
Conditions for Connection of Distributed Generation to our Network

1. Technical Standards and Guidelines

All distributed generation plant connected to NEL's distribution network must comply with:

- AS/NZS 3000 Electrical Installations (known as the Australian/New Zealand Wiring Rules).
- Nelson Electricity's Network Code available at www.nel.co.nz.
- Nelson Electricity's DG Connection Conditions (this document).

Generation installations must also comply with the following technical standards where relevant:

- AS 4777.1 Grid connection of energy systems via inverters – Installation requirements.
- AS 4777.2 Grid connection of energy systems via inverters – Inverter requirements.
- AS 4777.3 Grid connection of energy systems via inverters – Grid protection requirements.

We also strongly recommend that all generation installations comply with requirements of:

- EEANZ "Guide for Connection of Generating Plant".

This document is available from www.eea.co.nz.

2. Industry Regulations

All distributed generation plant connected to NEL's distribution network must comply with the relevant requirements of the:

- Electricity Industry Participation Code 2010 – Part 6 "Connection of Distributed Generation".

These documents are available at www.ea.govt.nz.

3. Agreement with Electricity Retailer for Purchase and Sale of Export Electricity

Before any distributed generation plant can be connected to NEL's distribution network an agreement for the metering, sale and reconciliation of all export electricity must be put in place with one of the electricity retailers operating on NEL's network.

4. NEL Switching Activity Remains Unrestricted

The connection of the distribution plant to NEL's network shall in no way interfere with or restrict the routine or emergency switching practices already employed on NEL's distribution network.

5. Adequate Protection

As a condition of connection to NEL's distribution network the distributed generator must put in place and continuously maintain adequate protection systems. For most systems these will normally include:

- Disconnection/isolation switch
- Generation circuit breaker
- Over/under voltage protection
- Over/under frequency protection
- Earth fault protection
- Mains loss protection and protection for auto recloser operation
- Synchronisation of system with the distribution network
- Neutral voltage displacement protection

Safety is fundamentally important; all generators must:

- Automatically and fully isolate itself from the network in the event of an outage, and
- Not reconnect to the network until such time as the network is fully back to normal function.

6. Metering

All distributed generation installations connected to NEL's distribution network shall have in place appropriate metering arrangements. The metering must reflect the metering category applicable to the type of connection concerned and must be certified and compliant with the metering standards set out in the Electricity Industry Participation Code 2010 – Part 10 "Metering". Metering can be arranged by the generator, a specialist service provider or, more commonly, by the electricity retailer contracted to purchase the exported electricity.

Nelson Electricity has no involvement in metering services and we cannot connect a distributed generation facility until such time as it has in place metering arrangements that comply with the requirements of the EIPC 2010.

7. Suitable Signage

Suitable signage shall be attached to all switchboards that are capable of being supplied from any distributed generation plant. The signage shall be in accordance with AS/NZ 3000 and typically will be as shown below:

<p style="text-align: center;">WARNING DUAL SUPPLY ISOLATE BOTH NORMAL AND GENERATOR SUPPLIES BEFORE WORKING ON THIS SWITCHBOARD</p>

8. Application

The distributed generator must submit a written application, using an NEL Network Connection Application form, outlining the key details of the proposed generation installation. NEL will respond with written approval or will specify any changes that need to be made before the proposal can be approved. Once approved the distributed generation facility can be built/installed but cannot be connected to the network until:

- Inspection and testing has been undertaken.
- An Electrical Certificate of Compliance has been issued.
- A Declaration and Confirmation form has been submitted to and accepted by NEL.
- An NEL Network Connection Application form has been completed and submitted - available at www.nel.co.nz.

9. Inspection and Testing

All new distributed generation installations must be inspected and tested by a suitable qualified person(s). Inspection and testing is necessary in order to:

- Obtain an Electrical Certificate of Compliance.
- Demonstrate compliance with the technical requirements specified in Section (1) above.
- Demonstrate compliance with the protection requirements specified in Section (5) above.

NEL may wish to be present to inspect the facility and to observe or undertake its own tests; so please provide us with adequate notice.

10. Electrical Compliance Certificate

Every distributed generation installation must have an Electrical Certificate of Compliance issued by a suitably qualified person(s) before it can be connected to the network. A copy of the Certificate of Compliance must be furnished with the Declaration and Confirmation of Connection before NEL can permanently connect the installation to the network.

11. Contractual Agreements

The distributed generator and Nelson Electricity must have agreed the contractual terms for connection before the generation installation can be permanently connected to NEL's network. At a minimum the parties must agree to be bound by the default contractual terms specified in Electricity Industry Participation Code 2010 Part 6 Schedule 6.2, otherwise they must mutually agree alternative contractual terms of connection.

12. Declaration and Confirmation

Once testing and inspection has been completed and the installation has gained an Electrical Certificate of Compliance the generator must complete and submit a Declaration and Confirmation of Connection form to NEL. Once received and checked, NEL will permit the installation to be permanently connected to NEL's distribution network. The Declaration and confirmation forms are available from NEL's website.