

Part 6 of the Code

Distributed generation

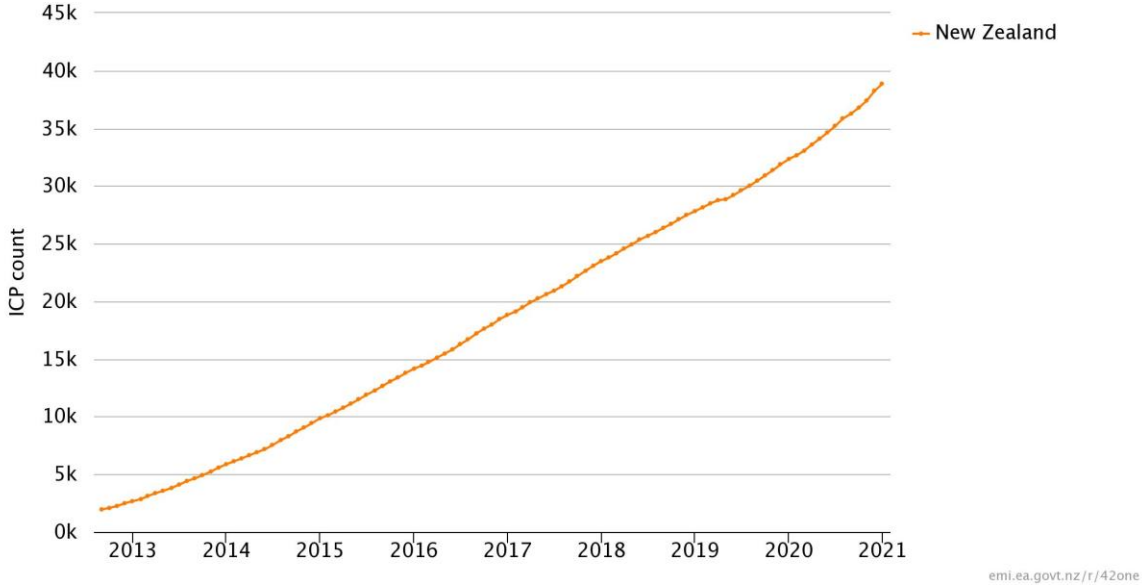
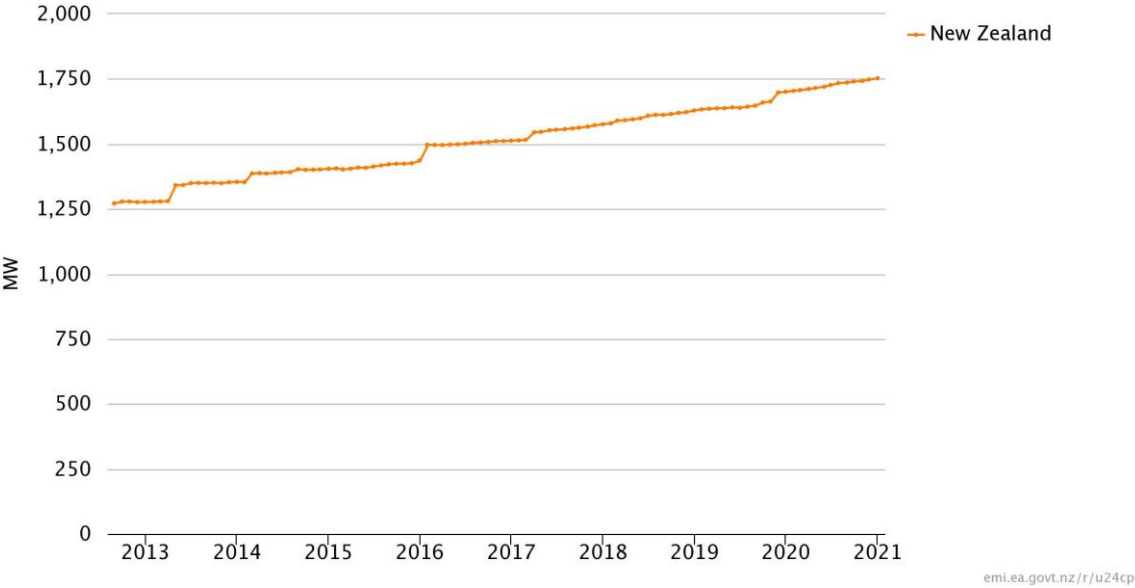
Current landscape behind Part 6

- Government policy
 - The Climate Change Response (Zero Carbon) Amendment Act 2019 sets a goal of net 0 carbon by 2050
 - Government policy is 100% renewable electricity by 2030
 - On 19 December 2019, MBIE released the discussion document “Accelerating renewable energy and energy efficiency”
 - <https://www.mbie.govt.nz/assets/discussion-document-accelerating-renewable-energy-and-energy-efficiency.pdf>
 - The transition to net zero-emissions means finding sustainable ways to provide energy that we currently source from fossil fuels – **it is an energy transition**
- New Zealand's energy position
 - As of 2020, 59.7% of all energy was met by non-renewable resources
 - Currently 4th in the OECD for renewable penetration, with between 80% and 85% of our electricity coming from renewable sources (hydro, geothermal, wind, and biomass)
- Decarbonisation creates greater dependency on electricity availability as other fuel forms convert to electricity, which itself creates
 - Increased demand on the existing electricity infrastructure
 - Greater dependency on energy efficiency and flexibility to reduce peak demands, manage power quality, system inertia and intermittent generation
- Distributed generation is an integral part of the DER and decarbonisation

The landscape behind Part 6

Fuel type	Installed capacity, grid connected and embedded		Generated last year as % of total generation	Notes
	MW	%		
Hydro	5,531,000	54.60%	60.66%	
Thermal	1,883,000	18.59%	13.72%	
Geothermal	1,161,700	11.47%	18.62%	
Wind	787,992	7.78%	4.81%	Increasing with Turitea and Kaiwaikawa coming on line over the next few years
Cogeneration	302,000	2.98%	2.19%	
Solar	186,241	1.84%	0.11%	Growing rapidly as a number of investors considering solar farms
Biomass	114,640	1.13%	Unknown	
Battery	<10	0.00%	Unknown	
Tidal	0,004	0.00%	0.00%	
Unknown/other estimated	162,959	1.61%	Unknown	
Total generation capacity	10,130		Approx 43 TWh	

- Te Maui O Hiko estimated ~90 TWh by 2050




Electricity Industry Act 2010 defines a generator as a participant, requires generators to comply with the Code

- Section 7 of the Electricity Industry Act 2010 (Act) defines participants
7 Industry participants

(1) *The following are industry participants for the purposes of this Act:*

- (a) *a generator:*
- (b) *Transpower:*
- (c) *a distributor:*
- (d) *a retailer:*
- (e) *any other person who owns lines:*
- (f) *a person who consumes electricity that is conveyed to the person directly from the national grid:*
- (g) *a person, other than a generator, who generates electricity that is fed into a network:*
- (h) *a person who buys electricity from the clearing manager:*
- (i) *any industry service provider identified in subsection (2).*

- Act sets out that participants must comply with the Electricity Industry Participation Code 2010 (Code), available at <https://www.ea.govt.nz/code-and-compliance/the-code/>



Electricity Industry Act 2010
Public Act 2010 No 116
Date of assent 5 October 2010
Commencement see section 2

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Note
Changes authorised by subpart 2 of Part 2 of the Legislation Act 2012 have been made in this official reprint.
Note 4 at the end of this reprint provides a list of the amendments incorporated.
This Act is administered by the Ministry of Business, Innovation, and Employment.

