

# Connection of distributed generation (greater than 10 kW) to a local network

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Guideline

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## **Disclaimer**

The purpose of this guideline (guideline) is to assist participants to understand and comply with the Electricity Industry Participation Code 2010 (Code). However, it is not a substitute for, nor does it form part of the Code. If there is any inconsistency between the content of this guideline and the Code, the Code takes precedence.

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## **Executive summary**

Part 6 describes the framework and process for the connection of distributed generation. The Authority completed an operational review (review) of Part 6 of the Code (Part 6) in August 2014 that resulted in some changes to the connection process.

This guideline provides information on the connection of distributed generation greater than 10 kW to distribution networks if a distributed generator seeks approval before:

- (a) connecting new distributed generation whether on regulated terms or other agreed terms; or
- (b) continuing an existing connection of distributed generation when:
  - (i) a connection contract has to be extended or has expired;
  - (ii) there is no existing contract and regulated terms do not apply; or
  - (iii) there is a change to the nameplate capacity or fuel type of connected distributed generation.

The guideline has been prepared to assist distributors and distributed generators with the requirements of Schedule 6.1 of Part 6 of the Code, and in particular, Part 2 of that Schedule.

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# 1 Introduction

- 1.1 This guideline outlines the connection process for distributed generation with a capacity greater than 10 kW. A guideline for small-scale distributed generation (distributed generation with a capacity of 10 kW or less) is available from the Authority's website.<sup>1</sup>
- 1.2 distributed generation means equipment used, or proposed to be used, for generating electricity that:
- (a) is connected, or proposed to be connected, to a distribution network that is directly or indirectly connected to the grid, or to a consumer installation that is connected to a distribution network<sup>2</sup>
  - (b) is capable of injecting electricity into that distribution network.
- 1.3 A distributed generator, for the purposes of Part 6, means a person who owns or operates, or intends to own or operate, distributed generation.<sup>3</sup>
- 1.4 Distributed generators own and operate a wide variety of distributed generation equipment connected to distribution networks throughout New Zealand, ranging from small-scale plants of a few kilowatts or less through to large power stations capable of generating many megawatts of power.
- 1.5 Part 6 of the Code:
- (a) came into effect on 1 November 2010 and replaced the Electricity Governance (Connection of Distributed Generation) Regulations 2007, which were in force from 30 August 2007 until 31 October 2010
  - (b) 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
  - (c) enables the connection of distributed generation if connection is consistent with the distributor's connection and operation standards.
- 1.6 The Authority reviewed Part 6 from late 2011 to July 2014 to investigate and resolve a number of technical issues with the regulated process by which distributed generators can apply to:
- (a) connect new distributed generation to a distributor's local network, whether on regulated terms or other agreed terms; or
  - (b) continue an existing connection of distributed generation to a distributor's local network in a situation in which:
    - (i) a connection contract has to be extended or has expired
    - (ii) there is no existing connection contract and the regulated terms do not apply; or
    - (iii) the distributed generator wants to change the nameplate capacity or fuel type of connected distributed generation.

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<sup>1</sup> <https://www.ea.govt.nz/operations/distribution/distributed-generation/>.

<sup>2</sup> A generation plant directly connected to the national grid (as opposed to a distribution network) is not distributed generation.

<sup>3</sup> Clause 1.1(1) of the Code.

- 1.7 Following the review, the Authority amended Part 6 in August 2014, with the amendments coming into effect on 23 February 2015.

### **Registration of distributed generators**

- 1.8 Under section 7(1)(a) of the Electricity Industry Act 2010 (Act), a generator is an industry participant. Section 5 of the Act defines the term generator as a business engaged in generation.<sup>4</sup> However, a business is not a generator unless its primary form of business is generation.
- 1.9 Section 7(1)(g) of the Act provides that a person, other than a generator, who generates electricity that is fed into a network is an industry participant.
- 1.10 Accordingly, a distributed generator is an industry participant under section 7(1)(g) of the Act if it is either:
- (a) directly connected to a distribution network;
  - (b) connected to a consumer installation<sup>5</sup> that is connected to a distribution network; or
  - (c) a business engaged in generation, with generation as its primary form of business.
- 1.11 Under section 9(1) of the Act, industry participants must:
- (a) register as participants by supplying the Authority with the information specified in section 27(2) of the Act<sup>6</sup>
  - (b) comply with the Code.
- 1.12 Distributed generators who propose to connect to a distribution network (but are not yet connected) do not qualify as industry participants under the Act and are not regulated by the Code.<sup>7</sup>

### **Information that distributors must provide**

- 1.13 Each distributor must provide at its office and on its website:<sup>8</sup>
- (a) suitable documentation for connecting distributed generation, including the distributor's:
    - (i) application forms
    - (ii) connection and operation standards
    - (iii) fees

<sup>4</sup> Under section 5 of the Act, generation means the generation of electricity that is fed into the national grid or a network.

