

Connection and Operation of Distributed Generation



Eastland Network Ltd,
172 Carnarvon St,
PO Box 1048,
Gisborne

Phone (06) 869-0700
Fax (06) 867-8563
Email info@eastland.co.nz
Web www.eastland.co.nz

Contents

- Contents 2
- 1. Introduction 3
 - 1.1 Introduction 3
 - 1.2 Definitions 4
- 2. Distributed Generation Requirements 5
 - 2.1 General Requirements 5
 - 2.2 Technical Requirements 5
 - 2.3 Operational Requirements 6
 - 2.4 Commercial Requirements 7
 - 2.5 Regulatory Requirements 7
- 3. Policies for Embedded Generation 8
 - 3.1 Open Access Network 8
 - 3.2 Financing & Ownership of Connection Assets 8
 - 3.3 Financing Technical Modifications 8
 - 3.3 Financing Technical Analysis 8
 - 3.4 Financing Corrective Actions 9
 - 3.5 Recognition of Benefits (or Costs) to ENL 9
 - 3.5 Limiting the Density of Generation 10
 - 3.6 Operational Functions 11
 - 3.7 Ensuring Safety and Stability 11
 - 3.8 Change of Occupancy or Ownership 13
 - 3.9 Confidentiality of the Application 13
- 4. Connection Process for Distributed Generation Greater than 10kW Capacity 14
 - 4.1 Step 1 (Initial Application) 14
 - 4.2 Step 2 (Response to Initial Application) 16
 - 4.3 Step 3 (Final Application) 17
 - 4.4 Step 4 (Notice to Proceed) 18
 - 4.5 Step 5 (Negotiate connection contract) 19
 - 4.6 Step 6 (Connection of the generation) 19
- 5. Connection Process for Distributed Generation Less than 10kW Capacity 20
 - 5.1 Step 1 (Initial Application) 20
 - 5.2 Step 2 (Response to Initial Application) 22
 - 5.3 Step 3 (Notice to Proceed) 22
 - 5.4 Step 4 (Negotiate connection contract) 22
 - 5.5 Step 5 (Connection of the generation) 23
- 6. Schedule of Fees 24
- 7. Distributed Generation Forms 25
 - 7.1 Distributed Generation Application Form 25
 - 7.2 Distributed Generation Technical Form 27
 - 7.3 Distributed Generation Final Application Form > 10kW 29
- 8. Appendix A (Regulated Terms) 30

1. Introduction

1.1 Introduction

The purpose of this document is to provide details of the processes necessary and information required to enable connection of distributed generation to ENL's assets.

The document contains:

- The nature of distributed generation, and the safety, technical, operational, commercial and regulatory issues or requirements that may be encountered.
- ENL policies relating to connection and operation of distributed generation.
- Application forms that must be completed as part of the applicant's initial application and, where applicable under the Regulations, final applications to connect distributed generation. It is preferable that applicants make contact with ENL to discuss intended generation as soon as possible so that issues can be resolved before submitting an initial application.

The connection of distributed generation is regulated by the Electricity Participation (Connection of Distributed Generation) Code 2010. This code specifies a number of matters such as the time period within which ENL must process the application, the maximum fees that can be charged for processing an application and inspecting the generation, and a series of default terms & conditions.

The participation code provides for the following classifications of generation:

- Generation at a rate of 10kW or less
- Generation at a rate greater than 10kW

The varying requirements and timeframes for the classifications are defined in the participation code.

This document is based on the participation code, and where this document is inconsistent or unclear, the code shall prevail.

1.2 Definitions

Distributed generation	<p>Distributed generation (Also known as embedded generation) is electricity generation equipment that is embedded within a distribution network, and is connected in such a way that it can produce energy flow into the network, or loads connected to the network.</p> <p>Distributed generation is designed to operate in parallel with the electricity network.</p> <p>Distributed generation does not include standby generation that can only operate in isolation and provides energy to loads that are disconnected from the network.</p>
Connection assets	<p>Means assets such as (but not limited to) lines, poles, transformers, cables, fuses, re-closers or circuit breakers necessary to connect generation to our network.</p>
Regulations	<p>Means the Electricity Authority (Electricity Industry Participation Code 2010) or any regulation passed in substitution thereof</p>
Requirements	<p>Means the requirements referred to in Sections 2.2 to 2.6 of this document.</p>
ENL	<p>Means Eastland Network Ltd and includes the associated company Eastland Group Ltd.</p>
The Generator or the Applicant	<p>Means the party wishing to connect distributed generation to Eastland Network Ltd's network.</p>
Network or Distribution Network	<p>Assets such as (but not limited to) lines, poles, transformers, cables, fuses, re-closers or circuit breakers forming ENL's electricity distribution and sub-transmission system</p>

2. Distributed Generation Requirements

2.1 General Requirements

Distributed generation must comply with the following general requirements:

- The specific requirements contained in the [Electricity Safety Regulations 2011](#) and associated codes of practice.
- The general requirements contained in the [Health and Safety in Employment Act 1992](#).
- [Dam Safety Rules](#) and Ministry of Business innovation & Employment requirements.
- The funding and policy requirements identified in section 3 of this document.
- Requirements contained in the [Electricity Participation Code 2010](#).

2.2 Technical Requirements

Distributed generation must comply with the following technical requirements:

- AS 4777.1 2002
- AS 4777.3 2002
- AS/NZS 3000

For a generator connected through an inverter, the inverter must comply with the following additional requirements:

- AS 4777.2 2002
- The inverter must be approved by ENL, to ensure compatibility with the ENL network

2.3 Operational Requirements

In addition to the general requirements contained in ENL's Connection Standard, distributed generation must comply with the following operational requirements:

- Unless the generation is specifically designed to supply the distribution network, as an isolated network, and has been approved as such by ENL, the generation installation must include a switch or circuit breaker that disconnects and locks out (requiring a manual action to reset) if the mains voltage varies by more than 3% from the standard operating voltage, or if the mains frequency varies from 50Hz by more than 0.5Hz for more than 2 seconds. This is to ensure that the distribution network is not back-livened from the generation. Back-livening would create a safety hazard for fault staff and can result in un-synchronised closing between the grid and generator causing damage to equipment.
- For high voltage distributed generation installations, the generator must employ trained staff and have appropriate systems in place, in order to carry out isolation, earthing, and issuing of assurances, in accordance with the Safety Manual Electricity Industry (SM-EI).
- Under the Electricity Participation Code, the generator may be required to provide asset capability information and comply with the requirements of the System Operator.
- For operational and safety purposes, generation installations may need to provide real time information of Generator Operational State, Connection State and Output Load. In general, ENL can provide SCADA equipment for connection of Status and Analog indication, or can support modbus/DNP protocols.
- Clear and durable notices must be prominently posted near the point of connection between the generator and the network, stating that there is connected generation. For generation within an installation containing load, additional notices at the switchboard and meter box are required. This is to warn people of the possibility that the installation could still be live even if the mains have been disconnected.

2.4 Commercial Requirements

The Generator must comply with the following commercial requirements:

- The Generator must have a contract in place with a retailer for the purchase of the energy being generated, or provide evidence that the energy will be consumed within the installation.
- Electricity metering is required, and must be capable of recording all energy flow in the distribution network, both in to and out of the generator installation.
- The energy retailer contracted for purchase of exported energy may charge the generator for metering services and data management.
- ENL line charges must be included in the contractual arrangements with the retailer.

2.5 Regulatory Requirements

The generation may require one or more of the following classes of consents:

- Resource consent issued by the Regional Council.
- Resource consent issued by the District Council.
- Building consent issued by the District Council.

