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1 general

1.1 Scope

This Policy follows the requirements of the *Electricity Industry Participation Code Part 6, Connection of Distributed Generation*, and sets out the process and requirements for connection to the Powerco Network and operation of:

- Distributed Generation of 10kW or less in total; and
- Distributed Generation over 10kW.

1.2 Introduction

Distributed Generation (herein after referred to as DG and embedded generation), is generation from any generating plant that is capable of exporting electricity into Powerco's Network. This type of generation can range from small photovoltaic installations at residential premises to large wind, hydro and gas-fuelled generating stations, and may be connected directly to the network, or via a customer's internal switchboard.

Powerco promotes the safety of staff and contractors who may be working on its networks, and the general public, and also ensures the integrity of its networks at all times. Accordingly, Powerco must know where all DG is located, must note installations on SCADA and schematic diagrams, and must have the ability to isolate the generating plant from the relevant network from time to time for operational and maintenance purposes.

This policy does **NOT** apply to any generating plant that is **always** operated in isolation from Powerco's Network – e.g. independent generation for remote locations, and standby generators, which have a changeover arrangement to prevent operation in parallel with Powerco's Networks.

1.3 Interpretation

In this policy the following meanings apply:-

ACOT	"Avoided Cost Of Transmission" - The amount equal to the actual reduction in Transpower's annual charges payable by Powerco to Transpower under Transpower's "Transmission Pricing Methodology" (which may change from time to time) arising as a direct result of the Generator being connected to Powerco's Network and reflects the benefits to Powerco of having the Generator connected to the Distribution Network.
Business Day	means any day of the week other than a Saturday, Sunday, or a public holiday within the meaning of the Holidays Act 2003.
Capacity Measurement Period	refers to the twelve month period 1 September – 31 August in which demand is measured to set the transmission pricing commencing 1 April the following year
Customer	the person who owns or operates DG and wishes to connect the DG to the Network
Clearing Manager	The service provider responsible for monitoring prudential security requirements and invoicing and settling electricity and ancillary service payments.
Connection Charges	means the cost of connecting distributed generation to Powerco's network (i.e. the capital cost of connection). Normal line charges and any offsets from having the generation connected will be discussed during the connection process.
DG or Distributed	means distributed generation being equipment used, or proposed to be used,

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Generation	for generating electricity that is: <ul style="list-style-type: none"> connected, or proposed to be connected, to the Network or to a consumer installation which is connected to the Network; and is capable of injecting electricity into the Network.
DG Regulations	means the Electricity Industry Participation Code Part 6 Connection of Distributed Generation
Generator	A company that generates electricity connected to the grid or a local network.
Network	means the relevant Powerco distribution network.
Point of Isolation	refers to the physical location of a device (e.g., a switch, fuse or link) which enables de-energisation of the connection from the Network.
Powerco	means Powerco Limited
Power Factor	Is a method of measuring the efficiency of a given load.
Regulated Terms	means the Regulated Terms for Connection of Distributed Generation set out in Schedule 6.2 to the EIPC, Part 6, a copy of which is attached as Schedule D to this Policy.
Retailer	means the Customer's electricity retailer.
Transpower Connection Charge	The Customer's allocation of the Distributor's Annual Connection Charge for the GXP.
Transpower Interconnection Charge	The Customer's allocation of the Distributor's Annual Interconnection Charge for the GXP.
Transpower Interconnection Rate	the Interconnection Rate (\$/kW) used by Transpower to calculate the Distributor's Annual Interconnection Charge at the GXP.

1.4 Copyright

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1.5 Document Owner

Contact Person: Technical Service Manager

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Schedule A**1.6 Powerco's Connection and Operation Standards**

Powerco's Connection and Operation Standards include:

- (a) 393S089 *Distributed Generation Up To 10kW Connection Standard*
- (b) 393S012 *Distributed Generation Over 10kW Connection Standard*
- (c) 392S002 *Health And Safety Requirements For Network Contractors*
- (d) 393S007 *Powerco Electricity Network Connection Standard*
- (e) Certain industry rules and standards
- (f) A congestion management policy
- (g) DG protection systems requirements

These standards are available on request from Powerco at: *DistributedGeneration@powerco.co.nz*

1.7 Congestion Management Policy

This Congestion Management Policy is an integral part of this document, and sets out the conditions under which Distributed Generation that is connected to any of Powerco's Networks, can be curtailed or interrupted from time to time to ensure that Powerco's other Connection and Operation Standards are met.

Powerco may interrupt the connection of any Distributed Generation to the Network, or curtail either the operation or output of Distributed Generation, or both, and may temporarily disconnect the Distributed Generation from the Network in any one or more of the following cases:

- (a) if Powerco considers it reasonably necessary for planned maintenance, construction or repairs on the Network;
- (b) in an emergency or for the purpose of protecting, or preventing danger or damage to, persons or property;
- (c) if the Customer modifies its Distributed Generation, without obtaining prior authorisation from Powerco, in such a way that the modification has a material effect on the injection of electricity from the Distributed Generation into the Network; or
- (d) as a consequence of obligations that may be imposed on Powerco which, in Powerco's opinion, could affect the operation of the Distributed Generation for example, obligations imposed by Transpower New Zealand Limited both as owner of the National Grid and as the System Operator, obligations to an electricity retailer, or obligations arising in respect of other distribution networks, or imposed by law including the Electricity Industry Participation Code 2010.
- (e) in the case of a prevalence or saturation of DG installations on any part of Powerco's Network leading to operational issues including (but not restricted to) excessive voltage or the compromising of protection equipment or settings.

Powerco strongly recommends that prospective generation operators review their internal networks with regard to minimising voltage drop between the point of connection and the generator.

1.8 Distributed Generation Protection Systems Requirements

The protection systems associated with Distributed Generation plant must be co-ordinated with the other protection systems associated with the Network.

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The setting or operating limits of any protection controlling a circuit breaker, or operating values of any automatic switching device at any point of connection between the Distributed Generation and the Network, shall be agreed in writing, between Powerco and the relevant generator, during the process for approval and connection of the Distributed Generation. These protection settings or operating values must not be changed without the express written agreement of Powerco. Operators of DG must ensure that voltage levels of injected energy to the grid remain within the requirements of the *Electricity (Safety) Regulations*.

1.9 Powerco's Health and Safety Standards

1.9.1 General

Powerco promotes the safety of its staff and contractors who may be working on its Networks from time to time and that of the general public, and also ensures the integrity of its Networks at all times.

