Operational Review of Part 6 – Summary of Submissions Page

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20) Cashy & Gary Ball
21) Gaylene Barnes
22) Dr Hugh Barr
23) Kirsten Bracey
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25) Pippa Cain
26) David Cassey
27) Jenny Christie
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29) Pauline Cooper and William Griffin
30) Dr Leigh A.L. Corner
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39) Stefan Geyer
40) Barbara Gillatt
41) David Godfrey
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49) David Hodges
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53) Louise Humpage and Bradley Smith
54) Bill Irwin
55) J.H. [Hans] Jansen
56) Philippa Johnson
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61) Jan Mabey
62) Geoff Mason
63) Andrew Massie
64) Stella McArthur
65) Glen McGeachen
66) Stephen McLuckie
67) David McNeill
68) Alex Mitcalfe
69) Ann Louise Mitcalfe
70) Leith Morrimire
71) Diana Musgrave
72) Patricia Norton
73) Tim Petterson
74) Graham Petterson
75) Sue Pockett
76) Tess Porter
77) Sue Pugmire
78) Cornelia Regnier
79) Sian Robinson
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82) David Salas
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85) Rachel Shields
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87) Ian Stephenson
88) Makere Stewart-Harawira
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90) Peter Thompson
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92) Dr Mark R. Titchener
93) Wilma Trjsen
94) Sarah Walsh
95) Alicia Warren
96) Michael Watson
97) Lynley Webster
98) Peter Whitmore
99) Ben Whitmore
100) Trevor Willmot
101) Jenny Wollerman
102) Stephen

Question 1) Do you agree that the proposed Code amendment to introduce a lower cost connection process promotes the Authority's statutory objective? If not, please explain why not.

Note: Submissions points coloured in blue relate to specific drafting matters not related to the new Part 1A. Topics which created a significant number of submissions have been addressed in the Decisions and Reasons Paper even if no changes to the December 2013 proposal have been introduced.

Question No.	Submitter	Comments	Authority response
Q1	Meridian	Yes, subject to our comments below [response to Question 2]	Support noted. Q2 comments addressed under Q2.
Q1	Genesis	Yes	Support noted.
Q1	Unison	In theory, yes. However, we have concerns about the application and inspection fee amounts. Please see our comments in the attached letter. **(Appendix A)**	Support noted. Fee comments addressed elsewhere.
Q1	Northpower	No it would increase costs to the distributor and customer. 1. DG connections would all still require to be checked before connection. There are minimal costs associated with applications hence there will be no cost saving with the connection process however any reconfiguration required due to not being checked initially could be considerable.	1. There should be no need to check a standards compliant inverter connection that has provided a CoC.

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		2. Providing congestion information and an inverter register would require considerable engineering and IT resources to implement and maintain. There would be a considerable cost to the distributor for this. 3. Engaging testing facilities to test inverters for each distributor would be a considerable cost to either the distributor or customer particularly if duplicated by each distributor.	2. Export congestion on a 400 V network caused by installation of a < 10 kW SSDG should be an extremely rare occurrence. The whole network will not need to be analysed at the outset. If the distributor becomes aware of a local case of export congestion, it must identify this on its website. 3. Distributors do not need to test inverters. The distributed generator is responsible for demonstrating the conformity of the intended inverter with AS4777. Once this has been done for a specific model of inverter, the distributor must list the make and model on its website. This provides assurance to future distributed generators that the distributor has effectively pre-approved this specific inverter model and that it does not need to supply DoC information to the distributor.
Q1	Gaylene Barnes	Yes, I agree with the efforts made in this document	Support noted.
Q1	Trustpower	Yes.	Support noted.
Q1	Glen	No. See responses to Q3 for further details	Responses provided under Q3.

Question No.	Submitter	Comments	Authority response
	McGeachen		
Q1	Right House	Right House does not agree that the proposed Code amendment is consistent with the Authority's statutory objective. Right House submits there are further changes that should be made to reduce transaction costs and achieve an efficient connection process without compromising technical and safety concerns of distribution companies (see answer to Q2).	Responses provided under Q2.
Q1	Pioneer Generation Ltd	Yes and we are in favour of a streamlined application process if the installed equipment is manufactured in accordance with AS4777.	Support noted.
Q1	Vector	See **Appendix V**	Responses provided elsewhere.
Q1	WEL Networks	No, WEL believes that in its current proposed state the reliability of supply will effected based on 'implied' silent approval and no safety checks on the network prior to approval able to be undertaken by the Distributor. The efficient operation will not be met due to the time spent producing and maintaining a congestion map that in a highly dynamic LV network that will never be sufficiently accurate to gain enough benefits to override the cost. The additional cost of producing and maintaining the map would then be passed	Process retained. See response in decisions and reasons paper. Export congestion on a 400 V network caused by installation of a < 10 kW SSDG should be an extremely rare occurrence. The whole network will not need to be analysed at the outset. If the distributor becomes aware of a local case of export congestion, it must identify this on its

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		onto consumers.	website.
Q1	Orion	See **Appendix Y**	Responses provided elsewhere.
Q1	SEANZ	SEANZ does not agree that EA is meeting its statutory objective. The proposed Code amendments do not go far enough and address more specifically process issues in the interests of all stakeholders. Further changes are required to address consumer demand to install and invest in solar PV systems and be more objectively minded in addressing ALL stakeholders' positions, rather than providing distributors with more discretion without accountability for the consumer. This can be achieved without compromising technical and safety standards of distribution companies.	Objection noted but there is no specific alternative provided here that would indicate what the submitter is seeking (which appears to relate to out-of-scope policy matters). More specific SEANZ issues addressed elsewhere.
Q1	Powerco	No, we do not agree with all elements of the proposed Code amendment. In particular, we do not agree with the requirement for distributors to include a list of approved inverters and to list sites of potential export congestion. The additional work required to comply with this requirement would be onerous and would increase the overall costs associated with the connection of SSDG. We do not believe imposing these additional costs would be consistent with the Authority's statutory objective to promote competition in, reliable supply by, and the efficient operation of, the electricity	Issue addressed in the decisions and reasons paper.

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		industry for the long-term benefit of consumers. We believe that introducing the two step pre-connection process only across the industry, and utilising AS 4777, would be more cost effective and consistent with the Authority's statutory objective. We agree that it would be sensible and efficient to adopt a practicable proposal that can be shown to reduce the administration requirements and costs applying to proven compliant SSDG. However, Powerco's view is that the existing base cost to applicants is not correctly quantified in the consultation paper. Consequently, we dispute the assumed savings. In Powerco's case, the cost to an applicant for SSDG amounts to the cost of two emails – one for the application documents, and another, when the installation is completed, for the COC and sign-off documents. We do not charge the regulated application fee for SSDG. The assertion that administrative and application costs are barriers to SSDG applicants is questionable, in our view, when the distributor application fee (if it were applied) would be less than two per cent of the total investment being made by the applicant. Also of concern to us is the proposal to impose more onerous requirements (and consequently costs) on distributors to include more data on their websites. Specifically, a list of approved inverters seems to be unnecessary – if an inverter is AS4777 compliant it is approved. Ensuring equipment compliance is the applicant's responsibility at the time an	The connection process has been further refined and should address these concerns. These requirements are minimal and will provide useful information for potential applicants and their service providers. These issues are addressed in the decisions and reasons paper.

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		installation is scoped and designed. Secondly, requiring distributors to list sites of potential export congestion would be extremely onerous. Many network transformers (thousands) are of 30kVA capacity or less. We consider that there may be thousands of locations on the network already subject to congestion risk. Identifying such locations would be a massive technical undertaking, and any database would need regular revision, as loads and SSDG connections changed over time. The method of publication proposed (listing streets or geographic locations) would also usually be impracticable, as the locations would be so diverse and varied that the list would be effectively unsearchable. SSDG congestion is most likely to occur on the low voltage system, where most distributors, including Powerco, have very limited real time operational information. Detailed information on the low voltage system usually needs to be specifically identified and analysed before any new connection alteration (load or generation) can be considered. We understand the Authority is attempting to provide a system whereby the installer of a new compliant SSDG can validate its conformance prior to making an application, but we suggest that this approach will be less efficient overall. We would endorse the existing framework where each application is assessed specifically with regard to possible congestion at the time of the application, rather than attempting to maintain what would effectively have to be a real time register of every ICP and its current congestion status. The cost to operate such a system would run to hundreds of thousands of dollars. If this requirement were introduced, the only practical means by which it could be	The requirement only extends to areas that are already identified. If they are known, they should be documented. If they are documented, it is a simple exercise to publish them.

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		implemented would be a blanket listing across wider demographics, such as rural, urban or CBD. This would defeat the intended purpose, as case by case analysis of applications would still be required. Powerco's view is that the assumed annual distributor costs used in the quantitative cost benefit analysis are inaccurate. Administrative salary, technical and network data maintenance costs are closer to $30,000 per annum. These costs will continue to increase as the acceleration in the rate of SSDG uptake consumes more resources. The assumed savings in transaction costs and commissioning delay avoidance in the CBA are accounted against an assumed base cost which is not specifically quantified. This leaves the CBA's accuracy open to question, as it is difficult to judge any assumed savings in transaction costs when those costs are not initially quantified. In Powerco's existing process this base cost to the applicant does not exist. Using zero as a total benefits amount, against a realistic distributor cost of $30,000, the CBA would return a perpetually negative net benefit. We support the streamlining measures, as we already follow a very similar process to that proposed, but we are opposed to any measures which would unnecessarily increase our administration and overhead costs. These costs would eventually be borne by the end user.	The likely costs suggested here appear to be overstated. The decisions and responses paper clarifies that it is minimal *existing information* that must be published by distributors. The transaction costs were against the status quo, which is explained in the paper as being an application under Part 1 of Schedule 6.1. The benefits are real as Part 1A of Schedule 6.1 will standardise a process nationally across all networks that should effectively 'rubber stamp' approval of conforming connection applications.

Question No.	Submitter	Comments	Authority response
Q1	PowerSmart Solar	I agree	Support noted.
Q1	Electricity Networks Association	Please see response in paragraphs 7-12 in the main body of our submission. See **Appendix HH**	Responses provided elsewhere.
Q1	Alpine Energy	Please refer to the ENA submission. [**Appendix HH** as above]	Responses provided elsewhere.

Question 2) What improvements should the Authority consider to the proposed process under Part 1A of Schedule 6.1?

Question No.	Submitter	Comments	Authority response
Q2	Meridian	Meridian is concerned about the process described in paragraph 3.3.18(b) of the consultation i.e. no communication from a distributor within 10 business days of submitting an application is taken to be implied approval. Without a formal notice of approval, it is difficult for a retailer or an independent contractor to verify that approval has been granted for connection of a DG installation. In some situations, this could enable the connection of unapproved DG, which is likely to have safety implications. Rather, we suggest that a distributor should be required to approve or reject an application to install DG within 10 business days (as per the process under Part 1, but with a shorter timeframe). A lack of response within 10 business days would mean the distributor is non-compliant. A formal notice of approval would then exist for all DG installations which have been approved under the Part 1A process.	An acknowledgement process has been included under Part 1A of Schedule 6.1. These issues are addressed and provided for in the decisions and reasons paper.
Q2	Genesis	We consider that the phrase “distributed generator has not elected to apply to a distributor under clause 2A(2)” is unnecessarily repeated within clause 9(A)(2). We suggest the following amendment:	Agree

Question No.	Submitter	Comments	Authority response
		"This part of this schedule specifies the process by which a distributed generator, that has not elected to apply to a distributor under clause 2A(2) applies for approval of distributed generation described in clause 2A(1) ~~where the distributed generator has not elected to apply to a distributor under clause 2A(2).~~"	
Q2	Unison	See **Appendix A**	Responses provided elsewhere.
Q2	Northpower	Part 1A and Part 1 clause 2A should preferably be deleted or if required to be retained threshold reduced to under 3 kVA for domestic installations or be at the distributers discretion.	This clause establishes the option of the Part 1A process for compliant SSDG systems. No rationale is provided that would support limiting Part 1A to a maximum of 3 kVA.
Q2	Gaylene Barnes	I think the document needs to be reworked in order to provide a simpler process. The DEFAULT in the document should be that “DG is always connected under regulations’ – and distributed generators should only apply if they have non-approved inverter modules etc, or are in areas of high congestion. The wording 'elect to not apply' should be eliminated, as it will create confusion. Keep it simple. NOTIFICATION only should be required to the distributer - if all conditions are met, (outline these clearly in the schedule). And APPLICATION is only required if there is variations. Also – there needs to be ONE standard notification and application form, and ONE database of inverters approved etc, and ONE map of high congestion. You also need to be careful about the distributors 'connection and operation standards' – these	The safety drivers for requiring that prospective distributed generators apply to have their SSDG connected are well established. Part 1A provides a more streamlined process than the existing Part 1 process and this is considered to be an improvement over the status quo. Distributors need the flexibility to be able to tailor their connection and operation standards to local circumstances. It has not been established that connection and operation standards present a problem.

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		should be a national standard, with no confusing variance.	
Q2	Trustpower	None.	Noted.
Q2	Right House	The improvements Right House recommends are discussed in more detail in our covering letter [see **Appendix R**], and are: • Solar PV systems less than 5kW with an inverter are allowed to connect to the home without an application process; • Solar PV systems between 5-10kW be subject to the proposed process with the following amendments: 1. Distribution companies must notify the installer within 10 days of receiving an application (ie, remove the deemed approval);	Responses provided elsewhere. All DG systems require prior approval to connect for safety and operational reasons. The Distributor must provide a final notice of approval (clause 9F of Schedule 6.1) within 10 business days after the date of submission of the application. This matter is further addressed in the decisions and reasons paper.

Question No.	Submitter	Comments	Authority response
		2. Changes are made to the Code relating to the distribution company claiming congestion; and 3. Consideration of whether AS:NZ4777 provides assurance about the impact of the solar PV system on network assets and the requirement to comply with the network company's connection and operation standards is too onerous • A specific fast dispute resolution process be available for issues relating to small scale distributed generation connection applications	Unclear what this point is – will address it where it is discussed in more detail. Unclear what this point is – will address it where it is discussed in more detail. The Authority's dispute resolution process is a robust process that provides equitable treatment of both parties. We are unaware of issues that have arisen from the speed at which the process progresses. This matter is further addressed in the decisions and reasons paper.
Q2	Pioneer Generation Ltd	There may be benefit in producing a brief, plain English / non-technical document that would encourage new entrants and the general public to comply.	The Authority will update its educational material following completion of the Code amendment. Distributors also provide information on their websites as to how their connection processes operate.
Q2	Vector	See **Appendix V**	Responses provided elsewhere.
Q2	WEL Networks	That the implied silent approval is not adopted in favour of a 10 day limit with the option of an additional 10 days should certain circumstances be met and additional work required to complete application assessment. That the DG must notify the Distributor upon connection, this	Disagree. 10 business days timeframe for providing approval is considered sufficient. See discussion and reasons paper. Providing notification of connection is

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		is not implied in the proposed code. The addition of the DG requiring to provide proof that the calculation has been completed ensuring the maximum voltage will not exceed 1% across the service main if the AS4777.1 is revised and reissued as per draft.	acknowledged as an important event. We have revised the proposed process to combine this notice with the provision of CoC documentation. We expect that, if it is updated as some submitters anticipate, AS/NZS 4777 would be explicit as to how assurance is provided in meeting this (and any other) requirement. The preference is not to duplicate material more appropriately contained in standards.
Q2	Orion	See **Appendix Y**	Responses provided elsewhere.
Q2	SEANZ	As discussed beforehand – titled Proposed Process Changes. Defined application period with obligation from Distributor required (< 10days) Solar PV systems less than 10 kW are allowed to connect without a complex application process – simplified process with reduced transaction costs Solar PV systems above 10kW be subject to the proposed process with amendments:	As summarised here in abbreviated form, it is difficult to assess the merits of these suggestions. We will provide comment alongside the more detailed submission points elsewhere in this schedule.

Question No.	Submitter	Comments	Authority response
		Distribution companies notify the installer in less than 10 days of receiving an application Changes made to Code relating to the distribution company claiming congestion – third party validation required A specific dispute resolution process be available for issues relating to small scale distributed generation connection applications	
Q2	Powerco	**Clause 3.3.8(d) should be deleted:** "A distributed generator …may apply under Part 1A provided that: (d) the SSDG installation has been issued a COC under the Electricity (Safety) Regulations 2010. " **Reasoning** – a COC cannot be issued until the installation is completed and tested. Hence, a COC cannot be part of the application documentation. **Clauses 3.3.9, 3.3.10 and 3.3.11 should be deleted**. These requirements are impracticable and would be ineffective. **Clause 3.3.12 should be deleted:** Export restriction parameters would need to be calculated from network studies of various scenarios – high load/low generation, low load/high generation, etc. This work would incur significant costs which would be borne by the applicant. Powerco's published DG Policy already contains a basic congestion management clause. **Clause 3.3.15 (e) (i) (ii) should be deleted**. Refer to 3.3.9 and 3.3.10. **Clause 3.3.25 (a**) should be revised to apply a maximum	Agreed. The timing has been revised to reflect the point at which a CoC is available (i.e. post-connection, in which case it assists with confirmation of connection). Disagree. See rationale in the decisions and reasons paper. This is not what this provision requires. It simply provides that a distributor may impose export restrictions. See earlier response to 3.3.9 etc. Would be more helpful if a detailed cost breakdown was provided that itemises

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		application fee of $250. This reflects distributor costs more accurately.	administrative and engineering tasks. Our view is that the approval tasks are minimal in the vast majority of cases and the cap on fees in schedule 6.5 reflects this.
		Clause 3.3.35 Disagree. Our estimate of average electricity cost savings/DG payback time on $10K capital outlay at $2.50 per day as assumed in the CBA is 10-12 years. Will 20 days less make much difference? In our experience many installations are not completed until some months after approval is given, while some are completed before the application is made. We consider this clause unnecessary.	From the investor's perspective, accelerating the accrual of benefits provides a real and measurable benefit.
		Clause 3.3.36 It would be useful to see some evidence of existing problems in this area. Powerco has not experienced any instances of dispute or delay with over 400 SSDG applications processed over the last three years. It is difficult to envisage this assumed benefit leading to lower SSDG system prices.	"decreas[ing] the scope for disputes and delays" is the operative phrase here. There is anecdotal evidence of this from SSDG service providers.
		Clause 3.3.38(b) Disagree. Distributor admin/technical/regulatory recording obligations represent a cost. Our estimation is that DG administration currently consumes approximately 0.35 FTE, equating to around $30K per annum in direct salary costs and associated network data systems maintenance and operational costs. We do not recover any of these costs from	That Powerco and others (e.g. Vector) do not charge application fees indicates that the true costs are not significant and/or that collection costs mean that it is not worth processing such small amounts.

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		applicants at present. Fees should remain unchanged at least, if not increased to $250 maximum for <10kW. The proposal is no simpler for us than our existing process. **Clause 3.3.39** Consider this unlikely. The exponential increase in uptake is committing more distributor resource to activity that is not seen as core business. Pressure to recover increasing costs is almost certain to trigger the collection of application fees.	Noted.
Q2	PowerSmart Solar	Ref: Appendix B Part 6 Clause Part 1A 9B (4) (e) How can the distributed generator pay the fee? Direct Debit? These applications are sent in via email. The distributor needs to make the information available as to how they would like SSDG to pay and where to. Can it be mandatory they issue an invoice? Clause Part 1A 9D (1) (3) Does this fee include travel costs? If the distributor does the inspection, then do we not need to get the system inspected by an independent inspector? 9F (7) Information needs to be made available as to how the distributed generator pays the fee. Can it be mandatory they issue an invoice? If it is to be changed into a one step process, then contacting the distributer to give them notice of the inspection is adding	The distributor's website information will need to provide invoice and payment details. The fees prescribed are the maximum fees the distributor may charge. The distributor's inspection is separate to the inspection required under the Electricity (Safety) Regulations. As above, referring to the same comment. The application/approval process has been reviewed in line with other submitted comments.

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		in another step. The information supplied to the distributor also needs to be regulated. What documents must be sent in after inspection? There needs to be clarification as to whether the SSDG can be installed regardless of whether the import/export meter is installed and vice versa. Can the SSDG system be turned on after inspection regardless of whether the import/export meter has been installed yet? If the distributors supply to the SSDG house is high within the plus and minus 14V, and the PV system pushes this voltage higher causing the inverter to trip, does the distributor need to upgrade their lines? Information on Neutral Voltage Displacement Protection needs to be outlined.	 The requirements are specified in the new process. A copy of the CoC is required. Metering must be provided in accordance with the Code requirements before connection. No. A compliant metering installation must first be provided. This situation would need to be resolved with the distributor. Anticipated changes to AS 4777 may also add requirements relating to voltage rise. We are not familiar with this specific type of protection in the current AS 4777 – it is possibly a draft requirement in the proposed AS/NZS 4777.
Q2	Electricity Networks Association	Please see response in paragraphs 13-23 in the main body of our submission. See **Appendix HH**.	Responses provided elsewhere.

Question No.	Submitter	Comments	Authority response
Q2	Alpine Energy	Please refer to the ENA submission. [**Appendix HH** as above]	Responses provided elsewhere.

Question 3) Do you have any comments relating to the proposed Code amendments that have resulted from the Authority's review of Part 6? Please provide comments and suggested drafting improvements with reference to specific parts, schedules and clauses of the draft Code amendments set out in Appendix B.

Question No.	Submitter	Comments	Authority response
Q3	Meridian	See response to Question 2. Meridian would be happy to work with the Authority to draft appropriate Code wording to implement this change if it is accepted by the Authority.	Responses provided elsewhere.
Q3	Genesis	See **Appendix B**	Responses provided elsewhere.
Q3	Unison	See **Appendix A**	Responses provided elsewhere.
Q3	Northpower	See **Appendix C**	Responses provided elsewhere.
Q3	Gaylene Barnes	See **Appendix A** where Ms Barnes has made comments in the margins of the Schedule.	Responses provided elsewhere.

