Connection Impact Assessment (CIA) Application Instructions

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1. GENERAL APPLICATION INFORMATION

1.1 ABOUT THE CIA FORM

The Connection Impact Assessment (CIA) application is to be completed by any proponent interested in connecting a Distributed Energy Resource (DER) with a project size over 10 kilowatts (kW) to ERTH Power Corporation. This includes DERs applying for a new CIA or for revision(s) to their original CIA. This form expresses an intent to enter into an agreement between ERTH Power Corporation and the customer (or host customer[1] for load displacement projects) for completion of a CIA associated with connecting a DER to the ERTH Power Corporation distribution grid. The CIA Application shall be part of the required servicing (electrical installation, maintenance, and operating) agreements between ERTH Power Corporation and the proponent. Throughout this process, ERTH Power Corporation will be the proponent's contact with the transmission system provider (e.g. Hydro One Networks Inc.) and, if necessary, the provincial market operator, namely, the Independent Electricity System Operator (IESO).

1.2 TECHNICAL REQUIREMENTS

For technical requirements of ERTH Power Corporation's DER projects, refer to the "DER Technical Interconnection Requirements Interconnections at Voltages 50kV and Below", available at ERTH Power Corporation's website, www.erthpower.com

1.3 SUBMISSION INSTRUCTIONS

Please return the completed form, fees and other required documents by mail to:
ERTH Power Corporation
143 Bell Street
P.O. Box 157
Ingersoll, Ontario
N5C 3k5
Attn: DER Connections

1.4 IMPORTANT NOTES

An engineering stamp and all red box fields (on electronic version of form) are mandatory. Incomplete applications may be returned by ERTH Power Corporation and will result in delays in processing your application. Click the "Validate Form" button

[1] For Load Displacement projects, the term "host customer" refers to the owner of the load facility. The term "DER owner" refers to the owner of the DER facility.

on the top right of this page to ensure all required information is filled. 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

ERTH Power Corporation specific requirements and notes are found in Sections S and T, respectively

Applicants are cautioned NOT to incur major expenses until ERTH Power Corporation approves to connect the proposed DER facility.

All technical submissions (CIA Application, Single Line Diagrams, etc.) must be signed, dated and sealed by a licensed Ontario Professional Engineer (P.Eng.).

The proponent will pay for the CIA according to the ERTH Power Corporation CIA Fee Schedule.

The siting restrictions in O. Reg. 274/18 which were administered by electricity distributors such as ERTH Power Corporation 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.

2. SECTION A – APPLICATION INFORMATION

- **Engineering Stamp**: Must be signed and sealed by a licensed Ontario Professional Engineer (P.Eng).
- **Application Type**: CHOOSE ONE.
  - **New CIA Application**: first application for any given project
  - **CIA Revision/Rework**: changes to a previous CIA.
  - **Capacity Increase Request**
  - **Modification or Addition to Existing Project**
  - **Reconnection of Existing Generator**

Your previous CIA must still be valid with ERTH Power Corporation (i.e. your previous CIA cannot be withdrawn or expired).

- **Date**: Fill in the current date
- **Program Type**: CHOOSE ONE.
  - **IESO (please specify)**
  - **Load Displacement**
  - **Net Metering**
  - **Net Metering (Subdivision)**
  - **Off-Grid Islanded Generation**
  - **Other (please specify)**

- **Program Type (additional details):** Use this field to provide additional details (Applicable for **IESO** or **Other** Program Type)
    - **IESO (please specify)**
    - **Other (please specify)**
- **Project Name**: Provide the exact project name of your proposed generation facility. ERTH Power Corporation will use this name along with your Project Number (if one already exists) to identify your project in our system going forward.
- **IESO Contract Number and IESO Reference Number:** (Applicable for IESO Program Type selection)
- **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 ERTH Power Corporation's distribution system. If you are unsure how to determine an In-service Date, contact your Design Engineer (for new applicants) or your ERTH Power Corporation Account Executive Manager (for existing customers). *Important note*: the In-service Date (ISD) you provide must be as accurate as possible. The ERTH Power Corporation 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.

