be removed and the Preliminary Consultation Report be provided free of charge once a year to each individual customer upon request. This ensures fair and equal access to distribution system information for all customers.

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6.2.11 A 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: Convergent 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.

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: Convergent supports this clarification, which prompts concurrent processing of impact assessment studies at both the distributor and transmitter levels. Convergent's only note of clarification relates to the language of 6.2.13, which states that the CIA must be completed in 60 days. Some additional wording may be required that to clarify that the time frame for receiving the completed CIA and Transmission System review study would be 75 days from the initial CIA start date (60 days for the CIA, and 60 days + 15 days for the Host Distributor or Transmission System review study).

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.

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Comment: Convergent 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
- if an applicant wishes to have a more detailed estimate completed, notice is provided to the distributor along with a payment, and detailed estimate is provided within the timeframe noted
- if the applicant wishes to proceed, they enter into a capital cost agreement or capital cost recovery agreement in the case with Hydro One.

6.2.18 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;
(b) 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: Convergent recommends removal of this section, or – at a minimum – it should be discussed in depth by the Working Group in tranche 3 of the DER Connection consultation. It is unclear how the specified capacity reserve charge of $20,000/MW was determined, so we recommend this provision be removed. Additional clarity is also necessary regarding the 15-month payment requirement following the execution of the connection cost agreement.

Timelines for developing resources vary and the requirement to collect a second deposit does not provide fair and equal treatment for all resources. Instead, Convergent recommends that the second deposit be collected once exporting generation facilities reach a specific milestone within the connection cost agreement.

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: Convergent supports these proposed changes, but would appreciate clarification specifically regarding the phrase "and enters into the Connection Agreement." In most cases the transmitter/distributor will not execute the Connection Agreement until facility commissioning is

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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.

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: Convergent fully agrees with this improvement

Review of the Distributed Energy Resources Connection Procedures

Convergent 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

4.3 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

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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.

Convergent appreciates 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.

Sincerely,
Tremor Temchin
Vice President, Business Development

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