

Marlborough Lines Network Standard

DN014 - DG Connection Policy

DOCUMENT ISSUE STATUS

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1 General

1.1 Purpose

This connection policy specifies the process for connecting Distributed Generation to Marlborough Lines Limited's (MLL's) electricity distribution network.

Distributed generation (DG) refers to any device, such as a photovoltaic solar array, micro-hydro, diesel generator or a storage device (e.g., electric vehicle battery or standalone battery) which involves the generation of electricity from a consumer's premises or property, into MLL's network.

We do not need to be notified of standby generators isolated from the network nor any other isolated generation. If you are unsure please get in touch.

1.2 Scope

This policy provides details on the requirements of the applicant and MLL, and application fees for the connection of DG to MLL's network.

1.3 References, Standards and Codes

The following documents are referred to or have been used in the development of this policy:

MLL Document	Description
DN015	DG Congestion Management
DN016	LV DG Connection and Operation Standard
DN017	HV DG Connection and Operation Standard
MLL F36	LV DG Connection Application Form (200kW and less)
MLL F126	LV DG Connection Initial Application Form (greater than 200kW)
MLL F127	LV DG Connection Final Application Form
MLL F37	LV DG IES Commissioning Form (200kW and less)
MLL F128	HV DG Connection Initial Application Form
MLL F129	HV DG Connection Final Application Form

External Document	Description
Electricity Industry Participation Code	The Electricity Authority's Electricity Industry Participation Code 2010 (the Code) governs how the electricity market operates. In particular Part 1, Part 1A or Part 2 of Schedule 6.1 . are applicable.
EEA Guide	EEA Guide for the connection of Small-Scale Inverter Based Distributed Generation 2018

1.4 Definitions and Abbreviations

The following definitions are referred to in this information pack:

Definition	Explanation
Certificate of Compliance (COC)	Registered electrical workers must self-certify their own work and fill out a certificate of compliance as proof that they have complied with electrical safety standards and codes.
Distributed generation (DG)	Generation installed at a customer's installation that is capable of exporting electricity back into the local distribution network. When viewed from MLL's perspective the generation is distributed throughout our network.
Embedded Generating System (or EG)	One or more generating units embedded behind an installation control point (ICP).
(ICP) Installation control point	A point of Supply on a local network or an embedded network which the distributor nominates as the point at which a retailer will be deemed to supply electricity to a customer.
Installation	A complete electrical installation from the point of a service main connection to the network, to the most remote circuit supplied by the switchboard.
Inverter Energy System (or IES)	A system comprising one or more inverters together with one or more energy sources (which may include an ESS) and controls, where the inverter(s) satisfies the requirements of AS/NZS 4777.2.
Point of Connection	A point at which electricity may flow into or out of our network.

Abbreviation or Acronym	Definition
CEC	Clean Energy Council
CoC	Certificate of Compliance
DG	Distributed Generation
EG	Embedded Generation
EIPC	Electricity Industry Participation Code
HV	High Voltage (> 1kV)
IES	Inverter Energy System
LV	Low voltage (\leq 1kV)
PV	Photovoltaic
ROI	Record of Inspection

2 Distributed Generation Connection Process

The connection of DG is regulated by the Electricity Authority under Part 6 of the Code. This connection policy and our connection standards have been based on the Code.

If you wish to install and connect DG it is best to get in contact with a local installer or experienced consultant and have them apply to MLL for the connection of DG on your behalf.

2.1 Know your DG Capacity and Site Export Power

Where there are multiple EG systems at a property, connected to a single ICP, the system capacity will consider the aggregate of the existing and proposed nameplate capacities.

Each connection application shall specify maximum export power to the network (denoted P). This value is equal to the system capacity defined above in almost all instances.

Demand or generation management systems including export control devices, energy storage, and discretionary demand can be used to reduce maximum export power. If these systems are present, they must be capable of ensuring the specified maximum export power is not exceeded under any realistic circumstances.

Location specific export thresholds are detailed in DN015 - Distributed Generation Congestion Management on our website.

2.2 Compliance with Standards

All EG must comply with MLL's Connection and Operating Standard to connect to MLL's network. Our standards are split depending on the point of connection voltage rather than EG capacity.