The generator may also need to liaise with other agencies such as (but not limited to) Land Transport, the Civil Aviation Authority or the Department of Conservation if the generation extends into areas such as road reserve, flight paths or ecologically sensitive areas. ENL does not provide advice on these matters, or issue such consents.

3. Policies for Embedded Generation

3.1 Open Access Network

Our policy for network access is that any generator who meets the applicable safety, technical, operational and commercial requirements, and who agrees to pay the applicable charges, can connect to our network.

The details of our distributed generation policy are set out in Section 4.6 of the [ENL 2013 Asset Management Plan](#).

3.2 Financing & Ownership of Connection Assets

Connection of distributed generation to our network may require construction of specific assets, such as a few spans of line, a length of cable or a disconnecter. These assets are referred to as connection assets and can be financed and owned in either of the following ways:

- The generator can install and own these assets at their own cost, subject to ENL's technical requirements for connection to the network. This will require the generator to assume all usual ownership responsibilities and obligations, such as obtaining planning and building consents, safety, maintenance, fault restoration, land issues and tree trimming.
- Subject to approval by ENL, the generator can contribute 100% of the capital costs, and ENL will install and own the assets. In this case ENL will assume all usual ownership responsibilities and obligations.

3.3 Financing Technical Modifications

The generator may be required to finance technical modifications to the ENL network, such as re-calibrations of protection or control equipment, which may be necessary once the generation installation is connected to the network.

3.3 Financing Technical Analysis

The generator may be required to arrange and finance technical analysis and modelling necessary to demonstrate that the proposed generation installation can operate without having a negative impact on the distribution network. ENL will provide information including the line types, line lengths, loading data and protection settings for this purpose.

3.4 Financing Corrective Actions

The generator may be required to finance corrective actions to problems arising in the network, which may be identified once the generation installation is connected to the network. For example, this may include costs for additional power factor correction, or additional control and monitoring equipment required to ensure safe operation of the ENL network.

3.5 Recognition of Benefits (or Costs) to ENL

The following may be useful when considering recognition of the benefits (or costs) to ENL provided by a distributed generation installation:

- The generator contributes toward a solution where the existing network is unable to supply, which contributes positively toward ENL's security of supply standard.
- The generator contributes to a solution where investment can be deferred. Arrangements put in place will, in general, be linked to penalties when the generator is unable to provide for the agreed contribution. Typically agreements are separated from published tariffs, and are applied to fixed timeframes.
- In recognition of the benefits of distributed generation to the region, the variable component for energy flow from an installation to the distribution network is not charged by ENL.
- In recognition of the benefits of distributed generation to the region due to the evasion of transmission costs, ENL may reduce the cost of energy delivery to customers, or defer tariff increases. In general, changes in transmission charges from period to period are reflected by changes in tariffs. Therefore benefits to ENL from generators (and users undertaking load management strategies) are averaged across the different capacity groups and users, so generator contribution cannot be recognised directly. In some cases where deferred investment costs or reductions in reinvestment costs can be specifically identified, direct recognition may be considered.
- Reduction of losses is excluded, as the benefits are realised by the energy retailers and are passed on to end users. In addition, due to the varying load conditions typical in the distribution network, the assessment of the physical losses applicable to a single installation is typically complex, and as such ENL does not financially recognise the reduction of losses.

- Tariffs covering the provision of the line function services provided by ENL will be charged and amended periodically. Published tariffs are based on active (MW) power capacity requirements for an installation, and averaging is applied across groups within a number of capacity bands.
- Where generation is embedded within an existing connection, the capacity charges for the greater of the net imported or exported demand are applied to the installation.
- ENL has not historically required tariffs based on reactive (MVAR) requirements. It is likely that tariffs of this nature will be developed.

3.5 Limiting the Density of Generation

ENL's distribution network has been designed to distribute electricity in one direction from large grid substations to remote end users. The following guidelines for distributed generation limits are likely to apply to the current network. Actual limits are determined on a case by case basis. These limits are applicable in considering size and location of generation.

Approximate limits for generation connected to:

- | | |
|--|----------------|
| • Urban Sub-transmission 50kV | -Maximum 15MW |
| • Rural Sub-transmission 50kV | -Maximum 5MW |
| • Rural Sub-transmission 33kV | -Maximum 3MW |
| • Urban Distribution 11kV | -Maximum 4MW |
| • Rural Distribution 11kV near Zone substation | -Maximum 1MW |
| • Remote Rural Distribution 11kV | -Maximum 0.5MW |
| • Generation within a domestic installation | -Maximum 10kW |

ENL reserves the right to decline any application to connect generation to the network if it is believed that any distributed generation could interfere with the operation of the distribution network (including overloading), or alter the quality of supply provided to any currently connected installation. In the event that more than one application is received to connect generation to part of our network, the participation code allows for ENL to consider such applications as competing bids for limited capacity.

3.6 Operational Functions

ENL operates a number of standby generators, which supply the distribution network independently from the grid during outages and maintenance activities. In general, to maintain stability of the network, distributed generation will not be permitted to operate in parallel with the standby generators when isolated from the grid.

For planned shutdowns, notifications are sent via the generator's energy retailer, in accordance with the process agreed with the retailers. For larger generation customers, direct consultation and notification will be undertaken whenever possible.

For unplanned events, ENL operate an external service to provide communication relating to the outages. For larger generators, direct communication can be arranged.

The priorities for fault restoration and repair work are determined on the basis of the nature and number of customers affected, the available resources, locations, environmental conditions, and estimated repair times. In general, generation only connections are expected to have a lower priority assigned, compared with load using customers, who have a greater dependence on their electricity supply.

3.7 Ensuring Safety and Stability

It is important that any new distributed generation can operate safely and effectively using the distribution network. In addition, the operation of equipment within an installation must not cause interference or hazards to other installations. The impacts are assessed in terms of the following categories:

Effect on Fault levels

Distributed generation can increase the design fault levels of the distribution network, affecting the ability for existing protection systems to operate correctly. The increased fault levels may also exceed the fault rating of cables, conductor and equipment.

Frequency Performance

Because the distribution network stability is affected by frequency, the size, type and location of generation is assessed to establish the ability of the generation to influence other generators, and the ability of the generators to

disconnect or remain operating when the grid or mains frequency disappears. Remote signalling and control functions may be required to ensure safe operation of the distribution network.

Voltage Control

In general, rural connected generators are expected to cause increased voltage, where the size of the generator is greater than the minimum load conditions of the connected segment. It may be necessary for generators to adjust output power levels to maintain voltage levels at existing customer installations to levels required by the participation code. Voltage flicker or momentary changes in voltage caused by step changes in output, or excitation inrush on induction generators, must be maintained within the guidelines identified by the Committee Report on Motor Starting currents.

Power Factor Correction

To maintain the network efficiency and maximise stability, all embedded generation installations must maintain a power factor between 0.95 lag and unity. Load Control signals levels can be influenced by power factor correction. Where operation of distributed generation affects the correct operation of load control equipment, the generator is required to finance and/or carry out corrective actions.

Harmonic Levels

Distributed generation can introduce harmonic levels that are not typically present in the distribution network. In general, the ability to determine adverse impacts on harmonic levels cannot be established prior to connection of distributed generation. Where harmonic levels impact on power quality and adversely affect other equipment connected to the network the generator must alter operating patterns or make the necessary alterations to eliminate any interference.

Security of Supply

Where generation is capable of outputs greater than or equal to the load of a segment of the distribution network, and is approved by ENL to operate in isolation from the grid, analysis of the synchronising arrangements and remote signalling requirements may be necessary to ensure safe operation of the distribution network.

