

An Operational Review of Part 6 of the Code: Connection of Distributed Generation

Consultation Paper

4 September 2012



Executive summary

This consultation paper relates to an operational review of Part 6 of the Electricity Industry Participation Code 2010 (Code) that deals with the connection of distributed generation (DG) to distribution networks. Part 6 was brought into the Code on the establishment of the Electricity Authority (Authority) in November 2010; the matters covered in Part 6 were previously set out in the Electricity Governance (Connection of Distributed Generation) Regulations 2007.

The Authority issued a pre-consultation paper in October 2011 that solicited the views of interested parties on what issues should be considered within the scope of this review. The Authority has considered the 18 submissions received from a wide range of parties interested in the connection of DG.

As a result, this consultation paper:

- proposes a number of amendments to Parts 1, 6 and 17 of the Code, including supporting regulatory statements as required by the Electricity Industry Act 2010 (Act);
- identifies a number of related questions that the Authority seeks further feedback on; and
- responds to the suggestions identified during pre-consultation that the Authority considers to be outside the scope of this operational review.

This Authority considers that a problem exists in respect of small-scale DG (SSDG, i.e. DG with up to 10 kW nameplate capacity) that is connected to networks without the distributor being aware of its connection. There appears to be SSDG that is connected in breach of the mandatory Part 6 requirements. This raises potential safety and power quality concerns.

In response, a key proposal in this consultation paper is the addition of a new Part 1A to Schedule 6.1 of Part 6 of the Code. This new Part 1A provides for a simpler notifications process where distributed generators seek to connect SSDG to a distribution network (or to a consumer installation connected to a distribution network), where the SSDG has been designed, installed, tested, inspected, and connected in accordance with specified standards and regulations.

The objective of this proposal is to encourage owners of SSDG to notify distributors of the presence of SSDG by lowering the transaction costs to achieve compliance. Education and awareness of the Code requirements is an important component and views are sought from submitters as to how suitable programmes might most effectively be undertaken.

In addition to the proposed new Part 1A, this paper proposes a number of technical and operational Code amendments that propose a wide range of improvements to Part 6. Many of these are relatively straightforward corrections of identified errors or endeavour to provide clarification where ambiguity has been identified. The objective is to lower transaction costs,

including the likelihood of disputes arising between distributors and distributed generators, by improving the operation and clarity of Part 6.

Submissions are sought from interested parties on the matters identified in this consultation paper. The Authority appreciates the engagement of interested parties in this project to date and looks forward to receiving feedback on this consultation paper from a wide range of interested parties.

Glossary of abbreviations and terms

Act	Electricity Industry Act 2010
Authority	Electricity Authority
CoC	Certificate of Compliance
Code	Electricity Industry Participation Code 2010
DG	Distributed generation
DoC	Declaration of Conformity
RAG	Retail Advisory Group
SSDG	Small-scale distributed generation – i.e. DG with a nameplate capacity not exceeding 10 kW

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1. Introduction and purpose of this paper

1.1 Introduction

1.1.1 Distributed generation (DG) is any form of electricity generation that is connected to:

- (a) a local network;
- (b) an embedded network that conveys 5 GWh or more of electricity annually; or
- (c) a network that is not connected, directly or indirectly, to the national grid (e.g. Chatham Islands).

1.1.2 Therefore, generation plant directly connected to the national grid is not DG.

1.1.3 Distributed generators own and operate a wide variety of DG 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.

1.1.4 Part 6 of the Code regulates the connection of DG 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.

1.1.5 The purpose of Part 6 is to enable connection of DG if connection is consistent with connection and operation standards.

1.2 Purpose of this paper

1.2.1 The purpose of this paper is to consult with participants and persons that the Authority thinks are representative of the interests of persons likely to be affected by a review of Part 6 of the Code, including amendments to Part 1 and Part 17.

1.2.2 Section 39(1)(c) of the Act requires the Authority to consult on any proposed amendment to the Code and the regulatory statement. Section 39(2) provides that the regulatory statement must include a statement of the objectives of the proposed amendment, an evaluation of the costs and benefits of the proposed amendment, and an evaluation of alternative means of achieving the objectives of the proposed amendment. This paper contains a separate regulatory statement for each of the following:

- (a) the proposed amendment to insert a new Part 1A into Schedule 6.1 of the Code, to include a new connection process for SSDG; and
- (b) the other technical and operational amendments to Part 6.

- 1.2.3 The proposed amendments are attached as Appendix C.
- 1.2.4 The Authority invites submissions on the regulatory statements and the proposed amendments, including drafting comments.

1.3 Submissions

- 1.3.1 The Authority's preference is to receive submissions in electronic format (Microsoft Word). It is not necessary to send hard copies of submissions to the Authority, unless it is not possible to do so electronically. Submissions in electronic form should be emailed to submissions@ea.govt.nz with Consultation Paper—An Operational Review of Part 6 of the Code: Connection of Distributed Generation in the subject line.

If submitters do not wish to send their submission electronically, they should post one hard copy of their submission to either of the addresses provided below.

Submissions
Electricity Authority
PO Box 10041
Wellington 6143

Submissions
Electricity Authority
Level 7, ASB Bank Tower
2 Hunter Street
Wellington

Tel: 0-4-460 8860

Fax: 0-4-460 8879

- 1.3.2 Submissions should be received by 5 pm on 30 October 2012. Please note that late submissions are unlikely to be considered.
- 1.3.3 The Authority will acknowledge receipt of all submissions electronically. Please contact the Submissions' Administrator if you do not receive electronic acknowledgement of your submission within two business days.
- 1.3.4 If possible, submissions should be provided in the format shown in Appendix A. Your submission is likely to be made available to the general public on the Authority's website. Submitters should indicate any documents attached, in support of the submission, in a covering letter and clearly indicate any information that is provided to the Authority on a confidential basis. However, all information provided to the Authority is subject to the Official Information Act 1982.

2. Background

2.1 Part 6 context and purpose

- 2.1.1 Part 6 of the Code came into effect on 1 November 2010 and is a direct replacement of the Electricity Governance (Connection of Distributed Generation) Regulations 2007 that were in force from 30 August 2007 until 31 October 2010.¹ These regulations were developed in response to frequently raised issues in respect of the process and the terms on which distributed generators connect DG to distributors' networks.
- 2.1.2 The purpose of Part 6 is "...to enable connection of distributed generation if connection is consistent with connection and operation standards".²
- 2.1.3 A key feature of Part 6 is the inclusion of a set of regulated terms that provide a default set of terms governing the connection of DG where the distributor and distributed generator are unable (or unwilling) to negotiate a connection agreement. The regulated terms include a schedule of pricing principles and provide access to the Authority (including the Rulings Panel) for dispute resolution, if this is necessary.

2.2 Pre-consultation

- 2.2.1 In 2011, the Authority commenced a review of Part 6 of the Code. The Authority initiated this review due to its identification of a number of operational issues with Part 6.
- 2.2.2 While the Authority had assembled a list of items it considered should form the basis of the proposed Code amendment, it chose to seek early feedback from interested parties to assist it in developing a comprehensive scope for this review. The paper *Pre-consultation: Connection of distributed generation*³ was published for stakeholder consultation on 11 October 2011 with submissions due by 4 November 2011. The due date for submissions was subsequently extended by a week.
- 2.2.3 The pre-consultation paper identified 25 review items that the Authority was considering, and sought the view of interested parties on any additional items that might be suitable for incorporation into the review.

¹ These regulations were required to be included in the Code in accordance with section 34(1)(a)(v) of the Act.

² Bolded terms are defined terms included in Part 1 of the Code.

³ The paper is available at <http://www.ea.govt.nz/our-work/consultations/retail/pre-consultation-connection-of-distributed-generation/>

- 2.2.4 Submissions were received from 18 parties (including one confidential submission)⁴, representing a wide range of stakeholders interested in DG, including:
- distributors – MainPower, Network Waitaki, Orion, Powerco, The Lines Company, Vector;
 - retailers – King Country Energy, Meridian, Mighty River Power, Simply Energy;
 - a distributed generator – Transpacific Industries Group (NZ) Ltd;
 - DG industry service providers – Able Solar, Alphasat, Black Diamond Technologies;
 - a DG technology research organisation – Industrial Research Ltd (IRL); and
 - interested individuals – Annette Sharp, Dan Howard.
- 2.2.5 Several submitters identified themselves as being members of the Sustainable Electricity Association of New Zealand (SEANZ) and some of the views expressed by this group of submitters emphasised common themes. Where this paper identifies submission points or views as being from “SEANZ members”, this has been done for simplicity, and is intended to mean that the point or view is a common theme submitted by the various parties that have identified themselves as being SEANZ members. To be clear, SEANZ itself did not make a submission on the pre-consultation paper.

2.3 Evaluation of pre-consultation submissions

- 2.3.1 A wide range of views were expressed in submissions. While many of the topics and views are clearly within the scope of the current review of Part 6, the Authority considers that several topics are outside the scope of this review. Some of the topics and views put forward that are outside the scope of this review appear to better fit within the scope of other Authority work programmes and consultations. In particular, the following work programmes are relevant to a number of the topics and views raised by submitters:
- (a) A work programme investigating barriers facing SSDG conducted by the Retail Advisory Group (RAG). The RAG’s report, *Investigating barriers facing small-scale distributed generation*,⁵ was considered by the Authority Board on 29 June 2012. Matters relevant to the energy market in which SSDG operates were within the scope of this work programme.

⁴ The submissions are available at <http://www.ea.govt.nz/our-work/consultations/retail/pre-consultation-connection-of-distributed-generation/submissions/>

⁵ This report is available from <http://www.ea.govt.nz/our-work/programmes/market/distributed-generation/>

- (b) A work programme investigating distribution pricing is planned for 2012. Matters relevant to pricing principles of Part 6 and the charges that would apply to DG are more appropriately within the scope of the distribution pricing work programme.

2.3.2 There were also some views expressed by submitters that the Authority considers are not within the scope of the Part 6 review or any other Authority work programme, or which the Authority does not wish to progress.

2.4 Structure of this paper

2.4.1 To capture the wide range of issues identified in the pre-consultation process, this paper has the following structure:

Code amendment proposals

Proposed new process for the connection of SSDG

2.4.2 For the proposal to add an optional process for the connection of SSDG to Schedule 6.1 of the Code, the paper:

- (a) discusses the background and the problem in section 3.1;
- (b) provides a regulatory statement in respect of the proposed Code amendment in section 3.2; and
- (c) provides a *draft* Code amendment in Appendix C.

Other proposed amendments to Part 6

2.4.3 For the other proposed amendments that meet the Authority's statutory objective and Code amendment principles, the paper:

- (a) lists these items in the table in Appendix D, providing a description of the proposed amendment and the rationale for the proposed amendment;
- (b) discusses some specific issues related to connection requirements in section 3.3;
- (c) provides a regulatory statement in respect of these other proposed Code amendments in section 3.4; and
- (d) provides, for each proposed item, a *draft* Code amendment in Appendix C.

Issues for further discussion

2.4.4 Items the Authority considers are within the scope of the Part 6 review but for which there is currently insufficient information for the Authority to consider possible solutions are discussed in section 4 with questions that seek feedback from interested parties.

2.4.5 The Authority will consider the information it receives from submissions in developing its views as to:

- (a) whether the items actually constitute a problem; and
- (b) what solutions, if any, the Authority could consider to address genuine problems.

Issues outside the scope of this review

2.4.6 The paper lists the items that the Authority considers are not within the scope of the Part 6 review in Appendix E, providing a description of the proposed change, the identity of the submitter(s), their rationale for proposing the change, and the Authority's response in terms of:

- (a) why it disagrees with the proposed change; or
- (b) which alternative work programme should best consider the matter further.

2.4.7 This consultation paper includes:

- (a) a Code amendment proposal in respect of items the Authority considers meet its statutory objective and the Code amendment principles;
- (b) a discussion of topics the Authority seeks further feedback on; and
- (c) a response to submissions received in respect of the pre-consultation paper.

3. Proposed amendments to Part 6 of the Code

3.1 DG connected without notification to distributors

Submitter concerns about DG being connected without notification

- 3.1.1 A key concern expressed by submitters in pre-consultation feedback was that DG service providers (whether designers, installers or equipment providers) are not always aware of the requirements of Part 6 and that consequently some distributed generators are connecting DG to distribution networks without having followed the connection approval process in Part 6 of the Code. Distributors are consequently unaware of the presence of this DG and this poses serious safety and power quality concerns.
- 3.1.2 The Authority considers that an un-notified connection of DG is likely to be SSDG of sufficient simplicity that it can be connected with relative ease. While a lack of awareness of the requirements is one driver of adverse outcomes in this area, it is possible that some distributed generators may deliberately not notify a distributor of a connection to avoid the transaction costs associated with the approvals process. These connections may be able to exploit an inappropriate retail benefits by running the consumption meter register backwards.⁶
- 3.1.3 Some submitters were further concerned that a well-publicised safety incident associated with incorrectly connected SSDG could potentially be damaging to the nascent SSDG industry.
- 3.1.4 The Authority understands this issue to be widely recognised amongst distributors and the DG industry service providers that do follow the formal processes. SEANZ's activities include the development of a standards and accreditation programme to ensure safety and performance of SSDG installations and to ensure that its members are kept up to date with relevant compliance requirements.

Problem scale

- 3.1.5 Distributors report the number of connections of DG to each distribution network annually under the reporting requirements in clause 26 of Schedule 6.1 of the Code. The summary of reported information published by the Authority under clause 27 of Schedule 6.1 indicates that distributors approved 150 applications relating to SSDG in the year to 31 December 2011, and that 138 of those

⁶ Some metering installations with meters in excess of 15 – 20 years old are capable of “running backwards” (i.e. the meter's consumption register will decrement when power flows from the metered installation back into the network). It is noted that the population of old meters is dwindling. The benefit conveyed to the consumer is that the value of exported electricity is automatically credited to the consumer's account at the full retail variable rate (a practice known as “net-metering” that is not permitted under clause 10.3(e) of the Code).

applications proceeded to connection by the time distributors reported to the Authority.⁷

- 3.1.6 The total number of SSDG systems connected to all distribution networks is unknown. The Authority considers it is likely to be a number in excess of the reported data because of:
- (a) the feedback received from both distributors and the SSDG industry service providers expressing concerns regarding unauthorised connections; and
 - (b) other information that SEANZ has provided to the Authority.
- 3.1.7 In respect of (b) above, in February 2012, SEANZ provided survey information to the Authority that indicates that 153 connections of SSDG to distribution networks were completed in the year to 31 December 2011.⁸ SEANZ's view is that its survey was robustly implemented using an independent third party and is reasonably representative of around 85% of the total SSDG industry.⁹
- 3.1.8 On this basis, it could be reasonably estimated that a total of 180 connections of SSDG to distribution networks were completed in 2011.

Table 1: Estimated percentage of 2011 connections not notified to distributors

	138 SSDG connections approved and connected by distributors	150 SSDG connections approved by distributors, but not connected at time of reporting
153 SSDG systems sold	10%	2%
180 SSDG systems sold (scaled to include sales not captured by SEANZ survey)	23%	17%

Percentages have been calculated based on the difference as a percentage of the SEANZ sales figures. For example: $(153 - 138) / 153 = 10\%$

Percentages have been rounded to zero decimal places

- 3.1.9 Table 1 above indicates a range of possible percentages of SSDG connections that went unreported to distributors in 2011. This table suggests that the number of unreported connections of SSDG in 2011 was between 2% and 23%. The

⁷ See *Distributed Generation Statistics* at <http://www.ea.govt.nz/industry/market/statistics-reports/distributed-generation-statistics/>. This data also highlights an issue with registry data population by distributors. Registry data for the same 12 month period indicates that only 79 DG systems of any size were connected in 2011.

⁸ A further three DG installations of more than 10 kW capacity were recorded in the SEANZ survey for the same year.

⁹ 56 of the 71 survey respondents identified themselves as being involved in manufacturing, equipment sales, design and consultancy, or installation and maintenance.

Authority considers the most reasonable combination of assumptions produces the 17% result.

- 3.1.10 The Authority considers the magnitude of the issue to be material, and is likely to be growing.

Possible causes

- 3.1.11 The Authority considers that possible causes are:
- (a) a lack of awareness of the Code requirements by some SSDG industry service providers and SSDG investors; and
 - (b) a lack of compliance with the Code requirements by some SSDG industry service providers and SSDG investors that are aware of the requirements but see them as barriers to connection due to their transaction costs.
- 3.1.12 Improving awareness requires on-going education and publicity and can, and should, be undertaken by the Authority and other interested parties. In respect of non-compliance (assuming a party is aware of its legal obligations) there is likely to be some DG investors who would follow the prescribed process if compliance transaction costs were reduced (or if the cost of subsequent discovery of an un-notified connection is increased).

Problem definition

- 3.1.13 DG that is connected without notifying the distributor creates a number of problems identified in paragraphs 3.1.14 to 3.1.21.

Reliability - power quality

- 3.1.14 This problem relates to the quality of supply experienced by consumers in the vicinity of a substandard DG connection (including at the premises where the DG is connected). Substandard DG connections can lead to voltage issues (for example, voltage flicker) or harmonic issues (such as radio frequency interference).
- 3.1.15 Power quality problems are closely linked with the Authority's objective of promoting the reliable supply of electricity to consumers.

