



## **PETERBOROUGH DISTRIBUTION INC.**

1867 Ashburnham Drive, PO Box 4125, Station Main  
Peterborough ON K9J 6Z5

### **Micro-Embedded Generation Facility Connection Agreement**

In consideration of Peterborough Distribution Inc. (PDI) agreeing to allow the customer to connect their 10 kW or smaller name-plate rated capacity generation facility to PDI's distribution system, the customer hereby agrees to the following terms and conditions.

#### **1.0 Eligibility**

- 1.01 The customer agrees that their generation connection shall be subject to all applicable laws and bound by the terms and conditions of PDI's Conditions of Service as amended from time-to-time, which have been filed with the OEB and are available on our website [www.peterboroughutilities.ca](http://www.peterboroughutilities.ca).

#### **2.0 Technical Requirements**

- 2.01 The customer represents and warrants that they have installed or will install prior to the connection of your generation facility to PDI's distribution system, an isolation device satisfying Section 84 of the Ontario Electrical Safety Code and agree to allow the PDI's staff access to and operation of this as required for the safe maintenance and repair of the distribution system.
- 2.02 The customer agrees to perform regular scheduled maintenance to their generation facility as outlined by the manufacturer in order to assure that connection devices, protection systems and control systems are maintained in good working order and in compliance with all applicable laws.
- 2.03 The customer agrees that during a power outage on PDI's system their generation facility will shut down, unless they have installed special transfer and isolating capabilities on the generation facility. The customer agrees to the automatic disconnection of their generation facility from PDI's distribution system, as per the generator protective relay settings set out in this Agreement, in the event of a power outage on PDI's distribution system or any abnormal operation of the distribution system.
- 2.04 The customer covenants and agrees that the design, installation, maintenance and operation of their generation facility are conducted in a manner that ensures the safety and security of both the generation facility and PDI's distribution system.

- 2.05 Due to PDI's obligation to maintain the safety and reliability of its distribution system, the customer acknowledges and agrees that in the event PDI determines that the generation facility (i) causes damage to; and/or (ii) is producing adverse effects affecting other distribution system customers or PDI's assets, the customer will disconnect their generation facility immediately from the distribution system upon direction from PDI and correct the problem at their own expense and obtain PDI approval prior to reconnection.

### **3.0 Liabilities**

- 3.01 The customer and PDI will indemnify and save each other harmless for all damages and/or adverse effects resulting from either party's negligence or willful misconduct in the connection and operation of the generation facility or PDI's distribution system.
- 3.02 PDI and the customer shall not be liable to each other under any circumstances whatsoever for any loss of profits or revenues, business interruptions losses, loss of contract or loss of goodwill, or for any indirect, consequential, incidental or special damages, including but not limited to punitive or exemplary damages, whether any of the said liability, loss or damages arise in contract, tort or otherwise.

### **4.0 Compensation and Billing**

- 4.01 If the customer is not an embedded retail generator, the customer agrees that, subject to any applicable law:
- a) PDI will not pay the customer for any excess generation that results in a net delivery to PDI between meter reads; and
  - b) there will be no carryover of excess generation from one billing period to the next unless the customer is, at the relevant time, a net metered generator (as defined in section 6.7.1 of the Distribution System Code).
- 4.02 If the customer is an embedded retail generator selling output from the embedded generation facility to the Ontario Power Authority under contract, the customer agrees that PDI will pay the customer for generation in accordance with the Retail Settlement Code
- 4.03 If the customer is an embedded retail generator delivering and selling output to PDI, the customer agrees that PDI will pay the customer for generation in accordance with the Retail Settlement Code.

### **5.0 Termination**

- 5.01 The customer understands that they have the right to terminate this agreement at any time, and that by doing so the customer is required to disconnect their generation facility and notify, in writing, PDI of such action.

### 6.0 Assignment

6.01 The customer may assign their rights and obligations under this Agreement with the consent of PDI, which shall not withhold its consent unreasonably. PDI shall have the right to assign its rights and obligations under this Agreement without your consent.

I understand, accept and agree to comply with and be bound by the above terms and conditions governing the connection of my generation facility to PDI's distribution system.

Customer Name: \_\_\_\_\_

Customer Signature: \_\_\_\_\_ Date: \_\_\_\_\_

PDI account number: \_\_\_\_\_

Service Address: \_\_\_\_\_

I confirm that the following information is true and accurate:

Nameplate rating of Generator: \_\_\_\_\_ kW Total installed generation: \_\_\_\_\_ kW

Type:  Wind Turbine  Photovoltaic (Solar)  Hydraulic Turbine  
 Fuel Cell  Other \_\_\_\_\_

Inverter Utilized:  Yes  No

Inverter Certification:  C22.2 #107.1  UL 1741  Site Certified by the ESA

*For office use: Station \_\_\_\_\_ Feeder \_\_\_\_\_ Date Connected \_\_\_\_\_*

## Generator Protective Relay Settings

### Table 1 – Inverter Based Generation

The following relay settings shall be used for inverters built to the CSA standard:

Source: CSA C22.2 No. 107.1-01 Table 16

| System Voltage<br>Vn ' V nominal'<br><b>V (Volts)</b> | Frequency<br><b>F (Hertz)</b> | Maximum number of<br>cycles to disconnect |       |
|---|-------------------------------|---|-------|
|   |                               | Seconds                                   | Cycle |
| $V < 0.5 V_n$   | 60                            | 0.1                                       | 6     |
| $0.5 V_n \leq V < 0.88 V_n$                           | 60                            | 2   | 120   |
| $1.10 V_n \leq V < 1.37 V_n$                          | 60                            | 2   | 120   |
| $V > 1.37 V_n$  | 60                            | 0.033                                     | 2     |
| Vn  | $F < 59.5^*$                  | 0.1                                       | 6     |
| Vn  | $F > 60.5$                    | 0.1                                       | 6     |

\* The UL1741 & IEEE P1547 Standards use  $F < \text{rated} \cdot 0.7$  i.e. 59.3 Hz. To update if CSA C22.2 No. 107.1-01 is changed.

### Table 2 – Non-Inverter Generation

LDC's minimum requirements, for other generation are as follows:

| System Voltage<br>Vn ' V nominal'<br><b>V (Volts)</b> | Frequency<br><b>F (Hertz)</b> | Maximum clearing time* |       |
|---|-------------------------------|------------------------|-------|
|   |                               | Seconds                | Cycle |
| $V < 0.5 V_n$   | 60                            | 0.16                   | 9.6   |
| $0.5 V_n \leq V < 0.88 V_n$                           | 60                            | 2                      | 120   |
| $1.10 V_n \leq V < 1.20 V_n$                          | 60                            | 1                      | 60    |
| $V \geq 1.20 V_n$                                     | 60                            | 0.16                   | 9.6   |
| Vn  | $F < 59.3$                    | 0.16                   | 9.6   |
| Vn  | $F > 60.5$                    | 0.16                   | 9.6   |

\* Clearing time is the time between the start of the abnormal condition and the generation ceasing to energize the LDC's distribution system.

- If you are uncertain about your generation equipment's protective relay settings, please check with your generating equipment supplier.
- Automatic reconnect setting time for your generator is after 5 minutes of normal voltage and frequency on the LDC's distribution system.