EG connected to MLL's network at **LV** will need to comply with DN016 – LV EG Connection and operation Standard found on our website.

EG connected to MLL's network at **HV** will need to comply with DN017 – HV EG Connection and operation Standard found on our website.

2.3 Application Process

The application pathways are prescribed by the Electricity Authority. The flow chart shown in Figure 2-1 helps determine the correct path you should select when applying to MLL.

2.3.1 Distributed Generation \leq 10kW

For DG \leq 10kW the Customer or representative must apply under either Part 1 or Part 1A of the Code, Schedule 6.1.

2.3.2 Distributed Generation $>$ 10kW

For DG $>$ 10kW the Customer or representative must apply under Part 2 of the Code, Schedule 6.1.

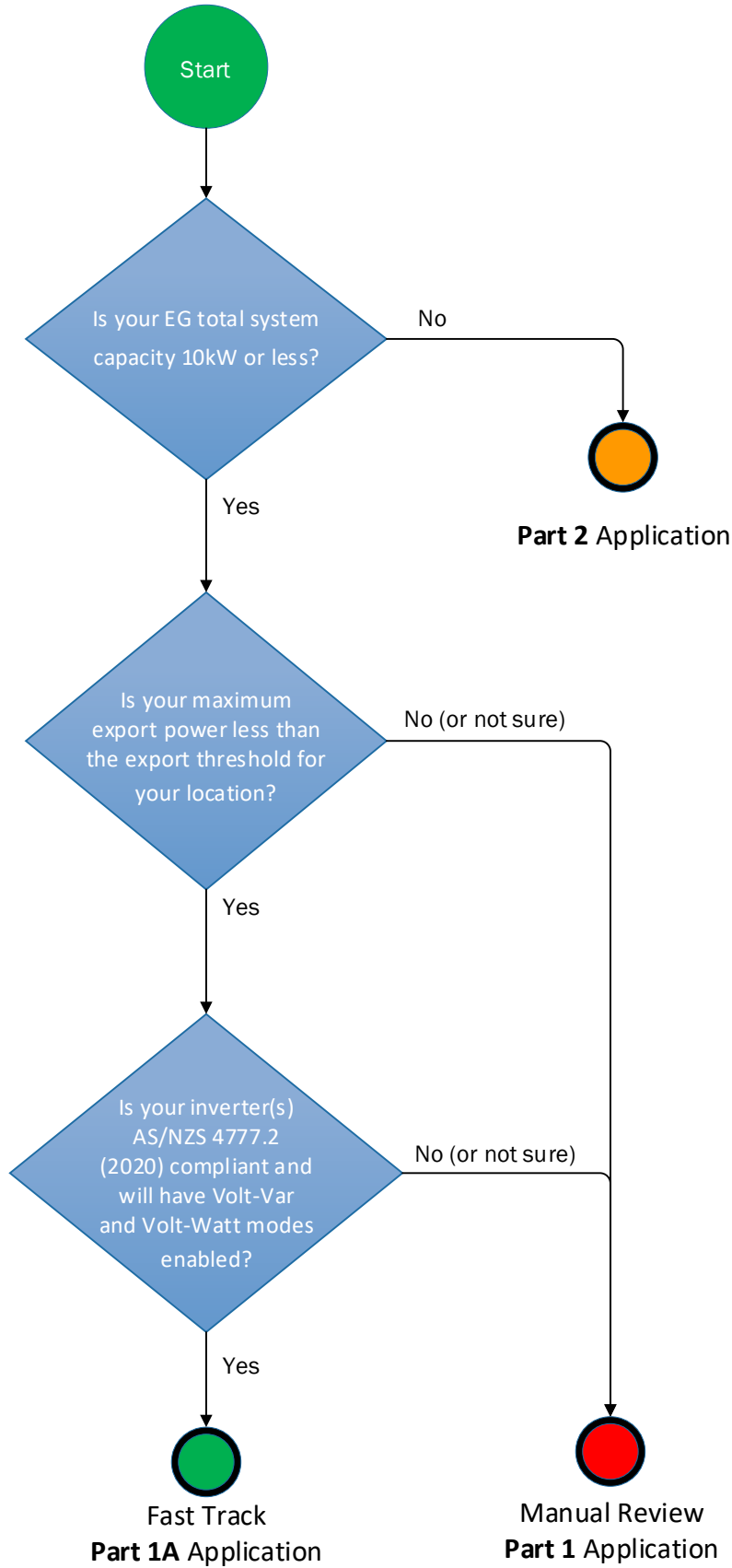


Figure 2-1 Application Path Guide

2.3.3 How to Apply

All applications should be made via the MLL website www.marlboroughlines.co.nz/connect-distributed-generation.

