



## Form B Connection Impact Assessment (CIA) Application Brantford Power Inc.

This Application Form is for Generators applying for Connection Impact Assessment (“CIA”) and for Generators with a project size >10 kW, including:

- **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 Brantford Power system. It is part of the overall Distribution Connection Agreement.

For generation size ≤ 10 kW, please fill out Form C located at <http://www.brantfordpower.com/generation.shtml>

For technical details, refer to Appendix 3 “Technical Details for Generators wanting to Connect to Brantford Power’s Electrical Distribution System” at [http://www.brantfordpower.com/pdf/Generation\\_Information\\_Package.pdf](http://www.brantfordpower.com/pdf/Generation_Information_Package.pdf)

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

Brantford Power Inc.  
Attn: Steve Faulkner  
84 Market St.  
Brantford, Ontario N3T 5N8

If you have any questions please e-mail [FIT@Brantford.ca](mailto:FIT@Brantford.ca) or call 519-751-3522 ext. 3367 (8:30 am to 4:30 pm Mon to Fri).

### NOTES:

- 1) Applicants are cautioned NOT to incur major expenses until Brantford Power approves to connect the proposed generation facility.
- 2) All technical submissions (Form B, single line diagrams, etc.) must be signed and sealed by a licensed Ontario Professional Engineer (P.Eng.).
- 3) All fields below are mandatory, except where noted. Incomplete applications shall be returned by Brantford Power.

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) Application ID Number: \_\_\_\_\_ and Reference Number : \_\_\_\_\_
3. Ontario Corporate Number \_\_\_\_\_ or Business Identification Number \_\_\_\_\_

4. **Proposed In-Service Date:** \_\_\_\_\_(dd / mm / yyyy)
5. **Project Size:** Nameplate Capacity \_\_\_\_\_ kW  
 Number of Units \_\_\_\_\_  
 Nameplate Rating of Each Unit \_\_\_\_\_ kW  
 Number of Phases (1 or 3) \_\_\_\_\_
6. **Project Location:** Address \_\_\_\_\_  
 City / Town / Township \_\_\_\_\_  
 Lot Number(s) \_\_\_\_\_  
 Concession Number(s) \_\_\_\_\_
7. **Project Information:**  
 Choose a Single Point of Contact:  Owner  Consultant

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

**Preferred method of communication with Brantford Power:**  E-mail  Telephone  Mail  Fax

**8. Customer Status:**

Existing Brantford Power Customer?  Yes  No

If yes, Brantford Power Account Number: \_\_\_\_\_

Customer name registered in this Account: \_\_\_\_\_

Are you a HST registrant?  Yes  No

If yes, provide your HST registration number: \_\_\_\_\_ - \_\_\_\_\_ RT \_\_\_\_\_

**9. Fuel / Renewable Energy Type:**

- Biomass       Solar       Gas Turbine
- Wind       Diesel Engine       Other (Please Specify) \_\_\_\_\_

Water (for water projects please answer the following questions):

- Is water your primary energy source? Yes  or No
- Is your generation facility located on provincial Crown or federally-regulated lands? Yes  or No

**10. Location and Site Plan**

Provide Site Plan with approximate line routings for connection to nearby Brantford Power facilities. The Site Plan should include roads, concession and lot numbers and nearby power lines.

Drawing / Sketch No. \_\_\_\_\_, Rev. \_\_\_\_\_

**11. Connection to Brantford Power Distribution System:**

- a. Proposed or existing Connection voltage to Brantford Power’s distribution system: \_\_\_\_\_ kV
- b. Station: \_\_\_\_\_
- c. Feeder: \_\_\_\_\_

- 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 on the high-side of interface transformer(s):

\_\_\_\_\_ km;

Conductor size: \_\_\_\_\_

- g. Fault contribution from Generator’s facilities, with the fault location at the PCC:
  - Three-phase generators: 3-phase short circuit \_\_\_\_\_ MVA;
  - Single-phase generators: 1-phase short circuit \_\_\_\_\_

**12. Single Line Diagram (“SLD”):**

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

SLD Drawing Number: \_\_\_\_\_, Rev. \_\_\_\_\_

**13. 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:**

**NOTE:**

Please provide the manufacturer's technical data (electrical) for the generator or inverter.