Question No.	Submitter	Comments	Authority response
Q3	Trustpower	We have no comments.	Noted.
Q3	Glen McGeachen	Part 6, Section 6.2.4 - Metering Clarity is required in terms of handling 'Net Instantaneous Metering'. Given that most domestic inverter installations are single phase, but yet many ICP's may be supplied by 2 or 3 phase connections, there is a situation which may arise where Electricity is exported on One phase, but at the same exact instant, is being consumed at the same ICP on a different phase. Whilst this submission does not seek to discuss Net Metering or Feed-in tariffs (Given this is not within the scope of Section 6), it seeks to ensure that specifications for Metering Installations require recording of NET inflows and NET export at any given instant, on a Multi-Phase installation. This will ensure that DG owners are not further disadvantaged in the absence of a 1:1 FIT, paying a higher rate for power that is consumed at the same instant that DG power is exported on a different phase. A further consequence of the current situation, is that an electrical/DG designer may deliberately 'stack' loads on one phase (single phase loads obviously, and within the parameters of the available supply), to maximise the return on the DG installation, but with the consequence of reducing balancing of loads across phases on the Distribution network Part 6, Section 6.3.2(f) – The distributor should not be required to publish, nor limit connections to such a list of	The Authority's view is that the requirement under clause10.24 (b) that "all electricity conveyed is quantified in accordance with this Code", necessitate separate measurements for each instance in which either extraction for consumption or injection for generation occurs at the relevant ICP. Any injection for any one phase back into the distributor's network is an "injection" for this purpose, regardless of what is happening on the other phase(s). Therefore each phase that is capable of injection and extraction needs to have both values separately measured, and not netted into the measurement of other phases as this would be considered "net metering". If all the phases are part of the same ICP, then it is permissible to aggregate the injection from all phases into one register, and the extraction into another register. Alternatively, each phase may have its own injection and extraction registers This is consistent with the intention of these Code provisions. It is simply a list of inverters the distributor has previously received DoC

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		approved inverters for connection to the distribution network. The applicant providing evidence of compliance with the relevant AS4777 standards (i.e. Declaration of Conformity) should suffice. This clause will result in both list maintenance effort/ issues for the distributor, and may also provide opportunities for distributors to use their position to drive business to specific Inverter brands, either unintentionally or otherwise. Clause should be modified to require distributors to list approved equipment, as that complying (and tested to comply) with AS4777. If a list MUST be required, then that should be maintained by an independent, and central party such as the EA, to ensure that this is consistent through all distribution networks, and maintained to reflect all AS4777 compliant units available in NZ. This will provide certainty for both equipment importers, and clients alike. 6.1 – Section 2B – "Revision of AS4777" This clause will have the unintended effect of closing the second-hand market in Grid-Tie inverters. Owners should be entitled to expect that their investment has an appropriate residual value, either in terms of relocating to a new dwelling (should they choose to bring their DG equipment), or through the sale of such assets, if they are no longer required. As such, this clause creates a situation where such units, which would otherwise be acceptable to remain connected to the distribution network, and export power in their existing	documentation for in earlier connection applications, so as to avoid unnecessary photocopying/scanning of documentation the distributor has previously sighted. A centrally maintained register could be looked at as a future development. A significant technical update to AS 4777 is anticipated and the issue is about how long equipment tested as conforming to an earlier standard can be considered for new installations. It seems reasonable that an inverter approved for connection should be able to remain in service within its original installation for its serviceable life. However, if it were to be transferred to a new location, a new application for connection would be required and the equipment used would need to be compliant with

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		location, becoming unusable should these move to another ICP within the current distribution network, or another distribution network, unless granted such approval, at the distributors discretion. Recommendation is to either extend such a window to 10 years (from 12 months) for existing equipment, or include implicit approval where evidence can be provided that the SSDG formed part of a currently approved installation (regardless of which distribution network this was on). Either approach will assist with ensuring that gradual compliance with revisions to 4777 are achieved, without eroding the value of the investment provided by the equipment owners Schedule 6.5 - Application fee under clause 2(2)(c) of Schedule 6.1 - This should be limited to $100, to reflect both the limited effort involved for the Distributor to assess and approve such applications, and reflect the benefits such an installation brings in terms . The onus should be on the applicant to provide baseline information, which satisfies the requirements of assessing the application, including aspects such as supply of the AS4777 Declaration of conformance, which will help ensure that the costs of assessing such an application are kept to a minimum.	the standards of the day (as is the case with all electrical equipment). This is no different to shifting, say, an old switch board from a demolished house to a new location. The electrical installation would be inspected against current safety standards and obsolete equipment would not be permissible. However, as outlined in greater detail in the decisions and reasons paper, the previously proposed new clause 2B of Schedule 6.1 has been omitted from the proposed Code amendment, because the Authority has determined that it must amend the Code each time it wishes to provide for a new inverter standard or version that supersedes AS4777.1. If in the future the Authority amends the Code to this effect, it will provide a transition period for changes from one standard or version to the next by providing an up to 12-month window within which the incumbent inverter standard or version is still valid. The Authority will provide for this window with the date in the *Gazette* that the new standard or version will have effect.This clause relates to Part 1. Maximum fees for a Part 1 application were reviewed at an earlier stage of the review process and the decision made was that they remained appropriate.

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Q3	Right House	See **Appendix S**	Responses provided elsewhere.
Part 1		Definition of distributed generation: "generating plant that is connected or proposed to be connected, but …" "does not include (a) generating plant connected and operated by a distributor …" (iii) during a period when the distribution network capacity would otherwise be exceeded on part or all of the distribution network (b) Right House submits that this part of the definition should be clear that the generating plant is connected or proposed to be connected "to a distribution network". Right House is very concerned with this proposed exclusion of generating plant operated by distributors when the distribution network capacity would otherwise be exceeded. The Consultation Paper does not discuss why this proposed change is being made. This definition must be amended to place a time limit on period when the distributor can operate its generation without being subject to Part 6 of the Code. The other proposals are	This is unnecessary since the Code definition of "connected" means connected to the distribution network. This issue was addressed in earlier consultation papers. There is intentionally no time limit. Some distributors prudently use generation as an on-

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		for a specific purpose where it is clear the operation of the generation would cease. Clause (a)(iii) is open ended. It is not clear if this conflicts with the requirement in 6.11 that the distributor must act at arm's length.	going capacity management tool within their networks to avoid costly network upgrades. We consider there is no conflict.
6.3(2)(g)		Relates to congestion on the network Right House submits that more work is required relating to the distribution company claiming congestion – see cover letter.	See response provided alongside the relevant comment in Right House's covering letter, elsewhere in this summary.
6.3(4)		Describes when export congestion occurs Right House suggests 'export congestion' should be a defined term. The way that congestion is defined and managed also overlaps with the definition of 'reasonable and prudent operating practice' in Part 1.	We have included export congestion as a defined term in Part 1.
6.3(4)(a)		"directly cause a component in the network to operate beyond its rated maximum capacity" Right House submits this should be specific to a particular relevant part of the network. Clause 16(b) refers to "a particular part of the distribution network".	So long as there is demonstrable cause and effect, the condition would be met.
7(4)		"The distributed generator must provide the distributor with a written test report when testing and inspection is complete, including suitable evidence that the ~~metering installation~~	

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		distributed generation complies with the ~~metering standard in the Code~~ distributor's connection and operation standards " This is a significant change in the requirements in this clause – previously only relating to metering but now requiring evidence that the installation meets the distributor's connection and operation standards. Right House queries if it is cost effective to require this evidence for every Solar PV installation on a network when the installations are standard and compliant in every other sense. If the first installation on a network is compliant with connection and operation standards and it is more efficient for the installer to make all other installations the same (and compliant) then there should be no need for this evidence.	This is only required if the distributor requires testing and inspection, which could well be the case once standards compliant systems will likely be connected using Part 1A (only unusual systems would use the Part 1 process). If it does require testing and inspection, it is reasonable to require provision of a report of that testing and inspection. Note that this is for the Part 1 process, not Part 1A.
26 & 27		Revoked on 29 August 2013 Right House note these Record keeping clauses have recently been revoked. While we did not make a submission on the first consultation paper we would not have supported deleting these requirements. This is the only way information about distributed generation becomes available on a network basis. Right House finds this information very useful. We are also surprised that any part of Part 6 has been revoked when the rule development and consultation process is still underway.	Having carefully considered the points raised, we consider they relate to matters that are not within the scope of the technical and operational review of Part 6 of the Code.

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Q3	Pioneer Generation Ltd	Part 1 Definition of distributed generation "… generating plant that is connected to a distribution network, or proposed to be connected, but does … " "(a)(iii) during a period when the distribution network capacity would otherwise be exceeded on part or all of the distribution network; or …" As discussed in our covering letter: Pioneer recommends the underlined words be added to the definition to provide clarity. This part of the definition must be clear that the use of generation is only temporary – there must be a time limit. As the definition stands the network company could operate its generation continuously/permanently if there is or would be congestion on any part of the network.	This is unnecessary since the definition of connected means connected to the network. There is intentionally no time limit. Some distributors use generation as an ongoing capacity management tool within their networks to avoid costly network upgrades.
		Schedule 6.1 Part 2 Initial application process Pioneer is comfortable with the initial application process but more certainty is required from the distributor that the distributed generation can proceed. A competent distributed generator should be in a position to satisfy the distributor the installation will meet the technical requirements set by the distributor. To provide more certainty for the distributed generator to proceed, perhaps the initial application form could include upper and lower limits / specifications / performance / outputs etc. Provided the final specifications are within these limits the distributed generator	This is provided for in clauses 12 and 13. "Proceed" means proceed to the final application process. It is not an approval at this stage. Dialogue with the distributor throughout the process should provide the certainty required.

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		should be given assurance the project can proceed.	
		Schedule 6.1 Final application process The technical information required for the final application is usually not available until the machine has been ordered and manufacturing commenced. Such data includes reactances, sub-transient reactances, voltage and frequency response, turbine output, generator power, efficiencies etc. To reach this point the distributed generator is financially committed to the project. Distributed generators require assurance from the initial application that the final application will not be unreasonably withheld.	Design data within a reasonably accurate range should be available at the application stage, even if the delivered machine has different parameters. After all, how is the machine specified without specifying some ranges of tolerable electrical characteristics to the manufacturer?
		Schedule 6.1 17 Priority of final applications For commitment reasons stated above, the priority of applications should be considered during the initial application phase not the final application.	Priority of multiple applications may become an issue at the final application stage, when an applicant is committed to proceed. The initial application process is investigative in nature.
		Schedule 6.1 22 (2) testing and inspection The notice should include a period of time for distributed generation greater than 1MW – we suggest 20 business days.	This process relates to DG that is less than 10 kW in nameplate capacity, and the requirement is “reasonable notice”. We consider this is a reasonable requirement.

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		Schedule 6.2 14 (2) – distributed generator must advise the distributor of any planned outages…. Pioneer disagrees with this proposed Code which should be reworded. The distributed generator should advise the distributor of planned outages where there is deemed to be mutual advantage of coordinated works. Reason: many hydro stations and wind farms are designed to respond to water levels and wind conditions. These power stations and wind farms start and stop at will. There is no difference between these stations automatically starting and stopping and planned outages.	A planned outage is not the same as daily operational starting and stopping. The requirement to notify the distributor *if there is an impact on network operations* is a reasonable one.
		Schedule 6.2 15 (A) Distributed generator must construct distributed generation within 18 months of approval Clarification is required, ie does distributed generation construction need to commence within 18 months or the plant commissioned within 18 months. If this means construction must commence within 18 months then the clause would be acceptable. It would be unreasonable to expect plant to be commissioned within 18 months given procurement times, tender process, Director approval, design and gaining of other consents such as resource consents etc.	"**construct**", for the purposes of the definition of **associated equipment** and Part 6, includes to erect, to lay, and to place, and **construction** has a corresponding meaning. Thus, the DG construction needs to be complete within 18 months, or other timeframe agreed between the parties. The purpose is to avoid the situation where an approved DG is never progressed to construction i.e. it provides a finite expiry for the regulated terms.
		Schedule 6.5 Prescribed maximum fees The Authority should be congratulated for holding and in some	Noted.

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		cases reducing the fees.	
	SEANZ	Part 1 Definition of SSR/DG and distributed generation: "generating plant that is connected and is proposed to be connected to a distribution network" "does not include (a) generating plant connected and operated by a distributor …" generating plant that is … for example standby generation" Clarification by defining Small Scale Renewables from distributed generation. Clarification that the SSR/DG and DG plant is connected to a distribution network This part is in favour of the Distributor. Why should it be different for distributors? This conflicts with the requirement in 6.11 that the distributor must act at arm's length.	This was discussed in previous consultation papers. The reasons are provided there in those papers.

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		6.3(2)(g) Network Congestion Clarification and a clearer understanding are required as defined above under Network Congestion. Summary is: Distributors have discretion to not approve connections because of "perceived issues". Third party independent analysis required to check validity.	Response provided in the decisions and reasons paper.
		6.3(4) Description and definition of "Export Congestion" Must be a defined term with clear description and impacts on distributors' assets at local level.	The definition of 'export congestion' has been moved to Part 1 of the Code.
		6.3(4)(a) "directly cause a component in the network to operate beyond its rated maximum capacity" Must be defined and specific. Very subjective and no way of defining validity.	Disagree. This is an explicit criterion that can be measured.
		7(4) "The distributed generator must provide the distributor with a written test report when testing and inspection is complete, including suitable evidence that the ~~metering installation~~ distributed generation complies with the ~~metering standard in the Code~~ distributor's connection and operation standards" This is a major variation and change in the requirements in this clause – as the current code relates to metering. This suggests evidence that the installation meets the distributor's connection and operation standards is required. Given the	This is only required if the distributor requires testing and inspection, which could well be the case once standards compliant systems will likely be connected using Part 1A of Schedule

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		standard nature of SSR/DG solar PV systems implementations on a specific distributor's network, the implications on the SSR/DG consumer include cost, resource, limited or no liability mitigation.	6.1 (only unusual systems would use the Part 1 process). If it does require testing and inspection, it is reasonable to require provision of a report of that testing and inspection. Note that this is for the Part 1 process, not Part 1A.
Q3	Vector	See **Appendix V**	Responses provided elsewhere.
Q3	WEL Networks	WEL is supportive of the DG making an application to the Distributor to ensure the safety of customers and of the network. WEL however requests that the EA do not make it mandatory for each distributor to produce and maintain a congestion map and remove Part 6 6.3 (g). Rather this process should be look at as part of a desktop study upon application. WEL would like to see the requirement for import and export metering re-instated in Schedule 6.2 4 (1) (a) and (b). WEL recommends the removal Schedule 6.1 1A 9H (b) of the silent approval in favour of adding the option under 6.1 1A 9G of the ability for the Distributor to have an additional 10 days on the original 10 should field investigations and/or liaising with the DG is required for a solution. WEL also recommends the addition of the DG requiring to	Noted. Responded to in the decisions and reasons paper. It is reasonable that distributors make available information they hold about known export congestion on their network. Responded to in the decisions and reasons paper. We agree that an explicit approval requirement should be added. However, the 10 working day window will be retained. See decisions and reasons paper for discussion of this matter. The proposed Code amendment incorporates

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		provide proof that the calculation has been completed ensuring the maximum voltage will not exceed 1% across the service main if the AS4777.1 is revised and reissued as per draft. This would need to be under Part 1 2 (3) and also under Part 1A 9B (4) WEL also recommends that the Testing and Inspection requirement for an application under Part 1 also be added for Part 1A applications to ensure the Distributor is notified of connection to meet their Code requirements.	the AS4777.1 inverter standard into the Code as a document incorporated by reference. As a consequence, obligations and standards under AS4777.1 become Code obligations and standards. As outlined in greater detail in the decisions and reasons paper, the previously proposed new clause 2B of Schedule 6.1 (Revision of AS 4777.1) has been omitted from the proposed Code amendment, because the Authority has determined that it must amend the Code each time it wishes to provide for a new inverter standard or version that supersedes AS4777.1. The distributor is able to inspect an installation under Part 1A. Notice of connection will be provided with provision of the CoC by the distributed generator to the distributor.
Q3	Powerco	Part 1 – No comment Part 6 – Clause 6.3 (2) (f) & (g) – delete. Clause 6.3 (4) delete Clause 9B(4)(g)(i) – delete Clause 9E – delete	Noted. Retained for reasons outlined in the decisions and reasons paper. Retained for reasons outlined in the decisions and reasons paper. Retained for reasons outlined in the decisions and reasons paper.

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		Schedule 6.5 Fees should remain the same or increase to $250 maximum for SSDG <10kW.	For reasons outlined in the decisions and reasons paper, proposed fees are unchanged.
		Part 11 – No comment	Noted.
		Part 17 – No comment	Noted.
Q3	PowerSmart Solar	3. Proposal to introduce a revised SSDG connection process	
		3.2.3 – Agree	Noted.
		3.2.5 (b) Agree	Noted.
		3.3.3 Is the post notification connection process needed?	Responded to in the decisions and reasons paper.
		3.3.7 Can the PV installation company apply on the customers behalf?	It could be prepared by the service provider but must be authorised by the distributed generator.
		3.3.8 (d) This is done after installation.	Noted. This is now combined with a notice of connection.
		3.3.9 Agree	Noted.
		3.3.10 Agree	Noted.
		3.3.15 (c) Why do we need to include the physical location of the SSDG? The panels, the inverter, the wiring, the meter? Ref: Appendix B Part 6 Clause Part 1A 9B (4) (c)	Providing this information to the registry is a Code requirement on the distributor. It needs to be sufficient to be able to locate the equipment.

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		(g) The CoC is provided after the installation. Ref: Appendix B Part 6 Clause Part 1A 9B (4) (d)	Noted. This is now combined with a notice of connection.
		3.3.22 If the distributor is going to do the inspection and not just the witness of inspection, then is this still $60 ex GST? Is the cost for the inspection regulated? And is the inspection itself regulated? Does the electrician need to be present? If so who pays for the electricians time? And can an inspection be done irrelevant of whether the import/export meter is installed? If the inspection is done independently, can any NZ registered inspector inspect the system? Ref: Appendix B Part 6 Clause Part 1A 9D (1) (a) & (b)	This is the distributor's inspection, not the same as for a CoC. The cost is subject to a maximum fee. The electrician does not need to be present – this is the distributor's own inspection for assuring conformance of the application with the Code, including the distributor's connection and operation standards.
		3.3.25 (a) (b) (c) Agree	Noted.
		3.3.27 (b) Make them all the same.	Form design is at the distributor's discretion.
		3.3.29 Agree	Noted.
		3.3.31 How is the distributors specifications for the voltage and frequency trip settings being regulated?	We understand that establishing these settings is being considered as part of the review of AS/NZS 4777. To the extent AS 4777 does not cover them, or where AS 4777 provides an explicit discretion to the distributor, they must be set in accordance with the distributor's connection and operating standards.
	Electricity Networks Association	The proposed Code amendments should be reviewed by the proposed technical working group. Please see response in paragraph 23 in the main body of our submission.	The Authority appreciates the offer but considers that a technical working group is unnecessary. We are confident that Code amendments can be finalised as a result of the recent consultation

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		See out comments above (para 11) relating to s54Q of the Commerce Act. See **Appendix HH**	round. Response provided elsewhere. Responses provided elsewhere.
Q3	Alpine Energy	As discussed above we strenuously object to the implied approval as we are of the view that such a condition could result in death or serious injury. See **Appendix II**	Responses provided elsewhere.

Question 4) General Comments

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General	Meridian	We broadly support the Authority's revised proposal for a streamlined connection process for particular distributed generation (DG) installations.	Support noted.
		However, Meridian is concerned about the process described in paragraph 3.3.18(b) of the consultation i.e. no communication from a distributor within 10 business days of submitting an application is taken to be implied approval. Without a formal notice of approval, it is difficult for a retailer or an independent contractor to verify that approval has been granted for connection of a DG installation. In some situations, this could enable the connection of unapproved DG, which is likely to have safety implications.	The time period is considered sufficient for the distributor to respond. Failure to respond within 10 business days would mean that the distributor would be in breach of clause 9F.
		Rather, we suggest that a distributor should be required to approve or reject an application to install DG within 10 business days. A lack of response within 10 business days would mean the distributor in non-compliant. A formal notice of approval would then exist for all DG installations which have been approved under the Part 1A process.	A process to acknowledge receipt of an application has been included in Part 1A of Schedule 6.1. Further information is provided in the decisions and reasons paper.
		Meridian concurs with the Authority's statement that a simplified connection process will not, on its own, resolve the problem of non-notified DG connections. As such, we encourage the Authority to explore education and awareness initiatives, as well as other means of encouraging compliance with DG notification requirements.	Noted. Communication of any amended Code requirements in Part 6 as a result of this review will be undertaken at an appropriate time. All relevant participants and industry associations have a role to play in education of interested parties.

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General	Network Tasman	See **Appendix D**	Responses provided elsewhere.
General	Pioneer Generation Ltd	The proposal is for distributed generation to mean: generating plant that is connected, or proposed to be connected, but does not include: (a) generating plant connected and operated by a distributor for the purposes of maintaining or restoring the provision of electricity to part or all of the distributor's distribution network (i) as a result of a planned network outage; or (ii) as a result of an unplanned network outage; or (iii) during a period when the distribution network capacity would otherwise be exceeded on part or all of the distribution network; or … We strongly submit that the definition in (a)(iii) be amended to include a specific time limit. The other parts of this definition provide exceptions for events where it is clear there is a start and a finish. The current definition in (a)(iii) gives the network company discretion about how long it operates its generation when it considers its network	In practical terms, these will be temporary periods of generation, such as from mobile diesel generating plant placed to relieve temporary network capacity constraints at holiday spots (e.g. Mahia). Having reviewed the likely responses of distributors to this dispensation, we consider it most unlikely that a distributor would rely on such

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		capacity might be exceeded. The current proposed Code could allow the network company to operate its generation permanently to ensure the network capacity is not exceeded on part or all of their network. The operation of a network company's generation in this circumstance must be temporary. Pioneer is concerned to ensure a level playing field for distributed generation owned by independent companies and distributed generation owned by a network company (who has access to more information about the details, and obviously controls the operation, of the network). We also suggest the words underlined below are added to the definition for clarity: … generating plant that is connected, or proposed to be connected to a distribution network, but does not include …	a "loophole" to run its generation in competition with another generator. If a specific situation of concern were alleged, the Authority would investigate and consider whether a breach had occurred. Disagree. That the connection is to a distribution network is explicitly clear in the Part 1 definition of the term **connect**.
General	WEL Networks	See **Appendix X**	Responses provided elsewhere.
General	Powerco	See **Appendix DD**	Responses provided elsewhere.
General	PwC	See **Appendix EE**	Responses provided elsewhere.
	Right House	Dear Carl RE Consultation Paper – An operational review of Part 6 of	

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		the Code – second consultation Right House Limited ("Right House") appreciates the opportunity to make submissions on the 'Consultation Paper – An operational review of Part 6 of the Code – second consultation paper' ("Consultation Paper") published by the Electricity Authority ("Authority"). Right House is operating under this section of the Code on a daily basis completing approximately 100 new installs per month. We submit that the current and proposed process in Part 6 represent a barrier for consumer's wishing to invest in micro Solar PV and our submission below includes practical suggestions on how to amend the Code to create a more efficient process and retain the safety and technical imperatives. Background on Right House Right House is a wholly owned subsidiary of the Mark Group in the United Kingdom. The Mark Group is an international company, with over 1,500 employees in 6 countries, which is dedicated to providing a 'whole house' solution to energy-efficiency. Founded in 1974, Mark Group has already helped to make more than two million homes more energy-efficient, currently installing energy efficient measures in over 8,000 homes every week. Mark Group is installing over three megawatts of micro Solar PV	Right House business background noted.

