Distributed Energy Resource (DER)

Micro Connection Information Package

(≤10 kW)

Last updated: August 22, 2025

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1. Abbreviations:

- **DER - Distributed Energy Resources**

  Electricity generation systems like solar panels, wind turbines, battery storage, combined heat and power systems, and other energy technologies that can operate either connected to the power grid or independently (off-grid).

- **LDC - Local Distribution Company**

  The company responsible for delivering electricity from the main power grid to homes and businesses in a specific area. Elexicon is the electricity distributor for the service areas shown in “Elexicon Service Area”.

- **Pre-Generation Application form**

  A request submitted to the local distribution company (LDC) to gather initial technical and procedural information before proceeding with a distributed energy resource (DER) connection application.

2. Introduction:

This guideline serves as a reference to help Elexicon customers understand the overall information, process, requirements, and available options for connecting micro-generation (<10kW) facilities to Elexicon’s distribution system. It is intended as a general guide; final design approvals for all generators will be determined by the Connections Team.

2.1 Responsibilities of Elexicon:

Elexicon is responsible for maintaining the safety, reliability, and efficiency of its distribution system while ensuring that new generation connections do not negatively impact the system or existing customers.

2.2 Responsibilities of the Customer:

- The generator/customer shall safely design, construct, operate, and maintain their generation facility. This includes the installation of all necessary protection and control devices to ensure safe and reliable operation.

- The Customer may consider engaging a consultant to assist with the connection requirements, process, and approvals. They must also obtain all necessary approvals from applicable agencies before a connection is permitted.

- The Customer must fulfill all submission requirements, finalize the necessary agreements, and ensure that all required payments to Elexicon are made.

3. Elexicon Service Area:

Ajax, Beaverton, Belleville, Bowmanville, Cannington, Gravenhurst, Newcastle, Orono, Pickering, Port Hope, Port Perry, Sunderland, Uxbridge, and Whitby.

3.1 Elexicon Contact Information:

Address: 55 Taunton Road East, Ajax, Ontario, L1T 3V3
Email: dservices@elexiconenergy.com
Phone: 1-888-420-0070

For all email inquiries, **customers and generators must include the generator site address and municipality in the email subject line** to ensure efficient processing.

4. Generator Classification

Elexicon Energy supports the incorporation of these generation facilities within the electrical distribution system in its service territory. The process is guided by the latest revision of the Distribution System Code (DSC) issued by the Ontario Energy Board. The Code sets out the minimum obligations that a licensed electricity distributor (such as an LDC) must meet in carrying out its obligations. The latest revision of the Code can be found on the official website of the OEB under Industry Relations/Rules, Codes, Guidelines and Codes.

- **Micro Embedded Generation:** Electricity generation less than or equal to 10 kW.
- **Small, Mid-Sized and Large Generation:** Electricity generation greater than 10 kW (Please refer to the Distributed Energy Resource (DER) Non-Micro Generator Information Package).

Elexicon will apply its Conditions of Service for any generation interconnection costs and/or any metering changes that Elexicon deems necessary to allow for settlement purposes under a specific program.

5. Micro DER (≤ 10 kW) Connection Process

Proponents applying for the connection of distributed energy resources (DER) to the

Elexicon's distribution system must complete the following process:

1. Complete the pre-generation application form and e-mail it to DxGenerationPlanning@elexiconenergy.com to check whether there is capacity to accommodate a DER at your location (some areas of our system may have restricted capacity and may not be able to connect DERs to the system at your location).

2. Elexicon will respond to a completed pre-generation application form within 15 days. The processed pre-generation application form will let you know whether capacity is likely available at the location, whether any changes to infrastructure (e.g. new line expansion, transformer upgrade) are required.

3. Once approved, Elexicon will issue an Offer to Connect to the Customer outlining the requirements and construction costs for connecting the generator.

4. The Customer will be issued a Micro Generation Agreement and a Commissioning Verification Form which must be completed before the project is connected.

5. The customer must submit a Professional Engineer Stamped Single Line Diagram.

6. Design and Build

   Elexicon performs the work required to make the connection. The customer completes the construction of the generation facility and applies to the Electrical Safety Authority (ESA) for an electrical inspection. The customer submits final detailed design documents to Elexicon for review.

7. Customer completes and submits the signed Commissioning Verification Form.

8. Connect, Operate and Maintain

   When the Commissioning Verification Form is approved, the final ESA Connection Authorization is received, and the Connection Agreement (and the Operating Agreement, if applicable) is signed, Elexicon will authorize connection of the generation facility to its distribution system.

Note: The ESA "Connection Authorization" is sent to Elexicon directly from the Electrical Safety Authority. Elexicon will work with the customer to set up the appropriate settlement arrangement based on the project type.

