

Distributed Generation - Guidelines & Application Form

For small generators – total capacity less than 10 kW

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This document is subject to change without any prior notice.

Please ensure you have the latest version.

Installing distributed generation with less than 10 kW in capacity

START HERE

i See the attached guide for details of each numbered step.

Interpretation:

Generator - refers to the person or an organisation that owns or operates distribution generators.

Application Process

1
System Selection

1

Typically, smaller distributed generation systems of this size are rotating (turbine) based systems, solar photovoltaic panels, battery, etc.

2
Submission of Application

2

Note: The Generator will submit the application accompanied with the additional information. An invoice will be sent for the application fee.

Within 5 business days of receiving the application, EA Networks will send to the Generator a written notice advising whether the application is complete or not.

3
Application Approval Process

3

Note: EA Networks will send a written notice to the Generator, stating whether the application is approved or declined **within 30 business days after the date of receipt of a completed application**.

Extension of time by mutual agreement of up to 20 business days may be granted by the Generator.

4
Notice of Intention to Proceed

4

Note: The Generator must give a written notice to EA Networks confirming whether or not they intend to proceed with the connection, **within 10 business days after the day on which the notice of approval has been received**.

Connection Process

5
Connection Contract Negotiation

5

Note: Both parties must, in good faith, attempt to negotiate a connection contract **within 30 business days**.

6
Contact your Electricity Retailer

6

Note: A new meter may be fitted at the Generator's location, by either the Generator or the Retailer.

7
Installation, Testing and Inspection

7

Note: The Generator must comply with all regulations and local bylaws.

The Generator must use a Registered Electrician who is required to follow AS4777 plus all NZ regulations and standards.

8
Connection Completion and Benefits

8

Note: In order to obtain the full benefit of the distributed generation system, it is critical the metering system is import/export and the retailer has been selected on the net benefit of import and export to the Generator.

A small system could generate up to 87,600 kWh per year (10 kW systems). The income from this generation will depend on the price negotiated with the retailer.

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Guide to installing distributed generation with capacity less than 10kW

This information guide is intended for individuals or organisations wishing to connect distributed generation with a total capacity less than 10 kW to EA Networks' electricity network for the purpose of generating into the grid and selling electricity. This is a **one-stage application process**.

For larger systems above 10 kW there are separate guidelines.

The information provided in this guide is of general nature and the owners of distributed generation must discuss their intentions with EA Networks **before** connecting the distributed generation system to the network. It would also be prudent to approach a preferred energy retailer to ensure arrangements are in place to sell any excess exported energy.

EA Networks will assist you with the connection process as distributed generation of this size can require changes to your connection to the electricity network.

To understand the various terms used in this guide, please refer to the glossary on the back of this guideline.

This guide does not apply to generation systems that are stand-alone and have no connection to EA Networks' electricity network.

1. System Selection

The likely distributed generation technology for systems with a capacity less than 10 kW will be large arrays of solar panels or small rotating plant, such as turbines (wind, steam, hydro, etc). At the upper end of the range, systems are likely to have a three-phase output. If so, you will need a three-phase connection to EA Networks' network. You need to consider your connection to the network in this regard.

Generation systems that are less than 10 kW in capacity may require some modifications to be carried out which can affect your connection to the network. All distributed generation systems must comply at all times with the requirements of the [Health and Safety at Work Act 2015](#), [Electricity Act 1992](#) and the regulations and rules made under the Electricity Act 1992. The distributed generation must comply with EA Networks' connection and operation standards ([EA Networks' Conveyance and Use of System Agreement](#)).

For this reason, EA Networks recommends that you contact an experienced electrical contractor/consultant to make sure that your distributed generation complies with all requirements prior to submitting the application. This may involve extra cost.

2. Submission of Application

Any person or organisation, who wishes to connect distributed generation capable of generating electricity at a rate of 10 kW or less in total, must apply to EA Networks by using the application form attached to this guideline and provide any necessary information in respect of the distributed generation proposed to be connected.

If the application is for an increase in capacity for an existing connection, you must provide extra information about the size (nominal capacity) of the additional generation and the total size (nominal capacity) of all generators at the point of connection.