Compatibility with Other Generation

Proposed generation in a related or adjacent network segment may react with other established generation. In general, the ability to determine adverse interaction between generators cannot be established prior to operation of generators. Generators may be required to disconnect or adjust

output levels for periods where adverse interaction with previously established generators is found to occur.

3.8 Change of Occupancy or Ownership

It is important that any new owner or occupant of a premise involving distributed generation is aware of the safety, technical, operational and commercial aspects. Accordingly, ENL must be notified of any new occupant or owner so arrangements can be made to discuss the obligations of the new owner or occupant.

3.9 Confidentiality of the Application

The participation code allows for the broad details (but not necessarily the ownership details) of generation applications to be made available to other applicants, or existing generators whose generation might be affected by the proposed generation.

4. Connection Process for Distributed Generation Greater than 10kW Capacity

4.1 Step 1 (Initial Application)

To begin the connection process the applicant must provide ENL with the following information in writing. It would be preferable for the applicant to contact ENL to discuss the generation proposal first.

The Application form and Technical form is provided at the end of this document, defining all information required. Both these forms must be completed for applications above 10kW. Additional pages including drawings, maps, photos and descriptive text must be clearly marked with a reference, and the reference identified in the relevant section on the forms. These two forms request important information to enable ENL to assess the proposed generation in terms of the relevant requirements and policies.

Component and asset identification information is required to update operational records and systems, to ensure clear communication in all operational matters. The line/cable information is required to maintain records associated with information disclosure requirements.

The technical data and performance related information is necessary to enable ENL to analyse the impacts of the distributed generation on the distribution network components, and assess the effects on other customers connected to the distribution network, as per the requirements and policies detailed in Sections 2 and 3 of this document.

The energy profile information is necessary to enable assessment of the generation to affect the network, as detailed in Section 3.7 and the possible contribution to any benefits. This information will typically include; half hourly, weekday and weekend daily profiles, monthly or seasonal trends, and a long range annual forecast. The basis for projections should also be described, with reference to any testing or monitoring work undertaken or assumptions made to arrive at the profiles. The daily and weekly profile information is also used to assess the effects on other customers connected to the distribution network.

Technical Information Required:

- Type of generation to be connected (hydro, wind etc).
- Manufacturers' rating of the generator, or if this is not possible, a certification of its maximum rating.
- The configuration of the proposed generation installation, in particular whether the generator is a new generator or an addition to an existing generator. If the proposed generator is an addition, the rating of the entire installation at the single point of connection to the network must be specified.
- The technical specifications of the generator and associated equipment including maximum real power, reactive power requirements, resistance and reactance, fault level contribution, means of voltage and frequency control, synchronisation and expected operating modes.
- The technical specifications of the equipment that will disconnect the generator from the network in the event that mains voltage is lost.
- Exactly where the generator is expected to be installed.
- Whether the generator is single phase or 3-phase.
- The proposed point of connection to the network (exact location).
- Evidence that the generation installation will meet the requirements set out in Section 2 of this document.

The completed Form 1 will need to be accompanied by the required application fee plus GST (refer Section 6), payable to Eastland Group Ltd.

If the completed forms (Application & Technical form) do not provide sufficient information for ENL to determine if the proposed generator meets the standards set out in Sections 2.2 to 2.5 of this document, further information may be requested.

4.2 Step 2 (Response to Initial Application)

After submitting an initial application, the applicant will be advised within 5 working days whether the initial application is complete. If the initial application is incomplete, the applicant will be advised as to the information that will need to be included when reapplying.

Within 30 days of receiving a correctly completed initial application the participations code requires ENL to provide the applicant with the following information:

- (a) Information about the capacity of the distribution network, including both the design capacity (including fault levels) and actual operating levels.
- (b) Information about the extent to which connection and operation of the distributed generation may result in a breach of the relevant standards for safety, voltage, power quality, and reliability of supply to our connected customers and other generators.
- (c) Information about any measures or conditions (including modifications to the design and operation of the distribution network or to the operation of the distributed generation) that may be necessary to address the matters referred to in points (a) and (b) above.
- (d) The approximate costs of any network-related measures or conditions identified under point (c) above and an estimate of time constraints or restrictions that may delay the connecting of the distributed generation.
- (e) Information about any further detailed investigative studies that ENL reasonably considers are necessary to identify any potential adverse effects on our network resulting from the proposed connection, together with an indication of...
 - Whether ENL agrees to the generator, or a suitably qualified agent of the generator, undertaking those studies; or
 - If not, whether ENL could undertake those studies and, if so, the reasonable estimated cost of the studies that the generator would be charged.
- (f) Information about any obligations to other parties that may be imposed on ENL and that could affect the distributed generation (for example,

obligations to Transpower, in respect of other networks, or under the rules).

- (g) Any additional information or documents that ENL may consider would assist the generator's application.
- (h) Information about the extent to which planned and unplanned outages may adversely affect the operation of the distributed generation.

The applicant may also make written requests for information such as single line diagrams, equipment ratings, normal switch configurations (including fault levels), and protection system details relevant to the proposed point of connection. The participation code requires such information to be provided within 10 days of receiving a written request.

If either involved party becomes aware of new information that is relevant to the application, that party must make reasonable endeavours to pass the information to the other party.

4.3 Step 3 (Final Application)

Final application to connect the generation installation may be made at any time within 12 months of receiving the information set out in Section 4.2 above. The application must include the correctly completed 'Final Application Form' (at the end of this document) and copies of any technical studies that may have been requested.

Once the correctly completed final application is received, the participation code requires ENL to make reasonable endeavours to notify in writing:

- Everyone who has made an initial application to connect generation to a part of our network that could be affected by the proposed generation.
- All generators connected to that part of the ENL network on the regulated terms and conditions that could be affected by the proposed generation.

If a final application from another generator is received within 10 days of receiving the applicant's final application, ENL may consider the two final applications as competing bids for limited connection capacity, as long as the overriding principles of the participation code are kept in mind. Otherwise, final applications will be treated on a "first come, first served" basis.

Upon receiving the applicant's correctly completed final application that includes evidence that the proposed generation will meet all safety requirements, all statutory requirements, technical and operating requirements, ENL have:

- 45 business days if the generation capacity is less than 1MW
- 60 business days if the generation capacity is greater than 1MW but less than 5MW
- 80 business days if the generation capacity is greater than 5MW

to do one of the following three things:

- Provide written notification that the final application has been approved with no additional conditions.
- Provide written notification that the final application has been approved but with additional conditions. In such a case, ENL must provide the conditions in detail, state why such conditions are necessary, specify any charges payable by the applicant, and advise the applicant of how to challenge the decision under the dispute resolution process set out in Schedule 3 of the participation code.
- Provide written notification that the final application has been declined. In such a case, ENL must inform the applicant why the final application has been declined, how to re-apply, and how to challenge the decision under the dispute resolution process set out in Schedule 3 of the participation code.

ENL may also request an extension of up to 40 working days to process the final application, which cannot be reasonably refused.

4.4 Step 4 (Notice to Proceed)

If the application to connect generation is approved, the applicant must inform ENL in writing whether it is intended to connect the generation. The applicant has 30 working days to do so, although this period may be extended at the discretion of ENL. This written notice of intention to proceed must include the details of the generation, and confirm the acceptance of any conditions that may have been imposed on the connection. If the applicant does not accept any conditions that may have been imposed, but wishes to continue with connection, they must notify ENL of this dispute within the 30 day period. If such written notice is not provided, the

obligations of ENL under the participation code cease. However, a new application may be made.