<sup>5</sup> Consumer installation, for the purposes of the definitions of connect, distributed generation, electrical installation and fittings under the Code, and for the purposes of Part 6 of the Code, includes—

- (a) an electrical installation; and
- (b) any fittings that are used, or designed or intended for use, by any person in or in connection with the generation of electricity so that electricity can be injected into a distribution network.

<sup>6</sup> Information on how to register as an industry participant is at <http://www.ea.govt.nz/operations/industry-participants/>.

<sup>7</sup> If a distributed generator (who is not yet connected) does not comply with the requirements for connecting distributed generation under Part 6, it will not be in breach of the Code. However, the distributor that the distributed generator is applying to is unlikely to allow the distributed generator to connect its distributed generation in such circumstances. This is because the distributor is likely to have mirrored the requirements for connecting distributed generation under Part 6 in its own connection and operation standards, which the distributed generator must comply with to connect distributed generation.

<sup>8</sup> Clause 6.3 of the Code.

- (iv) regulated terms for connection and information on how the regulated terms apply if the parties do not enter into a connection contract
  - (v) interruption and curtailment policies
  - (vi) contact information
- (b) 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 4777-2005)<sup>9</sup>
  - (c) an up-to-date list of all specific locations on its network that are currently known to be subject to export congestion (or reasonably expected to become subject to export congestion within the next 12 months) and, hence, unable to accept additional export of electricity from distributed generation connections at specific times.<sup>10</sup>
- 1.14 Each distributor should identify export-congested parts of their networks with reference to districts, suburbs, feeders, streets or street addresses (as may be relevant) so as to clearly indicate to a reasonable person that a point of connection of distributed generation to the network may be subject to operational export congestion restrictions. In practice, location descriptions will relate to specific feeders and suitable descriptions will accordingly be in the same format as distributors use when notifying consumers and retailers of planned outages. Generic network area descriptions (such as, for example, “parts of the northern suburbs of Wellington”) are not sufficient for this purpose.

## 2 Connecting distributed generation using Part 2 of Schedule 6.1

### Connection approval process

- 2.1 A distributed generator must obtain approval from the distributor before:
- (a) connecting new distributed generation whether on regulated terms or other agreed terms; or
  - (b) continuing an existing connection in a situation in which:
    - (i) a connection contract has to be extended or has expired;
    - (ii) there is no existing connection contract and the regulated terms do not apply; or
    - (iii) the distributed generator wants to change the nameplate capacity or fuel type of connected distributed generation.

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<sup>9</sup> To be clear, the distributor is not responsible for conformance testing of inverters. The distributor is only required to publish information that identifies the make and model of all inverters that have previously been submitted in applications under Part 6 and for which appropriate Declaration of Conformity documentation has been received.

<sup>10</sup> Export congestion occurs if an additional unit of electricity injected into the network would cause a component in the network (e.g. a circuit or a transformer) to operate beyond its rated maximum capacity or give rise to an unacceptably high level of voltage at the point of connection to the network. The purpose of identifying areas of the network subject to export congestion is to provide prospective distributed generators at the earliest possible time with information that may affect their decision to invest in distributed generation.

## Application and information for connection approval from distributed generator

- 2.2 A distributed generator must make an initial application to a distributor by:
- (a) using the publicly available application form provided by the distributor
  - (b) providing any information in respect of the distributed generation to which the application relates that is required by the Code or specified by the distributor under the Code
  - (c) paying the application fee (if any) specified by the distributor in accordance with the Code.<sup>11</sup>
- 2.3 The information that the distributor may require the distributed generator to provide with its application may include:<sup>12</sup>
- (a) specifying whether the application is to:
    - (i) connect a new distributed generation installation to the distribution network;
    - (ii) continue an existing distributed generation connection if a connection contract is in force or has expired;
    - (iii) continue an existing distributed generation connection that has not previously been connected under a connection contract; or
    - (iv) change the nameplate capacity or fuel type of an existing distributed generation connection.<sup>13</sup>
  - (b) the name and address of the distributed generator and contact details of the person that the distributor may contact regarding the distributed generation
  - (c) if the application is to change the nameplate capacity or fuel type of connected distributed generation:
    - (i) the nameplate capacity that the distributed generation will have after the change
    - (ii) the aggregate nameplate capacity that all distributed generation that is connected at that point of connection will have after the change
  - (d) details of the fuel type of the distributed generation (e.g. solar, wind, hydro or liquid fuel)
  - (e) a brief description of the physical location at the address at which the distributed generation is or will be connected
  - (f) if the application is to connect distributed generation, when the distributed generation is expected to be connected
  - (g) technical specifications of the distributed generation and associated equipment, including the following:
    - (i) technical specifications of equipment that allows the distributed generation to be disconnected from the distribution network on loss of mains voltage
    - (ii) manufacturer's rating of equipment