1.9.2 Contractors

All contractors working on the Network, or involved in the connection or disconnection of Distributed Generation to or from Powerco's Network, must be Powerco Approved Contractors licensed to perform such work(s), and must adhere to Powerco Standard 392S002 *Health and Safety Requirements for Network Contractors*.

1.10 Industry Rules and Standards

In constructing, operating and maintaining the Distributed Generation the Customer, any contractors working on the Network, and any equipment to be connected must comply with the requirements of the following industry standards as they may be amended and reissued from time to time:

- Electricity (Safety) Regulations 2010 and subsequent amendments
- Electricity Industry Participation Code 2010 including all relevant Codes of Practice and subsequent amendments.
- Safety Manual - Electricity Industry (SM-EI).
- NZECP 35:1993 Power Systems Earthing
- AS/NZS 3000:2007 Aust/NZ Wiring Rules (excluding interlocking requirements).
- AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines
- AS/NZ4777 Parts 1, 2 & 3 Grid Connection of Energy Systems via Inverters.

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Schedule B**1.11 Connection of Distributed Generation up to 10kW****1.11.1 Interface with the Retailer**

- (a) The Customer should discuss the options for the sale of the electricity to be produced by the DG with its Retailer. The Retailer will usually enter into a contract for the purchase of the electricity once the DG has been approved for connection to the Network.
- (b) Each ICP installation control point must have only one Retailer for importing and exporting electricity.
- (c) The billing and data requirements relating to any connection of DG to the Network will be dealt with in the Customer's contract with the Retailer.

1.11.2 Metering

A DG installation must have a meter which records import and export electricity flows separately and the meter must comply with the requirements of the Electricity Industry Participation Code 2010, Part 10.

1.11.3 Powerco's Connection and Operation Standards

Powerco's Connection and Operation Standards for the connection of DG to its Networks is set out in Schedule A to this Policy.

1.11.4 Application Fee

An application fee may be charged as specified in the EIPC Part 6.

1.11.5 Application by Customer

- (a) **Application Form:** The Customer must apply under either Part 1 or Part 1A of the Code, using the Application Form set out in Section 2 of this Schedule B. The Customer must include with its application all the information and supporting documentation that is specified by Powerco on the Application Form.
- (b) **Application Complete:** Within 2 Business Days of the date it receives a Part 1A application from the Customer, Powerco will provide written notification to the Customer stating whether the application is complete. Within 5 Business Days of the date it receives a Part 1 application from the Customer, Powerco will provide written notification to the Customer stating whether the application is complete.
- (c) **Approval or Declined:** Within 5 Business Days of the date that it receives a completed Part 1A application Form and required documentation, Powerco will give written notification to the Customer stating whether the application is approved or declined. Within 30 Business Days of the date that it receives a completed Part 1 application Form and required documentation, Powerco will give written notification to the Customer stating whether the application is approved or declined.

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- (d) **Application Declined:** If Powerco declines the application, the notice to the Customer stating that the application is declined will be accompanied by:
 - (i) detailed reasons why the application has been declined; and if the Customer makes a new application the steps that the Customer can take to ensure connection of the DG; and
 - (ii) a copy of the Dispute Resolution Process set out in Schedule E to this Policy.
- (e) **Extension Time:** Powerco may give written notice to the Customer seeking an extension of the 30 Business Day period referred to in paragraph (c) above for considering whether the application is approved or declined. Powerco will specify the reasons for seeking the extension in the notice. The Customer can grant Powerco an extension of up to 20 Business Days. The Customer must not unreasonably withhold its consent to Powerco's request for an extension of time.

1.11.6 Connection

- (a) **Customer to proceed with Connection:** Within 10 Business Days of receipt of the notice from Powerco that the application is approved the Customer must provide written notice to Powerco confirming whether the Customer intends to proceed with the connection of the DG and confirming the details of the DG to be connected.
- (b) The Customer may request Powerco to agree a longer period than 10 Business Days by which the Customer must give this notice.
- (c) If the Customer does not give this notice within the 10 Business Day period or such other agreed period then Powerco is no longer required to proceed with the application to connect the DG.
- (d) **Connection Agreement:** If the Customer gives written notice under paragraph (a) above, that it intends to proceed with the connection of the DG and confirms the details of the DG then, Powerco will agree to connect, as soon as practicable, the DG under the term and conditions set out in the **Regulated Terms**.
- (e) **Customer Initiated Works Process:** All approved DG connection applications shall be recorded against the ICP for that application in the Powerco Customer Initiated Works management system.
- (f) **Inspection and Testing of DG:** The Customer, at its own cost, must test and inspect its DG. The Customer is to give adequate notice to Powerco of the times and place where the testing and inspection is to occur. Powerco may send an approved contractor to observe the testing and inspection of the DG.
- (g) **Report on Testing and Inspection:** When the testing and inspection of the DG is completed the Customer is to provide Powerco with a completed commissioning report as per Schedule B 3.3 or similar declaration of compliance.
- (h) **Certificate by Electrician:** Upon connection of the DG to the Network the Customer must provide Powerco with a Certificate of Compliance from a registered electrician or licensed electrical inspector that the installation complies with the Electricity (Safety) Regulations 2010 and Associated Standards AS/NZS 3000:2007.

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- (i) **Review of Connection Charges:** Powerco will be entitled to review the connection charge not more than once in any 12 month period following the date of the connection of the DG to the Network. Following any review Powerco must provide the Customer with formal notice of any change to the connection charge that is payable. This notice must be given to the Customer at least 3 months before the date that the change is to take effect.

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1.12 Connection Of Distributed Generation Up to 10kW in total
APPLICATION FORM

Name, address and telephone number of the Customer being the owner and operator of the DG:	
The contact details of the installer, including address, telephone number and email address:	
Application fee invoice to:	
Is this a new installation or capacity increase to existing?	
Generation capacity in kW:	
Type of DG (photovoltaic, wind etc.)	
Proposed connection date:	
Technical specifications of Grid Tie equipment: <ul style="list-style-type: none"> ▪ Inverter Make and Model: ▪ Complies with AS4777.1, 2, 3 ? ▪ The number of phases: ▪ The proposed point of connection to the Network e.g., ICP number and street address: ▪ Any battery storage? ▪ Typical load at the proposed point of connection: ▪ Connection voltage – 230V, 415V or 11kV: 	
Application under EIPC Part 6	Part 1 or Part 1A (Delete one)
Energy Retailer for load and generation:	

Continued .../2

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Declaration

[], being the applicant for the connection of the DG referred to in this Application to Powerco’s Distribution Network, certify that the above information is true and correct.