Reliability - safety

- 3.1.16 This problem relates to the safety of:
- (a) those working on the distribution network who are unaware of the existence of DG (irrespective of the standard of materials and workmanship); and
 - (b) the occupants of premises where substandard or otherwise electrically hazardous DG equipment may be connected.

- 3.1.17 Electrical safety concerns are, in general, outside the Authority's statutory objective. However, the extent that aspects of the Code may frustrate safe outcomes is a matter the Authority should consider when performing its functions. Providing a safe supply of electricity is directly relevant to the Authority's mandate to promote reliable supply, in that an unsafe supply can result in supply interruptions and inefficient levels of reliability.

Competition

- 3.1.18 Where unnecessarily high transaction costs have the effect of inhibiting investment in generation alternatives, such as SSDG, this raises a problem in respect of competition in the market for the provision of new generation capacity.
- 3.1.19 Additionally, connections that are made in breach of the Code (by failing to comply with the required process) effectively obtain a free ride by avoiding connection, testing and inspection fees and the costs associated with ensuring compliance with quality and safety standards.
- 3.1.20 Such connections may also be able to exploit an inappropriate retail benefit if an existing legacy metering installation provides the ability for the meter consumption register to run backwards during periods of electricity export.

Efficiency

- 3.1.21 Efficiency is a problem to the extent that the transaction costs of the existing connection processes within Part 6 are higher than is necessary to meet the purpose of Part 6. Such an issue would represent a productive inefficiency within the current arrangements.

Suggested solutions

- 3.1.22 Several submitters have requested that consideration is given to providing a simplified process where a distributed generator can provide documented evidence that the SSDG has been designed and installed in accordance with relevant standards and inspected and tested in accordance with relevant provisions of the Electricity (Safety) Regulations 2010 prior to connection.
- 3.1.23 Submitters noted that the majority¹⁰ of SSDG connected to distribution networks is inverter-connected¹¹, and that a comprehensive local standard relating to the

¹⁰ This is supported by SEANZ survey data which indicates that 97% of SSDG installations connected to a distribution network that were captured by the survey are either solar PV or wind which typically generate direct current electricity. The remaining 3% of SSDG connections are identified as hydro systems, which usually utilise an alternating current generator.

¹¹ An inverter is a device that converts electricity from direct current into alternating current, at the correct voltage and frequency. It provides the electrical interface between SSDG and the consumer installation or distribution network to which it is connected.

safe and reliable operation of the inverter exists. This standard is AS 4777¹² and is the standard most commonly cited by distributors in their connection and operation standards relating to inverter-connected SSDG systems. AS 4777.1¹³ is also referred to in the Electricity (Safety) Regulations 2010.

- 3.1.24 The Authority further notes that at least one distributor (Vector) already allows SSDG that meets specific requirements to connect to its distribution network following a simplified approval process.

Code amendments

- 3.1.25 Having considered these views, the Authority considers there is likely to be a net benefit if more distributed generators notify currently un-notified SSDG. The Authority intends to achieve this net benefit by decreasing transaction costs for distributed generators and distributors while ensuring that only properly installed SSDG that is compliant with relevant standards is connected.
- 3.1.26 The proposed mechanism to increase the notification of SSDG will involve an alternative connection process within Schedule 6.1 for SSDG that meets a defined set of criteria – this process would be incorporated within a new Part 1A of Schedule 6.1.
- 3.1.27 The proposed process provides for properly installed SSDG that is tested, inspected and compliant with relevant standards, to be permitted to connect to a distribution network without an application under Schedule 6.1. It is proposed that the distributed generator notifies the distributor within a short period of time following the initial connection and provides the distributor with documentation that demonstrates compliance with specific connection requirements identified in Part 1A.
- 3.1.28 Full details of this proposal are set out in the regulatory statement in section 3.2.

Market facilitation measures

- 3.1.29 In addition to the proposed Code amendment, the Authority considers that some market-facilitation measures (such as providing education, guidelines and information papers) may be warranted.

¹² AS 4777 is sometimes referred to in submissions as “AS/NZS 4777”, however reference to both the Australian and New Zealand Standards website finds reference only to AS 4777. While it is understood that an initiative is underway to make the currently AS-only standard a joint AS/NZS standard, the Authority understands that this initiative has not been ratified.

¹³ AS 4777 is in 3 parts:

AS 4777.1-2005 - Grid connection of energy systems via inverters - Installation requirements;

AS 4777.2-2005 - Grid connection of energy systems via inverters - Inverter requirements; and

AS 4777.3-2005 - Grid connection of energy systems via inverters - Grid protection requirements.

- 3.1.30 While the Authority has a statutory function¹⁴ to undertake market-facilitation measures, and to monitor the operation and effectiveness of market-facilitation measures, it is not the only organisation that is well placed to undertake education activities and information dissemination. In particular, distributors, retailers and DG industry associations, such as SEANZ, are more closely engaged with frontline service providers. The Authority considers that the greatest level of improvement will be achieved when all key players clearly and consistently undertake service provider education and information dissemination programmes.
- 3.1.31 The Authority welcomes the view of submitters on possible roles for the parties identified above to most effectively implement education and awareness initiatives.

3.2 Regulatory Statement relating to the proposed Part 1A amendment

Authority's Proposal

- 3.2.1 The Authority proposes that a new notification process for SSDG (i.e. DG with a nameplate capacity not exceeding 10 kW after an application is approved) should be added into Schedule 6.1 as a new Part 1A.
- 3.2.2 For the purpose of the proposed Part 1A, SSDG would be permitted to connect to a consumer installation connected to a distribution network, or to connect to a distribution network directly (hereafter collectively referred to as 'connect(ed) to a distribution network') without an application under Part 1 of Schedule 6.1, provided that:
- (a) the distributed generator is otherwise required to apply to the distributor under Part 1 of Schedule 6.1 to:
 - (i) connect SSDG;
 - (ii) continue an existing connection of SSDG under a connection contract that is in force or has expired; or
 - (iii) increase the nameplate capacity of an existing connection of SSDG;
 - (b) the SSDG is designed and installed in accordance with AS 4777.1;
 - (c) the SSDG incorporates an inverter that has been tested and issued a Declaration of Conformity (DoC) with AS 4777.2 by a laboratory with

¹⁴ Under section 16(1)(f) of the Act.

accreditation issued or recognised by International Accreditation New Zealand;¹⁵ and

- (d) the SSDG has been inspected and issued a certificate of compliance (CoC) under the Electricity (Safety) Regulations 2010.¹⁶

3.2.3 Despite a distributed generator being entitled to connect SSDG if the requirements in paragraph 3.2.2 are satisfied, a distributed generator may still elect to apply to the distributor using the application process in Part 1 of Schedule 6.1.

3.2.4 If the distributed generator connects SSDG that meets the requirements identified in paragraph 3.2.2, without an application under Part 1 of Schedule 6.1, the distributed generator must notify the relevant distributor of the connection. Notification must be made within 5 business days following:

- (a) the connection of the SSDG inverter to the distribution network in the case of a new connection of SSDG;
- (b) the expiry of the connection contract in the case of an existing connection of SSDG if a connection contract is in force or has expired;
- (c) the increase in nameplate capacity if the distributed generator has increased the nameplate capacity of an existing connection of SSDG.

3.2.5 The notification must include the following:

- (a) an electrical single line diagram of the SSDG clearly demonstrating conformance with AS 4777.1;
- (b) a copy of the AS 4777.2 DoC certificate in respect of the inverter;
- (c) a table showing the DG's conformance with the protection settings specified in the distributor's connection and operation standards for SSDG systems;
- (d) a copy of the CoC for the SSDG issued under the Electricity (Safety) Regulations 2010; and
- (e) any fee specified by the distributor up to the limit in Schedule 6.5.

3.2.6 The regulated terms for the connection of DG set out in Schedule 6.2 will apply, but the parties may agree to substitute negotiated terms for the regulated terms.

¹⁵ Having a DoC issued and specified protection settings applied provides the distributor with assurance that the inverter will operate safely and reliably when the distributed generation is connected to the distribution network. Furthermore, the DoC includes compliance with AS/NZS 3100 (covering general requirements for electrical equipment) and a range of standards relating to electromagnetic compatibility.

¹⁶ Having a CoC issued by a person authorised under the Electricity (Safety) Regulations 2010 provides assurance that the SSDG meets the relevant safety requirements set out in those regulations.

- 3.2.7 The distributor may choose to inspect the SSDG, no later than 10 business days after receiving a notification for the purpose of :
- (a) verifying that the SSDG meets the requirements for connection without an application; and
 - (b) verifying the information provided with the distributed generator's application.
- 3.2.8 The distributor may advise the distributed generator that their notification is deficient for any of the following reasons:
- (a) the SSDG does not meet the Part 1A qualification criteria;
 - (b) the SSDG differs from the information provided in the documentation submitted by the distributed generator; or
 - (c) the documentation submitted by the distributed generator is incomplete;
- 3.2.9 If the distributed generator does not remedy the deficiency to the distributor's satisfaction (acting reasonably) within 10 business days, the distributor may require the distributed generator to disconnect the SSDG within a reasonable timeframe specified by the distributor. The SSDG must be reconnected if the deficiency is remedied to the distributor's satisfaction (acting reasonably) within one year of the date on which the DG was disconnected (the SSDG may be reconnected after a longer period of time if mutually agreed by the parties). If the distributed generator elects to remedy the deficiency, the distributor may charge an administration fee up to the limit set out in Schedule 6.5.¹⁷
- 3.2.10 The distributor must provide notice of final approval of the SSDG to the distributed generator within 10 business days of the date that the distributor is satisfied that:
- (a) the DG meets the requirements for connection under Part 1A; and
 - (b) the information accompanying the distributed generator's notification is complete and accurate.
- 3.2.11 The prescribed maximum fees for notifications processed under the Part 1A process in Schedule 6.1 are:
- (a) \$100 (excluding GST) for processing a notification;
 - (b) \$100 (excluding GST) for processing information related to the remedy of a deficiency in the notice or the information that accompanies the notice; and

¹⁷ Requiring payment of a resubmission fee reflects the additional cost incurred by the distributor and provides an incentive the distributed generator (or their agent) to submit complete and compliant documents in their notification.

- (c) \$60 (excluding GST) for an inspection of the SSDG, if the distributor requires one.
- 3.2.12 A draft Code amendment for the proposed Part 1A process is provided in Appendix C.
- 3.2.13 If the proposed Part 1A does proceed, the Authority considers that the Code amendment should come into force three months from the date that the amendment is published in the New Zealand Gazette. The three month window would enable distributors to:
 - (a) create business processes and forms relating to the proposed new Part 1A process;
 - (b) modify existing application forms;
 - (c) modify existing guidance material; and
 - (d) publish any new and revised documentation on their websites, and make them available at their offices.

Statement of the objectives of the proposed amendment

- 3.2.14 The objective of the proposed Part 1A is to increase the number of connections of SSDG systems that are notified to distributors. This will decrease the likelihood that substandard, potentially hazardous, SSDG will be connected to distribution networks.

Evaluation of the costs and benefits of the proposed amendment

Competition

- 3.2.15 The proposed Part 1A lowers compliance costs when connecting SSDG that is standards-compliant and has been installed and tested in accordance with relevant regulations. This promotes competition in the generation market by lowering an unnecessary barrier to entry.

Reliability

- 3.2.16 Connecting SSDG that meets relevant standards significantly decreases the likelihood that nearby consumers might encounter power quality-related issues arising from poorly designed and installed SSDG.
- 3.2.17 SSDG that complies with relevant standards and has an inverter with voltage and frequency trip settings set to the distributor's specifications (so as to maintain its connection and output when voltage or frequency falls to low but operable levels) is marginally more reliable than DG that does not comply with relevant standards or has inappropriate voltage and frequency trip settings.

- 3.2.18 Given the total number of SSDG presently connected, this benefit is negligible. However, when aggregated across several thousand SSDG, as may eventuate over time, the benefit would become more significant on a system-wide basis.
- 3.2.19 As discussed earlier, SSDG that is not notified to distributors may pose serious safety risks to consumers, electrical workers and the public. While not specifically within the Authority's statutory functions, the extent that aspects of the Code may frustrate safe outcomes is a matter the Authority should consider when performing its functions. Safe supply is related to reliable supply (an unsafe supply is not one that consumers may rely upon).
- 3.2.20 Safer SSDG, notified to the distributor, will reduce the risk of serious injury to, or possibly the death of, an electrical worker maintaining or operating the distribution network or an occupant of the premises in which an unauthorised DG system is installed.

Efficiency

- 3.2.21 The proposal promotes productive efficiency by decreasing transaction costs for both distributed generators and distributors (which ultimately benefits consumers if these lower costs are reflected in the cost of electricity) for a significant subset of DG connection applications. Pre-approving compliant SSDG should increase distributed generators' notification of SSDG connected to distributors' distribution networks. Compared with the current process in Part 1 of Schedule 6.1, the number of required notice exchanges between the parties under the proposed Part 1A process is halved from four to two¹⁸. Each notice requires time and effort to prepare, send, receive, consider and act upon.
- 3.2.22 The proposal should also decrease the scope for disputes between distributed generators and distributors by providing a robust and universal process for dealing with straight-forward SSDG connections. This provides a particular benefit to SSDG service providers who service clients across two or more distribution networks.
- 3.2.23 Against these benefits, the proposal would introduce some one-off costs to distributors by requiring them to modify their existing DG connection processes and publish updated guidance material. Once that is done, administrative costs for processing new Part 1A notifications are likely to be less than applications for approval under Part 1.

¹⁸ The Part 1 process, assuming it leads to a connected DG installation, requires (1) an application by the distributed generator, (2) an approval from the distributor, (3) a notice of intention to proceed from the distributed generator and (4) a notice of intention to test and inspect from the distributed generator. In addition, the parties must attempt to negotiate a connection contract in good faith. In contrast, the proposed simplified process would only require (1) a notice of connection from the distributed generator and (2) a notice of approval from the distributor. Negotiation of a connection contract would be optional.

- 3.2.24 The Authority considers that the proposed fee structure does not affect allocative efficiency, assuming that:
- (a) the current prescribed maximum fees set out in Schedule 6.5 are appropriate; and
 - (b) the proposed maximum fee for a connection under the Part 1A process (\$100) is representative of the relative reduction in transaction costs compared to the costs that would be incurred if the connection were progressed under the process for approval in Part 1 of Schedule 6.1 (for which the prescribed maximum fee is \$200).
- 3.2.25 The Authority notes that some distributors have opted not to charge a fee for processing applications for connection of SSDG under Part 1 and considers that others may follow this approach in respect of the proposed, simpler Part 1A process.

Summary

- 3.2.26 The benefits and costs considered in this section are, in general, very difficult to quantify. However, the Authority considers that the benefits gained through an increased notification rate of new connections of SSDG should materially exceed the costs of introducing and implementing the new Part 1A process.

Evaluation of alternative means of achieving the objectives of the proposed amendment

- 3.2.27 The Authority considered the following alternatives to the proposed Part 1A in paragraphs (a) to (c) below.
- (a) Retain the status quo in respect of Part 1 of Schedule 6.1 but implement an education and awareness campaign to drive increased awareness of the processes in Part 6 for the connection of SSDG.

While this might be beneficial to complement the proposed Part 1A, it would not change the behaviour of those parties who are already aware of the Part 6 requirements but who seek to avoid the transaction costs inherent in complying with the process in Part 1 of Schedule 6.1. In addition, the most effective education and awareness campaigns are likely to be those undertaken by the parties closest to the frontline service providers: distributors, retailers, and SSDG industry associations such as SEANZ.
 - (b) Require the distributed generator to provide less or more information in the notification of the connection of the SSDG to the distributor.

The information that the distributed generator is required to provide under the new Part 1A is considered to provide the optimal balance between ensuring that the distributor has sufficient information (in order to

determine whether the SSDG is compliant with relevant standards and regulations) and the transaction costs incurred by the distributed generator and the distributor when receiving and administering the documents provided with the notice.

- (c) Require the distributed generator to provide the information specified in the proposed Part 1A, but instead of allowing the distributed generator to connect the SSDG, require the distributed generator to obtain the distributor's express approval prior to connection.

This option was rejected as it would unnecessarily delay the connection of compliant SSDG that has already received a CoC and is otherwise compliant with relevant standards and regulations. Under the proposed Part 6, the distributor would have the right to:

- (i) immediately disconnect SSDG if the distributed generator fails to comply with the distributor's safety requirements (under the proposed amendments to the regulated terms);
- (ii) disconnect the SSDG if the notice is deficient and the deficiency has not been remedied within 10 business days; and
- (iii) inspect the SSDG.

Assessment under section 32(1)

3.2.28 Section 32(1) of the Act provides that Code provisions must be consistent with the Authority's objective and be necessary or desirable to promote any or all of the following:

- (a) competition in the electricity industry;
- (b) the reliable supply of electricity to consumers;
- (c) the efficient operation of the electricity industry;
- (d) the performance by the Authority of its functions;
- (e) any other matters specifically referred to in the Act as a matter for inclusion in the Code.

3.2.29 Appendix B sets out an assessment of the proposed amendment against the requirements of section 32(1) of the Act.

Assessment against the code amendment principles

3.2.30 When considering amendments to the Code, the Authority is required by its Consultation Charter to have regard to the following Code amendment principles, to the extent that the Authority considers they are applicable.