<sup>11</sup> Clause 11(2)(c) of Schedule 6.1 of the Code.

<sup>12</sup> Clause 11(3) of Schedule 6.1 of the Code.

<sup>13</sup> To enable the distributor to meet the requirement under clause 8(1) of Schedule 11.1 in respect of a change in nameplate capacity, the distributed generator must inform the distributor of any changes (both increases and decreases) to the nameplate capacity of the generation at the ICP.

- (iii) number of phases
  - (iv) proposed or current point of connection to the distribution network (for example, the ICP identifier and street address)
  - (v) details of either or both of any inverter and battery storage
  - (vi) details of any load at the proposed or current point of connection
  - (vii) details of the voltage (for example, 415 V or 11 kV) when connected
  - (h) information showing how the distributed generation complies with the distributor's connection and operation standards
  - (i) the maximum active power injected (MW max)
  - (j) the reactive power requirements (MVARs) (if any)
  - (k) resistance and reactance details of the distributed generation
  - (l) fault level contribution (kA)
  - (m) method of voltage control
  - (n) single line diagram of proposed connection
  - (o) means of synchronisation and connection and disconnection to the distribution network, including the type and ratings of the proposed circuit breaker
  - (p) details of compliance with frequency and voltage support requirements as specified in the Code (if applicable)
  - (q) proposed periods and amounts of electricity injections into, and offtakes from, the distribution network (if known)
  - (r) any other information that is required by the system operator
  - (s) any additional information or documents that are reasonably required by the distributor.
- 2.4 The distributor must, within 5 business days of receiving an initial application, give written notice to the applicant advising whether or not the application is complete.

### **Information that the distributor must provide**

- 2.5 A distributor has 30 business days from receipt of a completed initial application to give the distributed generator the following:<sup>14</sup>
- (a) information about the capacity of the distribution network, including both the design capacity (including fault levels) and actual operating levels
  - (b) information about the extent to which connection and operation of the distributed generation may result in a breach of the relevant standards for safety, voltage, power quality, and reliability of electricity conveyed to points of connection on the distribution network
  - (c) information about any measures or conditions (including modifications to the design and operation of the distribution network or to the operation of the distributed generation) that may be necessary to address the matters referred to in paragraphs (a) and (b)

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<sup>14</sup> Clause 12 of Schedule 6.1 of the Code.

- (d) the approximate costs of any distribution network-related measures or conditions identified under paragraph (c) and an estimate of time constraints or restrictions that may delay connecting the distributed generation
- (e) information about any further detailed investigative studies that the distributor reasonably considers are necessary to identify any potential adverse effects the distributed generation may have on the system together with an indication of:
  - (i) whether the distributor agrees to the distributed generator, or a suitably qualified agent of the distributed generator, undertaking those studies; or
  - (ii) if not, whether the distributor could undertake those studies and, if so, the reasonable estimated cost of the studies that the distributed generator would be charged
- (f) information about any obligations to other parties that may be imposed on the distributor and that could affect the distributed generation (for example, obligations to Transpower New Zealand Limited, in respect of other networks, or under the Code)
- (g) any additional information or documents that the distributor considers would assist the distributed generator's application
- (h) information about the extent to which planned and unplanned outages may adversely affect the operation of the distributed generation.

### **Other matters to assist decision making**

- 2.6 If requested by a distributed generator making an initial application, a distributor must provide additional information<sup>15</sup> to that provided in paragraph 2.5 within 10 business days of receiving the request.<sup>16</sup>
- 2.7 The additional information that the distributor must provide may include single line diagrams, equipment ratings, normal switch configurations (including fault levels), and protection system details relevant to the current or proposed point of connection of the distributed generation to the distribution network.