Signed for/by the applicant:

[insert name and position]

[insert date]

For Powerco Use: Network Approval Confirmation		
Application requirements complete: Yes/No		
Application approved to progress to installation and testing: Yes/No		
Signed:		Date:
Network Connection Details		
Zone Substation	Feeder	Distribution Transformer

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1.13 Distributed Generation Plant And Commissioning Report

DISTRIBUTED GENERATION - COMMISSIONING REPORT

Installation tested by:	
Date test completed:	
Loss of network supply auto-isolation test proven:	Yes / No
Auto-isolation disconnection speed Seconds:	
Auto-restoration after specified delay proven:	Yes / No
MEN Earth test results Ohms:	
Protection setting details attach additional details where necessary:	
Electrical inspection to AS/NZS3000:2007 and Electricity (Safety) Regulations 2010 completed Yes / No:	Yes / No
Name of Electrical Inspector:	

Other tests requested by Powerco to be specified:

A Certificate of Compliance (COC) from a registered electrician or licensed electrical inspector that the installation complies with the Electricity (Safety) Regulations 2010, should accompany this report.

Completed report including COC shall be forwarded to Powerco Ltd, Private Bag 2061, New Plymouth or distributedgeneration@powerco.co.nz

=====

Report completed by:

Name:

Address:

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Schedule C**1.14 Connection of Distributed Generation over 10kW****1.14.1 Interface with the Retailer**

- (a) The Customer should discuss the options for the sale of the electricity to be produced by the DG with its Retailer. The Retailer will usually enter into a contract for the purchase of the electricity.
- (b) Each ICP installation control point must have only one Retailer for importing and exporting electricity.
- (c) The billing and data requirements relating to any connection of DG to the Network will be dealt with in the Customer's contract with the Retailer.

1.14.2 Interface with Clearing Manager

Where the customer elects to clear direct to the MARKET as a GENERATOR, the customer must interface with the CLEARING MANAGER as required, and enter into a Use of System Agreement with Powerco or relevant version of Powerco's Connection Contract.

1.14.3 Metering

- (a) A DG installation must have an interval meter which records import and export electricity flows separately and the meter must comply with the requirements of the Electricity Industry Participation Code 2010, Part 10.

1.14.4 Powerco's Connection and Operation Standards

Powerco's Connection and Operation Standards for the connection of DG to its Networks is set out in Schedule A to this Policy.

1.14.5 Connection Charges

The charges payable by the Customer for the connection of the DG to the relevant Network are set out in Schedule F.

1.14.6 Initial Application by Customer

Powerco recommends that consultants are engaged to carry out the initial evaluation when a customer wishes to connect DG to Powerco's Network. Powerco does not provide this service, and the evaluation is at the expense of the Customer.

- (a) **Initial Application:** The Customer must apply to Powerco using the Initial Application Form set out in Section 2 to this Schedule C. The Customer must include all the information and supporting documentation that is specified by Powerco on the Initial Application Form.
- (b) **Application Fee:** At the time the Customer submits its application, Powerco may require the customer to pay the relevant application fee set out below plus GST:

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- For DG of over 10kW but less than 100kW in total: \$500.00
 - For DG of 100kW or above in total, but less than 1MW: \$1,000.00
 - For DG of 1MW and above: \$5,000.00
- (c) **Initial Application Complete:** Powerco will, within 5 Business Days of receiving the Initial Application Form give written notice to the Customer advising whether or not the application is complete.
- (d) **Information to be provided by Powerco:** Within 30 Business Days of the date that it receives the completed Initial Application Form and required documentation, Powerco will provide the following information to the Customer:
- (i) Information about the capacity of the distribution network, including, both the design capacity including fault levels and actual operating levels.
 - (ii) Information about the extent to which the connection and operation of the DG may result in the breach of the relevant standards for safety, voltage, power quality, and reliability of supply to other connected parties.
 - (iii) Information about any measures or conditions including, modifications of the design and operation of the distribution network or the operation of the DG that may be necessary to address the matters in paragraph (d)(i) and (ii) above.
 - (iv) The approximate costs of any network-related measures or conditions, identified under paragraph (d) (iii) and an estimate of time constraints or restrictions that may delay the connection of the DG.
 - (v) Information about any further detailed investigative studies that Powerco considers are necessary to identify any potential adverse effects on the system resulting from the proposed connection of the DG, together with an indication of:

Whether Powerco agrees to the Customer, or a suitably qualified agent of the Customer, undertaking those studies; or
If not, whether Powerco or a recommended consultant could undertake those studies, and if so the reasonably estimated cost of the studies that the Customers would be charged.
 - (vi) Information about any obligations to other parties such as Transpower or under the Electricity Industry Participation Code 2010 that could be imposed on Powerco and whether those obligations could affect the DG.
 - (vii) Any additional information or documents that would assist Powerco in considering the Customer's Initial Application.
 - (viii) Information about the extent to which planned and unplanned outages may adversely affect the operation of the DG.

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- (e) **Customer Request for Further Information:** The Customer may request further information from Powerco such as single line diagrams, equipment ratings, normal switch configurations including fault levels and protection systems relevant to the proposed point of connection of the DG to the relevant Network. Powerco will provide this information to the Customer within 30 Business Days of receipt of the request being received by Powerco.
- (f) **New Information:** If either the Customer or Powerco subsequently becomes aware of new information relevant to the application to connect the DG, it will use reasonable endeavours to provide it to the other party.

1.14.7 Final Application by the Customer

- (a) **Final Application:** The Customer must make a final application within 12 months after receipt of the information from Powerco under paragraph 4.1.5(d) and 4.1.5(e) above if it intends to proceed to connect the DG to Powerco's Network.
- (b) **Final Application Form:** The Customer must make a Final Application by using the Final Application Form set out in Section 3 to this Schedule C. The Customer must include all the information and supporting documentation that is specified by Powerco on the Final Application Form.

This information is to include the results of any investigative studies identified by Powerco as being required to be undertaken by the Customer or its agent in the Initial Application process.