1

The Electricity Act 1992 has obligations on anyone that is defined as an electricity generator >10MW

Version
as at 28 October 2021



Electricity Act 1992
Public Act 1992 No 122
Date of assent 17 December 1992
Commencement see section 1

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Note
The Parliamentary Counsel Office has made editorial and format changes to this version using the powers under subpart 2 of Part 3 of the Legislation Act 2019.
Note 4 at the end of this version provides a list of the amendments included in it.
This Act is administered by the Ministry of Business, Innovation, and Employment.

1

61A Electricity generators and electricity distributors must have safety management systems

(1) Every electricity generator¹ and every electricity distributor that owns or operates an electricity supply system must implement and maintain, in accordance with regulations made under section 169, a safety management system.

.....

(2) For the purposes of this Act, electricity supply system means,—

(a) in relation to an electricity generator, assets that, whether taken individually or as a whole, have a rated electricity generating capacity equal to, or greater than, 10 MW:

(b) in relation to an electricity distributor, assets that, whether taken individually or as a whole, are used, or designed or intended for use, in or in connection with the conversion, transformation, or conveyance of electricity at a capacity equal to, or greater than, 10 MVA.

¹ *electricity generator means any person who owns or operates a generator connected to distribution or transmission lines*

The Electricity Industry Participation Code 2010 (Code)

The Code sets out industry participant responsibilities, including our own duties and responsibilities.

[Download the full Code](#)
Full-Merged-Code-30-June-2021.pdf (PDF, 7.2 MB)
Last updated: 30 June 2021

Part 1 - Preliminary provisions
Part 1 contains the interpretation section which sets out the definitions of the bolded words used in the Code.

[Code-Part-1-Preliminary-Provisions-30-June-2021.pdf \(PDF, 662 KB\)](#)
Last updated: 30 June 2021

Part 2 - Availability of Code information
Part 2 sets out a participant's right to request Code information from the Authority. It also includes obligations on the Authority and on participants to respond to requests for Code information and includes rights to appeal where a request is refused.

[Code-Part-2-Availability-of-Code-Information-5-October-2017.pdf \(PDF, 32 KB\)](#)
Last updated: 14 October 2020

Part 3 - Market operation service providers
Part 3 sets out certain terms relating to arrangements between the Authority and market operation service providers.

[Part-3-Market-operation-service-providers-1-November-2018.pdf \(PDF, 51 KB\)](#)
Last updated: 14 October 2020

Part 4 - Force majeure provisions relating to ancillary service agents
Part 4 sets out the terms on which force majeure relief will be available to ancillary service agents.

[Code-Part-4-Force-majeure-provisions-relating-to-ancillary-service-agents-5-October-2017.pdf \(PDF, 18 KB\)](#)
Last updated: 14 October 2020

Part 5 - Regime for dealing with undesirable trading situations
Part 5 sets out how the Authority will deal with undesirable trading situations. It includes criteria for investigating undesirable trading situations and details directions the Authority may order to be taken to correct an undesirable trading situation.

[Code-Part-5-Regime-for-dealing-with-undesirable-trading-situations-15-May-2014-Reformatted-v2.PDF \(PDF, 22 KB\)](#)
Last updated: 14 October 2020

Part 6 - Connection of distributed generation
Part 6 sets out provisions relating to the connection of distributed generation. It provides a framework to enable the connection of distributed generation and sets out the regulated terms that will apply unless parties have agreed otherwise.

Documents incorporated into the Code by reference
Amendments to the Code
Code exemptions
Historical versions of the Code
How the Code maps to the Electricity Governance Rules
Approved Systems Document

- Generators must register with the Authority as a participant using the process at <https://www.ea.govt.nz/operations/industry-participants/how-to-register-as-a-participant/>
- Parts 1, 6, 8, and 13 of the Code apply to connection and operation of generation, requirements are dependent on the nameplate capacity of the generation
- Parts 1, 10, 11, 14, 15 and 16A of the Code may apply depending on the trading arrangements
- The Code also sets different requirements for generation that is
 - $\leq 10\text{kW}$ (Part 6)
 - $> 10\text{kW}$ (Part 6)
 - $\geq 1\text{MW}$ (Part 8)
 - $\geq 1\text{MW} < 10\text{MW}$ (Part 13)
 - $\geq 10\text{MW} < 30\text{MW}$ (Part 13)
 - $\geq 30\text{MW}$ (Part 13)

Types of generation and generators

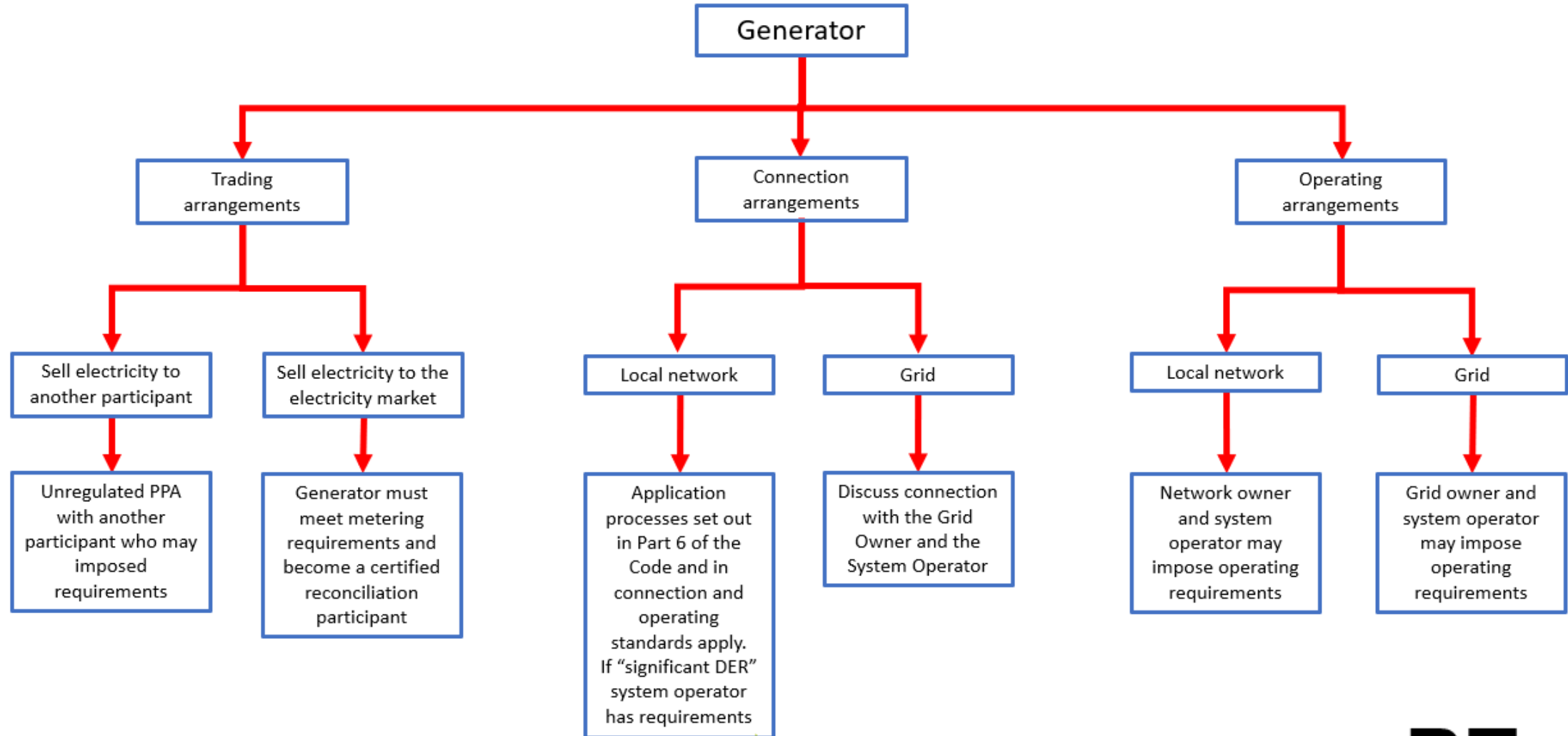
The Code defines

generator means a person who owns **generating units** connected to a **network**, or any person who acts, in respect of Parts 13, 14 and 15, on behalf of any person who owns such **generating units**, and includes **embedded generators, intermittent generators, type A co-generators, and type B co-generators**

generating unit means all equipment functioning together as a single entity to produce **electricity**

- There are different types of generation noted in the code, as far as Part 6 is concerned, anything not connected to the grid is distributed generation
 - Co-generation (type A and type B)
 - Distributed generation
 - Embedded generation
 - Grid connected generation
 - Intermittent generation
- For clarity
 - Batteries are considered to be generators
 - Solar, wind and tidal are considered to be intermittent
- The registry records nameplate capacity and fuel type for generation that can export at an ICP – *distributors must maintain registry records*
- There are unresolved definitional issues where more than one party owns, operates and sells the output of a generating unit

Generator arrangements



Trading arrangements for surplus electricity generated

The Code

The Code sets out industry participant responsibilities, including our own duties and responsibilities.

