
Guide to Connection of Small Scale Distributed Generation

29 January 2015

Table of Contents

1	Purpose	1
2	Scope	1
3	Accountabilities	1
4	Definitions	1
5	Connecting Small Scale Distributed Generation	1
5.1	General	1
5.2	Equipment Requirements	2
5.3	Application	2
5.4	Application Processing.....	3
5.5	Installation	3
5.6	Metering	3
5.7	Network Inspection	3
5.8	Terms of Connection	3
6	Dispute Resolution	3
7	Records.....	4
8	References	4

Doc ID	Suite	Author	Approver	Issued	Version	Page
AE-G002	Aurora Energy	Commercial Mgr	GM AM	29/1/2016	1.0	i of i

1 Purpose

This guide provides guidance to customers and contractors on the requirements and procedures for the connection of Small Scale Distributed Generation, where export of energy into the Aurora network is possible.

2 Scope

This guide applies to all proposed connections of Small Scale Distributed Generation. This guide does not apply to generation installed within an installation that is not connected to the Aurora network.

3 Accountabilities

Commercial Manager (Delta)	Accountable for ensuring this guide is current and published on Aurora's website in accordance with requirements set out in Part 6 of the Code.
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4 Definitions

Apect.	Definition.
AC	Means alternating current.
CoC	means a Certificate of Compliance issued in accordance with the Regulations
Code	means the electricity Industry Participation Code administered by the Electricity Authority.
ESC	means an Electrical Safety Certificate issued in accordance with the Regulations.
Generator	means the owner of the SSDG system, and/or their appointed agent / installer / contractor.
ICP	means Installation Control Point and is further defined in the Code.
JAS-ANZ	means the Joint Accreditation System of Australia & New Zealand.
Regulations	means the Electricity (Safety) Regulations 2010, as amended from time-to-time.
Regulated Terms	means Schedule 6.2 of the Code.
SSDG	means Small Scale Distributed Generation, being distributed generation with a total generation capacity of 10kW or less.

5 Connecting Small Scale Distributed Generation

5.1 General

This guide is intended for use by Generators when proposing to connect SSDG systems to Aurora's network. SSDG systems are usually, but not always, single-phase, and are likely to be installed in residential or small commercial premises.

Doc ID	Suite	Author	Approver	Issued	Version	Page
AE-G002	Aurora Energy	Commercial Mgr	GM AM	29/1/2016	1.0	1 of 4

SSDG is normally derived from an intermittent source (solar, wind, micro-hydro) and usually generated at DC. The DC source is fed into a grid-tied inverter, which commutates the energy into AC and synchronises it to the network. Most SSDG systems do not incorporate battery storage, with energy being imported or exported as required or available. Storage may become more prevalent in the future, as battery technology develops and costs decline.

The information provided in this guide is designed to assist with connecting SSDG systems to the network. It does not provide advice on system selection, as that is a matter that Generators should discuss with SSDG system vendors/installers.

5.2 Equipment Requirements

5.2.1 Inverters

Where the SSDG system incorporates inverters, the proposed inverter must comply with AS/NZS4777.2:2015.

A list of inverters accepted for use within Aurora network areas is available from the Aurora website (refer s8).

5.2.2 Anti-Islanding and Grid Protection Devices

SSDG systems must incorporate anti-islanding protection, which isolates the SSDG system from the network in the event of a network outage.

Where SSDG systems generate at AC, specific anti-islanding protection will generally need to be provided, unless integral to the generator controller. Full details of the protection scheme will need to accompany the application to connect.

5.3 Application

Generators proposing to connect SSDG systems to Aurora's network must make application to do so, using form AE-F011 Small Scale Distributed Generation Connection Application. This form is available from Aurora's website (refer s8).

Where an inverter is proposed that is not currently listed as accepted for use on the Aurora website, the applicant must provide a declaration of conformity issued by a laboratory listed on the JAS-ANZ register (www.jas-anz.org), attesting that the inverter complies with AS/NZS4777.2. Inverter vendors should be able to provide this documentation.

The applicant must provide the name of the electricity retailer that has agreed to purchase any excess energy exported into the Aurora network. A copy of the application form, once approved, will be sent to the nominated retailer in order to minimise delays in having appropriate metering fitted. If no retailer has been nominated, the approved form will be sent to the retailer identified on the electricity registry as responsible for the ICP.