- (c) **Notification by Powerco:** When Powerco receives the Final Application it will use reasonable endeavours to give written notice to:
 - (i) all persons who have made an Initial Application for the connection of DG to the particular part of the Network that Powerco considers would be affected by the connection of the DG that is the subject of the Final Application; and
 - (ii) all Customers who have DG above 10kW in total connected on Regulated Terms to the particular part of the Network that Powerco considers would be affected by the connection of the DG to that part of the Network.
- (d) **Priority of Applications:** If Powerco receives a Final Application for connection to a Network (the first application) and within 10 Business Days of receiving the first application Powerco receives another Final Application (the second application) for connection to part of the Network that Powerco considers would be affected by the DG subject of the first application then:
 - (i) Powerco may consider the two or more Final Applications together as if they were competitive bids to use the same part of the Network; and
 - (ii) must consider the applications in the light of the purpose of the DG Regulations, which is to enable connection of DG where connection is consistent with Powerco's Connection and Operation Standards; and

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- (iii) if a Final Application is declined, Powerco must set out the reasons for its decline in the notice given under this paragraph (e) below and must also set out in that notice the criteria used by Powerco in making any decision under these paragraphs (d)(i) and (ii).

In any other case in which Powerco receives more than one Final Application for connection to a similar part of its Network, Powerco must consider the earlier Final Application in priority to other Final Applications.

- (e) **Approved or Declined:** Powerco will give written notice to the Customer stating whether the Final Application is approved or declined within the time limits specified below:
 - (i) **For DG up to 1 MW:** 45 Business Days after the date of receipt of the Final Application.
 - (ii) **For a DG above 1 MW but no greater than 5 MW:** 60 Business Days after the date of receipt of the Final Application.
 - (iii) **For a DG 5MW or above:** 80 Business Days after the date of receipt of the Final Application.
- (f) **Extension Time:** Powerco may by giving written notice to the Customer, seek one or more extensions of the relevant time, specified in paragraph (e) above, for considering whether the Final Application is approved or declined.
 - (i) Powerco must specify the reasons for seeking the extension of time in the notice.
 - (ii) The Customer may grant Powerco an extension of up to 40 Business Days.
 - (iii) The Customer must not unreasonably withhold its consent to Powerco's request for an extension of time.
- (g) **Final Application Approved with Conditions:** A notice given by Powerco approving the Final Application under paragraph 4.1.6 (e) should be accompanied by
 - (i) a detailed description of the conditions or other measures that are conditions of the connection of the DG and what the Customer must do to comply with them;
 - (ii) detailed reasons for those conditions or other measures;
 - (iii) a detailed description of the charges payable by the Customer; and
 - (iv) the Dispute Resolution Process set out in Schedule E to this Policy if the Customer disputes any or all of the conditions or charges payable.
- (h) **Final Application Declined:** If Powerco declines the Final Application, the notice to the Customer stating that the application is declined must be accompanied by:

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- (i) detailed reasons why the application has been declined and, if the Customer makes a new application the steps that the Customer can take to ensure connection of the DG; and
- (ii) a copy of the Dispute Resolution Process set out in Schedule E to this Policy.

1.14.8 Connection

- (a) **Customer to proceed with Connection:** Within 30 Business Days of receipt of the notice from Powerco that the Final Application is approved, the Customer must provide written notice to Powerco confirming whether the Customer intends to proceed with the connection of the DG and, if so, confirming:
 - (i) the details of the DG to be connected; and
 - (ii) that the Customer accepts all of the conditions or other measures that have been specified by Powerco under paragraph 4.1.7 above as conditions of the connection of the DG.

The Customer and Powerco may agree to a longer period than 30 Business Days by which the Customer must give this notice. Advice of the progression to connection shall be given to the Powerco CIW team.

If the Customer does not give this notice within the 30 Business Day period or such other agreed period, then Powerco is no longer required to proceed with the application to connect the DG.

- (b) **Connection Contract:** If the Customer gives the written notice under this paragraph (a) above that it intends to proceed with the connection of the DG and confirms the details of the DG then, Powerco will provide the Customer with its standard Connection Contract (Distributed Generation, Electricity Network Contract Agreement). The Customer and Powerco have a period of 30 Business Days, starting on the date on which Powerco received the notice, to attempt in good faith, to negotiate a connection contract.

The parties may agree to extend the 30 Business Day term.

If the Customer and Powerco enter into a connection contract Powerco will connect the DG to the Network in accordance with that contract as soon as practicable.

- (c) **Regulated Terms:** If Powerco and the Customer do not enter into a connection contract within the period prescribed in this paragraph (b) above then Powerco must connect the DG to the Network on the Regulated Terms set out at Schedule D to this Policy as soon as practicable after the later of:
 - (i) the expiry of that period; and
 - (ii) the date on which the Customer has fully complied with any conditions or other measures that were specified by Powerco under paragraph 4.1.7 above as conditions of the connection; or

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- (iii) if conditions or other measures are the subject of a dispute, the date on which the dispute is finally resolved and those conditions or other measures have been performed by the Customer.
- (d) **Inspection and Testing of DG:** The Customer must test and inspect its DG. The Customer is to give adequate notice to Powerco of the times and place where the testing and inspection is to occur. Powerco may send an approved contractor to observe the testing and inspection of the DG.
- (e) **Report on Testing and Inspection:** When the testing and inspection of the DG is completed the Customer is to provide Powerco with a written test report to include but are not limited to points listed in Schedule C including suitable evidence that the metering installation complies with the metering standards in the Electricity Industry Participation Code 2010.
- (f) **Fee for Testing and Inspection:** The Customer is to pay Powerco the relevant fee (as per the Distributed Generation Regulation) set out below plus GST for observation of the testing and inspection of the DG under this paragraph (d) above:
- DG of above 10kW in total but less than 100kW in total: \$120.00
 - DG of 100kW and above: \$1,200.00
- (g) **Certificate by Electrician:** Prior to connecting the DG to the Network the Customer must provide Powerco with a Certificate of Compliance from a registered electrician or licensed electrical inspector that the installation complies with the Electricity (Safety) Regulations 2010 and Associated Standards AS/NZS 3000:2007.
- (h) **Connection Charges:** Prior to the connection of the DG to the Network, Powerco will provide the Customer with a written notice specifying the connection charge payable by the Customer and explaining how the charge has been calculated.
- (i) **Review of Connection Charges:** Powerco will be entitled to review the connection charge not more than once in any 12 month period following the date of the connection of the DG to the Network. Following any review Powerco must provide the Customer with written notice of any change to the connection charge that is payable. This notice must be given to the Customer at least 3 months before the date that the change is to take effect.