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- NZ operates a gross pool model. All generation must be sold to the clearing manager and all consumption must be purchased from the clearing manager (*apart from self consumption*)
- If a generator wants to be paid for generation it needs to either
 - Sell generated electricity to another participant who then has the compliance obligations under Parts 10, 11, 14, 15 and 16A of the Code
 - Note that selling a hedge or similar is not selling electricity
 - Despite trading arrangements, the generator remains responsible for connection and operation arrangements
 - Sell electricity generated to the clearing manager
 - Generator must become and maintain certified reconciliation participant status
 - Undergo audits
 - Comply with Parts 10, 11, 14, 15 and 16A of the Code
- Embedded generators pay for network losses
 - Local and embedded network losses are built into the reconciliation process and will affect what a generator may expect for its wholesale market payments
 - Note - loss adjustment may be a debit or credit to site metered generation volumes
- Generators above 10MW may be subject to system operator dispatch and above 30MW will be subject to dispatch (Part 13)
- Other specific metered information requirements (Clauses 13.136 -13.140 of Part 13)

Connection arrangements for distributed generation

Electricity Industry Participation Code 2010

Part 6 Connection of distributed generation

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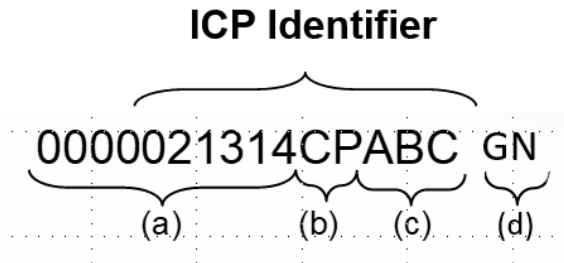
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	Regulated terms for distributed generation

20 December 2021

- Part 6 of the Code regulates connection arrangements and applies where a customer wants
 - To connect new distributed generation whether on regulated terms or other agreed terms; or
 - Continue an existing connection of distributed generation when:
 - A connection contract has to be extended or has expired;
 - There is no existing contract and regulated terms do not apply; or
 - There is a change to the nameplate capacity or fuel type of connected distributed generation
- Part 6 of the Code does not differentiate generation with fuel types. It applies to any form of electricity generation that injects into a local or secondary network (does not regulate connections to the grid)
- Regulates distributors connection process:
 - Application process, provisions and publication of information
 - Response time and fees
 - Connection charges
 - Disputes process

Point of connection

POC of a generator or customer to a local or embedded network is called an ICP and is in Part 6



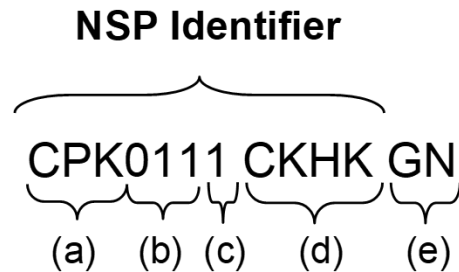
- (a) up to a 10 digit distributors reference number
- (b) 2 character code identifying the distributor that created the ICP identifier (not necessarily what network the ICP is connected to)
- (c) 3 character checksum to prevent inaccurate ICP identifiers in the registry (and elsewhere where validation has been provided)
- (d) Reconciliation type indicating what the purpose of the ICP is

- ICP identifier connects a customer to the electricity market, and to distributor systems and enables revenue collection
- Only a trader can request a distributor to create an ICP (*Clause 10.31 of Part 10*)
 - Generators and customers can discuss connection with a distributor, but a distributor needs a request for an ICP from a trader (which can be the generator if the generator will be the trader)
- Distributor must Provide each ICP with a unique reference called an ICP identifier and populate in registry
 - ICP identifiers in the registry and required supporting information
 - DG nameplate capacity and fuel type – some difficulties with this one
 - Loss category code and loss factors
 - Generators =>10MW must have a unique loss category code registered with the reconciliation manager (Clause 7(1)(f) of Schedule 11.1)
 - Distributors are free to publish unique loss factors for each ICP identifier <10MW
 - =>10MW loss factor code is used to determine Levy information
- Note the requirements in the Code applying to connection of embedded generation

8.21(2) Whether likely to be an excluded generation station or not, a generator who is planning to connect to the grid or a local network a generating unit with rated net maximum capacity equal to or greater than 1 MW must provide the system operator with written advice of its intention to connect together with other information relating to that generating unit in accordance with clause 8.25(4).

Point of connection

POC of a generator or customer to the grid is called an NSP and is not in Part 6

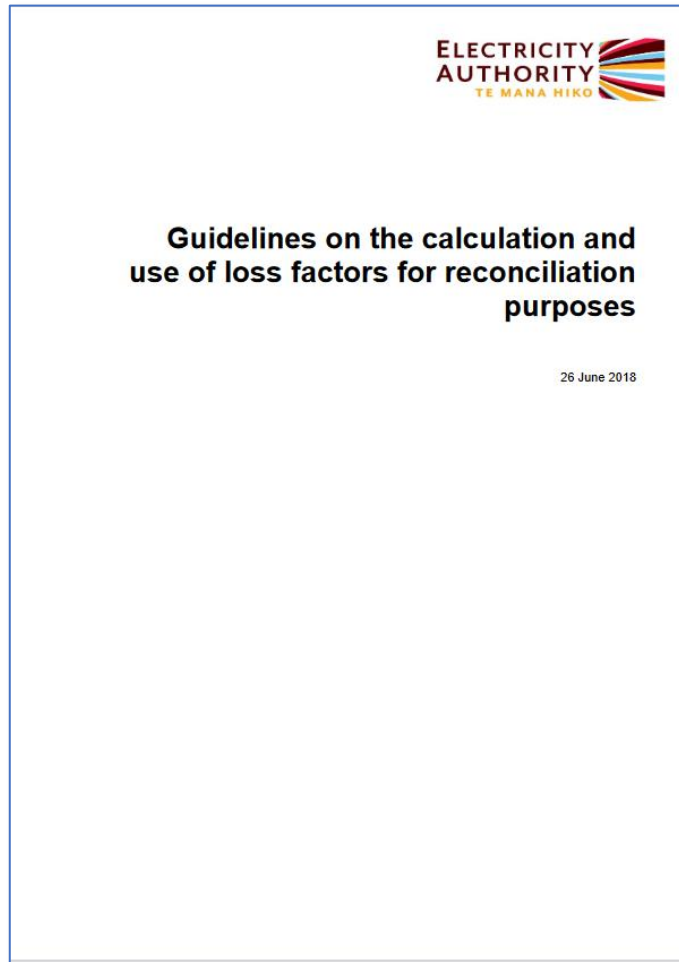


- (a) 3 letter bus code (in the example this is Central Park)
- (b) 3 number voltage reference (in the example this is 11kV)
- (c) 1 number connection reference
- (d) connecting asset owner participant identifier (in the example this is Wellington Electricity)
- (e) reconciliation type
- (f) www.ea.govt.nz – emi – wholesale – reports – NSP table

- NSP identifier connects a customer to the electricity market and enables revenue collection
- Only the grid owner can
 - Approve a point of connection to the grid
 - request the reconciliation manager to create an NSP for a generators POC to the grid (Clause 25 of Schedule 11.1 of Part 11)
- Connection asset requirements at <https://www.transpower.co.nz/system-operator/resources-asset-owners>
 - Asset Capability Statements (ACS)
 - Asset Testing
 - Dispensations/Equivalence Arrangements
 - Risk of Double Circuit Faults
- Note the requirements in the Code applying to grid connected generation

8.21(2) Whether likely to be an excluded generation station or not, a generator who is planning to connect to the grid or a local network a generating unit with rated net maximum capacity equal to or greater than 1 MW must provide the system operator with written advice of its intention to connect together with other information relating to that generating unit in accordance with clause 8.25(4).