- **Subdivision Project Name:** If you selected "Net Metering (Subdivision)" as the Program Type, please provide the name of the subdivision project.
- **Number of Lots:** If you selected "Net Metering (Subdivision)" as the Program Type, please provide the number of lots in the development.
- **Original CIA Project ID#** (if applicable): If this is a revision to a previous CIA Application Form that you submitted to the ERTH Power Corporation, and that Application is still valid with the ERTH Power Corporation, provide your current CIA Project Number.
- **Revised Fields:** If you are a submitting a revised CIA Application, list the fields that have changed from your previous CIA in the box provided.

3. SECTION B – PROJECT LOCATION

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

4. SECTION C – CONTACT INFORMATION

- **Who is the single point of contact for this project?** CHOOSE ONE. This will be the person within your company who receives all communications regarding the project. Normally, this would be someone in a Project Management role.

He/she will be responsible for communicating information regarding your proposed facility.

- In the Contact Information section, provide contact information for the Host Customer, the DER Owner if different than the host customer and consultant if applicable. Note that the Host Customer and DER Owner may be the same. Also note that Post Office (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 the ERTH Power Corporation for other matters regarding your project when necessary. Due to Privacy Laws, the ERTH Power Corporation will only release information to the persons listed on the CIA Application Form.

5. SECTION D – CUSTOMER STATUS

- **Is there an existing** ERTH Power Corporation **customer account at the project** location?Choose "Yes" if there is an existing electrical connection to ERTH Power Corporation'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 ERTH Power Corporation's grid at the location.
- **If yes, what is the** ERTH Power Corporation **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?"**
- **Account Holder 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.
- **Is the owner an HST registrant?** 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 "Are you an HST registrant?" provide your HST number. Failure to provide an accurate number will delay your application. If you are unsure of your HST number, please ***sign into your Canadian Revenue Agency business account*** to retrieve it.

6. SECTION E – EXISTING DER

- **Is there any existing DER facility located at the point of common coupling (PCC)?** Please select "Yes" if there is an existing DER facility on you premises.
- If yes, please provide the **Existing Project Number, Existing Project Size (kW) and the Program Type** for the Existing DER

- **Select the existing DER Type**: CHOOSE ONE. Synchronous, Induction, Inverter-based or Other and provide applicable power levels, ratings and reactance values.

7. SECTION F – PROJECT INFORMATION

- **Station Name**: provide the name of the ERTH Power Corporation station that your facility will connect to *(e.g. "CONESTOGA DS").*
- **Feeder and Feeder Voltage**: Provide the name of the feeder that your facility will connect to *(e.g. "F1" or "M1")* and feeder voltage if available.
- **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).
- **Equipment Capacity**: Provide the total amount of capacity in (kVA) of your facility's equipment. **Important note**: For more information on the technical requirements of distribution generation facilities, see ERTH Power Corporation's Technical Interconnection Requirements (TIR). Note: Typically, the generator's Nameplate Capacity or Gen-Set Name Plate Capacity shall be considered as project size.
- **Fuel / Energy Type**: 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.
  - If this is a solar project, please select the Mounting Type.
  - If this is a water project, please answer the indicated questions.

8. SECTION G – STATION SERVICE LOAD INFORMATION

- In the Load Information section, if required, provide *Maximum Demand of Station Service Load of the DER in KW and the Average Monthly Consumption in kWh*

9. SECTION H – CONNECTION INFORMATION

- DOM means "Distribution Operating Map". ERTH Power Corporation will prepare the DOM upon receiving the CIA Application.

[2] Refer to CIA Application Form Appendix A for the definition of POE and PCC.

- **Single Line Diagram ("SLD"):** Provide an SLD of the DER'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 CIA Application. Submitting an accurate SLD that meets ERTH Power Corporation'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 ERTH Power Corporation' 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.
- ***The "Point of Expansion" (POE)*** *indicates the origin of the new line expansion.*
- **The "Point of DER Connection" or "PODC"** *means the point where the DER connects with the DER's connection assets as outlined in Appendix A of the CIA form.*
- **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 kilometers of the line from the POE to the PCC.
- **Length of line distance from the PCC to the DER Facility** (refer to Appendix A of CIA Application Form): Provide the exact distance in kilometers 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 the size. E.g. ACSR/ CU/ AL and size in kcmil or AWG
- **Fault contribution from the DER'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 Notes:

If this project requires line expansion work between the **POE** and **PCC**, ERTH Power Corporation 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 the ERTH Power Corporation, as well as Contestable work (i.e. new construction/ green-field) that can be performed by the Generator/their contractor or the ERTH Power Corporation. (Both Uncontestable work and Contestable work requires design to ERTH Power Corporation specifications). ERTH Power Corporation will become the owner of the line expansion.