Number of generating unit(s): \_\_\_\_\_ / \_\_\_\_\_  
 Manufacturer / Type or Model No: \_\_\_\_\_ / \_\_\_\_\_  
 Rated capacity of each unit: \_\_\_\_\_ kW \_\_\_\_\_ kVA  
 If unit outputs are different, please fill in additional sheets to provide the information.  
 Rated frequency: \_\_\_\_\_ Hz  
 Rotating Machine Type:  
 Synchronous  Induction  Inverter  Other (Please Specify) \_\_\_\_\_  
 (If the machine type is "Other", please provide values equivalent to a Synchronous or Induction type Generator)  
 Generator connecting on:  single phase  three phase  
 Limits of range of reactive power at the machine output:  
 i. Lagging (over-excited): \_\_\_\_\_ kVAR power factor \_\_\_\_\_  
 ii. Leading (under-excited) \_\_\_\_\_ kVAR power factor \_\_\_\_\_  
 Limits of range of reactive power at the PCC:  
 iii. Lagging (over-excited): \_\_\_\_\_ kVAR power factor \_\_\_\_\_  
 iv. Leading (under-excited) \_\_\_\_\_ kVAR power factor \_\_\_\_\_  
 Starting inrush current: \_\_\_\_\_ pu (multiple of full load current)  
 Generator terminal connection:  delta  star  
 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, Xd'' \_\_\_\_\_ pu  
 Direct axis transient reactance, Xd' \_\_\_\_\_ pu  
 Direct axis synchronous reactance, Xd \_\_\_\_\_ pu  
 Zero sequence reactance, X0 \_\_\_\_\_ 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, Xd'' \_\_\_\_\_ pu  
 Direct axis transient reactance, Xd' \_\_\_\_\_ 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

**14. Interface Step-Up Transformer Characteristics:**

a. Transformer ownership:  Customer /  Brantford Power  
 b. Transformer rating: \_\_\_\_\_ kVA  
 c. Nominal voltage of high voltage winding: \_\_\_\_\_ kV  
 d. Nominal voltage of low voltage winding: \_\_\_\_\_ kV

- e. Transformer type:  single phase  three phase
- f. 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  
Nameplate rating and impedance values of High Voltage Grounding Transformer (If applicable):  
Voltage: \_\_\_\_\_ V Rating: \_\_\_\_\_ kVA R: \_\_\_\_\_ pu X: \_\_\_\_\_ pu
- h. Low voltage winding connection:  delta  star  
Grounding method of star connected low voltage winding neutral:  
 Solid  Ungrounded  Impedance: R: \_\_\_\_\_ ohms X: \_\_\_\_\_ ohms

**NOTES:**

- At the Generator's expense, and, if requested, Brantford Power may provide transformation up to a maximum of 1500 KVA three-phase, as described in the Brantford Power Conditions of Service.
- The term 'High Voltage' refers to the connection voltage to Brantford Power's distribution system and 'Low Voltage' refers to the generation or any other intermediate voltage.

**15. Intermediate Transformer Characteristics (if applicable):**

- 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
- f. High voltage winding connection:  delta  star  
Grounding method of star connected high voltage winding neutral:  
 Solid  Ungrounded  Impedance: R: \_\_\_\_\_ ohms X: \_\_\_\_\_ ohms
- g. 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.

**16. Load information:**

- a. Maximum load of the facility: \_\_\_\_\_ kVA \_\_\_\_\_ kW
- b. Maximum load current (referred to the nominal voltage at the connection point to Brantford Power system): \_\_\_\_\_ A
- c. Maximum inrush current to loads (referred to the nominal voltage at the connection point to Brantford Power system): \_\_\_\_\_ A