4.5 Step 5 (Negotiate connection contract)

Once ENL has been notified in writing of the intention to connect the generation to the network, a connection contract must be mutually negotiated within 30 working days (starting from the date at which we receive the written notice of intention to connect). This period can be extended by mutual agreement.

If mutually acceptable connection terms and conditions cannot be mutually negotiated, the regulated terms (Appendix A) and conditions set out in Schedule 6.2 of the participation code will apply.

4.6 Step 6 (Connection of the generation)

Before connection to the network, testing of the generator installation must be performed. The applicant must provide ENL with sufficient notice of these tests to allow ENL to send qualified personnel to observe the testing and inspection. The applicant must also pay the fee specified in Schedule 6 for ENL to witness the testing, plus GST.

Following testing and inspection, ENL must be provided with a comprehensive test and inspection report, including confirmation that any metering will fulfil its intended purposes.

5. Connection Process for Distributed Generation Less than 10kW Capacity

5.1 Step 1 (Initial Application)

To begin the connection process the applicant must provide ENL with the following information in writing. It would be preferable for the applicant to contact ENL to discuss the generation proposal first.

The application form is provided at the end of this document, defining all information required. Only a completed 'Application Form' is required for applications below 10kW. Additional pages including drawings, maps, photos and descriptive text must be clearly marked with a reference, and the reference identified in the relevant section on the form. The 'Application Form' requests important information to enable ENL to assess the proposed generation in terms of the relevant requirements and policies.

Component and asset identification information is required to update operational records and systems, to ensure clear communication in all operational matters. The line/cable information is required to maintain records associated with information disclosure requirements.

The technical data and performance related information is necessary to enable ENL to analyse the impacts of the distributed generation on the distribution network components, and assess the effects on other customers connected to the distribution network, as per the requirements and policies detailed in Sections 2 and 3 of this document.

Technical Information Required:

- Type of generation to be connected (hydro, wind etc).
- Manufacturers' rating of the generator, or if this is not possible, a certification of its maximum rating.
- The configuration of the proposed generation installation, in particular whether the generator is a new generator or an addition to an existing generator. If the proposed generator is an addition, the rating of the entire installation at the single point of connection to the network must be specified.
- The technical specifications of the generator and associated equipment including maximum real power, reactive power requirements, resistance and reactance, fault level contribution, means of voltage and frequency control, synchronisation and expected operating modes.
- The technical specifications of the equipment that will disconnect the generator from the network in the event that mains voltage is lost.
- Exactly where the generator is expected to be installed.
- Whether the generator is single phase or 3-phase.
- The proposed point of connection to the network (exact location).
- Evidence that the generation installation will meet the requirements set out in Section 2 of this document.

The completed 'Application Form' will need to be accompanied by the required application fee plus GST (refer Section 6), payable to Eastland Group Ltd.

If the completed 'Application Form' does not provide sufficient information for ENL to determine if the proposed generator meets the standards set out in Sections 2.2 to 2.5 of this document, further information may be requested.

5.2 Step 2 (Response to Initial Application)

After submitting an initial application, the applicant will be advised within 5 working days whether the initial application is complete. If the initial application is incomplete, the applicant will be advised as to the information that will need to be included when reapplying.

Within 30 days of receiving a correctly completed initial application the participation code requires ENL to give written notice of whether the application is approved or declined. ENL may also request an extension of up to 20 working days to process the final application, which cannot be reasonably refused.

If either involved party becomes aware of new information that is relevant to the application, that party must make reasonable endeavours to pass the information to the other party.

5.3 Step 3 (Notice to Proceed)

If the application to connect generation is approved, the applicant must inform ENL in writing whether it is intended to connect the generation. The applicant has 30 working days to do so, although this period may be extended at the discretion of ENL.

If such written notice is not provided, the obligations of ENL under the participation code ceases. However, a new application may be made.

5.4 Step 4 (Negotiate connection contract)

Once ENL has been notified in writing of the intention to connect the generation to the network, a connection contract must be mutually negotiated within 30 working days (starting from the date at which we receive the written notice of intention to connect). This period can be extended by mutual agreement.

If mutually acceptable connection terms and conditions cannot be mutually negotiated, the regulated terms and conditions set out in Schedule 6.2 of the participation code will apply.

Generally applications below 10kW are connected under the regulated terms and conditions.

5.5 Step 5 (Connection of the generation)

Before connection to the network, testing of the generator installation must be performed. The applicant must provide ENL with sufficient notice of these tests to allow ENL to send qualified personnel to observe the testing and inspection. The applicant must also pay the fee specified in Schedule 6 for ENL to witness the testing, plus GST.

Following testing and inspection, ENL must be provided with a comprehensive test and inspection report, including confirmation that any metering will fulfil its intended purposes.

6. Schedule of Fees

Maximum fees for connection of distributed generation

Schedule 5 of the Electricity Participation (Connection of distributed Generation) Code 2010

In this schedule, reference to a kW or MW rate, in relation to distributed generation, is a reference to the kW or MW rate at which distributed generation is capable of generating electricity.

A distributor may require the payment of fees for any of the following activities prescribed under the participation code up to the maximum fee specified in the column opposite the activity:

Fee for application for distributed generation 10kW or less in total	\$
Distributed generation of 10kW or less in total	200
Fee for initial application for distributed generation above 10kW	
Distributed generation of above 10kW in total but less than 100kW in total	500
Distributed generation of above 100kW in total but less than 1MW in total	1,000
Distributed generation of 1MW and above	5,000
Fee for observation of testing and inspection	
Distributed generation of 10kW or less in total	60
Distributed generation of above 10kW in total but less than 100kW in total	120
Distributed generation of 100kW and above	1,200



172 Carnarvon Street, Gisborne,
4010
PO Box 1048, Gisborne, 4040

Ph (06) 869 0700
Fax (06) 867 8563

Distributed Generation Application Form

Note: This is **not** an application for electricity.
Allow five working days (from receipt of the completed form by Eastland Network) for processing for a standard application. Applications are valid for a period of **six months** from the date of approval.

	AFS
	Reference

Service owner to complete this section

Connection Details

Surname			
First name (s)			
Business name			
Phone (H)			
Phone (W)			
House No.		or Rapid No.	
Address			
Suburb			
City/Town			
Post-code			
Energy Retailer			
Date required	/	/	

Billing Details

Please fill in this section if the address where correspondence or accounts are to be sent is different to the Applicant's connection details.

House No.		Rapid No:	
Street name			
Suburb			
PO Box			
City/Town			
Post-code			

Supplier Details

Contact name	
Company	
Phone (W)	

Tariff Definitions & Conditions of Supply are available on Eastland Network's website; <http://www.eastland.co.nz/eastland-network/> and follow the links The Network > Disclosures and Regulations > Line Charges.

I accept and agree to the terms and conditions of connection described in Eastland Network's Connection Standards; See <http://www.eastland.co.nz/document-library/eastland-network/connections/>.

Applicant signature	
---------------------	--

Date	/	/	
------	---	---	--

Please refer **all enquires** regarding this connection to your Electrician and / or nominated Network Approved Connection Contractor.

Electrician to complete this section

Distributed Generation Details:

Entirely new installation:	<input type="checkbox"/>
Installed in an existing installation (i.e. Switchboard):	<input type="checkbox"/>
Addition to an existing installation (Containing Generation):	<input type="checkbox"/>



Primary Energy Source (e.g. Solar)	
Synchronous / Asynchronous	
Rating of Generation Installation (kVA)	
Power Factor	
Rated Terminal Voltage (V)	
Number of Phases	
Location of multi pole isolator	
Proposed Connection Date	

Attachments:

- Equipment ensuring disconnection of DG on loss of mains to system
- Single line diagram showing protection system
- Circuit Diagram
- Distributed Generator test report
- System complies with ENL's 'Connection & Operation of DG Document'

For applications concerning systems > 10 kW, please also complete the 'DG Technical Form'



Site Plan. Show site boundaries, dimensions, meter location, position of nearest pole or disconnection box, proposed cable route, demarcation point and any thrusting. Where a pole or disconnection box is indicated, provide the pole or disconnection box number. Any application received without a nominated point of connection will be returned to the Network Approved Contractor.

