

Form B

Connection Impact Assessment (CIA) Application

Distribution System

This Application Form is for Generators applying for Connection Impact Assessment ("CIA") and for Generators with a project size >10 kW.

This Application Form is required for:

- **New** Generators applying for Connection Impact Assessment ("CIA")
- **New** Generators applying for revision to their original Connection Impact Assessment ("CIA")
- Generators applying for Connection Impact Assessment ("CIA") after rescinding a previous CIA.
Note: Please include your previous CIA Project ID # below.
- **Existing** Generators to verify information related to current connection to the E.L.K. system. It is part of the overall (Distribution) Connection Agreement.

IMPORTANT: All fields below are mandatory, except where noted. Incomplete applications may be returned by E.L.K. Energy Inc. ("E.L.K.").

If you have any questions please e-mail E.L.K.'s Business Customer Centre at customer.service@elkenegy.com or call 5197765291 (9:00 am to 4:00 pm Mon to Fri).

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

E.L.K. Energy Inc.
Attn: Engineering and Operations
Generation Connection Application
172 Forest Avenue
Essex, Ontario N8M 3E4

NOTE 1: Applicants are cautioned NOT to incur major expenses until E.L.K. approves to connect the proposed generation facility.

NOTE 2: All technical submissions (Form B, single line diagrams, etc.) must be signed and sealed by a licensed Ontario Professional Engineer (P.Eng.).

Date: ____ (dd / mm / yyyy)

Application Type: ☐ New CIA Application ☐ CIA Revision/Rework

1. **Original CIA Project ID# (if applicable):** ____
Project Name: ____

2. **Ontario Power Authority (OPA) Feed-In Tariff (FIT) Contract Number:** ____

3. **Proposed In- Service Date:** ____ (dd / mm / yyyy)

4. **Project Size:**

Number of Units	_____	
Nameplate Rating of Each Unit	_____ kW	
Generator connecting on	<input type="checkbox"/> single phase	<input type="checkbox"/> three phase
Existing Total Nameplate Capacity	_____ kW	
Proposed Total Nameplate Capacity	_____ kW	

5. **Project Location:**

Address	_____
City / Town / Township	_____
Lot Number(s)	_____
Concession Number(s)	_____

6. Project Information:

Choose a Single Point of Contact: ☐ Owner ☐ Consultant

	Generator (Mandatory)	Owner (Mandatory)	Consultant (Optional)
Company/Person			
Contact Person			
Mailing Address Line 1			
Mailing Address Line 2			
Telephone			
Cell			
Fax			
E-mail			

Preferred method of communication with E.L.K.: ☐ E-mail ☐ Telephone ☐ Mail ☐ Fax

7. Fuel Type:

- ☐ Wind Turbine ☐ Hydraulic Turbine ☐ Steam Turbine ☐ Solar/ Photovoltaic
☐ Diesel Engine ☐ Gas Turbine ☐ Fuel Cell ☐ Biomass
☐ Co-generation/CHP (Combined Heat & Power) ☐ Bio-diesel
☐ Anaerobic Digester
☐ Other (Please Specify) _____

9. Customer Status:

- Existing E.L.K. Customer? ☐ Yes ☐ No
 If yes, E.L.K. 10-digit Account Number: _____
 Customer name registered in this Account: _____
 Are you a GST registrant? ☐ Yes ☐ No
 If yes, provide your GST registration number: _____ - _____ RT _____

10. Connection to E.L.K. Distribution System:

In the following items, Point of Connection means the point where the new Generator's connection assets or new line expansion assets will be connected to the existing E.L.K. distribution system.

Point of Common Coupling" or "PCC" or "Point of Supply" means the point where the Generator's facilities are to connect to E.L.K.'s distribution system.

The Point of Connection and the PCC may be the same, especially if the Generator's facilities lie along the existing E.L.K. distribution system; or the PCC may be located somewhere between the Point of Connection and the Generator's facilities if new line will be owned by E.L.K..

For illustration of the Point of Connection and the PCC, refer to Appendix A attached.