3.2.31 *Principle 1 – Lawfulness:* The Authority and its advisory groups will only consider amendments to the Code that are lawful and that are consistent with the Act (and

therefore consistent with the Authority's statutory objective and its obligations under the Act).

- 3.2.32 The Authority considers that the proposal is lawful.
- 3.2.33 *Principle 2 – Clearly Identified Efficiency Gain or Market or Regulatory Failure:* Within the legal framework specified in Principle 1, the Authority and its advisory groups will only consider using the Code to regulate market activity when:
- (a) it can be demonstrated that amendments to the Code will improve market efficiency¹⁹;
 - (b) market failure is clearly identified, such as may arise from market power, externalities, asymmetric information and prohibitive transaction costs; or
 - (c) a problem is created by the existing Code, which either requires an amendment to the Code, or an amendment to the way in which the Code is applied.
- 3.2.34 The proposed Part 1A will improve market efficiency for the long-term benefit of consumers. In particular, the proposed Part 1A will provide a more streamlined process that will decrease transaction costs for both distributed generators and distributors, where SSDG that complies with relevant standards and regulations is installed, tested, and connected to a distribution network. These benefits will flow on to consumers, since consumers are invariably the investors in SSDG.
- 3.2.35 *Principle 3 – Quantitative Assessment:* When considering possible amendments to the Code, the Authority and its advisory groups will ensure disclosure of key assumptions and sensitivities, and use quantitative cost-benefit analysis to assess long-term net benefits for consumers, although the Authority recognises that quantitative analysis will not always be possible. This approach means that competition and reliability are assessed solely in regard to their economic efficiency effects. Particular care will be taken to include dynamic efficiency effects in the assessment, and the assessment will include sensitivity analysis when there is uncertainty about key parameters.
- 3.2.36 As discussed above (commencing at paragraph 3.2.15), it is difficult to quantitatively assess the competition, reliability and efficiency benefits identified for this proposal. However, the Authority considers the expected benefits to materially exceed the very low level of cost that the proposed Part 1A process would create.

¹⁹ Where efficiency refers to allocative, productive and dynamic efficiency, and improvements to efficiency include, for example, a reduction in transaction costs or a reduction in the scope for disputes between industry participants.

Q1.	Do you agree the proposed Code amendment to introduce a lower cost connection process promotes the Authority's statutory objective? If not, please explain why not.
Q2.	What improvements should the Authority consider to the proposed Part 1A process?
Q3.	Which organisations should undertake education and awareness initiatives relating to the connection of DG? If so, what specific initiatives do you think should be considered?
Q4.	Do you consider a three month implementation period gives distributors a reasonable time period in which to prepare for the proposed changes?

3.3 Other technical and operational amendment proposals

Introduction

- 3.3.1 A number of technical and operational amendments are proposed to:
- (a) Part 1 of the Code (in respect of the definitions that relate to Part 6);
 - (b) Part 6 of the Code; and
 - (c) Part 17 of the Code.
- 3.3.2 These proposed amendments have been sourced from:
- (a) pre-consultation feedback;
 - (b) other concerns communicated to the Authority at various times; and
 - (c) the Authority's own review of the provisions of Part 6.
- 3.3.3 The proposed technical and operational amendments are set out in Table 5 in Appendix D and include a brief statement of the rationale for each proposed amendment.
- 3.3.4 It is considered impractical to set out a separate regulatory statement for each of the proposed drafting amendments included in Appendix D. The approach adopted in this consultation paper is to treat the whole set of technical and operational amendments as a package of proposed amendments and to set out a regulatory statement in respect of the whole package. This appears to be an appropriate approach, as all of the proposed Code amendments share the same high-level objectives and benefits/costs. The regulatory statement for the technical and operational amendments is provided in section 3.4.

3.3.5 The proposed amendments to the definition of “distributed generation” require additional discussion outside the table in Appendix D. The change to the definition is intended to exclude:

- (a) temporary generation connected by distributors; and
- (b) standby generation connected by consumers.

3.3.6 These two topics are discussed in paragraphs 3.3.7 to 3.3.22 with cross references to the appropriate items within Table 5 in Appendix D.

Connection of temporary generation by distributors

3.3.7 Submissions received during pre-consultation raised questions relating to DG that is connected to a distribution network, or to a consumer installation connected to a distribution network, on a temporary basis.

3.3.8 The most common uses of temporary generation deployed by distributors are:

- (a) backup supply – a distributor providing continuity of supply to a section of its distribution network, or to a single consumer installation, during a planned outage, by connecting generation directly to the distribution network or to a consumer installation;
- (b) emergency supply – a distributor providing emergency supply to its distribution network during an unplanned outage by connecting generation directly to the distribution network; and
- (c) local capacity – a distributor providing supply to some or all of its distribution network that would otherwise become overloaded, by connecting generation to the distribution network.²⁰

3.3.9 Orion and Powerco, in their submissions on the pre-consultation, suggested that temporary generation connected by distributors should not be subject to Part 6 of the Code. The Authority notes that distributors have been connecting temporary generation to their distribution networks to provide backup and emergency supply and local capacity as a routine operating practice for many years.

3.3.10 Nevertheless, the definitions of “distributed generation” and “distributed generator” in Part 1 of the Code do not exclude generation connected and operated by distributors themselves.

3.3.11 With respect to metering and reconciliation, the Authority understands that the electricity injected into distribution networks by distributors’ temporary generation is frequently unmetered and effectively donated into the pool of unaccounted for

²⁰ Each of these situations may also be encountered by consumers in respect of their own supply by connecting generation within their electrical installation on a temporary basis. Deployment by consumers is considered further in the next section headed ‘Connection of standby generation by consumers’.

electricity. In other cases, the Authority understands that specific arrangements are in place for sale of the generated electricity, and these arrangements address metering and reconciliation requirements.

- 3.3.12 The Authority considers that it is not necessary for a distributor to apply to itself before connecting and operating temporary generation. In many cases, establishing supply or additional capacity is required on an emergency basis where timeliness is critical and prompt response is strongly in the interests of affected consumers.
- 3.3.13 If a distributor wishes to connect DG for purposes other than a purpose identified in paragraph 3.3.8, such as for the purpose of selling generated energy, then the arms' length provision (clause 6.11) and the prioritisation of applications under Part 6 (clause 17 of Schedule 6.1) offer some dynamic efficiency benefits by maintaining incentives for investors to research and develop prospective DG opportunities.
- 3.3.14 In summary, the Authority considers a distributor should be able to connect and operate temporary generation connected to its distribution network for the purposes identified in paragraph 3.3.8 without being subject to Part 6 of the Code.
- 3.3.15 Table 5 in Appendix D includes this proposed amendment as proposal reference 7.

Connection of standby generation by consumers

- 3.3.16 A number of consumers arrange for generation to be connected to their consumer installation for the sole purpose of providing supply when their consumer installation is isolated from the distribution network (referred to in this paper as "standby generation"). The circumstances where isolation occurs could be:
- (a) planned (for example, to provide for planned equipment maintenance); or
 - (b) unplanned (for example, following an unplanned supply interruption caused by a fault on the distribution network).
- 3.3.17 Generation that always operates completely isolated from the distribution network is not intended to be made subject to the provisions of Part 6.
- 3.3.18 It is acknowledged, however, that some standby generation may synchronise with the distribution network for very brief periods to avoid the need for a (brief) supply interruption within the consumer installation when the standby generation plant is being connected or disconnected.
- 3.3.19 The Authority indicated, in its pre-consultation paper, its concerns as to what the phrase "capable of injecting electricity" (within the definition of "distributed

generation”) might mean, and whether this might include standby generation. Orion’s submission in response to the pre-consultation indicated that it wishes to be informed of all DG that is capable of synchronising with its distribution network, even if only for very brief periods, and to have the right to review and approve the DG’s operating and protection arrangements.

- 3.3.20 Having considered submissions in response to the pre-consultation, the Authority proposes to exclude standby generation from the definition of “distributed generation”.
- 3.3.21 While it is proposed that standby generation should be outside the scope of Part 6, the Authority considers that:
- (a) a distributor is already able to set binding²¹ requirements in respect of the operating and protection arrangements for standby generation by specifying these requirements in its network connection standards²²; and
 - (b) using network connection standards to set requirements for operating and protection arrangements would incur lower transaction costs compared to using the Part 6 processes.
- 3.3.22 Table 5 in Appendix D includes this proposed amendment as proposal reference 7.

3.4 Regulatory statement relating to other drafting amendments to Part 6

Authority’s Proposal

- 3.4.1 The Authority proposes a number of technical and operational amendments to Part 6 of the Code. The package consists of the individual amendments described in Table 5 in Appendix D.
- 3.4.2 Draft Code amendments in respect of these proposals are provided in Appendix C.
- 3.4.3 If some or all of the proposed technical and operational amendments are approved, the Authority considers that the amendments should come into force:
- (a) at the same time as the proposed amendments to Part 1A (which, as proposed in paragraph 3.2.13, is three months from the date that the

²¹ Through use of system agreements, distributors require retailers to include conditions within their contracts with customers that require customers to adhere to the distributor’s network connection standards.

²² Local network owners may already have similar requirements in place for other networks connected to their local network. These requirements may provide for situations where the network has generation connected (which may or may not be DG connected under Part 6).

amendment is published in the New Zealand Gazette), if the proposed amendment to Part 1A is approved; or

- (b) 28 days from the date that the amendment is published in the New Zealand Gazette, if the proposed amendment to Part 1A is not approved.

3.4.4 However, the Authority considers that if proposal 49 in Table 5 in Appendix D is approved, that amendment should come into force:

- (a) at the date determined in accordance with paragraph 3.4.3, if that date is 1 April 2013 or earlier; or
- (b) on or before 1 April 2013, if the date determined in accordance with paragraph 3.4.3 is 2 April 2013 or later (because proposal 49 in Table 5 in Appendix D is of use only if it becomes effective prior to 2 April 2013).

Statement of the objective of the proposed amendments

3.4.5 The objective of the proposed technical and operational amendments is to improve the effectiveness of Part 6 of the Code, by:

- (a) correcting obvious drafting errors;
- (b) improving the clarity of the existing requirements and removing ambiguities;
- (c) including additional provisions in respect of previously unforeseen or unaddressed circumstances;
- (d) limiting the application of Part 6 (or specific provisions within Part 6) in certain cases; and
- (e) removing provisions rendered obsolete as a result of other Code amendments.

Evaluation of the costs and benefits of the proposed amendments

3.4.6 The benefits of the proposed technical and operational amendments are:

- (a) improved compliance with distributors' connection and operation standards;
- (b) slightly improved certainty for investors in DG by understanding how their application will be handled; and
- (c) lower transaction costs for distributed generators and distributors, resulting from:
 - (i) less time spent interpreting Part 6;
 - (ii) less frequent use of the dispute resolution processes; and
 - (iii) reduced non-compliance with Part 6 by distributors and distributed generators.

- 3.4.7 Lower transaction costs will have the effect of improving the productive efficiency of the electricity industry. This will have a flow on effect of improving competition in the generation market through the lowering of an unnecessary barrier to entry.
- 3.4.8 Improved investor certainty will improve the dynamic efficiency of the electricity industry.
- 3.4.9 In general, there should be little or no additional costs associated with the proposed technical and operational amendments. Two possible exceptions are:
- (a) proposal 15 in Table 5 in Appendix D, which includes a process for a distributor to approve a distributed generator's application to increase the nameplate capacity of DG that is already connected. This may introduce a new transaction cost if distributors and distributed generators previously interpreted the Code to not require such approval; and
 - (b) proposal 14 in Table 5 in Appendix D, which includes a process for a distributor to approve a distributed generator's application to continue DG if a connection contract is in force or has expired. While, by virtue of clause 6.13, distributed generators with an expired connection contract are entitled to apply under Part 6, there is no further discussion of the process to be followed. This may introduce new transaction costs as distributors will need to create a formal process for these applications.
- 3.4.10 The proposed technical and operational amendments may introduce some minor one-off costs for distributors as a result of the need to update their processes and publish guidance material.
- 3.4.11 It is difficult to quantitatively assess these benefits and costs. However, the Authority considers that the benefits gained by improving the effectiveness of Part 6 of the Code should materially exceed any costs introduced.

Evaluation of alternative means of achieving the objectives of the proposed amendments

- 3.4.12 The Authority considered the alternatives to the proposed technical and operational amendments in paragraphs (a) to (c) below.
- (a) Retain the status quo by not amending the Code to include the proposed technical and operational amendments.

This was rejected as the objective for introducing the improvements to Part 6 would not be met.
 - (b) Omit one or more of the proposed technical and operational amendments.

This was rejected as each proposed amendment is considered to provide a net benefit in terms of improving the effectiveness of Part 6 of the Code.
 - (c) Adding additional proposed technical and operational amendments.

This was rejected as the proposed technical and operational amendments contain all of the amendments the Authority considers will provide net benefits in terms of improving the effectiveness of Part 6 of the Code.

- 3.4.13 However, the omission or inclusion of individual items will be reviewed in response to feedback received from this round of consultation.

Assessment under section 32(1)

- 3.4.14 Section 32(1) of the Act provides that Code provisions must be consistent with the Authority's objective and be necessary or desirable to promote any or all of the following:

- (a) competition in the electricity industry;
- (b) the reliable supply of electricity to consumers;
- (c) the efficient operation of the electricity industry;
- (d) the performance by the Authority of its functions;
- (e) any other matter specifically referred to in the Act as a matter for inclusion in the Code.

- 3.4.15 Appendix B sets out an assessment of the proposed technical and operational amendments against the requirements of section 32(1) of the Act.

Assessment against the code amendment principles

- 3.4.16 When considering amendments to the Code, the Authority's Consultation Charter requires it to have regard to the Code amendment principles identified in paragraphs 3.4.17 to 3.4.23 below.

- 3.4.17 *Principle 1 – Lawfulness:* The Authority and its advisory groups will only consider amendments to the Code that are lawful and that are consistent with the Act (and therefore consistent with the Authority's statutory objective and its obligations under the Act).

- 3.4.18 The Authority considers that the proposal is lawful.

- 3.4.19 *Principle 2 – Clearly Identified Efficiency Gain or Market or Regulatory Failure:* Within the legal framework specified in Principle 1, the Authority and its advisory groups will only consider using the Code to regulate market activity when:

- (a) it can be demonstrated that amendments to the Code will improve market efficiency²³;

²³ Where efficiency refers to allocative, productive and dynamic efficiency, and improvements to efficiency include, for example, a reduction in transaction costs or a reduction in the scope for disputes between industry participants.

- (b) market failure is clearly identified, such as may arise from market power, externalities, asymmetric information and prohibitive transaction costs; or
- (c) a problem is created by the existing Code, which either requires an amendment to the Code, or an amendment to the way in which the Code is applied.

- 3.4.20 The proposed technical and operational amendments will improve market efficiency for the long-term benefit of consumers. In particular, the proposed technical and operational amendments will decrease transaction costs for both distributed generators and distributors by improving the effectiveness of Part 6 of the Code.
- 3.4.21 Additionally, many of the proposed technical and operational amendments are intended to address problems created by the drafting of the existing Code.
- 3.4.22 *Principle 3 – Quantitative Assessment:* When considering possible amendments to the Code, the Authority and its advisory groups will ensure disclosure of key assumptions and sensitivities, and use quantitative cost-benefit analysis to assess long-term net benefits for consumers, although the Authority recognises that quantitative analysis will not always be possible. This approach means that competition and reliability are assessed solely in regard to their economic efficiency effects. Particular care will be taken to include dynamic efficiency effects in the assessment, and the assessment will include sensitivity analysis when there is uncertainty about key parameters.
- 3.4.23 As discussed earlier in this consultation paper, a quantitative analysis of the benefits and costs of the proposed amendments is difficult. However, the Authority considers the expected benefits to materially exceed the low level of costs that the proposed technical and operational amendments would create.

- Q5. Do you agree that the proposed technical and operational Code amendments promote the Authority’s objective? Feedback on the individual proposals from Table 5 in Appendix D should be included using Table 3 in Appendix A.**
- Q6. Do you have any new proposed amendments to Part 6 of the Code that you consider would be of long-term benefit to consumers? Please describe the proposal and its intended purpose.**

4. Discussion of other issues associated with DG connections

4.1 Introduction

- 4.1.1 In addition to the matters that have resulted in Code amendment proposals, a number of other issues were raised in submissions in response to the Authority's pre-consultation.
- 4.1.2 The Authority has considered these issues but has been unable to find evidence of a clearly defined or substantive problem. Accordingly, the Authority seeks further views from interested parties in respect of these issues.
- 4.1.3 The issues are briefly introduced and discussed in this section. Although relevant questions are provided at the end of each section, submitters are encouraged to provide whatever feedback they consider would benefit the Authority's consideration of these matters.

