Application to connect distributed generation to Vector's electricity network (up to 10kW)

Thank you for applying to connect distributed generation (**DG**) to Vector Limited's (**Vector** or **us**) electricity network.

Please complete and return this application form by email to dginfo.applications@vector.co.nz.

Please also read the technical details in Part 2 carefully so that you know what is required when you complete the installation of the DG system.

Installers may complete the declaration (set out in Part 5) and submit this application form to Vector on behalf of the ICP holder.

1. APPLICATION DETAILS

Part 1 of this application form asks you to provide the details of the proposed DG system.

A. ICP details

A DG connection is specific to an electricity ICP. That is because the ICP is the connection point into Vector's electricity network.

ICP number (from electricity bill)	
Physical address	

B. Generation details

Is the proposed connection	Select option
Proposed date of installation	
Type of generation	Select option
Maximum generation nameplate capacity (in kW)	
Total site maximum export power (in kW), including existing capacity (if applicable)	

C. Inverter details

The type of inverter that the DG system uses, and how the inverter is set up, will both affect how quickly your application is processed and the export limit that Vector offers.

A summary is set out below, but please refer here for information on (i) Vector's inverter requirements, and (ii) links to Vector's applicable connection and operation standards.

Inverter type

Inverters must comply with AS/NZS 4777.2 2020 to be used on Vector's network.

If an inverter from Vector's Approved Inverter List (found on our website here) is used, then that inverter is pre-approved for use on Vector's network.

If an inverter that is not on Vector's Approved Inverter List is used, then as part of your application you will need to provide Vector with (i) an inverter datasheet for the inverter, (ii) a Certificate of Suitability demonstrating that the inverter complies with AS/NZS 4777.2 2020, and (iii) certification that the inverter is CSIP capable (optional - required only if the inverter is in fact CSIP capable and you want to use that functionality). Your application will only be reviewed once these technical documents have been provided, so this will generally lead to a longer timeframe for processing. If you don't provide these documents within a reasonable period of time then we may decline your application.

Inverter setup

Separately, how an inverter is set up will impact the export limit that Vector offers.

If:

1. the inverter is CSIP communication capable and enabled from installation (inverters on Vector's Approved Inverter List that have a *Software Communication Client* function listed are CSIP capable),
2. the inverter will be connected to the internet, and
3. once it is available the ICP holder will let Vector connect its dynamic export management system to the inverter,

then Vector will ordinarily process your application within 10 business days and offer a default **10kW dynamic** export limit (or, if your inverter's nameplate capacity is less than 10kW, then a dynamic export limit equal to that nameplate capacity).[1]

If inverter is not CSIP communication enabled, and / or the ICP holder chooses not to connect the inverter to the internet, and / or the ICP holder does not allow Vector's dynamic export management system to connect to the inverter, then Vector will offer a **2.5kW fixed** export limit and it may take longer to process this application.

[1] If the inverter has an internet connection, but after installation that connection becomes unstable or disconnects, then it will be limited to a fixed 2.5kW export limit for the duration of the disconnection.

Please provide details of each inverter in the DG System, including inverters that are combined with battery modules in the DG System (the next section asks separately for the details of those batteries).

How many inverters are there?	
What is the type of inverter?	Select option
List the make of each inverter	
List the model of each inverter	
What is the size of each inverter (in kW)?	
Are ***all*** inverters entered above included on Vector's Approved Inverter List? (Vector's approved list can be found here)	○ **Yes** — all inverters are on Vector's Approved Inverter List ○ **No** — one or more inverters are not on Vector's Approved Inverter List, so I have (or will) provide relevant supporting technical documents
Are your inverters CSIP capable, or will you make your inverters CSIP capable (e.g. through retrofitting)?	○ **Yes** ○ **No**
Will the inverter be set up to allow Vector's dynamic export management system to connect to it? *(this requires (i) CSIP communication to be enabled, (ii) a continuous internet connection, and (iii) configuration of the inverter to connect to Vector's export management system (once it is available)*	○ **Yes** ○ **No**

Appendix 2 shows the protection settings that Vector requires you to apply to the inverters (including, if applicable, battery inverters) as part of installation.

D. Battery information

Are batteries being installed?	○ **Yes** Please provide details below ○ **No** Please go to **Declarations**
Number of batteries	
Maximum nameplate storage (in kWh)	

Maximum charge rate for each battery installed (in kW)	
Maximum discharge (export) rate for each battery installed (in kW)	

2. TECHNICAL INFORMATION

Part 2 of this application form provides technical information to be aware of and / or that should be complied with during the installation of the DG system:

- The installer of the DG system must be a Registered Electrical Worker.
- On the completion of the DG installation, Vector needs to be provided with the following:
    - A signed Certificate of Compliance (CoC) and Record of Inspection (RoI). The CoC and RoI must include confirmation of compliance with AS/NZS 4777.1 2024 and AS/NZS 4777.2 2020.
      The CoC and RoI confirm the DG system has been installed in accordance with Vector's applicable connection and operation standards, which can be found here.
    - A photo of the nameplate of each inverter in the DG system showing its model details and serial number.
    - A photo of the inverter settings having been setup in accordance with the protection settings in Appendix 2.
      For inverters on Vector's Approved Inverter List this can often be done by pre-selecting the "**Australia A** – AS/NZS 4777.2 2020" settings.
- If the DG system includes an inverter combined with a battery, then separate Volt/Watt control settings are also required for charging (these too are specified in Appendix 2).
- (If you would like the DG system to be eligible for a dynamic export limit, then) the inverters will need to be installed in a place where they can maintain an internet connection.