- a. Proposed or existing Connection voltage to E.L.K.'s distribution system: _____ kV
 b. Station: _____
 c. Feeder: _____

**LDC applications only: TS feeder is entirely LDC owned ☐ Yes ☐ No

d. GPS coordinates of the following:

(Please give GPS co-ordinates in following format: Longitude, Latitude - Degree Decimal Format: * e.g. 49.392, - 75.570)

Point of Connection: _____

PCC: _____

Generator facilities: _____

e. Distance from the Point of Connection to the PCC _____ km

f. Generator's Collector Lines or Tap Line Facilities

If the Generator's facilities include collector lines or a tap line on the Generator's side of the PCC, provide the following:

Distance and conductor size of tap line on the Generator's side of the PCC, or equivalent distance for Generator's collector lines (i.e., from PCC to interface transformer(s)):

_____ km;

Conductor size: _____

g. Fault contribution from Generator's facilities, with the fault location at the PCC:

3-phase short circuit _____ MVA;

h. Does your project require to establish joint use on E.L.K. poles? (i.e. generator's collector lines attached to E.L.K. poles on municipal right of way? ☐ Yes ☐ No

i. If you answer "No" to "h" above is your project going to own Poles + wires on municipal right of way?

☐ Yes ☐ No

Note:

Generators requiring line construction between the Generator's facilities and the Point of Connection should contact E.L.K. to discuss potential ownership options, construction and co-ordination logistics for these facilities. Also those Generators whom may require attaching collector lines to E.L.K. poles must also contact E.L.K. to discuss potential to engage in Joint Use of utility assets. *E.L.K. will consider owning and operating new lines if they are designed and constructed to E.L.K. standard and are located on public road right-of-ways. This may change the PCC location. For details, please contact E.L.K.'s Business Customer Centre at 519-776-5291*

11. Generator's Facilities and New Line Map:

On a cut-out from the E.L.K. DOM (distribution operating map) provide location of Generator's facilities with proposed line routings for connection to E.L.K. distribution system. It should identify the Point of Connection, the PCC, and the location (i.e. on private property or public road right-of-ways) of new lines between the Generator's facilities and the Point of Connection.

Drawing / Sketch No. _____, Rev. _____

12. Single Line Diagram ("SLD"):

Provide a SLD of the Generator's facilities including the PCC.

SLD Drawing Number: _____, Rev. _____

13. Protection Philosophy:

- Provide a document describing the protection philosophy for detecting and clearing:
 - Internal faults within the EG facility;
 - External phase and ground faults (in E.L.K.'s distribution system);
 - Certain abnormal system conditions such as over / under voltage, over / under frequency, open phase(s);
 - Islanding

Document Number:

- Include a tripping matrix or similar information in the document.

Note: EG shall install utility grade relays for the interface protection. The protection design shall incorporate facilities for testing and calibrating the relays by secondary injection.

14. Generator Characteristics
a. Characteristics of Existing Generators

If Generator's facilities include existing generators, provide details as an attached document.

b. Characteristics of New Generators:

10. Number of generating unit(s): _____
11. Manufacturer / Type or Model No: _____ / _____
12. Rated capacity of each unit: _____ kW _____ kVA
13. If unit outputs are different, please fill in additional sheets to provide the information.
14. Rated frequency: _____ Hz
15. Rotating Machine Type: ☐ Synchronous ☐ Induction ☐ Other (Please Specify) _____
16. Generator connecting on: ☐ single phase ☐ three phase
17. Limits of range of reactive power at the machine output:
18. Lagging (over-excited) _____ kVAR power factor _____
19. Leading (under-excited) _____ kVAR power factor _____

20. Limits of range of reactive power at the PCC: _____ kVAR power factor _____
21. Lagging (over-excited) _____ kVAR power factor _____
22. Leading (under-excited) _____ pu (multiple of full load current)
23. Starting inrush current: ☐ delta ☐ star
24. Generator terminal connection: _____
- Neutral grounding method of star connected generator:
- ☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms

For Synchronous Units:

- i. Nominal machine voltage: _____ kV
- ii. Minimum power limit for stable operation: _____ kW
- iii. Unsaturated reactances on: _____ kVA base _____ kV base
- Direct axis subtransient reactance, X_d'' _____ pu
- Direct axis transient reactance, X_d' _____ pu
- Direct axis synchronous reactance, X_d _____ pu
- Zero sequence reactance, X_0 _____ pu
- iv. Provide a plot of generator capability curve (MW output vs MVAR)
- Document Number: _____, Rev. _____

For Induction Units:

- i. Nominal machine voltage: _____ kV
- ii. Unsaturated reactances on: _____ kVA base _____ kV base
- Direct axis subtransient reactance, X_d'' _____ pu
- Direct axis transient reactance, X_d' _____ pu
- iii. Total power factor correction installed: _____ kVAR
- Number of regulating steps _____
 - Power factor correction switched per step _____ kVAR
 - Power factor correction capacitors are automatically switched off when generator breaker opens ☐ Yes ☐ No