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

10. SECTION I – ENERGY STORAGE

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

Select the Energy Storage Facility Control Strategy to be used and include with this application a detailed description of the control strategy according to the templates in Appendix B. ERTH Power Corporation reserves the right to modify the control strategy as part of its Connection Impact Assessment.

11. SECTION J – LOAD DISPLACEMENT INFORMATION

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 non-parallel load displacement, SCADA monitoring and Gross Load Billing (GLB) may apply. 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)

12. SECTION K –DER CHARACTERISTICS (1/1)

In the DER Characteristics section, complete all fields accordingly.

For facilities with multiple DERs: 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:
The ERTH Power Corporation requires that all CIA Applicants have a P.Eng. review this section. Failure to complete this section correctly will result in delays to your application.

13. SECTION L – INTERFACE TRANSFORMER

14. SECTION M – INTERMEDIATE TRANSFORMER

15. SECTION N – HIGH-VOLTAGE GROUNDING TRANSFORMER

In the Interface Transformer section, complete all fields accordingly.
At the Generator's expense, and if requested, ERTH Power Corporation may provide transformation as described in the ERTH Power Corporation Conditions of Service .
The term "High Voltage" refers to the connection voltage to ERTH Power Corporation'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.

16. SECTION O – 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**
Payment in full including applicable taxes (by cheque payable to "ERTH Power Corporation") Completed Form B stamped by a Professional Engineer

Signed Study Agreement

Not required

Single Line Diagram (SLD)

Attach a SLD of the Generator's facilities, must be stamped by a Professional Engineer

Protection Philosophy

Attach Protection Philosophy documents

Distribution Operating Map

Distribution Operating Map (DOM) is 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 Schedules

Load Displacement Generation Facility's load and generation schedules (if applicable)
Load Displacement Generation Facility's mode of operation (if applicable)

Operating Strategy
Energy Storage Facility operating strategy description and parameters (if applicable)
Emergency Backup Generation Facility's mode of operation (if applicable)

17. SECTION P – CIA APPLICATION FEE CHECKLIST

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

Applicable CIA Fee

See the Connection Impact Assessment Fee Schedule on our website for costs. Please enter the amount from the fee schedule. Note HST will be applicable.

Transmission Customer Impact Assessment (TxCIA) Fee (if applicable)

A Tx CIA is also required if the total nameplate generation of the project is greater than 10MW. Note HST will be applicable.

IESO System Impact Assessment (SIA) Fee (if applicable)

An SIA deposit is required if the total nameplate generation of the project is greater than 10MW. The total cost of the SIA will be Trued Up/Down upon the receipt of the SIA from the IESO. See the IESO's SIA Application for costs.

18. SECTION Q – ATTACHMENTS

Please provide a description, document number and number of pages for each supporting document/drawing attachment.

19. SECTION R – NOTES

Please include any additional details that you think ERTH Power Corporation should be aware of in support of this application.

20. SECTION S – ERTH Power Corporation SPECIFIC REQUIRED FIELDS

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

21. SECTION T – ERTH Power Corporation SPECIFIC ADDITIONAL NOTES

DISCLAIMER

By submitting a CIA Application, the Proponent authorizes the collection by ERTH Power Corporation ("EP"), of any agreements and any information pertaining to agreements made between the Proponent and the Independent Electricity System Operator from the Independent Electricity System Operator, the information set out in the CIA Application and otherwise collected in accordance with the terms hereof, the terms of ERTH Power Corporation's Conditions of Service, ERTH Power Corporation's Privacy Policy and the requirements of the Distribution System Code and the use of such information for the purposes of the connection of the generation facility to ERTH Power Corporation's distribution system.