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		throughout the world every month. In NZ we are the largest installer of residential Solar PV – installing up to 100 systems per month on NZ homes. The corporate ownership of Right House by the Mark Group brings a level of international experience, knowledge and capability to Right House that sets it apart from its competitors. It also brings the combined buying power of the corporate group to Right House and enables it to source products including insulation materials, photovoltaic systems and heating options at highly competitive prices and to pass those benefits on to its customers. For further information on the Mark Group please refer to www.markgroup.co.nz Right House approach to selling Solar PV Right House believes in right sizing solar PV systems. A detailed assessment of energy needs is undertaken including an assessment of the constant or background energy use of the home. Care is then taken to size the solar system to ensure maximum value for the customer. This is achieved by keeping the level of export energy to a minimum. By doing this the home owner obtains the maximum return from the energy produced and from their capital investment and the impact on the network is minimised. All installs are completed by highly qualified staff and in accordance with all regulatory requirements. It is important to note and to understand that electricity consumers are now making an economic decision to invest in micro Solar	

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		PV as, when the system is right sized, it is providing a viable return. It is no longer a 'green' decision. Regulatory approach to small scale distributed generation In our view, this review of the connection requirements in Part 6 is tinkering and the fundamental regulatory approach to micro scale distributed generation must be changed to recognise that micro scale is different to large scale distributed generation. The two are fundamentally different and their impact on the network is fundamentally different. The processes, technical and operational requirements via this Code are significant barriers to the uptake of micro scale Solar PV. In our view, the only reason that micro generation can be of any risk to a network is if a lines company has chosen not to invest in the network infrastructure in its area and even then with modern inverters micro Solar PV systems pose little if any risk to networks. As such lines companies are passing the cost of under investment in their network onto the consumer through either not allowing the consumer to connect at all or restricting the type of connection. The overriding presumption needs to be that micro generation can connect. At present the presumption is that	We disagree. We are conducting the review in accordance with the Authority's statutory objective. Parts 1 and 2 (and the proposed Part 1A) of the Code reflect that different size DG systems do require different connection processes. Part 1A seeks to introduce a more streamlined connection process for connection of standards compliant SSDG. Part 6 provides for connection of DG if connection is compliant with connection and operating

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		micro generation can only connect if the lines company approves the connection.	standards. This is because distributors are statutorily responsible for network safety and quality, in the interests of all consumers. We consider this arrangement remains highly appropriate.
		The cut-off for 'micro' generation systems should be 5kW and any system below 5kW should be automatically connected to the distribution network. For a micro Solar PV system between 5-10kW the process that is outlined in the Consultation Paper could be followed, with some amendments.	We disagree. The capacity limit at which DG becomes SSDG was reviewed at an earlier stage of this review and found to remain appropriate.
		It is important to note that protection for the lines company's assets are likely to come from the new requirements of AS:NZ 4777. This standard will require the installer to warrant that a 1% voltage increase will not be exceeded and to install inverters that can achieve this. Right House submits that incorporating the requirements of AS:NZ 4777 into the Code is critical.	We will review the contents of this standard, if and when it is revised. The Code is drafted to provide that requirements in the standard supersede equivalent connection and operation standards (because the distributor is bound by the ESRs to use AS 4777).
		Right House does note that the application process and time it takes to get approval has improved markedly over time and is no longer a concern to us. Our concern is now the different connection and operating standards across network companies - standardisation of these would speed up and simplify the connection process.	Some specific examples of issues would have been more informative here. It is difficult to consider appropriate responses to general allegations.
		A second and currently more concerning barrier to consumer adoption of micro Solar PV caused by lines companies and retailers is the ongoing slow response from	Having carefully considered the points raised, we consider they relate to matters that are not within

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		meter owners to install new meters to support the connection of micro Solar PV systems. The EA must imposed time constraints on the parties responsible for the installation of import and/or export meters. We are happy to provide examples of the excessive time it takes in some instances for meters to be installed. Increased penetration of micro generation will be an issue and of relevance in another 5 years and as such issues need to be addressed now. The Ministry of Business, Innovation and Employment is forecasting approximately 3,000 new micro solar PV installs per annum to achieve the target of micro Solar PV systems comprising 4% of electricity supply by 2040 (2.2 TWh – Global Low Carbon Scenario). Given the growth in installs in the Right House business we support this analysis. Taking any action now would be an overreaction to a recent significant increase in micro Solar PV installations as this is starting from a very low base. The current proposed overreaction is analogous with the concerns expressed a number of years ago about the possible impact of an increasing penetration of utility scale wind generation. Utility scale wind generation in 2012 was 4% of the electricity supply and no such restrictions have been implemented for wind generation. Right House is also concerned to ensure a level playing field for independent installers relative to lines companies that may be active in, or considering, competing with	the scope of the technical and operational review of Part 6 of the Code. It is not clear what the “proposed overreaction” refers to. Again, some specific examples of issues would have been more informative here. It is difficult to

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		independent Solar PV installers. This is becoming an issue of increasing concern as Lines Company develop micro Solar PV businesses Specific comments on the proposed changes *Deemed approval time frame* We support the goal of the review to shorten the approval window from 30 days to 10 days. However, the proposal to 'deem approval' if the installer hasn't heard from the lines company in 10 days will actually lengthen the approval timeframe. At present we are notified of approval in less than 6 days on average. Excluding the average time it takes for the slowest network (9 days) the average approval time is less than 5 days. Right House submits the Code should still require lines companies to notify the installer when they have approved the application and that approval is required within 10 days. The deemed approval proposal could result in lines companies placing less resources in this area and the time period for approvals defaults to 10 days, which is significantly longer than the current actual approval times of 5-6 days. *Standards-compliant equipment* We note the proposal that an installer can use Part 1A if a conforming installation is proposed consistent with the following requirements, in paragraph 3.3.8, that is:	consider general allegations. Support noted. Regarding the point made about deemed approval, your comments support the assumption that distributors will be able to deal with applications for approval well within the required 10 business days.

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		a) designed and installed in accordance with AS:NZ 4777 b) includes an inverter that has been tested and issued a DoC c) has protection systems that meet the distributor's connection and operation standards d) installation has been issued a CoC It is relatively easy to ensure compliance with the technical requirements, i.e. a), b), and d) above, for all or any Solar PV system installed anywhere in NZ. The variable and less certain requirement of complying with a distributor's connection and operation standards increases transaction costs – these connection and operating standards are different for each of the 29 network companies. As discussed above the new AS:NZ 4777 standard will require the inverter to operate within a voltage range of 1% - this is considerably tighter than the band allowed for network company voltage of 230 +/- 6%. We query whether other parts of the network company's connection and operation standards are relevant to micro solar PV systems. Is it appropriate that a network company operates its system at the upper limit of the voltage range so that an up to 1% change arising from the solar PV system cannot happen because the network company will be breaching its limit? We note that a 3kW solar PV system is comparable	The points relating to protection settings and voltage are noted. Distributors are responsible for the safety and quality of power delivered through their networks. Generators of any size or type connected to the local network, or to an electrical installation that is in turn connected to the local network, can have an impact on safety and/or quality of electricity delivered through the network to other consumers. It is therefore appropriate that distributors allow only the connection of distributed generation in accordance with their connection and operation standards. We acknowledge that current standards development work in respect of AS 4777 may result in greater standardisation of protection settings. New Zealand Standards is the appropriate forum for this work. Any settings required by AS 4777 will supersede any equivalent setting defined in connection and

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		to a household hot water system in terms of its impact on the network. Right House is currently undertaking voltage data logging investigations on one network with a large number of notified constraints to assist in determining the extent of the constraints issue on this point of the network. Right House is able to make this information available to the EA if required. As well as complying with AS:NZ 4777, Energy Safety Regulations must be complied with in order to be issued with a CoC. It is important that the requirements in Part 6 do not overlap with other requirements from existing regulations or standards creating uncertainty and additional processes for installers. Right House considers a revised process could be developed for systems up to 5 kW whereby once an installer sets up one solar system to take into account a distributor's connection and operation standards this set up can be used for any other installation on that network – with a post installation notification rather than an application process. *Congestion on the network* The proposal regarding congestion on the network, and the process if congestion occurs, needs to be explained and clarified in much greater detail by the Authority. Right House has a number of concerns about these proposals.	operating standards. We don't consider we need to get into technical detail here. We assume that technical standards are authoritative on these matters. We consider there is no such overlap and, having considered the revised proposal suggested here, consider that an explicit approval from the local distributor for all DG connections, remains appropriate. The intention of this proposed requirement was to make known, specific situations of export congestion more transparent to prospective investors in SSDG before an investment decision is made. It is not intended that distributors carry out extensive studies of their networks to determine possible export congestion, rather to publish known cases, along with plans for

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		Firstly, we are concerned that a lines company will identify large constraints (or large areas which are reasonably expected to become subject to export congestion within the next 12 months) on their network and limit the ability to connect. Right House submits that the Code should allow for the decision of the network company to be independently reviewed and verified if there is a dispute or disagreement between the network companies and installers about the level of congestion. Further, we suggest the Code place an obligation on the network company to reduce / eliminate congestion in these areas within a certain time period (say 12 months) so that consumers that want to make an efficient investment decision are not disadvantaged. Secondly, the proposed Code gives discretion to each network company to determine if an individual connection would "cause a circuit or transformer to operate beyond its rated maximum capacity or give rise to an unacceptably high level of voltage at the point of connection to the network". We query how installers will be informed about the acceptable level of voltage for each network and what limits the network company from operating their network at a voltage level just below their acceptable level so that any connection would be unacceptable? We query whether network companies will use these rules to manage "network congestion" or voltage issues.	relieving the congestion. We expect that in the vast majority of cases, export congestion will not play a factor in connection of SSDG. We note Unison's view that publication of this information has merit and agree that publication should be on a best information basis. The Code is not the appropriate regulatory vehicle for placing investment obligations on distributors. This area is administered by the Commerce Commission under Part 4 of the Commerce Act. Installers and distributors will have to develop better communications so that issues are identified and resolved before investment decisions are made. The congestion map is one means of providing greater transparency but the best installers will develop means of ensuring a trouble free installation before a customer commits to purchase. The requirement is that the distributor work with

Question No.	Submitter	Comments	Authority response
		Thirdly, the amended Code proposes connections in areas with congestion may be subject to "export restriction at certain times". We note that the technology is not currently available (at a reasonable cost) to 'not export' if the inverter is operational. Batteries, relays and other technology will help minimise export but to ensure there is definitely no electricity exported from the Solar PV system the inverter would have to be non-operational. As this would be a breach of the rules the Solar PV system would have to be completely turned off all the time to avoid the risk of it exporting 'at a certain time'. Right House submits the proposals regarding congestion must be re-considered. We are happy to discuss these technical and potential barriers to entry issues with the Authority. *Dispute resolution* Right House submits there must be a specific fast dispute resolution process for issues relating to small scale distributed generation connection applications. Installation of Solar PV is a consumer driven market and the normal dispute resolution process is cumbersome and overly complicated for a consumer. *Overview of proposed process* Right House supports the Authority's view that a standardised, simplified connection process for standards-compliant small scale distributed generation would have efficiency benefits when compared against the status quo.	the distributed generator to assess whether solutions exist to mitigate any export congestion. Resolution *may include* restricting export to certain time periods and this would likely be a short-term mitigation measure. The more permanent solution would be for the distributor to provide additional export capacity. We consider the Authority's existing process will be suitable for resolving issues as they arise. Support noted.

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		We support the requirement for an inverter that conforms to AS:NZ4777 and this is the principal mechanism to address network company's safety and power quality concerns. The cut-off for 'micro' generation systems should be 5kW and any system below 5kW should be automatically connected to the distribution network. The installer could be required to notify the network company that the system has been installed. For a Solar PV system between 5-10kW the process that is outlined in the Consultation Paper could be followed, with the following amendments: • Distribution companies must notify the installer within 10 days of receiving an application (ie, remove the deemed approval); • Changes are made to the Code relating to the distribution company claiming congestion; • Consideration of whether AS:NZ4777 provides assurance about the impact of the solar PV system on network assets and the requirement to comply with the network company's connection and operation standards is too onerous	We disagree. The capacity limit at which DG becomes SSDG was reviewed at an earlier stage of this review and found to remain appropriate.

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		A specific fast dispute resolution process be available for issues relating to small scale distributed generation connection applications. We are concerned that the proposals introduce a number of steps that give discretion to each of the 29 network companies to implement these steps in a different way	

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<tr><th>Question No.</th><th>Submitter</th><th>Comments</th><th>Authority response</th></tr>
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<table>
<tr><td>Steps</td><td>Current Process</td><td>Proposed Process</td></tr>
<tr><td>1</td><td>Pre-approval</td><td>Maximum of 10 days to get application approved (clause 9H)

Deemed approval if the distributed generator does not hear from the distributor</td></tr>
<tr><td>2</td><td>30 days to get approval</td><td>Prior to giving approval the distribution company has discretion about

• if there is or might be congestion

• the make and model of inverters (or the inverter has to be proven to conform with AS:NZ 4777)

• what it’s ‘connection and operation standards’</td></tr>
<tr><td>4</td><td>Unit installed –</td><td>Unit installed</td></tr>
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		<table><tr><td></td><td>send in CoC, commissioning report (in the format developed by each network company)</td><td></td></tr><tr><td>5</td><td>Receive NoC</td><td>Network company has discretion about the number and timing of inspections to verify the unit meets, or continues to meet, the requirements of connection</td></tr><tr><td></td><td>Flat fee of $200, includes the cost for the network company for any inspections</td><td>Fee for approval $100 Fee if information in application is incomplete $80 Fee for each inspection $60</td></tr></table> Currently network companies may not be undertaking inspections because the cost is covered by a flat fee for the application (and therefore may be a net cost to the network company). The proposal allows for the network company to charge the consumer for as many inspections	These two sentences would seem to conflict. If in fact a distributor faced a net cost for an inspection, why would it choose to undertake multiple (unnecessary) inspections?

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		as the network company thinks is required – this discretion and additional cost is a concern. Right House responds to the questions raised in the Consultation Paper in Appendix 1. The economics for consumers of installing Solar PV systems on their homes is improving all the time. It is important to have rules that make these connections efficient, with low transaction costs as well as being compliant with technical and safety requirements so that consumers are not faced with barriers and disincentivised to invest. Right House's Chief Executive, Hamish Sisson, and I would appreciate the opportunity to discuss with you this submission and our practical day-to-day experiences of installing Solar PV. I will contact you to arrange a suitable time.	
General	Unison	Thank you for the opportunity to make a submission on the second consultation on an operational review of Part 6 of the Electricity Industry Participation Code 2010 (Code): Distributed Generation. Unison made a submission on first consultation paper in September 20121, which we have referred to throughout our current submission. I**ntroduction**	

Question No.	Submitter	Comments	Authority response
		Unison is generally supportive of the intent of the Electricity Authority's (Authority) revised proposed changes to Part 6 of the Code to make it easier, and indeed safer, for operators of small-scale distributed generation (SSDG) to connect to the distribution network: 3.2.3 Introducing the proposed revised Part 1A into Schedule 6.1 of the Code would standardise the connection application and approval process where an SSDG system incorporates an inverter that has received a Declaration of Conformity with AS 4777, and complies with other safety requirements (conforming SSDG). We are also pleased to see in this second consultation paper that the Authority has shifted away from its original proposal to notify distributors after the fact that SSDG has been connected to the network. It is important that distributors receive prior notification of SSDG connections to ensure these are safe and are compatible particularly in areas of congestion. Unison does, however, have concerns with aspects of the Authority's proposal, and these are discussed in the sections below. Inverter standard (3.3.6) and publishing of approved inverters (3.3.9)	Support noted. Support noted.

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		The Authority proposes: (a) inverters sold for use in SSDG systems need to conform with AS 4777 (3.3.6), and (b) distributors publish a register of all previously approved inverters on its website (3.3.9).	
		Unison is supportive of having inverters meet a required standard and for a list of approved inverters to be publically available. However, we believe that there is value in undertaking a wider approach with the aim of achieving national consistency in approved inverters – to identify inverters that meet AS 4777 and that are suitable for New Zealand conditions. A project such as this may involve the Electricity Networks Association (ENA) or another party working with distributors to develop a list of inverters that meet AS 4777 and that the distributor networks approve. This would aid both installers and future SSDG owners as there would be national consistency and certainty around inverter approval. If such a list were to be developed, it is likely to take longer than the six-month window from when the Code amendments are published to when it comes into force as the industry would need time to accurately identify compliant and suitable inverters. Unison recommends that the Authority consider the long-term benefits of this	We note the support for a national approach to inverter approval. The intended requirement is for each distributor to publish a list of the inverter makes/models that it has previously approved, so that the applicant does not have to submit DoC documentation needlessly to that distributor. If the distributor has previously sighted DoC documentation, it should be sufficient that the applicant simply states that it has incorporated a previously approved inverter into its application. If distributors coordinate and propose a national approach to previously approved inverters, the Authority would consider this. As the submitter states, it would likely take longer than 6 months to arrange such a national approach. At this time, the Authority's preference is to put the per-distributor approach in place and leave the door open to distributors to take the lead on a national approach, if they prefer.

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		suggestion. Communication – installation of inverters and on-going certification and compliance As a related issue to inverter standards, Unison is concerned about communication around: (a) the process of installing inverters, and (b) the on-going certification and compliance of inverters. Firstly, we have had experience of SSDG that has incomplete and/or incorrect documentation from installers, resulting in potential safety issues for SSDG users. There needs to be better industry communication to installers (e.g. electricians) about what they need to do to correctly and safely install SSDG. For example, the settings on the inverters need to be set to 230v +/- 6%. In addition, it needs to be reiterated that retailers also have responsibility for SSDG connections (along with distributors), as discussed in the Authority's paper on barriers facing small-scale distributed generation2. E.g., for the customer to be eligible for a payment based on exported energy the retailer should ensure that a certificate of compliance has been sighted as a final check and that compliant metering has been installed. Secondly, while the on-going certification and compliance of inverters is the responsibility of the SSDG owner, there needs to be improved industry communication about safety	This has been previously considered. The conclusion is that many stakeholders (including distributors, retailers, industry associations, Government agencies and the Authority) have a role to play in increasing awareness and each needs to play its part in communication. The example cited relates to connection and operation standards that Unison needs to communicate with relevant stakeholders. However, we note that Unison needs to do further technical work on determining appropriate voltage settings (e.g. we are unsure why Unison would trip a generator at -6%, exacerbating the low voltage situation) and we refer Unison to the ongoing development of AS/NZS 4777, which has done considerable development work on protection settings. Agreed. Note response to previous points on awareness and communication.

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		issues. For example ensuring equipment is still certified, and compliant for safe operation once installed. Both these issues (installation of inverters and certification/compliance) can be addressed with better industry communication around SSDG – for the owner and for the installer. Communication, education and awareness around SSDG was discussed in the original proposal, however, it has not been discussed in this consultation paper due to it not being something that can be amended by Code (see section 3.1.4). While this may be true, it is still a very important issue to address as it concerns the underlying problem – owners are connecting SSDG to the network without notifying distributors. Unison still recommends that communication, education and awareness around SSDG be carried out by a body such as the EECA, as was noted in our earlier submission (October 2012). Unison also recommends that a future amendment be made to NZ ECP 51 2004 (domestic wiring) to include reference to Part 6 of the Code in respect of DG installations. This will help to ensure that electricians are aware of their responsibilities. As a third recommendation on this point, Unison also asks the Authority consider adding a formal step in the process for notification (by the electrician or the customer) to the	Note response to previous points on awareness and communication. Unison should bring this point to the attention of the relevant authority. This is outside the process as between the distributed generator and the distributor. The installer will need to allow for metering installation timeframes but these are not covered by Part 6.

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		retailer for the purpose of installation of compliant metering (import and export). 2 Contract visibility was identified as a potential barrier for SSDG owners in the Retail Advisory Group (RAG) review: Investigating barriers facing small-scale distributed generation (February 2011). **Publishing locations of congestion (3.3.10)** The proposal by the Authority to require distributors to publish on its website locations on the network that are known to be subject to congestion for compliant SSDG has merit. However, the requirement to provide detailed location information down to street numbers and addresses level is not practical for Unison to achieve, as it would require detailed modelling of not just high voltage networks but also the low voltage (400 V and 230 V) distribution network. As an alternative proposal, Unison recommends that network congestion information be provided at a higher level – down to the suburb and street name – to inform potential SSDG installers and owners. This would ensure the publication of website information will be achievable within the nominated six month period, and that the regular update of website information can be carried out. For clarity, the locations of congestion information should be used as a guide only. Individual connection will be subject to formal application process.	The intention of this proposed requirement was to make known, specific situations of export congestion more transparent to prospective investors in SSDG *before* an investment decision is made. It is not intended that distributors carry out extensive studies of their networks to determine possible export congestion, rather to publish known cases of areas that have been, or are likely to be subject to export congestion, along with plans for relieving the congestion. We expect that in the vast majority of cases, export congestion will not play a factor in connection of SSDG. We note Unison's view that publication of this information has merit and agree that publication should be on a best information basis.

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		Pre-connection notification and timeframes for applications (3.3.18) Unison strongly supports the pre-connection notification for SSDG. This is important for safety reasons and for our ability to effectively manage our network. However, the Authority proposes that distributors have 10 business days from when the distributed generator submits the application to notify an applicant of any deficiencies in the application. If a distributor has not contacted the applicant within this timeframe, consent to connect is implied and the SSDG can be connected to the network. Unison has several concerns around this timing. Firstly, we recommend that the Authority change the 'start' of the timing from when the distributor receives the application and an acknowledgement of receipt is issued. Given that consent is implied if the distributed generator does not hear back within 10 business days of submitting the application, there is a risk that applications may have not been received (as noted in 3.3.41). By specifying that the 10 business days start from when distributors receive the application, this would minimise this risk.	Support noted. We agree with the view that an explicit acknowledgement of receipt of application should be provided to remove possible doubt relating to receipt of the application. A suitable Code amendment has been developed.

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		Secondly, if the timeframe start date is changed to 10 business days from when distributors receive the application, this will generally be an achievable period for Unison to either approve the application or advise the applicant of deficiencies. However, we would ask that the Authority consider adding in caveats around this timeframe: • Applications must include full information in order for distributors to meet the 10 business day processing timeframe. • Multiple applications may require more than 10 business days to process. For example, the receipt of multiple SSDG applications may create problems in any one low voltage circuit. In instances such as these, Unison would likely need more time to undertake modelling and assessment of the effect of the SSDG on the network. This would require an extension of the timeframe of 10 business days. We recommend that the Authority amend the wording of the Code to "…notify the applicant of any deficiencies or complexities in the application and advise of extension of timeframe if applicable". If these applications are >10kW in aggregate on any one network, the distributor should also have the ability to use the timeframes for applications for DG that are >10kW. Timeframe for distributed generator to remedy deficiencies	An acknowledgement of receipt should be provided and a response will be required within 10 business days; this will either be an approval or a notice of deficiency, with full information as to what is needed to gain approval. This situation is identical to any case where the distributor is concerned about an application's impact on a known or suspected case of export congestion.

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		(3.3.23(b)) Paragraph 3.3.23(b) states that if the distributor notifies the distributed generator that it does not meet the criteria for connection, either as part of the application process or as a result of an inspection, and if the SSDG is connected to the network: "…the distributed generator must remedy the deficiency. If the distributed generator does not remedy the deficiency to the distributor's reasonable satisfaction within 10 business days, the distributor may require the distributed generator to disconnect the SSDG within a reasonable timeframe specified by the distributor". Unison accepts that SSDG owners should be allowed time to remedy any deficiency with their SSDG and that the 10 business day timeframe is reasonable. However, if there is a deficiency that presents a safety concern, the distributor needs to have the power to enforce an immediate disconnection of SSDG and then allow the SSDG owner 10 business days to remedy the problem. It is strongly recommended that the installer at the SSDG site issue a code of compliance certificate and forward a copy to the distributor to validate the connection. This will complete the	Under the proposed process, a final notice of approval is required. A non-compliant application should not get approved as the distributor should be able to respond within 10 business days. The completion notification part of the process has been reviewed and this should address this concern.

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<tr><td></td><td></td><td>connection criteria in regards to safety concerns.

Fees (3.3.25)

The Authority has proposed a change in fee structure limits for SSDG (3.3.25 and in Appendix B, Schedule 6.5 – Prescribed Maximum Fees). We have summarised the proposed changes in the table below to compare the current fees outlined in the Code with the proposed changes:

<table>
<tr><th>Fee type</th><th>Current Code</th><th>Proposed Code Change</th></tr>
<tr><td>Application fee</td><td>$200</td><td>$100</td></tr>
<tr><td>Deficiency fee</td><td>N/A</td><td>$80</td></tr>
<tr><td>Inspection fee</td><td>$60</td><td>$60</td></tr>
</table>

Unison is concerned about reducing the application fee from $200 to $100 as this will not enough to cover our staff costs to process an application for SSDG. On average, our staff costs per application have been approximately $100, however, this is expected to rise to $150. This extra half hour of time accounts for additional checks being done to ensure retailers are changing the meters. We recommend that the application fee be no lower than $150.

While Unison welcomes the introduction of a deficiency fee, the rate for the inspection fee needs to be revised in</td><td>We consider the maximum fees set out are appropriate on average over time. It is noted that some cases will require more or less effort, but the vast majority should require little effort on the distributor’s part.</td></tr>
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		with consultation with the Ministry of Business, Innovation and Employment (MBIE). The $60 fee has remained same since the regulations on distributed generation were first introduced in 20073, despite increases in inflation, labour and fuel costs. In addition, this flat fee makes no allowances for the significant variance in travelling distances between inspection locations. For example, over 25 per cent of SSDG connections are rural or remote rural on Unison's network. However, the inspection fee will not generally be charged by Unison, as ideally the electrician installing the device should provide the code of compliance to Unison together with the livening certificate. On this basis we would not see Unison required to undertake many inspections. The only time we would become involved is if the customer contacts Unison for a no power or partial power via our control room, or if there are anomalies or complaints for customers in relation to the quality of supply network the DG is connected to. Unison recommends that the Authority revise the inspection fee rate, in consultation with MBIE, to allow for: • increases in inflation since 2007 (in line with CPI increases), and	Noted. This reinforces the view that there should normally be no need for the distributor to undertake an inspection, instead relying on the completed documentation. Six months was set after taking into account distributor views that three months was too short. We have considered this timeframe again and consider that six months should be ample time to

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		• a component of travel time cost. **Timeframe for Code implementation (3.3.27)** The Authority has indicated that relevant Part 6 Code amendments will come into force six months from being published in the NZ Gazette. Unison considers that this timeframe may be too short to implement the following proposed amendment: • Publish a schedule of approved inverters on the website. This is an area that Unison believes would benefit from a longer timeframe to implement, such as 12 months to carry out a more extensive, national identification of approved inverters. There would be great advantage of getting consistency in approved SSDG inverters across NZ, with the help of a body such as the ENA. **Summary of recommendations** In summary, Unison submits the Authority consider the following recommendations as discussed in our submission above: (a) commission a project to work with distributors to identify a nationally consistent schedule of inverters that meet AS 4777 and that are suitable for NZ conditions (b) improve communication around installation and on-going certification and compliance of inverters and use a body such as the EECA to oversee this communication	review internal processes. The requirement is for each distributor to simply publish a list of the inverters that it has previously considered as part of a Part 1 or Part 2 application and approved. As previously stated, if ENA or anybody else wishes to lead a national approach, the Authority would consider that if/when such an initiative came to pass. These summarised points have been responded to above, where appropriate.