### **New information**

- 2.8 Each party must make reasonable endeavours to inform the other party if new information relevant to the application becomes available.<sup>17</sup>

### **Final application process**

- 2.9 A distributed generator that makes an initial application must make a final application no later than 12 months after receiving information from the distributor, if the distributed generator wishes to proceed with the application, unless:<sup>18</sup>
- (a) the parties agree that a final application is not required

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<sup>15</sup> Provided this additional information is reasonably necessary to enable the distributed generator to consider and act on the information given by the distributor under clause 12 of Schedule 6.1.

<sup>16</sup> Clause 13 of Schedule 6.1 of the Code.

<sup>17</sup> Clause 14 of Schedule 6.1 of the Code.

<sup>18</sup> Clause 15 of Schedule 6.1 of the Code.

- (b) there are no persons to whom notification is required under clause 16 of Schedule 6.1 of the Code when the distributor and distributed generator agree that a final application is not required.
- 2.10 If a final application is not required then the distributor must treat the distributed generator's initial application as a final application.
- 2.11 Unless the distributor treats the distributed generator's initial application as a final application, the distributed generator must make the final application by:
- (a) using the final application form provided by the distributor that is publicly available
  - (b) providing to the distributor the results of any investigative studies that the distributor required the distributed generator to undertake under the Code.

### **Distributor must give notice to third parties**

- 2.12 A distributor that receives a final application must give written notice to the following persons no later than 10 business days after receiving the final application:<sup>19</sup>
- (a) all persons that have made an initial application relating to a particular part of the distribution network that the distributor considers would be affected by the approval of the final application
  - (b) all distributed generators that have distributed generation with a nameplate capacity of 10 kW or more in total connected on the regulated terms to the particular part of the distribution network that the distributor considers would be affected by the approval of the final application.

### **Priority of final applications**

- 2.13 The situation may arise in which a distributor receives a final application from a distributed generator and then, within 20 business days, subsequently receives another final application relating to a particular part of the distribution network that the distributor considers would be affected by the approval of the first application. If this occurs, the distributor:<sup>20</sup>
- (a) may consider the final applications together as if they were competitive bids to use the same part of the distribution network
- 2.14 must consider the final applications in light of the purpose of Part 6.<sup>21</sup> In any other case in which a distributor receives more than 1 final application relating to a similar part of the distribution network, the distributor must consider an earlier final application in priority to other final applications.

### **Distributor's decision on application**

- 2.15 A distributor must, within the time limit specified in paragraph 2.19, give notice in writing to the applicant stating whether it approves or declines the final application.<sup>22</sup>
- 2.16 A distributor must approve a final application to connect distributed generation, subject to any reasonable conditions the distributor specifies, if:

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<sup>19</sup> Clause 16 of Schedule 6.1 of the Code.

<sup>20</sup> Clause 17 of Schedule 6.1 of the Code.

<sup>21</sup> Under clause 6.2 of the Code, the purpose of Part 6 is to enable the connection and continued connection of distributed generation if connection is consistent with connection and operation standards.

<sup>22</sup> Clause 18 of Schedule 6.1 of the Code.

- (a) the application has been properly made in accordance with Part 6
  - (b) the information provided in the application would reasonably support an assessment by the distributor that:
    - (i) the distributed generator will comply at all times with the requirements of the Health and Safety in Employment Act 1992
    - (ii) the distributed generator will ensure that the distributed generation complies at all times with the Act and the Code
    - (iii) the distributed generation meets the distributor's connection and operation standards (assuming that the distributed generator meets the conditions (if any) referred to in paragraph 2.17).
- 2.17 A notice from the distributor stating that it approves an application must include:
- (a) a detailed description of any conditions (or other measures) that are conditions of the approval, and what the distributed generator must do to comply with them
  - (b) detailed reasons for those conditions (or other measures)
  - (c) a detailed description of any charges payable by the distributed generator to the distributor or the distributor to the distributed generator, and an explanation of how the charges have been, or will be, calculated
  - (d) the default process for resolution of disputes under Schedule 6.3 of the Code, if the distributed generator disputes all or any of the conditions (or other measures) or charges payable.
- 2.18 A notice from the distributor stating that it declines an application must include:
- (a) detailed reasons as to why the application has been declined and the steps that the applicant can take to achieve approval if it makes a new application
  - (b) if the application is one relating to priority of connection, the criteria used in making a decision relating to competitive bids and the purpose of Part 6
  - (c) the default process for resolution of disputes between participants under Schedule 6.3 of the Code
  - (d) if the distributed generator is not a participant, information on how the distributed generator may report to the Authority under the Electricity Industry (Enforcement) Regulations 2010 if it considers that the distributor has breached any requirement in Part 6.