15. Interface Step-Up Transformer Characteristics:

- a. Transformer rating: _____ kVA
- b. Nominal voltage of high voltage winding: _____ kV
- c. Nominal voltage of low voltage winding: _____ kV
- d. Transformer type: ☐ single phase ☐ three phase
- e. Impedances on: _____ kVA base _____ kV base
- R _____ pu, X _____ pu
- g. High voltage winding connection: ☐ delta ☐ star
- Grounding method of star connected high voltage winding neutral:
- ☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms
- h. Low voltage winding connection: ☐ delta ☐ star
- Grounding method of star connected low voltage winding neutral:
- ☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms

NOTE: The term 'High Voltage' refers to the connection voltage to E.L.K.'s distribution system and 'Low Voltage' refers to the generation or any other intermediate voltage.

16. Intermediate Transformer Characteristics (optional):

☐ No intermediate transformer (if chosen, parts a. to h. below are **optional**)

- a. Transformer rating: _____ kVA

- b. Nominal voltage of high voltage winding: _____ kV
- c. Nominal voltage of low voltage winding: _____ kV
- d. Transformer type: ☐ single phase ☐ three phase
- e. Impedances on: _____ kVA base _____ kV base
R _____ pu X _____ pu
- g. High voltage winding connection: ☐ delta ☐ star
Grounding method of star connected high voltage winding neutral:
☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms
- h. Low voltage winding connection: ☐ delta ☐ star
Grounding method of star connected low voltage winding neutral:
☐ Solid ☐ Ungrounded ☐ Impedance: R _____ ohms X _____ ohms

NOTE: The term 'High Voltage' refers to the intermediate voltage that is input to the interface step-up transformer and the 'Low Voltage' refers to the generation voltage.

17. Load information:

- a. Maximum load of the facility: _____ kVA _____ kW
- b. Maximum load current (referred to the nominal voltage at the connection point to E.L.K. system): _____ A
- c. Maximum inrush current (referred to the nominal voltage at the connection point to E.L.K. system): _____ A

Attached Documents:

Item No.	Description	Reference No.	No. of Pages
1			
2			
3			
4			

Attached Drawings:

Item No.	Description	Reference No.	No. of Pages
1			
2			
3			
4			

CHECKLIST

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

- ☐ Completed CIA Form, must be stamped by a Professional Engineer
- ☐ Payment in full including applicable taxes (by cheque or money order payable to "E.L.K Energy Inc." "Signed Study Agreement"
Please note that when there is an upstream LDC an additional charge will be required for costs associated with this LDC's CIA.
- ☐ Single Line Diagram (SLD), must be stamped by a Professional Engineer

