



Lakeland Power Distribution Ltd

Distributed Energy Resources (DER) Connection Guide

Effective Date: May 1, 2026

1. Introduction

Welcome to the Distributed Energy Resources (DER) Connection Guide for Lakeland Power Distribution Ltd.

This guide outlines the process, requirements, timelines, and responsibilities for connecting DER projects to our distribution system. DERs include, but are not limited to:

- Solar photovoltaic (PV) systems
- Battery energy storage systems (BESS)
- Rotating machine generating systems
- Electric vehicle (EV) charging infrastructure
- Other distributed generation and controllable loads

This guide is designed to support transparency and consistency in accordance with regulatory expectations in Ontario. Besides connection process overview and application requirements, this provide the details on the requirements distributor and customer need to follow Pre and post construction of the DER projects. This also shed the light on the timelines for the DER projects. Please follow the link below for the details

<https://www.lakelandpower.on.ca/distributed-energy-resources-der/>

<https://www.lakelandpower.on.ca/wp-content/uploads/2023/09/DER-Connection-Procedures-DERCP-20220914.pdf>

Based on the new OEB directives, for small and medium generation facilities, the distributor will provide with its CIA assessment a detailed cost estimate of the proposed connection and an offer to connect within:

- a) 60 days of the receipt of the complete application where no distribution system reinforcement or expansion is required;
- b) 75 days of the receipt of the application where no distribution system reinforcement or expansion is required, and where a host distributor/transmitter CIA is needed; and

- c) 90 days of the receipt of the application where a distribution system reinforcement or expansion is required, regardless of the need for a host distributor/transmitter CIA.
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2. Fees and Cost Responsibilities

For all Distributed Energy Resource (DER) projects with a capacity of 12 kW or less, a deposit of \$500 is required. This deposit must be submitted as part of the application process.

For DER projects greater than 12 kW, the Connection Impact Assessment (CIA) fee schedule is available on the Lakeland Power website. Applicants pursuing larger projects should consult the Hydro One website to review the applicable fees/cost based on specific project size and type, for Transfer Trip (TT).

Additionally, a detailed cost estimate will be provided to the applicant within the Offer to Connect. This estimate outlines all expected costs associated with connecting the DER project to the Lakeland Power distribution system.

3. Technical Requirements

All DER installations must comply with:

- Lakeland Power Distribution Ltd Technical Standards
- Hydro One Technical Interconnection Requirements (TIR)
- Ontario Electrical Safety Code
- Applicable provincial and industry standards

Key Technical Considerations

- Anti-islanding protection
 - Voltage regulation compliance
 - Power quality standards
 - Metering requirements
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4. System Capacity & Hosting Information

The Hosting capacity information are available by following the OEB link

In addition, the maximum nameplate capacity for Micro DER is now increased to $\leq 12\text{kW}$ from $\leq 10\text{kW}$, and the “load displacement” term is replaced with “non-exporting”

DER Hosting Capacity Calculations

Per OEB directive and section DERCP 4.4.2: Lakeland Power methodology to calculate DER hosting capacity on its distribution system is as under. However, when calculating the remaining DER hosting capacity for a specific feeder or station, Lakeland Power considers the capacity and characteristics of all DERs that have been allocated capacity on that feeder or station. This includes whether the facilities are exporting, export-limited, or non-exporting. These factors must be appropriately reflected in the hosting capacity calculations.

There are two key aspects of the calculations

1. Minimum feeder load criterion
2. Short-circuit capacity (SCC) criterion

Lakeland Power methodology in terms of the planning criteria for loading the feeders/equipment is aligned with other utilities and is as follow

Calculating Available Feeder Capacity for New DER Projects

The following steps outline the process for determining available feeder capacity for new Distributed Energy Resource (DER) connections.

Establish a Complete Inventory of Existing Generation

Develop and maintain a inventory of all existing generation connected to each feeder. At a minimum, this inventory must include:

- Nameplate rating
- Type of generation (e.g., inverter-based, synchronous, etc.)
- Feeder to which the generation is connected

Accurate feeder-level data is essential, as all subsequent calculations depend on the integrity of this information.

Understand Applicable Generation Limits

Establish the generation limits for each feeder, which generally fall into four categories:

- a) Thermal Feeder Ampacity



- a. Feeders \leq 13kV =200Amps
 - b. Feeders $>$ 13kV =400Amps
- b) Thermal Station Limits
- a. Substation TX = 60% of the TX capacity
 - b. The minimum load at the station.
- c) Small Generation Penetration Limit (\leq 12 kW)
- a. For micro-generation (\leq 12 kW per installation), there is a limit of micro-generation on a feeder:
 - i. No more than 7% of feeder peak load on F-class feeders, or
 - ii. No more than 10% of feeder peak load on M-class feeders
- d) Short Circuit Limit
- The addition of new generation must not cause short circuit levels to exceed the lower of:
- a. Station equipment ratings, or
 - b. Transmission System Code limits

Lakeland Power's SCC calculations are based on the following standard assumptions:

- a) Inverter-based DER contributes 1.2 x full-load current (FLA)
- b) Rotating-machine DER contributes 6 x FLA

The available short-circuit capacity is determined as:

Available SCC (MW) = Equipment SC Rating - Existing Station SC - DER SC Contribution

Where: **SC**= Short-circuit current

Calculate Existing Utilization per Feeder

Using the generation inventory, calculate the current utilization against each of the applicable limits:

- Total connected generation (thermal feeder basis)
- Total station-connected generation (thermal station basis)
- Total micro-generation penetration percentage
- Contribution to short circuit levels

Each feeder must be assessed against all applicable constraints.

Determine Remaining Feeder Capacity

For each limiting category:

Remaining Capacity = Applicable Limit – Existing Connected Generation

The lowest remaining value across all constraint categories represents the available feeder capacity from the LDC perspective.

Confirm Upstream Transmission Constraints

Finally, compare calculated available capacity against limits provided by the upstream transmitter.

The governing available capacity is always the lower of:

- The LDC-calculated feeder/station limit, or
- The upstream transmitter limit

Hydro One's capacity and constraints upstream are considered as the ultimate feeder limit.

Disclaimer:

Capacity information is indicative and does not guarantee connection approval.

5. Queue Management

Applications are processed on a **first-come, first-served basis**.

Queue Rules

- Only complete applications receive queue positions
- Applicants must meet all milestone deadlines
- Failure to respond may result in removal from the queue

Status Updates

Applicants will receive updates at key stages of the process.

6. Contact Information

DER Connections Team

Lakeland Power Distribution Ltd
Email: engineering@lakelandpower.on.ca
Phone: (705) 555-0123
Website: www.lakelandpower.ca/DER

Escalation Process

1. Contact DER Coordinator
 2. Escalate to Supervisor, Asset and Engineering
 3. Submit formal complaint via company website
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7. Additional Resources

- DER Application Form (available on website)
 - Technical Standards Manual
 - Connection Agreement Template
 - Frequently Asked Questions (FAQ)
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8. Disclaimers

- This guide is for informational purposes only
 - All connections are subject to technical feasibility
 - Requirements may change without notice
 - Applicants must comply with all applicable regulations
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9. Document Control

Version	Date	Description
1.0	May 1, 2026	Initial Release