Connection of a Power Generator System

This document has been developed to inform people wishing to connect a power generator system (including solar generators) to Endeavour Energy's distribution network.

Before you proceed to apply for a connection of your generator system, please confirm that Endeavour Energy is the Distribution Network Service Provider for your area. Endeavour Energy's network franchise spans across Sydney's Greater West, the Illawarra, South Coast, Blue Mountains and the Southern Highlands (refer to the map below).

Alternatively, because you are already connected to the distribution network, you can check your National Meter Identifier (NMI) shown on your electricity retail account.
If your site is located within the Endeavour Energy franchise area, your NMI should start with 431.

If your NMI does not start with 431, your connection will be provided by either Ausgrid or Essential Energy. If that is the case, please contact Ausgrid on 131 365 or Essential Energy on 132 391.

For connection of a new or an upgrade to an existing solar generator resulting in inverter capacity no greater than:

- 5 kW single phase,
- 10 kW single phase, with 5kW export to distribution network, or
- 30kW three phase,

please complete an online Application for Connection Micro Solar Generator. To connect online, click here.

Connection of any other generator system to Endeavour Energy's distribution network requires an *Application for Connection of a Generator* (form FPJ6008 can be found on our website) to be submitted in writing to Endeavour Energy.

Note: To apply for connection of a generator you must have an existing connection to the network.

If you do not have an existing connection to the network, please refer to the information document *How to Get your Electricity Connected/Augmented - when NOT subdividing* available on the Endeavour Energy website for more details on the process of getting connected.

Connection of a Power Generator System

Q1: Why do I need to contact Endeavour Energy to get my generator system connected?

You need to contact Endeavour Energy to receive a *Permission to Connect*. Without a *Permission to Connect* your Meter Installer and Electrician **is not allowed** to connect your generator system to the network.

Please contact your retailer for provision of the required meters and applicable tariffs.

Q2: How do I go about connecting a new/additional generator system to the network?

The process of connecting your generator system to Endeavour Energy distribution network involves the following steps:

Step 1: Decide what generator system you wish to connect

Step 2: Submit the relevant application

Submission of an application to Endeavour Energy is necessary to ensure that your proposed generator system does not adversely affect the Endeavour Energy distribution network or other customers.

To submit an application for connection of a generator system, you must have a NMI and be connected to the network.

Note: The application forms may be submitted by your electrical contractor or generator system installer on your behalf.

You must submit one of the two possible application types to be issued a *Permission to Connect* for your generator system.

The choice of the relevant application type will depend on the generator system that you are installing as either a new or addition to an existing system.

1. Online Application

If you are applying for Connection of New or Upgrade of existing Micro Solar Generator with total inverter capacity no greater than:

- *5 kW single phase,*
- *10 kW single phase, with 5kW export to distribution network, or*
- *30kW three phase.*

To connect online, click here.

Note: For micro embedded solar generator systems only.

2. Application for Connection of a Generator (form FPJ6008)

Note: For solar and non-solar generator systems

This application must be completed and sent to Endeavour Energy if you are connecting a new or additional solar generator system resulting in inverter capacity **greater than 10kW single phase or 30kW three phase**; or you are connecting a new or making changes to an existing non-solar generator system.

Step 3: Application Processing

Upon receipt of your complete and valid application, Endeavour Energy will undertake a desktop assessment of the application to determine the impact of your proposed generator system on the distribution network.

If using the online application, a permission to connect is issued to all compliant applications immediately.

Step 4: Connection Offer

For written applications, once Endeavour Energy has completed the desktop assessment of your application, a relevant connection offer (or a *Permission to Connect* – for expedited connection offers) will be sent to you within 10 business days.

Connection of a Power Generator System

For non-expedited connection offers, you will receive an offer which you will need to accept by signing the document and returning it to Endeavour Energy.

Other additional conditions applicable to connection of large and complex generator systems may be stated in the connection offer.

Step 5: Acceptance of the Offer

In order to be issued a *Permission to Connect* your generator system to Endeavour Energy's distribution network, you or your representative must accept the relevant connection offer in terms of the *Model Standing Offer, Terms and Conditions* relevant to your connection.

Note: You can streamline the process of connecting your generator system by requesting an expedited (streamlined) connection service.

