



GENERAL APPLICATION INFORMATION

This Connection Impact Assessment (CIA) application must be completed by (a) any proponent who is interested in connecting a Distributed Energy Resource (DER) facility with a nameplate capacity greater than 10 kilowatts (kW) to Hydro One's distribution system or (b) any Hydro One distribution customer who is interested in connecting a DER facility with a nameplate capacity greater than 10 kW to their load facilities. This application must also be completed by any applicant who received a CIA for their project and wants to make changes/revisions to their project.

For clarity, if this application is for an energy storage or load displacement facility, it is important to note that Hydro One will only enter into a Connection Agreement with the customer (i.e. the load customer) that is connected to our distribution system. All agreements related to the project will be between Hydro One and the load customer.

Load customers interested in installing an Emergency Backup Generator must use the Emergency Backup Generation Application Form available at:

<https://www.hydroone.com/business-services/generators/fit>

For technical requirements of Hydro One's DER projects, refer to the "DER Technical Interconnection Requirements Interconnections at Voltages 50kV and Below", available at:

<https://www.hydroone.com/businessservices/generators/Pages/technicalrequirements.aspx>

Note: The application form is a smart PDF form. For best results, please complete the form using Adobe Reader. Adobe Reader can be downloaded for free from <https://get.adobe.com/reader/>

Application Submission Instructions:

Please return the completed form, fees and other required documents by courier or mail to:

Hydro One Networks Inc.
Attn: Dx Generation Connections
Generation Connection Application
185 Clegg Road
Markham, Ontario L6G 1B7

Important Notes

- When using the electronic version of this form: (a) Ensure all red box fields are filled in. (b) After completing the form, click the "Validate Form" button on the top right of this page to ensure all required information is filled in. If any of the required fields are not applicable to your project, type "N/A" in any required text field or "0" in any required numerical field.
- All technical submissions including this form (CIA Application, Single Line Diagrams, etc.) must be signed, dated and sealed by a licensed Ontario Professional Engineer (P.Eng.).
- Incomplete applications will be returned by Hydro One and will result in delays in processing your application.
- Hydro One specific requirements and notes are found in Sections S and T, respectively.
- Hydro One CIA Fee Schedule can be found here:
<https://www.hydroone.com/business-services/generators/connection-impact-assessment>
- For Load Displacement or Energy Storage facility connections, the assessment performed by Hydro One is referred to as a Detailed Technical Connection Assessment (DTCA). For such facilities, the term "CIA" as it appears throughout this Connection Impact Assessment (CIA) Application shall be interpreted to mean "DTCA".
- The siting restrictions in O. Reg. 274/18 which were administered by electricity distributors such as Hydro One have been replaced by amendments to the Planning Act (Ontario) that puts siting and planning requirements for renewable DER

facilities under municipal oversight. It is recommended that you discuss municipal permitting and approvals requirements with the planning department in the municipality where your DER project is located before you proceed.

- For micro-embedded projects (10 kW or less), please fill out Hydro One's "Micro-Generation Connection Application (Form C)" available at: <https://www.hydroone.com/business-services/generators/microfit>

SECTION A – APPLICATION INFORMATION

- **Engineering Stamp:** Must be signed and sealed by a licensed Ontario Professional Engineer (P.Eng).
- **Date:** Fill in the current date
- **Application Type:** CHOOSE ONE. New CIA Application = first application for any given project **OR** CIA Revision/Rework = changes to a previous CIA. Your previous CIA must still be valid with Hydro One (i.e. your previous CIA cannot be withdrawn or expired).
- **Program Type/Purpose:** CHOOSE ONE. If Program Type/Purpose is Load Displacement or Net Metering, as per Hydro One's Conditions of Service and Ontario Energy Board-approved Rate Order (www.hydroone.com/CoS & www.hydroone.com/DxRateSchedules), Gross Load Billing (GLB) may apply. Please ensure you review the requirements and Frequently Asked Questions (FAQ) at <https://www.hydroone.com/business-services/generators/gross-load-billing>.
- **Net Metering Type:** If you selected Net Metering as the program type, please check the applicable boxes.
- **Subdivision Project Name:** If you selected "Subdivision" as the Net Metering Type, please provide the name of the subdivision project.
- **Number of Lots:** If you selected "Subdivision" as the Net Metering Type, please provide the number of lots in the development.
- **Project Name:** Provide the exact project name of your proposed generation facility. Hydro One will use this name along with your Project Number (if one already exists) to identify your project in our system going forward.
- **IESO Feed-In Tariff (FIT) Contract Number and IESO Reference Number:** Provide the contract and reference numbers the IESO has provided to you upon approving your IESO FIT Application. This would have been provided to you prior to your FIT contract being issued. Providing this number on your application allows us to cross reference your project with the IESO in various stages of the application process.
- **Ontario Corporate Number OR Business Identification Number:** PROVIDE ONE.
- **Proposed In-Service Date:** ____ / ____ / ____ (dd / mm / yyyy): Provide the date your generation facility will officially be connected and producing energy on Hydro One's distribution system. If you are unsure how to determine an In-service Date, contact your Design Engineer (for new applicants) or your Hydro One Account Executive (for existing customers). **Important note:** the In-service Date (ISD) you provide must be as accurate as possible. Hydro One schedules station maintenance, outages and other work based on ISDs. Failure to provide an accurate ISD could cause delays to your project's connection timeline.
- **Original CIA Project ID# (if applicable):** If this is a revision to a previous CIA Form B Application that you submitted to Hydro One, and that Application is still valid with Hydro One, provide your current CIA Project Number.
- **Revised Fields:** If you are submitting a revised CIA Application, list the fields that have changed from your previous Form B CIA Application Form in the box provided.