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		(c) consider a future amendment be made to NZ ECP 51 2004 (domestic wiring) to include reference to Part 6 of the Code in respect of DG installations (d) consider adding a formal step in the process for notification (by the electrician or the customer) to the retailer for the purpose of installation of compliant metering (import and export) (e) provide network congestion information at a higher level – down to the suburb and street name, not individual addresses (f) amend the application timeframe wording to: "…10 business days from when the distributor receives the application" and consider the requirement for an acknowledgement receipt (g) amend the application wording to: "…notify the applicant of any deficiencies or complexities in the application and advise of extension of timeframe if applicable" (h) ensure that there is provision for distributors to immediately disconnect deficient SSDG if there is a safety concern, and that the installer issues a code of compliance certificate and forward a copy to the distributor following the remedy of SSDG deficiencies (i) ensure the application fee is no lower than $150 to ensure that staff costs are met	

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		(j) revise the inspection fee rate, in consultation with MBIE, to allow for increases in inflation since 2007 and a component of travel costs, and (k) extend the six-month implementation timeframe to 12 months for publishing a national schedule of improved inverters.	
General	Genesis	We seek clarification from the Authority on the following points raised in the consultation paper: 1. <u>Paragraph 3.3.12 and 3.3.20, in relation to Schedule 6.1 Part 1(A) clause 9(E)</u> We recommend that the Authority clarify what the reasonable resolution is in a situation where small-scale distributed generation (SSDG) "may be subject to export restriction at certain times."1 From our understanding, this may be achieved in practice if a control relay is installed between an inverter and the network connection. Alternatively, the resolution is a complete power cut by the distributor. However, unless the SSDG has a battery set-up, a complete power cut would force the SSDG owner to purchase electricity off the grid. For both resolutions, we are unsure the impact on the inverter. Therefore, we seek clarification on how this matter can be resolved from an operational perspective.	For SSDG, connection is invariably made to a local 400/230 volt (LV) network, supplied through a single distribution transformer. In the vast majority of cases, the output of a new SSDG system will simply reduce the load on the transformer and the local LV network (an average SSDG system turning on its full output would have the equivalent effect on the network as switching off a hot water cylinder element). Export congestion could occur if the export capacity of many local SSDG systems combined to reverse the power flow on the LV network and the distribution transformer. Managing LV network capacity is a core asset management responsibility for a distributor. Since voltage and current in LV networks are historically not actively monitored, in many cases capacity issues are

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		2. <u>Paragraph 3.3.18, in relation to Schedule 6.1 Part 1(A) clause 9(H)</u> The clause currently provides that if the distributor doesn't respond within 10 business days after the SSDG has submitted its application, acceptance is implied. We suggest to avoid any confusion for distributors and SSDG owners, the wording should be changed to "deemed acceptance". In addition, no direction is given on what happens if	identified from consumer complaints related to low voltage. We expect that a distributor's response to an identified case of export congestion would be the same as its response to an identified case of import congestion (e.g. where in-fill housing overloads an existing LV circuit). Remedies typically involve replacement with a larger capacity transformer and/or reconfiguration of LV circuits, including providing additional circuits. Imposing output restrictions on individual SSDG systems is as problematic as imposing import restrictions on load. Congestion in general signals that the distributor's network has become inadequate to serve the needs of consumers, including those that have invested in distributed generation. The implied approval provision under clause 9F(3) "has been amended to 'is deemed to have given approval". If a distributor breaches its obligation to respond

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		the distributor simply has a back log and sends a decline, or advises of a deficiency after 10 business days. This needs to be addressed further to provide greater certainty for SSDG owners. 3. <u>Paragraph 3.3.24 and 3.3.25, in relation to Schedule 6.1 Part 1(A) cause 9 (D)</u> We consider that allowing distributors to charge for SSDG site visits may create perverse incentives. It is possible that distributors will be overly strict with their inspections, knowing that the cost of re-visit is being covered by other parties. Distributors may also request two visits for essentially one single task, such as confirming compliance. 4. We understand that this change is driven by the desire for consistent processes across all distributors and areas, and also to provide an incentive for the DG owners to get it right in the first instance. However, in reality, we consider that many of the deficiencies identified in site visits will be the labelling and paper work provided by the installation agent. The DG owner has little ability to control this. Therefore, we remain of the view stated in our previous submission that: "it is unfair and arbitrary to require the cost of	within 10 business days of the date on which the application was submitted it will be in breach of the Code. We have considered this view alongside counter-views of some distributors that the maximum fee is set too low. On balance, we consider the fee represents a nominal fee that would reasonably compensate a distributor for their actual costs but reflects that inspection should be a rare necessity. The issuing of a CoC should address the majority of distributor concerns in respect of installation safety and documentation. Distributor inspections should only occur in rare cases.

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		unnecessary inspections. We recommend that distributor should be required to waive the customer fee for a site inspection, if this inspection confirms that the owner of SSDG has provided accurate documentation supporting their application." In addition, we also consider that this issue should be addressed via the Use of System Agreement, rather than as part of commercial processes. It is essentially a service that distributors provide to their customers.	
General	Northpower	**Clause 6.3 (2) (f)** It is not the Distributor's role to approve individual makes and models of inverters, Distributor are not test houses for certifying of compliance to AS/NZS 4777.2 (and other relevant inverter standards). In the case of the electrical fittings, fixtures and equipment the Electricity (safety) Regulations states it the responsibility person seller or person offering the equipment for sale to ensure the equipment has been certified as complying with the required standards. Also it is the person carryout the prescribed electrical work responsibility to ensure the fittings, fixtures and equipment are marked as complying with the required standards.	Agreed. However, this is not the intended approach. The intended requirement is for each distributor to publish a list of the inverter makes/models that it has previously approved, so that the applicant does not have to submit DoC documentation needlessly to that distributor. If the distributor has previously sighted DoC documentation, it should be sufficient that the applicant simply states that it has incorporated a previously approved inverter into its application.

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		To give an “Approved” status on an inverter require you have under taken a thorough testing and evaluation of each make & model inverter (a bit like the heart foundation “tick” on food items). Also there would be some liability on the Distributor should the inverter fail or develop a fault on an approved make and model of inverter. Inverters are specialised electrical equipment and many Distributors such as Northpower will not have the technical expertise to “approve” specific makes and models of inverters. In addition it would be difficult for each distributor to keep track of all the models and specification changes made by inverter manufactures given variety of equipment available. It would make more sense to administer this centrally rather than a duplicated individual effort by each distributor. **Clause 6.3 (2) (g)** It is not possible to list all locations where there is export congestion or likely to be export congestion if there is no scale (magnitude) of generation when considering congestion. In Northpower’s network the largest distributed generator is currently 9 MW, therefore 99.9% of Northpower’s network is congested for this scale of generation. Distribution networks rely heavily on diversity congestion calculations we need consider the type of generation, therefore you may have different levels of congestion	If distributors are able to demonstrate a national approach to previously approved inverters, the Authority would consider this. The intention of this proposed requirement was to make known, specific situations of export congestion more transparent to prospective investors in SSDG *before* an investment decision is made. It is not intended that distributors carry out extensive studies of their networks to determine possible export congestion, rather to publish known cases, along with plans for relieving the congestion. We expect that in the vast majority of cases, export congestion will not play a factor in connection of SSDG. The scale

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		depending on the generation type. Congestion due to Voltage regulation is dependent on reactive power flows, there needs to be some information regarding reactive power from these distributed generation system. It is possible to get more active power out of a PV / grid connected inverter if the inverter could be set up to sink reactive power. If there are several distributed generation systems set up in one area within a short period, as is currently occurring and particularly if there is only a small transformer, the congestion model may not be effective. **Schedule 6.1 Part 1 Clause 2A** There is no requirement or onus on the Distributed Generator to check for congestion in this clause. Also congestion on a 3 phase LV system is as much about balance the loading and generation across the 3 phases than total electrical power quantity. The application progress is where engineering takes places. Note that there does not appear to be a reference in clause 2A that it is subject to part 1A clause 9.	required for consideration of export congestion is "any relevant level of power export". This would seem to be a good example in which the distributor would consider providing information. In addition, we would expect the distributor to be considering options to relieve any export congestion by possibly replacing the small transformer with a larger transformer. Clause 2A is simply a drafting gate that allows application under Part 1A for an installation that would otherwise qualify under Part 1 (note that clause 2A is now clause 1D).

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		A cluster of small (less than 10 kW) distributed generation systems on a domestic LV network will need to be coordinating from a phase balancing point of view. Note many domestic installations in Northpower's network are two phase and small distributed generation system are often connected to a single phase. Distributed generation system up to 10 kW is just too large a power bracket on a domestic LV system where it is likely to multiple distributed generation systems not go through an approval step. It would make more sense to not require approval for larger distributed generation system on high capacity electrical supplies, particularly if the generation capacity will never or unlikely to excess the minimum load i.e. no export is expect to occur. As an example Northpower has received an enquiry for a 20 – 30 kW PV system on a large commercial building which has a minimum consumption of around 50 kW. A possible solution would be to let the distributor wavier the application approval provided clauses (1) (a) to (e) is complied with. Note it is also in the Distributor's interest to simplify the process for straight forward distributed generation systems. There also does not appear to be any requirement for the distributed generation to have an ICP. Not all proposed generation installations will have an existing ICP.	Applications under Part 1A were required under the revised proposal in the December 2012 consultation paper to go through an approval step. This is still the case. Under clause 11.3(1)(a) of the Code, a trader who has agreed to purchase electricity from an embedded generator is required to obtain an ICP identifier for the ICP. The point of connection may already have an ICP identifier if a SSDG is

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			connected to an electrical installation that is supplied with electricity from the local network.
General	Network Tasman	Network Tasman has experienced significant growth in distributed solar PV generation on its network over the past last years and there is an expectation that high numbers of applications for distributed generation will continue to be received into the future. Nelson being the sunny area that it is, is attractive for PV generation. We have the highest penetration of PV generation (generating sites as a percentage of total connections) of any lines company in the country. The effects of distributed generation on the electricity network are to raise voltage at the consumers point of connection and more generally at extremities of the network on summer days. At times of peak solar generation, background network loadings in many areas are at a minimum. As power is drawn from the network by consumers, impedance in the supply system causes the voltage at the consumer's point of connection to fall. Conversely as power is injected, the voltage at the consumer's point of connection tends to rise. EDB's are required under the Electricity regulations to keep voltage at the consumer's point of connection to within +/- 6% of the nominal supply	Introductory points made by Network Tasman noted.

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		voltage of 230V. The electricity distribution network is not generally designed for the reverse flow of power. It is primarily designed for distribution of power to consumers rather than for the transportation of power from remote producers. In remote rural areas in particular, the distribution network is designed and operated such that the maximum voltage approaches the upper limit under the lightest loading conditions, and approaches the lower limit under the heaviest loading conditions. Taking advantage of the regulatory tolerances means that the capital invested into the network is put to greatest use. Rural capital asset utilisation is thereby maximised. Larger solar generation installations in these areas (or many small installations) will therefore cause the regulatory upper voltage limits to be breached. In urban areas, the supply impedance is generally significantly lower, and as a result voltage rise is generally much less of an issue for low levels of PV saturation. Many more installations occur in the urban area than the rural area however and eventually urban solar PV penetration will reach a point where summer time voltage management becomes an issue. In some overseas cities where there are high levels of PV generation, voltage management has become a significant problem for lines companies. Rear guard responses are difficult and expensive to implement. This upper voltage exceedance can be rectified either by further capital investment into the network to reduce the	

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		supply impedance or by reducing the amount of generation into the network when the voltage has risen to the regulatory limit. Capital investment into the network for the primary purposes of accommodating solar generation is generally uneconomic. Relatively few consumers are generators and the capital servicing costs of reducing supply impedance are typically orders of magnitude higher than the benefits derivable from solar generation. In order to address the voltage management issues both in rural areas now and in urban areas in the future, it is proposed that EDB's introduce a requirement for all solar PV inverters connected to their networks that they automatically shut down generation if the voltage has risen to such a limit that the regulatory supply voltage has been exceeded. This will automatically cap the voltage at all points of supply. There is a disadvantage for PV generation owners in that their generation will not be operating during times of high network voltage and this may decrease the total amount of energy that they generate, and decrease their return on investment. However, as EDB's are required by law to hold the voltage within the regulatory limits, then it is not unreasonable that they have this control as a condition of connection of the PV generation to the network. All grid connected solar inverters in NZ must meet the	Distributors are able to prescribe overvoltage trip settings for existing DG systems under AS 4777-2005. We understand that AS 4777 is currently being updated and expanded to incorporate more

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		standard AS4777. This standard incorporates a voltage control facility that allows for this automatic overvoltage shutdown function. It is a matter of programming the correct voltage limits into the inverter at the time the inverter is installed. ***Network Tasman recommends that regulatory limit based automatic over voltage shutdown be mandatorily set up and operational in all grid connected solar PV inverter installations in New Zealand.***	stringent requirements, including a requirement to address overvoltage concerns. SSDG systems are required to incorporate an inverter that conforms with AS 4777 under the ESRs. As stated, this will be addressed through compliance with AS4777 and its successor standards.
General	Vector	1. Overall, Vector supports the Authority's review of Part 6 of the Code and its aim to simplify and streamline the connection process for small-scale distributed generation (SSDG). Vector also appreciates the Authority's efforts to revise its previous proposal having considered the submissions. 2. However, some improvements could still be made to the revised proposal. To this end, we hope that the Authority seriously consider s our comments and recommendations to clarify certain clauses. 3. Vector would also like to note that, in response to the Authority's consultation on the "Transmission pricing methodology: Avoided cost of transmission (ACOT)	Support noted This will be undertaken as part of the Authority's ACOT review.

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		payments for distributed generation", we recommended a full review of Schedule 6.4 in addition to the current operational review of Part 6. This is because the issues raised by the Authority in relation to ACOT payments provide a valid prima facie basis for a review of distributed generation payment arrangements. **Overall Part 1A process** 4. Vector considers that the revised low-cost, ex-ante approval process will provide a better platform for ensuring compliance for SSDG connections than the previously proposed ex-post notification proposal. Vector supports the proposal on this basis. 5. The paper states that "other initiatives", together with a simplified connection process for SSDG, will help resolve the problem of non-notified SSDG connections (paragraph 3.1.4). However, these initiatives are not further explained. Vector **recommends** the Authority provide further information and consult with stakeholders on these initiatives on the basis that stakeholders should have	. Support for Part 1A process noted. The other initiatives are those undertaken by all parties to increase awareness. The Authority has no specific initiatives planned for itself, other than those arising from the review of Part 6. We consider that 10 business days (2 full weeks

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		the opportunity to comment before they are introduced. 6. Vector considers that the timeframe of 10 business days for processing a Part 1A SSDG application is too short, particularly given the proposal under clause 9H to deem implied distributor approval if the DG operator has not received notice within this timeframe. *7.* Vector **recommends** that if the Code includes provision for implied approval, distributors should be given a timeframe of 15 business days to process the application. On balance we believe this is more appropriate because it provides a reasonable time for distributors to properly assess DG applications for the need to carryout inspections, and whether deficiencies or non-compliance exist. **Part 6 should provide for post-connection information** 8. For Part 6 to be effective, it is essential that distributors receive notification that DG is connected, and other information such as the ICP identifier and provision of a certificate of compliance (CoC). 9. Vector **recommends** that an additional step be added	minimum) should provide sufficient time – these are non-complex connections of low capacity, standards-compliant, inverter-based SSDG equipment. We consider that 10 business days is sufficient to enable a distributor to respond to an application. We have revised the proposal to require a notice of connection at the stage the CoC copy is sent to the distributor.

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		to the operational requirements of Part 6 for each DG type (i.e. under Parts 1, 1A and 2) requiring DG operators to provide distributors, within a reasonable timeframe: i. Notification that the approved DG is connected and the date on which this occurred; ii. A copy of the CoC. The CoC must also state the particular standard (e.g. AS 4777) that the installation conforms to; and iii. The DG's ICP identifier (if one did not exist at the time of the application). 10. Vector's reasons are stated below. ***Notification of connection*** 11. Notification of connected DG is a key concern for distributors. Not only is it important to know whether there is DG connected from a network safety perspective, but regulations require distributors to disclose information about connected DG. However,	We have revised the proposal to require a notice of connection at the stage the CoC copy is sent to the distributor.

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		distributors cannot know if or when DG is actually connected following an application approval unless notified. 12. Accordingly, if DG operators do not notify distributors of their connection distributors will have no way of knowing that DG has been connected and may breach their obligations to provide DG related information to the registry, under clause 7 of Schedule 11.1 of the Code. Distributors are also required to report the number of DG connections and capacity installed per year under Schedule 9e (i) of the Information Disclosure Determination, under Part 4 of the Commerce Act and doing so requires knowledge of the DG installation and its date of connection. ***Certificate of Compliance*** 13. Vector supports the proposal under clause 2A(1)(e) whereby DG must be inspected and issued a CoC under the Electricity (Safety) Regulations 2010. This is an important feature of the application process as it helps ensure safety and compliance. However, Vector understands that a CoC is only available *post*-	

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		connection. This is recognised under clause 9B(4)(d), where DG applications only need to include a copy of the CoC "when available".	Agree. Proposal revised to address this concern.
		14. Vector considers that all DG connections under Part 6 (i.e. under Parts 1, 1A and 2) should be required to provide the CoC as soon as practicable. Vector also considers that the CoC should be required to state the standard the installation conforms to, e.g. AS 4777.1 or the relevant standard at the time. This will help provide distributors with certainty that the DG installation is designed and installed according to Part 6 requirements.	The regulations covering CoCs are specific as to what they require. No additional requirements should be necessary. SSDG is required to conform with AS 4777 under the ESRs.
		ICP identifier	Agreed. If none exists at the time, then it should be provided with the notice of connection and provision of the CoC.
		15. Clause 9B(4)(b) requires DG applicants to provide the ICP identifier "if one exists". Vector considers that the Code must also require DG operators to provide the distributor with the ICP identifier as soon as practicable. The identifier is important and distributors cannot properly identify the DG site or meter without it.	

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		Drafting of Part 6 16. Vector considers that the drafting of Part 6 could be generally improved through better wording and clarification. There are numerous cross references (especially in Part 1A) and several clauses with poor wording, which leave readers in doubt of their meaning and / or application. Vector's specific comments on drafting are below. ***Ambiguous and inconsistent drafting*** 17. The proposed wording of clause 2A, Part 1 of Schedule 6.1, could be improved. Vector **recommends** including some words to the following effect in the heading of clause 2A, "…not required under Part 1 *but required under Part 1A*" (as highlighted). This is because the wording currently gives the impression that in the circumstances outlined in clause 2A no application is required, which is not the case. 18. Similarly in clause 2A(1), Vector suggests inserting	Noted. We have removed clause 2A and replaced it with preliminary provisions in clauses 1A to 1D to remove any ambiguity regarding when an application is required under Part 1A. We consider that this addresses this concern. Disagree. We consider that the intended meaning is sufficiently clear, and note that the wording "This Part of this Schedule" arises in several other contexts here.

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		reference to Part 1, e.g. "*Part 1* of this Schedule does not apply to distributed generation if…". This will help clarify the scope of clause 2A.	Agreed.
		19. Clause 9A(2) seems to unnecessarily repeat the phrase "where the distributed generator has not elected to apply to a distributor under clause 2A(2)". Vector **recommends** deleting this repetition.	
		20. Clause 9B appears to be inconsistent with clause 2A(1)(a). It is not clear if this was intentional or a mere oversight. Clause 2A(1)(a) refers to clause 2(1)(a), (b) and (d). However, clause 9B(2)(c) appears to contradict this as it suggests clause 2A(1)(a) should also refer to clause 2(1)(c). Vector **recommends** the Authority clarify this.	Agreed. We have removed clause 2A, and revised clause 9B to require provision of the CoC and ICP identifier when available, but no later than 10 business days after connection of the distributed generation to the distributor's network.
		21. There appears to be a drafting error under clause 2A(1). It is currently worded so that only DG that has been inspected and issued a CoC (along with other requirements) can apply under clause 9B. However as discussed above, only connected DG can be issued a CoC. This means that only connected DG	

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		could apply under clause 9B, which appears to be inconsistent with the proposed scheme. Vector **recommends** the Authority clarify this and amend the wording accordingly. 22. As mentioned above (paragraph 10) distributors do not connect DG to its network. DG operators physically connect the DG installation to a network. This is not consistently reflected throughout Part 6. For instance, clause 9H reflects this - "distributed generator may connect to the network" but other clauses use the phrase - "distributors must connect" (clauses 8, 9, 23, 24). Vector **recommends** the Code be drafted consistently to reflect the fact that DG is not connected by the distributor. ***Unclear timeframes*** 23. It is also not clear how the timeframes set out in clauses 9G and 9H integrate with the situations that arise in clauses 9D and 9E. 24. Clause 9D does not prescribe what happens in the situation where the DG operator does *not* grant the distributor permission to inspect, or only grants permission on the last day of the statutory timeframe,	Agreed. The Code clauses have been amended to this effect.

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		making it challenging for the distributor to respond to the application. In such circumstances the distributor may wish to decline the application but refusal to grant permission to inspect is not specified in clauses 9G or 9H as a reason to not grant approval for an application. 25. Under clause 9E the distributor can notify the DG operator that their application is subject to constraints and is then required to work with them to assess solutions. However, this is not covered in clause 9F and 9H as a reason for the distributor to not give approval. Thus the following scenario could occur: a DG operator would apply, the distributor would tell them they are not able to connect due to a constraint and then the distributor needs to work with the DG operator to find a solution. But unless that is all done within 10 (or, as we propose above, 15) business days, the timeframe will expire and the application is automatically approved. We do not believe this was the EA's intention.	This is remedied in Part 1A of Schedule 6.1 by requiring the distributed generator to provide or arrange for access and allowing the distributor to prohibit a distributed generator from connecting if the distributed generator has not provided or arranged for the distributor to have reasonable access to the distributed generation. . This matter is addressed in the decisions and reasons paper.