The flow chart shown in Figure 2-2 below outlines which form to use when applying to MLL.

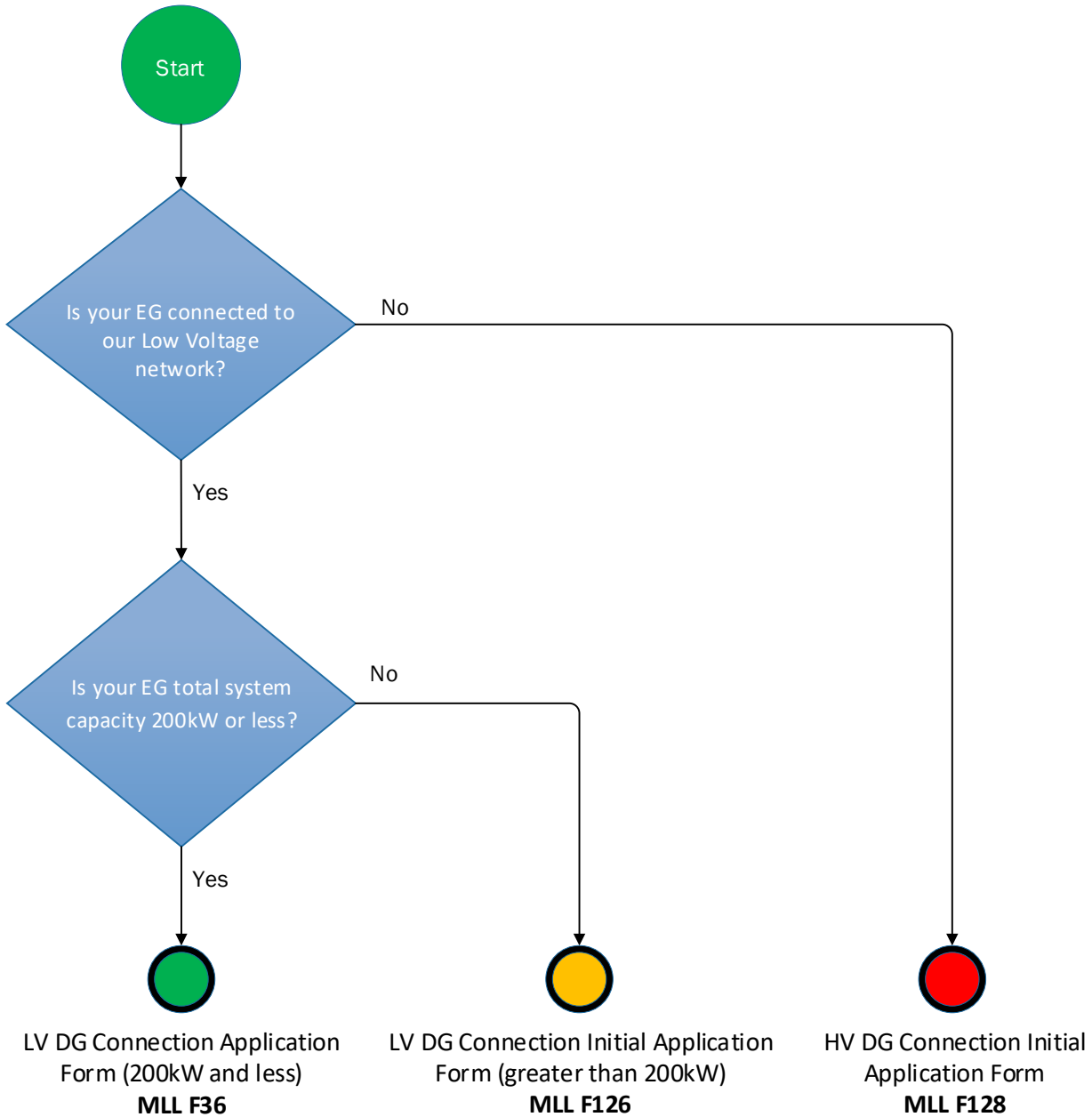


Figure 2-2 MLL Application Form Guide

2.3.4 Part 1 Application

MLL will, within five (5) business days of receiving an application and payment, give written notice to the applicant advising whether or not the application is complete.