Point of connection Asset Id

Electrician to complete this section

Electrician:

Name: Phone:
 Company: Mobile:
 Address: Email:

I declare that the distributed generation installed will comply with the relevant industry regulations and standards including but not limited to Electricity Regulations 2010, AS/NZS 3000 2007 and where applicable AS NZS 4777.

Signature of Electrician: Date : / /

Network Approved Connection Contractor (If required):

Name:
 Company: Transformer No.

I certify that this application conforms with Eastland Network design requirements and does not exceed approved loading on the Network.

Signature of Network Contractor: Date : / /

Network Contractor

ENL Processing

Application Fee

Installations < 10kW \$200*
 Installations 10 - 100kW \$500*
 Installations 100 - 1000kW \$1000*
 Installations > 1MW \$1500*
 Total amount to be invoiced
 Engineering check / approved
 Date

Observation of testing Fee

Installations 10 - 100kW \$60*
 Installations 100 - 1000kW \$120*
 Installations > 1MW \$1200*

Processed by / date:
 Date Received:

ENL Processing

*GST Exclusive



172 Carnarvon Street, Gisborne,
4010
PO Box 1048, Gisborne, 4040

Ph (06) 869 0700
Fax (06) 867 8563

Distributed Generation Technical Form

Note: This is **not** an application for electricity.
Allow five working days (from receipt of the completed form by Eastland Network) for processing for a standard application. Applications are valid for a period of **six months** from the date of approval.

	AFS
	Reference

File Reference

Distributed Generator details (per generator):

Unit Designation (e.g. G1):	
Nominal KVA rating:	
Synchronous / Asynchronous:	
Primary Energy Source:	
Prime Mover Description:	
Nominal Generator Voltage:	
Rated Terminal Voltage:	

Terminal Voltage Range:	
Turbine / Generator Inertia Constant:	
Active Aux. Load at rated Power:	
Reactive Aux. Load at Rated Power:	
Does Aux. Load Trip with Generator:	
Short Circuit Ratio (Synchronous):	

Synchronous Machine Unsaturated Impedance (in per unit, on generator base)

Armature or Stator Resistance (R_a):	
Direct Axis Synchronous Reactance (X_d):	
Quadrature Axis Synchronous Reactance:	
Direct Axis Transient Reactance (X'_d):	
Leakage Reactance (X_l):	
Quadrature Axis Transient Reactance for RR Machines (X'_{q}):	
Direct Axis Sub-Transient Reactance (X''_d):	
Quadrature Axis Transient Reactance for RR Machines (X''_{q}):	
Direct Axis Transient Open Circuit Time Constant (T_{do}):	

Negative Sequence Reactance (X_2):	
Zero Sequence Reactance (X_0):	
Earthing Resistance (R_e):	
Earthing Reactance (X_e):	
Earthing Transformer Ratio:	
Quadrature Axis Transient Time Constant for Round Rotor Machines (τ_{q0}):	
Direct Axis Sub-Transient Open Circuit Time Constant (T_{d0}):	
Quadrature Axis Sub-Transient Open Circuit Time Constant (T_{q0}):	
Saturated Sub-Transient Reactance ($X''_{d sat}$):	

Asynchronous Machines:

Attach detailed functional description	
Reactive Power Range (kVAr)	

Current Ratio on Excitation (p.u.):	
Pole Pair Number	

Asynchronous Machine Impedances (In per unit on generator MVA Base):

Stator Resistance (R_1)	
Stator Leakage Reactance (X_1)	
Magnetising Reactance (X_m)	

Rotor Resistance (R_2)	
Rotor Leakage reactance (X_2)	

Power Factor Correction Capacitors:

Capacitor Total (kVAr):	
Capacitor Step Sizes:	

Capacitor Dielectric Losses (kW):	
-----------------------------------	--

Reactive Power and Voltage Control Systems:

Attach detailed description:	[]
------------------------------	-----

Settings and parameters:	[]
--------------------------	-----

Governor or Frequency Control Systems:

Attach detailed description: []

Settings and parameters: []

- Attach single line diagram showing CB's, Disconnectors, VT's, CT's, Capacitors, Transformers.

Connection Circuit Breakers (for each CB):

Equipment Label (eg. CB1)	
Rated Voltage:	

Nominal Current Rating:	
Short Circuit Rating (3 - Second)	

Network Connection Disconnectors:

Equipment Label (eg. CB1)	
Rated Voltage:	

Nominal Current Rating:	
Short Circuit Rating (3 - Second)	

Protection Settings:

Attach Single Line Diagram showing protection system []

List Protective Devices and Settings: []

Restrictions:

Attach details of any special islanding, protection, or synchronising requirements []

Generator Transformer General Details:

Nominal Voltage Ratio including any tertiary windings:	
Number of Windings per Phase:	
Rating of HV Winding:	

Rating of LV Winding:	
Rating of any Tertiary Windings:	
Vector Group:	
Iron Losses:	

Generator Transformer Resistance and Reactance:

Positive Sequence Resistance (HV to LV):	
Positive Sequence Reactance (HV to LV):	
Zero Sequence Resistance (HV to LV):	

Zero Sequence Reactance (HV to LV):	
Earthing Resistance:	
Earthing Reactance:	

Generator Transformer Tap Changer:

Attach description of Tap Changer:	[]
Which Winding is Tapped (HV or LV):	
Step Size (%)	

Number of Taps:	
High to Low Voltage Range (HI% to LO%)	
No. and Voltage of Nominal Tap Position:	

HV Lines and Cables:

Name and Conductor Type:	
Conductor Size:	
Length (km):	
Positive Sequence Resistance (Ohm/km):	
Positive Sequence Reactance (Ohm/km):	

Zero Sequence Resistance (Ohm/km):	
Zero Sequence Reactance (Ohm/km):	
Capacitance (nF/km):	
Attach Route Drawing	[]

Operational Data:

Attach Details of any Low Load Restrictions	
Cold Start Time to achieve Minimum Load (All Plant Types)	
Warm Start Time to achieve Minimum Load (Thermal Plant)	

Hot Start Time to achieve Minimum Load (Thermal Plant)	
Typical time from Cold Start to Maximum Load (All Plant Types)	
Typical Power Ramping Rate from minimum Load to maximum Load:	

Operational Profiles:

Attach Estimated Generation / Demand Profile (in enough detail to enable identification of all generation scenarios): []



172 Carnarvon Street, Gisborne,
4010
PO Box 1048, Gisborne, 4040

Ph (06) 869 0700
Fax (06) 867 8563

Distributed Generation Final Application Form > 10kW

Note: This is **not** an application for electricity.
Allow five working days (from receipt of the completed form by Eastland Network) for processing for a standard application. Applications are valid for a period of **six months** from the date of approval.

Applicant Contact Details

Surname	<input type="text"/>	House No.	<input type="text"/>	or Rapid No.	<input type="text"/>
First name (s)	<input type="text"/>	Address	<input type="text"/>		
Business name	<input type="text"/>	Suburb	<input type="text"/>		
Phone (H)	<input type="text"/>	City/Town	<input type="text"/>		
Phone (W)	<input type="text"/>	Post-code	<input type="text"/>		
Fax	<input type="text"/>				
Email	<input type="text"/>	AFS no. of initial application	<input type="text"/>		

Please attach confirmation that our requirements will be met (Attach supporting documentation as necessary).