4.2 Workability of the regulated dispute resolution process

- 4.2.1 In a submission in response to the pre-consultation, a party who has first-hand experience with the Part 6 process raised questions over the workability of the dispute resolution process. The concern related to the amount of time required to resolve a particular dispute using the procedure in Schedule 6.3.
- 4.2.2 This feedback raised some questions on which the Authority would value further feedback from interested parties. The Authority provides the following observations to assist interested parties to provide comment on the dispute resolution process:
 - (a) Schedule 6.3 applies to two types of dispute as set out in clause 6.8:²⁴
 - (i) a dispute that a party has breached any of the regulated terms; and
 - (ii) a dispute as to whether a party has breached any other provision in Part 6 of the Code;
 - (b) if a distributor and a distributed generator enter into a connection contract outside the regulated terms, then that contract should specifically provide for dispute resolution, as the Schedule 6.3 process (including referral to the Authority and the Rulings Panel) is only available for disputes between a

²⁴ Note that a separate but related issue has been raised concerning the drafting of clause 6.8 and its relationship with clause 1(2) of Schedule 6.3. This issue of clarification is separately addressed in proposal reference 63 in Table 5 in Appendix D.

distributor and distributed generator in respect of the regulated terms or a breach of Part 6;

- (c) in respect of the time required to resolve a dispute, disputes involving complex technical or commercial issues may require a significant amount of time and effort to resolve under any dispute resolution process. Therefore, the time taken by the Authority to resolve a particular dispute may simply be symptomatic of the complexity of the issues and the negotiating stances adopted by the parties involved;
- (d) if the dispute is referred to the Authority and the distributor and distributed generator reach a mutually agreed settlement under the Electricity Industry (Enforcement) Regulations 2010 (Enforcement Regulations), the usefulness of the following provisions of the Enforcement Regulations is questionable in the context of the parties having reached a mutually agreed settlement:
 - (i) the requirement (in regulation 24 of the Enforcement Regulations) that the Authority Board approve or reject the settlement; and
 - (ii) the requirement (in regulation 25 of the Enforcement Regulations) that details of an approved settlement be published;²⁵
- (e) the likelihood of an issue arising that requires access to the dispute resolution process is diminished if the requirements in Part 6 of the Code are clear and complete – this consultation paper includes proposed amendments that will improve the existing drafting of Part 6; and
- (f) since 30 August 2007, there have been only three formal disputes brought before the Electricity Commission and the Authority.

4.2.3 While the Authority and Rulings Panel are the appropriate bodies to resolve questions relating to breaches and potential breaches of the Code, it is possible that an alternative dispute resolution process (e.g. mediation) could provide a superior process for resolution of some disputes. The Authority notes that the approach in clause 12A.3 of the Code, which provides for mediation in respect of certain disputes between distributors and traders, could be used as a model for the disputed resolution provisions in Schedule 6.3.

4.2.4 However, any change to the dispute resolution arrangements would need to be mindful of the possibility of creating two or more overlapping processes. This could arise if a party to a dispute is unhappy with the progress or outcome of an alternative dispute resolution process, and then reported a breach of the Code to the Authority.

²⁵ Although the Authority has the power to decide not to publish the details of a settlement agreement if it considers there are special circumstances to justify non-publication.

- 4.2.5 With respect to possible improvements to the existing dispute resolution process, submitters should only consider those changes that are possible without modifying the Enforcement Regulations. The Authority has commenced work on a review of the Enforcement Regulations, and any suggestions for amendments to the Enforcement Regulations should be directed to that review process²⁶.
- 4.2.6 The Authority would like to receive views on the workability of the dispute resolution process from interested parties, including any alternative dispute resolution process that is appropriate for breaches of the regulated terms.

- Q7. Are you satisfied that the Authority and the Rulings Panel are the most appropriate bodies to resolve disputes in respect of the regulated terms, as provided for in clause 6.8(1)(a) and Schedule 6.3? If not, what alternative would you favour?**
- Q8. What options should be considered by the Authority for improving the existing dispute resolution process?**

4.3 Adequacy of clause 6.11

- 4.3.1 Clause 6.11 currently requires distributors to use the same effort in processing and considering connection applications from all parties regardless of whether the distributor has an interest in the distributed generator that is the subject of an application. Some interested parties consider this to be inadequate. This concern appears to relate to these parties' actual experience, although no further detail has been provided to the Authority at this time.
- 4.3.2 An alleged breach of this clause could be referred to the Authority for consideration. The Authority is interested in receiving submitters' views on specific issues that arise during distributors' consideration of an application from a distributed generator in which they are interested and, consequently, how clause 6.11 might be improved.
- 4.3.3 The Authority draws submitters' attention to the proposed amendment to the definition of "distributed generation". The elements of that proposal discussed in paragraphs 3.3.7 - 3.3.15 would have the effect of excluding some generation owned by distributors from the requirements of Part 6.

- Q9. What amendments to clause 6.11, if any, do you propose in order to promote the long-term benefit of consumers?**

²⁶ While the Authority is reviewing the Enforcement Regulations and expects to consult on that review, any changes to the Enforcement Regulations could only be made by the Minister of Energy and Resources, on advice from the Ministry of Business, Innovation and Employment.

4.4 Competing DG connection applications

Prioritisation of distributed generation

- 4.4.1 Clause 17 of Schedule 6.1 provides a process for dealing with two or more applications for connection of DG (of more than 10kW) received within 10 business days of each other if the later application would be affected by the earlier application. This clause specifies which application has priority.
- 4.4.2 This clause does not specify the circumstances in which an application is considered to be “affected”, but it presumably relates to adverse effects that might occur due to the presence of multiple DG connections to the distribution network within close proximity of each other. Some examples of adverse effects might include:
- (a) increasing fault levels beyond the design limits of distribution network equipment (such as switchgear); and
 - (b) reaching the capacity limit of the distribution network to import generation, due to a component of the distribution network (such as a circuit or transformer) reaching its maximum capacity.
- 4.4.3 Clause 17 provides that the distributor may choose which applications it will approve and which it will decline by considering the applications as competitive bids. The distributor must consider each application in light of the purpose of Part 6. It is conceivable that the distributor itself could be one of the applicants.
- 4.4.4 Feedback received in pre-consultation submissions requested that the Authority clarify the decision-making framework by which the distributor will make a decision on competing applications under clause 17.
- 4.4.5 However, having reviewed the clause in light of this feedback, the Authority considers there are wider issues than the distributor’s decision-making framework. Clause 17 raises the following questions:
- (a) how likely this scenario is to arise in practice (i.e. two or more applications received within 10 days of each other and one or more of the applications is affected by the other application);
 - (b) if the distributor is also a distributed generator who has submitted an initial application that might be affected by another final application, the distributor will have knowledge that a final application has been received before other parties who have also submitted an initial application. As clause 16 of Schedule 6.1 does not specify a period of time by which distributors must notify other parties who have made an initial application, the distributor could delay the notification to consume some or all of the 10 business day period in clause 17(1)(b);

- (c) what purpose does clause 17(2) intend to achieve by providing an exception to the first-come, first-served principle otherwise applied to multiple final applications in clause 17(3); and
- (d) whether it is necessary to prioritise applications for connection when these provisions are read in conjunction with clauses 6.2 and 6.3.

4.4.6 Clause 6.2 provides that the purpose of Part 6 is:

"...to enable connection of **distributed generation** if connection is consistent with **connection and operation standards**".

4.4.7 Clause 6.3 requires a distributor to make publicly available (amongst other things):

"(b) the distributor's connection and operation standards"

and

"(d) a statement of the policies, rules, or conditions under which **distributed generation** is, 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."

4.4.8 The definition of "connection and operation standards" in Part 1 of the Code includes the distributor's congestion management policy.

4.4.9 Clause 2(n) of Schedule 6.4 states that:

"...nothing in Part 6...creates any capacity or property rights in any part of the distribution network unless these are specifically contracted for."

4.4.10 These provisions suggest that approval to connect DG does not provide a distributed generator with the right to inject electricity into the distribution network at the DG's full nameplate capacity at all times. This is consistent with the approach taken in respect of generation connected to the national grid.

4.4.11 However, unlike the national grid, where comprehensive market rules anticipate and manage congestion and the system operator dispatches generation in real time, each distributor can set its own congestion management policy limited only in that it must reflect, or be consistent with, reasonable and prudent operating practice.

4.4.12 While other variants exist, two generic approaches to the management of congestion on distribution network are feasible:

- (a) allow all distributed generators that apply and are otherwise compliant with connection and operation standards to connect, but provide a mechanism within the distributor's congestion management policy to decide which DG

is curtailed when a constraint binds, and dispatch generation to manage this situation; or

- (b) consider each application for connection of DG in strict order of receipt (or via some other prioritising mechanism) and only approve an application for connection of DG if sufficient distribution network capacity exists, or is added (presumably at the expense of the distributed generator applying to connect). This will provide the applicant's DG, and all previously connected DG within the same part of the distribution network (if any), with the right to inject electricity without *normally* needing to be curtailed or constrained off while the distribution network is configured in its normal state.

4.4.13 The Authority welcomes feedback on:

- (a) the priority of applications under clause 17 of Schedule 6.1; and
- (b) the approach to managing congestion on distribution networks and the implications for distributed generation that is already connected.

4.4.14 The Authority is interested in understanding if there is a problem, and if a problem exists, defining that problem and identifying possible and preferred solutions.

4.4.15 Information relating to distributors' approaches to congestion management, including views as to what constitutes reasonable and prudent operating practice in this area, would also be valuable.

4.4.16 The Authority draws submitters' attention to Code amendment proposal 37 in Table 5 in Appendix D which relates to the effectiveness of the prioritising requirements.

Distributor conditions of connection

4.4.17 Clause 18 of Schedule 6.1 specifies requirements relating to the distributor's decision on an application for connection of DG. In The Lines Company's (TLC) view, expressed in its submission on the pre-consultation paper, clause 18 does not provide sufficient certainty as to when a distributor can decline an application for connection.

4.4.18 Currently, a distributor must approve an application to connect DG if the application meets the requirements of clause 18(2) of Schedule 6.1, subject to any conditions specified by the distributor that are reasonably required.

4.4.19 In TLC's view, clause 18(2)(b)(iii) of Schedule 6.1 implies that the distributor should impose conditions rather than decline an application on the basis that it is inconsistent with connection and operation standards. Clause 18(2)(b)(iii) states:

“the connection of the **distributed generation** would be consistent with the **distributor's connection and operation standards** (assuming that the

distributed generator performs the conditions (if any) referred to in subclause (3)).”

- 4.4.20 In TLC’s experience, the current process means significant time and resource is committed at the front end of the application process (i.e. developing all the necessary conditions of connection) when it is not clear whether the applicant’s DG is able to connect and operate consistently with the distributor’s connection and operation standards.

- | | |
|-------------|---|
| Q10. | In your view, is there a problem with the priority of applications under clause 17 of Schedule 6.1 or the approach to managing congestion on distribution networks? If so, what is/are the problem(s), the options, and your preferred solution to promote the long-term benefit of consumers? |
| Q11. | In your view, is there a problem with the requirements of clause 18 of Schedule 6.1 relating to the distributor’s imposition of conditions on an application for connection of DG? If so, what is/are the problem(s), the options and your preferred solution to promote the long-term benefit of consumers? |

4.5 The level of the liability caps under regulated terms

- 4.5.1 If the distributor and distributed generator consider the liability limits specified in clause 22 of Schedule 6.2 are too high or too low, they can set a different liability cap by entering an agreement outside the regulated terms under clause 6.5.
- 4.5.2 In its submission on the pre-consultation paper, Vector proposed that the liability limit in clause 22 of Schedule 6.2 of \$1000 per kW of installed capacity up to a maximum of \$5 million is too high, for both distributors and distributed generators, and parties may welcome a reduction in their liability as it would reduce business risk and costs.
- 4.5.3 As an alternative, Vector proposed that the regulated terms should include options around limits on liability and/or an ability for the parties to agree a separate limits on liability relating to fraud, wilful breach and breach of confidentiality²⁷. In Vector’s view, there is no valid reason why parties should not be able to agree alternative limits on liability as long as there is a fall-back option in the event parties fail to agree.
- 4.5.4 The Authority would like to receive the views of other interested parties on the level at which the liability caps are set under the regulated terms.

²⁷ If clause 23 of Schedule 6.2 applies, the party at fault has unlimited liability for a breach of the regulated terms. Clause 20 specifies that damages for a breach of the regulated terms are limited to direct loss.

Q12. Do you consider the liability limits under the regulated terms best promote the long-term benefit of consumers? If not, what limits would be more suitable?

4.6 Standardising inverter settings

- 4.6.1 A problem may exist in respect of the protection settings applied to inverters that are the interface between DG and consumer installations connected to a distribution network.
- 4.6.2 The Authority understands that inverters supplied for use in New Zealand may not always have appropriate protection settings applied at the factory, or set by importers prior to delivery of the inverter to the purchaser.
- 4.6.3 Some distributors may rely on a DoC with the technical standard AS 4777.3 as evidence of suitable protection settings in respect of:
- (a) under-voltage and over-voltage trip settings;
 - (b) under-frequency and over-frequency trip settings; and
 - (c) restoration time delay following a protection tripping.
- 4.6.4 The Authority notes that while AS 4777.3 provides acceptable maximum and minimum protection settings, these have been specified with respect to the minimum performance capability that the grid-tie inverter manufacturer must provide for its equipment in order to achieve compliance with AS 4777.3.
- 4.6.5 However, the appropriate protection settings, must be determined by the distributor who operates the particular distribution network. A distributor may specify a narrower acceptable voltage and/or frequency operating band than AS 4777.3 provides, and a longer or shorter restoration time delay than the factory settings.
- 4.6.6 In general, voltage and frequency trip settings should be set to provide the maximum possible operating range that satisfies both AS 4777.3 and the distributor's connection and operating standards. In this state, the DG may attain its maximum performance consistent with both the capability of the inverter and the safe and secure operation of the distribution network.
- 4.6.7 The Authority considers that distributors' connection and operation standards should complement AS 4777.3 by specifying protection settings that support the proper functioning of the distribution network.

- 4.6.8 Transpower has expressed concerns²⁸ that a concentration of SSDG in an area may have implications on system operations, particularly in relation to frequency and voltage excursions.
- 4.6.9 The Authority seeks interested parties' views as to whether an Authority guideline in respect of these settings would be of benefit. Alternatively, whether an industry guideline or a New Zealand Standard is preferable.

- Q13. Would there be a long-term benefit for consumers in seeking to develop nationally consistent inverter protection settings (as set out in paragraph 4.6.3) that are also consistent with distributors' connection and operation standards?**
- Q14. Would you prefer a regulatory or non-regulatory measure to create nationally consistent protection settings for inverters? In the case of a non-regulatory measure, would an Authority guideline, an industry guideline or a New Zealand Standard be preferable?**
- Q15. What settings, or ranges of settings, would be appropriate?**

²⁸ Transpower's submission to the Retail Advisory Group on 'Investigating barriers facing small-scale distributed generation' is available from <http://www.ea.govt.nz/our-work/consultations/advisory-group/investigating-barriers-small-scale-generation/submissions/>

Appendix A Format for submissions

- A.1 Three tables are provided for submitters to use for providing feedback on this consultation paper:
- (a) a table for responses to the questions set out in the paper;
 - (b) a table for views on the Code amendment proposals set out in Table 5 in Appendix D, including drafting comments relating to the corresponding draft Code amendment provided in Appendix C; and
 - (c) a table for views on the Authority's consideration of items outside the scope of this review is set out in Table 6 in Appendix E.

Table 2 – Form for response to questions from the consultation paper

Question No.	Question	Response
1	Do you agree the proposed Code amendment to introduce a lower cost connection process promotes the Authority's statutory objective? If not, please explain why not.	
2	What improvements should the Authority consider to the proposed Part 1A process?	
3	Which organisations should undertake education and awareness initiatives relating to the connection of DG? If so, what specific initiatives do you think should be considered?	
4	Do you consider a three month implementation period gives distributors a reasonable time period in which to prepare for the proposed changes?	

5	Do you agree that the proposed technical and operational Code amendments promote the Authority's objective? Feedback on the individual proposals from Table 5 in Appendix D should be included using Table 3 in Appendix A.	
6	Do you have any new proposed amendments to Part 6 of the Code that you consider would be of long-term benefit to consumers? Please describe the proposal and its intended purpose.	
7	Are you satisfied that the Authority and the Rulings Panel are the most appropriate bodies to resolve disputes in respect of the regulated terms, as provided for in clause 6.8(1)(a) and Schedule 6.3? If not, what alternative would you favour?	
8	What options should be considered by the Authority for improving the existing dispute resolution process?	
9	What amendments to clause 6.11, if any, do you propose in order to promote the long-term benefit of consumers?	
10	In your view, is there a problem with the priority of applications under clause 17 of Schedule 6.1 or the approach to managing congestion on distribution networks? If so, what is/are the problem(s), the options, and your preferred solution to promote the long-term benefit of consumers?	

11	In your view, is there a problem with the requirements of clause 18 of Schedule 6.1 relating to the distributor's imposition of conditions on an application for connection of DG? If so, what is/are the problem(s), the options and your preferred solution to promote the long-term benefit of consumers?	
12	Do you consider the liability limits under the regulated terms best promote the long-term benefit of consumers? If not, what limits would be more suitable?	
13	Would there be a long-term benefit for consumers in seeking to develop nationally consistent inverter protection settings (as set out in paragraph 4.6.3) that are also consistent with distributors' connection and operation standards?	
14	Would you prefer a regulatory or non-regulatory measure to create nationally consistent protection settings for inverters? In the case of a non-regulatory measure, would an Authority guideline, an industry guideline or a New Zealand Standard be preferable?	
15	What settings, or ranges of settings, would be appropriate?	