The application form must be accompanied by the following attachments:

- a. information about the name plate rating (if known), or other suitable evidence that the generating unit is (or will be) only capable of generating electricity at a rate of 10 kW or less;
- b. detailed information about the inverter and/or battery (if applicable);
- c. technical specification of the equipment that allows the distributed generation to be disconnected from the network on loss of mains voltage;
- d. information and justification showing how the distributed generation complies with AS 4777 (where appropriate);
- e. information and justification showing how the distributed generation complies with EA Networks' connection and operation standards (where applicable);

Within 5 business days from the date of application receipt, EA Networks will advise you in writing whether your application contains all the information required.

An invoice for the application fee will be raised shortly after submission of the application and it is expected that payment of this fee will occur promptly.

3. Application Approval Process

Based on the information provided in the application, EA Networks will assess whether:

- a. the generator will comply at all times with the requirements of the [Health and Safety at Work Act 2015](#); and
- b. the distributed generation will comply at all times with the [Electricity Act 1992](#), and the regulations and rules made under this Act; and
- c. the connection of the distributed generation complies with EA Networks' connection and operation standards ([EA Networks' Conveyance and Use of System Agreement](#)).

Within 30 business days following the date a completed application is received, EA Networks will notify you in writing whether the application has been approved or declined.

Due to situations which occasionally arise, EA Networks may seek an extension of the application processing time. In these circumstances, EA Networks will notify you in writing specifying the reasons for the delay and the amount of additional time required to process the application.

You may grant an extension of up to 20 business days and must not unreasonably withhold consent to an extension.

4. Notice of Intention to Proceed

If the application is approved, a written notice must be provided to EA Networks confirming whether you as "The generator" intend to proceed with the connection and, if so, confirming the details of the generation to be connected.

Notice must be given within 10 business days after the day on which EA Networks gives notice of approval to connect distributed generation or, within a longer period of time mutually agreed between EA Networks and you.

Failure to give written notice to EA Networks within the time limit specified, will cause the application to be considered cancelled and EA Networks' responsibilities under the most recent version of the Electricity Industry Participation Code, [Part 6](#) (the Code) will no longer apply. This does not prevent you from submitting a new application for connection of distributed generation at a later, subsequent date.

5. Connection Contract Negotiation

After receiving the written notice of intention to proceed, both the applicant and EA Networks have 30 business days during which they must, in good faith, attempt to negotiate a connection contract.

If no connection contract has been negotiated by the expiry of the negotiating period, the regulated terms contained in the Electricity Industry Participation Code ([Schedule 6.2](#)) will apply for the connection of distributed generation.

The period for negotiating a connection contract may be extended by mutual agreement between both parties.

6. Contact your Electricity Retailer

You must discuss your Generator scheme with an electricity retailer, as you may be selling any surplus of energy (exported energy) back to them. You can purchase from, and sell to, any retailer trading in EA Networks' area.

The electricity retailers that currently have a Use of System Agreement with EA Networks' Network are:

- Contact Energy Limited
- Country Connect Solar Limited
- Ecotricity GP Limited
- Electric Kiwi Limited
- Energy Online
- Flick Electric Limited
- Genesis Energy Limited
- Kea Energy Ltd
- Mercury NZ Limited
- Meridian Energy Limited
- Nova Energy Limited
- Pioneer Energy Limited
- Powershop New Zealand Limited
- Prime Energy Limited
- Pulse Utilities NZ Limited
- Simply Energy Limited
- Switch Utilities Limited
- TrustPower Limited

You must complete an agreement with an electricity retailer before you can connect your generator to the EA Networks' network.

A new meter may need to be installed

Your retailer is responsible for your metering installation. When you contact a retailer, you need to discuss with them the fitting of a new meter or, ask if your present meter will be suitable. The complexity of the metering required will depend on the contract you have arranged with the retailer who is purchasing your exported power.

Your electricity retailer will advise you of any rental costs and data handling fees associated with this metering.

Minimum metering requirements

You will need a full import/export metering system that measures energy (kWh) in each half hour that is used (imported) or injected (exported) back into the system.

Normally, your retailer or meter provider will choose to own the meter and lease it to you. You could own the meter yourself, but this is more complicated and is uncommon.

This type of metering will generally be fitted with a cellular modem to allow it to be remotely interrogated.

In addition, there may be a tariff / meter change fee. This fee will depend on your location and your existing metering.

7. Installation, Testing and Inspection

The installation must be undertaken by qualified trades personnel to ensure compliance with all required building and electrical codes and standards.

All wiring associated with the system must comply with AS/NZS 3000 - Electrical Installations (Australian/New Zealand Wiring Rules) or any successive standard, regulation, or legislation, and be undertaken by a registered electrician where required by legislation. You must also ensure that all building and other consents required are obtained, by discussing the proposal with your local council.