- Safety Requirements
- Technical Requirements
- Operational Requirements
- Commercial Requirements

Confirmation that external regulatory requirements such as resource, planning or building consents will be met (Attach supporting documentation as necessary).

- Evidence showing external regulatory requirements have been met

Grid Operator Requirements

- Evidence showing grid operator requirements have been met

A certificate of Compliance certifying that the generation installation is electrically safe. This certificate must be signed off by both the electrical worker who installed the generation and a person who is a registered electrical inspector under part 9 of the Electricity Act 1992 AND who is competent with distributed generation.

- Attached completed Certificate of Compliance

Details of energy retailer who will buy the energy generated

Company: _____

- Attached copy of energy purchase agreement

Details of electrical worker who will connect the generation

Person: _____

Registration: _____

Declaration:

By submitting this inquiry I declare all of the above information and any attached information true and correct. I also acknowledge Eastland Network's full and unlimited right to disconnect our generation should any part of this application prove to be false or fraudulent.

Applicant signature

Date

 / /

Post the completed application form to PO Box 1048 Gisborne or deliver to 172 Carnarvon St, Gisborne. No Payment is required

Appendix A

Schedule 6.2
Regulated terms for connection of distributed generation

cl 6.6

Contents

General

- 1 Contents of this Schedule
- 2 Interpretation
- 3 General obligations

Meters

- 4 Installation of meters and access to metering information

Access

- 5 Right of distributor to access distributed generator's premises
- 6 Process if distributor wants to access distributed generator's premises
- 7 Distributor must not interfere with distributed generator's equipment
- 8 Distributed generator must not interfere with, and must protect, distributor's equipment
- 9 Obligation to notify if interference with distributor's equipment or theft of electricity is discovered

Interruptions and disconnections

- 10 General obligations relating to interruptions
- 11 Circumstances allowing distributor to temporarily disconnect distributed generation
- 12 Obligations if distributed generation temporarily disconnected by distributor
- 13 Adverse operating effects
- 14 Interruptions by distributed generator
- 15 Permanent disconnections

Confidentiality

- 16 General obligations relating to confidentiality
- 17 When confidential information can be disclosed
- 18 Disclosures by employees, agents, etc

Pricing

- 19 Pricing principles

Liability

- 20 General obligations relating to liability
- 21 Exceptions to general obligations relating to liability
- 22 Limits on liability
- 23 Liability clauses do not apply to fraud, wilful breach, and breach of confidentiality
- 24 Indemnity
- 25 Force majeure

General

1 Contents of this Schedule

This Schedule sets out the **regulated terms** for connection of **distributed generation** that apply to the connection of **distributed generation** that is connected in accordance with clause 6.6 and Schedule 6.1.

Compare: SR 2007/219 clause 1 Schedule 2

2 Interpretation

These **regulated terms** must be interpreted—

- (a) in light of the purpose of Part 6 of this Code; and
- (b) so as to give business efficacy to the relationship between the **distributor** and the **distributed generator** created by Part 6 of this Code.

Compare: SR 2007/219 clause 2 Schedule 2

3 General obligations

- (1) A **distributor** and a **distributed generator** must perform all obligations under these **regulated terms** in accordance with **connection and operation standards** (where applicable).
- (2) The **distributor** and the **distributed generator** must each **construct**, interconnect, operate, test, and **maintain** their respective equipment in accordance with—
 - (a) these **regulated terms**; and
 - (b) **connection and operation standards** (where applicable); and
 - (c) this Code.
- (3) The **distributed generator** must, subject to subclause (2), **construct**, interconnect, operate, test, and **maintain** its **distributed generation** in accordance with—
 - (a) **reasonable and prudent operating practice**; and
 - (b) the applicable manufacturer's instructions and recommendations.
- (4) The **distributor** and **distributed generator** must each be fully responsible for the respective facilities they own or operate.
- (5) The **distributor** and **distributed generator** must each ensure that their respective facilities adequately protect each other's equipment, personnel, and other persons and their property, from damage and injury.
- (6) The **distributed generator** must comply with any conditions specified by the **distributor** under clause 18 of Schedule 6.1 as conditions of the connection (or, to the extent that those conditions were the subject of a dispute under clause 20(3) of that Schedule, or of negotiation during the period for

negotiation of the connection contract, the conditions or other measures as finally resolved or negotiated).

Compare: SR 2007/219 clause 3 Schedule 2

Meters

4 Installation of meters and access to metering information

(1) The **distributed generator** must ensure that 1 or more **metering installations** are installed that—

- (a) separately record any inflows of **electricity** from the **distribution network** and any **electricity** injected into the **distribution network**; and
- (b) fully comply with this Code.

(2) The **distributed generator** must provide to the **distributor**, at the **distributor's** request, the interval data and cumulative data recorded by those **metering installations**.

(3) If the **meter** is part of a **category 2 metering installation**, or a **category 3 metering installation**, or a **category 4 metering installation**, or a **category 5 metering installation**, or a **category 6 metering installation**, the **distributor** may require that **reactive** metering be installed.

Clause 4(3): substituted, on 1 December 2011, by clause 5 of the Electricity Industry Participation Code (Distributor Use-of-System Agreements and Distributor Tariffs) Amendment 2011.

(4) The **distributor's** requirements in respect of metering measurement and accuracy must be consistent with this Code.

Compare: SR 2007/219 clause 4 Schedule 2

Access

5 Right of distributor to access distributed generator's premises

(1) The **distributed generator** must provide the **distributor**, or a person appointed by the **distributor**, with safe and unobstructed access onto the **distributed generator's** premises at all reasonable times—

- (a) for the purpose of installing, testing, inspecting, maintaining, repairing, replacing, operating, reading, or removing any of the **distributor's** equipment and for any other purpose related to these **regulated terms**; and
- (b) for the purpose of verifying **metering information**; and
- (c) for the purpose of ascertaining the cause of any interference to the quality of delivery services being provided by the **distributor** to the **distributed generator**; and

- (d) for the purpose of protecting, or preventing danger or damage to, persons or property; and
 - (e) for the purposes of reconnecting or disconnecting the **distributed generation**; and
 - (f) for any other purpose relevant to either or both of—
 - (i) the **distributor** connecting **distributed generation** in accordance with **connection and operation standards**; and
 - (ii) maintaining the integrity of the **distribution network**.
- (2) The rights of access conferred by these **regulated terms** are in addition to any right of access the **distributor** may have under a statute or regulation or contract.
- Compare: SR 2007/219 clause 5 Schedule 2

6 Process if distributor wants to access distributed generator's premises

- (1) The **distributor** must exercise its right of access under clause 5 by,—
- (a) wherever practicable, giving to the **distributed generator** reasonable notice of its intention and of the purpose for which it will exercise its right of access; and
 - (b) causing as little inconvenience as practicable to the **distributed generator** in carrying out its work; and
 - (c) observing **reasonable and prudent operating practice** at all times; and
 - (d) observing any reasonable security or site safety requirements that are made known to the **distributor** by the **distributed generator**.
- (2) However, the **distributor** may take all reasonable steps to gain immediate access where it reasonably believes there is immediate danger to persons or property.
- Compare: SR 2007/219 clause 6 Schedule 2

7 Distributor must not interfere with distributed generator's equipment

- (1) The **distributor** must not interfere with the **distributed generator's** equipment without the prior written consent of the **distributed generator**.
- (2) However, if emergency action has to be taken to protect the health and safety of persons, or to prevent damage to property, the **distributor**—
- (a) may interfere with the **distributed generator's** equipment without prior written consent; and
 - (b) must, as soon as practicable, inform the **distributed generator** of the occurrence and circumstances involved.