3. CONTACT INFORMATION

Part 3 of this application form asks for contact information for the person submitting this application and, if that person is not the ICP holder, the ICP holder for the DG system.

Please provide this information by completing Appendix 1.

4. ADDITIONAL INFORMATION

Part 4 of this application form gives you the chance to provide us with any other information about your DG application.

5. DECLARATION

Part 5 of this application form requires a declaration from the applicant that they have understood their application and its consequences. It can be made either by the ICP holder or an installer (as the agent of the ICP holder).

I am the

○ *installer of the DG system described in this application*

OR

○ *holder of the ICP listed in this application*

and I confirm with my signature that:

☐ *information provided in this application is true and accurate.*

☐ *the holder of the ICP to which the DG system is connected will be a distributed generator for the purposes of the Electricity Industry Participation Code 2010 (the **Code**) and will be subject to the Code's requirements.*

☐ *the export limit that Vector allocates to the DG System depends on compliance with the Code and Vector's standards, and it may be different from the DG system's full export capacity.*

☐ *the setup of the inverters in the DG system will influence the export limit that Vector allocates to the DG system – if the inverters (i) are CSIP capable / enabled, (ii) are connected to the internet, and (iii) will be connected to Vector's dynamic export management system (once it is available), then the DG system will be eligible for a dynamic export limit of 10kW (although a 2.5kW fixed export limit will apply if at any time CSIP is disabled, the internet connection is interrupted or the inverter will not be connected to Vector's dynamic export management system).*

☐ *Vector will be informed of any future changes to the distributed generation installation at the ICP listed in this application.*

If this application is submitted by an installer, then by signing below the installer additionally confirms that they have explained the above to the ICP holder and the ICP holder has understood the above.

Signature	
Name	
Company *(if signed by installer)*	
Date	

Appendix 1 – Contact Information

Applicant's contact information

Role of requester	Select option
Full name	
Billing address	
Daytime phone number	
Email address	

ICP holder's contact information (if the applicant is not the ICP holder)

Full name	
Company name (if applicable)	
Daytime contact number	
Email address	

Appendix 2: Required Inverter Protection Settings

Vector's required protection settings can be applied on inverters by **selecting** the "**Australia A** – AS/NZS 4777.2 2020" default option.

Inverter voltage and frequency settings

The table below shows the inverter voltage and frequency protection settings that you must apply to the inverters installed as part of your DG system.

	Parameter	Required Setting Value	Required Setting Value (1ph)	Required Setting Value (3ph)	Required maximum disconnection (trip) time
a	Under-voltage 2 (V <<)	0.304 p.u.	70 V	121.7 V	2 seconds
b	Under-voltage 1 (V <)	0.783 p.u.	180 V	313.0 V	11 seconds
c	Over-voltage 1 (V >)	1.152 p.u.	265 V	460.9 V	2 seconds
d	Over-voltage 2 (V >>)	1.196 p.u.	275 V	478.3 V	0.2 seconds
e	Under-frequency (F <)		47 Hz	47 Hz	2 seconds
f	Over-frequency (F >)		52Hz	52Hz	0.2 seconds

Inverter Volt/Watt and Volt/VAR export settings

The tables below show the inverter Volt/Watt and Volt/VAR settings for **exporting generation**.

These are the control settings that you must apply to the inverters installed as part of your DG system.

Inverter Volt/Watt Settings

	Active Power (%)	Voltage	Voltage (1ph)	Voltage (3ph)
P1	100%	1.10 p.u.	253 V	440 V
P2	20%	1.13 p.u.	260 V	452 V

Inverter Volt/VAR Settings

	Reactive Power (%)	Voltage	Voltage (1ph)	Voltage (3ph)
V1	44% (Supplying)	0.900 p.u.	207 V	360 V
V2	0%	0.957 p.u.	220 V	383 V
V3	0%	1.043 p.u.	240 V	417 V

	Reactive Power (%)	Voltage	Voltage (1ph)	Voltage (3ph)
V4	60% (Absorbing)	1.122 p.u.	258 V	449 V

Inverter Volt/Watt charging settings (for inverters combined with batteries)

For inverters combined with batteries, **Volt/Watt settings for battery charging** are required in addition to the Volt/Watt settings for exporting generation.

The tables below show the required Volt/Watt settings for battery charging that you must apply to the batteries being installed as part of your DG system.

Inverter Volt/Watt charging settings for inverters combined with batteries

	Active Power (%)	Voltage	Voltage (1ph)	Voltage (3ph)
P1	20%	0.900 p.u.	207 V	360 V
P2	100%	0.935 p.u.	215 V	374 V