**Attached Documents:**

Item No.	Description	Document No.	No. of Pages
1			
2			
3			

**Attached Drawings:**

Item No.	Description	Document No.	No. of Pages
1			
2			
3			

**CHECKLIST**

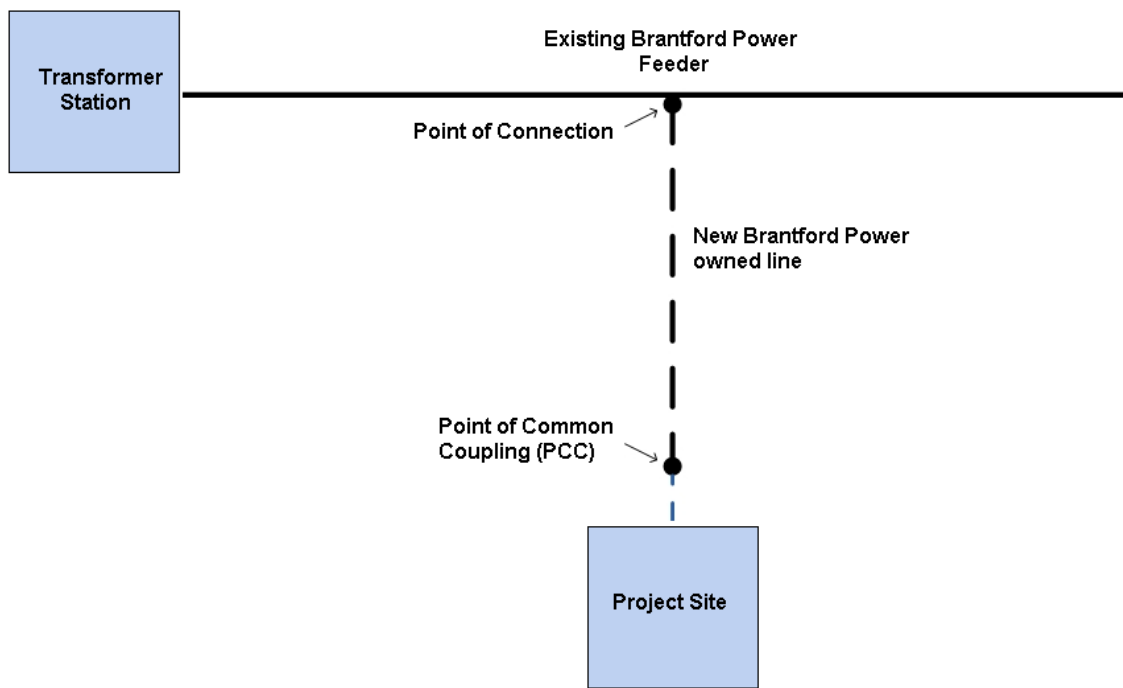
Please ensure the following items are completed prior to submission. The application shall be returned if incomplete:

- Completed form stamped by a Professional Engineer
- Payment in full including applicable taxes (by cheque or money order payable to “Brantford Power Inc.”). See “Brantford Power Inc. Connection Impact Assessment Cost table”.
- Single Line Diagram (SLD) of the Generator’s facilities, must be stamped by a Professional Engineer

