

# SMALL SCALE DISTRIBUTED GENERATION (SSDG) (<10KW POLICY)

Category	Asset Management
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Approved By	General Manager Network and Technology
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## 2. PURPOSE

This policy has been prepared in accordance with the Electricity Industry Participation Code 2010. (the “Regulations”). The process for the connection of distributed generation is set out in Part 6 of the Code. On 23 February 2015, Part 6 will include a new Part 1A to Schedule 6.1 that provides for a simpler process for distributed generators seeking to connect SSDG. This document sets out the process and requirements for the connection of distributed generation of 10 kilowatts

or less to Horizon Energy’s network under Part 1A and Part 1 of the Regulations and comes into effect from the 23 February 2015.

If you have any further questions related to this policy, please contact Horizon Networks on (07) 306 2900 or email [deDistributedGeneration@horizonnetworks.nz](mailto:deDistributedGeneration@horizonnetworks.nz)

## 3. SCOPE

This policy covers the implementation of Small-Scale Distributed Generation up to 10kW in single or multi-phase systems. This policy is intended primarily for Consumers wishing to connect alternative energy generation systems such as solar panels, wind or micro hydro turbines to the Horizon’s network.

## 4. DEFINITIONS

For purposes of this Policy, unless otherwise stated, the following definitions shall apply:

TERM	DEFINITION
Applicant	A person who submitted the SSDG application who can be either the owner, or on behalf of the owner of the SSDG.
Energy Source	Interchangeable with the term ‘Fuel’. This can be either solar, wind, hydrocarbon, micro-hydro or others.
Fuel	This can be either solar, wind, hydrocarbon, micro-hydro or others.
Horizon	Refers to Horizon Energy Distribution Limited (Trading as Horizon Networks)
SSDG	Small Scale Distribution Generation of rated capacity up to 10kW
Regulation	Interchangeable with “The Code”. A rule or directive made and maintained by an authority. In the context of the document, Regulation refers to the Electricity Industry Participant Code 2010.

## 5. SYSTEM REQUIREMENTS

### 5.1. Installation Codes and Standards

In the case of new generation, the installation of the distributed generation must be done by a registered electrician in accordance with plans and specifications that meet the relevant building and electrical codes and standards, including the latest edition of AS/NZS 3000, AS/NZS 4777.1 and AS/NZS 4777.2.

### 5.2. SSDG Connection Requirements

Horizon Networks’ requirements for SSDG are:

- Comply with Horizon’s Standard Terms and Conditions of Connection;
- Operate at AC Voltage of 230 volts ± 6%;
- Phase current not exceeding 21.7A at 230V between phase and neutral (or 5kVA) for single phase system;
- Phase current in one phase shall not exceed the current in any other phase by more than 21.7A for a multiphase system;
- Automatic disconnect within 2 seconds when voltage exceeds 230V + 6%, or 243.8V;
- Auto-isolate on loss of grid supply within 2 seconds and have at least 1 method of active anti-islanding protection;
- Reconnection delay of at least 1 minute after normal grid supply is established;

- Supplying rated power for frequencies between 45Hz and 50.25Hz, and curtail power when frequency rises above 50.25Hz;
- Total Harmonic Distortion less than 5%; and
- Power Factor shall be controllable between 0.95 leading and 0.95 lagging, for current output from 25% to 100%, or operating at fixed power factor mode with minimum range settings should be 0.8 leading to 0.8 lagging.

### 5.3. Congestion Management Policy

In order to ensure that Horizon's connection and operation standards are met, we may curtail and/or interrupt distributed generation that is connected to our network.

Horizon's Congestion Management Policy and the list of known location where export constraint are expected to occur within the next 12 months are available on our website.

## 6. CONNECTION PROCESS FOR SMALL SCALE DISTRIBUTION GENERATION (SSDG) <10KW

### 6.1. Application for Connection

SSDG application must be applied prior to connection and must not be connected before approval.

Existing Distributed Generator or new applicant must apply for connection if they wish to:

- a) Connect new SSDG;
- b) Change in the nameplate capacity by connecting/removing energy sources or power conversion unit;
- c) Change in the Fuel type;
- d) Continue the term of, or renew, an existing connection contract; and
- e) Continue a connection that does not have an existing contract.

Applicant must complete the application form posted on our website for connection of distributed generation with capacity of 10 kilowatts or less. The applicant may apply for connection either through **Part 1A (pre-approved)** or **Part 1**.

#### Application through Part 1A (pre-approved)

The proposed SSDG that satisfy the following conditions can apply through **Part 1A (pre-approved)**:

- The system is designed and installation in accordance to AS/NZS 3000 and AS/NZS 4777.1 standards;
- The inverter is listed in Horizon's list of approved inverters or certified to AS/NZS 4777.2 standard by a laboratory with accreditation issued or recognized by International Accreditation New Zealand;
- Horizon's Standard Terms and Conditions of Connection and protection settings are meet; and
- In an area where there is no export congestion or export congestion is not expected in the next 12 months (Please refer Congestion Management Policy on our website).