SECTION B – PROJECT LOCATION

In the Project Location section, provide project location information and complete accordingly.

SECTION C – CONTACT INFORMATION

In the Project Contact Information section, provide contact information. Note that the Generator and Owner may be the same. Also note that PO boxes and Rural Routes will not be accepted. Only list a physical address. Aside from the Single Point of Contact, the person(s) listed may be contacted by Hydro One for other matters regarding your project when necessary. Due to Privacy Laws, Hydro One will only release information to the persons listed on the Form B.

- **Who is the single point of contact for this project?** This will be the person within your company who receives all communications from Hydro One regarding the project. Normally, this would be someone in a Project Management role. This contact person will be responsible for communicating information regarding your proposed facility.

SECTION D – CUSTOMER ACCOUNT INFORMATION

- **Does the account holder have a HST registration number?** Normally, a business – sole proprietor, partnership, corporation – has a Harmonized Sales Tax (HST) Number as a requirement to conduct regular business in Ontario.
- **If yes, provide your HST registration number:** If you answered “Yes” to “Does the account holder have a HST registration number?” provide your HST number. Failure to provide an accurate number will delay your application. If you are unsure of your HST number, please [sign in to your Canadian Revenue Agency business account](#) to retrieve it.
- **Is there an existing Hydro One customer account at the project location?** Choose “Yes” if there is an existing electrical connection to Hydro One’s grid (i.e. load and/or generation) at the Project Location OR choose “No” if this generation facility will be the only connection to Hydro One’s grid at the location.
- **If yes, what is the Hydro One 12-digit account number of the property:** If you answered “Yes” to the previous question, provide the existing account number (i.e. customer load account number OR generation customer account number) found in the top right corner of your bill. Also select “Yes” or “No” to “Is the account holder aware of this application?” and “Does your account fall within a residential-rate classification?”
- **Customer name registered on existing Account:** Provide the name on the existing customer account you provided in the previous question. If you answered “No” in the previous question, leave this space blank.
- **Barcode of nearest Hydro pole serving project location:** If there is no existing Hydro One customer associated with the project property, ensure to provide the barcode of the nearest pole. This is necessary to identify the project location. Failure to provide the account number in 10(b) or the pole ID in 10(g) may result in application delays.

SECTION E – EXISTING DER

If you have an existing generation facility located on your premise already, indicate what type of generation it is and provide the existing Project Number, Project Size and any technical information as requested in the tables provided in the document.

SECTION F – PROJECT INFORMATION

- **Station Name:** Provide the name of the Hydro One station that your facility will connect to (e.g. “CONESTOGA DS”).
- **Feeder:** Provide the name of the feeder that your facility will connect to (e.g. “F1” or “M1”).
- **Feeder Voltage (kV):** Proposed or existing connection voltage to Hydro One’s distribution feeder.
- **Project Size:** Provide the total amount of generation your facility will produce, i.e. the facility’s maximum kW output. **Important note:** The project size on this application must match the project size you provided on your IESO contract (if applicable). If you are adding to existing capacity, please only include the additional amount.
- **Equipment Capacity (kVA):** Provide the total amount of capacity in kilowatts (kW) of your facility’s equipment. **Important note:** For more information on the technical requirements of distribution generation facilities, see section 2.1.2 of [Hydro One’s Technical Interconnection Requirements \(TIR\)](#). Note: Typically the generator’s Name Plate Capacity or Gen-Set Name Plate Capacity shall be considered as project size.
- **Fuel/Energy Type/Technology:** CHOOSE ONE. Provide the type of energy your generation facility will produce. If it is “Other”, ensure to provide the type of generation you are proposing.
- **Type of connection:** CHOOSE ONE. Single phase **OR** Three Phase. **Important note:** FIT applicants may choose to connect Three phase in an area currently serviced by a Single Phase line resulting in a possible line expansion to supply the required voltage and phasing for the project.
- **Mounting Type:** If you have selected ‘Solar (PV)’ as Energy Type, please CHOOSE ONE.
- **For water projects,** please ensure you response to ‘Is your generation facility located on provincial Crown or federally-regulated lands?’ and ‘Is water you primary energy source?’