Table 3 – Form for response to individual proposals from Appendix D

Proposal Reference	Do you agree that the corresponding draft Code amendment set out in Appendix D promotes the Authority's statutory objective? If not, please explain why not.
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Proposal Reference	Do you agree that the corresponding draft Code amendment set out in Appendix D promotes the Authority's statutory objective? If not, please explain why not.
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Proposal Reference	Do you agree that the corresponding draft Code amendment set out in Appendix D promotes the Authority's statutory objective? If not, please explain why not.
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Proposal Reference	Do you agree that the corresponding draft Code amendment set out in Appendix D promotes the Authority's statutory objective? If not, please explain why not.
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Proposal Reference	Do you agree that the corresponding draft Code amendment set out in Appendix D promotes the Authority’s statutory objective? If not, please explain why not.
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Table 4 – Form for response to individual items from Appendix E

Item Reference	Response and/or comment on the corresponding item set out in Appendix E
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Item Reference	Response and/or comment on the corresponding item set out in Appendix E
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Item Reference	Response and/or comment on the corresponding item set out in Appendix E
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Appendix B Assessment under section 32(1) of the Act

Appendix B1 – Proposed amendment to introduce a new Part 1A to Schedule 6.1 of the Code

Section 32(1) requirements:	Response
The proposed amendment is consistent with the Authority's objective under section 15 of the Act, which is as follows:	
(a) to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers	The proposal is consistent with the objective. As noted in paragraph 3.2.26, while the costs and benefits have not been quantified, the benefits of the proposal are considered to materially exceed the minimal costs imposed.
The proposed amendment is necessary or desirable to promote any or all of the following:	
(b) competition in the electricity industry;	The proposal promotes competition, as set out in paragraph 3.2.15.
(c) the reliable supply of electricity to consumers;	The proposal promotes reliable supply, as set out in paragraphs 3.2.16-3.2.20.
(d) the efficient operation of the electricity industry;	The proposal promotes efficiency, as set out in paragraphs 3.2.21-3.2.25.
(e) the performance by the Authority of its functions;	The proposal is not considered to promote the Authority's performance of its functions.
(f) any other matter specifically referred to in the Act as a matter for inclusion in the Code.	The proposal is not considered to promote any other matter specifically referred to in the Act as a matter for inclusion in the Code.

Appendix B2 – Proposed amendments to introduce a package of changes to Part 6 of the Code

Section 32(1) requirements:	Response
The proposed amendments are consistent with the Authority's objective under section 15 of the Act, which is as follows:	
(a) to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers	The proposal is consistent with the objective. As noted in paragraph 3.4.11, while it is difficult to quantitatively assess the costs and benefits, the benefits of the proposal are considered to materially exceed the minimal costs imposed.
The proposed amendments are necessary or desirable to promote any or all of the following:	
(b) competition in the electricity industry;	The proposal promotes competition, as set out in paragraph 3.4.7.
(c) the reliable supply of electricity to consumers;	The proposal does not affect reliable supply.
(d) the efficient operation of the electricity industry;	The proposal promotes efficiency, as set out in paragraphs 3.4.7 and 3.4.8.
(e) the performance by the Authority of its functions;	The proposals are not considered to promote the Authority's performance of its functions.
(f) any other matter specifically referred to in the Act as a matter for inclusion in the Code.	The proposals are not considered to promote any other matter specifically referred to in the Act as a matter for inclusion in the Code.

Appendix C Proposed amendments

- C.1 The proposed amendments to Parts 1, 6 and 17 of the Code have been published as a separate document. This document is available from www.ea.govt.nz/our-work/consultations/retail/operational-review-part6/.
- C.2 Copies of the existing Code are available from <http://www.ea.govt.nz/act-code-regs/code-regs/the-code/>.

Appendix D Detailed proposals for amendments to Part 6 of the Code

Introduction

- D.1 This Appendix provides, a table that summarises the proposed technical and operational amendments to Part 6 of the Code.
- D.2 The table is ordered by relevant Part, Schedule and clause. However, many of the proposals have consequential amendments that relate to clauses other than those specifically quoted.
- D.3 In addition to the changes identified in the Table, the draft Code attached at Appendix C includes consequential amendments and a number of minor changes to improve the drafting of Part 6.
- D.4 Clause references are based on the existing version of Part 6, not the proposed version in Appendix C.
- D.5 Proposed amendments have been derived from matters the Authority considers meet the Code amendment principles.

Table 5: Detailed proposals for amendments to Part 6 of the Code

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Various within Parts 1 and 6	1	Reword definitions within Part 1 (that relate to Part 6) and clauses within Part 6 that use the defined term “supply”.	The term “supply” is defined in the Code. It is intended to have a different meaning in the context of Part 6.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Definition of “capacity” in Part 1	2	Remove the defined term “capacity” and replace it with “distribution network capacity”. All references to “capacity” will be changed to “distribution network capacity”.	”Capacity” is used as an undefined term in other parts of the Code. Using the term ”distribution network capacity” will avoid possible confusion.
Definition of “connect” in Part 1	3	Modify the definition to include ‘connected’ and better reflect that the definition relates to <i>electrical</i> connections. Remove any references to “connected” that do not fit within the newly defined term and add new references where appropriate. This includes an amendment to clause 17.16(1) to bold the term “connected”.	To enable better drafting of Part 6 and Part 6 related definitions.
Definition of “consumer installation” in Part 1	4	Amend the defined term “consumer installation” by removing any reference to “electrical installation” and incorporating the content of paragraph (a) of the “electrical installation” definition. The amendment includes other drafting changes.	To simplify the definition by making it self-contained (i.e. it would no longer need to be read in conjunction with the definition of “electrical installation”). Other changes aim to improve the drafting of this definition.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Definition of “distributor” in Part 1	5	Specify that the definition of “distributor” includes a participant who owns— (a) a local network; (b) an embedded network that is used to convey 5 GWh or more per annum; or (c) a system of lines that— (i) is used for providing line function services to a person other than the owner of those lines; (ii) has no direct or indirect connection to the grid; and (iii) conveys 5 GWh or more of electricity per annum.	At present, the definition of “distributor” does not clearly specify the participants that are intended to be distributors for the purpose of Part 6. Instead, the Code attempts to limit the application of Part 6 through the defined term “distribution network”. Defining “distributor” for the purposes of Part 6 should clarify those participants that are intended to be distributors for the purpose of this Part. The Authority considers that the same 5 GWh threshold that applies to embedded networks should also apply to islanded networks. It appears likely that no islanded network would exceed this threshold at this time.
Definition of “distributed	6	Amend “distributed generator” so as to include a party that does not yet own generation plant, but intends to.	Aligns the definition with the clear intent of Part 6.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
generator” in Part 1			
Definition of “distributed generation” in Part 1	7	Exclude the following types of generating plant from the definition of “distributed generation”: (a) generating plant connected and operated by a distributor for the purpose of maintaining or restoring the provision of electricity to all or part of the distribution network: (i) as a result of a planned distribution network outage; (ii) as a result of an unplanned distribution network outage; and (iii) during a period when the distribution network capacity would otherwise be exceeded on part or all of the distribution network; and	<i>Paragraph (a)</i> This would allow distributors to respond to temporary and emergency situations without unnecessary delays and transaction costs and maintain or restore supply in a timely manner. This outcome is beneficial to consumers. Further explanation of the purpose is provided in paragraphs 3.3.7 to 3.3.15. <i>Paragraph (b)</i> To remove the ambiguous phrase “capable of injecting electricity”, and clearly exclude standby generation from the definition. We consider that there are two categories of DG that relate to this proposal: (1) DG that is normally synchronised with the distribution

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
		(b) generating plant that is only momentarily synchronised with the distribution network for the purpose of operations to start or stop the generating plant. Part 6 should not apply to the above types of generation.	network; and (2) DG is only momentarily synchronised with the distribution network during the process of changing supply from local supply to distribution network supply or vice versa (referred to as standby generation). Category 1 DG includes all DG that either <i>requires</i> synchronisation with the distribution network to function (e.g. many inverter-connected systems) or that may run either isolated from the distribution network or connected to the distribution network during normal operation. This DG is intended to be subject to Part 6, even if there is unlikely to be any net energy exported to the distribution network. Category 2 DG systems include most standby generation and uninterruptible power supplies that maintain an isolated supply to a load in the event that distribution network supply is interrupted. These DG systems may be designed to synchronise with the distribution network <i>momentarily</i> in the process of switching from local supply to distribution network supply and vice versa. While standby generation systems are

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
			not intended to be subject to Part 6, distributors may include relevant requirements within their connection and operation standards for their distribution network. Consumers must adhere to connection and operation standards through their normal supply contracts either with their retailer (under interposed terms) or distributor (under conveyance terms). Further explanation of the purpose of this proposed amendment is provided in paragraphs 3.3.16 to 3.3.22.
Definition of “distribution network” in Part 1	8	Amend the definition to remove the exclusion of “national grid” and embedded network that is used to convey less than 5 GWh per annum.	This exclusion will no longer be required if the changes to the definition of “distributor” are made.
Create a Part 6-specific definition for “nameplate capacity” in	9	Include a new defined term “nameplate capacity”. The proposed definition is: “nameplate capacity means the lesser of (c) the full-load continuous rating of generating plant under conditions as	Part 6 uses the words “capacity”, “rated capacity”, “nominal capacity”, “installed capacity” and “name plate rating”. These words are intended to have the same meaning in some instances. The proposed change would standardise usage. In many cases, the total capacity of the DG (or an individual

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Part 1		specified by its designer and measured in MW or kilowatts; or (d) the full-load continuous rating of the generating plant's inverter (if any) under conditions specified by its designer and measured in MW or kilowatts. Where appropriate in Part 6, amend the existing provisions to use the newly defined term.	generating unit) is not clearly defined as it is dependent on design of the DG and individual components (e.g. A 12 kWp solar PV array could be connected to a 10 kW inverter and therefore be only capable of generating electricity at a rate of 10 kW or less. Similarly, a 5 kWp PV array connected to a 12 kW inverter will not be able to generate more than 5 kW). Under the proposed new definition, the nameplate capacity of a DG plant would be the capacity of the lowest rated series-connected component in that DG unit. In the examples above, the nameplate capacities would be 10 kW and 5 kW respectively. It thus represents the <i>effective maximum capacity</i> of the DG as a whole.
Definition of "national grid"	10	Remove this definition.	This defined term has been removed from the definition of 'distribution network'. This definition has not been used elsewhere in the Code.
Definition of "reasonable"	11	Delete "excessive power flow at feeder points or" from the definition of 'reasonable and prudent operating	To improve the clarity of the definition.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
and prudent operating practice” in Part 1		practice’. Bold references to “reasonable and prudent operating practice” in other parts of Part 1 and Part 6 that are intended to have the same meaning as the defined term.	
Various clauses throughout Part 6	12	Replace all references to the defined term “year”, with alternative wording that clarifies the intended period (e.g. “3 years” becomes “36 months”).	‘Year’ is defined in Part 1 as “a year commencing on the 1 st day of April of each calendar year and expiring on the 31 st day of March the following calendar year”. The proposed change aligns the drafting with the clear intent of Part 6.
Various clauses throughout clause 6	13	Amend various clauses throughout Part 6 to clarify which metering installation the clause refers to (e.g. “the metering installation at the point of connection at which the distributed generation is connected or proposed to be connected”).	Various clauses refer to “metering installation” without specifying which metering installation the clause is referring to. The amendments will improve the clarity of the requirement.
Clause 6.4 and various	14	Amend Part 6 to require a distributed generator to apply to a distributor if it wishes to continue an existing	Owners of existing DG connected under a connection contract that has expired or will expire should have

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
other clauses throughout Part 6		connection if a connection contract is in force or has expired. If a connection contract is agreed, the distributor must continue the distributed generator's existing connection in accordance with that contract: (a) if a connection contract is in force, from the expiry of the existing connection contract; or (b) if a connection contract has expired, as soon as practicable. If a connection contract is not agreed, the distributor must continue the distributed generator's existing connection in accordance with the regulated terms in Schedule 6.2: (a) if a connection contract is in force, from the expiry of the existing connection contract; (b) if a connection contract has expired, as soon as practicable after the expiry of the period for negotiating a connection contract.	confidence that in the event of contract expiry there is a process available to continue their DG connection. The purpose of the proposed amendments are to make it clear that Schedule 6.1 applies when a connection contract for the DG has expired or will expire and the distributed generator wishes to continue the connection. Clause 6.13 contemplates the expiry of a connection contract, but the process in Schedule 6.1 concentrates on a connection of new DG rather than where DG is connected on agreed terms which are in force or have expired and the distributed generator wishes to remain connected. As more DG is connected on agreed terms, there will be more circumstances where the agreed terms have expired or are due to expire and a distributed generator connected to a distribution network should have confidence regarding the process for continuing an existing connection.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
		This requires a number of consequential amendments to the remainder of Part 6.	
Clause 6.4 and various other clauses throughout Part 6	15	Amend Part 6 to require a distributed generator to apply to increase the nameplate capacity of DG. If a connection contract is agreed, the distributor's existing connection will be continued with the increased nameplate capacity in accordance with that contract as soon as practicable. If a connection contract is not agreed, the distributor's existing connection will be continued with the increased nameplate capacity in accordance with the regulated terms from the expiry of the period for negotiating the connection contract. This requires a number of consequential amendments to the remainder of Part 6.	Clauses 2(3)(b)(ii) and 11(3)(b)(ii) of Schedule 6.1 already contemplate applications to increase the nameplate capacity of DG. However, there is no specific process for these applications anywhere else in Schedule 6.1. In any case, the Authority considers that it is appropriate for such increases to be clearly provided for within Part 6.
Clause 6.4 and various	16	Amend Part 6 to include a process for applications from distributed generators to continue an existing connection	Part 6 does not contemplate applications from distributed generators to continue an existing connection of distributed

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
other clauses throughout Part 6		of DG that has not previously been connected under a connection contract. If a connection contract is agreed, the distributor's existing connection will be continued in accordance with that contract as soon as practicable. If a connection contract is not agreed, the distributor's existing connection will be continued in accordance with the regulated terms from the expiry of the period for negotiating the connection contract. This requires a number of consequential amendments to the remainder of Part 6.	generation that has not been previously connected under a connection contract.
Various clauses in Part 6	17	Replace the term "notify" with "advise" where it is intended to have a different meaning from the defined term "notify" in Part 1 of the Code.	"Notify" is a defined term in Part 1 of the Code. In order to avoid confusion, references to "notify" need to be replaced. The Authority considers the term "advise" to be preferable.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Various clauses in Part 6	18	Replace some instances of the term “network” with “distribution network”.	More accurately reflects the type of network.
Clause 6.3(2)(e)	19	Amend this paragraph to clarify that the fees identified by a distributor are the fees that it is entitled to charge under Schedule 6.1 which must not exceed the limits in Schedule 6.5.	Improve the clarity of the requirement.
Clause 6.6(1)	20	Delete this subclause.	The subclause is not required because the definition of “regulated terms” already refers to Schedule 6.2.
Clause 6.9(a)	21	This clause should refer to clause 19 of Schedule 6.2, not clause 20.	To fix an obvious error.
Clause 6.10	22	Delete this clause.	To align with the rest of the Code. The principle is that a participant is responsible for the performance of its obligations under the Code, and a participant cannot delegate or contract out of its obligations under the Code. The participant may have commercial arrangements in place