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		26. To address these issues, Vector **recommends:** i. Including provision for the distributor to decline the application on the basis that an inspection which it has requested has not taken place. For instance, an additional deficiency could be added to clause 9F(1) to the following effect, 9F(1)(d) "the distributor has not been permitted by the distributed generator to inspect the distributed generation in a reasonable timeframe, despite giving two business days' notice"; and ii. Including reference to clause 9D and 9E in clause 9H(2) so that clause 9H(1) does not apply if the distributor has advised the distributed generator of a deficiency under clause 9F(2), inspection under clause 9D(1), or congestion under clause 9E(1). ***Testing and inspection*** 27. Vector considers it would be beneficial to allow distributors under clause 7 and 22 (under Parts 1 and 2, respectively) to request testing and inspection or documentation to demonstrate ongoing compliance. It	

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		is not clear to Vector why distributors only have this right under Part 1A. That is, all approved and connected DG should be required to undertake *ongoing* testing and inspection to ensure ongoing compliance with the distributor's connection and operation standards.	
		28. Vector **recommends** clauses 7 and 22 include provision for distributors to request testing, inspection, or documentation, to demonstrate ongoing compliance and conformity and that non-conformity or non-compliance may result in the distributor requiring the distributed generator to disconnect (subject to rectification).	Post-connection matters are addressed under regulated terms (or negotiated terms where the parties have agreed to replacement terms). The distributor already has suitable rights under clause 5 of schedule 6.2 (regulated terms).
		Reference to A4777.2	This matter is addressed in the decisions and reasons paper.
		29. Vector is aware that the "A 4777" standard is in the process of being revised and will soon become the "AS/NZS 4777" standard.	
		30. Vector **recommends** the final Part 6 amendments be	

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		drafted in a way in which it can deal with such change, and any other future changes without requiring amendments. For instance, Part 6 could refer to the "relevant standard", where "relevant standard" is defined in Part 1 of the Code as AS 4777 or any successor to this standard. ***Definition of "distributed generator" will not always apply to one party*** 31. The current Part 6 appears to only contemplate situations where the DG owner, operator and person in possession of the DG are the same person. In a market where SSDG is becoming increasingly popular and accessible, Vector considers that the Code needs to be able to cater for situations where the DG owner, operator and person in possession of the DG is not necessarily the same person, e.g. take for example a lease to own system where ownership and possession are separated, or other new technology solutions where possession and effective control is separated. 32. When such situations arise, application of the current Code is problematic. For instance, the Code is	Noted. Agreed. When resources allow, we will investigate whether it would be appropriate to seek a class exemption from the MBIE from registration for certain distributed generators,

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		currently drafted in a manner where the "distributed generator must" do something. Given the range of obligations that are placed on the distributed generator in the Code, such separation of ownership / possession / control can create uncertainty when determining which person actually has the obligation. Vector **recommends** the Authority consider these issues and make any changes, as appropriate. **Proposed fees** 33. The proposed fees set out in Schedule 6.5 do not appropriately reflect the actual costs incurred by distributors for processing applications and carrying out inspections. As a result, this means that electricity distributors would be subsidising DG operations at the expense of electricity consumers more generally. The costs of ensuring safety and compliance should fall on the party wishing to connect its DG, as they are the party creating such risks. 34. Vector **recommends** the Authority amend the maximum proposed fees to more adequately reflect	particularly those with SSDG. See decisions and reasons paper. The Authority has reviewed the fees and, considering the lack of hard information related to actual costs, is comfortable with levels proposed. There is little difference between the $100 maximum included in the proposal and the $120 Vector suggests here, which indicates the

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		actual costs. Vector suggests that such fees start at $120 per site for DG < 10kW. **Vector supports the Electricity Network Association's (ENA) submission** 35. Vector agrees with the ENA's views as outlined in its submission. In particular, we agree that the Authority's cost benefit analysis is not robust and requires further work. In our view, the Authority must demonstrate a clear case for these proposals, in other words there must be certainty that the benefits of the Authority's proposal will outweigh the costs. Vector also agrees with the ENA that it is not practical to require distributors to provide a list of all locations on the network subject to export congestion. Determining such a list requires details of the load and voltage of all distribution transformers and LV cables, which distributors do not currently have. Distributors would need to install meters on all LV cables, monitor demand and voltage under different conditions and model the results in order to determine congestion. Furthermore, in some cases congestion cannot be identified until details of generating unit parameters are known. To this end, Vector supports the ENA's suggested changes to the export congestion provisions.	Authority's figure is appropriate. Noted. See response to this point in the ENA section. Logically, if the distributor doesn't monitor LV networks, then it cannot identify export congestion. The requirement is to only publish cases *it knows about*.

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	WEL Networks	***Consultation Paper – An operational review of Part 6 of the Code – second consultation*** *Introduction* 1. WEL Networks (WEL) welcomes the opportunity to comment on the Consultation Paper – An operational review of Part 6 of the Code, published by the Electricity Authority (EA) on 2 December 2013. 2. WEL's contact person for this submission is: Kevin Sharp Regulatory and Pricing Manager DDI: 07 850 3375 Email: Kevin.Sharp@wel.co.nz *WEL supports the changes made by the EA from feedback* 3. WEL supports the change made by the EA from the first Part 6 Consultation which now proposes that an application to be made to the distributor. This change has reduced the risk to the Electricity Network and in turn to the Customers. *WEL supports the concept of having a 'streamlined' process for specifically defined Distributed Generation sites that meet connection and operation standards* 4. WEL supports the proposal of a 'streamlined' process for Distributed Generation (DG) applications	Noted. Noted. Noted.

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		that fit certain criteria and believe it is a positive step. WEL believes that the applications that fit the criteria should in most cases be able to be approved within the 10 days.	
		5. WEL does not want to be seen as an impediment to DG but equally wishes to maintain the right to protect its network assets and ensure the safety of its customers.	Noted.
		6. WEL is opposed to 10 day silent 'implied' approval; we suggest a time limit of 10 days but no silent approval if response not received. Similar to the building consent process, by law, there is a time limit but there is no silent approval. Whilst the EA considers the risk involved in the use of a non-guaranteed communication method negligible, WEL considers the potential risk to the network and risk to the safety of our customers to be sufficient to warrant that the silent 'implied' approval is not adopted.	The distributor must provide a final notice of approval under Part 1A of Schedule 6.1. The Authority considers that 10 business days is sufficient time for an application to be considered and a response provided. See the decisions and reasons paper.
		7. WEL is opposed to the mandatory congestion map, given the complexity of the Low Voltage Network (LV) where loads can be highly dynamic in nature, the cost to implement and maintain such a system in an accurate manner is seen to be greater than any benefits gained. The map would be seen to effectively be pre-approval or decline for all ICP's. Because the map cannot be produced with certainty for every single ICP the risk of this 'preapproval' lays	Refer to the response in the decisions and reasons paper.

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		with the Distributor. As a Distributor WEL commits to customer service KPIs to provide quick turnaround for applications. 8. Currently by code the DG owner is required to add import export metering to any site capable of exporting energy, this requirement had been removed and is only at the requirement of the Distributor. To standardise the process as much as possible WEL believes that this requirement to add metering should remain in the code. As this requirement to arrange the metering inevitably falls to the Retailer to organise, WEL believes that the Retailer should be involved in the DG process which under the proposal they are not. WEL is supportive of Retailers being involved during the application process for DG as they are currently for new ICP's and any upgrades. This would remove the current situations that WEL are finding of Retailers having no knowledge of DG being installed at their customer's sites. 9. The distributor is currently required by code to update the EA Registry with DG site information. Whilst currently a DG customer is required by code to notify the Distributor when a DG site is connected this is not currently working or occurring in many	Import export metering is required under Part 10. See decisions and reasons paper discussion. There is no need to involve the retailer in Part 6 as their responsibilities are set out in other Parts of the Code. Connection date can be confirmed when the CoC is sent to the distributor. The process has been

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		cases. This failure is hindering the Distributors ability to meet code requirements. The proposed code under Part 1A does not seem to require a Distributor to be notified of connection. This would hinder a Distributors ability to meet their code requirements.	revised.
		10. If the AS4777.1 is revised and reissued, it requires the maximum voltage rise not to exceed 1% (as per the DRAFT) across the service main. This would be the Distributed Generator's responsibility to demonstrate this. The DG would need to provide proof that this calculation has been completed and include this information as a part of the application.	Compliance with AS 4777 would be addressed within the standard.
		Recommendations	
		11. WEL supports having the 10 day limit, but does not support the silent 'implied' approval. Whilst all efforts would be made to meet the 10 day requirement WEL recommends that when further work is required to be carried out to ensure safety of customer and network that an extension of time be allowed prior to the ability to approve. WEL recommends that an extension period for applications under Part 1A of a further 10 days be allowed under the certain circumstances where additional work is required by the Distributor. Such circumstances, for example, may include but not limited to that a proposed DG site is located in an area that is only identified as a potential congested	See decisions and reasons paper. Process revised to address this issue.

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		area during the process. Under such circumstances, the Distributor may need to carry out field investigations and/or liaise with the Distributed Generator on a solution 12. WEL proposes that the congestion map is not made mandatory but that the congestion is looked at as part of the application process. This would require a desktop study to be undertaken at an individual ICP level upon application. This would ensure that each site is studied with the most current information to ensure the safety of the customers and the network. 13. WEL recommends the Retailers be involved within this process and that applications for DG come via the retailers which currently happens for most ICP requests and change of load. The Retailer will then know about the DG application and be able to organise metering as currently occurs for non DG applications. They have systems and processes set up currently to cater for applications and work order processes for metering changes. 14. WEL also recommends that the current requirement, under Part1 and also applicable to the proposed Part1A, for import and export metering to be installed to all DG sites remains. This allows for the	See decisions and reasons paper. It is not intended that distributors carry out extensive studies of their networks to determine possible export congestion, rather to publish known cases of areas that have been, or are likely to be subject to export congestion, along with plans for relieving the congestion. Retailer interaction is not addressed within Part 6

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		standardisation of the connection process for all small scale DG's embedded within a Distributor's network, regardless of their intention to export or not. 15. WEL recommends adding into code the requirement (if the AS4777.1 is reissued with the requirement of the maximum voltage rise not to exceed 1% across the service main) of the DG providing evidence and calculations and include this information as a part of the application. *Conclusion* 16. WEL supports the requirement to have a 'streamlined' process for DG but does not approve of a silent 'implied' approval. 17. WEL believes the cost benefit of every distributor implementing and maintaining a congestion map will not see the overall benefits being met and believe this should not be implemented. Thank you for the opportunity to make this submission. If the Authority wishes to discuss any aspects of this submission please do not hesitate to contact me.	See decisions and reasons paper. Import and export metering is required under Part 10. See earlier comment on this point. Noted.
	Orion	**AN OPERATIONAL REVIEW OF PART 6 OF THE CODE**	Introductory points noted.

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		– SECOND CONSULTATION 1 Orion New Zealand Limited (**Orion**) welcomes the opportunity to comment on the Electricity Authority's (**the Authority**) Consultation paper "An operational review of Part 6 of the Code – second consultation, 2 December 2013" (the **Paper**). The consultation is supported by the following papers: 1.1 *Pre-consultation*: *Connection of Distributed Generation*, 11 October 2011, which introduced the project and sought input from interested parties to assist with development of the scope of the review *1.2 Consultation Paper - An Operational Review of Part 6 of the Code: Connection of Distributed Generation*, 4 September 2012, which described a Code amendment proposal covering a range of detailed amendments to Part 6, and also discussed a number of additional questions relating to the connection of DG to networks (September 2012 consultation paper). 2 The review of Part 6 has progressed alongside a	

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		separate, related work stream, undertaken by the Retail Advisory Group (RAG). 3 The Authority has published a Summary of Submissions paper (summary of submissions) that provides: 3.1 a summary of the submissions received on the September 2012 consultation paper 3.2 the Authority's responses to those submissions. **General comments** 4 The Authority has carried out considerable consultation on this issue which has produced a significant response from the industry and other parties. This is evidenced by the sheer size of the summary of submissions from the first consultation which together with the Authorities response to these submissions is itself a document that is 211 pages long. 5 After consideration of the 25 submissions received on the first consultation paper, the Authority has revised a small number of the proposals. In particular, the Authority now proposes: 5.1 a revised proposal for Part 1A of Schedule	

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		6.1 that requires the approval of the distributor prior to connection but significantly shortens the window in which the distributor may consider the application; or 5.2 the alternative of retaining the status quo; and 5.3 revised drafting to other Part 6 clauses and a number of clause from other Parts. 6 The Authority's revised proposal is a significant improvement on the 4 September 2012 proposal. Despite this improvement, Orion remains of the view that the current Part 6 code relating to the application process for SSDG under 10kW remains superior to the revised proposal. Having said that we do consider that there is merit in some but not all of the other proposed Code changes. 7 While we commend the Authority on this earlier work, and acknowledge the changes that the Authority has made in response to submissions, we have a number of concerns with the current proposal and process. In	Noted.

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		particular we are concerned that: 7.1 the assumptions in the cost benefit analysis (CBA) overstate the benefits and understate the costs 7.2 a number of responses made by the Authority in the summary of submissions indicate that the Authority has dismissed some of the concerns raised by submitters without adequate explanation or in a manner that suggests they may have misinterpreted the issue being raised 7.3 the Authority has indicated that as part of this second consultation round it is seeking submissions on only a small number of questions (three) relating to these revised proposals. We consider that this approach has the potential to limit or bias the potential response to the second consultation. The Authority has proposed two options yet the three questions that the Authority has requested a response to are all related to the Authority's preferred Code amendment and ignore the question of whether the status quo is in submitters opinion the better option. We consider this could potentially limit or bias the consultation.	Which submissions and responses? The Authority carefully considered all submissions and considers it understood the points being made. Submitters are free to comment on anything they wish. The Authority's questions were intended to focus feedback on the outstanding issues the Authority is seeking to resolve.

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		7.4 We discuss these aspects in greater detail in the balance of our submission. 8 As indicated the Authority has proposed two options plus a number of other changes 8.1 *Option one is to introduce the proposed revised Part 1A of Schedule 6.1 into the Code* *8.2 Option two is not to introduce the proposed Part 1A of Schedule 6.1 into the Code* 9 The Authority suggests[1] that: 9.1 Option 1, introducing the proposed revised Part 1A into Schedule 6.1 of the Code, would standardise the connection application and approval process where an SSDG system incorporates an inverter that has received a Declaration of Conformity with AS 4777, and complies with other safety requirements (conforming SSDG). 9.2 Option 2 would retain the status quo, which	

[1] Paragraphs 3.2.3 and 3.2.4 *An operational review of Part 6 of the Code – second consolation* – Electricity Authority 2 Dec 2013

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		would oblige applicants to continue to use the existing process under Part 1 of Schedule 6.1 for connection of all SSDG systems and, in some cases, individual distributors develop would need to their own variations to the Part 1 process (within the constraints that exist within the Code). 9.3 It is unclear from the proposal whether the other changes are independent of the two proposed options as some of them have merit regardless of which option is eventually decided upon. **Concerns with the Authority's preferred option - Option 1** 10 Option 1 relates to small scale generation of less than 10 kW and proposes to retain the existing application process (the status quo) for non–conforming SSDG and adds an option for conforming SSDG[2] to adopt a separate process should they wish. 11 Thus option 1 adds additional complexity to the status quo as it provides for two separate processes for conforming and non-conforming generation.	They are independent. A new Part 1A was a key part of the proposal and the other largely technical drafting and minor policy matters followed. Disagree. We consider that the only issue for such applicants is in deciding whether to follow the Part 1A process rather than the Part 1 process.

[2] Also referred to as standards-compliant SSDG in Paragraphs 3.2.15 *An operational review of Part 6 of the Code – second consolation* – Electricity Authority 2 Dec 2013

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		Earlier connection of DG 12 The Authority suggests that the revised proposal will provide efficiency benefits for these conforming SSDG's however the Authority also notes[3] "*it is understood that some distributors have streamlined the Part 1 process by requiring less information if the connection equipment meets certain standards, as well as providing faster turnaround for such applications*". 13 If, as the Authority suggests, distributors are already streamlining the processes this raises the question of whether additional regulation is actually required. It also raises the question of whether the cost benefit analysis can be relied on as the paper notes the CBA is very sensitive to the assumed connection growth rate. Yet there appears to be no assumption of how many connections are carried out by distributors using a streamlined process and therefore would provide reduced or no additional cost benefits over the status quo. As a matter of good regulatory practice we would expect that the Authority should	Only some distributors. The new Part 1A process is efficient because it standardises a simplified connection application process nationally, for all distributors. Part 1A is not additional regulation, rather it substitutes for Part 1 for conforming applications and *removes* complexity and unnecessary delay.

[3] Footnote 8 *An operational review of Part 6 of the Code – second consolation* – Electricity Authority 2 Dec 2013

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		avoid additional regulation where possible. 14 The Authority also claims that decreasing the turnaround time on an application from 30 business days to 10 business days would enable conforming SSDG systems to be commissioned and connected earlier than they otherwise would have been. However, as the Authority has noted, some distributors have already streamlined their processes and provide a turnaround of much less than 30 days. In Orion's case we are generally able to approve SSDG in 5 to 10 working days. Therefore the claimed cost benefit is reduced. The Authority provides no data to substantiate the number of applications that are taking the full 30 working days to turn around or what the average turn round time is. 15 The Authority's claim in relation to the possible savings of earlier connection (less than 30 days) in the CBA is dependent on appropriate metering being installed in a timeframe to suit the commissioning. Our understanding is that a significant delay relating to the connection of DG is the provision of suitable metering. We understand that it can take up to 6 weeks to get the appropriate metering installed, although we note that in their submission, Solar City indicate that it can take up to 30 days. 16 Unless compliant (import/export) metering is in place	If Orion is achieving 5 – 10 days turnaround, then the new process will achieve the same outcome in terms of timing. However, the new process also standardises this for all distributors and eliminates a significant amount of complexity in assembling documentation. Metering lead times are not relevant to Part 6. Agree.

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		we believe that it would be a breach of the Code to connect SSDG to a network. 17 The Authority, in response to submissions, indicated that with respect to fitting meters, parties installing DG *"will need to anticipate lead times for metering (different providers will have different lead times) and plan accordingly"*. To the extent that distributed generators can plan (via their retailer) to have the meters installed and commissioned at the same time as the generation is approved (either under the 10 day default provision or otherwise) then they will be able to take advantage of the reduced distributor approval time, if any. Otherwise they may incur additional costs for metering if the metering is installed ahead of their approval for the DG or if the metering is not installed by the time approval for the DG has been granted they will be unable to generate (and gain no benefits) as they will have non-compliant metering. 18 We understand that current normal practice is that retailers will not install metering or enable the export section of compliant metering without documentation that the installation has been completed and approved by the distributor. Given this practice we do	Noted. We disagree. Part 1A still removes 20 business days from the existing Part 1 process. If metering takes further time to install after the distributor's approval, then this is a common delay to both processes and does not negate the benefit that stems from a quicker connection process under

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		not consider that any benefits can be claimed in the CBA related to early connection. 19 We note that Solar City, in their submission, suggested an: *Obligation for retailers to fit a meter within 10 days that is capable of metering of distributed generation export. The installation of such a meter should be:* *a. on request by customer who has an intention to install DG* *b. without need to site documentation that the installation has been completed and approved by the distributor* 20 The Authority's response was that *"These points are not within the scope of this review"* we consider that this response lacks adequate explanation and contradicts the Authority's response that parties installing DG *"will need to anticipate lead times for metering (different providers will have different lead times) and plan accordingly"* 21 We consider that for SSDG, Solar City's suggestion has merit if the Authority implements Option 1 and their suggestion is a pre-requisite to some of the benefits the Authority is claiming in its CBA. 22 Given the above issues we consider that the Authority's CBA overstates the benefit that could	Part 1A. We disagree. Part 1A takes 20 business days out of the process when compared with Part 1. The process by which metering is installed is a separate issue outside the scope of the Part 6 review. We disagree for the reasons stated.

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		accrue from the shortened application time frame. *Standardisation* 23 The Authority also suggests that a standardised process will provide an efficiency benefit. To an extent we agree with the Authority but this standardisation already occurs. A brief look at the under 10 kW applications on the distributors websites in the South Island indicates that they are already remarkably similar and in fact a number are identical. The Distributors also include a significant amount of educational and other information to assist customers looking at connecting SSDG. 24 We consider that the Authority is overstating the benefits that would come from the proposed amendments in relation to standardisation as the current application processes do not vary to any great extent. We also consider that the process needs to retain a degree of flexibility to be able to respond to individual generator and distributor network needs. 25 As noted above distributors have a considerable amount of educational and other information relating to DG on their websites. We estimate that the 'one	Process differences between network areas has been a clear and consistent complaint from system installers. The Part 1A process will remove doubt as to whether standardisation exists. We have considered these points and are comfortable with the level of benefits ascribed to the proposal and the sensitivity we have considered around key inputs assumptions.

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		off' cost to update this information to reflect option 1 changes would be in the order of $5,000 to $10,000 per distributor. We note that the CBA allows an annual cost for distributors of $1,000 per annum. We consider that this 'one off' cost would be additional to the annual cost.	This conflicts with the view that Orion already provides a streamlined process. In any event, an annual $1k cost roughly equates to a one off $10k cost, so the task has been accounted for.
		Publication of export congestion information 26 Option 1 requires each distributor to publish on its website a list of specific locations on its network that are currently known to be subject to export congestion. The Authority has defined[4] export congestion to occur where an additional unit of electricity[5] injected into the network would directly cause a component in the network (eg a circuit or a transformer) to operate beyond its rated maximum capacity or give rise to an unacceptable high level of voltage at the point of connection to the network.	See decisions and reasons paper discussion on this topic. The main point is that distributors need only publish known congestion locations on the LV network and that detailed studies are not required for individual SSDG applications.
		27 Orion believes that the definition of export congestion makes this requirement irrelevant and indeed would mislead customers and potential DG owners. We believe that under this definition there would not be any network owner that would be able to say that any part of its network was congested. That is not to say that if one or a number of SSDG occurred this would	Noted.

[4] Footnote 12 *An operational review of Part 6 of the Code – second consolation* – Electricity Authority 2 Dec 2013

[5] We assume that the Authority is using the term 'unit of electricity' to mean 1 kWh

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		not cause network issues. 28 We consider that the impact of each SSDG on the network (if any) needs to be considered individually at the time of application. This is in the interests of the customer as any issues and potential costs to the customer can be established prior to the customer investing in the SSDG. 29 While it may be possible to amend the definition of export congestion to make a more meaningful measure we doubt that this could be definitive and that each application would still need to be looked at on an individual basis. It also has the potential to be prohibitively expensive to implement *Acknowledgement of receipt of application* 30 The proposed Option 1 does not include any requirement to acknowledge receipt of the application; we consider this is a retrograde step compared to the current Code requirements. It has the potential to lead to SSDG being connected by default (after 10 days) in the event that an application has not been received by the distributor. We have had issues with applications by email not being received, but the acknowledgment process of the	Noted. Noted. The process has been revised to require receipt of application.

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		current Code provides that follow up action from the applicant will occur. 31 Without an acknowledgement step then there are no records that the application has been lodged and that it is compliant. This is best addressed by an application, acknowledgement and approval process as required by the current Code. 32 In addition distributors need to be aware of the connection of SSDG to update the registry information as required by section 7 of schedule 11.1 of the Code. Without this information distributors will, by omission, breach the requirements of the Code. **Option 2 The status quo** 33 The status quo is our preferred option. It clearly meets the Authority's objective under the Act as it is current code. 34 It is superior to Option 1 in that: 34.1 it provides flexibility to meet the needs of the distributed generation and the distributor. As the Authority has indicated, distributors are already streamlining the process and are providing approval in shorter time frames than the maximums allowed under the Code.	Agreed. Process has been revised. Agreed. Process has been revised. Noted.

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		34.2 it requires an acknowledgement of the application, and then consent. The proposal (option 1) has the potential to lead to SSDG being connected by default in the event that an application has not been received by the distributor. 34.3 it provides the distributed generator with information on any potential network costs prior to an unnecessary commitment to purchase the DG 34.4 it is a standardised process for all forms of SSDG under 10kW. **General comments on changes to the Code** 35 We do not consider that the proposed Option 1 should be implemented. However, to assist the Authority should the Authority choose to go ahead with the proposal we have included recommendations on changes to the proposed Code and other amendments we consider necessary to	Points noted, however, the Authority considers the proposed Part 1A process meets its statutory objective.

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		improve the Code in relation to distributed generation. This should not be taken as any endorsement or acceptance of the proposal. *Confusion over 'distributed generation' and 'embedded generation'* 36 We recommend that as part of this consultation the Authority considers the relationship of the defined terms '*embedded generator*' and *'distributed generator'* which are commonly used interchangeably (including in the Authority's own document Regulating New Zealand's small-scale distributed generation Fact sheet 7) and clarify the difference if any. 37 We note that the difference can be confusing for potential generators. For example, the Authority's web site contains information on embedded generation that we consider to be incorrect. The document "Information Sheet Embedded Generation" indicates that embedded generators *"must register if your total generation is greater than 5 MW in capacity or if you intend to buy/sell electricity yourself to/from the clearing manager"*. 38 This may mislead potential generators into considering that they are not required to register or	We acknowledge the concern and note that this is being separately considered in a different workstream. Part 6 for now will retain 'distributed generator'.

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		comply with the Code. 39 We believe that distributed generators and embedded generators must register regardless of capacity of generation as they are an industry participant as set out in section 7 of the Electricity Industry Act 2010 (the Act) and that distributed generators and embedded generators will fall under this category unless exempted under section 10 of the Act. 40 Another difficulty is that various sections of the Code refer to 'distributed generation' while other sections refer to 'embedded generation'. For example under clause 15.13 of part 15, embedded generators must: give a notification to the **reconciliation manager** for an **embedded generating station** in relation to a **point of connection** for the purposes of clauses 15.3 and 15.5(3) if the **embedded generator** will not receive payment from the **clearing manager** or any other person for any **electricity** generated by the relevant **embedded generation station** through the **point of connection** to which the notification relates	See decisions and reasons paper for discussion of this issue. As above, we acknowledge the concern and note that this is being separately considered in a different workstream. Part 6 for now will retain 'distributed generator'.

