Small, Mid-Sized and Large DERs (> 10kW) Generator Connection Information Package

1. Introduction

In accordance with the Ontario Energy Board's Distributed Energy Resources Connection Procedure, Kingston Hydro (KH) Corporation is providing the "Generation Connection Information Package" to customers with the information necessary to connect a Distributed Energy Resource (DER) to Kingston Hydro's distributions system.

The package will provide the process, information, applications and documents required to facilitate the DER connection. The Generator Connection Information Package and all supporting documents are available electronically. Proponents may contact Utilities Kingston (an affiliate of Kingston Hydro) for an alternate format of the "Package". Throughout this document, Kingston Hydro and Utilities Kingston will be used interchangeably when referring to the ownership and management of the Kingston Hydro distribution system.

Website https://www.kingstonhydro.com/

2. Contact Information

Utilities Kingston
85 Lappans Lane, PO Box 790
Kingston, ON K7L 4X7
info@utilitieskingston.com

Attn: **DER Connections**
DER@Utilitieskingston.com
Ph: 613-546-1181

3. Generation Connection Information Package Documents

- Ontario Energy Board - DER Connection Process (DERCP)
- KH - Appendix B - Guide for DER Applicants
- KH - DER Preliminary Consultation Information Request (PCIR)
- KH - Connection Impact Assessment (CIA) Application
- KH - Connection Impact Assessment (CIA) Application Instructions
- KH - Small and Mid-sized Embedded Generation Facility Connection Agreement
- KH - Information on Large Embedded Generation Facility Connection Agreement
- KH - Overview of SCADA requirements
- KH - Sample protection philosophy
- KH - DER Restricted Feeder List

4. Process for connecting Distributed Energy Resources (DER)

These are the steps that must be followed to connect a DER that will generate more than 10 kilowatts and operate at voltages below 50 kilovolts to the Kingston Hydro Electricity grid. Note that this is subject to change at any time.

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1. Preliminary Consultation

Customer completes and submits a PCIR – Preliminary Consultation Information Request to Kingston Hydro at DER@Utilitieskingston.com. Kingston Hydro establishes the generator classification and completed assessment of the connection details of the proposed project and available capacity.

DER Classification	Project Type/Size
Small	> 10 kW and ≤ 500 kW
Mid-sized	> 500 kW and ≤ 10 MW
Large	Above 10 MW

Based as the assessment, Kingston Hydro will provide the customer with Preliminary Consultation Report (PCR)

2. Connection Impact Assessment (CIA) Application

Based on the PCR information, customer completes and submits Connection Impact Assessment (CIA) Application and Single Line Diagram (SLD) to Kingston Hydro at DER@Utilitieskingston.com. Instructions on how to complete the CIA application are available at Kingston Hydro website. The full package should be P. Eng stamped.

A complete Form B includes the following items:

1. Complete CIA Form
2. SLD
3. CIA Fees
4. Protection Philosophy
5. Site Plan and/or Distribution Operations Map
6. Load and generation schedules (if applicable)
7. Mode of operation (if applicable)

Some small DERs are eligible for simplified Connection Impact Assessment (CIA) Process. For simplified CIA process including eligibility, timelines, fees, potential outcomes, and processes for small DER project, please refer to document - Simplified Connection Impact Assessment (CIA) Process for Small Projects.

3. CIA Application Completeness

Kingston Hydro reviews the CIA application in detail to determine if there is sufficient information provided by the applicant to process the submission. Once Kingston Hydro determines that the submission provides the necessary information to commence a CIA study, the application is deemed substantially complete, and CIA Complete confirmation letter is sent to the customer.

4. Connection Impact Assessment (CIA)

The CIA assessment looks at the generator's impact on power flow, feeder voltage, current loading, fault currents and power factor. For submissions that are deemed substantially complete, Kingston Hydro will

reconfirm transmission and distribution capacity availability. For generators exceeding 500kW, Hydro One will be required to perform its own CIA, at additional cost to the customer.

Kingston Hydro performs a CIA study and issues the CIA report to the customer, which is valid for 12 months. If the CIA expires or the generator revises the original design, the customer must submit an updated P.Eng. stamped Form B and SLD along with payment for the revised CIA. Refer to DERCP documents for details on CIA study timelines.