#### Application through Part 1

SSDG that does not meet the requirements in **Part 1A** must apply under **Part 1**.

#### 6.1.1. Application Process

The application form which is available in our website must be accompanied by:

- The non-refundable application fee of \$100 + GST (**Part 1A pre-approved**); or
- The non-refundable application fee of \$200 + GST (**Part 1**);

and

- Supporting documentation which includes:
  - **Datasheet** of the Inverter if the inverter is not in Horizon's list of approved inverters;

- The Inverter's **Certificate of Conformity** for AS/NZS 4777.2 standard if the inverter is not in Horizon's list of approved inverters; and
- High-level **Single Line Diagram** depicting the connection of the generator and equipment such as solar array, wind turbine, inverter, batteries, control instruments, circuit breakers and isolators.

Applicant must supply the following document within 10 business days after the approval of the application:

- A **Certificate of Compliance (CoC)** and **Record of Inspection (RoI)** signed by the registered electrician installing the distributed generation (in the case of new generation) or a registered licensed inspector (in all other cases) verifying that the installation complies with Horizon's network requirements and connection and operation standards and is electrically safe.

Please forward the completed application form to [deDistributedGeneration@horizonnetworks.nz](mailto:deDistributedGeneration@horizonnetworks.nz) or send it by post to:

**Horizon Energy Distribution Ltd**  
Level 4  
Commerce Plaza  
52 Commerce Street  
PO Box 281  
Whakatane 3158  
New Zealand

### 6.1.2. Approval Process

#### Application through Part 1A (pre-approved)

Horizon Networks will acknowledge receipt of the application within 2 business days of receiving it and will advise applicant whether the application is complete. An additional processing fee of \$80 + GST will be charged if there is any deficiency with application documentation.

Horizon Networks will advise the applicant of whether the application has been approved or declined within 10 business days after date on which the complete application was received. However, provided the applicant has not contributed to a delay in granting approval, if the applicant does not receive a notice of approval within 10 business days of the date on which the applicant submitted the application:

- a) Horizon Networks is deemed to have approved the application (deemed approval);
- b) The applicant may connect the SSDG.

Horizon may inspect the SSDG for the purpose of verifying the information contained in the application or verify that the SSDG meets or continues to meet Horizon's requirement. Horizon Networks will provide at least two business days' notice for inspection.

In case of any deficiency in the SSDG application, Horizon Networks will notify the applicant within 10 business days and would provide clear reasons for the decision along with the steps the applicant must take to have the application reconsidered. If the applicant wishes to proceed with the application, the applicant must:

- a) remedy all deficiencies to the distributor's satisfaction within 10 business days of being notified;
- b) not connect the SSDG unless final approval is given.

If the applicant elects to remedy the deficiency at a later stage, the applicant may need to submit new application. Horizon will also ensure the applicant is aware of the dispute resolution procedure under the Regulations.

If Horizon Networks approves the application, the applicant must provide written notice to Horizon Networks of whether the applicant intend to proceed with the connection and, if so, confirming the details of the generation to be connected. The applicant has 10 business days from the date your application is approved to provide such notice. If the applicant fails to do so within this time, the approval of the SSDG application will expire. The applicant may request an extension of the 10 business day period.

#### Application through Part 1

Horizon Networks will acknowledge receipt of the application within 5 business days of receiving it and will advise applicant whether the application is complete.

Horizon Networks will advise the applicant of whether the application has been approved or declined within 30 business days after date on which the complete application was received. However, if the application is declined, Horizon will provide detailed reasons and steps that the applicant can take to achieve approval if they decided to make a new application.

Horizon may inspect the SSDG for the purpose of verifying the information contained in the application or verify that the SSDG meets or continues to meet Horizon's requirement. Horizon Networks will provide at least two business days' notice for inspection.

## 6.2. Connection

### Application through Part 1A (pre-approved)

Application through Part 1A may connect after Horizon has approved the application. The applicant must notify Horizon of the connection within 10 business days of the approval. The regulated terms specified in the Regulations will apply together with our Standard Terms and Conditions of Connections. If there is any conflict between our Standard Terms and Conditions of Connection and the regulated terms, the regulated terms prevail.

### Application through Part 1

If Horizon approves the application, and the applicant notifies us their wish to proceed, we will negotiate a connection contract with the applicant to cover the technical aspects of the connection of the distributed generation to our network. If an agreement cannot be reached within 30 business days from the date we receive notice that the applicant wishes to proceed, the regulated terms as specified in the Regulations will apply together with our Standard Terms and Conditions of Connection posted on our website. If there is any conflict between our Standard Terms and Conditions of Connection and the regulated terms, the regulated terms prevail.

All other issues (including the billing and payment of charges) will be dealt with under the applicant's contract with the Retailer. Horizon Networks will advise the actual load line charge that will be payable in respect of the connection of any load at the distributed generation site to our network.

## 6.3. After Connection – Installation, Testing and Inspection

The applicant must provide as-built information to Horizon Networks following connection of the distributed generation to our network.