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		There is no equivalent for distributed generation. Similarly there are other clauses relating to embedded generation and not distributed generation in Part 10. 41 We note that in the recent (29 January 2014) presentation by the Authority on TPM beneficiaries-pay working paper the Authority refers to *'embedded generation'* rather than *'distributed generation'*. 42 To avoid on-going confusion we recommend the Authority standardises on either 'distributed generation' or 'embedded generation' and modifies the definition as required. *Authority's changes to exclude some distributor's generating plant from the definition of distributed generation* We agree with the proposed exclusion of distributors generating plant that is connected and operated by a distributor for the purposes of maintaining or restoring the provision of electricity to part or all of the distributors distribution network and the exclusion of generating plant that is only momentarily synchronised with the distribution network as set out in the proposed definition of distributed generator. *Definition of conforming DG* 43 We recommend that in the event the Authority implements Option 1 (which we do not agree with), then it includes a definition of conforming DG	Support noted. Agree Noted.

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		Definition of distribution network 44 In the definition of distribution network the word electricity in the term '**electricity lines**' should not be bolded. *Definition of distributor* 45 We are concerned that this definition is getting so convoluted and has different meaning in many different Parts that it is almost impossible to interpret. *Definition of distributed generation* 46 The definition of distributed generation only refers to Part 6 yet the defined term is used in other Parts of the Code (e.g Part 11). We recommend this omission be corrected. See also our earlier comments about combining distributed generation and embedded generation in one defined term (Paragraphs 36 to 42). *Clause 6.3 (2)(f) of Part 6 requirements to make publically available a list of make and model of each inverter approved by the distributor for connection to the distributors network.* 47 This should not be a Code requirement. It may be something that could be included in guidelines for a distributor to voluntarily disclose if they choose. As	Disagree. The definition of "distributed generation" does not contain a reference to any particular Part of the Code. The definition of "distributed generator" has a reference to Part 6, but this definition is not used outside Part 6 of the Code. The Authority intends to make this a mandatory requirement to ensure it happens. The intention is to avoid submission of unnecessary documentation when an inverter has previously been approved.

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		we understand the proposal this requirement is effectively redundant as an inverter approval is basically dictated by clause 2A(c) of Schedule 6.1 which requires that it has been issued a declaration of Conformity with AS 4777.2. *Clause 6.3 (2)(g) of Part 6 requirements to make publically available a list of congested parts of the network* 48 This section and the associated section 6.3(4) of Part 6 should be deleted - see our earlier in regard to making publically available a list of congested parts of the network comments in paragraphs in 26 to 29 *Section 2B of Schedule 6.1 - Revision of AS 4777* 49 The proposed clause 2B of schedule 6.1 provides a mechanism to deal with a revision of AS 4777.2. We agree with the Authority that it is useful to have a mechanism that addresses changes to AS4777, particularly as there is currently a draft of the proposed changes which has been out for consultation. We question whether inclusion in the Code is the most appropriate method. Many aspects of the Code are dependent on equipment complying with various standards. For example section 10.10 of Part 10 states: **10.10 Standards used** In this Part a reference to compliance with a	The proposed Code amendment incorporates the AS4777.1 inverter standard into the Code as a document incorporated by reference. As a consequence, obligations and standards under AS4777.1 become Code obligations and standards. As outlined in greater detail in the decisions and reasons paper, the previously proposed new clause 2B of Schedule 6.1 (Revision of AS 4777.1) has been omitted from the proposed Code amendment, because the Authority has determined that it must amend the Code each time it wishes to provide for a new inverter standard or version that supersedes AS4777.1.

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		standard, including an AS/NZS or IEC standard, is a reference to— (a) the version of the standard existing as at 29 August 2013; or (b) any amendment to or replacement of the standard incorporated by the **Authority** in accordance with section 32 of the **Act**; or (c) any equivalent standard incorporated by the **Authority** in accordance with section 32 of the **Act**. 50 As the Code is requiring compliance with a standard by reference we would therefore expect a similar section to section 10.10 of Part 10 to be incorporated in Part 6. We would expect that legal effect to any amendments or revocations of any standards would be incorporated by notice in the Gazette as set out in Schedule 1 of the Act. 51 We consider that incorporating amendments or replacements of standards is a process and should not be incorporated as Code. By including a process in Code the Authority is creating future problems. For example the proposed Code set out in clause 2B would apply to all future changes to AS 4777 which	

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		may not be desirable and would need a further Code amendment to rectify any undesirable outcomes. *Section 9A(4) of schedule 6.1* 52 Clause 11.7 of schedule 11.1 of the Code requires distributors to update information held in the registry relating to the installation type code assigned to the ICP and information on the nameplate capacity and fuel type of the distributed generation . We understand that the distributor should update the installation type field and the generation fields effective of the date of connection (clause 7 and 8 of schedule 11.1). 53 We believe that the information that the distributed generator is required to provide must be sufficient information for distributors to be able to comply with the requirements of section7 of schedule 11.1. Under the proposed Option 1A it is unclear whether the distributor will ever receive the information required. 54 We also consider that the current Code is inadequate in this respect and that it should be modified to ensure sufficient information is provided to distributors for them to be able to comply with the requirements of section 7 of schedule 11.1. *Section 9E of schedule 6.1* 55 See our earlier comments in regard to section 6.3	It is not possible to comprehensively insulate the Code from changes that arise in the future. The Authority considers it has struck a reasonable balance in this case. The process has been revised to provide connection confirmation when the distributed generator sends the CoC.

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		(2)(f) of Part 6 *Metering issues - Proposed changes to section 4.1 of schedule 6.2* 56 The Authority proposes to remove the obligation in clause 4.1 of schedule 6.2 on distributed generators to ensure that 1 or more metering installations are installed that: 56.1 separately record any inflows of electricity from the distribution network and any electricity injected into the distribution network and 56.2 fully comply with the code[6] 57 TLC raise concern over the deletion of this clause in its submissions and the reason provided by the Authority in response to TLCs submission on this issue was: "*Disagree. The Code requirements relating to metering are clearly set out in other parts of the Code. It would be redundant (and potentially confusing) to repeat them in Part 6."*	It is unclear which aspects are not able to be complied with.

[6] However the Distributed generator remains responsible for providing reactive metering on larger installations

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		The Authority's reason is inconsistent the remaining requirement on the distributed generators to provide reactive metering set out in section 4(3) of schedule 6.2. We recommend that the Authority should adopt a consistent treatment of metering in Part 6. 58 Also we do not agree with the Authority that the metering requirements for DG are clearly set out in other Parts of the Code. We believe that Part 10.24[7] does require that import/export metering is required and that the retailer is responsible (not the distributed generator). The implication of this is that the current Code is in error as it has two parties responsible for ensuring there is a metering installation - the distributed generator under Part 6 and the retailer under Part 10. 59 If it is not the case that the current Code has two participants responsible for ensuring a metering installation is provided then the deletion of section 4.1 of schedule 6.2 will result in nobody being responsible, as we can find no reference to a distributed generator being responsible for metering	We maintain this view, although acknowledge that Part 10 would benefit from being more explicit about SSDG metering requirements. See decisions and reasons paper discussion. See discussion in decisions and reasons paper. This anomaly will be removed by the amended Part 6.

[7] **10.24 Responsibility for ensuring there is metering installation for ICP that is not also NSP**

A **trader** must, for each **energised ICP** that is not also an **NSP**, and for which it is recorded in the **registry** as being responsible, ensure that—

(a) there is 1 or more **metering installations**; and

(b) all **electricity** conveyed is quantified in accordance with this Code; and

(c) it does not use subtraction to determine **submission information** for the purposes of Part 15.

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		in Part 10. 60 However we think that this demonstrates that it is certainly not the case that *"The Code requirements relating to metering are clearly set out in other parts of the Code"* and we would recommend that the Authority should make it clear in Part 6 that import and export metering is required to be installed and certified prior to the DG being connected and at least include a cross reference in Part 6 to the appropriate section in Part 10 (or other Part of the Code) which sets out who is the participant responsible for ensuring that a metering installation is installed. 61 **Other issues - Registration as an Industry participant** 62 The Code may not impose obligations on any person other than an industry participant or a person acting on behalf of an industry participant[8]. For the purposes of the Act then, for the Code to apply to distributed generators, they must be one of the industry participants listed in section 7 of the Act. The	See decisions and reasons paper discussion on

[8] Section 32(2)(a) of the Act

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		most likely candidates being either: 62.1 a generator[9]; or 62.2 a person, other than a generator, who generates electricity that is fed into a network; or 62.3 a distributor. 63 An industry participant can be exempt registration under s10 and from the Code under s11 of the Act. We are not aware of any class exemptions to registration under s110 of the Act or of individual exemption of participants by the Authority. Nor can we see the 1000 or so distributed generators that the Authority's paper suggests there should be, given the number of SSDG that will have been commissioned by now, in the participant's registry. 64 This issue was raised in section 4.2 of the RAG paper[10] in February 2011and does not appear to have been resolved even though failure to register is an offence under s.31 of the Act. 65 The requirements of the Act on industry participants	this topic.

[9] Defined in part 5 of the Act as: **generator** means a business engaged in generation

[10] Retail Advisory Group Investigating barriers facing small scale distributed generation 7 February 2011

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		suggests that a pre-requisite for application to connect under the Code for any form of distributed generation or embedded generation should be registration as a participant or evidence of exemption from registration or the Code. Clearly, if the distributed generation or embedded generation is exempt from the Code as well as registration, then the Code cannot impose obligations on them which means we will have more non-notified SSDG connections which as the Authority has identified is a safety issue. 66 We believe that the Authority has an educational role in this area, particularly with suppliers and installers of DG, to ensure that when any form of distributed generation or embedded generation is installed that the owner, as an industry participant, is aware of their obligations under the Code. **Concluding remarks** 67 Thank you for the opportunity to make this submission. Orion does not consider that any part of this submission is confidential. If you have any questions please contact Dennis Jones (Industry Developments Manager - Commercial), DDI 03 363	Agree. The Authority will review and update existing guidelines on distributed generation.

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		9526, email Dennis.Jones@oriongroup.co.nz.	
	SEANZ	**Re: Consultation Paper – An operational review of Part 6 of the Code** Thank you for the opportunity to present the following submission in response to the Electricity Authority review of Part 6 of the Code. **Preface** SEANZ represents 96 organisations, each of whom must meet specific prerequisites to join SEANZ, and gain official industry recognition. SEANZ members include local corporate, SME and multi-national businesses that supply, design, integrate and build small scale renewable/distributed generation technology and systems (SSR/DG). These include retailers, distributors/lines companies as well as technology manufacturers. Most actively implement and install SSR/DG systems, namely solar photovoltaics, working and operating under Part 6 of the Code daily. Code changes impact SEANZ members businesses, operations and efficiencies. As the industry voice this submission supports our first submission in the first consultation round. The growth of solar PV has escalated exponentially in New Zealand against most forecasts with 370% of real installed growth in 2012 and 2013. Albeit from a low base; forecast growth exceeds 100% per annum over the next three years. (Full specifics of growth numbers – grid connected,	Introductory points noted.

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		off grid, cumulative are available to EA on request) Our first target of achieving 10 MW installed by 2015 was reached in 2013. Industry development has defined necessities in building industry capability to support industry development. We view this submission as a key part of this. Further to your consultation on specific aspects, SEANZ believes there are other components that need be considered as both the current and proposed process represent barriers for consumer's investing and implementing SSR/DG solar PV. The SEANZ submission recommends amendments to streamline and make more efficient the process for all stakeholders, without compromising technical, safety and other prerequisites. For further information please review the attached SEANZ document and check out SEANZ here. **SSR/DG Regulatory Position** SSR/DG is substantially different to centralised generation and distribution. SEANZ believes the regulatory position does not recognise or acknowledge this given the current status enjoyed by stakeholders under the current generation and distribution model. SEANZ recognises and acknowledges that a transitional period, that accommodates stakeholders is appropriate, as SSR/DG uptake increases and distributors come to grips with the impacts on their networks and investment. The question is how long this may be.	

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		■ The key difference is the regulatory position taken with a distributor's network and how this is impacted with the iminent growth of SSR/DG. If distributors maintain development of their network infrastructure as system operators, we suggest there would be far less issues for other stakeholders. ■ There is no standardisation which limits continuity and process efficiencies for stakeholders, of connection and operating standards across distributors' networks. A solution could be to utilise modified model agreement incorporating the variation of standards and requirements. ■ To remedy this some distributors have attempted to pass on additional charges over and above standard network charges to SSR/DG consumers (ROI on asset justification) or they have limited or not allowed the SSR/DG consumer to connect to their network (for reasons other than safety and electrical requirements. A historical example is distributors maintaining a view that inverter settings (managed by standard AUS/NZ AS4777 - SEANZ represents NZ interests on standards committee) be set either at the maximum level or outside the recommended NZ setting standard, to accommodate their network. However it can potentially create other issues. If this is not complied with, the SSR/DG implementation is not signed off). This has been partially addressed with a review of the AUS/NZ AS 4777 specifications and requirements which SEANZ addressed for New Zealand.	AS 4777 is required under the ESRs for certain DG installations. If a distributor required settings outside of those specified in AS 4777, it could be in breach of the ESRs.

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		■ A regulatory position that states, SSR/DG can be connected is vital, rather than it can be connected only if the distributor approves it. Therefore the rules of the code need to reflect the interests of all stakeholders, which they do not currently. A recommended position to protect the SSR/DG consumer and the distributor (their assets are then protected) could be to include the requirements of AS/NZ AS4777 and all its sub points into the Code. ■ SEANZ recommends that any system below 10kW should be automatically connected to the distribution network. For systems above 10kW the process outlined in the consultation paper could be followed with the removal of the steps that provide discretion to the 29 distributors to not allow the connection. The steps must be validated accordingly – as defined further herein this submission. (SEANZ maintains data on average sizes of implementations by year and totals) **Proposed Process Changes** **Time frame** SEANZ members acknowledge the timeframes have shortened over the last 2 years as SSR/DG uptake has increased. Current SEANZ data suggests that the average currently is less than 10 days. SEANZ suggests a less than 10 day approval goal in the	We disagree. These are valid issues that distributors need to cover off when DG of any size is connected to a network.

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		Code over the current level. SEANZ does recommend that this be incorporated formally, whereby the distributors notify the installer/system integrator within 10 days, overriding the "deemed approval" proposal to mitigate risk and disputes for all stakeholders. This process would then make more efficient the current process and formalise what is currently being experienced in the industry, for the benefit of all stakeholders. **Standards** Compliance with the technical requirements as per standards for all or any SSR/DG (namely solar PV) in New Zealand is not difficult. The complexities arise when distributors require adjustment to the standard settings of the inverter technology to meet their local position and to gain connection. This potentially pushes up the transactional cost for the SSR/DG consumer. With 29 distributors this pushes up the costs for installer/system integrators and is most inefficient. Suggested solutions are: ■ One approved implementation on a distributors network be used as the standard for that installer/system integrator, which can be replicated on the distributors network as SSR/DG implementation occur ■ A pre-approval process be implemented whereby an installer/system integrator is endorsed by that distributor to connect systems based on historical performance and an audit process ■ Final approvals can be actioned post installation ■ Non performance jeopardises the installer/system integrators status **Network Congestion** SEANZ believes this potentially limits connections and may	Disagree. See revised process discussed in the decisions and reasons paper. AS 4777 should resolve these differences. If a valid reason for unique protection settings are accepted within AS 4777, then the distributor's connection and operation standards are the appropriate place to specify these unique setting requirements. Provision has been made for previously approved SSDG inverters to be published to enable applicants to reduce documentation when applying for approval of an SSDG connection See decisions and reasons paper discussion on this topic.

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		not be valid. It proposes that each distributor has discretion to determine issues ("cause a circuit or transformer to operate beyond its rated maximum capacity or give rise to an unacceptably high level of voltage at the point of connection to the network") which removes objectivity in the solution. In the interests of stakeholders the code must reflect a solution to ensure validity to mitigate disputes. Suggested solutions are: ■ An independent analysis by an independent body to define congestion level with costs shared or borne by SSR/DG consumer. If congestion is valid, the SSR/DG consumer and installer/system integrator are committed to accept the position ■ The code reflect that distributors are obligated to reduce network congestion with investment in their network infrastructure ■ The code reflect that the reduction of network congestion be actioned in a more timely period from commencement of the SSR/DG consumers or installers/system integrators application ■ The code proposes that areas with connections where congestion exists may be subject to "export restriction at certain times". Technically this is possible, but at a prohibitive cost. The solution currently is to turn the system off which penalises the SSR/DG consumer. This proposal requires more analysis and a clearer	This should be unnecessary. If a dispute arises it can be referred to the dispute resolution mechanism under Part 6 of the Code. The Commerce Commission undertakes economic regulation under Part 4 of the Commerce Act. See decisions and reasons paper discussion on this topic. Support noted.

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		understanding of affected networks, congestion amounts and its validity. **Summary** SEANZ supports the Electricity Authority's current position that a standardised and simplified process for standards-compliant SSR/DG would have efficiency benefits when compared against the current position. The key technology to address distributor's safety and power quality requirements is the inverter, and SEANZ recommends that the detailed technical variances of the technology, within the standards, are included in the code. As an in dependant director of SEANZ (with no interests in the industry) this view is objectively minded and addresses stakeholders interests as best as possible. SEANZ directors would love the opportunity to discuss this submission in part or whole at your convenience, so please feel free to let us know if this is possible.	
	Powerco	**Powerco's submission on *An Operational Review of Part 6 of the Code: second consultation*** *Introduction* 1. Powerco welcomes the opportunity to comment on the Electricity Authority's (Authority) consultation paper, *An Operational Review of Part 6 of the Code: second consultation* ("2013 consultation"), published on 2 December 2013. The management of current and future distributed generation connections is of significant interest to Powerco due to the safety and	Introductory comments noted.

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		reliability issues associated with such connections. 2. This submission comprises two parts: ○ key comments on relevant parts of the consultation paper; and ○ responses to the Authority's consultation questions (Appendix A). 3. None of the content of this letter or Appendix A is confidential. In addition to this submission we also fully support the content of the submission being made by the Electricity Networks Association. *Powerco continues to support the Authority's work on Part 6* 4. Powerco continues to support the Authority's work to address the issue raised by the October 2011 pre-consultation paper[11] (that small scale distributed generation (SSDG) may be connected to a network without distributor awareness), and the	

[11] Electricity Authority consultation paper: *Pre-consultation: Connection of distributed generation*

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		Authority's efforts to clarify and generally improve the drafting of Part 6 of the Electricity Industry Participation Code 2010 (Code). Breaching of the mandatory Part 6 requirements is an on-going problem that creates significant safety and reliability issues for our personnel, contractors and the public. 5. The problem definition used by the Authority in the 2012 consultation[12] is still valid and correctly identifies the consequences of SSDG connecting without notifying the distributor. While the 2011 consultation paper[13] provided an indication of the potential scale of the problem in 2011, we consider it to be significantly larger now due to the exponential growth of SSDG connections. *Summary feedback on proposed Part 1A of Schedule 6.1* 6. While we do not believe that the 2013 consultation paper offers a strong justification for the introduction of Part 1A over current arrangements, Powerco supports the amendments to the process proposed in the 2012 consultation. It is reassuring	Support noted.

[12] Electricity Authority Consultation Paper: *An Operational Review of Part 6 of the Code: Connection of Distributed Generation*, 4 September 2012

[13] Electricity Authority consultation paper*: Pre-consultation: Connection of distributed generation*

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		to see that the Authority has considered the feedback from the 2012 consultation and acted on it. We consider the new pre-connection application process for conforming SSDG to be significantly more practicable and streamlined than the previous post-connection process presented as part of the 2012 consultation. 7. While we recognise the streamlining of the proposed connection process, we still consider it to be overly complicated and to include some requirements that appear to create additional costs for no material benefit. Specifically, the introduction of a register of inverters and the list of locations that currently are export constrained or may become export constrained appears to us to be unnecessary. Our responses to the Authority's consultation questions (Appendix A) include further detail on the rationale supporting our position. 8. We are also pleased to note that the 2013 consultation paper correctly focuses on ease of application, rather than simply application cost, as	See the decisions and reasons paper discussion on this topic.

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		the issue that has the greatest bearing on the notification of SSDG connections. Powerco does not consider connection transaction costs to be a genuine barrier to distributed generators notifying new connections to distributors. Powerco's experience with SSDG industry service providers, suppliers and distributed generation owners suggests that it is awareness and the practicality of the process that are the two factors that most strongly affect compliance. 9. Currently, we do not charge an application fee, but we still experience similar rates of non-notification to those experienced by distributors that do charge a fee. This observation is consistent with connection transaction costs being an insignificant proportion of the total costs incurred by parties installing distributed generation (several hundred dollars out of a total cost generally in excess of $10,000). 10. The Authority has not provided any evidence in its consultation papers to support the hypothesis that	Feedback noted. We are unsure how Powerco can be so confident about statistics relating to non-notification (as the presence and location of non-notified connections will usually not be known).

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		transaction costs are a barrier to compliance, but has simply offered the opinion that it is 'likely'[14] that some DG investors would follow the prescribed process if compliance transaction costs were reduced. As such, we do not believe that sufficient justification has been provided to support an amendment to the prescribed maximum fees for applications processed under Part 1A of Schedule 6.1, as the proposal is no simpler than the two step approach that both Vector and Powerco currently use. If further cost benefit analysis were conducted, we believe that $250 would be likely to reflect distributor costs more accurately. 11. We have provided further commentary around suggested improvements to Part 1A of Schedule 6 in our response to the consultation paper's question 2. *Concerns that the cost benefit analysis does not fully consider all the costs to distributors*	Noted. Part 1A is significantly simpler for both the applicant and the distributor.

[14] Clause 3.1.12, Electricity Authority Consultation Paper: *An Operational Review of Part 6 of the Code: Connection of Distributed Generation*

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		12. While we recognise that there are significant differences in the sizes of distribution networks across New Zealand, we do not believe the annual distributor costs used in the quantitative cost benefit analysis (CBA) reflect the actual costs distributors have to meet. For example, Powerco's costs associated with meeting our Part 6 requirements (including administrative salaries, technical and network data maintenance costs) are closer to $30,000 per annum. These costs will continue to increase as the acceleration in the rate of SSDG uptake consumes more resources. 13. The assumed savings in transaction costs and commissioning delay avoidance in the CBA are accounted against an assumed base cost which is not specifically quantified. This leaves the CBA's accuracy open to question, as it is difficult to judge any assumed savings in transaction costs when those costs are not initially quantified. In Powerco's existing process there is no base cost to the applicant. Hence, using zero as a total benefits amount, against a realistic distributor cost of $30,000, the CBA returns a perpetually negative	We note that this relates to the current Part 1 and 2 processes. The Part 1A process should reduce compliance costs for both parties. See response to Vector on the same point.

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		net benefit. 14. In summary, it is our view that the provision of a simple application process, rather than merely modifying the cost of the application, will address the problem statement and contribute to improved network reliability and safety. *Other technical and operational amendment proposals* 15. As previously stated in our response to the 2012 consultation, Powerco supports the proposed amendments that have been grouped as a package of technical and operational amendments. The proposed amendments are essentially a useful 'tidying' exercise. We do not have any issues with the proposed amendments to Parts 1, 11 and 17. 16. We note that many submitters supported a three month implementation period to allow for a transition to the proposed changes, but this proposal has not been raised again in the 2013 consultation. Powerco still objects to the proposed three month implementation period, as any	Part 1A provides such a simplified connection application process. Support noted. A six month implementation period will be adopted after the Code amendment is gazetted.