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN

1.15 Connection of Distributed Generation above 10kW in Total
INITIAL APPLICATION FORM

The name, address and telephone number of the Customer, being the owner/operator of the DG:	
The contact details of the installer including address, telephone number and email address:	
Application fee invoice to:	
Is this a new installation or capacity increase to existing?	
Generator capacity in kW:	
Type of DG – (photovoltaic, wind, gas etc.)	
Proposed location of the DG NZMG coordinates or address	
Proposed Connection Date:	
Technical specifications of the DG and associated equipment, including: <ul style="list-style-type: none"> ▪ Technical specifications of equipment that allows the DG to be disconnected from the Network on loss of mains voltage: ▪ The number of phases: ▪ The proposed point of connection to the Network; - ICP or transformer number: ▪ Any battery storage? ▪ Details of any load at the proposed point of connection: ▪ Connection voltage: 	
The maximum active power injected MW max:	
The reactive power requirements MVARs if any:	
Resistance and reactance details of the generating unit:	
Fault level contribution kA:	

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Method of voltage control:	
Single line diagram of proposed connection attached:	
Means of synchronisation and connection and disconnection to the Network, including the type and ratings of circuit breaker proposed:	
Details of compliance with frequency and voltage support requirements as specified in the Electricity Industry Participation Code 2010 if applicable:	
Proposed periods and amounts of electricity injections into, and off takes from, the Network if known:	
Any other information that is required by Transpower New Zealand Limited as the system operator:	
Energy Retailer for load and generation	

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN
Declaration

[_____], being the applicant for the connection of the DG referred to in this **Initial Application Form** to Powerco’s Distribution Network, certify that the above information is true and correct.

Signed for/by the applicant:

[insert name and position]

[insert date]

For Powerco Use: Network Approval Confirmation	
Application requirements complete:	Yes/No
Application approved to progress to installation and testing:	Yes/No
Signed:	Date:

Network Connection Details		
Zone Substation	Feeder	Distribution Transformer

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN

**1.16 Connection of Distributed Generation over 10kW
 FINAL APPLICATION FORM**

The name, address and telephone number of the Customer:	
The contact details of the installer including address, telephone number and email address:	
Whether the proposed connection is a new connection or an increase in capacity for an existing connection:	
Generation capacity in kW:	
Type of DG (photovoltaic, wind, gas etc.)	
Proposed location of the DG NZMG co-ordinates or address:	
Proposed connection date:	
Energy Retailer for load and generation	
The information specified in or provided in connection with the Initial Application dated [] relating to the DG is confirmed and is true and correct at the date of this Final Application.	

Continued .../2

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN
Declaration

[_____], being the applicant for the connection of the DG referred to in this **Final Application Form** to Powerco's Distribution Network, certify that the above information is true and correct.

Signed for/by the applicant:

[insert name and position]

[insert date]

For Powerco Use: Network Approval Confirmation	
Application requirements complete:	Yes/No
Application approved for connection:	Yes/No
Signed:	Date:

Network Connection Details		
Zone Substation	Feeder	Distribution Transformer

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN

1.17 Distributed Generation Plant Specification & Commissioning Report
DISTRIBUTED GENERATION - COMMISSIONING REPORT

Installation tested by:	
Date test completed:	
Loss of network supply auto-isolation test proven Y/N:	
Auto-isolation disconnection speed Sec:	
Auto-restoration if existing after specified delay proven Y/N:	
Over speed disconnection process proven >15kW Y/N:	
MEN Earth test results Ohms:	
Protection setting details attach additional details where necessary:	
Electrical inspection to AS/NZS3000:2007 and Electricity (Safety) Regulations 2010 completed Y/N:	
Name of Electrical Inspector:	

Other tests requested by Powerco to be specified:

A Certificate of Compliance (COC) from a registered electrician/licensed electrical inspector that the DG complies with the Electricity (Safety) Regulations 2010, should accompany this report.

Completed report including COC shall be forwarded to Powerco Ltd, Private Bag 2061, New Plymouth, or distributedgeneration@powerco.co.nz

Report completed by:
Name:

Address:

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN

Schedule D Regulated terms**Regulated terms for distributed generation****Contents***General*

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-

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN

*General***1 Contents of this Schedule**

This Schedule sets out the **regulated terms** that apply to a **distributor** and a **distributed generator** in respect of **distributed generation** that is **connected** in accordance with clause 6.6 of Part 6 of this Code and Schedule 6.1.

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.

3 General obligations

- (1) The **distributor** and the **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 (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).

*Meters***4 Installation of meters and access to metering information**

- (1) *[Revoked]*
- (2) The **distributed generator** must give the **distributor**, at the **distributor's** request, the interval data and cumulative data recorded by the **metering installations** at the **point of connection** at which the **distributed generation** is **connected** or is proposed to be **connected**.

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN

- (3) The **distributed generator** must provide **reactive** metering if—
 - (a) the **meter** for the **distributed generation** is part of a **category 2 metering installation**, or a higher category of **metering installation**; and
 - (b) the **distributed generator** is required to do so by the **distributor**.
- (4) The **distributor's** requirements in respect of metering measurement and accuracy must be the same as set out in Part 10 of this Code.

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.

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.

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**.

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- (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.

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

- (1) The **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.

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

- (1) If the **distributor** or the **distributed generator** discovers evidence of interference with the **distributor's** equipment, or evidence of theft of **electricity**, the party discovering the interference or evidence must advise 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.

*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.

11 Circumstances allowing distributor to temporarily disconnect distributed generation

Despite clause 10, the **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**:

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- (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) *[Revoked]*
- (f) in accordance with clause 13 (adverse operating effects):
- (g) if the **distributed generator** fails to comply with the **distributor's**—
 - (i) **connection and operation standards**; or
 - (ii) safety requirements.

12 Obligations if distributed generation temporarily disconnected by distributor

- (1) The **distributor** must make reasonable endeavours to—
 - (a) advise 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—
 - (a) restore service to the **distributed generator**; and
 - (b) advise the **distributed generator** of the expected duration of the outage.

13 Adverse operating effects

- (1) The **distributor** must advise the **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 advice, the **distributed generator** fails to remedy the adverse operating effect within a reasonable time, the **distributor** may disconnect the **distributed generation** by giving reasonable notice (or without notice when reasonably necessary in the event of an emergency or hazardous situation).