Distributors - calculation of loss factors



- Distributors directly influence the accuracy of trader wholesale market settlements with the calculation of loss factors, and allocation of ICP identifiers into balancing areas
 - Loss factors on generation with a nameplate capacity greater than 10MW must be unique (*Clause 7(6) of Schedule 11.1 of Part 11*)
- Part 11 of the Code requires
 - Distributors calculate reconciliation loss factors and populate these into the registry for each ICP identifier (*Clause 7(1)(e) of Schedule 11.1 of Part 11*)
 - Distributors determine GXPs which are allocated to balancing areas and populate these into the registry for each ICP identifier (*Clause 7(1)(b) of Schedule 11.1 of Part 11*)
 - There are time requirements on the creation of loss factors and population in the registry (*Clauses 21 and 22 of Schedule 11.1 of Part 11*)
 - Information must be accurate (*Clause 11.2 of Part 11*)
- Guideline on the calculation of loss factors is available at <https://www.ea.govt.nz/assets/dms-assets/8/8577Guidelines-on-the-calculation-and-the-use-of-loss-factors-for-reconciliation-purposes.pdf>

Part 6 of the Code

- Part 6 replaced the Electricity Governance (Connection of Distributed Generation) Regulations 2007 (30 August 2007), and Regulates
 - Distributors
 - Distributed generation owners
 - Does not regulate installers or suppliers, but these may act as agents for the distributed generator

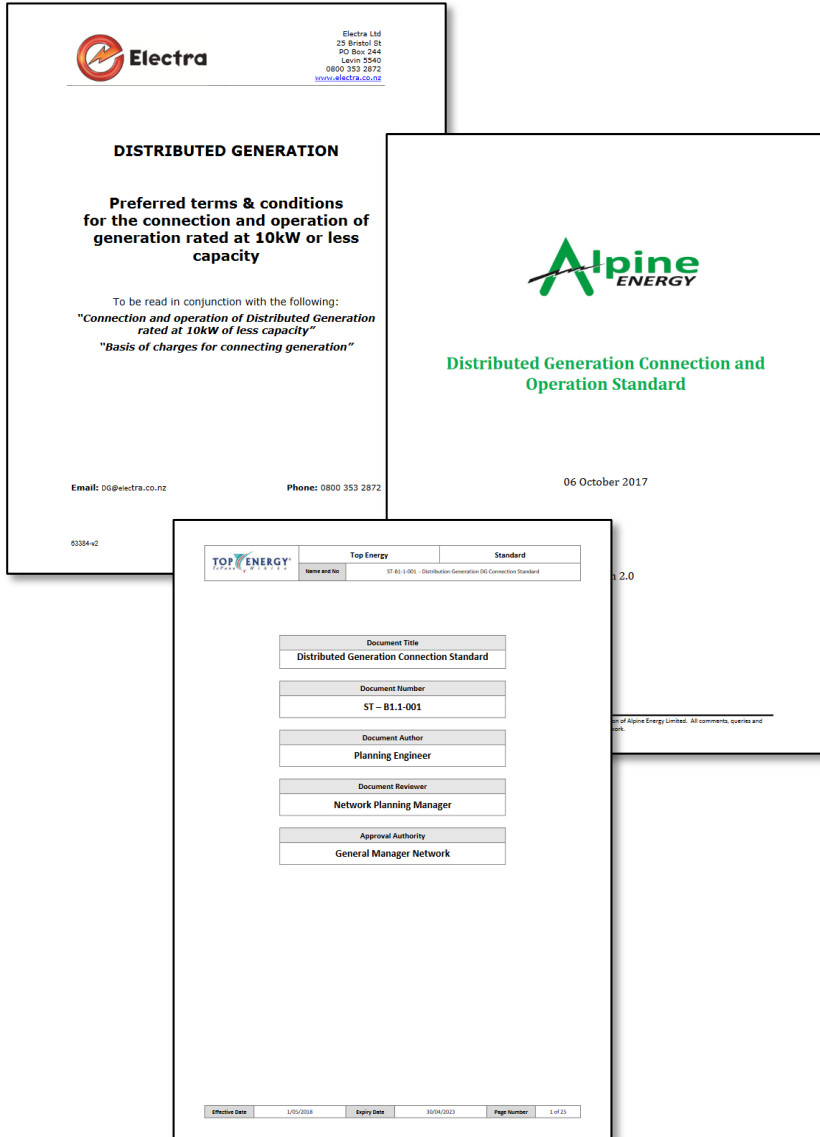
- Part 6 includes, amongst other things:
 - Maximum time periods for most actions (these are not targets, they are maximums)
 - Distributors publishing certain information on their websites
 - Regulates the connection of distributed generation to distribution networks and provides a set of default regulated terms that apply if a distributor and distributed generator do not negotiate a connection contract
 - Enables the connection of distributed generation if connection is consistent with the distributor's connection and operation standards
 - Provides the regulatory framework under which distributors may impose connection charges on distributed generators
 - Provides a dispute resolution process for disputes between distributors and distributed generators
 - Sets maximum application fees

Electricity Industry Participation Code 2010
Part 6
Connection of distributed generation
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Schedule 6.2
Regulated terms for distributed generation

20 December 2021

Distributors web sites



- Suitable documentation for connecting distributed generation, including
 - Application forms
 - Connection and operation standards
 - Hosting capacity requirements
 - Fees
 - Regulated terms for connection and information on how the regulated terms apply if the parties do not enter into a connection contract
 - Interruption and curtailment policies
 - Contact information
- An up-to-date list of the make and model of every inverter the distributor has previously approved for connection to the network, which should identify the specific AS 4777 edition that was used for conformance testing of each approved inverter (e.g. AS 4777.2-2020)
- An up-to-date list of all locations on its network that are currently congested (or reasonably expected to become subject to export congestion within the next 12 months) and are unable to accept additional export from DG connections at specific times
- Wise to include a statement of the circumstances in which distributed generation will be, or may be, curtailed or interrupted from time to time in order to ensure that the distributor's other connection and operation standards are met (Clause 6.3(d))

Connection and operation standards

25 Force majeure

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 and Schedule 6.1.

Compare: SR 2007/219 clause 1 Schedule 2

Clause 1: amended, on 23 February 2015, by clauses 50 and 75 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 1: amended, on 5 October 2017, by clause 61 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Clause 1: amended, on 20 December 2021, by clause 9 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2019.

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) 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**, connect, 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**, connect, 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).