SECTION G – STATION SERVICE LOAD INFORMATION

In the Load Information section, provide Maximum Demand of Station Service Load of DER and Average Monthly Consumption in kWh.

SECTION H – CONNECTION INFORMATION

- **Single Line Diagram (“SLD”):** Provide an SLD of the Generator’s facilities including the PCC, transformer and connecting station, feeder and supply voltage. SLD Drawing No. and Rev: **Important note:** An SLD is a very important piece of your application and must accurately reflect the project information provided on the Form B. Submitting an accurate SLD that meets Hydro One’s standards ensures your application is not delayed. Failure to submit an acceptable SLD will result in your application being deemed incomplete. Please refer to [Hydro One’s Technical Interconnection Requirements](#) for more information on SLDs and other technical requirements for your generation facility. **Please ensure that the SLD is no larger than 11x17 inches.** As well, if your project is subject to Gross Load Billing (“GLB”) as outlined in Hydro One’s Conditions of Service and Ontario Energy Board-approved Rate Order (www.hydroone.com/CoS & www.hydroone.com/DxRateSchedules) and Frequently Asked Questions (FAQ) at

<https://www.hydroone.com/business-services/generators/gross-load-billing>, please ensure the SLD includes the proposed location of your GLB Meter.

- **“Point of Expansion” or “POE”** means the point where the new line expansion assets will be connected to the existing Hydro One distribution system. **“Point of Common Coupling” or “PCC” or “Point of Supply”** means the point where the Generation facility is to connect to Hydro One’s distribution system. The POC and the PCC may be the same, especially if the Generation facility lies along the existing Hydro One distribution system; or the PCC may be located somewhere between the POC and the Generation facility if the new line will be owned by Hydro One.
- **GPS coordinates of the following:** All three GPS coordinates must be provided: POE, PCC and generation facility. GPS Format: Latitude, Longitude - Degree Decimal (e.g. 49.392, -75.570).
- **Length of line distance from the POE to the PCC:** Provide the exact distance in kilometres of the line from the POE to the PCC.
- **Length of line distance from the PCC to the Generation Facility** (refer to Appendix A of Form B): Provide the exact distance in kilometres of the line from the PCC to your proposed generation facility. See Appendix A at the end of the application document for a diagram.
- **Conductor type/size:** Provide what type of conductor you will be using, including with the size. E.g. ACSR/ CU/ AL and size in kcmil or AWG
- **Fault contribution from the Generator’s Facilities, with the fault location at the PCC:**
 - Three-phase generators: 3-phase short circuit
 - Single-phase generators: 1-phase short circuit
- **Connection Figure:** See Appendix A at the end of the application document and choose ONE appropriate figure that is most applicable to how your proposed generator will connect.

Important Note:

If this project requires line expansion work between the **POE** and **PCC**, Hydro One will provide a cost estimate to construct any line located on public road right-of-way. The cost estimate will include a breakdown of **Uncontestable** work (i.e. overbuild to existing line) that can only be performed by Hydro One, as well as **Contestable** work (i.e. new construction/green-field) that may be performed by the Generator, their contractor or Hydro One. (The design of uncontestable and contestable work shall conform to Hydro One specifications).

For a Generator-owned line, the Generator may apply to construct the line on existing Hydro One-owned poles. This is known as an application for **Joint Use (JU)** of poles. If the application is accepted, Hydro One will provide the Generator with information on initial connection costs, annual pole-space rental and emergency service (ES) fees, and required JU & ES Agreements.

SECTION I – ENERGY STORAGE OR UNINTERRUPTIBLE POWER SUPPLY (UPS)

In the Energy Storage section, provide “Number of Units”, “Energy Storage Unit Size (kWh)”, “Total Energy Storage Size (kWh)”, “Inverter Unit Size (enter zero if inverter is shared with generation unit(s))” and “Energy Storage Facility Control Strategy”.

Please submit a detailed description of the control strategy according to the templates in Appendix B. Hydro One reserves the right to modify the control strategy as part of its Detailed Technical Connection Assessment (“DTCA”).

SECTION J – LOAD DISPLACEMENT/PEAK SHAVING

In the Load Displacement Information section, provide the Operating Mode, Transition Type, and Time that Generator Remains Parallel to the Grid (closed transition only).