14 Interruptions by distributed generator

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

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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 been temporarily disconnected under clause 11(g) and—
 - (i) the **distributed generator** fails to remedy the non-compliance within a reasonable period of time; and
 - (ii) there is an ongoing risk to persons or property;
 - (c) without notice, if the **trader** that is recorded in the **registry** as being responsible for the **ICP** to which the **distributed generation** is **connected** to the **distribution network** has **de-energised** the **ICP** and advised the **registry** that the **ICP** has a status of "inactive" with the reason of "de-energised – ready for decommissioning";
 - (d) on at least 10 **business days'** notice of intention to disconnect, if—
 - (i) the **distributed generator** has not injected **electricity** into the **distribution 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) *[Revoked]*
- (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 advise the **distributed generator** within 2 **business days** of the work having been completed.
- (4) *[Revoked]*
- (5) *[Revoked]*

Time frame for construction

1. **15A Distributed generator must construct distributed generation within 18 months of approval**
- (1) This clause applies if the **distributor** approves the **distributed generator's** application to **connect distributed generation** under Part 1, Part 1A, or Part 2 of Schedule 6.1.
- (2) The **regulated terms** cease to apply if the **distributed generator** does not **construct** the **distributed generation** within—
 - (a) 18 months from the date on which approval was granted; or
 - (b) such later date as is agreed by the **distributor** and **distributed generator**.
- (3) The **distributed generator** must reapply under Schedule 6.1 if—
 - (a) the **regulated terms** no longer apply in accordance with subclause (1); and
 - (b) the **distributed generator** wishes to **connect distributed generation** to the **distributor's distribution network**.

Confidentiality

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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**.

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.

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.

*Pricing***19 Pricing principles**

Charges that are payable by the **distributed generator** or the **distributor** must be determined in accordance with the pricing principles set out in Schedule 6.4.

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*Liability***20 General obligations relating to liability**

- (1) If the **distributor** or the **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 and clauses 21 to 25 do 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**.

21 Exceptions to obligations relating to liability

- (1) Neither the **distributor** nor the **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 reduced **injection of electricity** into the **distribution network**; or
 - (iia) the failure arises from an interruption in the conveyance of **electricity** in the **distribution network**, if the interruption was 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

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- (b) a failure to perform an obligation under these **regulated terms** arising from any defect or abnormal conditions in the **distribution network**.

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 **nameplate capacity** up to a maximum of \$5 million.

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 the **distributor** or the **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.

24 [Revoked]**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 the **injection of electricity** into 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

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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 advise 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 advise 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.

Prescribed maximum fees

1 *[Revoked]*

Clause 1: revoked, on 23 February 2015, by clause 72 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

- 2 A **distributor** may require the payment of fees for any of the following activities prescribed under Part 6 of this Code to the maximum fee specified in the column opposite that activity:

Description of fee	\$ (exclusive of GST)
Part 1 of Schedule 6.1 application	
Application fee under clause 2(2)(c)	200
Fee for observation of testing and inspection under clause 7(5)	60
Part 1A of Schedule 6.1 application	
Application fee under clause 9B(2)(c)	100
Fee for inspection under clause 9C(3)	60
Deficiency fee under clause 9E(4)	80
Part 2 of Schedule 6.1 application	

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Application fee for distributed generation with nameplate capacity of more than 10 kW but less than 100 kW under clause 11(2)(c)	500
Application fee for distributed generation with nameplate capacity of 100 kW or more in total but less than 1 MW under clause 11(2)(c)	1,000
Application fee for distributed generation with nameplate capacity of 1 MW or more under clause 11(2)(c)	5,000
Fee for observation of testing and inspection of distributed generation with nameplate capacity of more than 10 kW but less than 100 kW under clause 22(5)	120
Fee for observation of testing and inspection of distributed generation with nameplate capacity of 100 kW or more under clause 22(5)	1,200

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schedule E**1.18 Dispute Resolution Process****1.18.1 Introduction**

The dispute process set out below is specified in Schedule 6.3 of the DG Regulations.

1.18.2 When the Dispute Process Applies

The Dispute Process applies:

- (a) To disputes between the Customer and Powerco arising from an allegation that a party has breached any of the Regulated Terms where the DG is connected to the Network on the Regulated Terms.
- (b) If there is any other dispute between Powerco and the Customer about an alleged breach of any of the other provisions of the DG Regulations.

1.18.3 Notice of Dispute

- (a) A party must give written notice to the other party of the dispute.
- (b) The parties must attempt to resolve the dispute with each other in good faith.
- (c) If the parties are unable to resolve the dispute, either party may complain in writing to the Electricity Authority.

1.18.4 Complaints

- (1) A complaint made under clause 2(3) must be treated as if it were a notification given under regulations made under section 112 of the **Act**.
- (2) The following provisions apply to the complaint:
 - (a) sections 53-62 of the **Act**; and
 - (b) the Electricity Industry (Enforcement) Regulations 2010 except regulations 5, 6, 7, 9, 17, 51 to 75, and subpart 2 of Part 3.
- (3) Those provisions apply—
 - (a) to the dispute that is the subject of the complaint in the same way as those provisions apply to a notification of an alleged breach of this Code; and
 - (b) as if references to a **participant** in those provisions were references to a party under Part 6 of this Code; and
 - (c) with any further modifications that the **Authority** or the **Rulings Panel**, as the case may be, considers necessary or desirable for the purpose of applying those provisions to the complaint.

1.18.5 Application of pricing principles to disputes

- (a) The Electricity Authority and the Rulings Panel must apply the pricing principles set out in Schedule 6.4 to the DG Regulations to determine any connection charges payable.
- (b) Sub-clause (1) applies if:
 - (i) there is a dispute under Part 6 of the Code; and
 - (ii) in the opinion of the Electricity Authority or the Rulings Panel it is necessary or desirable to apply sub-clause (1) above in order to resolve the dispute.

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1.18.6 Orders that Rulings Panel can make

If a complaint is referred to it, the Rulings Panel may make any order, or take any action, that it is able to make or take in accordance with section 54 of the Act.

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Schedule F**1.19 Connection Charges**

Powerco's pricing principles are charges based on recovery of reasonable costs incurred by Powerco to connect the generator and to comply with Powerco's connection and operation standards.

Incremental costs means the reasonable costs that an efficient service provider would incur in providing electricity distribution services with connection services to the distributed generation, less the costs that the efficient service provider would incur if it did not provide those connection services.

- (a) Powerco's connection charges for the connection of distributed generation consist of the incremental costs of providing connection services to the distributed generation. For the avoidance of doubt, incremental cost is net of transmission and distribution costs that an efficient service provider would be able to avoid as a result of the connection of the distributed generation:
- (b) Avoidable costs, that cannot be calculated, will be estimated taking into account reasonable estimates of how the Powerco's capital investment decisions and operating costs would differ, in the future, with and without the generation.
- (c) Estimated costs may be adjusted ex post. Ex-post adjustment involves calculating, at the end of a period, the actual costs incurred by Powerco as a result of the distributed generation being connected to the Powerco network were, and deducting the costs that would have been incurred had the generation not been connected. In this case, if the costs differ from the costs charged to the generator, Powerco will notify and recover or refund those costs after they are incurred unless the distributor and the generator agree otherwise.