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
			to offset its risk or outsource tasks, but the participant remains responsible for compliance with the Code.
Clause 6.11	23	Restructure paragraphs (a) to (c) into distinct items.	To improve the clarity of the requirement (no change to actual requirement is intended).
Heading of Clause 6.13	24	Amend the heading to read: "This Part does not apply to earlier connections".	To fix an error of transcription when Part 6 was imported from the Electricity Governance (Connection of Distributed Generation) Regulations 2007.
Clause 6.13	25	Amend this clause to clarify that that Part 6 applies to pre 30 August 2007 contracts for the purpose of continuing an existing connection of DG if a connection contract is in force or has expired.	The fact that that DG was connected under a contract entered into prior to 30 August 2007 should not preclude an application to continue the connection under Part 6 either before or after the connection contract has expired.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Clause 6.13(2)	26	Delete this subclause.	This subclause appears to preclude a distributed generator who had a contract terminated by a distributor from ever re-applying for approval under Part 6. Deleting this subclause would allow such a distributed generator to re-apply like anyone else.
Structure of Schedule 6.1	27	Restructure Schedule 6.1 so that it does not contain “Parts”. Possible solutions include re-labelling the parts within Schedule 6.1, removing the parts within Schedule 6.1, and breaking the parts of Schedule 6.1 into separate Schedules. Note that this proposal is not presented in Appendix C as draft Code.	The Electricity Governance (Connection of Distributed Generation) Regulations 2007 were drafted with two Parts within what is now Schedule 6.1 of the Code. Because the Code is divided into Parts, this now means there are Parts within a Schedule of a Part. This can cause unnecessary confusion when referring to the provisions of Part 6. For the purposes of making comparisons of the existing and proposed Code more easily understood, this proposal is not presented in Appendix C. The Authority does not expect to present this change in a consultation.
Various clauses in	28	Where appropriate change references to “generating unit” to “distributed generation”.	The definition of “generating unit” is the machine that generates electricity.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Schedule 6.1			In some cases generating unit has been used where the correct reference should be “distributed generation”.
Clause 1(1) and 10(1) of Schedule 6.1	29	Amend these subclauses to clarify that whether Part 1 or Part 2 of Schedule 6.1 applies will depend on the size of the DG if the application is approved.	Avoid possible confusion.
Clause 2(3)(d) and 11(3)(d) of Schedule 6.1	30	Amend to clarify the term ‘location’, as in “proposed location of the distributed generation...” It is proposed that the location referred to in 2(3)(d) is clarified to mean “a brief description of the location of the distributed generation at the address where it will be located.” (e.g. “solar PV modules mounted to house roof and inverted mounted beside main switchboard” or “wind turbine mounted on freestanding pole behind garage and inverter mounted to the inside wall of the garage”). Remove the reference to the date on which the DG is likely to be connected from this paragraph and include it	It is unclear what is meant by the term ‘location’. This could be the site address or the location within the site address (e.g. “roof mounted”), or it could indicate the location within the consumer installation (e.g. connected to sub board DB-03). Clause 2(3)(a) requires the name and address of the owner or operator of the DG and 2(3)(e)(iv) requires the street address and ICP identifier of the DG, so this information should not be duplicated. The location of the DG and the date on which it is expected to be connected are distinct information.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
		in a new paragraph.	
Clauses 2(4) and 11(4) of Schedule 6.1	31	Remove clauses 2(4) and 11(4) of Schedule 6.1 and add a new clause 2(2)(c) and 11(2)(c).	This change makes it clear that an application that does not include the required fee is incomplete.
Clause 2(3)(e)(iv) and 11(3)(e)(iv) of Schedule 6.1	32	Replace “ICP number” with “ICP identifier”.	Improve the clarity of the requirement by using the appropriate defined term.
Clauses 3(2)(b)(ii) and 18(2)(b)(ii) of Schedule	33	Amend the subparagraphs to reflect that a distributed generator (as opposed to distributed generation) is required to comply with the Act and the Code.	Improve the clarity of the requirement by having unambiguous drafting.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
6.1			
Clauses 7 and 22 of Schedule 6.1	34	Amend these clauses to: (a) allow the distributor to waive the distributed generator's requirement to test and inspect provided the distributor is satisfied that the DG is compliant with connection and operation standards; (b) allow the distributor to set a reasonable timeframe within which the testing and inspection must be completed; (c) require the test report to include evidence that the distributed generation complies with the distributor's connection and operation standards; (d) remove the requirement for the test report to include "suitable evidence that the metering installation complies with the appropriate metering standards in this Code".	The purposes of these proposed amendments are to: (a) not require testing and inspection where the distributor is satisfied that it is unnecessary (e.g. in circumstances where the DG is already connected and the connection has not changed). This will avoid transaction costs associated with testing and inspection where both the distributor and distributed generator are satisfied that such is unnecessary; (b) improve the enforceability of the requirement to test and inspect by requiring the distributed generator to complete the testing and inspection with a reasonable timeframe specified by a distributor; (c) clearly specify the standards against which the DG must be tested and inspected. Improving the clarity of the standards that DG must meet may reduce transaction costs and improve reliability by achieving better compliance with connection and operation

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
			standards; and (d) remove an unnecessary obligation on distributors to act as a double-check on the compliance of metering installations. Participants' obligations concerning metering installations are contained in Part 10 of the Code.
Clauses 8(1)(b), 9(1)(b), 23(1)(b) and 24(1)(b) of Schedule 6.1	35	Delete these paragraphs.	The proposed changes to clauses 7 and 22 of Schedule 6.1 would make the testing and inspection clauses self-contained. This makes these paragraphs redundant. Removing these paragraphs improves the clarity of the Code.
Clause 15 of Schedule	36	Allow for an initial application to be accepted with no need for a final application, provided it is by mutual	Remove unnecessary administrative steps if the distributor and distributed generator are in agreement.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
6.1		agreement and that there are no notifications required under clause 16 of Schedule 6.1. If the distributed generator and distributor agree that a final application is not required, the distributed generator's initial application will be treated as a final application.	
Clauses 16 and 17 of Schedule 6.1	37	Replace the requirement to use reasonable endeavours to notify in clause 16 with a specific timeframe of 10 business days. Replace "10 business days" with "20 business days" in clause 17(1)(b).	This provides certainty for investors in DG that if they have an initial application lodged and that they are informed of another final application, then they will have at least 10 business days in which to lodge their own final application (should they wish to have their final application treated as a competitive bid under clause 17).
Clause 17(1) of Schedule 6.1	38	Change subclause (1) from "This clause applies if—" to "Subclause (2) applies if—". Change subclause (2) to state "When this subclause	Subclauses (3) and (4) do not relate to the circumstances set out in subclause (1). Only subclause (2) relates to those circumstances.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
		applies, the distributor—”	
Clause 17(1) of Schedule 6.1	39	Bold the term “first application”, which is defined for the purpose of this clause.	Creates consistent formatting of the term ”first application”.
Clause 18(3) of Schedule 6.1	40	Amend the subclause to reflect that there may or may not be conditions.	Given that approval may be given with or without conditions, the distributor should provide the information in this subclause even if there are no conditions. Under the current drafting, the distributor is only required to provide the information in paragraphs (c) and (d) if there application is approved subject to conditions.
Clauses 18(3)(c) of Schedule 6.1 and 19 of Schedule	41	Amend these clauses to reflect that the charges might be payable by either party.	If incremental costs under Schedule 6.4 are negative, charges would be payable by the distributor. The drafting of these clauses should reflect Schedule 6.4.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
6.2			
Clause 18(3)(c) of Schedule 6.1	42	Move the requirements of clause 2(g) of Schedule 6.4 into clause 18(3)(c) of Schedule 6.1, so that the explanation of how the charges have been calculated accompanies the description of charges.	While clause 18(3)(c) does not prevent the distributor from providing the explanation of charges with the description of charges, requiring the distributor to provide this information together may assist a distributed generator to understand and verify in a timely manner any charges specified by distributors. Item 2(g) is a process detail rather than a pricing principle.
Clause 18(4)	43	Amend this subclause to require a distributor's notice that an application is declined to include the criteria used by the distributor in making its decision if the decision relates to two competing applications under clause 17.	Although clause 17(2)(c) already requires the distributor to provide the criteria used in making its decision, this requirement should be specified in the notice provision.
Clause 19(1) of Schedule 6.1	44	Amend clause 19(1) to clarify that the timeframe that applies depends on the nameplate capacity of the DG if the application is approved (rather than the additional capacity where the application is to increase capacity).	An assessment of an application for additional capacity will be based on the nameplate capacity (i.e. the total capacity) of the DG if the application is approved. Accordingly, the timeframe that applies should be based on the nameplate

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
			capacity, not the additional capacity.
Clause 21(1) of Schedule 6.1	45	Amend clause 21(1) to clarify that the notice referred to in this clause is the notice provided under clause 20(1) and not the notice of a dispute under 20(3)(a).	The reference to a notice under clause 21(1) is ambiguous as clause 20 provides for notice to be given by the distributed generator in two separate circumstances. It makes sense to commence negotiation of a connection contract only if the distributed generator agrees with the conditions specified by the distributor. If the distributed generator does not agree, the matter should be referred to dispute resolution. The 30 business day period for negotiation of a connection contract will commence when the distributed generator has provided notice confirming that it accepts the conditions specified by the distributor.
Clause 22(1) of Schedule 6.1	46	Replace “application” with “final application”.	Improves the clarity of the requirement by using the appropriate defined term.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Clause 24(2) of Schedule 6.1	47	Delete this subclause.	Whether or not a dispute has occurred, the regulated terms only apply when the distributed generator has accepted all of the distributor's conditions (the 30 business day period for negotiation of a connection contract in clause 21 of Schedule 6.1 will commence once the distributed generator has provided notice that it accepts all of the distributor's conditions under clause 20(1) of Schedule 6.1). Removing this improves the clarity of the Code.
Clause 25 of Schedule 6.1	48	Amend this clause to extend the confidentiality obligations in Schedule 6.1 to apply to any confidential information that a distributed generator receives from the distributor during the application process under Schedule 6.1. Currently, clause 25 of Schedule 6.1 requires only the distributor to maintain confidentiality. Amend subclause (1) to clarify that information relating to an application is confidential.	Distributed generators may receive confidential information during the application process. This proposed amendment would protect the distributor and remove any incentive to withhold information. Under the current Part 6, the distributed generator only has an obligation of confidentiality if and when the regulated terms come into effect.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
		Amend subclause (3)(a) to clarify that the information may be used for the purpose of the application process.	
Clauses 26 and 27 of Schedule 6.1	49	Delete these clauses.	Following the Authority's consultation on 'Creating Additional Fields in the Registry', the Authority Board approved²⁹ the deletion of these clauses with an effective date of 6 June 2013. Distributors will instead be required to record DG information in the registry. If these clauses are deleted with an effective date prior to 2 April 2013, then distributors will not be required to report information under clause 26 of Schedule 6.1. Given the registry reporting is expected to be published about a month after the Part 6 reporting is typically published by the Authority, there appears to be more cost than benefit in requiring distributors to report under clause 26 of Schedule 6.1 by 1 April 2013. The timing of this proposed change is discussed in

²⁹ The decisions paper is available on the Authority's website at <http://www.ea.govt.nz/our-work/consultations/retail/creating-additional-fields-registry/submissions/>

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
			paragraphs 3.4.3-3.4.4.
New clause 29 of Schedule 6.1	50	Make it clear that distributors and distributed generators must meet their own costs (including legal) incurred under Schedule 6.1.	Provide clarification.
Clause 4(1) of Schedule 6.2	51	Delete this subclause.	The Authority Board approved changes to Part 10 of the Code effective from 6 June 2013, which provide for a metering equipment provider to be responsible for the compliance of a metering installation. The deletion will leave metering equipment providers solely responsible for ensuring that metering installations comply with the requirements of the Code. This improves the clarity and enforceability of the Code.
Clause 4(3) of Schedule 6.2	52	Amend this subclause to simplify the wording and clearly obligate the distributed generator to meet the requirement to provide reactive metering (if the distributor requires it	Provide clarification and improve enforceability.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
		to do so).	
Clause 4(4) of Schedule 6.2	53	Amend the subclause to state that the distributor's measurement and accuracy requirements for metering installations must be the same as Part 10 of the Code.	The existing wording uses "consistent with". This could be construed to mean the distributor can impose more stringent accuracy requirements than those specified by Part 10 of the Code. The amendment provides clarification. Adding a reference to Part 10 provides a more explicit cross reference to the relevant Part.
Clauses 11 and 15(1)(b) of Schedule 6.2	54	Redraft clause 15(1)(b) of Schedule 6.2 so that such an action must be preceded by a temporary disconnection under clause 11, and a permanent disconnection may only occur where the distributed generator fails to remedy the non-compliance within a reasonable period of time. Amend clause 11 to specify that a temporary disconnection may occur where a distributed generator fails to comply with connection and operation standards or safety requirements. Delete clause 11(e), as this can be described as a failure	Immediate disconnection is appropriate where a distributed generator fails to comply with connection and operation standards or safety requirements. However, there is no reason for immediate disconnection to be permanent unless the distributed generator cannot, or will not remedy a failure to comply. As currently drafted, clause 11(e) can be read to require that a distributed generator must seek approval from the distributor for a modification of DG that affects the injection of electricity into the distributor's distribution network, yet no

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
		to comply with connection and operation standards.	such requirement exists in Part 6. However, the proposed broadening of clause 11 to encompass a failure to comply with 'connection and operation standards' provides a distributor with some flexibility while still requiring distributors to comply with reasonable and prudent operating practice. A reasonable requirement in a distributor's 'connection and operation standards' could require a distributed generator to notify the distributor of any proposed changes to its DG in circumstances specified by the distributor.
Clause 15(1)(c) of Schedule 6.2	55	Replace this paragraph with "without notice, if the trader has de-energised the ICP at which the distributed generation is connected to the distribution network and advised the registry that the ICP has a status of "inactive" with the reason of "de-energised – ready for decommissioning"".	Remove a possible dependency on attempted meter removal and remove duplicated wording.
Clauses 15(2) and	56	Delete clause 15(2).	These requirements relate to the reconciliation process that existed prior to 1 May 2008. Prior to 1 May 2008, each

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
15(3) of Schedule 6.2		Delete the sentence “If applicable...the ICP” from clause 15(3).	embedded generator had its own unique network supply point in the reconciliation process. Removing these references improves the clarity of Part 6.
Clauses 15(4) of Schedule 6.2	57	Delete clause 15(4).	This clause duplicates clause 20(1) of Schedule 11.1. Removing this clause improves the clarity of the Code.
15(5) of Schedule 6.2	58	Delete clause 15(5).	This clause duplicates the obligations on distributors and traders in clauses 8 and 10 of Schedule 11.1 to update the registry. Removing this clause improves the clarity of the Code.
New clause 15A of Schedule 6.2	59	Include a new clause 15A that states that the regulated terms no longer apply if the distributed generator does not construct the DG within 18 months from the commencement of the regulated terms (this can be extended by mutual agreement). If the distributed	This provides distributors with certainty about the length of time that a distributor must have regard to DG that has been approved but the distributed generator has not constructed the DG.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
		generator fails to construct the DG within this timeframe or negotiate an extension, the regulated terms no longer apply and the distributed generator must reapply under Schedule 6.1.	
Clause 20 of Schedule 6.2	60	Amend clause 20 of Schedule 6.2 to emphasise that participant liability to the Crown is set by the Act and the Electricity Industry (Enforcement) Regulations 2010, but liability of distributors and distributed generators to each other is set by these clauses. Amend clause 20(3) to refer to clauses 20 to 25 (the liability clauses) rather than just 'this clause'.	Improve the clarity of the requirement. Section 54 of the Act empowers the Rulings Panel to require a participant to pay a pecuniary penalty to the Crown of an amount not exceeding \$200,000 in the event of a breach of the Code. There are also various limits on liability contained in the Electricity Industry (Enforcement) Regulations 2010. Clause 22 of Schedule 6.2 contains a limit on the maximum total liability of each party as a result of a breach of the regulated terms. The intention of this clause is to limit the liability between the parties. This amendment clarifies that clause 22 does not exclude liability of a distributor or distributed generator to pay a pecuniary penalty to the Crown as determined by the Rulings Panel.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Clause 21(2)(b)(ii) of Schedule 6.2	61	Amend this subparagraph so that it is two separate subparagraphs. One subparagraph will contain (A), the other will contain (B).	Improve the drafting of this subparagraph.
Clause 24 of Schedule 6.2	62	Delete this clause.	Improve the clarity of the requirement. Clause 24(2) states that the indemnity in that clause is subject to the limits of liability in clauses 20 to 23 (therefore, if clause 21(1)(b) applies, clause 24 will not). However, the wording of clause 21(1)(b) is so broad that it is hard to envisage a situation where clause 24 would apply because clause 21(1)(b) will apply and override this clause. This renders clause 24 unnecessary.
Clause 1(2) of Schedule 6.3	63	Delete clause 1(2) of Schedule 6.3 and add the contents of this subclause to clause 6.8.	Improve the clarity of the circumstances in which the dispute resolution process will apply by placing all relevant provisions relating to its application together.

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
Clause 2(a) and 3 of Schedule 6.4	64	Replace the references to “market operation service provider” with “distributor”.	An efficient market operation service provider is not a useful yardstick against which to assess the efficiency of a distributor’s operations. This definition seems to be an error as the definition of market operation service provider does not include a distributor but it is clearly the distributor that would be the party who would be able to avoid the relevant transmission or distribution costs.
Clause 2(f) of Schedule 6.4	65	Delete the words “... expressed in dollars per annum.” This removes the unnecessary requirement that period charges are only expressed in dollars per annum.	There are circumstances where expressing charges in dollars per annum is unhelpful and it is preferable to express charges in more frequent time periods (e.g. \$/month).
Clause 3 of Schedule 6.4	66	Delete this clause. Replace it with a definition of ‘incremental costs’ in Part 1 of the Code. Bold each instance of the term ‘incremental costs’.	Not all readers may appreciate that this clause defines the term ‘incremental costs’ in the preceding clauses. The use of a defined term improves the clarity of the Schedule.
Clause 1 of Schedule	67	Amend this clause to refer to the nameplate capacity of	The existing drafting does not clearly specify how applications for increases in nameplate capacity should be

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
6.5		the DG if the application or notification is approved.	treated in terms of fees that a distributor may charge (i.e. are the references to kW and MW in Schedule 6.5 before or after an increase in nameplate capacity?). It is proposed that the fees a distributor is entitled to charge are based on the nameplate capacity of the DG if the application is approved.
Table in Schedule 6.5	68	Specify that the maximum fees in the table in clause 2 are <i>exclusive of GST</i>. The table will also be restructured to better present the information). This includes new fees relating to a notice under Part 1A	Explicitly state whether the figures in Schedule 6.5 are GST inclusive or exclusive. Excluding GST means that any future changes in the rate of GST will not affect the maximum amount the distributor receives if it sets its fees at the maximum allowable level. In making this proposed amendment, the apparent increase in the level of prescribed maximum fees (as a result of specifying that they are GST exclusive compared to the Authority's view that they are currently GST inclusive) is mitigated by the fact that there has been 13% inflation

Relevant Part, Schedule or clause	Proposal reference	Description of proposed change	Purpose of proposed change
			between Q3 2007 and Q4 2011 (per the Reserve Bank of New Zealand inflation calculator), meaning that the value of the fees to distributors has diminished over that period in proportion to the rate of inflation. Setting the same maximum fees as were published in 2007, but making them exclusive of GST, approximately maintains their value. Assuming the maximum fees set in 2007 were appropriate, the change maintains allocative efficiency. In addition, some distributors charge less than the prescribed maximum fees, and in some cases distributors charge no fees for specific activities. Restructuring the table will improve the readability.