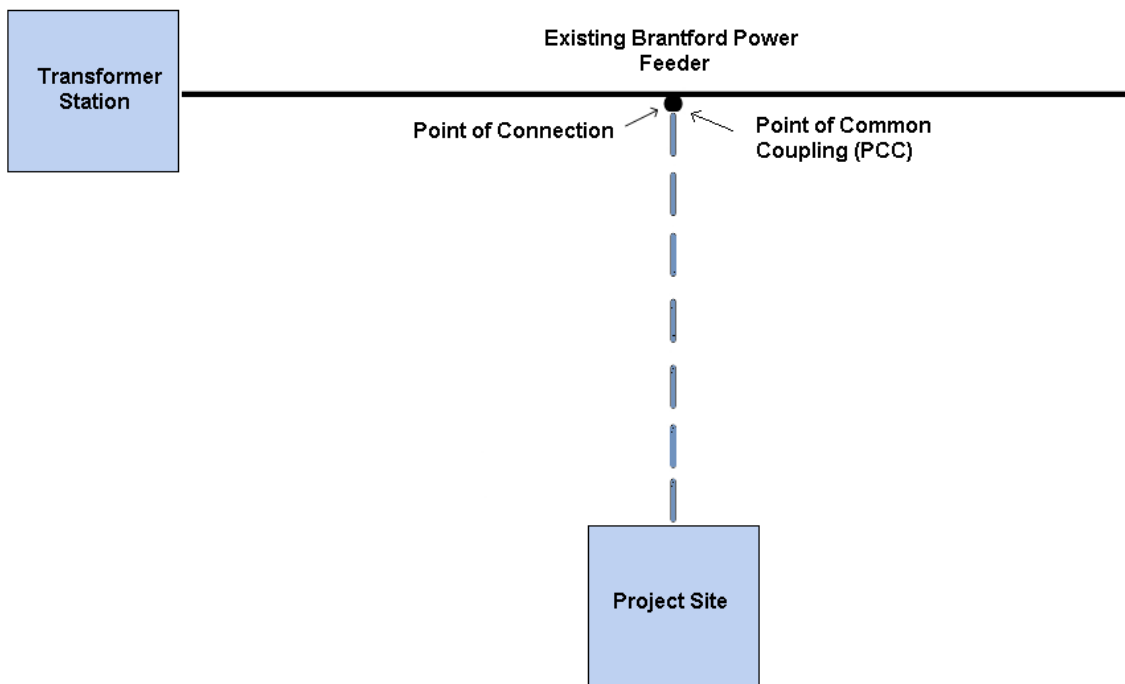
**NOTE:**

**By submitting Form B, the Proponent authorizes the collection by Brantford Power Inc. (“Brantford Power”), 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 Brantford Power’s Conditions of Service, Brantford Power’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 Brantford Power’s distribution system.**

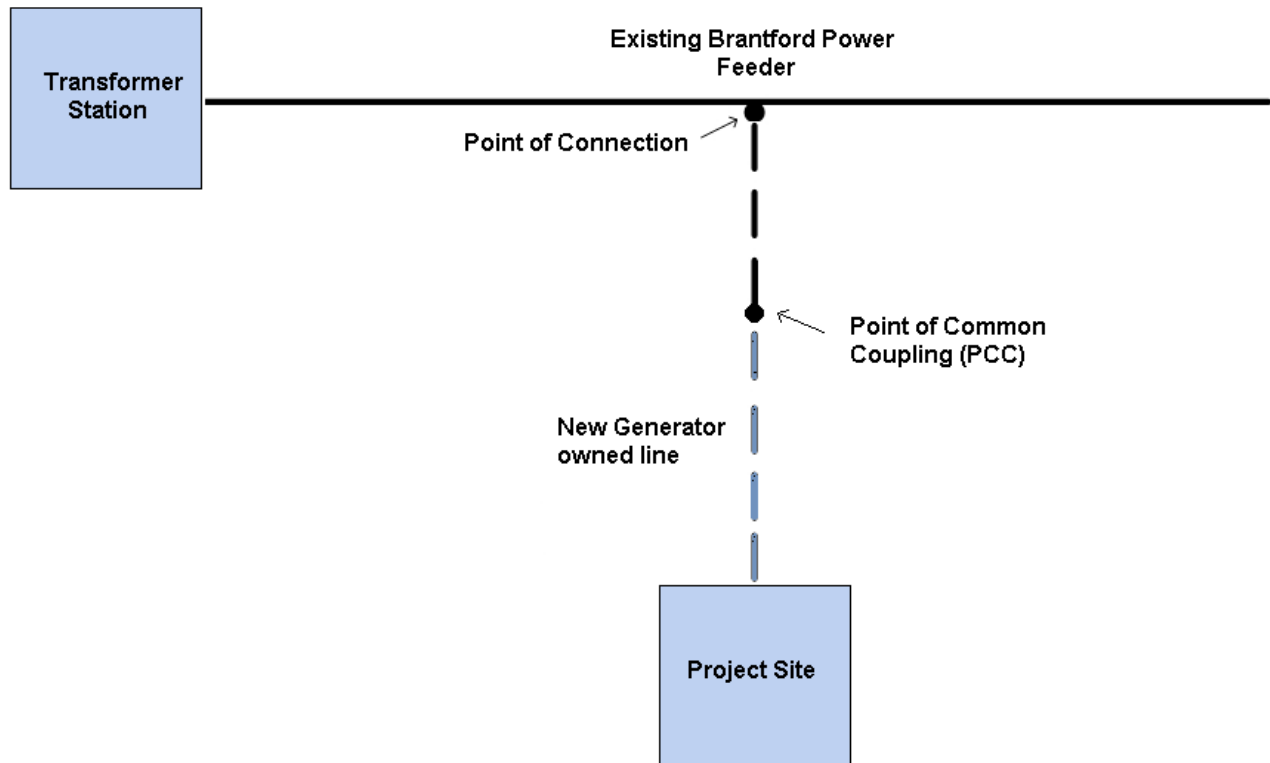
**Appendix A: Illustrations of PCC and Point of Connection**



**Figure A-1: Brantford Power Owns Entire Tap Line**



**Figure A-2: Generator Owns Entire Tap Line**



**Figure A-3: Brantford Power Owns a Portion and Generator Owns a Portion of Tap Line**