Compare: SR 2007/219 clause 7 Schedule 2

8 Distributed generator must not interfere with, and must protect, distributor's equipment

- (1) A **distributed generator** must not interfere with the **distributor's** equipment without the prior written consent of the **distributor**.
- (2) However, if emergency action has to be taken to protect the health and safety of persons, or to prevent damage to property, the **distributed generator**—
 - (a) may interfere with the **distributor's** equipment without prior written consent; and
 - (b) must, as soon as practicable, inform the **distributor** of the occurrence and circumstances involved.
- (3) The **distributed generator** must protect the **distributor's** equipment against interference and damage.

Compare: SR 2007/219 clause 8 Schedule 2

9 Obligation to notify if interference with distributor's equipment or theft of electricity is discovered

- (1) If the **distributor** or the **distributed generator** discover evidence of interference with the **distributor's** equipment, or evidence of theft of **electricity**, the party discovering the interference or evidence must notify the other party within 24 hours.
- (2) If interference with the **distributor's** equipment at the **distributed generator's** installation is suspected, the **distributor** may itself carry out an investigation and present the findings to the **distributed generator** within a reasonable period.
- (3) The cost of the investigation—
 - (a) must be borne by the **distributed generator** if it is discovered that interference by the **distributed generator**, or by its subcontractors, agents, or invitees, has occurred, or if the interference has been by a third party, and the **distributed generator** has failed to provide reasonable protection against interference to the **distributor's** equipment; and
 - (b) must be borne by the **distributor** in any other case.

Compare: SR 2007/219 clause 9 Schedule 2

Interruptions and disconnections

10 General obligation relating to interruptions

The **distributor** must make reasonable endeavours to ensure that the connection of the **distributed generation** is not interrupted.

Compare: SR 2007/219 clause 10 Schedule 2

11 Circumstances allowing distributor to temporarily disconnect distributed generation

Despite clause 10, a **distributor** may interrupt the connection service, or curtail either the operation or output of the generation, or both, and may temporarily disconnect the **distributed generation** in any of the following cases:

- (a) in accordance with the **distributor's congestion management policy**;
- (b) if reasonably necessary for planned **maintenance, construction, and repairs** on the **distribution network**;
- (c) for the purpose of protecting, or preventing danger or damage to, persons or property;
- (d) if the **distributed generator** fails to allow the **distributor** access as required by clause 5;
- (e) if the **distributed generator** modifies its **distributed generation**, without prior authorisation from the **distributor**, in such a way that it has a material effect on the **distributed generator's injection of electricity** into the **network**;
- (f) in accordance with clause 13 (adverse operating effects).

Compare: SR 2007/219 clause 11 Schedule 2

12 Obligations if distributed generation temporarily disconnected by distributor

- (1) The **distributor** must make reasonable endeavours to—
 - (a) notify the **distributed generator** before an interruption under clause 11; and
 - (b) co-ordinate with the **distributed generator** to minimise the impact of the interruption.
- (2) The **distributor** and the **distributed generator** must co-operate to restore the **distribution network** and the **distributed generation** to a normal operating state as soon as is reasonably practicable following temporary disconnection.
- (3) In the case of a forced outage, the **distributor** must, subject to the need to restore the **distribution network**, make reasonable endeavours to restore service to the **distributed generator** and to advise the **distributed generator** of the expected duration of the outage.

Compare: SR 2007/219 clause 12 Schedule 2

13 Adverse operating effects

- (1) A **distributor** must notify a **distributed generator** as soon as is reasonably practicable if it reasonably considers that operation of the **distributed generation** may—

- (a) adversely affect the service provided to other **distribution network** customers; or
 - (b) cause damage to the **distribution network** or other facilities; or
 - (c) present a hazard to a person.
- (2) If, after receiving that notice, the **distributed generator** fails to remedy the adverse operating effect within a reasonable time, the **distributor** may disconnect the generation by giving reasonable notice (or without notice when reasonably necessary in the event of an emergency or hazardous situation).

Compare: SR 2007/219 clause 13 Schedule 2

14 Interruptions by distributed generator

- (1) This clause applies to any connected **distributed generation** above 10 kW in total.
- (2) The **distributed generator** must notify the **distributor** of any **planned outages** and must make reasonable endeavours to advise the **distributor** of an event that affects **network** operations.
- (3) The **distributed generator** must make reasonable endeavours to notify the **distributor** of the interruption and to co-ordinate with the **distributor** to minimise the impact of the interruption.

Compare: SR 2007/219 clause 14 Schedule 2

15 Permanent disconnections

- (1) Despite clause 10, the **distributor** may permanently disconnect **distributed generation** in the following circumstances:
- (a) on receipt of a request from a **distributed generator**:
 - (b) without notice, if a **distributed generator** has failed to comply with either the connection or safety requirements of the **distributor** and there is an ongoing risk to persons or property:
 - (c) without notice, on receipt of the **registry** inactive status with reason “De-energised—ready for decommissioning” if the trader has de-energised a site, attempted to recover the **meters**, and updated the **registry** to that status:
 - (d) on at least 10 **business days'** notice of intention to disconnect, if—
 - (i) the **distributed generator** has not injected **electricity** into the **network** at any time in the preceding 12 months; and
 - (ii) the **distributor** has not been notified by the **distributed generator** of reasons for the non-injection; and

- (iii) the **distributor** has reasonable grounds for believing that the **distributed generator** has ceased to operate the **distributed generation**.
- (2) If the **point of connection** is to remain as a consumption point, the **distributed generator** must (if applicable) cancel any seller contracts and ensure the trader decommissions the embedded generation network service point with the **reconciliation manager**. The site must revert to a standard **ICP**.
- (3) If the **point of connection** is to be disestablished in its entirety, a permanent disconnection must be performed by means of isolation of generation by removal of all electrical connections to **distributor's lines**. The **distributor** must notify the **distributed generator** within 2 **business days** of the work having been completed. If applicable, the **distributed generator** must cancel any seller contracts, ensure that the **retailer** decommissions the embedded generation network service point with the **reconciliation manager**, and that the **retailer** arranges decommissioning of the **ICP**.
- (4) Once having the status of decommissioned on the **registry**, the **ICP** must not be used again. The process for new connections in Part 1 or 2, as the case may be, of Schedule 6.1 must be followed if generation is to be connected again at this **point of connection**.
- (5) Both the **distributor** and the **distributed generator** (through notification to a **retailer** where selling to a **retailer**) must ensure that the **registry** is correctly updated throughout this process in accordance with this Code.

Compare: SR 2007/219 clause 15 Schedule 2

Confidentiality

16 General obligations relating to confidentiality

- (1) Each party must preserve the confidentiality of **confidential information**, and must not directly or indirectly reveal, report, publish, transfer, or disclose the existence of any **confidential information**, except as permitted in subclause (2).
- (2) Each party must only use **confidential information** for the purposes expressly permitted by these **regulated terms**.