Compare: SR 2007/219 clause 3 Schedule 2

- Is where distributors set requirements for connections.
- It is enforceable under the Code for distributed generators with regulated terms, proper content is essential

Connection and operation standards, in relation to a distributor or distributed generation,—

- (a) means requirements, as amended from time to time by the **distributor**, that—
 - (i) are set out in written policies and standards of the **distributor**; and
 - (ii) relate to connecting **distributed generation** to a **distribution network** or to a **consumer installation** that is connected to a **distribution network**, and the operation of the **distribution network**, including requirements relating to the planning, design, construction, testing, inspection, and operation of **distributed generation** that is, or is proposed to be, connected; and
 - (iii) are made publicly available in accordance with clause 6.3; and
 - (iv) reflect, or are consistent with, **reasonable and prudent operating practice**; and
- (b) includes the following, as amended from time to time by the **distributor**:
 - (i) the **distributor's congestion management policy**, as referred to in clause 6.3(2)(d); and
 - (ii) the **distributor's emergency response policies**; and
 - (iii) the **distributor's safety standards**; and
- (c) until 1 September 2026, may include the **distributor's** policies for specifying available **maximum export power** amongst categories of **network users**, a **maximum export power threshold** for applications under Part 1A of Schedule 6.1, and the methodology used to determine that threshold

- Individual contracts for connection need to capture similar requirements

Confidentiality

Electricity Industry Participation Code 2010
Schedule 6.1

25 Confidentiality of information provided

- (1) All information given with, or relating to, an application made under this Schedule to a distributor must be kept confidential by the distributor except as agreed otherwise by the person that gave the information.
- (1A) A distributor may require a distributed generator to keep confidential information that—
- (a) is given to the distributed generator by the distributor for the purpose of an application under this Schedule; and
 - (b) the distributor reasonably identifies as being confidential.
- (1B) A distributor is excused from processing an application made by a distributed generator under this Schedule if the distributed generator does not agree to comply with a requirement to keep information confidential imposed under subclause (1A).
- (2) Despite subclause (1), the distributor—
- (a) may, in response to an application under this Schedule, disclose to the applicant that another distributed generator has made an application under this Schedule (without identifying who the other distributed generator is); and
 - (b) may, in the case of an application under Part 1 of this Schedule, generally indicate the location or proposed location of the distributed generation that is the subject of the other application; and
 - (c) may, in the case of an application under Part 2 of this Schedule, disclose the nameplate capacity and proposed location of the distributed generation that is the subject of the other application.
- (3) The obligation to keep information confidential set out in subclause (1) includes—
- (a) an obligation not to use the information for any purpose other than considering the application under this Schedule and enabling the connection or continued connection of the distributed generation; and
 - (b) an obligation to destroy the information as soon as is reasonably practicable after the later of—
 - (i) the date on which the information is no longer required for the purposes in paragraph (a); and
 - (ii) 60 months after receiving the information.

Compare: SR 2007/219 clause 25 Schedule 1

Heading: amended, on 23 February 2015, by clause 46(1) of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 25(1): substituted, on 23 February 2015, by clause 46(2) of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 25(1A) and (1B): inserted, on 23 February 2015, by clause 46(3) of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 25(2) and (3): substituted, on 23 February 2015, by clause 46(4) of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

Clause 25(3)(a): amended, on 5 October 2017, by clause 60 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

Record keeping

Heading: amended, on 29 August 2013, by clause 4(1) of the Electricity Industry Participation (Additional Registry Fields) Code Amendment 2012.

26 [Revoked]

Compare: SR 2007/219 clause 26 Schedule 1

Clause 26: revoked, on 29 August 2013, by clause 4(2) of the Electricity Industry Participation (Additional Registry Fields) Code Amendment 2012.

- Confidential information should only be disclosed in any of the following circumstances:
 - If the distributed generator and distributor agree in writing to the disclosure of information
 - If disclosure is expressly provided for under these regulated terms
 - At the time confidential information is in the public domain
- Confidentiality of information made in applications (25(3) of Schedule 6.1)
 - All information given with, or relating to, an application to a distributor must be kept confidential by the distributor except as agreed otherwise by the person that gave the information, but a distributor may:
 - Disclose to an applicant that another DG has made an application
 - May generally indicate the location or proposed location of the DG
 - May disclose the nameplate capacity and proposed location of the distributed generation that is the subject of the other application
 - Information must not be used for any purpose other than considering the application and enabling the connection or continued connection of DG
 - Information must be destroyed as soon as is reasonably practicable but within 60 months

Connection application process

Electricity Industry Participation Code 2010
Schedule 6.3

Schedule 6.3 cl 6.8
Default dispute resolution process

Contents

1	Application of this schedule
2	Notice of dispute
3	Complaints
4	Application of pricing principles to disputes
5	Orders that Rulings Panel can make

1 Application of this Schedule
This Schedule applies in accordance with clause 6.8.
Compare: SR 2007/219 clause 1 Schedule 3
Clause 1: substituted, on 23 February 2015, by clause 68 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.

2 Notice of dispute
(1) A party must give written notice to the other party of the dispute.
(2) The parties must attempt to resolve the dispute with each other in good faith.
(3) If the parties are unable to resolve the dispute, either party may complain in writing to the **Authority**.
Compare: SR 2007/219 clause 2 Schedule 3

3 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.
Compare: SR 2007/219 clause 3 Schedule 3

4 Application of pricing principles to disputes
(1) The **Authority** and the **Rulings Panel** must apply the pricing principles set out in Schedule 6.4 to determine any connection charges payable.
(2) Subclause (1) applies if—

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- Application necessary for new, changed, *modified DG installations*
- Distributed generators should also make arrangements with the electricity retailer for metering and sale of any surplus – *not part of the approval process but always worth asking if this has been done*
 - Distributed generators can elect to gift surplus electricity to the electricity market, but distributors may still require metering data
- Code does not change distributors responsibilities under other enactments
- The distributed generator is the networks customer and is party responsible for an application, but may get an agent to act on its behalf
- There are 4 Code related stages to the connection of generation
 - Application made by the distributed generator
 - Assessment of the application by the distributor
 - Approval of the application by the distributor
 - Commissioning of the generation by the distributed generator
- Distributed generators that connection generation that can inject into a network, for which the distributor did not receive an application, are in breach of the Code and probably the distributors safety requirements
- There are maximum fees set out in the Code

Unauthorised connection of distributed generation

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 **electrically disconnect the distributed 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
Clause 13(1): amended, on 23 February 2015, by clause 57(1) of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.
Clause 13(2): amended, on 23 February 2015, by clause 57(2) of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.
Clause 13(2): amended, on 5 October 2017, by clause 68 of the Electricity Industry Participation Code Amendment (Code Review Programme) 2017.

- If a customer can inject electricity into a network, they are a participant to the Code, and if they have not had an approved application from a distributor they are in breach of the Code

If a distributor considers that a distributed generator may:

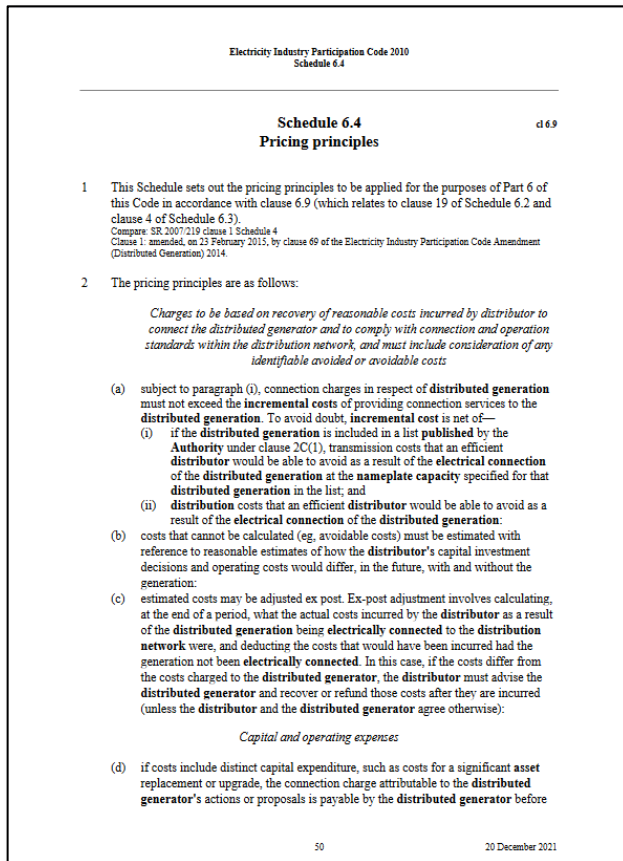
- Adversely affect the service provided to other distribution network customers; or
- Cause damage to the distribution network or other facilities; or
- Present a hazard to a person.