Appendix A: Illustrations of PCC and Point of Connection

Figure A-1: E.L.K. Owns Entire Tap Line

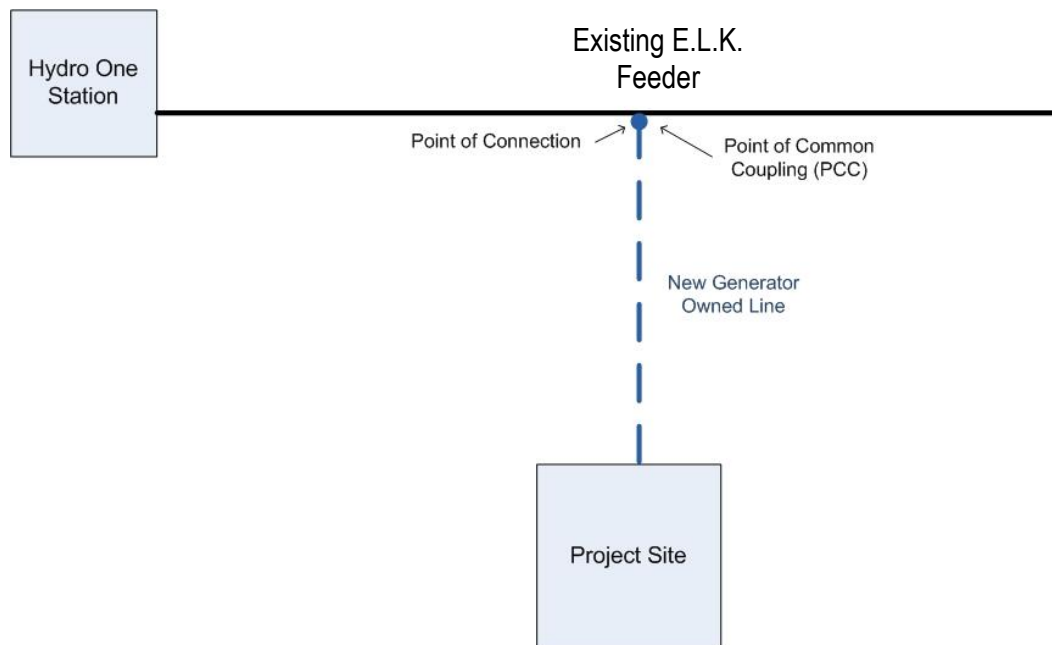


Figure A-2: Generator Owns Entire Tap Line

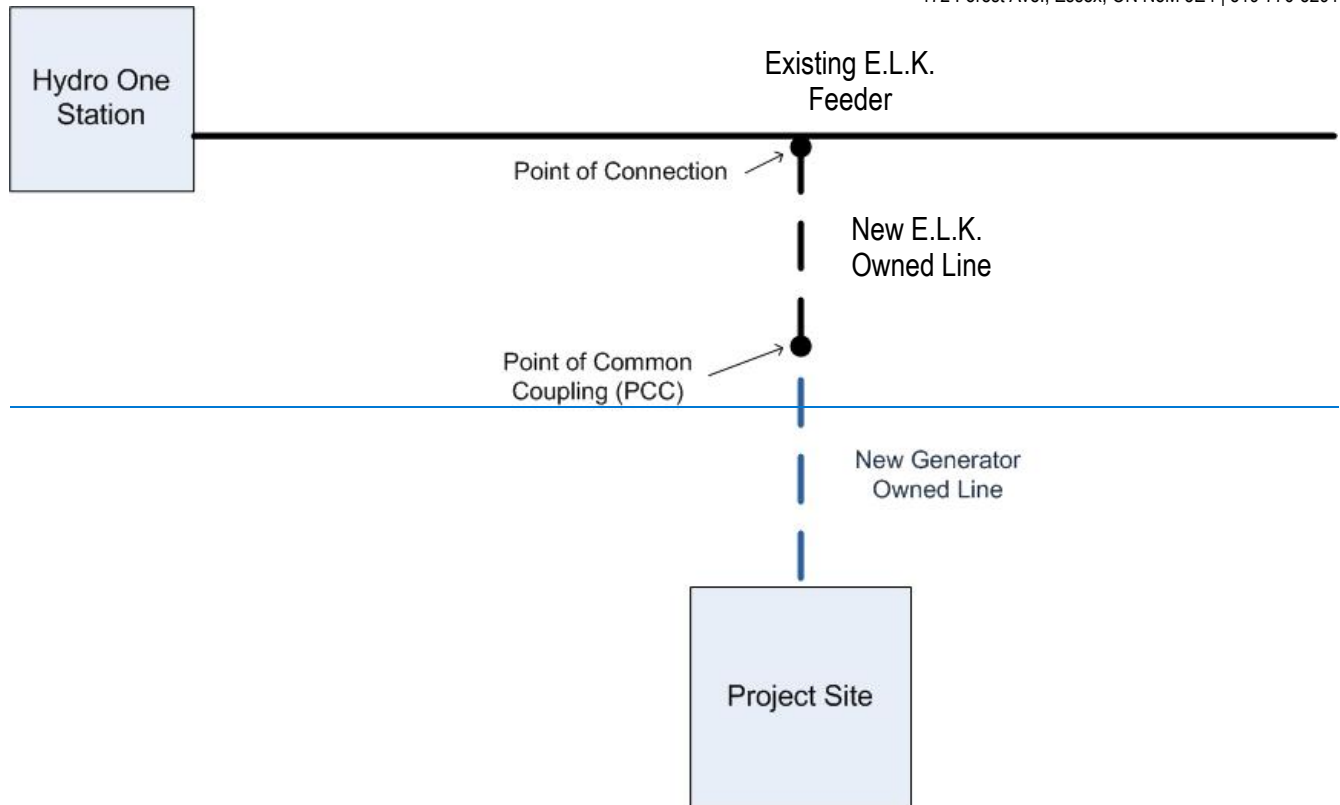


Figure A-3: E.L.K. Owns a Portion and Generator Owns a Portion of Tap Line

By submitting a Form B, the Proponent authorizes the collection by E.L.K. Networks Inc. (“E.L.K.”), of any agreements and any information pertaining to agreements made between the Proponent and the Ontario Power Authority from the Ontario Power Authority, the information set out in the Form B and otherwise collected in accordance with the terms hereof, the terms of E.L.K.’s Conditions of Service, E.L.K.’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 E.L.K.’s distribution system.