MLL then has 30 business days to give notice in writing to the applicant stating whether the application is approved or declined (unless an extension is agreed).

If the application is approved, the applicant must give written notice to MLL, within 10 business days, confirming their intention to negotiate a connection contract (or use the default regulated terms). We then have 30 business days to negotiate the connection contract. The default regulated terms can be found in Schedule 6.2 of the code.

Following notice of approval, the applicant then has eighteen (18) months to complete testing and inspection of the EG system before a new application will be required.

You must not connect your distributed generation to the MLL network without written approval.

2.3.5 Part 1A Application

MLL will within two (2) business days of receiving an application (including payment), give written notice to the applicant advising whether or not the application is complete.

Provided the application is complete and MLL is satisfied the system complies with our connection standards, we will issue notice of final approval within 10 business days. The default regulated terms found in Schedule 6.2 of the code will apply.

Following notice of approval, the applicant then has eighteen (18) months to complete testing and inspection of the EG system before a new application will be required.

You must not connect your distributed generation to the MLL network without written approval.

The Part 1A Application method is much faster and simpler as the applicant is confirming they will operate their EG system in accordance with our connection standard and congestion management policy when applying (refer section 2.1 and 2.2).

2.3.6 Part 2 Application

This pathway follows a 2-stage application process. An Initial Application to determine high level connection options and requirements followed by a Final Application.

You must not connect your distributed generation to the MLL network without written approval.

Prior to receiving an approved Final Application, we recommend not to invest significantly in an EG project given the variables present.

It is critical to provide as much information as possible during the Initial Application and in response to specific requests, to ensure the EG project progresses as promptly as possible.

2.3.6.1 Initial Application

MLL will, within five (5) business days of receiving an Initial Application and payment, give written notice to the applicant advising whether or not the application is complete.

MLL then has 30 business days to provide information to the applicant about the connection. This information is prescribed in section 12, schedule 6.1, part 6 of the code. We will list any technical studies that shall be completed by the applicant in our response.

MLL may decide that a Final Application is not required. In this case we will clearly outline this in our response to your Initial Application and list any requirements with our approval to connect.

2.3.6.2 Final Application

Where appropriate, the applicant must complete a Final Application for the EG system. A Final Application shall be submitted to MLL no later than 12 months after receiving our response to your Initial Application. After this date you must restart the application process and pay any necessary fees.

After receipt of a Final Application MLL then has a defined period, outlined in Table 1, to provide a response.

Table 1 Decision timeframes

Time Frame (Business days)	EG System Capacity
45	< 1 MW
60	≥ 1 MW and < 5 MW
80	≥ 5 MW

MLL will give notice in writing to the applicant stating whether the application is approved or declined, unless an extension is agreed.

Once the Final Application has been approved the applicant must give written notice to MLL, within 30 business days, confirming their intention to negotiate a connection contract (or use the default regulated terms) and acceptance of any conditions imposed. If the applicant fails to respond to MLL within this timeframe the application process may need to be restarted.

We then have 30 business days to negotiate the connection contract. The default regulated terms can be found in Schedule 6.2 of the Code.

Following notice of final approval, the applicant then has eighteen (18) months to complete testing, inspection and livening of the EG system. Beyond this date MLL will assume the connection has not proceeded and you must re-apply.

2.3.7 If MLL Decline your Application

If MLL declines your application, you will be given detailed reasons why and, if you choose to make a new application, detail the steps that you can take to improve your application.