The distributor may give a notice and if distributed generator fails to remedy the adverse operating effect within a reasonable time, the distributor may electrically disconnect the distributed generation by giving reasonable notice (or without notice when reasonably necessary in the event of an emergency or hazardous situation) (Clause 13 of Schedule 6.2)

- If the safety of the installation is not known, it is an issue under the Electricity Safety Regs
- If the installation is due to a deficiency in the Part 1A application process, Clause 9E of Schedule 6.1 applies, distributor may instruct distributed generator to disconnect

Connection pricing

- Case study at <https://www.ea.govt.nz/assets/dms-assets/28/Determination-of-connection-charges-payable-by-distributed-generator.PDF>
- Schedule 6.4 provides the regulatory framework under which distributors may impose connection charges on distributed generators
- Schedule 6.3 provides the regulatory framework under which disputes may be considered, and includes pricing



Quick summary of Schedule 6.4 pricing principles is as follows

- **Must not exceed the incremental costs of providing connection services**, net of transmission and distribution costs that an efficient distributor would be able to avoid
- **If incremental costs are negative**, the distributed generator may invoice the distributor
- **Costs that cannot be calculated (e.g. avoidable costs) must be estimated** with reference to reasonable estimates of how the distributor's capital investment decisions and operating costs would differ, in the future, with and without the generation, and may be adjusted ex post
- If distinct capital expenditure for a significant asset replacement or upgrade **the cost may be payable by the distributed generator before connection**
- Ongoing or periodic operating expenses, such as costs for routine maintenance **may take the form of a periodic charge**
- The distributor may review the connection charges payable by a distributed generator **not more than once in any 12-month period**. The distributor must advise the distributed 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
- **If multiple distributed generators share an investment**, the portion of costs payable by any 1 distributed generator must be calculated taking into account the relative expected peak of each distributed generator's injected generation; and may also have regard to the percentage of assets that will be used by each distributed generator, the percentage of distribution network capacity used by each distributed generator, the relative share of expected maximum combined peak output, and whether the combined peak generation is coincident with the peak load on the distribution network
- If a distributed generator/s has paid connection charges that include (in part) the cost of an investment that is subsequently shared by other distributed generators within 36 months of connection, **the distributor must refund to the distributed generator all connection charges** paid to the distributor in respect of that investment in accordance with the expected peak of that distributed generator's injected generation over a period of time agreed between the distributed generator and the distributor.

Disputes process

Schedule 6.3 of Part 6

Electricity Industry Participation Code 2010 Schedule 6.3	
Schedule 6.3 cl 6.3	
Default dispute resolution process	
Contents	
1	Application of this schedule
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3	Complaints
4	Application of pricing principles to disputes
5	Orders that Rulings Panel can make

1 Application of this Schedule
This Schedule applies in accordance with clause 6.8. <small>Compare: SR 2007/219 clause 1 Schedule 3 Clause 1: substituted, on 23 February 2015, by clause 68 of the Electricity Industry Participation Code Amendment (Distributed Generation) 2014.</small>
2 Notice of dispute
(1) A party must give written notice to the other party of the dispute. (2) The parties must attempt to resolve the dispute with each other in good faith. (3) If the parties are unable to resolve the dispute, either party may complain in writing to the Authority. <small>Compare: SR 2007/219 clause 2 Schedule 3</small>
3 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. <small>Compare: SR 2007/219 clause 3 Schedule 3</small>
4 Application of pricing principles to disputes
(1) The Authority and the Rulings Panel must apply the pricing principles set out in Schedule 6.4 to determine any connection charges payable. (2) Subclause (1) applies if—

- Where parties cannot agree, disputes may be referred to the Authority who may consider it or refer it to the Rulings Panel

6.8 Dispute resolution

(1) Subject to subclause (2), Schedule 6.3 applies to a dispute between a distributed generator that is a participant and a distributor arising from any one of the following—

- (a) an allegation that a party has breached any of the regulated terms that apply under clause 6.6(2); and
- (aa) an allegation that conditions specified by the distributor under clause 18 of Schedule 6.1 are not reasonably required; and
- (ab) an allegation that a party has not attempted to negotiate in good faith under clause 6 or clause 21 of Schedule 6.1; and
- (b) an allegation that a party has breached any of the other provisions of this Part.

- If the dispute is about prices, pricing principles set out in Schedule 6.4 apply
- If the DG does not accept one or more of the conditions of approval specified by the distributor, but intends to proceed to negotiate a connection contract, the DG must
 - Give notice of the dispute in accordance with the Code, within 30 business days of approval of the final application
 - Give a notice of intention to proceed within 30 business days after the dispute is resolved

Disputes process Schedule 6.3 of Part 6

- Note Clauses 3 to 5

3 Complaints

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 - (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.

4 Application of pricing principles to disputes

- (1) The Authority and the Rulings Panel must apply the pricing principles set out in Schedule 6.4 to determine any connection charges payable.
- (2) Subclause (1) applies if—
 - (a) there is a dispute under Part 6 of this Code; and
 - (b) in the opinion of the Authority or the Rulings Panel it is necessary or desirable to apply subclause (1) in order to resolve the dispute.

5 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

Electricity Industry Participation Code 2010 Schedule 6.3	
Schedule 6.3 cl 6.8 Default dispute resolution process	
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Connection application process