Compare: SR 2007/219 clause 17 Schedule 2

17 When confidential information can be disclosed

Either party may disclose **confidential information** in any of the following circumstances:

- (a) if the **distributed generator** and **distributor** agree in writing to the disclosure of information:

- (b) if disclosure is expressly provided for under these **regulated terms**:
- (c) if, at the time of receipt by the party, the **confidential information** is in the public domain or if, after the time of receipt by either party, the **confidential information** enters the public domain (except where it does so as a result of a breach by either party of its obligations under this clause or a breach by any other person of that person's obligation of confidence):
- (d) if either party is required to disclose **confidential information** by—
 - (i) a statutory or regulatory obligation, body, or authority; or
 - (ii) a judicial or arbitration process; or
 - (iii) the regulations of a stock exchange upon which the share capital of either party is from time to time listed or dealt in; or
 - (iv) this Code:
- (e) if the **confidential information** is released to the officers, employees, directors, agents, or advisors of the party, provided that—
 - (i) the information is disseminated only on a need-to-know basis; and
 - (ii) recipients of the **confidential information** have been made fully aware of the party's obligations of confidence in relation to the information; and
 - (iii) any copies of the information clearly identify it as **confidential information**:
- (f) if the **confidential information** is released to a bona fide potential purchaser of the business or any part of the business of a party, subject to that bona fide potential purchaser having signed a confidentiality agreement enforceable by the other party in a form approved by that other party, and that approval may not be unreasonably withheld.

Compare: SR 2007/219 clause 18 Schedule 2

18 Disclosures by employees, agents, etc

To avoid doubt, a party is responsible for any unauthorised disclosure of **confidential information** made by that party's officers, employees, directors, agents, or advisors.

Compare: SR 2007/219 clause 19 Schedule 2

Pricing

19 Pricing principles

Connection charges that are payable by a **distributed generator** must be determined in accordance with the pricing principles set out in Schedule 6.4.

Compare: SR 2007/219 clause 20 Schedule 2

Liability

20 General obligations relating to liability

- (1) If a **distributor** or **distributed generator** breaches any of the **regulated terms** (whether by act or omission), that party is liable to the other.
- (2) The **distributed generator's** and the **distributor's** liability to each other is limited to damages for any direct loss caused by that breach.
- (3) This clause does not limit the liability of either party to pay all charges and other amounts due under Part 6 of this Code or the **regulated terms**.

Compare: SR 2007/219 clause 21 Schedule 2

21 Exceptions to obligations relating to liability

- (1) Neither the **distributor** nor a **distributed generator**, nor any of its officers, employees, directors, agents, or advisors, are in any circumstances liable to the other party for—
 - (a) any indirect loss, consequential loss (including, but not limited to, incidental or special damages), loss of profit, loss of revenue (except any liability under clause 20(3)), loss of use, loss of opportunity, loss of contract, or loss of goodwill; or
 - (b) any loss resulting from the liability of the other party to another person; or
 - (c) any loss or damage incurred by the other party if, and to the extent that, this results from any breach of the **regulated terms** or any negligent action.
- (2) The **distributor** is not liable, except to the extent caused or contributed to by the **distributor** in circumstances where the **distributor** was not acting in accordance with Part 6 of this Code (including these **regulated terms**), for—
 - (a) any momentary fluctuations in the voltage or frequency of **electricity** conveyed to or from the **distributed generation's point of connection** or nonconformity with harmonic voltage and current levels; or
 - (b) any failure to convey **electricity** to the extent that—

- (i) the failure arises from any act or omission of the **distributed generator** or other person, excluding the **distributor** and its officers, employees, directors, agents, or advisors; or
 - (ii) the failure arises from—
 - (A) a failure to convey or a reduction of **injection** or supply of **electricity** into the **distribution network**; or
 - (B) an interruption in the conveyance of **electricity** in the **network**, at the request of the **system operator** or under a nationally or regionally co-ordinated response to an **electricity** shortage; or
 - (iii) the failure arises from any defect or abnormal conditions in or about the **distributed generator's** premises; or
 - (iv) the **distributor** was taking any action in accordance with Part 6 of this Code or the **regulated terms**; or
 - (v) the **distributor** was prevented from making necessary repairs (for example, by police at an accident scene).
- (3) The **distributed generator** is not liable for—
- (a) a failure to perform an obligation under these **regulated terms** caused by the **distributor's** failure to comply with the obligation; or
 - (b) a failure to perform an obligation under these **regulated terms** arising from any defect or abnormal conditions in the **distribution network**.

Compare: SR 2007/219 clause 22 Schedule 2

22 Limits on liability

The maximum total liability of each party, as a result of a breach of the **regulated terms**, must not in any circumstances exceed, in respect of a single event or series of events arising from the same event or circumstance, the lesser of—

- (a) the direct damage suffered or the maximum total liability that the party bringing the claim against the other party has at the time that the event (or, in the case of a series of related events, the first of such events) giving rise to the liability occurred; or
- (b) \$1,000 per kW of installed **capacity** up to a maximum of \$5 million.

Compare: SR 2007/219 clause 23 Schedule 2

23 Liability clauses do not apply to fraud, wilful breach, and breach of confidentiality

The exceptions in clause 21, and the limits on liability in clause 22, do not apply—

- (a) if a **distributor** or **distributed generator**, or any of its officers, employees, directors, agents, or advisors, has acted fraudulently or wilfully in breach of these **regulated terms**; or
- (b) to a breach of confidentiality under clause 16 by either party.

Compare: SR 2007/219 clause 24 Schedule 2

24 Indemnity

- (1) Each party (the **indemnifying party**) must indemnify the other for damages claimed by third parties to the extent that the loss is caused by a breach of these **regulated terms** by the **indemnifying party**, where the loss is materially caused by an action or omission of the **indemnifying party**.
- (2) The indemnity in this clause is subject to the limits on liability specified in clauses 20 to 23.

Compare: SR 2007/219 clause 25 Schedule 2

25 Force majeure

- (1) A failure by either party to comply with or observe any provisions of these **regulated terms** (other than payment of any amount due) does not give rise to any cause of action or liability based on default of the provision if—
 - (a) the failure is caused by—
 - (i) an event or circumstance occasioned by, or in consequence of, an act of God, being an event or circumstance—
 - (A) due to natural causes, directly or indirectly and exclusively without human intervention; and
 - (B) that could not reasonably have been foreseen or, if foreseen, could not reasonably have been resisted; or
 - (ii) a strike, lockout, other industrial disturbance, act of public enemy, war, blockade, insurrection, riot, epidemic, aircraft, or civil disturbance; or
 - (iii) the binding order or requirement of a Court, government, **local authority**, the **Rulings Panel**, or the **Authority**, and the failure is not within the reasonable control of the affected party; or

- (iv) the partial or entire failure of **supply** or availability of **electricity** to the **distribution network**; or
 - (v) any other event or circumstance beyond the control of the party invoking this clause; and
 - (b) the party could not have prevented such failure by the exercise of the degree of skill, diligence, prudence, and foresight that would reasonably and ordinarily be expected from a skilled and experienced **distributor** or **distributed generator** engaged in the same type of undertaking under the same or similar circumstances in New Zealand at the time.
- (2) If a party becomes aware of a prospect of a forthcoming **force majeure event**, it must notify the other party as soon as is reasonably practicable of the particulars of which it is aware.
- (3) If a party invokes this clause, it must as soon as is reasonably practicable notify the other party that it is invoking this clause and of the full particulars of the **force majeure event** relied on.
- (4) The party invoking this clause must—
 - (a) use all reasonable endeavours to overcome or avoid the **force majeure event**; and
 - (b) use all reasonable endeavours to mitigate the effects or the consequences of the **force majeure event**; and
 - (c) consult with the other party on the performance of the obligations referred to in paragraphs (a) and (b).
- (5) Nothing in subclause (4) requires a party to settle a strike, lockout, or other industrial disturbance by acceding, against its judgement, to the demands of opposing parties.

Compare: SR 2007/219 clause 26 Schedule 2