Capital and operating expenses include distinct capital expenditure, such as costs for a significant asset replacement or upgrade, the connection charge attributable to the generator's actions or proposals and is payable by the generator before Powerco has committed to incurring those costs. Powerco is not obliged to incur those costs until that payment has been received.

- (a) Where incremental costs are negative, the generator is deemed to be providing network support services to the distributor, and may invoice the distributor for this service and, in that case, the generator must comply with all relevant obligations for example, obligations under these regulations and in respect of tax.
- (b) Where costs relate to ongoing or periodic operating expenses, such as costs for routine maintenance, the connection charge attributable to the generator's actions or proposals may take the form of a periodic charge expressed in dollars per annum.
- (c) Before the connection of distributed generation, Powerco will notify the generator in writing of the connection charges that will be payable, and explain how the connection charges have been calculated.
- (d) After the connection of the distributed generation, Powerco may review the connection charges payable by a generator not more than once in any 12 month period. Following a review, Powerco will notify the generator in writing of any change in the connection charges payable, and the reasons for any change, not less than 3 months before the date the change is to take effect.

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- (e) Powerco currently do not impose any ongoing charges in relation to distributed generation. Normal line charges and any offsets created from having the distributed generation connected to Powerco's network will be discussed during the connection process.

1.20 Share Of Generation-Driven Costs

If multiple generators are sharing an investment, the portion of costs payable by any one generator:

- (a) must be calculated so that the charges paid or payable by each generator take into account the relative expected peak of each generator's injected generation; and
- (b) may also have regard to the percentage of assets that will be used by each generator, the percentage of capacity used by each generator, the relative share of expected maximum combined peak output, and whether the combined peak generation is coincident with the peak load on Powerco's Network;
- (c) in order to facilitate the calculation of equitable connection charges under paragraph (b) above, Powerco will make and retain adequate records of investments for a period of 5 years, provide the rationale for the investment in terms of facilitating distributed generation, and indicate the extent to which the associated costs have been or are to be recovered through generation connection charges.

1.21 Repayment Of Previously Funded Investment

- (a) If a generator has paid connection charges that include in part the cost of an investment that is subsequently shared by other generators, Powerco will refund to the generator all connection charges paid to Powerco under paragraph 7.1.3(b) above, by other generators in respect of that investment.
- (b) If there are multiple prior generators, a refund to each generator referred to in this paragraph (a) must be provided in accordance with the expected peak of that generator's injected generation over a period of time agreed between the generator and Powerco.

1.22 The Refund:

- (a) must take into account the relative expected peak of each generator's injected generation; and
- (b) may also have regard to the percentage of assets that will be used by each generator, the percentage of capacity used by each generator, the relative share of expected maximum combined peak output, and whether the combined peak generation is coincident with the peak load on Powerco's Network.
- (c) no refund of previous payments from the generator referred to in paragraph 7.1.4 (a) is required after a period of 3 years from the initial connection of that generator.

1.23 Non-Firm Connection Service

To avoid doubt, nothing in the DG regulations creates any capacity or property rights in any part of the Powerco's network unless these are specifically contracted for. Powerco will maintain connection and lines services to generators in accordance with their connection and operation standards.

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Appendix A – Network Support**1.24 Network Support Service & Avoided Cost of Transmission (ACOT)**

Where incremental costs are negative the Generator is deemed to be providing “Network Support Services” and may invoice Powerco for this service.

It should be noted that Powerco’s Network is constructed to provide for the known loads at the time with spare capacity for future growth. The known (requested) load for each ICP is limited by the protection at the Point of Isolation. If without the Generator operating, Powerco’s Network shows signs of being unstable, but with the Generator operating there is a noticeable effect on the stability of the network, then in this instance the Generator is deemed to be providing Network Support Services.

Therefore, where a Generator is connected under the Electricity Industry Participation Code 2010 Part 6 (Connection of Distributed Generation) and,

- can provide evidence to Powerco that the Generator is providing “network support services” to Powerco’s network as described above,
 - complies with all relevant obligations under these Regulations (and in respect of Tax),
- the Generator may invoice Powerco for this network support services (ACOT).

ACOT is directly related to the kVA exported from the Generator into the Network. For example, if the Generator is rated at 1MW but is exporting at 500kVA during the “peak period”, it is this exported figure (500kVA) that would be used to calculate ACOT.

The “Energy” Exported by the Generator is accounted for via the export meter which is reconciled by the Generators nominated method, i.e. Retailer or Clearing Manager.

Where a Generator is already connected to Powerco’s network (and not currently receiving ACOT), any benefit via reduced Transpower interconnection charges, has already been passed through to customers. To this end, for Powerco to pay an existing Generator ACOT, Powerco would have to increase its charges. Therefore the window for Powerco to factor any Generator benefit (ACOT) is in November/December for implementation 1 April the year following. For the avoidance of doubt, for existing Generators, ACOT will be determined as outlined in 2. below, and applied effective from 1 April in the forthcoming price year i.e. ACOT will not be applied retrospectively.

1.25 Requirements of receiving ACOT payments

ACOT will only be paid for Generators which export into Powerco’s Network, with an exporting capacity over and above 200 kVA and if the Generator is deemed to be supporting Powerco’s network

Where the Generator is deemed to be providing the Network Support Services the Generator should provide the data in the required format to Powerco for payment of ACOT in the following way:

- a) Ensure that the data provided has been audited by a Qualified Independent Auditor approved by Powerco.
- b) Provide to Powerco the data as outlined below by Business Day 5 in December each year
- c) Invoice Powerco monthly from the following April each year.

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Monthly data obtained from year one of operation will be used to make up the invoice to Powerco during year two of operation. If a Generator changes hands during, or at the end of, an operating year the payments made to the Generator for the generation during that Capacity Measurement Period will be paid to the Generator operating during that period.