The Customer is allocated capacity upon completion of the CIA study report by Kingston Hydro and Hydro One (if applicable).

5. Connection Cost Estimate and Agreement

If the customer is satisfied with the results of the CIA report and would like to proceed with the connection, Kingston Hydro will perform a Connection Cost Estimate (CCE) and share a copy with the customer.

The Connection Cost Agreement (CCA) specifies the scope of work to be performed by Kingston Hydro and/or the customer to complete the generation connection including, the connection costs associated with such work, the connection date, and any requirements that must be met.

For generators connecting on a Hydro One shared feeder or to a Hydro One Station, Hydro One will be required to perform its own CIA and CCA. The associated Hydro One costs will be included in the CCA provided by Kingston Hydro.

If the Customer decides to proceed with the project, the Customer signs the CCA and makes the required payments.

6. SCADA Monitoring and Transfer Trip

As applicable, Kingston Hydro provides project specific requirements for SCADA monitoring and Transfer Trip communications

7. Design and Build

Kingston Hydro performs the work required to make the connection. The customer completes the construction of the generation facility and applies to the Electrical Safety Authority (ESA) for an electrical inspection. The customer submits final detailed design documents to Kingston Hydro for review.

8. Commissioning

Customer confirms that communication is established with Kingston Hydro for generation metering and SCADA monitoring, as required.

Customer completes and submits Kingston Hydro Commissioning Verification Form or Kingston Hydro COVER where applicable. Kingston Hydro may request to witness all testing and commissioning.

Some small DERs are eligible for simplified commissioning and verification process. Applicant should utilize the Simplified Commissioning and Verification Template for eligible small DER projects. Forms for full commissioning can be requested through DER@Utilitieskingston.com.

9. Connection Agreement

Kingston Hydro will require the following documentation for the Generator Connection Agreement, but not limited to:

i. Single Line Diagram (as built)
ii. Contact Information (Owner, Contractual, and Operational contacts)
iii. Certificate of Insurance
iv. Commissioning Report
v. Kingston Hydro confirmation of metering requirements, if applicable
vi. Kingston Hydro confirmation of remote monitoring, if applicable

The Connection Agreement will detail any operating conditions and responsibilities. Kingston Hydro issues the Connection Agreement to be executed with the load customer. Customer completes and submits the Connection Agreement prior to energization.

10. Connect, Operate and Maintain

When the Commissioning Report is approved, the final ESA Connection Authorization is received, and the Connection Agreement is signed, Kingston Hydro will authorize connection of the generation facility to the Kingston Hydro distribution system.

Kingston Hydro will collaborate with the proponent to set up the appropriate settlement arrangement based on the project type.

Refer to document KH-Appendix B - Guide for DER Applicant and DERCP for detailed information, forms and the process of connecting distributed energy resources to Kingston Hydro's distribution grid.

5. Required Approvals

- Host distributor connection approvals (managed by Kingston Hydro).
- Electrical Safety Authority Inspection and Connection Authorization
- Canadian Standards Association – applicable to all equipment installations
- The local municipal office for siting limitations, building codes and by-laws.

6. Technical Requirements

Refer to the following Kingston Hydro technical documents:

- Appendix B – Guide for DER Applicants

Host distributor technical requirements:

- Hydro One

Distributed Generation Technical Interconnection Requirements Interconnections At Voltages 50kv And Below

Additional technical requirements:

- Ontario Electrical Safety Code (latest revision)
- Canadian Standards Association (applicable codes)
- Institute of Electrical and Electronics Engineers (IEEE)
- Other applicable rules, codes and regulations

7. Standard Contractual Terms

Refer to the following Kingston Hydro document for standard contractual terms:

- Small & Mid-Sized DER:

Form of Connection Agreement for a Small & Mid-Sized Embedded Generation facility

- Large DER:

Information In a Connection Agreement for a Large Embedded Generation Facility

8. Sample Protection Philosophy and SCADA Requirements

Refer to the following Kingston Hydro document for the Generator protection settings:

- DERCP Sample Protection Philosophy
- Overview of SCADA Requirements

9. List of Restricted Feeders

Refer to the following Kingston Hydro document for the list of restricted feeders:

KH-DER Restricted Feeder List.

Updated quarterly (1st of the month - January, April, July, October)

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