Safety comes first in connection of any generation equipment; safety to you, and safety to others connected to, or working on, EA Networks' electricity network.

If your generator continued to operate when there was a power cut, you could cause EA Networks' electricity network to become alive at a time it was assumed to be dead. This can cause serious harm to anyone working on the network, and/or damage to your equipment.

Your system must comply with [Australian/New Zealand Standard \(AS/NZS\) 4777.2](#) and with protection systems installed in accordance with [AS 4777.1](#) in order to provide isolation and prevent harm/damage from happening.

Your registered electrician should closely follow [AS 4777.1](#) when undertaking installation of your equipment. This Standard is downloadable from [Standards New Zealand](#). While AS 4777.1 deals primarily with the connection of inverter based systems, the principles covered by this standard shall also be followed for distributed generation systems that do not employ inverters.

EA Networks 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 you obtain the professional advice of your equipment supplier and/or installer. EA Networks do not accept any liability for an overvoltage setting above 244 volts.

The installation must also comply with [EA Networks' Conveyance and Use of System Agreement](#).

Please note that after your application has been approved and the steps outlined above are completed, as a minimum you must:

- a. test and inspect your distributed generation before connection;
- b. give EA Networks adequate notice of the tests and inspection – we may send qualified personnel to the site to observe the testing and inspection;
- c. provide EA Networks with a written test report when testing and inspection is complete, including suitable evidence that the metering installation complies with the metering standards in the rules;
- d. supply EA Networks with a copy of the Certificate of Compliance relating to the distributed generation system, and
- e. when applicable, pay the fee specified by EA Networks for observing the testing and inspection, up to the maximum fee detailed on [EA Networks' website](#).

Whether or not you entered into a connection contract with EA Networks before the period for negotiating a connection contract, you must complete the testing and inspection presented above **prior** to the connection of distributed generation.

If you have entered into a connection contract with EA Networks, your distributed generation will be connected in accordance with that contract as soon as practicable. Otherwise, EA Networks will connect the distributed generation on the regulated terms as soon as practicable after the expiry of that period.

8. Connection Completion and Benefits

Once the connection has been completed, you and EA Networks must perform all obligations under the negotiated connection contract or regulated terms, in accordance with connection and operation standards.

As owner of the distributed generation installation, you will need to negotiate a contract for the amount of electricity that is sold to an electricity retailer or, to another party via an electricity retailer. The retailer you choose can have a significant influence on the net financial benefit of the distributed generation system to you.

9. Glossary

Business day is considered as any day of the week other than Saturday, Sunday, or a public holiday (within the meaning of the [Holidays Act 2003](#))

Connect, in relation to distributed generation, means to be connected to a distribution network or, to a consumer installation that is connected to a distribution network

Distributed generation means equipment used, or proposed to be used, for generating electricity that:

- a. is connected, or proposed to be connected, to a distribution network, or to a consumer installation that is connected to a distribution network; and
- b. is capable of injecting electricity into that distribution network

Distribution network means the electricity lines, and associated equipment, owned or operated by EA Networks, but does not include:

- a. the national grid; or
- b. an embedded network that is used to convey less than 2.5 GWh per annum

Distributor means a person who supplies line function services to any other person or persons (such as EA Networks)

Generator means a person who owns or operates distributed generation

Any term that is defined in the Electricity Industry Participation Code 2010, [Part 6](#) (the Code) and used, but not defined, in this guideline has the same meaning as in the Code.

Written agreement from EA Networks must be obtained before the system can be connected to the EA Networks distribution network

Please return completed form to:

EA Networks,
Private Bag 802, Ashburton 7740

Phone: 03 307 9800 Fax: 03 307 9801

Email: enquiries@eanetworks.co.nz

<p align="center">Applicant Details (Grid Connection Owner)</p> <p>Name: <input style="width:95%;" type="text"/></p> <p>Company: <input style="width:95%;" type="text"/></p> <p>Address: <input style="width:95%;" type="text"/> <input style="width:95%;" type="text"/></p> <p>Phone: <input style="width:95%;" type="text"/></p> <p>Mobile: <input style="width:95%;" type="text"/></p> <p>Email: <input style="width:95%;" type="text"/></p>	<p align="center">Details of Grid Connection Point</p> <p>Grid Connection: Existing <input type="checkbox"/> or New <input type="checkbox"/></p> <p>Connection Type: Residential <input type="checkbox"/> or Commercial <input type="checkbox"/></p> <p>Phase Count: 1 <input type="checkbox"/> or 2 <input type="checkbox"/> or 3 <input type="checkbox"/></p> <p>ICP Number of Installation: <input style="width:95%;" type="text"/></p> <p>Expected DG Connection Date: <input style="width:95%;" type="text"/></p>
<p align="center">DG System Supplier (Company Providing DG System)</p> <p>Name: <input style="width:95%;" type="text"/></p> <p>Company: <input style="width:95%;" type="text"/></p> <p>Address: <input style="width:95%;" type="text"/> <input style="width:95%;" type="text"/></p> <p>Phone: <input style="width:95%;" type="text"/></p> <p>Mobile: <input style="width:95%;" type="text"/></p> <p>Email: <input style="width:95%;" type="text"/></p>	<p align="center">Details of Distributed Generator to be Installed (e.g. Solar PV Panels)</p> <p>DG Installation: New <input type="checkbox"/> or Upgrade <input type="checkbox"/></p> <p>Generation Type: Solar <input type="checkbox"/> or Micro Hydro <input type="checkbox"/></p> <p>or Other: <input style="width:95%;" type="text"/> <small>(please specify)</small></p> <p>Total Generation Capacity: <input style="width:95%;" type="text"/> Watts <small>(e.g. Solar Panel Count x Rating)</small></p>
<p align="center">Electrical Contractor (Installer of DG System)</p> <p>Name: <input style="width:95%;" type="text"/></p>	<p align="center">Details of Inverter to be Installed (if any)</p> <p>Type: Solar Only <input type="checkbox"/> or Hybrid <input type="checkbox"/></p> <p>Make: <input style="width:95%;" type="text"/></p> <p>Model: <input style="width:95%;" type="text"/> <small>(be precise)</small></p> <p>Continuous Rating: <input style="width:95%;" type="text"/> Watts</p> <p>Inverter Setpoint V_{nom-max}: <input style="width:95%;" type="text"/> Volts <small>(≤ 248 volts single phase)</small></p>
<p align="center">Certificate of Compliance for DG System</p> <p>Number: <input style="width:95%;" type="text"/></p> <p style="background-color: yellow;">Please note that DG Connection approval is not complete until a copy of the CoC is provided to EA Networks.</p>	<p align="center">Details of Grid Connected Storage to be Installed (e.g. Battery)</p> <p>Type: Battery <input type="checkbox"/> or Other <input type="checkbox"/></p> <p>Make: <input style="width:95%;" type="text"/></p> <p>Model: <input style="width:95%;" type="text"/> <small>(be precise)</small></p> <p>Continuous Output Rating: <input style="width:95%;" type="text"/> Watts</p> <p>Energy Storage Rating: <input style="width:95%;" type="text"/> kWh</p> <p>Max. Charging (Input) Rating: <input style="width:95%;" type="text"/> kW</p>
<p align="center">Standards Compliance</p> <p>AS 4777 Compliance: Yes <input type="checkbox"/> Information Attached <input type="checkbox"/> <small>(Proof of Compliance)</small></p> <p>EA Networks Use of System Agreement Compliance: Yes <input type="checkbox"/></p>	<p align="center" style="background-color: yellow;">Failure to complete all sections of this form may result in delays in processing this application.</p> <p align="center">I hereby apply to connect a distributed Generator to EA Networks' Network and confirm that the above information is correct:</p> <p>Signed: <input style="width:95%;" type="text"/> Date: <input style="width:95%;" type="text"/></p> <p>Name: <input style="width:95%;" type="text"/> Misc. Notes: <input style="width:95%;" type="text"/></p>
<p align="center">EA Networks agrees to the connection of the above Distributed Generator and Grid-Connected Storage to EA Networks' Electricity Network.</p> <p>Signed: <input style="width:95%;" type="text"/></p> <p>Name: <input style="width:95%;" type="text"/></p> <p>Date: <input style="width:95%;" type="text"/></p>	<p align="center">EA Networks does not agree to the connection of the above Distributed Generator and Grid-Connected Storage to EA Networks' Electricity Network.</p> <p>Signed: <input style="width:95%;" type="text"/></p> <p>Name: <input style="width:95%;" type="text"/></p> <p>Date: <input style="width:95%;" type="text"/></p>