Appendix E Pre-consultation feedback considered to be outside the scope of this review

Introduction

- E.1 A number of suggestions relevant to Part 6 of the Code have been received in response to the pre-consultation paper. This Appendix sets out the Authority's views on those items considered to be outside the scope of the current review or not considered to require a Code amendment.
- E.2 The Authority's views provided in this Appendix include, where relevant:
- (a) the Authority's rationale in considering an item to be outside the scope of this review;
 - (b) the reason(s) why the Authority disagrees with a submitter's view; or
 - (c) the identity of an alternative project or process within which the item is more appropriately addressed or referred.
- E.3 Please note that some of the feedback received has been edited for clarity and brevity in Table 6. Please refer to the individual submissions published on the Authority's website for the complete context.

Table 6: Pre-consultation feedback considered to be outside the scope of this review

Relevant Part, Schedule or clause	Item reference	Proposed by	Description of the proposed change	Purpose of or rationale for the proposed change	Proposed treatment of the proposed change or rationale for not adopting the proposed change
Clause 6.7(2)	1	Vector	Delete this subclause.	Parties should be allowed to change part of the regulated terms without affecting the application of the remaining regulated terms (i.e. the regulated terms will continue to apply).	The regulated terms establish a default contract where the parties are unable to agree a connection contract. The purpose of clause 6.7(2) is to make it completely clear whether regulated terms apply or not. If the parties negotiate a connection contract under clause 6.5, the regulated terms do not apply. With the exception of the dispute resolution procedures (involving the Authority and the Rulings Panel), there is nothing to stop the parties copying any or all of the regulated terms into their negotiated contract. Furthermore, there is flexibility to add extra terms in addition to the regulated terms, provided that they are not

Relevant Part, Schedule or clause	Item reference	Proposed by	Description of the proposed change	Purpose of or rationale for the proposed change	Proposed treatment of the proposed change or rationale for not adopting the proposed change
					covered by and do not contradict the regulated terms. The Authority does not consider that this proposal improves the existing situation.
Clause 6.8	2	Simply Energy	Provide binding dispute resolution through the Code breach process for unspecified disputes.	Would provide economic enforceability of Part 6.	Clause 6.8 and Schedule 6.3 are intended to provide a process for resolution of disputes in relation to alleged breaches of Part 6 of the Code and disputes relating to breaches of the regulated terms. The scope of the dispute resolution process includes disputes relating to conditions specified by a distributor and whether the parties have negotiated a connection contract in good faith.

Relevant Part, Schedule or clause	Item reference	Proposed by	Description of the proposed change	Purpose of or rationale for the proposed change	Proposed treatment of the proposed change or rationale for not adopting the proposed change
Clause 1(1) of Schedule 6.1 Clause 10(1) of Schedule 6.1	3	SEANZ members	Extend the more simplified procedure in Part 1 of Schedule 6.1 to include DG with a capability of no greater than 30 kW on a 3-phase connection (i.e. the maximum nameplate capacity for the simplified Part 1 process should apply <i>per phase</i>).	The current provision does not specify whether the maximum capacity relates to a 1-phase or 3-phase connection.	The Authority understands that the 10 kW limit was originally set with reference to reasonably sized (large domestic or small commercial) DG. The maximum capacity of a typical domestic network connection is around 14 kW (60 amps, 1-phase), so 10 kW is a fairly generous upper limit that accommodates the majority of SSDG. The connection could be 1-phase or 3-phase.
Clause 2(3)(e) and (f) and clause 3(2)(b)(iii) of Schedule 6.1	4	SEANZ members	Refer to AS 4777 as a technical requirement that DG must comply with. AS 4777 compliant DG should be deemed to comply with the distributor's connection and operation standards.	The proposed change refers to the "distributor's connection and operation standards". New Zealand has a very good installation and equipment standard for connection of DG via inverters (which is the majority of	This proposal is unnecessary if a new Part 1A is introduced as proposed. DG of 10 kW or less that is AS 4777 compliant would be allowed to follow the Part 1A notification process under that proposal.

Relevant Part, Schedule or clause	Item reference	Proposed by	Description of the proposed change	Purpose of or rationale for the proposed change	Proposed treatment of the proposed change or rationale for not adopting the proposed change
				DG systems). AS 4777 is directly referenced in the Electricity (Safety) Regulations 2010. It would be beneficial if the requirements for connection of DG are uniform among all distributors and that these requirements are the same as AS 4777.	Part 1 could also be used for AS 4777 compliant DG if an applicant particularly wanted to follow that process (e.g. if they wanted to gain confirmation that their design would be compliant prior to connection).
Clause 2(4) of Schedule 6.1 Schedule 6.4 Schedule 6.5	5	SEANZ members	No fees should be charged for connection applications/ connection notifications for DG of 10 kW or less.	Distributed generators are more likely to follow the appropriate procedures for connection of DG to a distribution network if they are not financially disadvantaged by doing so. The benefit to the distributor of having DG connected to its network will far outweigh the administrative costs associated	Allowing a distributor to determine whether to charge a fee for an application for connection is appropriate as processing applications places incremental costs on the distributor. We note that the maximum fees for Part 1 applications are already set at a relatively modest level and that some distributors choose to waive

Relevant Part, Schedule or clause	Item reference	Proposed by	Description of the proposed change	Purpose of or rationale for the proposed change	Proposed treatment of the proposed change or rationale for not adopting the proposed change
				with processing applications for connection.	the fee altogether – presumably these distributors consider the benefit of the connection of the DG outweighs the value that the fee provides once the transaction costs are deducted. However, the Authority proposes that the fee cap for the proposed new Part 1A process is set at a lower level than the fee for the Part 1 process, since less cost would be involved in processing a Part 1A application. This fee structure is discussed in paragraphs 3.2.24-3.2.25. discussed in the consultation paper.
Clause 5 of Schedule	6	SEANZ members	Delete this clause. The only requirement for the distributed	As per the proposed notification process for SSDG that complies	This proposal is unnecessary if the proposed new Part 1A is

Relevant Part, Schedule or clause	Item reference	Proposed by	Description of the proposed change	Purpose of or rationale for the proposed change	Proposed treatment of the proposed change or rationale for not adopting the proposed change
6.1 Clause 6 of Schedule 6.1			generator should be to give notice of its connection to the distributor.	with specific standards, the connection procedure should be as simple and straight forward as possible.	added.
Clause 7 of Schedule 6.1	7	SEANZ members	Remove the requirement for distributed generators whose DG meets pre-agreed criteria to test their DG. The distributed generator should provide evidence that their DG meets the pre-agreed criteria to the distributor at the time of giving notice of connection. The pre-agreed criteria should include: an AS 4777 type testing certificate for inverters and distribution network	For DG 10 kW or less that complies with the requirements of AS 4777, additional testing should not be required.	This proposal is unnecessary if a new Part 1A is added as proposed. Most of these requirements are proposed to be incorporated into the new Part 1A, other than the requirement in respect of IEC 61730. From an electricity network perspective, all DG components beyond the inverter are electrically “hidden” (i.e. “shielded”) by the inverter. While IEC 61730 may well represent a good standard to follow in respect of providing a safe and reliable solar PV DG, it

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			protection devices (if not integrated in the inverter); • an IEC 61730 certificate for the PV modules (if the DG is PV); • a single line diagram that shows the DG's compliance with AS 4777; and • a COC from the installer.		is not appropriate to include it as a requirement within Part 6 of the Code (that is limited to dealing with the connection of DG to a distribution network).
Clauses 3(3) and 13 of Schedule 6.1	8	Simply Energy	Allow a distributed generator to access information relevant to a distributor's decision to approve or decline an application for connection.	This is necessary so that a distributed generator may verify the costs and conditions imposed by a distributor who has responded to an initial application or provided reasons why an application was declined.	This is adequately provided for in clauses 3(3) and 18 of Schedule 6.1.

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Clauses 11 to 15 of Schedule 6.1	9	Mighty River Power	Review the timeframes in these clauses.	As drafted, the specified timeframes may be unworkable or difficult to comply with.	The timeframes appear to be reasonable. Further information, including more detailed rationale, is requested if specific clauses give a cause for concern.
Clause 15 of Schedule 6.1	10	The Lines Company	Under clause 12, distributors are required to provide the distributed generator with information about any deficiencies with its initial application. However, there is no express requirement that the distributed generator remedies or addresses these deficiencies in the final application. In other words, as it stands, a distributor may be technically required to approve a distributed generator's application to connect (albeit subject to	Clause 15, relating to the requirements of a distributed generator's final application, should include a requirement that the distributed generator has remedied the deficiencies notified by the distributor to the distributed generator under clause 12 (in same way that the distributed generator must provide the results of investigative studies that a distributor has required the distributed generator to carry out).	The discussion relating to the circumstances under which a distributor should approve a distributed generator's application with conditions or decline the application (an issue raised by The Lines Company) also relates to this issue (see discussion starting at paragraph 4.4.17). Notwithstanding that discussion, we consider that, under clause 18, the distributor would not be required to approve the application where it considered

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			conditions) even if the distributed generator has not addressed the deficiencies identified by the distributor.		that connection of the distributed generation would be inconsistent with the distributor's connection and operation standards. The distributor could either approve the application subject to conditions (under clause 18(3)) or decline the application (per 18(4)).
Clause 18 of Schedule 6.1	11	The Lines Company	TLC considers that "significant delays can occur between approving connection and construction negotiation period, a generator changing its proposal or design, and/or the parties awaiting the resolution of a dispute. During this delay there may be regulatory and/or network changes that impact on the applicant's connection	TLC consider "the Code should provide the distributor with the ability to revisit or amend the conditions up to the time of connection to ensure that connection of the applicant is consistent with the distributor's connection and operation standards. Further, if the distributed generator, whose application has been approved,	The Authority agrees that there are some valid concerns. However, the Authority has suggested different solutions – refer to proposals 54 and 59 in Table 5.

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			application, such as another distributed generator being approved within that time and building and connecting before the first applicant. The result can be that the original conditions of approval are no longer appropriate in that they may no longer ensure that connection will be consistent with the distributor's connection and operation standards."	materially changes its connection proposal, the Code should require that the distributed generator submit a new application (unless the distributor requires otherwise)."	
	12	The Lines Company	TLC considers that "clause 18(2) should state that "a distributor must approve a final application to approve a final application to connect distributed generation, subject to any conditions specified by the distributor that are	TLC considers that there should be an express ability for distributors to include conditions that are necessary to ensure that the distributed generator complies with a distributor's connection and operation standards.	The Authority considers that clause 18 of Schedule 6.1 allows a distributor to impose such conditions.

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			reasonable required or necessary to ensure compliance with connection and operation standards”		
Clause 18(3)(c) of Schedule 6.1	13	The Lines Company	Clarify what is meant by “a detailed description of the charges payable ...”	The Lines Company is concerned that complete information may not be available at this stage in the process to enable charges to be determined.	The distributed generator needs this information to make a final decision as to whether to proceed with the connection. The level of connection charges is a key part of its decision making. The Authority considers that the information provided by the distributed generator to support an application for connection should be sufficient to enable the distributor to determine what charges should apply. If there are charges that are

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					dependent on the actual output of the DG (such as avoided costs of transmission), then the description of charges should include the method by which the final charges would be calculated, with indicative charges estimated based on the best available information.
Clause 18(3)(d) of Schedule 6.1	14	The Lines Company	There should be no ability for a distributed generator to use the dispute resolution process to dispute conditions that are imposed to ensure compliance with connection and operation standards.		The Authority disagrees. Without a right to dispute conditions imposed to ensure compliance with connection and operation standards, a distributor could potentially impose unreasonable conditions of connection, or make a mistake in determining reasonable conditions, and the distributed generator would have no recourse to challenge these

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					conditions through a dispute resolution process.
Clause 20(3) of Schedule 6.1	15	The Lines Company	There is uncertainty regarding the process under clause 20 of Schedule 6.1 of the Code where a distributed generator decides to dispute the conditions of connection that have been specified by the distributor under clause 18. In order to progress the connection, clause 20(1) requires the distributed generator to give notice that it accepts all conditions specified. However, clause 20(3) anticipates that the distributed generator can dispute the conditions specified by the distributor. This creates uncertainty because it is not		The Authority acknowledges that the matters that can be resolved via the Schedule 6.3 dispute resolution process should be clarified – see proposal reference 63 in Table 5. In general, a distributed generator could dispute the distributor's conditions of approval on any grounds. We would note that a distributed generator would be incentivised to raise a dispute only in respect of conditions it felt were made in contravention of good electricity industry practice, as triggering the dispute resolution process is likely to

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			clear on what grounds conditions can be disputed, or how disputes about conditions are to be resolved to allow the next step of connection to occur. Clause 6.8 does not list disputes regarding the conditions of an approval as a dispute to which Schedule 6.3 applies, but clauses 18 and 20 of Schedule 6.1 suggest that disputes regarding conditions fall within the disputes resolution process under Schedule 6.3. In TLC's experience, distributors and distributed generators have been confused as to the distinction between a dispute regarding a breach of the Part 6, and a dispute		delay its connection. The dispute resolution process would ultimately determine the reasonableness of the disputed conditions. In relation to the point that a distributor's conditions of connection should in effect be non-negotiable if they are necessary to ensure the integrity and stability of the distributor's network, the Authority disagrees. Without a right to raise a dispute in this case, a distributor could impose unreasonable conditions of connection, or make a mistake in determining reasonable conditions, and the distributed generator would have no recourse to challenge this through

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			regarding a condition of connection. This has resulted in undue delay to the connection process, not only because the rules are unclear, but also because distributed generators have disputed conditions which are in effect non-negotiable as they are necessary to ensure the integrity and stability of the distributor's network. TLC does, however, recommend that there is flexibility within Part 6 of the Code that allows the parties to discuss and deliberate on the conditions of connection as the nature of the distributed generator's connection can change throughout the connection process. However,		a dispute resolution process.

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			the distributor should always be able to determine the conditions of the distributed generator's connection to ensure compliance with connection and operation standards.		
Clause 26 of Schedule 6.1	16	Simply Energy	Exempt embedded network owners from the annual reporting requirements.	DG is unlikely to connect to an embedded network.	Following a consultation on 'Creating Additional Fields in the Registry', the Authority Board approved³⁰ the deletion of the annual reporting requirements in clause 26 of Schedule 6.1 with an effective date of 6 June 2013. Distributors will instead be required to record DG information in the registry. Proposal reference 49 in Table 5

³⁰ The decisions paper is available on the Authority's website at <http://www.ea.govt.nz/our-work/consultations/retail/creating-additional-fields-registry/submissions/>

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					of Appendix D proposes the removal of clauses 26 and 27 of Schedule 6.1. Furthermore, the Authority proposes to remove obligations on distributors that do not own a distribution network (including embedded networks that convey less than 5 GWh per annum) per proposal reference 5 in Table 5. Embedded networks that convey more than 5 GWh per annum would still be subject to the requirements of Part 6 if the amendments to the definition of “distributor” are approved.

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Clause 26 of Schedule 6.1 and clause 7(1) of Schedule 11.1	17	The Authority	Add two fields to the registry: • nameplate capacity; and • fuel type. Create an obligation on distributors to keep this information updated. AND EITHER Remove all clause 26 reporting requirements. OR Remove all clause 26 reporting requirements except for the number of declined applications, the number of extended applications and	There is no comprehensive data on DG in New Zealand. Such data can be of use to distribution network planners, distributors, distributed generators, vendors and installers of DG, and regulators. Reporting under clause 26 provides data back to 2007, but not a total record of all DG. The data in the reports has gaps because applications for connection of DG that are only partly completed at the time of reporting are not included in the reports, and distributors are not always aware of the removal of DG.	Following a consultation on 'Creating Additional Fields in the Registry', the Authority Board approved³¹ the deletion of the clauses 26 and 27 of Schedule 6.1 with an effective date of 6 June 2013. Distributors will instead be required to record DG information in the registry. Proposal reference 49 in Table 5 of Appendix D proposes the removal of clauses 26 and 27 of Schedule 6.1.

³¹ The decisions paper is available on the Authority's website at <http://www.ea.govt.nz/our-work/consultations/retail/creating-additional-fields-registry/submissions/>

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			connection contract type.	Adding the two new fields to the registry would, in conjunction with the installation type field, allow the registry to track the existence, nameplate capacity and fuel types of DG. It is anticipated that the proposed registry changes could happen in conjunction with the proposed Part 10 Code amendments, which include many registry changes. If registry changes are appropriate, then removing reporting obligations from Part 6 would remove duplication of requirements. However, as the number of declined applications, the number of extended applications and type of connection contract would not be	

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				captured in the registry, complete removal of Part 6 reporting would reduce the availability of that data.	
Clause 26(f)(i) of Schedule 6.1	18	The Authority	Change “date of the original application” to refer to the date on which the distributor received the original application.	Improve the clarity of the requirement.	Following a consultation on ‘Creating Additional Fields in the Registry’, the Authority Board approved³² the deletion of the clause 26 of Schedule 6.1 with an effective date of 6 June 2013. Distributors will instead be required to record DG information in the registry. Proposal reference 49 in Table 5 of Appendix D proposes the removal of clauses 26 and 27 of Schedule 6.1.