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		regulatory changes would necessitate changes to our approved standards that would require a minimum six month transition period. *Conclusion* 17. Powerco supports the Authority's work on Part 6 and believes it will deliver the benefits sought as long as the solution is uncomplicated. 18. While it has not been raised as part of the 2013 consultation we would encourage the Authority to continue to explore market facilitation measures as a way to address the issues discussed, as we consider that education and simple process guidelines could potentially have the greatest positive effect on SSDG notifications. Thank you for the opportunity to make this submission. Please contact Oliver Vincent at oliver.vincent@powerco.co.nz (tel. (06) 757 3397) in the first instance if you wish to discuss any aspect of this submission.	Noted. Noted.
	PwC	**Submission on Operational Review of Part 6: Second Consultation** 1. This paper forms our submission on the Electricity	

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		Authority's (EA's) consultation paper, "An Operational Review of Part 6 of the Code: second consultation" released on 2 December 2013 (the Consultation Paper), which has been prepared by PricewaterhouseCoopers (PwC) on behalf of the following 22 Electricity Distribution Businesses (EDBs): • Alpine Energy Limited • Aurora Energy Limited • Buller Electricity Limited • Counties Power Limited • Eastland Network Limited • Electra Limited • EA Networks Limited • Electricity Invercargill Limited • Horizon Energy Distribution Limited • MainPower New Zealand Limited • Marlborough Lines Limited • Nelson Electricity Limited • Network Tasman Limited • Network Waitaki Limited • Northpower Limited • OtagoNet Joint Venture • Scanpower Limited	

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		• The Lines Company Limited • The Power Company Limited • Top Energy Limited • Waipa Networks Limited • Westpower Limited. 2. These businesses together supply 36% of electricity consumers, maintain 48% of total distribution network length and service 74% of the total network supply area in New Zealand. They include both consumer owned and non consumer owned businesses; and urban and rural networks located in both the North and South Islands. **Background** 3. In September 2012 the EA consulted on a proposal for a more streamlined approach to connection of small-scale distributed generation (SSDG) under Part 6 of the Code. It also proposed a number of technical and operational amendments to the Code to improve the clarity and operation of Part 6. 4. Following consideration of submissions, the Consultation Paper now proposes a revised process for the connection of SSDG. We are broadly supportive of the proposed revisions to the SSDG connection process, but note a number of technical concerns which we believe need to be addressed prior to finalising the proposal. We therefore support the ENA's submission	

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		calling for the establishment working group to address these detailed issues. **Revised Approach** 5. The EA's 2011 pre-consultation on Part 6 suggested that owners of SSDG were not always aware of the Part 6 requirements and consequently they have connected to distribution networks without following the connections process set out in Part 6. The September 2012 consultation paper suggested that Part 6 is seen as a barrier to connecting Distributed generation (DG) and there is a lack of awareness of the Code. 6. To address non-compliance, the September 2012 consultation paper proposed a new streamlined SSDG connection process. It was proposed that inverter based SSDG could connect to distribution networks without applying to the distributor, so long as certain conditions were met[15]. It was proposed that SSDG owners would notify the distributor within 5 business days of the connection, provided relevant documentation demonstrating compliance with pre specified standards and conditions. In response, it was proposed that distributors had 10 business days to inspect the SSDG to verify it met the connection	

[15] September Consultation Paper – Paragraph 3.2.2

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		requirements. SSDG owners were then to be provided a further 10 days to rectify any issues. 7. In our previous submission on this topic, we expressed broad support for standardised connection processes for SSDG. However, our concern was that the proposed 'post-connection' notification would create higher transaction costs for both SSDG owners and distributors relative to a 'pre-connection' approvals process. We therefore submitted that notification to connect SSDG should take place prior to connection and that distributors should have a set timeframe to review and approve connections, after which time default approval would be allowed under the Code. We also proposed that distributors should have the right to decline applications to connect SSDG in locations that were export constrained. 8. The revised proposal, presented in the Consultation Paper, addresses many of our previous concerns. The key features of the revised proposal are: • DG owners must make an application to distributors to connect SSDG consistent with pre-specified conditions. • Distributors have 10 working days to approve the proposal or notify the SSDG owner of any deficiencies in the application; otherwise default approval is assumed under the Code. • Distributors must publish a list of locations on	

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		the network which are subject to export constraint. SSDG owners may connect in these areas but distributors may apply export restrictions at certain times where necessary. Locations that are not listed may not be constrained[16]. Distributors must also take reasonable steps to work with SSDG owners to assess whether solutions exist to mitigate the relevant export constraint. • Distributors must publish on their websites, a list of the makes and models of inverters that have been approved for connection and the standards that have applied. • Existing DG would not be required to upgrade to meet revised or reissued standards, with new standards transitioned over a 12 month period. • Distributors may inspect SSDG connections (after giving 2 days notification) to verify the information in the application and that the connection meets the requirements of the connection. Re-inspections are permitted to ensure connections continue to meet the	

[16] Clause 9E(2) of Schedule 6.1 of the Code

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		relevant standards. • Where distributors notify SSDG owners that they do not meet the connection standards, distributors may prohibit connection or, where the SSDG is already connected, require any deficiencies to be rectified within 10 working days.	
		9. We support the revised pre-approval approach. This is similar to the suggestions included in our previous submission[17].	Support noted.
		10. In the remainder of this submission we highlight a number of detailed issues with the proposal which we believe need to be addressed before it can be implemented. In this respect we support the ENA's submission for a technical working group to be established to resolve the more detailed issues of the proposal.	
		Export constraint areas	
		11. The proposed requirement on distributors to provide a comprehensive list of all locations on their networks that are export constrained[18] will impose significant costs on distributors. SSDG is expected to connect mainly to the low voltage network, however this part of distribution networks are not always actively metered. If this	See decisions and reasons paper for discussion on this topic. The intent behind this Code requirement is for known congestion locations to be published It does not require a survey of all LV circuits for each application.

[17] PwC submission, 30 October 2012, Paragraph 13

[18] Clause 6.3(2)(g) of the Code

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		proposal proceeds, distributors will need to survey all low voltage circuits[19] to determine potential export constrained locations. This is a significant, and we submit, an unreasonable requirement. 12. Furthermore, limiting a distributor's right to constrain the connection of SSDG to only those locations listed in advance potentially creates security of supply and safety issues. This could occur where previously undetected constraints are discovered during the application process. This proposal could therefore compromise a distributor's ability to act as a reasonable and prudent operator, in order to provide a streamlined SSDG connection process. 13. In light of these concerns, we submit that any list of export constrained areas should not be required to be exhaustive or binding. Distributors should also have the discretion to decline SSDG applications where a constraint is found during the application process. 14. In addition, it is appropriate for distributors to seek funds from potential SSDG owners to address connection issues, should the SSDG wish to proceed to connect. This is consistent with existing connection policies of distributors who may seek capital	This is a pricing matter not within the scope of the review.

[19] There are over 49,000km of low voltage circuits owned by distributors (source: PwC 2013 Electricity Lines Business Information Disclosure Compendium)

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		contributions or connection fees from customers seeking new connections to the network. It is also consistent with the pricing principles under Part 6, which allow the recovery of incremental costs of connection. **List of approved inverters** 15. As discussed above, the proposed Code amendments to Part 6 require a distributor to publish on its website: 1. "a list of the make and model of each inverter that the distributor has approved for connection to the distributor's network" - Clause 6.3(2)(f) 16. We are concerned that this requirement, as written, appears to require distributors to publish a list of inverters that it has 'pre-approved' for connection to network. However, our reading of the Consultation Paper suggests the proposal is only for a list of inverters that have previously been connected to the network. The intent of this requirement needs to be clarified. 17. We do not support a Code requirement on distributors to pre-approve inverters, if this is the intent, for the following reasons: • distributors are not testing or certification bodies (ie just as distributors do not need to approve, test or certify meters connected to their networks).	See decisions and reasons paper discussion on this point. This is not the intent. See decisions and reasons paper.

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		• the regulations already state the standards to which inverters must comply, so it is unclear what status distributor approval would have. • approval may imply a recommendation or endorsement by a distributor. This may expose distributors to liability claims for product failure or poor performance. 18. Even where the proposed list represents inverters that have been historically connected to the network, we are concerned that this might be construed as implicit approval by a distributor. For instance, if an application for a similar inverter to that on the list is declined for legitimate reasons, it may be confusing for the consumer to understand why similar inverters have been connected in the past. 19. We therefore propose that this requirement is removed from the Code. In our view, it is of little value as it relates to historical connections under various circumstances. It will also distract SSDG owners from the primary task of ensuring that their own SSDG is compliant with the standards and conditions set out under the Code. 20. Alternatively, if the proposed list is retained, it should be clarified in the Code that it is a list of inverters that have been historically connected. Publication of the list	

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		should also not imply approval, recommendation or endorsement by the distributor for the future connection of inverters of the same make and model. Furthermore, the list should only relate to SSDG recently connected (ie in the previous 5-10 years). **Application fees** 21. We consider that the proposed maximum fees[20] that distributors may charge applicants are inadequate. Fees should be set with reference to charge out rates of appropriately skilled professionals and the time spent processing a typical application. If fees do not recover distributor costs, then any under recoveries will be socialised across other consumers. This is allocatively inefficient as other consumers are not beneficiaries of the service provided. 22. The Consultation Paper states that the current maximum fees will not impact allocative efficiency[21]. However, this is based on the assumption that the existing fees under schedule 6.5 are appropriate. No evidence is presented to show this is the case. In our view, schedule 6.5 fees are low relative to actual reasonable costs. 23. Accordingly, we recommend that the EA reset fees with reference to current market rates for qualified professionals and reasonable input time for processing	

[20] $100 for review of the initial application; $80 for processing information related to remediation of a deficiency;, and $60 for inspection of the SSDG (if required

[21] Consultation Paper, Paragraph 3.3.38

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		applications. This is one matter the technical working group could address.	
		Implementation 24. The EA proposes that the new Part 1A process will take effect 6 months after the Code amendment has been gazetted. 25. We support this timeframe. However we submit that the EA publishes appropriate educational material on the new Code requirements to assist awareness and understanding. This material should be aimed at distributors, SSDG installers, and SSDG owners. 26. Extra time may also need to be given to distributors to develop lists of export constrained areas, were these to remain exhaustive and binding in nature, as proposed.	We note that there is no evidence provided that would support higher maximum fees. We further note that some distributors charge no fees for processing applications under Part 1 Support noted.
		General 27. We trust this submission provides useful input for the EA on its operational review of Part 6 of the Code. We would be happy to answer any questions you may have regarding this paper.	The Authority is considering updating its guidance material on connection of DG. See decisions and reasons paper for further discussion on this.

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		28. The primary contacts for this submission are:	
	ENA	**1) Introduction** 1. The Electricity Networks Association (ENA) appreciates the opportunity to submit on the Electricity Authority's (EA's) second consultation paper on the operational review of Part 6 (the Consultation Paper)[22]. The ENA's contact person for this submission is: **Summary of submission** 2. In principle, the ENA supports the EA's revised small scale distributed generation (SSDG) connections process outlined in the Consultation Paper. The proposal is an improvement on the original proposal and addresses several issues raised previously by Electricity Network Businesses	Support noted.

[22] *An Operational Review of Part 6 of the Code: second consultation*, Electricity Authority, 2 December 2013

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		(ENBs). 3. We suggest however that the Cost Benefit Analysis (CBA) included in the Consultation Paper overstates the benefits of the proposal, because it overestimates the benefits to SSDG and underestimates the costs to ENBs of complying with it. In addition, we do not consider it to be feasible to carry out a robust CBA until issues for ENB pricing arising from the delayed implementation of energy efficiency and demand side management regulatory requirements under Section 54Q of the Commerce Act have been resolved. Accordingly we question whether there is a material benefit to implementing the proposal. 4. We are also particularly concerned about the technical detail included in the proposal. We suggest that elements of the proposal are unresolved, or not possible to implement in practice without ENBs incurring significant costs in obtaining information which is currently not readily available. 5. For example: • It is not possible for distributors to publish a list of all export constrained locations on the network, as sufficient data (for example for	See decisions and reasons paper discussion on this topic. This is not the intention behind this requirement. See decisions and reasons paper discussion on this topic.

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		low voltage circuits) is not readily available. • There is no explanation as to how the proposed process will interact with the process for the connection of meters as stipulated in Part 10 of the Code. • The proposal omits important acknowledgement steps necessary to ensure proposed timeframes are met. • The AS4777 standard mentioned is shortly to be replaced. 6. Accordingly, the ENA submits that a technical working group is established to develop the specific details of the proposal to be embodied in the Code. We understand that ENA members are willing to contribute to this process. **2. Revised SSDG Connection Process** **Support in principle for revised proposal** 7. The Consultation Paper sets out a revised proposal for the connection of SSDG to distribution networks.	The processes are self-evidently parallel and both must be complete before connection can occur. As described in greater detail in the decisions and reasons paper, the process has been revised to address this. As outlined in greater detail in the decisions and reasons paper, the previously proposed new clause 2B of Schedule 6.1 has been omitted from the proposed Code amendment, because the Authority has determined that it must amend the Code each time it wishes to provide for a new inverter standard or version that supersedes AS4777.1. If in the future the Authority amends the Code to this effect, it will provide a transition period for changes from one standard or version to the next by providing an up to 12-month window within which the incumbent inverter standard or version is still valid. The Authority will provide for this window with the date in the Gazette that the new standard or version will have effectWhile appreciative of the offer, we consider no such assistance is necessary to finalise the Part 6 Code amendment.

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		It is now proposed that pre approval is sought from ENBs, whereas the previous proposal[23] was for connection followed by notification to the distributor. 8. The ENA considers that the revised proposal is an improvement on the original proposal. In particular, we support: • Application being made to distributors to connect SSDG, rather than notification to distributors after connection is made. We believe this approach will avoid unnecessary complications and rework that will be better addressed prior to connection. • The distributor's right to prohibit connection where the connection does not meet the specified requirements. • Recognition of export constraints on the distribution network by allowing distributors to apply restrictions on SSDG generation during congestion periods or for maintenance. 9. While providing general support for the revised proposal, we have two areas of concern, which we	Support noted. See decisions and reasons paper discussion on

[23] Electricity Authority, An Operational Review of Part 6 of the Code: Connection of Distributed Generation, Consultation Paper, 4 September 2012

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		address in turn in the remainder of this submission: • the CBA included in the Consultation Paper appears overstated • the technical details included in the proposal require further refinement before they can be implemented. **Cost benefit analysis** 10. We are concerned that the CBA set out in Appendix C of the Consultation Paper over estimates the benefits accruing to the revised proposal. The calculation of the relative costs and benefits of the revised proposal are applied inconsistent and are not supported by sufficiently detailed analysis. 11. For example: • A benefit of $70 per new connection is assumed based on a reduction in the application process time (relative to the status quo). However the analysis ignores the impact on the present value of the costs to the generator of the earlier connection. • The assumed reduction in average connection time ignores the fact that (as acknowledged in para 3.2.2 of the	these topics.

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		Consultation Paper) many ENBs are already connecting SSDG well within the current application period. • ENB costs are assumed to increase by a constant cost of $29k per annum. It is not clear how this value has been determined. Importantly, the benefits are assumed to increase overtime as the number of connections increase, while the costs are held constant. This is not consistent with the underlying assumption of a three-fold increase in connections over the ten year projection period. • The regulatory price controls imposed on most ENBs under Part 4 of the Commerce Act result in financial penalties for those companies when electricity volumes imported through GXPs are reduced by (amongst other things) supply within networks from small scale distributed generation. We consider that this contravenes s54Q of the Act (a view supported by legal advice) and it is an issue that should be resolved before a robust CBA can be carried out. That is, currently the promotion of the connection of SSDG is likely to create costs for ENBs not recognised in	Part 6 does not promote the connection of DG to networks. It allows the connection if consistent with connection and operation standards. If there is an issue here, it is not an issue with Part 6 per se.

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		CBA. The intent of s54Q is to promote ENB engagement with energy efficiency and demand-side initiatives such as small scale DG, not to create disincentives for such engagement. • The CBA ignores initial one off costs associated with implementing the proposal, including (as discussed further below) establishing systems to collect the data, which distributors will be expected to publish about network constraints. 12. Based on these observations, we consider that the net benefits of the proposal are likely to be overstated. Accordingly, we question whether there is a material benefit to implementing the proposal. **Technical requirements** 13. ENA members have a number of reservations about the technical details included in the proposal. Examples of the technical matters that we believe require further consideration are discussed below. We note there are likely to be other areas which also require refinement before the proposal can be implemented. **Export constrained areas**	Distributor costs have been annualised for simplicity and are estimated as between $1k and $3k per annum. We remain of the view that these are reasonable estimates. A significant difference of view exists as to what is actually required to implement Part 1A. The Authority considers that the requirements are in fact much less onerous than distributor submissions have assumed (e.g. extensive network studies are not required). Publication on websites is limited to information that is already known and should already be documented. Processes and application forms for Part 1 are already written and will simply require modification to fit the simpler Part 1A process.

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		14. Under the proposal, distributors would be required to publish a list of locations on the network which are subject to export constraint and which are unable to accept additional export from distributed generation (DG) at specific times. It is proposed that: • SSDG may connect in constrained areas but the distributor may apply export restrictions at certain times • Constraints may only be applied in the areas listed • Distributors must undertake reasonable steps to work with SSDG owners to assess whether solutions exist to mitigate export constraints. 15. We welcome the proposal's acknowledgement of export constraints on distribution networks. Export related constraints will increase as connection of SSDG becomes more prevalent. However, the current proposal in this respect is very onerous on distributors. For example, it would be extremely costly for our members to survey their networks in order to list all of the circuits that are export	See decisions and reasons paper discussion on this topic. The Code does not require distributors to survey their networks in order to list all of the circuits that are export constrained. The requirement is to list congestion locations when these become known.

Question No.	Submitter	Comments	Authority response
		constrained. This is because many LV circuits are not metered, making it difficult to analyse whether there is an export constraint. 16. Prohibiting the SSDG generation constraints to only those locations listed is also risky from a network security perspective. This would effectively mean that SSDG could connect in areas where interruptions to supply could occur due to capacity breaches. 17. Accordingly we suggest that: • distributors provide a list of 'known' export constraint locations • distributors are also permitted to notify applicants of additional export constraints that they become aware of once an application is made (ie within the 10 day application timeframe). 18. This suggestion reduces distributor costs relative to the proposal, as it limits pre disclosure to information distributors have available to them based on current network configurations. It also provides SSDG owners with prior information about known constraints. **Interaction with connection of export meters**	This is the intention. Impact on costs noted.

Question No.	Submitter	Comments	Authority response
			Support for this provision noted.
		19. The proposal does not address how the connection of SSDG aligns to the process to connect export meters under Part 10 of the Code. We note that the proposed Code amendment appears to remove reference to metering in Part 6 (clause 4 schedule 6.2). In order to improve compliance with the Code, we consider that the application process needs to set out the metering application process in Part 6 (at least by reference to specific clauses in Part 10). Furthermore, there needs to be an explicit requirement to install an export meter for any SSDG connection under Part 6 (again, at least by reference to Part 10).	They are somewhat parallel processes. Both must be completed before connection can occur.
		Registration of industry participant	
		20. It is our understanding that under section 7(1)(g) of the Electricity Industry Act (EIA), "a person, other than a generator, who generates electricity that is fed into a network" is an industry participant. Under section 9, all industry participants must register with the EA and comply with the Code.	See decisions and reasons paper for discussion on this topic.
		21. It would appear that SSDG owners meet the criteria for industry participants under the EIA, and as such	

Question No.	Submitter	Comments	Authority response
		would be subject to registration and compliance with the Code. This requirement may raise a number of issues for SSDG owners, which do not appear to be addressed in Part 6 or the Consultation Paper. **Other issues** 22. Other technical issues we have identified include: • There is no process for acknowledging that an application has been submitted, and accordingly the start of the ten day application period. • It is proposed that a Code of Compliance is required (under clause 9B), but this is unlikely to be available where SSDG has yet to connect. Also there are no timeframes proposed for dealing with when the Code of Compliance must be provided. • It is our understanding the AS4777 is shortly to be replaced by a new Australia/New Zealand set of standards. These may place different obligations on distributors and SSDG owners. This forthcoming change in standards should be recognised in the Code	The process has been revised to require an acknowledgement. The process has been revised to reflect this timing. As outlined in greater detail in the decisions and reasons paper, the previously proposed new clause 2B of Schedule 6.1 has been omitted from the proposed Code amendment, because the Authority has determined that it must amend the Code each time it wishes to provide for a new

Question No.	Submitter	Comments	Authority response
		amendments.	inverter standard or version that supersedes AS4777.1. If in the future the Authority amends the Code to this effect, it will provide a transition period for changes from one standard or version to the next by providing an up to 12-month window within which the incumbent inverter standard or version is still valid. The Authority will provide for this window with the date in the Gazette that the new standard or version will have effect
		Technical working group We consider that the most effective way to resolve any technical issues and develop the detailed implementation requirements, including Code amendments, is for the EA to establish a technical working group for this purpose. ENA members would be happy to contribute technical resource to this group.	The offer is appreciated but we consider that the Code amendment can be finalised based on submissions received.
	Alpine Energy	**Introduction** 1. Alpine Energy Limited welcomes the opportunity to submit on the Electricity Authority's second consultation on *An Operational review of Part 6 of the*	

Question No.	Submitter	Comments	Authority response
		Code. Our responses to your consultation questions are addressed in the Electricity Networks Association's (ENA) submission on this matter [See **Appendix HH**].	Noted.
		2. The focus of this submission is a serious safety concern arising from the implied approval of an application where the applicant receives no notice from a distributor within 10 working days of the application being submitted.	See decisions and reasons paper. The process has been revised and should address these concerns.
		Safety concerns	
		3. We are of the view that implementing implied approval will result in unsafe SSDG being connected to electricity networks which could result in deaths and serious injuries.	The revised process requires the distributor to acknowledge receipt of an application within 2 business days. The date of the application will be from receipt.
		4. It is our interpretation that an application is considered 'submitted' the moment it is put in the mail box by the applicant. The 10 working day time frame does not take into account the infrequent nature of the New Zealand post[24], delays in delivery, the application being lost, or the application being returned to the applicant due to an incorrect address or postage.	

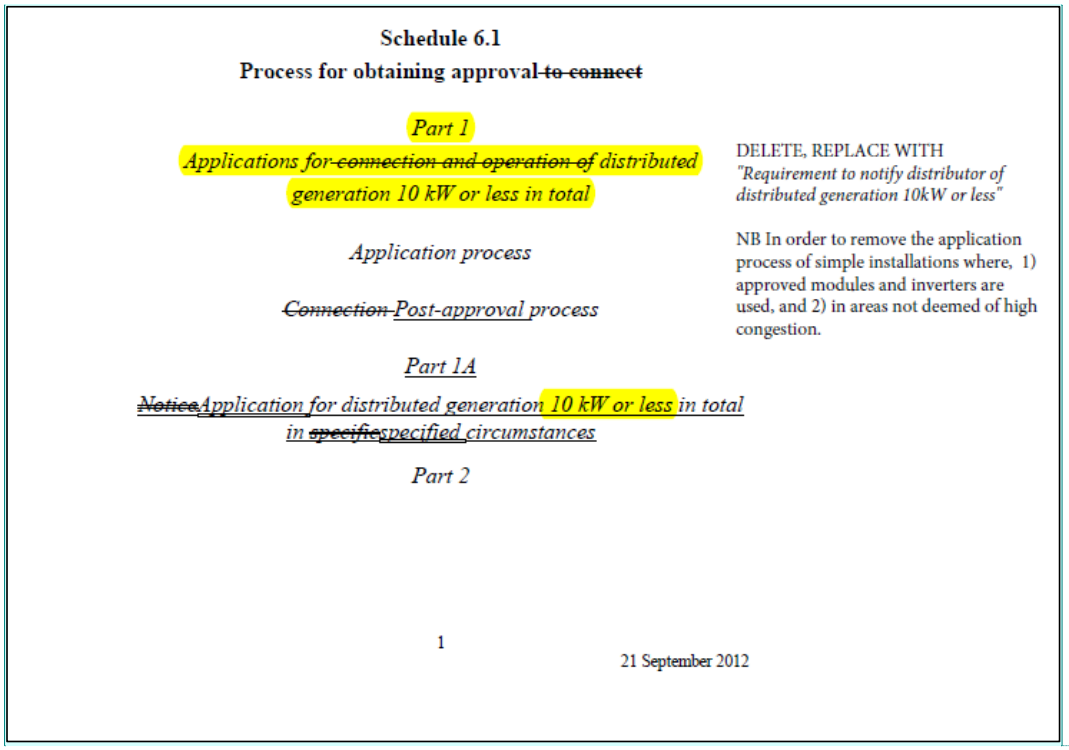
[24] Ie that since October 2013 New Zealand post delvers every three days.