### **Time within which distributor must decide final applications**

- 2.19 A notice of approval or declining approval of a final application must be given by a distributor to a distributed generator no later than:<sup>23</sup>
- (a) 45 business days after the date of receipt of the final application, in the case of distributed generation that will have a nameplate capacity of less than 1 MW
  - (b) 60 business days after the date of receipt of the final application, in the case of distributed generation that will have a nameplate capacity of 1 MW or more but less than 5 MW; or
  - (c) 80 business days after the date of receipt of the final application, distributed generation that will have a nameplate capacity of at least 5 MW.

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<sup>23</sup> Clause 19 of Schedule 6.1 of the Code.

- 2.20 A distributor may seek, by written notice specifying the reasons, 1 or more extensions to the relevant timeframe outlined in paragraph 2.19, to which the distributed generator must not unreasonably withhold consent. The distributed generator may not grant an extension that exceeds 40 business days.

### **Testing and inspection**

- 2.21 A distributed generator, whose final application to connect distributed generation is approved by a distributor, must test and inspect the distributed generation to which the final application relates within a reasonable time frame specified by the distributor.<sup>24</sup> In this instance:
- (a) the distributed generator must give adequate notice of the testing and inspection to the distributor
  - (b) the distributor may send qualified personnel to the site to observe the testing and inspection
  - (c) the distributed generator must give the distributor a written test report when the testing and inspection is complete, including suitable evidence that the distributed generation complies with the distributor's connection and operation standards
  - (d) the distributed generator must pay any fee specified by the distributor, which must not exceed the maximum amount specified in Schedule 6.5 of the Code, for observing the testing and inspection.
- 2.22 However, the distributor may waive the requirement that the distributed generator test and inspect if the distributor is satisfied that the distributed generation complies with the distributor's connection and operation standards.

### **Distributed generator must give notice of intention to proceed**

- 2.23 If a distributor advises a distributed generator that the distributed generator's final application is approved, the distributed generator must give written notice to the distributor confirming whether or not the distributed generator intends to proceed to negotiate a connection contract and, if so, confirming:<sup>25</sup>
- (a) the details of the distributed generation
  - (b) that the distributed generator accepts all of the conditions (or other measures) that the distributor has specified.
- 2.24 The distributed generator must give the notice no later than 30 business days after the day on which the distributor gives notice of approval of the final application, or such later date as is agreed by the parties.
- 2.25 If the distributed generator is a participant and does not accept one or more of the conditions of approval specified by the distributor, but the distributed generator intends to proceed to negotiate a connection contract, the distributed generator must:
- (a) give notice of the dispute in accordance with the Code,<sup>26</sup> within 30 business days after the day on which the distributor gave notice of approval of the final application
  - (b) give a notice of intention to proceed within 30 business days after the dispute is resolved.

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<sup>24</sup> Clause 22 of Schedule 6.1 of the Code.

<sup>25</sup> Clause 20 of Schedule 6.1 of the Code.

<sup>26</sup> Clause 2 of Schedule 6.3 of the Code.

- 2.26 If the distributed generator fails to give notice to the distributor of an intention to proceed to negotiate a connection contract within the specified time limits, the distributor has no obligation to progress the distributed generator's final application.
- 2.27 Failure to give notice of intention to proceed to negotiate a connection contract does not prevent the distributed generator from making a new application under Part 6.

### **Post-approval process**

- 2.28 If a distributed generator whose final application is approved gives notice to a distributor of its intention to proceed to negotiate a connection contract, the parties have 30 business days, starting on the date on which the distributor receives the notice, during which they must, in good faith, attempt to negotiate a connection contract.<sup>27</sup>
- 2.29 The distributor and the distributed generator may, by mutual agreement, extend the time beyond 30 business days for negotiating a connection contract.

### **Connection of distributed generation if connection contract negotiated**

- 2.30 If a distributor and a distributed generator, whose final application is approved, enter into a connection contract before the period for negotiating a connection contract expires, one of the following will apply depending on the purpose of the application:<sup>28</sup>
- (a) *application to connect distributed generation*: the distributor must allow the distributed generator to connect the distributed generation in accordance with the contract as soon as practicable;
  - (b) *application to continue an existing connection of distributed generation*: the distributor must use its best endeavours to ensure that the new terms under which the distributed generator's existing connection continues apply:
    - (i) as soon as practicable, if the previous connection contract has expired; or
    - (ii) no later than the expiry of the previous connection contract, if the contract is in force;
  - (c) *application to continue an existing connection for which there is no connection contract*: the distributor must use its best endeavours to ensure that the new terms under which the distributed generator's existing connection continues apply as soon as practicable; or
  - (d) *application to change the nameplate capacity or fuel type of connected distributed generation*: the distributor must use its best endeavours to ensure that the new terms under which the distributed generator's existing connection continues apply as soon as practicable.