1.26 Method of Calculating ACOT

- (a) From April 2008 ACOT will be paid in the following way:
- (i) The Annual Interconnection Charge that Powerco pays to Transpower is determined from Powerco's demand offtake at the GXP coincident with the Regional Peak Demand Periods occurring during the Capacity Measurement Period relevant for the applicable Pricing Year.
 - (ii) ACOT will not be paid to the Generator until electricity from the Generating Station is generated within the Capacity Measurement Period relevant for the applicable Pricing Year.
 - (iii) ACOT will be a fixed amount each year, using the Regional Peak Demand Periods and Regional Coincident Peak Demand applicable for the GXP and as notified by Transpower during the Capacity Measurement Period for the applicable Pricing Year.
 - (iv) ACOT will be calculated using the Transpower Interconnection Rate applicable to the Pricing Year.
 - (v) The annual ACOT amount will be the difference between:
 - i. the average of the Regional Coincident Peak Demand at the GXP (as notified by Transpower); and
 - ii. the average of Powerco's net demand off take (in kW), as measured at the GXP, plus the net electricity (in kW) injected into the Powerco's Network by the Generation Station at the Generator's Connection Point for each Regional Peak Demand Period.
 - (vi) Paid in 12 equal portions (if annual payment exceeds \$24,000) by the 20th day of each month during the Pricing Year to the Generator.
- (b) The Generator agrees that any payment due to the Customer in respect of the ACOT payment may be netted off by Powerco against any Network Charges due and payable by the Generator to Powerco.

If, at any time while the Distributed Generation connection is connected to Powerco's network, and Transpower changes its pricing methodology such that the ACOT calculation method described in clauses above is or will become obsolete, the parties agree that Powerco shall nonetheless pay the Generator the ACOT amount determined that is applicable in that Pricing Year. Following which, ACOT determination will be on the basis of the new Transpower methodology.

1.27 Data Requirements**1.27.1 Data Timing and Format**

- (a) Consumption data is to be supplied no later than the final Business Day prior to Christmas Day in December.

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- (b) Load and generation data must be adjusted to the GXP-based data by adding the appropriate the Distributor network loss factor. Time of use data should be the same as the data which is provided to the electricity market for reconciliation purposes.
- (c) The half hourly kWh and kVAh or kVAh data from the Retailer or the Data Administrator must be provided to the Distributor in a CSV file similar to the present data format used for reconciliation purposes under the EGRs.
- (d) The files received from the Retailer and Data Administrator must contain either kVAh or kVArh data. The system will accept kVArh data and will convert it into kVAh during processing.
- (e) File names must have a format xxxxMMYY.MNN. where xxxx is the data supplier, MMY is the month and year, M is the unique file type identifier and NN is a sequential number for each month starting at 01.
- (f) Files are adjusted for daylight savings time i.e., 46 time periods in October and 50 time periods in March.

Each data file will contain one record per half hour period per day in the month in a horizontal format as follows:

Field Name	Data Format	Example
Bus/Id	Char 7	WGN0331
Network ID	Char 4	POCO
Point of Injection	Char 2	GN
Retailer (Party Code)	Char 4	GENE
ICP Number	Char 15	0001234567PCXYZ
Units (kVah, Kvarh, kW, kWh)	Char 5	kWh
Flow (X, I)	Char 1	X
Status (I, F)	Char 1	F
Date*	DD/MM/YYYY	01/04/2004
Quantity**	Number 8	99999999
Checksum ***	Number 10	9999999999

Notes:

* This field will repeat for every day of the month.

** This field will repeat for every trading period in the day (1, 2...48).

*** This field will repeat for every day and contain the sum of the trading periods for the day.

1.27.2 Inaccurate Data

If any meter data provided to the Distributor is found to be inaccurate, the Distributor reserves the right to decide whether to use that data or to make appropriate adjustments to the data.

1.27.3 Loss Factor

The technical loss factor allocated to the Generating Station for reconciliation of the data at the relevant Grid Exit Point is:

Micro Generation <10kW 1.0

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Generation above 10kW but less than 1MW 1.0

1MW and above

Special Loss Factor as determined by
Powerco

1.28 Power Factor

If power factor at the Generator's Connection Point is less than 0.95 lagging when the Generator is importing power, or 0.95 leading when the Generator is exporting power, the Distributor may:-

- a) on the first occasion this clause applies, allow the Generator three months to correct the power factor at the Generator's Connection Point and then commence charging the power factor charge set out in clause c) if the power factor is not corrected within that specified time.
- b) on the second and subsequent occasions this clause applies, charge the power factor charge set out in clause c).
- c) The power factor charge for the purposes of this clause is 7.00/kVAr/month in respect of the Generator.

Where the kVAr amount represents the largest difference between the kVAr amount recorded in any one half hour period and one third of the kW demand recorded in the same half hour period. The charge is applicable only during weekdays, between 7am and 8pm

The charge detailed in clause (iii) will not be applicable in circumstances where power factor is 0.95 or below due to a System Operator instruction by way of the Code.

Annual Connection Charge, Annual Interconnection Charge, Capacity Measurement Period, Interconnection Rate, Pricing Year, Regional Coincident Peak Demand, Regional Peak Demand Period: have the same meanings as defined in the Transmission Pricing Methodology.

Document Ends

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Document Review History

Version Number	Reviewed By.	Review Date	Reason
1	Unknown	28/ 2/2008	First issue of document into BMS
2	C. Whitmore	28/ 2/2008	Unknown
3	P. Conn K. Thomas	1/10/2009	Unknown
4	M. Smith	11/ 5/2012	Updated to reference current legislation. Updated to align with current previously updated DG standards. Clarified congestion management, health and safety policies. Added review history and document change request pages. Words “Generate – AEN” added into Title to comply with Powerco standards matrix.
5	M. Smith	14/ 3/2014	Updated to reflect latest version of AS/NZS 4777 (various) <i>NEW</i> -added s1.4 and 1.5. s2.3 added new paragraph about voltage levels. s3.2 modified form. s3.3 modified form.
6	M Smith	08/04/2015	Urgent update to reflect changes in EIPC Part 6 and Regulated Terms.

POWERCO DISTRIBUTED GENERATION (DG) POLICY – GENERATE - AEN
Powerco Standard - Document Change Request
Memo To: **Technical Services Manager.**
Junction Street,
New Plymouth.
Change Details:
 (Attach separate sheets
 as necessary).

**Paragraphs
 Affected:****Priority:**

Urgent (Within 1 week)	Routine (Within 12 months)	Low (Next Review)
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Submitted By (Print Name)	Date
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Document Change Request - Acknowledgement

Dear

Thank you for your suggestion regarding changes to the above mentioned document.

Your request has been noted and added to our works program. Should we require any additional information regarding your notification then we will be in contact with you.

Thank you for your contribution to improving the quality of Powerco's documentation.

Regards,

Technical Services Manager

Date