Electricity Industry Participation Code 2010
Schedule 6.3

Schedule 6.3 cl 6.8
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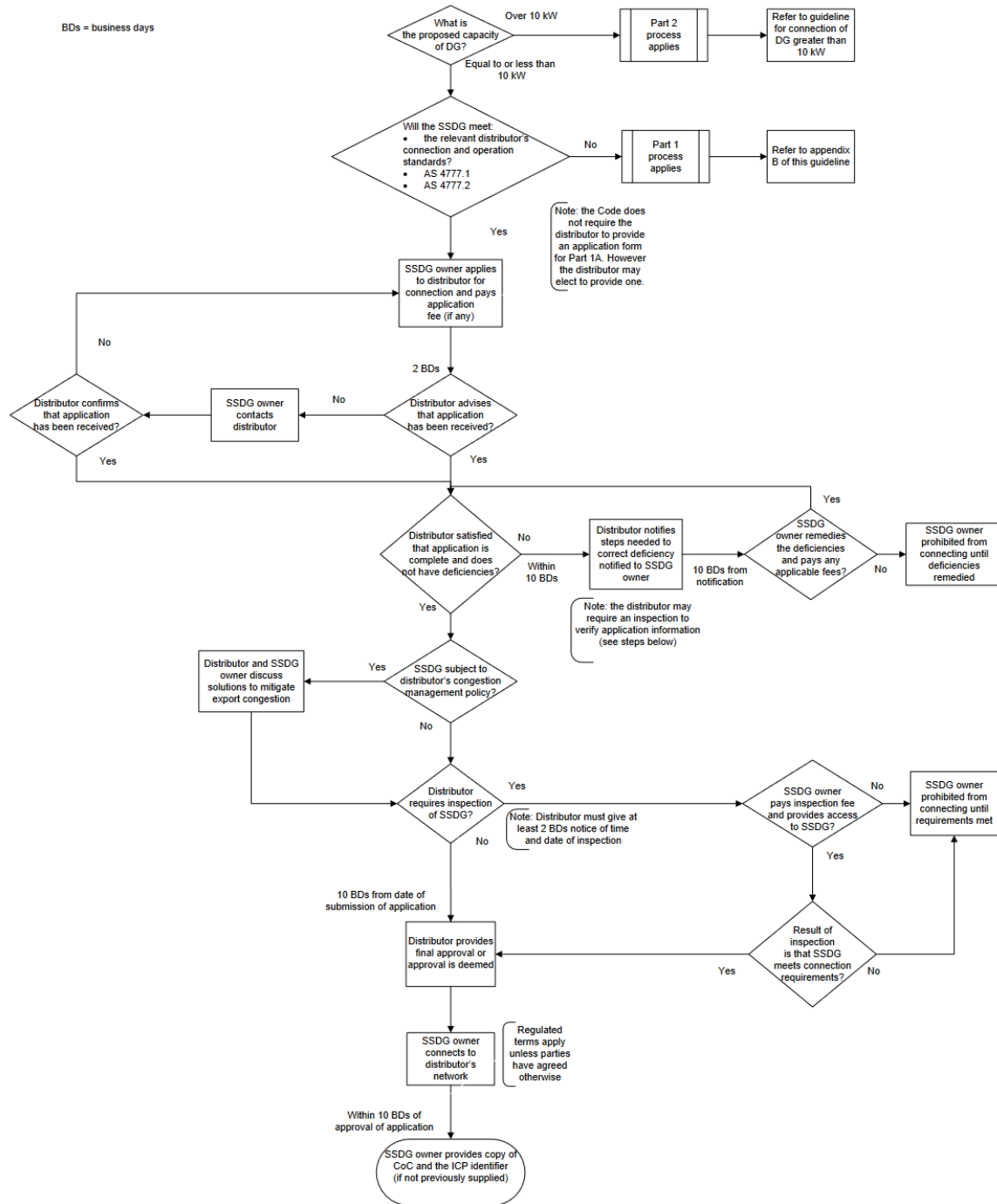
- Three application processes (*problematic with larger generation*)
 - **Part 1A - =<10kW**
 - Streamlined application and approval process if the distributed generation meets certain conditions
 - Hosting capacity provisions may apply from 1 September 2021
 - Injection cap
 - Voltage settings
 - **Part 1 - =<10kW**
 - Technical assessment process
 - **Part 2 - >10kW**
 - Technical assessment process
- Part 6 was last reviewed in 2012, needs a review now, consideration for:
 - Clear instruction in the Code for unauthorised connections
 - A large number of areas where Code not correctly stated or linked
 - Clear instruction in the Code that a replacement of a failed inverter should initiate an application
 - A formalised application process for connections to the Grid
 - An application process for larger distributed generation, e.g. above 1MW
 - Not Part 6 – but consideration on dispatch requirements for generation above 1MW (Part 13)

BDs = business days

Part 1A application process flow diagram

Objective

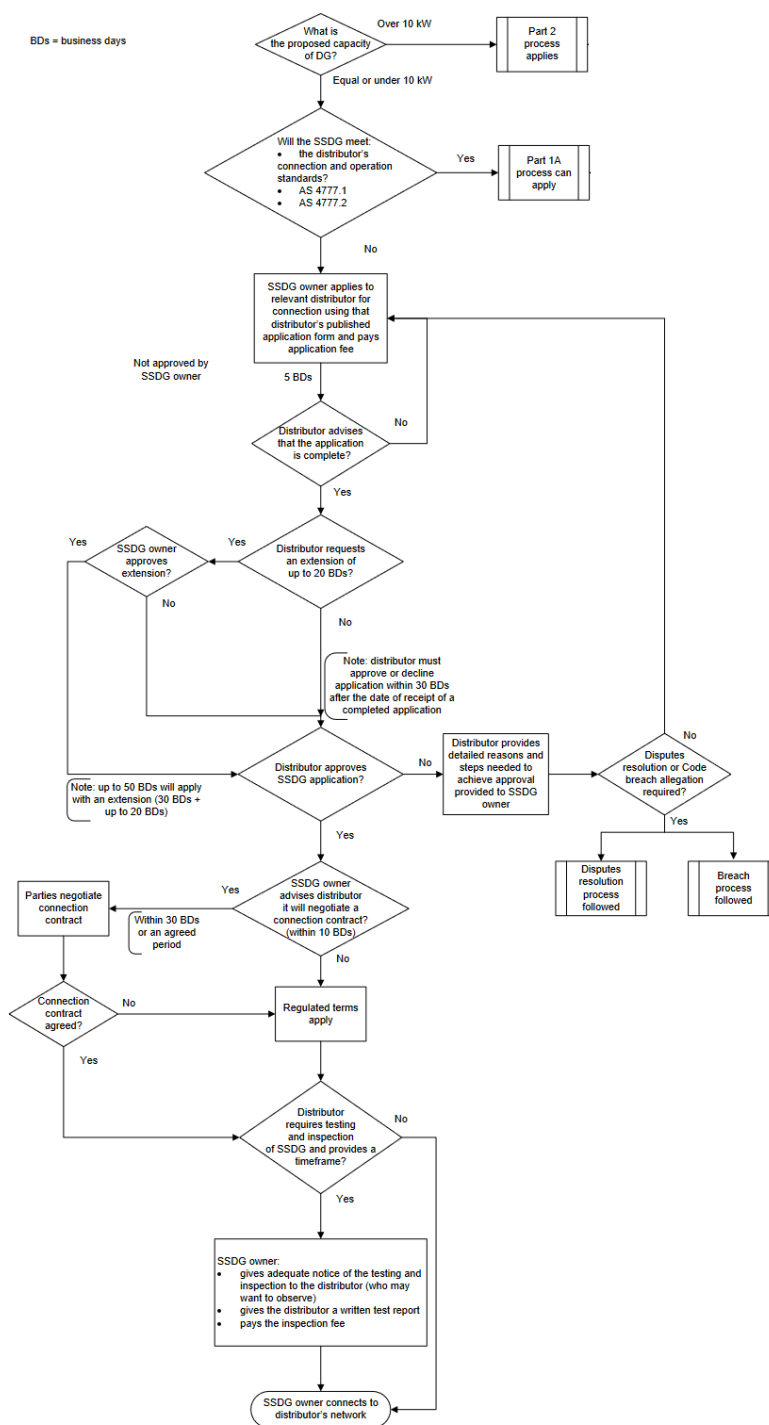
1. Simple application and contract process for Standards compliant installations
2. Lower transaction costs to improve the efficiency of the industry
3. Lower a barrier to distributed generation competing in the generation market
4. Reduce safety risks by ensuring that all relevant parties are aware that the DG has been connected and that design complies with NZ Standards
5. Minimise congestion within the distributors network and allow all customers to be able to install DG