### **Connection of distributed generation on regulated terms if connection contract not negotiated**

- 2.31 If a distributor and a distributed generator, whose final application is approved, do not enter into a connection contract before the period for negotiating a connection contract expires, then one of the following will apply depending on the purpose of the application:<sup>29</sup>

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<sup>27</sup> Clause 21 of Schedule 6.1 of the Code.

<sup>28</sup> Clause 23 of Schedule 6.1 of the Code.

<sup>29</sup> Clause 24 of Schedule 6.1 of the Code.

- (a) *if the application is to connect distributed generation*: the distributor must allow the distributed generator to connect the distributed generation on the regulated terms as soon as practicable after the later of the following:
  - (i) the expiry of the period for negotiating a connection contract; and
  - (ii) the date on which the distributed generator has fully complied with any conditions (or other measures) that were specified by the distributor as conditions of the connection;
- (b) *if the application is to continue an existing connection of distributed generation*: the regulated terms apply to the distributed generator's existing connection from the later of the following:
  - (i) the expiry of the period for negotiating a connection contract;
  - (ii) the expiry of the existing connection contract; and
  - (iii) the date on which the distributed generator has fully complied with any conditions (or other measures) that were specified by the distributor as conditions of the connection
- (c) *if the application is to continue an existing connection for which there is no connection contract*: the regulated terms apply from the later of the following:
  - (i) the expiry of the period for negotiating a connection contract; and
  - (ii) the date on which the distributed generator has fully complied with any conditions (or other measures) that were specified by the distributor as conditions of the connection
- (d) *if the application is to change the nameplate capacity or fuel type of connected distributed generation*: the regulated terms apply from the later of the following:
  - (i) the expiry of the period for negotiating a connection contract; and
  - (ii) the date on which the distributed generator has fully complied with any conditions (or other measures) that were specified by the distributor as conditions of the connection.

### **3 Options for selling electricity from distributed generation**

- 3.1 A distributed generator who wishes to trade electricity exported into a local network can either:
  - (a) enter into an agreement with a trader trading on the same network;
  - (b) sell the electricity directly to the clearing manager; or
  - (c) gift the electricity to the electricity market.
- 3.2 The Authority anticipates that distributed generators will generally arrange to sell their export quantities to the trader who retails electricity to the premises at which the distributed generation is located. If the trader declines to enter into an arrangement for this purpose, the distributed generator will need to either:
  - (a) seek an arrangement with another trader;

- (b) persuade the current trader to gift the distributed generator's surplus electricity to the electricity market;
  - (c) become the trader for the ICP that the distributed generation is connected to and sell the electricity to the clearing manager; or
  - (d) modify the distributed generation so that it does not export electricity (for example, by controlling the distributed generation or introducing storage batteries).
- 3.3 The Code requires distributed generators to notify the reconciliation manager if they will not receive payment<sup>30</sup> for any electricity that they export to the distribution network.<sup>31</sup> As an example, a distributed generator might choose not to be paid for any electricity generated if the costs of metering changes outweigh its profits from exporting electricity.
- 3.4 Distributed generators that opt to sell electricity to the clearing manager come within the definition of "trader" in the Code. Traders must:
- (a) register and be certified as reconciliation participants<sup>32</sup>
  - (b) comply with the relevant parts of the Code, including those for switching, metering, trading, and reconciliation<sup>33</sup>
  - (c) ensure that there is a metering installation at the ICP to measure all electricity conveyed.<sup>34</sup>
- 3.5 The following paragraphs outline the requirements for a metering installation that belongs to a distributed generator that wishes to export electricity from its distributed generation into its distribution network.
- 3.6 The metering installation at the point of connection between a distributed generator's premises and the network must have import/export and active/reactive metering if it:
- (a) is a category 2 (or higher category) half-hour metering installation<sup>35</sup>
  - (b) was certified after 29 August 2013
  - (c) is to be used for measuring and recording consumption and generation.<sup>36</sup>
- 3.7 Although it is not required in the Code, a distributor may still, in its connection and operation standards, require the distributed generator to have a category 1 metering installation if it is gifting the electricity.
- 3.8 The Code requires a category 2 (or higher category) metering installation to have export reactive metering in addition to the other metering requirements under the Code, if:
- (a) a distributed generator with a category 2 (or higher category) metering installation intends to gift its surplus electricity<sup>37</sup>
  - (b) the category 2 (or higher category) metering installation was certified after 29 August 2013.