³² The decisions paper is available from <http://www.ea.govt.nz/our-work/consultations/retail/creating-additional-fields-registry/submissions/>

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Clause 26(f)(i) of Schedule 6.1	19	The Authority	Change “the date of connection” to refer to the date on which the connection contract is agreed or the regulated terms apply.	Change the requirement to improve data availability.	Following a consultation on ‘Creating Additional Fields in the Registry’, the Authority Board approved³³ the deletion of the clause 26 of Schedule 6.1 with an effective date of 6 June 2013. Distributors will instead be required to record DG information in the registry. Proposal reference 49 in Table 5 of Appendix D proposes the removal of clauses 26 and 27 of Schedule 6.1.
Clause 3 of Schedule 6.2	20	Vector	Make it explicit that the general obligations include a requirement for the distributed generator to provide the	A protection system “warrant of fitness” completed periodically by a relay test company approved by the distributor represents good	The provision of such a test report is more appropriately included in the distributor’s connection and operation

³³ The decisions paper is available from <http://www.ea.govt.nz/our-work/consultations/retail/creating-additional-fields-registry/submissions/>

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			distributor with a written test report of the periodic protection system testing and auditing carried out by the distributed generator in accordance with the distributor's connection and operation standards.	industry practice. When testing and inspection is complete, the distributed generator should provide the distributor with suitable evidence that the DG's protection system complies with the requirements specified by the distributor in its connection and operation standards.	standards. An explicit requirement is unnecessary.
Clause 4 of Schedule 6.2	21	SEANZ members	Modify the clause to provide that a distributed generator is not required to provide an export meter if any and all exported energy is to be "donated" (i.e. not sold to a retailer).	Where DG is unlikely to result in significant levels of exported energy (e.g. generation capacity is less than consumption) and/or the distributed generator does not wish to be paid for electricity exported, the distributed generator should not be required	An export meter will not be required by the Code from 6 June 2013 provided the retailer notifies the reconciliation manager of the arrangement ³⁴ . The Authority considers that the exemption process is the appropriate vehicle for

³⁴ Refer to clause 10.13 of the Code effective from 6 June 2013, available on the Authority's website at <http://www.ea.govt.nz/act-code-regs/code-regs/future-code/>

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				to provide an export meter.	suspending the requirement for a distributed generator to have an export meter prior to the amendments to Part 10 taking effect on 6 June 2013.
Clause 15(1)(d)(i) of Schedule 6.2	22	SEANZ members	Amend this provision to specify that that it only applies to DG that, under normal operation, is expected to export energy into the distribution network (i.e. exclude DG where import is expected to be larger than export under normal operation).	This clause allows the distributor to disconnect DG if: (a) the distributed generator has not injected electricity into the distribution network at any time in the preceding 12 months; (b) the distributor has not been notified by the distributed generator of reasons for the non-injection; and (c) the distributor has reasonable grounds for	Clause 15(1)(d)(i) does not provide the distributor with a permanent disconnection right unless (ii) and (iii) are also satisfied. The distributed generator is protected against inappropriate permanent disconnection under this clause by subparagraph (iii) – the distributor must have reasonable grounds for believing that the distributed generator has ceased to operate the DG. We consider the clause is

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				believing that the distributed generator has ceased to operate the DG. This might be problematic for DG that is significantly smaller in capacity than the minimum power demand at the ICP (e.g. a 10 kW PV system on an office building with continuous 20kW power demand). No export would ever occur in this situation, but this should not provide the distributor with a right to terminate.	reasonable and should not lead to inappropriate permanent disconnection of DG that is currently in operation.
Schedule 6.4	23	The Authority	Amend the pricing principles to reflect that the incremental costs of the distributor should ignore any increased costs that are outside of the distributed generator's area of electrical	Under Transpower's current pricing methodology, when the presence of DG reduces a distributor's charges at a particular grid exit point (GXP), the difference is recovered from	This issue is best addressed in the Authority's distribution pricing review project.

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			influence (usually at a single GXP).	other GXPs. Whether those 'other' GXPs happen to be on the distributor's network or not shouldn't influence the application of the pricing principles. A similar effect can happen when DG reduces constraint rentals.	
Schedule 6.4	24	Vector	Remove the restriction on a distributor to charge a distributed generator no more than the incremental costs.	The requirement that distributors charge a distributed generator no more than incremental costs may unreasonably favour DG over end-consumers. The Authority's pricing principles applied to end-consumers include a requirement to price within a subsidy free band (between incremental and stand-alone costs). Where prices determined under this approach under-recover allowed revenues, the shortfall is made up by	This issue is best addressed in the distribution pricing review project.

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				applying Ramsey pricing principles. Schedule 6.4 does not apply the same principles to distributed generators and instead requires distributors to set prices to distributed generators at the bottom of the subsidy free band.	
	25		Clarify that incremental costs are measured over the long-term, not the short-term.	Distributed generators tend to argue that only short-run incremental costs should be charged to them. However, if a short-run view is adopted it increases the likelihood that incremental costs will not recover allowed revenues (e.g. for long-run impacts on distribution network upgrades that arise due to DG connections).	This issue is best addressed in the distribution pricing review project.

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	26		Remove the obligation to set charges net of avoidable transmission charges.	Allocating avoided transmission benefits to DG increases overall transmission costs to consumers in the short-term. It is also likely to increase overall transmission costs in the long-term. Therefore, it seems that for distributors to consider avoided transmission costs in the manner required under Schedule 6.4, that approach would not promote the long-term benefit of consumers. Vector provides a further detailed explanation in its submission.	This issue is best addressed in the distribution pricing review project.
General	27	SEANZ members	Provide for a regulated buy-back price in respect of energy	Various arguments put forward relating to the existence of a market failure. Refer to	These proposals were considered by the Retail Advisory Group (RAG) as part of its "Investigating

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		Black Diamond Technologies IRL	exported by DG. Provide for a regulated minimum term for energy buy-back contracts offered by retailers. [IRL only] Include time-of-use pricing where advanced metering is provided. [IRL only] Amend Part 6 to incorporate grid and distribution network support service benefits into the price paid to distributed generators.	submissions.	barriers facing small-scale distributed generation” report³⁵ considered by the Authority Board on 29 June 2012. These proposals are outside the scope of this operational review of Part 6.
General	28	IRL	Provide an upfront subsidy via an Energy Efficiency and Conservation Authority (EECA)	Investment in DG produces identical benefits to these other	This proposal is not within the Authority’s functions and is therefore not within the scope of

³⁵ This report is available from <http://www.ea.govt.nz/our-work/programmes/market/distributed-generation/>

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			grant, similar to the scheme that supports household insulation and solar hot water.	supported initiatives.	the operational review of Part 6. We suggest the concept is progressed through EECA or the Ministry of Business, Innovation and Employment.
	29		Provide a one-stop-shop to manage connection enquiries from distributed generators to alleviate the need to separately deal with the distributor, retailer and local Council.	High transaction costs through the need to deal with multiple agencies represents a real market barrier.	This proposal was considered by the RAG as part of its "Investigating barriers facing small-scale distributed generation" report ³⁶ considered by the Authority Board on 29 June 2012. The proposal is outside the scope of this Part 6 operational review.
General	30	MainPower	Improve the identification of ICPs that change from load only	Distributors need to be aware of all DG connected to its	The proposed new Part 1A process should achieve the

³⁶ This report is available from <http://www.ea.govt.nz/our-work/programmes/market/distributed-generation/>

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			to load plus DG. No specific suggestions were provided as to how this might be achieved.	distribution network for network management purposes.	purpose for this proposed change by encouraging distributed generators to notify distributors of their connection.
General	31	Powerco	Implement (unspecified) measures to improve the notification rate of SSDG to distributors.	The presence of un-notified SSDG can compromise system security and safety.	The proposed new Part 1A process should achieve the purpose of this proposed change by encouraging distributed generators to notify distributors of their connection.
General	32	Meridian	Before considering more detailed technical issues, undertake a high-level review of Part 6.	Ensure that the connection process and regulated terms currently set out in Part 6 is the best option to achieve the Authority's statutory objective.	A high-level review of Part 6 has not yet been scheduled in the Authority's work plan. A high-level review of Part 6 of the Code could be considered, but this is a substantial exercise that would take some time to complete. At this time, the Authority's

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					objective is to improve the efficiency of the existing Part 6 by remedying identified issues.
General	33	Network Waitaki	Allow more than one ICP per point of connection.	This would enable a more competitive range of options for distributed generators who sell excess energy.	Part 6 would not need to be amended to achieve this. This proposal does not fit within any existing or planned Authority project. The Authority has invited the submitter to lodge a formal Code amendment proposal for the Authority's consideration.
General	34	Orion	Consider amending the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 (LFC Regulations) so that residential properties with DG	Reduce the over-incentive to install DG created by the LFC Regulations. These regulations overstate the variable charges and therefore the perceived financial benefit of DG (and are	This is not within the scope of the Part 6 operational review. This suggestion would need to be considered as part of a review of the LFC Regulations. The Authority is considering whether

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			do not have to be offered LFC compliant pricing.	therefore economically inefficient).	to undertake a project on this topic.
	35		Include provisions in the Code for a local system operator for the distribution network with the ability of constrain off DG.	For system security reasons it may be necessary for the local system operator for the distribution network to constrain off DG.	Part 6 already provides for constraint management in specific circumstances. The distributor's congestion management policy (see clause 6.3(2)(d)) should cover the issues that may arise in respect of congestion and the actions the distributor will take to manage congestion. However, constraint management is part of a broader topic for further consideration; we have included some relevant discussion within the body of this consultation paper relating to network access arrangements

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					(refer to paragraphs 4.4.1 to 4.4.16).
	36		Standardise use of either “distributed generation” or “embedded generation”.	Clarify terms to remove duplication.	The use of the term “distributed generation” is limited to Part 6 of the Code. While there is some duplication, we prefer to retain the two terms at this stage as the proposed solution may introduce more confusion than it avoids. While extremely similar, the terms are not identical.
General	37	Daniel Howard	Enable distributors and retailers to require demand side management or extra generation from SSDG by data and price signals using smart grid technologies.	Encourage investment in SSDG by creating new market opportunities for SSDG.	Aside from incentives for investment in demand-side management that the Commerce Commission is required to promote (under section 54Q of the Commerce Act 1982), the Authority considers that the

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					parties are already able to do this. In any event, this is outside the scope of this Part 6 operational review.
	38		Develop data sharing standards and options to allow distributors to improve distribution network management and fault finding.		The Authority welcomes specific suggestions on relevant standards. Depending on the nature of the suggestion, this may best be directed to the Authority's Standing Data Formats Group (http://www.ea.govt.nz/our-work/advisory-working-groups/sdfg/).
	39		Establish formulas to determine the buy-back price of energy exported by DG, relative to either spot market or retail	Encourage investment in SSDG.	This proposal was considered by the RAG as part of its "Investigating barriers facing

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			electricity pricing.		small-scale distributed generation” report³⁷ considered by the Authority Board on 29 June 2012. The proposal is outside the scope of this Part 6 operational review.
	40		Provide for or mandate time of use metering for SSDG (broad daily bands, or up to half hourly) and price both use and supply of electricity.	Encourage investment in SSDG by pricing energy exported by the SSDG relative to the time it is generated.	The Authority notes that this is already possible under current market arrangements but is not mandatory. An issue for SSDG is its small size relative to the transaction costs that would be involved. This proposal was considered by the RAG as part of its “Investigating barriers facing

³⁷ This report is available from <http://www.ea.govt.nz/our-work/programmes/market/distributed-generation/>

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					small-scale distributed generation” report³⁸ considered by the Authority Board on 29 June 2012. The proposal is outside the scope of this Part 6 operational review.
	41		Provide for time of use distribution network charges that reflect when energy exported by SSDG would be most valuable.	Encourage investment in SSDG by pricing energy exported by SSDG at the time it is generated.	The Authority notes that distributors can already provide such pricing signals. This issue is more appropriately considered in the distribution pricing review project.
General	42	Simply Energy	Provide for specific penalties where a distributor fails to meet a required time for providing	Part 6 provides requires distributors to comply with timeframes but provides no	If a participant considers that a distributor has failed to comply with a timeframe, the dispute

³⁸ This report is available from <http://www.ea.govt.nz/our-work/programmes/market/distributed-generation/>

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			information or a response.	remedies.	resolution process in Schedule 6.3 of Part 6 will apply. If the parties cannot resolve the issue acting in good faith, either party can make a complaint to the Authority. When considering a complaint, the Authority has the ability to refer the complaint to the Rulings Panel where a settlement cannot be reached or where the Authority rejects a proposed settlement. Under section 54(1)(d) and (e) of the Act, the Rulings Panel may impose a pecuniary penalty or make a compensatory order.
	43		Make a distributor liable for a distributed generator's lost opportunity costs where it refuses to reconnect DG to its	Provide an incentive on the distributor to act reasonably.	The parties could agree to such an arrangement under a contract outside of the regulated terms.

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			distribution network.		Under the regulated terms a distributor must cooperate to restore DG to its normal operating state after a temporary disconnection. If a distributor does not reconnect the DG, the distributed generator could refer the dispute to the Authority. The Authority could refer the dispute to the Rulings Panel who may, under section 54(1)(d) and (e) of the Act, impose a pecuniary penalty or make a compensatory order
	44		Make it clear what specific costs “incremental costs” includes.	Some distributors have allegedly sought to impose incremental costs that are not appropriately applied under the pricing	It is neither possible nor desirable to exhaustively define “incremental costs”. The term is an appropriate term for use within

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				principles.	pricing principles and is sufficiently broad to cover a wide variety of costs. If issues arise and a dispute develops over the interpretation of this term, the dispute resolution process is available to the parties. In any event, this is outside the scope of the operational review of Part 6, but may be considered in the distribution pricing review project.
General	45	The Lines Company	Provide for a distributor to be able to recover the reasonable costs of progressing a distributed generator's application for connection up to the point where a distributed generator withdraws its	The distributor may incur significant costs in processing an application and it is reasonable to allow a distributor to recover costs from the distributed generator if it chooses to abandon its application.	Prescribed maximum fees relating to specific aspects of an application for connection are already provided for in Schedule 6.5. The Authority remains open to any feedback relating to the appropriateness of the limits on

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			application. One option is to allow the distributor to claim costs through the dispute resolution scheme under Schedule 6.3.		fees provided for in Schedule 6.5.
General	46	Vector	Undertake a broad review of Part 6 to determine whether it meets the Authority's statutory objective.	It is by no means certain that the Electricity Governance (Connection of Distributed Generation) Regulations 2007 that were introduced under a different regulatory framework, with different objectives and by a different agency, would meet (or best meet) the Authority's statutory objective to promote competition for the long-term benefit of consumers. The purpose of these regulations was relatively narrow when compared to the broader and more	A high-level review of Part 6 has not yet been scheduled in the Authority's work plan. A high-level review of Part 6 could be considered, but it would be a substantial exercise and may take some time to complete. At this time, the Authority's objective is to improve the efficiency of the existing Part 6 by remedying identified issues.

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				principled focus of the Authority's statutory objective. The Authority should turn its mind to whether there would be a net-benefit for consumers from regulating DG's access to distribution networks and whether the arrangements in the current Part 6 are the optimal means of achieving benefits for consumers.	
General	47	Vector	The Part 6 review should consider the existing exclusion of generation of a certain size from various requirements of the Code.	Currently, generation with capacity of less than 30MW (refer to clause 8.21) is excluded from meeting certain Code obligations. However, the exclusion of some generators from the requirement to comply various Code provisions should not interfere with a distributor's ability to place	The Authority considers that the exclusion of some generators from the requirement to comply with various Code provisions does not interfere with a distributor's ability to set reasonable connection and operation standards that the distributed generator is required

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				reasonable connection and operating requirements on the distributed generator.	to comply with.
General	48	The Authority	In the pre-consultation, the Authority indicated an intention to consult on the option to “Make the act of making a non-bona fide application a breach of the Code”.	In the pre-consultation, the Authority noted the purpose was to ensure that applications are not lodged “so that distributed generators are notified of other applications in the area – a form of prospecting the DG projects of others”	On further consideration, the Authority has concluded that no problem had been clearly identified, and that any ‘solution’ would be difficult to enforce.
General	49	RAG	“The Authority could consider...as part of its operational review of Part 6 of the Code...whether the 10kW or less threshold for small-scale DG should be increased.”		The Authority understands that the 10 kW limit was originally set with reference to reasonably sized (large domestic or small commercial) DG. The maximum capacity of a typical domestic network connection is around 14

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					kW (60 amps, 1-phase), so 10 kW is a fairly generous upper limit that accommodates the majority of SSDG. The rationale for moving away from this threshold is unclear. SEANZ's survey of its members for the 2011 year showed that less than 2% of grid connected systems completed were more than 10 kW in size. This suggests the existing threshold captures the vast majority of the SSDG market.
General	50	RAG	"The Authority could consider...as part of its operational review of Part 6 of the Code...whether it is appropriate that a DG owner		The distributor and distributed generator can agree to limit their liability under a connection contract outside of the regulated terms. Clause 6.3(2)(c) requires

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			could be exposed to unlimited liability if it negotiates a connection agreement with the distributor.”		distributors to make a copy of the regulated terms publicly available. Accordingly, the Authority understands that distributed generators are aware of the regulated terms and are likely to enter into a contract outside the regulated terms if the distributor and distributed generator consider that the regulated terms are inadequate.