6. Fees Schedule

All fees will be clearly outlined in the Offer to Connect agreement.

7. Technical Requirements

7.1 Single Phase Design Requirements – Single Line Diagram:

Generators/Customers are required to design and submit a Professional Engineer stamped Single Line Diagram (SLD) for the proposed project. The customer may consider a contractor to assist with the design.

Sample SLD for common project types within Elexicon's service area is shown here Single Line Diagram Example.

The sample SLD pertains to parallel secondary connection, but Elexicon may impose additional or alternative requirements depending on the specific details of the project.

Please note that the samples are references outlining the minimum requirements only, the customer must design and submit an original SLD according to their project.

7.2 Load Displacement Strategy – Non Exporting DERs

The load displacement strategy ensures that no power is exported to the grid, as required in a load displacement project.

The load displacement strategy for micro-generation incorporates a level of protection through the use of a zero-export controller, which actively monitors and regulates the DER output to ensure that the generated power is consumed entirely on-site. This controller is designed to prevent any reverse power flow to the grid under all operating conditions, thereby ensuring full compliance with the zero-export requirement.

Customers are required to submit a Professional Engineer stamped operational philosophy document confirming a zero-export controller is in place. This document must detail how the controller operates and demonstrate how it ensures no export to the grid occurs under any circumstances, in accordance with the zero-export requirement of the Load Displacement Program.

7.3 Label Requirements:

All labels must be lamacoid engraved.

1. Labels placed on the metering device base shall have the following label

content:

a. Warning text indicating the presence of two power sources in the system, such as “TWO POWER SOURCES PARALLEL SYSTEM”.

b. Single Line Diagram (SLD) note stating that the label must accurately reflect the physical and schematic installation.

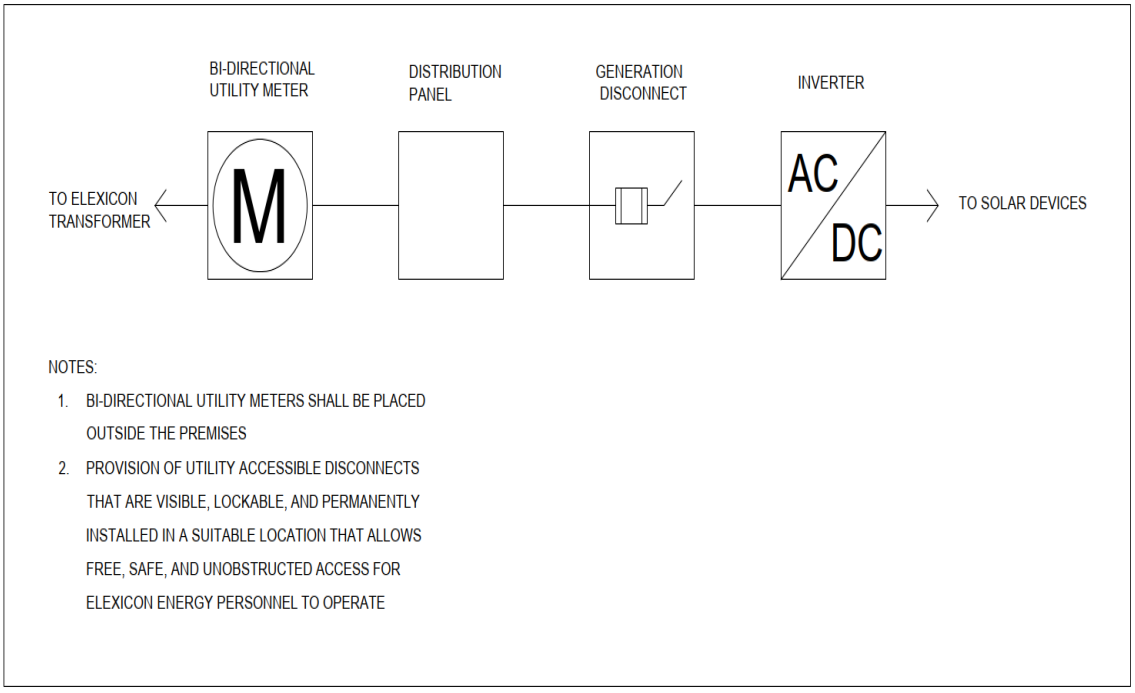
2. Labels placed on DER disconnect switch shall have the following label content:

a. Text identifying the switch as a DER disconnect, such as “DISTRIBUTED GENERATION DISCONNECT”.