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<sup>30</sup> This is termed 'gifting'.

<sup>31</sup> For more detail about this notice, refer to clause 15.13 of the Code.

<sup>32</sup> Clause 15.38 of the Code.

<sup>33</sup> Parts 10 (Metering), 11 (Registry), 13 (Trading) and 15 (Reconciliation) of the Code.

<sup>34</sup> Clause 10.24 of the Code.

<sup>35</sup> Table 1 of Schedule 10.1 of Part 10 of the Code details the metering installation characteristics and associated requirements.

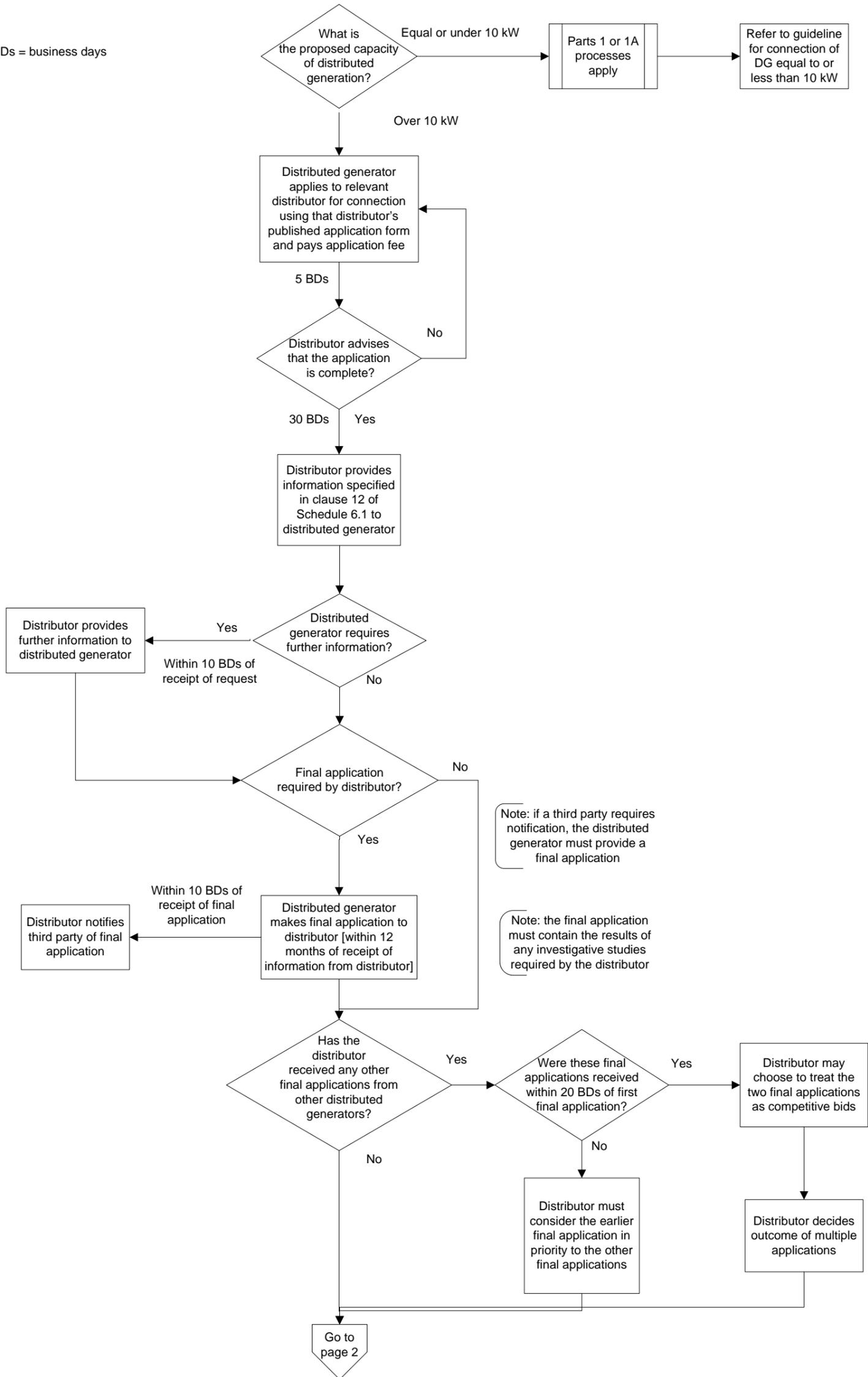
<sup>36</sup> Clause 10.37(1)(b) of the Code.

<sup>37</sup> Clause 10.37(1)(a) of the Code.