For load displacement generation facilities, please attach a schedule of the forecasted maximum generation output (as a function of loading of the facility). At a minimum, include the forecasted generation output information (i.e. watts and VARs) during the minimum and maximum of the load facility to which the load displacement generator is connecting (see Appendix C for template). For non-parallel load displacement generation facilities, SCADA monitoring and Gross Load Billing (GLB) may apply.

As per Hydro One’s Conditions of Service and Ontario Energy Board-approved Rate Order (www.hydroone.com/CoS & www.hydroone.com/DxRateSchedules), Gross Load Billing (GLB) may apply. Please ensure you review the requirements and Frequently Asked Questions (FAQ) at <https://www.hydroone.com/business-services/generators/gross-load-billing>.

SECTION K – DER CHARACTERISTICS (1/1)

In the Generation Characteristics section, complete all fields accordingly.

For facilities with multiple generators: If your generators have different characteristics, please use the “Add Page” button and provide the characteristics for each generator on the additional pages.

Important note:

- Hydro One recommends that all CIA Applicants have a P.Eng review this section. Failure to complete this section correctly will result in delays to your application.

SECTION L – INTERFACE TRANSFORMER

SECTION M – INTERMEDIATE TRANSFORMER

SECTION N – HIGH-VOLTAGE GROUNDING TRANSFORMER

In the Interface Transformer, Intermediate Transformer and High-Voltage Grounding Transformer sections, complete all fields accordingly.

In Section L and Section M, Voltages shall be measured at the PCC in accordance with CSA 22.3 No. 9.

The term “High Voltage” refers to the connection voltage to Hydro One’s distribution system and “Low Voltage” refers to the generation or any other intermediate voltage.

Providing a photo of transformer equipment along with this application may help expedite your application quicker.

SECTION P – SUBMISSION CHECKLIST

Please ensure the following items are completed prior to submission. Your application will not be processed if any part is omitted or incomplete:

- Payment in full including applicable taxes (by cheque payable to “Hydro One Networks Inc.”).*
- Completed Form B stamped by a licensed Ontario Professional Engineer (P.Eng.)*
- Signed Study Agreement (original signature of the Generator is required)*
- Single Line Diagram (SLD) of the Generator’s facilities, must be stamped by a P.Eng.*
- Protection Philosophy*
- GIS (Geographic Information System) Map and/or Site Plan (not required for existing load customers that are connecting a load displacement generation, net metering generation or energy storage system behind their existing metered connection point)*
- Load Displacement Generation Facility’s load and generation schedules (if applicable)*
- Load Displacement Generation Facility’s mode of operation (if applicable)*
- Energy Storage Facility operating strategy description and parameters (if applicable)*

Section Q – CIA APPLICATION FEE CHECKLIST

Payment in full by cheque, including applicable taxes. Cheque should be made payable to “Hydro One Networks Inc.” Refer to the [Connection Impact Assessment Fee Schedule](#) for fees.

Note: When there is an upstream LDC, an additional \$10,000 +HST will be required for costs associated with this LDC’s CIA.

Section R – ATTACHMENTS

Section S - NOTES

Please provide attachments, documents, drawings and notes as required.

Section T – HYDRO ONE SPECIFIC REQUIRED FIELDS

This section contains specific information that is required by Hydro One. Please read Section T notes regarding this section if you need further details.

Section U – HYDRO ONE SPECIFIC ADDITIONAL NOTES

Section L: At the Generator's expense, and if requested, Hydro One may provide transformation up to a maximum of 500 kVA three-phase, as described in the Hydro One Conditions of Service (Section 3.5 item C.4).

Section O: for new DER site, Distribution Operating Map (DOM) is required by Hydro One in addition to Site Plan

Section P: When there is an upstream LDC, an additional \$10,000+HST will be required for costs associated with this LDC's CIA.

Section S: For question: "What is the barcode of the nearest pole serving the project location?", this is only applicable if you choose "No" to question: "Is there an existing Hydro One account at the project location?" in Section D

Appendix A – FIGURES & DIAGRAMS

Appendix B – MINIMUM CONTROL STRATEGY INFORMATION FOR ENERGY STORAGE FACILITIES OF OTHER TECHNOLOGIES

Appendix C – LOAD DISPLACEMENT FIGURES

Please review these Appendices and provide the necessary information as required and related to your project.

Consent

By submitting a Form B, the Proponent consents to: (a) Hydro One collecting information: (i) pertaining to agreements the Applicant has with the Independent Electricity System Operator (IESO) from the IESO; and (ii) set out in this Form B and otherwise collected in accordance with the terms of Hydro One's Conditions of Service, Hydro One's Privacy Policy and the requirements of the Distribution System Code; and (b) the use of all such information for the purposes of the connection of the generation facility to Hydro One's distribution system.