The applicant is required to carry out regular testing and inspection of the distributed generation. The applicant must notify Horizon at least 5 business days beforehand. Horizon Networks may send qualified personnel to the site to observe the testing and inspection. An inspection fee of \$60+GST may apply if Horizon Networks requires an inspection and will provide at least two business days' notice of the time and date of inspection.

The applicant must provide Horizon Networks with a written test report after the testing and inspection is complete. The report should include suitable evidence that the metering installation complies with the metering standards in the Regulations.

Horizon Networks will require any inverter to disconnect if it detects the AC voltage exceeding 248 volts. This is a prudent level to prevent damage to household appliances which are typically rated to tolerate 230 volts  $\pm 6\%$ . This is not true of all appliances and some may be irreparably damaged by any voltage over that specified on the nameplate, possibly causing a fire. In some cases, a limit lower than 248 volts may be required. It is suggested that the applicant obtain the professional advice of the equipment supplier and/or installer. Horizon Networks do not accept any liability for Quality of Supply issues for installations with an overvoltage setting above 244 volts.

## 7. REGULATED TERMS

If Horizon grants approval to connect distributed generation to our network and we do not enter into a connection contract with the applicant within 30 business days of receiving written notice that the applicant wish to proceed (or such other period as we may agree with the applicant), then Horizon will connect the distributed generation as soon as reasonably practical to our network on the Regulated Terms and, to the extent not inconsistent, our Standard Terms and Conditions of Connection.

Terms used in the Regulated Terms have the meanings given to them in the Regulations.

Horizon may enter into a connection contract outside the Regulated Terms with the applicant at any time by mutual agreement when the Regulated Terms apply.

## 8. PRICING FOR SMALL SCALE DISTRIBUTED GENERATION (SSDG)

Pricing for SSDG applications are as in the table below:

Description of Fee	\$ (Excludes GST)
<b>Part 1A Application</b>	
Application Fee	100
Inspection Fee	60
Deficiency Fee	80
<b>Part 1 Application</b>	
Application Fee	200
Inspection Fee	60

For details of our charges please refer to our disclosed pricing methodology:

<https://www.horizonnetworks.nz/information-disclosure-regulation>

## 9. USEFUL LINKS

Electricity Authority Guidelines for connection of SSDG to a local network

<http://www.ea.govt.nz/operations/distribution/distributed-generation/>

Schedule 6.2 – Regulated term for distributed generation

<https://www.ea.govt.nz/code-and-compliance/the-code/part-6-connection-of-distributed-generation/schedule-6-2/>

Transpower

<http://www.transpower.co.nz/?id=184>

Horizon Networks' Congestion Management Policy and expected congestion areas

<https://www.horizonnetworks.nz/sites/default/files/CongestionPolicy.pdf>

Horizon Networks' List of Approved Inverters

<https://www.horizonnetworks.nz/sites/default/files/List%20of%20Pre-Approved%20Inverters%20by%20Horizon%20Energy.pdf>

## 10. RELATED POLICIES, PROCEDURES AND FORMS

REFERENCE	TITLE & DESCRIPTION
Electricity Industry Participation Code 2010 Part 6 Connection of Distributed Generation	The Code sets out duties and responsibilities that apply to industry participants and the Authority. Part 6 of the Code contains provisions relating to the connection of distributed generation.
AS/NZS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules) sets out requirements to select and install electrical equipment, and design and test electrical installations, especially for the essential requirements for safety of persons and livestock from physical injury, fire, or electric shock.
AS/NZS 4777.1:2016	This standard specifies safety and installation requirements for inverter energy systems (IES) intended for the injection of electric power through an electrical installation to the grid.
AS/NZS 4777.2:2015	This standard specifies requirements and tests for low-voltage inverters for the injection of electric power through an electrical installation into the grid at low voltage. This Standard applies to inverters that have power flow in either direction between the energy source and the grid. This standard does not specify a size of inverter, as it is applicable to all inverters that connect to the installation at low voltage (e.g. 240/415V AC).
HEDL.NW.SOP116	Distributed Generation Application Approval SOP.
HEDL.NW.F85	SSDG Application Form.

## 11. REVISION HISTORY

REVISION	PUBLISH DATE	DESCRIPTION OF CHANGE
1.0	27/01/2015	Initial Issue
2.0	24/3/2015	Section 2 Terms & Definitions added, Section 3 Reference Table added.
3.0	20/05/2015	Updated application timeframes
4.0	28/9/2016	Replaced AS 4777 with AS/NZS4777.2:2015
5.0	12/10/2017	Fee details updated Section 4.2 Section 4.4 After Connection – Installation, Testing and Inspection. Last paragraph inserted
6.0	20/07/2020	Added SSDG Connection Requirements and Congestion Management Policy sections. Clarified conditions for application under Part 1A (pre-approved) and Part 1. Clarified application and approval process for both Part 1A (pre-approved) and Part 1. Clarified connection for both Part 1A (pre-approved) and Part 1. Added a list of fees for SSDG connection Added Regulated Terms Section. Added link to Horizon’s Congestion Management Policy Added related policies, procedures and forms. Transferred content to new template.