2.4 Contact your Electricity Retailer

You must discuss your proposed distributed generation installation with your electricity retailer, as any surplus energy that you generate may be sold to them. Unless you have contractual arrangements for purchase of any surplus electricity generated, and an electricity retailer is responsible for the connection, you will not be able to connect to the MLL network.

2.5 Contact the System Operator (Transpower)

Distributed Generation 1 MW or larger must provide the System Operator with written advice of its intention to connect, together with other information relating to the EG.

The requirements and duties are set out in the Code, particularly sections 8.19, 8.22, 8.23, and 8.25. We also recommend you seek the latest advice from the Transpower website.

Please also be aware that MLL, as a Transpower customer, incurs transmission charges. MLL passes these charges through to consumers connected to MLL's network based on the Transmission Pricing Methodology and MLL's own Pricing Methodology. If EG results in additional transmission charges, then MLL will pass these through in accordance with these methodologies (noting that they may change from time to time). Applicants should consider whether their EG will incur transmission related charges.

2.6 Installation

The design and installation of your system should be completed by a suitably competent person in accordance with NZ legislation and comply with all relevant codes and standards, a selection of which are detailed in our Connection and Operation Standards. MLL will advise if there are any specific conditions or work required to allow connection of your generation.

2.7 Inspection, Testing and Commissioning

The EG system must undergo inspection, testing and commissioning as stated in our Connection and Operation Standards before it can be connected to our network.

We may send an approved contractor to observe the testing and inspection of the DG. Timeframes for notice is outlined in our Connection and Operation Standards and associated fees detailed in section 3.1.

2.8 Final Connection to the MLL Network

You must not connect your EG to the MLL network without written approval.

The requirements vary depending on the EG system capacity and connection voltage. These requirements are detailed in our Connection and Operation Standards.

Please note the EG system must be left disconnected if the metering does not yet support import/export recording.

The testing and commissioning report and supporting documentation (detailed in our standards) must be returned to MLL within the required timeframe. If this documentation has not been returned, the EG does not meet our connection and operation standards, or this policy followed, and it is found that the system has been connected to our network, MLL reserves the right to disconnect the system.

3 Pricing

Charges relating to the connection of the EG to MLL's network, and ongoing costs associated with the EG will be charged by MLL in accordance with the Code and MLL's Pricing Methodology.

If extensions, such as purpose-built electricity distribution lines, are required to connect the EG to MLL's distribution network, the distributed generator will be responsible for the costs associated with this.

3.1 Application Fees

Application fees will be invoiced by MLL and are prescribed under schedule 6.5, Part 6 of the code.

Table 2 Application Fees

Item	Fee (GST exclusive)
Application under Part 1	\$200
Application under Part 1A	\$100
Observation of testing and inspection for Part 1 and Part 1A applications	\$60
Deficiency fee for reassessing Part 1A applications	\$80
Application under Part 2, where EG capacity is < 100kW	\$500
Observation of testing and inspection for Part 2, where EG capacity is < 100kW	\$120
Application under Part 2, where EG capacity is < 1 MW	\$1,000
Application under Part 2, where EG capacity is 1 MW or more	\$5,000
Observation of testing and inspection for Part 2 applications	\$1,200

MLL will not consider an Initial Application received until payment has been made. The timeframes noted in Section 2.3 begin once an application and relevant payment has been received.

3.2 Reconciliation Loss Factors

For distributed generation under the Part 2 application pathway, MLL may calculate a site-specific Reconciliation Loss Factor (RLF). In the case of distributed generation equal to or exceeding 1MW, MLL will determine a site-specific RLF in accordance with the Electricity Authority's Guidelines concerning the calculation and utilisation of loss factors for reconciliation purposes.

MLL typically carries out loss calculations by assessing the additional impact of the distributed generation on network losses. If the distributed generator contributes to an increase in network losses beyond those caused by existing load and pre-existing distributed generation, an RLF will be assigned based on the increased losses caused by the distributed generator.

When the distributed generation results in a reduction of network losses, the RLF will be greater than 1.00. Conversely, if the distributed generation leads to an increase in network losses, the RLF will be less than 1.00. The RLF is then applied to the generator's energy output (kWh) to determine the quantity applicable at the local grid nodal point and may result in an increase or decrease in the generator's revenue.