**Appendix A**

**Flow chart: Connection of distributed generation  
(greater than 10 kW) to a local network under the  
Part 2 process**

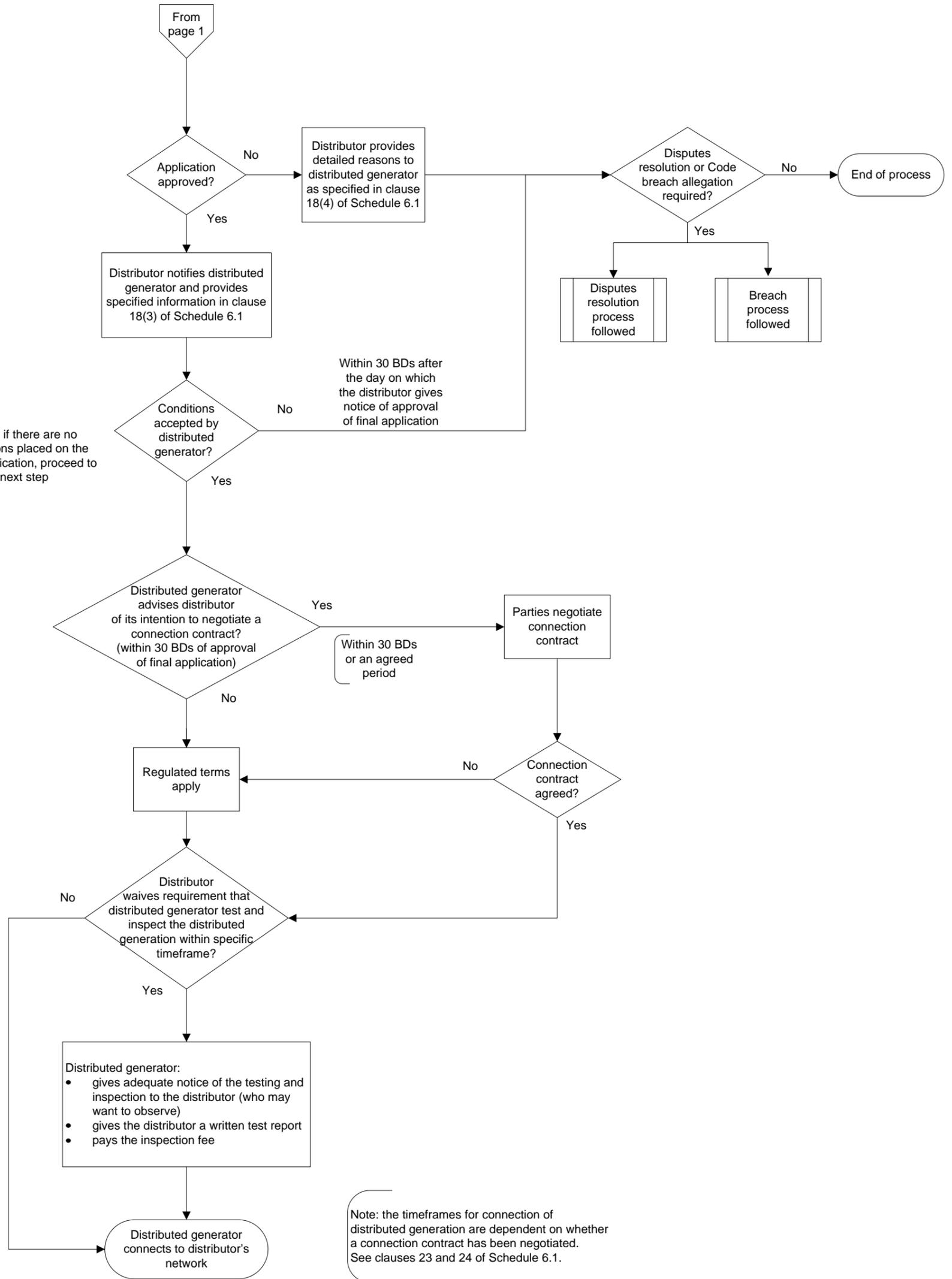
BDs = business days



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



Note: the timeframes for connection of distributed generation are dependent on whether a connection contract has been negotiated. See clauses 23 and 24 of Schedule 6.1.

## **Glossary of abbreviations and terms**

<b>Act</b>	Electricity Industry Act 2010
<b>Authority</b>	Electricity Authority
<b>Code</b>	Electricity Industry Participation Code 2010
<b>DG</b>	Distributed generation
<b>ICP</b>	Installation Control Point