Applications are to be sent to:

Network Connections Manager
Delta Utility Services Limited
PO Box 1,404
DUNEDIN 9054
By email: networkconnections@thinkdelta.co.nz
Fax: 03 474 9361

The preferred method of submitting an application is by email. If an email address is not provided, application processing may take longer, particularly if additional information is required.

5.3.1 Application Fee

No application fee is required for the connection of SSDG.

Doc ID	Suite	Author	Approver	Issued	Version	Page
AE-G002	Aurora Energy	Commercial Mgr	GM AM	29/1/2016	1.0	2 of 4

5.4 Application Processing

Applications will be assessed, and within 10 working days of the application being received, the Generator will be advised in writing that either:

1. the application is approved; or
2. the application is not approved; or
3. The application is incomplete.

If the application is not approved, the Generator will be given reasons why the application is declined, along with the steps that may be taken to allow approval to be given (if any).

If an application is considered to be incomplete, the Generator will be advised of the information that is required to allow the application to be processed.

5.5 Installation

Installation of SSDG systems is high risk prescribed electrical work, which must be undertaken by a licensed electrical worker and inspected by a registered electrical inspector.

SSDG installation must comply with AS/NZS3000:2007, AS/NZS 5033:2012, and AS/NZS4777.1:2015.

5.6 Metering

It is the Generator's responsibility to arrange with their preferred electricity retailer for import / export metering to be fitted, and for the retailer to purchase excess energy exported into the distribution network.

Retailers may ask for evidence that the SSDG system has been approved by Aurora before they will arrange for import / export metering to be fitted. In response, Generators should forward a copy of the approved application form to the retailer as evidence.

5.7 Network Inspection

Aurora requires the SSDG installation to be inspected by an Authorised Network Inspector, to verify that the generation meets, or continues to meet, the requirements for connection. A fee of \$60 plus GST may be charged for network inspection the SSDG installation.

Installers should note that network inspection will not be undertaken, and authorisation to operate given, until the SSDG installation is complete, including the fitting of import/export metering.

5.8 Terms of Connection

SSDG will be deemed to be connected under the Regulated Terms which are reproduced on the Aurora website (refer s8).

6 Dispute Resolution

Schedule 6.3 of the Code prescribes a dispute resolution process in the event that:

1. it is alleged that either party (Generator or Aurora) has breached any of the Regulated Terms, and the allegation is disputed; or
2. there is any other dispute regarding an alleged breach of any other of the provisions of Part 6 of the Code.

Doc ID	Suite	Author	Approver	Issued	Version	Page
AE-G002	Aurora Energy	Commercial Mgr	GM AM	29/1/2016	1.0	3 of 4

The following dispute provisions apply:

1. The disputing party must give written notice of the dispute to the other party; and
2. Both parties must attempt, in good faith, to resolve the dispute; and
3. If the parties cannot resolve the dispute, either party may complain in writing to the Electricity Authority.

7 Records

The Generator shall provide the following post-connection documentation:

1. A copy of the CoC, issued by the installer in respect of the SSDG installation; and
2. A copy of the ESC, where applicable, issued by the installer in respect of the SSDG installation.

8 References

	Electricity Act 1992
	Electricity (Safety) Regulations 2010
	Electricity Industry Participation Code 2010
AS/NZS 4777.1:2015	Grid connection of energy systems via inverters – Part 1: Installation requirements
AS/NZS 4777.2:2015	Grid connection of energy systems via inverters – Part 2: Inverter requirements
AS/NZS 3000:2007	Electrical Installations (AS/NZ Wiring Rules)
AS/NZS 5033:2012	Installation and safety requirements for photovoltaic (PV) arrays
AE-S014	Network Connections Standard
AE-S016	Distributed Generation Technical Standard
AE-F011	Small Scale Distributed Generation Connection Application
AE-G004	Accepted Inverters
AE-G005	Regulated Terms for Connection of Distributed Generation

Doc ID	Suite	Author	Approver	Issued	Version	Page
AE-G002	Aurora Energy	Commercial Mgr	GM AM	29/1/2016	1.0	4 of 4