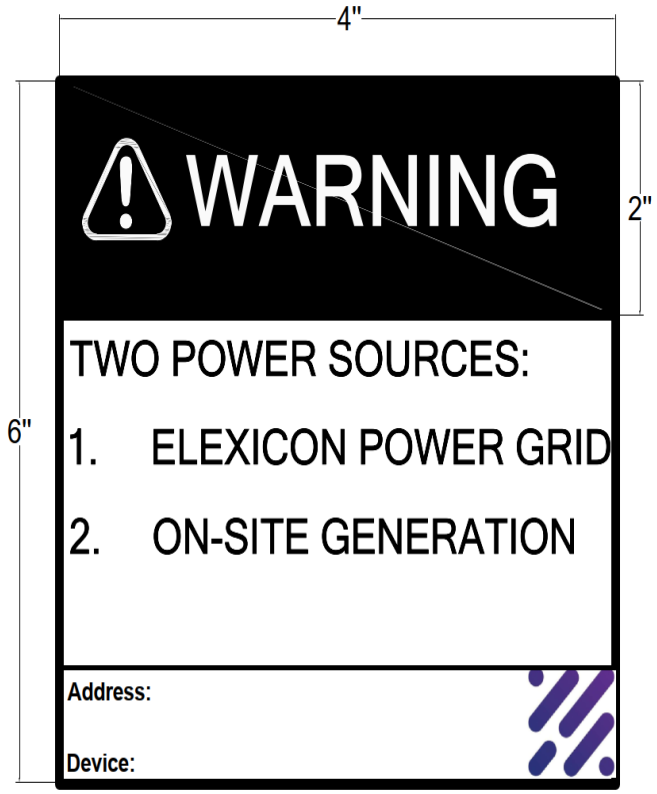
b. Warning text indicating the presence of two power sources in the system, such as “TWO POWER SOURCES PARALLEL SYSTEM”.

c. Single Line Diagram (SLD) note stating that the label must accurately reflect the physical and schematic installation.

7.3.1 Lamacoid SLD Sample:



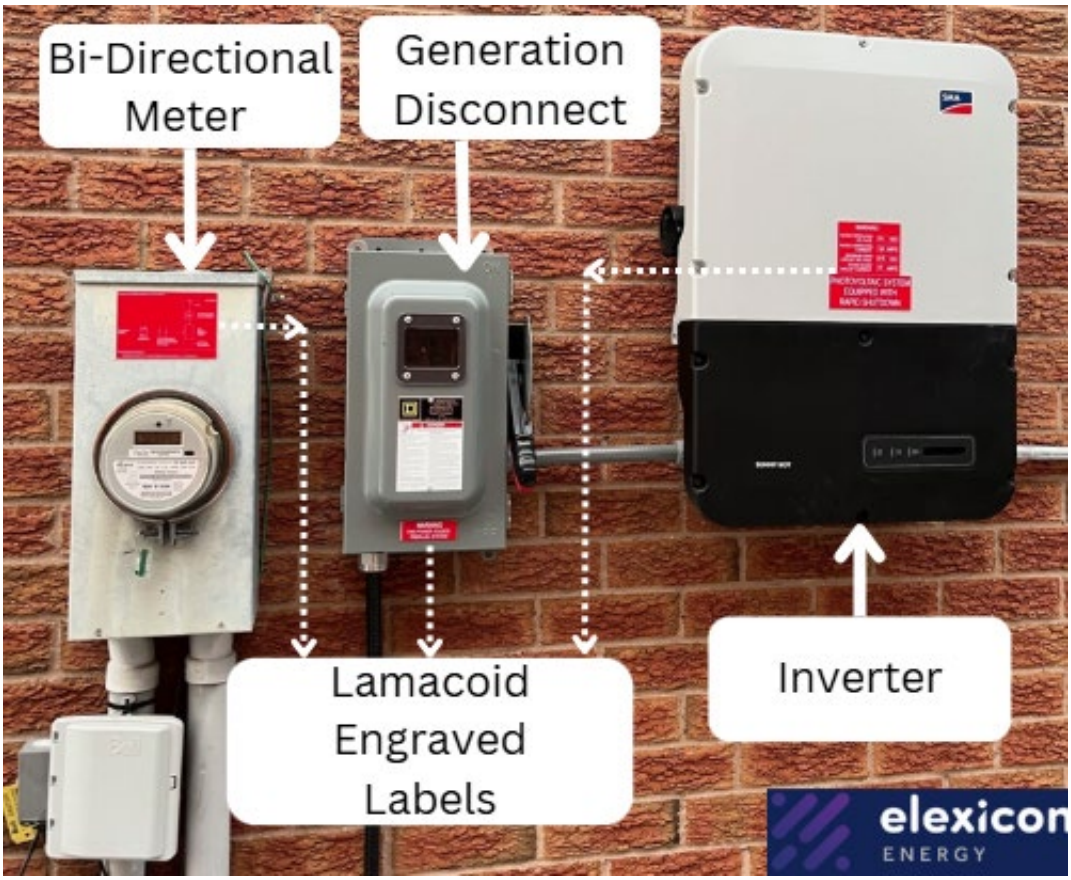
7.3.2 Metering Device Base Label Template:



NOTES:

1. ALL TEXT ON THE LABEL MUST BE CLEARLY LEGIBLE, WITH PRIMARY HEADINGS (SUCH AS 'ALERT TYPE') USING A MINIMUM FONT HEIGHT OF 0.7 INCHES, AND GENERAL LABEL CONTENT MAINTAINING A MINIMUM HEIGHT OF 0.5 INCHES
2. NUMERALS/LETTERS AND THE BACKGROUND MUST BE IN CONTRASTING COLORS
3. METER EQUIPMENT LABELS MUST CORRESPOND TO PERMANENT UNIT/SUITE NUMBERS ATTACHED TO OR NEXT TO CORRESPONDING UNIT DOORS/SUITE ENTRANCES

7.4 Sample Installation with Lamacoid Plates



7.4.1 Single Phase Design Requirements.

As per the Single Line Diagram Example, the Single Line Diagram (SLD) must include the following elements:

1. The disconnect switch.
2. The step-up transformer (if applicable).
3. The meter location.
4. The connection point to the existing service.

7.5 Single Phase Metering Requirements:

1. The customer must supply and install the meter base and generation disconnect switch. Refer to the "Approved List of Meter Bases" below. For more information, please contact dservices@elexiconenergy.com

Table 1. List of Approved Meter Bases

List of Meter Bases	
Manufacturer	**Model**
Microlectric	BDA2
Hydel	HC22R
Eaton	2K2

2. All metering and disconnect equipment must be installed outdoors and accessible to Elexicon staff.

3. The micro-generation disconnect must be within line of sight of the bi-directional meter.

4. Ensure the meter socket location complies with building and fire codes for safe accessibility.

5. All labels must be Lamacoid engraved.

6. Use Lamacoid plates (riveted engraved plates) to clearly label the following:

   a. Bi-directional meter

   b. Generation disconnect switch

7. An ESA inspection is required before energization.

8. Elexicon will install one bi-directional meter after all requirements are met.

7.5.1 Single Phase DER Project Requirements.

1. The proposed generation connection must match the existing load connection in voltage rating and phase configuration.

2. The customer shall ensure that a proper load displacement strategy is in place for non-exporting projects, including a functional zero-export controller that prevents any export to the grid under all operating conditions.

3. The customer shall submit an operational philosophy document outlining the

load displacement strategy for non-exporting projects, including confirmation of a zero-export controller, its operating methodology, and how it ensures no power is exported to the grid under any condition.

4. The meter and DG disconnect switch must be mounted together on an exterior wall at a height of 1.7 m to 2.1 m above grade and must be readily accessible.

5. The meter base location must comply with clearance requirements:

    a. At least 1.0 m from windows, doors, or other openings (reduced to 0.6 m for townhouses and row housing).

    b. A minimum 1.0 m horizontal clearance from the gas meter.

    c. A minimum 1.0 m radial clearance from any other objects.

6. The Distributed Generation (DG) Disconnect Switch must:

    a. Be a CSA-approved device or an equivalent approved under the Ontario Electrical Safety Code (OESC).

    b. Provide visible break isolation.

    c. Be accessible from outdoors and pad-lockable.

7. The customer must supply and install all required labels at specified locations in accordance with the "Label Requirements."

8. The project may be subject to an Elexicon site inspection, if required.

9. Elexicon will connect the project to its distribution system within five business days, or at a later agreed-upon date, once all of the following conditions are met:

    a. ESA provides Authorization to Connect directly to Elexicon.

    b. The customer has entered into a Connection Agreement with Elexicon.

    c. The project has met all service conditions and received all necessary approvals.

    d. The customer has paid for all connection costs, including any required new or modified metering.

    e. An Elexicon inspector approves the connection, if required.

8. Reference Links

1. Elexicon Energy Distributed Energy Resources Main Home Page:
   Elexicon Energy Distributed Energy Resources
2. Elexicon Energy Micro-Generation Webpage:
   Micro-Generation Connection Process
3. Pre-Generation Application Form:
   Pre-generation application form
4. Micro-Generation Agreement:
   Micro Generation Agreement
5. Single Line Diagram Example:
   Micro-Generation Single Line Diagram Example
6. Elexicon Energy Commissioning Verification Form:
   Generator Commissioning Report
7. Restricted Feeder List:
   List of Restricted Feeders