This is done at the time of submitting the application by signing the back of the relevant application form.

The application form allows the applicant to request an expedited connection service. Requesting an expedited service means that the applicant has read, understood and accepted the terms of the relevant Endeavour Energy connection offer available on the website.

If you sign the application form you will be issued a *Permission to Connect* as an attachment to your connection offer. This means that you will not be required to sign and return the connection offer.

The *Permission to Connect* will detail the approved generator capacity.

Step 6: Connection of the Solar Generator

Once you have received a *Permission to Connect* your generator system to Endeavour Energy's distribution network, you will need to contact your retailer who will engage a metering installer and make appropriate metering arrangements in accordance with the terms outlined in your connection offer.

Your metering installer will return the Permission to Connect together with other applicable paperwork specifying your new metering arrangements to Endeavour Energy after the work has been completed.

Step 7: Registration of Installation details

1. From 1 December 2019 your generation installation details must be entered into the Australian Energy Market Operator (AEMO) Distributed Energy Resource (DER) Register. Once your application has been approved your installer will be able to log onto AEMOs DER Register website using your reference number quoted on your Permission to Connect.
2. Your installer must then enter all information relevant to your installation and receive confirmation that the information has been submitted. The data must be submitted no later than 20 business days after connection of the generator and your installer should provide a copy of the confirmation to you as proof. More information regarding the Distributed Energy Resource Register can be found in AEMOs website www.aemo.com.au or the Information for Installers fact sheet

Q3: What else should I consider?

Generator system performance

Customers are encouraged to seek assurance from their generator system supplier regarding the expected performance of any generator system being installed.

This should include whether or not the generator system will have full export capability in the location chosen for installation and connection. Endeavour Energy's *Permission to Connect* a generator system to the network in no way warrants that the generator system performance will meet the customer's expectations.

There have been instances where customers have installed generator systems that are inefficient or incapable of exporting energy into the network. In these cases inefficient operation of the generator system can effectively reduce generator energy delivered to the network to a level where the generator system may be uneconomic.

Inverter systems

In order for generator systems to export energy to the network, the generator system's inverter must raise its voltage so that it is greater than the voltage level of the network. However the maximum voltage level must be limited to prevent damage to electrical equipment connected at other customers' installations as well as your own.

For this reason approved inverters must have over-voltage protection which must be set to appropriate limits. This correctly causes the inverters to shut down in cases where the voltage it is required to generate is greater than the maximum allowable voltage.

The voltage level of the network can also vary and is dependent on the supply impedance of the distribution network at the point of connection, the loading on the network, other generators that may be operating and various other operational circumstances. This is a particular issue for the operation of a network that has been designed to supply the load requirements of customers.

Further, inverter systems connected across multiple phases will greatly reduce the voltage rise caused by the delivery of energy to the network and will reduce out of balance currents. This may result in locations where the network voltage is maintained near maximum levels for significant periods of time. In such circumstances, a generator system's inverter, after attempting to increase its voltage above the networks near maximum voltage will shut off due to its internal protection.

It is expected that your supplier should have the understanding and capability to assess the installation's operational suitability for connection at your premises and advise you accordingly.

Q4: Am I entitled for any payment for generation output?

Your Retailer may agree to purchase the generation energy measured on the export meter, The retail customer is encouraged to discuss the availability of any such arrangement with their Retailer.

Q5: What special requirements apply to generator systems with total inverter capacity larger than 10kW single phase or 30kW three phase?

Application form FPJ 6008 requires voltage measurements and calculation to be undertaken to confirm the suitability of the proposed system at the customer's installation. Applications for connection of generator system with total inverter capacity larger than 10kW single phase or 30kW three phase will not be processed unless the application form is fully completed.

Q6: Can I use an online application form for generators greater than 10kW single phase or 30kW three phase output?

No unfortunately due to the complexity and detail required for assessing larger applications, an automated process has not been developed.

Q7: What if I need more information?

Connection of a Power Generator System

If you have any further questions after reading this information document, contact us on 133 718 or alternatively you can email or fax us your specific questions to the following address:

Customer Interaction Centre (CIC)
Fax: 02 4252 2915
Email:
cicadmin@endeavourenergy.com.au

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