Part 1 application process flow diagram

Objective

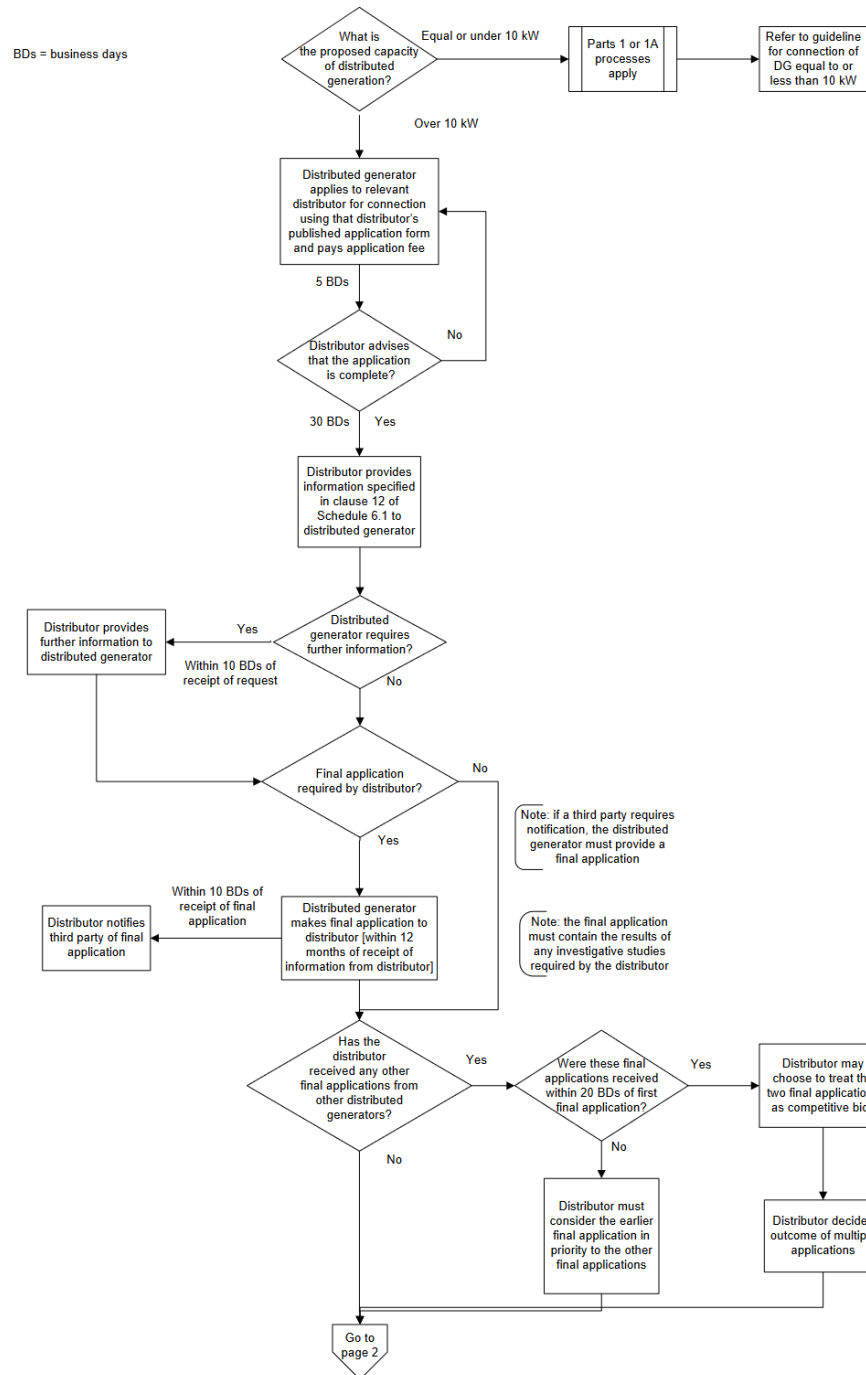
1. Application process for installations $\leq 10\text{kW}$ that do not meet the requirements of the Part 1A application process
2. Allows time for distributors to investigate the connection
3. Connection and operation standards may prevent connection in congested sections of a network



Part 2 application process flow diagram 1/2

Objective

1. Application process for installations >10kW
2. Allows time for distributors to investigate the connection



Part 2 application process flow diagram 2.

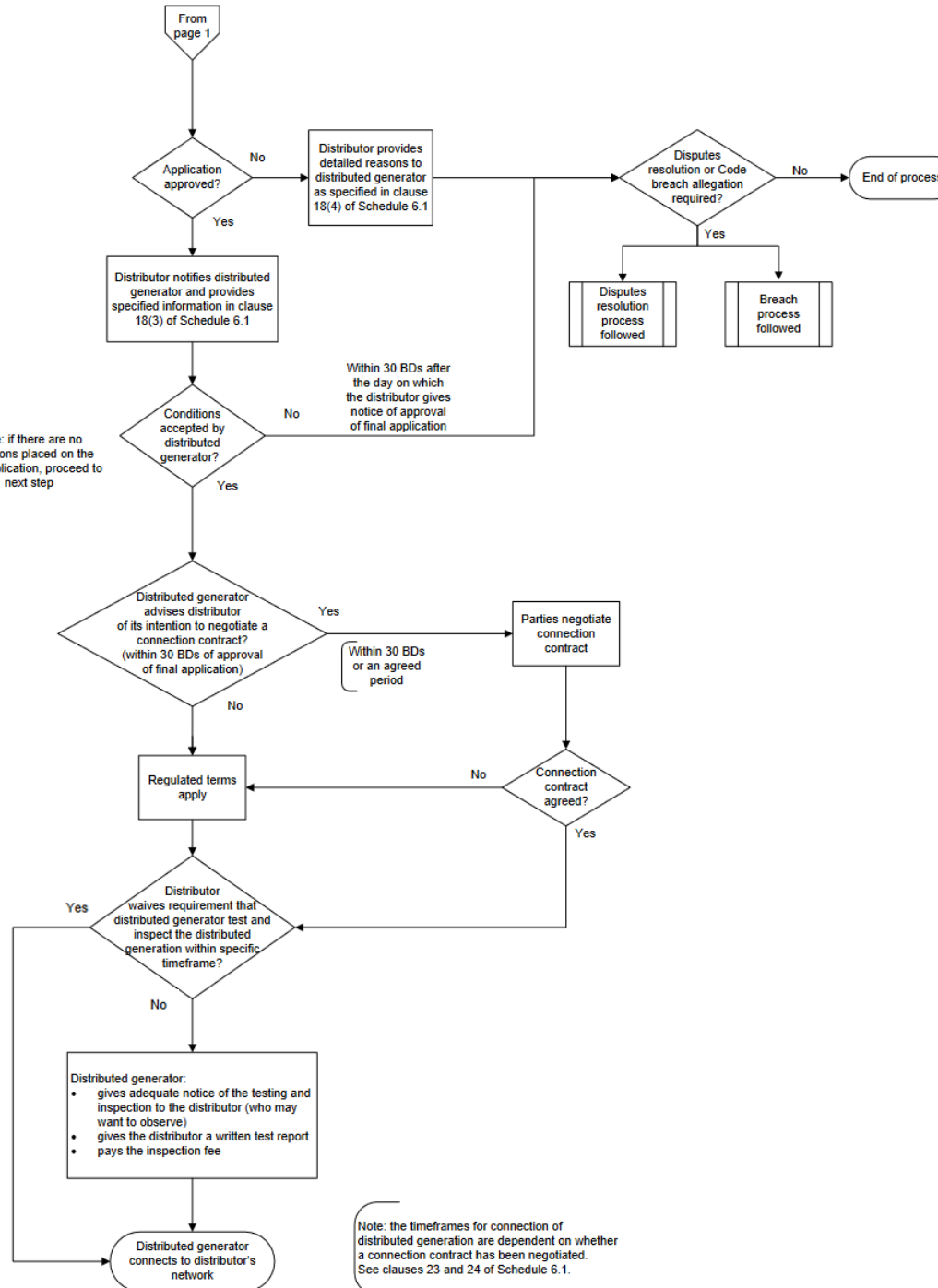
Objective

1. Application process for installations >10kW
2. Allows time for distributors to investigate the connection

Note: notifications regarding whether the distributor approves the application or not from the distributor must be received as per the number of BDs below after the date of receipt of the final application:

- 45 BDs for nameplate capacity of less than 1 MW
- 60 BDs for nameplate capacity of 1 MW or more, but less than 5 MW
- 80 BDs for nameplate capacity of 5 MW or more

Note: if there are no conditions placed on the final application, proceed to next step



Questions

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