Question No.	Submitter	Comments	Authority response
		5. Any of the above could result in the applicant not receiving acknowledgement of an application by a distributor, within the proposed 10 working day timeframe, simply because the distributor did not receive the application with the 10 working days. Under the implied approval such a situation could result in the connection of an unsafe SSDG to an electricity network putting the safety of all at risk. 6. The authority appears to have complete faith that the SSDG to be connected would be fully compliant, and therefore safe, at the time the application is submitted. Making the distributor's role no more than to 'rubber stamp' the application. 7. Unfortunately, in our experience despite the standards that have been put into place and the certification requirements put on SSDG we have come across unsafe installations that could have resulted in a death or serious injury had it been connected to the network. Where we are aware of an unsafe installation we will not allow it to be connected to our network. 8. We are of the view that explicit approval from the distributor must be given before SSDG can be	The Authority considers that 10 business days is sufficient time between the application and the distributor reaching a decision and notifying the applicant of approval. Safety issues should be picked up in the safety inspection for a CoC.

Question No.	Submitter	Comments	Authority response
		connected to an electricity network. This is a necessary final step to ensure the safety of the network. **Closing remarks** 9. We hope that our submission is helpful to the authority's review of Part 6 of the Code. We are happy to discuss our concerns further with the authority.	

Gaylene Barnes Response to Question 3

Page 1:



Schedule 6.1

Process for obtaining approval ~~to connect~~

Part 1

Applications for ~~connection and operation of~~ distributed generation 10 kW or less in total

Application process

~~Connection~~ Post-approval process

Part 1A

~~Notice~~Application for distributed generation 10 kW or less in total in ~~specific~~specified circumstances

Part 2

DELETE, REPLACE WITH
"Requirement to notify distributor of distributed generation 10kW or less"

NB In order to remove the application process of simple installations where, 1) approved modules and inverters are used, and 2) in areas not deemed of high congestion.

1

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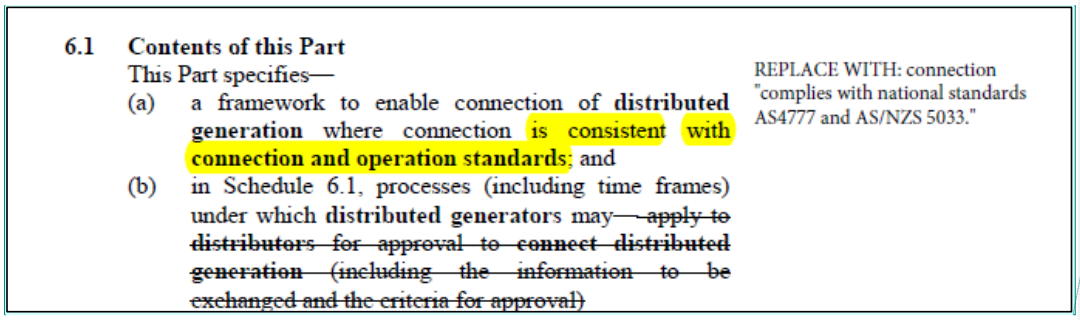
Comment [AU1]: Authority response: Removing the word 'Applications' detracts from the key point that this is the existing application framework for distributed generation for those that cannot or do not want to proceed under the new Part 1A.

Page 3:



6.1 Contents of this Part

This Part specifies—

(a) a framework to enable connection of **distributed generation** where connection is consistent with **connection and operation standards**; and

(b) in Schedule 6.1, processes (including time frames) under which **distributed generators** may ~~apply to distributors for approval to connect distributed generation (including the information to be exchanged and the criteria for approval)~~

REPLACE WITH: connection "complies with national standards AS4777 and AS/NZS 5033."

Comment [AU2]: Authority response: "connection and operation standards" are a defined term and they underpin each of the application schemes for distributed generation (under Part 1, 1A and 2 of Schedule 6.1).

"AS 4777 and AS/NZS 5033" are caught by (b) here (i.e. Schedule 6.1 processes), and only apply to the framework under Part 1A of Schedule 6.1.

Page 3:

6.2 Purpose

The purpose of this Part is to enable connection of **distributed generation** if connection is consistent with **connection and operation standards**.

Compare: SR 2007/219 r 3

REPLACE WITH: connection "complies with national standards AS4777 and AS/NZS 5033."

6.3 Distributors must make information publicly available

(1) The purpose of this clause is to require each **distributor** to make certain information publicly available to enable the

Comment [AU3]: Authority response: "connection and operation standards" are a defined term and they underpin each of the application schemes for distributed generation (under Part 1, 1A and 2 of Schedule 6.1).

charge, from its office and internet site,—

(a) ~~application~~ forms for an application~~or notice~~ under Schedule 6.1~~connection of distributed generation~~; and

(b) the **distributor's connection and operation standards**; and

(c) a copy of the **regulated terms**, together with an explanation of how the **regulated terms** will apply if—

(i) approval ~~to connect distributed generation~~ is granted under Schedule 6.1; and

(ii) the **distributor** and the **distributed generator** do not enter into a connection contract outside the **regulated terms**; and

(d) a statement of the policies, ~~rules~~clauses, 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; and

(e) ~~the application~~ a list of any fees ~~specified by~~ that the **distributor** ~~in respect of applications for connection of distributed generation~~ is entitled to charge under Schedule 6.1 which must not exceed the relevant maximum fees prescribed in Schedule 6.5~~.~~; and

(f) a list of the make and model of each inverter that the **distributor** has approved for connection to the **distributor's network**; and

(g) a list of all locations on the **distributor's network** that the **distributor**—

(i) knows to be subject to export congestion; or

(ii) reasonably expects to become subject to export congestion within the next 12 months; and

(h) the **distributor's** contact information for any enquiries relating to the application of this Part.

(3) The application forms ~~for an applicationor notice~~ referred to in subclause (2)(a) must specify the information (including any supporting documents) that must be provided under Schedule 6.1~~with an application~~.

(4) For the purposes of subclause (2)(g) and clause 9E of Schedule 6.1, export congestion occurs when a **network** is unable to accept **electricity** exported from a new **distributed generation** connection because an additional unit of **electricity** injected into the **network** would—

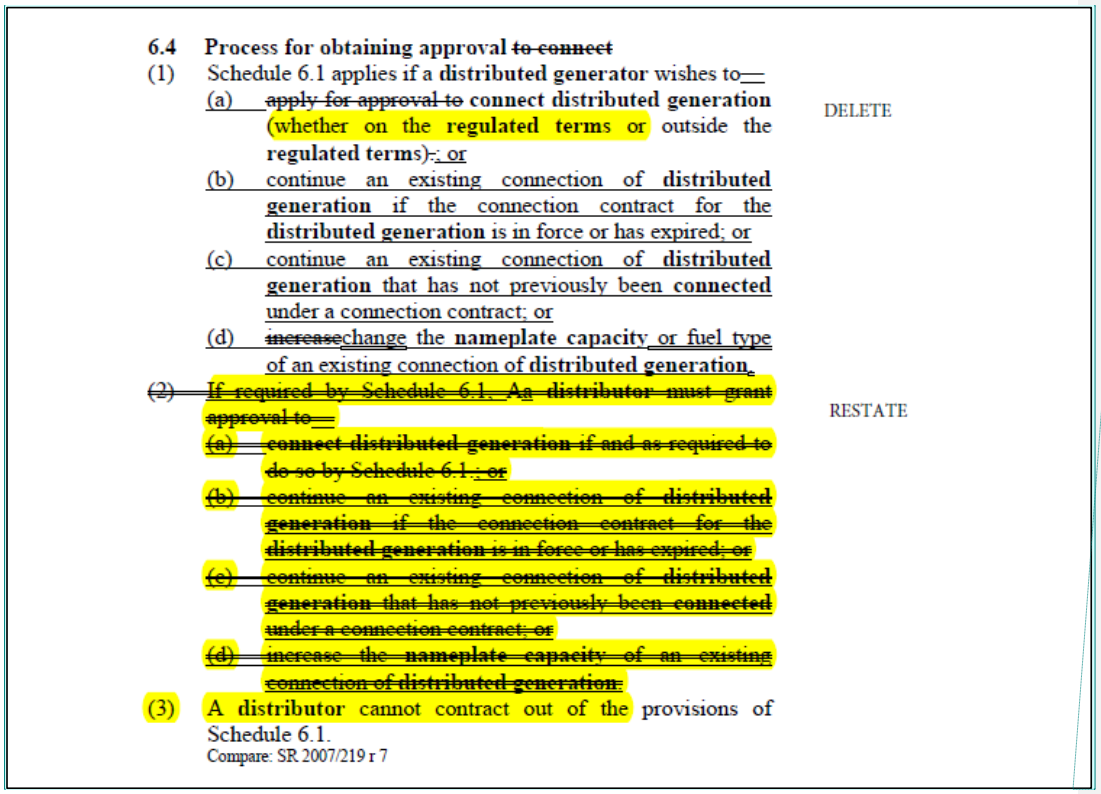
REPLACE WITH: the "standard application form for distrubuted generation which requires approval." [NB: This is **one form only** that all 27 networks should be required to agree upon, and is only required for new modules/ inverters and in areas of high congestion.]

REPLACE WITH: that "all distributors have approved for connection to the national grid."

NB: If this list and map work effectively then an application form should only be necessary if 1) the make and model is outside of the apporoived list and 2) the DG is to occur on an area of congestion. Otherwise, the distributed generator should only need to advise the netowrk of the installation and submit a COC.

Comment [AU4]: Authority response: The current wording can accommodate this as it captures any such form.

Page 5:



6.4 Process for obtaining approval ~~to connect~~

(1) Schedule 6.1 applies if a **distributed generator** wishes to—

(a) ~~apply for approval to~~ **connect distributed generation** (whether on the **regulated terms** or outside the **regulated terms**)~~.~~; or

(b) continue an existing connection of **distributed generation** if the connection contract for the **distributed generation** is in force or has expired; or

(c) continue an existing connection of **distributed generation** that has not previously been **connected** under a connection contract; or

(d) ~~increase~~change the **nameplate capacity** or fuel type of an existing connection of **distributed generation**.

DELETE

~~(2) If required by Schedule 6.1, A~~a **distributor** ~~must grant approval to—~~

~~(a) connect distributed generation if and as required to do so by Schedule 6.1; or~~

~~(b) continue an existing connection of distributed generation if the connection contract for the distributed generation is in force or has expired; or~~

~~(c) continue an existing connection of distributed generation that has not previously been connected under a connection contract; or~~

~~(d) increase the nameplate capacity of an existing connection of distributed generation.~~

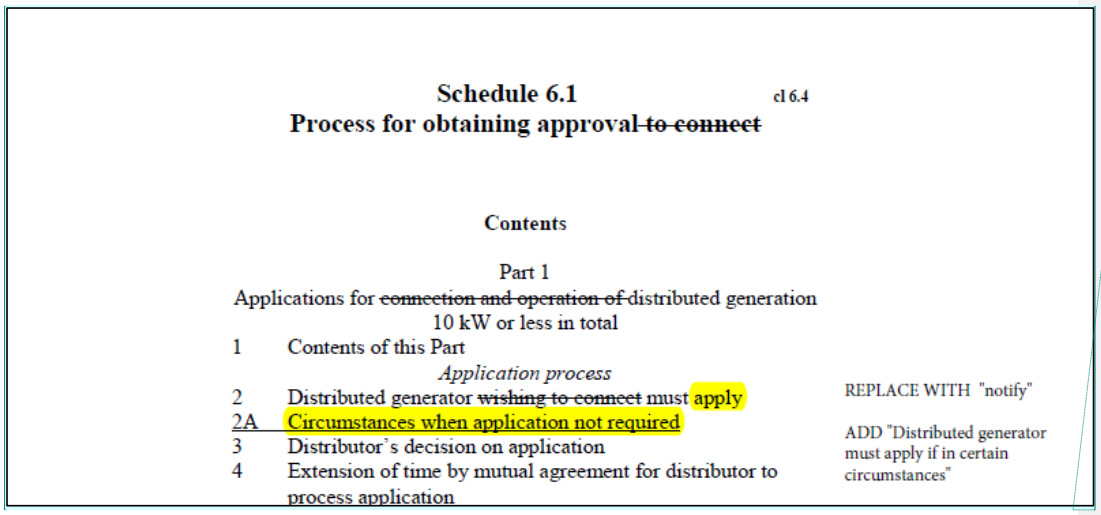
RESTATE

(3) A **distributor** cannot contract out of the provisions of Schedule 6.1.

Compare: SR 2007/219 r 7

Comment [AU5]: Authority response: No rationale is provided for these recommendations, and the Authority consider the proposed framework to be adequate.

Page 10:



Schedule 6.1 cl 6.4

Process for obtaining approval ~~to connect~~

Contents

Part 1

Applications for ~~connection and operation of~~ distributed generation 10 kW or less in total

1 Contents of this Part

Application process

2 Distributed generator ~~wishing to connect~~ must apply

2A Circumstances when application not required

3 Distributor's decision on application

4 Extension of time by mutual agreement for distributor to process application

REPLACE WITH "notify"

ADD "Distributed generator must apply if in certain circumstances"

Comment [AU6]: Authority response: The Authority considers that the current wording is adequate and properly reflects the fact that the processes for connection of distributed generation are application processes.

Page 12:

2 Distributed generator ~~wishing to connect~~ must apply

(1) Subject to clause 2A and clause 6.4A, A~~a~~ **distributed generator** ~~who wishes to connect~~ with **distributed generation** that is only capable of generating **electricity** at a rate of 10 kW or less in total after the **distributed generator**'s application is approved, must apply to the **distributor** if it intends~~:~~—

- (a) to **connect distributed generation**; or
- (b) to continue an existing connection of **distributed generation** if the connection contract for that **distributed generation** is in force or has expired; or
- (c) to continue an existing connection of **distributed generation** that has not previously been **connected** under a connection contract; or
- (d) ~~increase~~to change the **nameplate capacity** or fuel type, of an existing connection of **distributed generation**.

REPLACE WITH "notify"

REPLACE WITH "notify the distributor, and present a Certificate of Compliance, if 1) using an approved inverter/ module 2) is in an area of low congestion." etc

(2) The **distributed generator** must apply by—

- (a) using the application form provided by the **distributor** that is publicly available under clause 6.3(2)(a); and
- (b) providing any information in respect of the **distributed generation** ~~proposed to be connected~~ that is—
  - (i) referred to in subclause (3); and
  - (ii) specified by the **distributor** under clause 6.3(3) as being required to be provided with the application~~.~~; and
- (c) paying the application fee (if any) specified by the **distributor**, which must not exceed the relevant maximum fee prescribed in Schedule 6.5.

REPLACE WITH "notify"

a) present a Certificate of Complaince" etc

Application fee not necessary for 'notifications.'

(3) The information may include the following:

- (a) the full name and address of the owner or operator of the **distributed generation** and the contact details of a person that the **distributor** may contact regarding the **distributed generation**:
- (aa) whether the application is to—
  - (i) **connect distributed generation**; or
  - (ii) continue an existing connection of **distributed generation** if the connection contract for that **distributed generation** is in force or has expired; or

REPLACE WITH "This notification should include the following information."

Comment [AU7]: Authority response: The Authority considers that the current wording is adequate and properly reflects the fact that the processes for connection of distributed generation are application processes.

Page 14:

~~specified by the distributor, which must not exceed the maximum fee prescribed in Schedule 6.5.~~

(5) The **distributor** must, within 5 **business days** of receiving an application, give written notice to the applicant advising whether or not the application is complete.

Compare: SR 2007/219 clause 2 Schedule 1

REPLACE WITH ..."or not the notification is complete."

2A Circumstances when application not required under Part 1

REWORK. Parts of this section should be removed to the first section. This section could therefore be for "when application IS required." The **default setting in this schedule** should be that - notification only is required if the 2A 1) a)-e) are met - and it is installed in an area of low congestion. Only DG outside of this should require an application.

(1) This Part of this Schedule does not apply to **distributed generation** if—

(a) the **distributed generator** in respect of that **distributed generation** ~~is~~would otherwise be required to apply to the **distributor** under clause 2(1)(a), (b) or (d); and

(b) the **distributed generation** is designed and installed in accordance with AS 4777.1; and

(c) the **distributed generation** incorporates an inverter that has been tested and issued a Declaration of Conformity with AS 4777.2 by a laboratory with accreditation issued or recognised by International Accreditation New Zealand; and

(d) the **distributed generation** has protection settings that meet the **distributor's connection and operation standards**; and

DELETE. If compliant with the code, this should suffice.

(e) the **distributed generation** has been inspected and issued a Certificate of Compliance in accordance with the Electricity (Safety) Regulations 2010.

(2) Despite subclause (1), a **distributed generator** may elect to apply to the **distributor** under this Part of this Schedule, in which case the provisions of this Part apply to the **distributed generator**'s application.

Comment [AU8]: Authority response: The Authority considers that 2A provides an adequate gateway into the Part 1A framework. Further, we think it prudent to keep the two frameworks for the connection of distributed generation separate. (Note that clause 2A has been replaced by clause 1D).

Page 15:

(3) ~~If subclause (1) applies and~~However, a **distributed generator** must apply under Part 1A of this Schedule if—

(a) subclause (1) provides that this Part of this Schedule does not apply; and

(b) the **distributed generator** does not elect to apply to the **distributor** under subclause (2)~~, the distributed generator must comply with Part 1A of this Schedule~~.

The current wording 'if they elect to apply" etc - adds a level of confusion and uncertainty. Maybe you need to rework the whole thing.?

2B Revision of AS 4777.2

(1) If AS 4777.2 is revised and reissued—

(a) a **distributed generator** with **distributed generation** described in clause 2A(1) that has been approved under Part 1A may remain **connected** only if the **distributed generation** continues to comply with the requirements of clause 2A(1) that were in place when it was approved under Part 1A:

(b) **distributed generation** that has not been approved under Part 1A continues to meet the requirement in clause 2A(1)(c) if —

(i) the **distributed generation** incorporates an inverter that has been tested and issued a Declaration of Conformity with the previous version of AS 4777.2 by a laboratory with accreditation issued or recognised by International Accreditation New Zealand; and

(ii) the **distributed generator** applies under Part 1A for **distributed generation** that complies with the previous version of AS 4777.2—

(A) within 12 months of the revised version of AS 4777.2 being issued; or

(B) within a longer timeframe specified by the **distributor**.

(2) If a **distributed generator** with **distributed generation** described in subclause (1)(b) wishes to connect **distributed generation** under Part 1A, but does not apply within the relevant timeframe in subclause (1)(b)(ii), the **distributed generator** must ensure that the **distributed generation** complies with the revised and reissued version of AS 4777.2

3 Distributor's decision on application

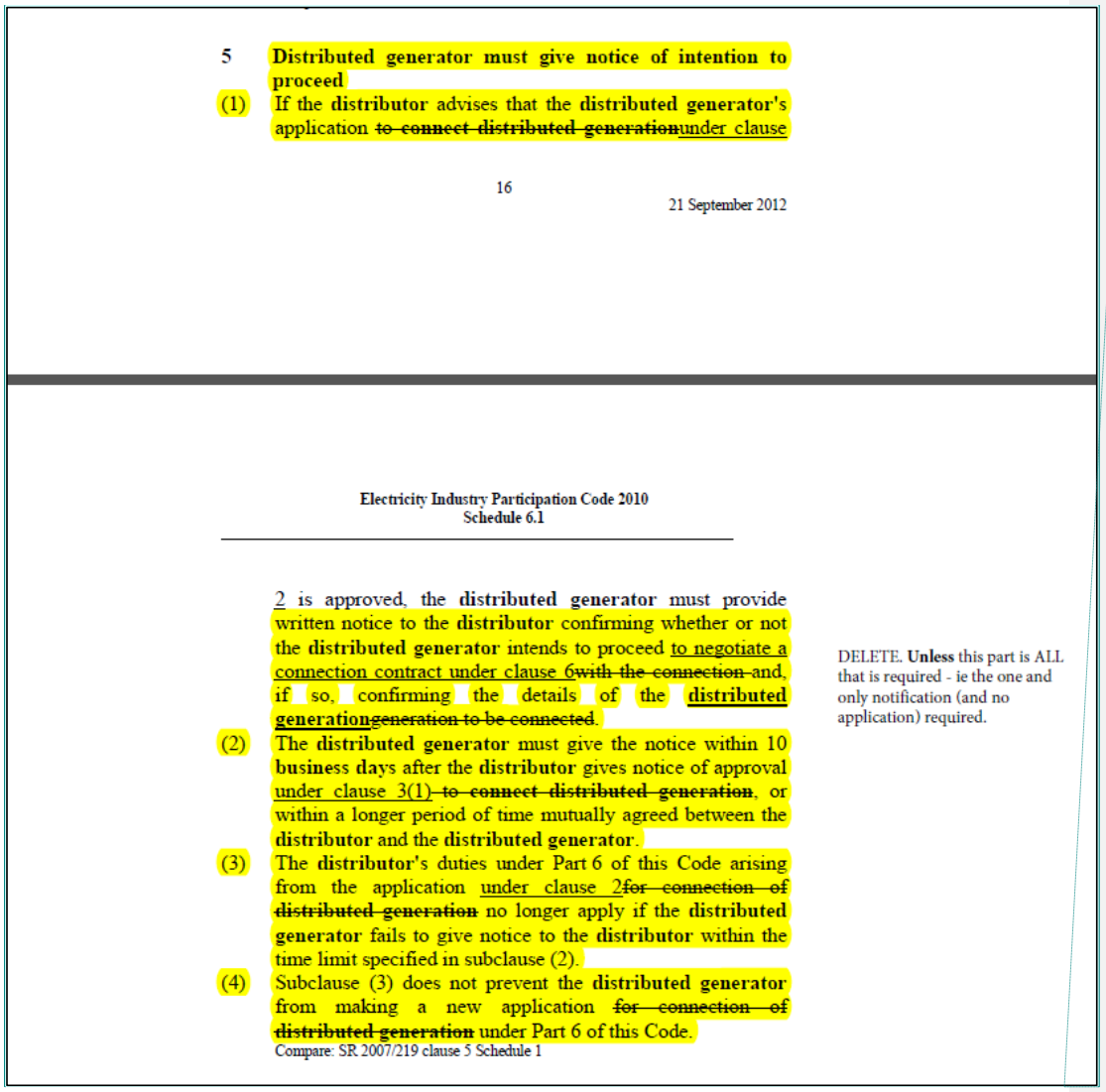
(1) A **distributor** must, within 30 **business days** after the date of receipt of a completed application made in accordance with clause 2, give notice in writing to the applicant stating whether the application is approved or declined.

NB : This schedule ony relates to those that require application ..

(2) A **distributor** must approve an application under clause 2~~to connect distributed generation~~ if—

Comment [AU9]: Authority response: Disagree. The Authority considers that clause 2A suitably sets out how the Part 1 and Part 1A frameworks complement each other. (Note that clause 2A has been replaced by clause 1D).

Page 16 & 17:



5 Distributed generator must give notice of intention to proceed

(1) If the **distributor** advises that the **distributed generator**'s application ~~**to connect distributed generation**~~under clause

16

21 September 2012

Electricity Industry Participation Code 2010
Schedule 6.1

2 is approved, the **distributed generator** must provide written notice to the **distributor** confirming whether or not the **distributed generator** intends to proceed to negotiate a connection contract under clause 6~~with the connection~~ and, if so, confirming the details of the **distributed generation**~~generation to be connected~~.

(2) The **distributed generator** must give the notice within 10 **business days** after the **distributor** gives notice of approval under clause 3(1) ~~**to connect distributed generation**~~, or within a longer period of time mutually agreed between the **distributor** and the **distributed generator**.

(3) The **distributor**'s duties under Part 6 of this Code arising from the application under clause 2~~**for connection of distributed generation**~~ no longer apply if the **distributed generator** fails to give notice to the **distributor** within the time limit specified in subclause (2).

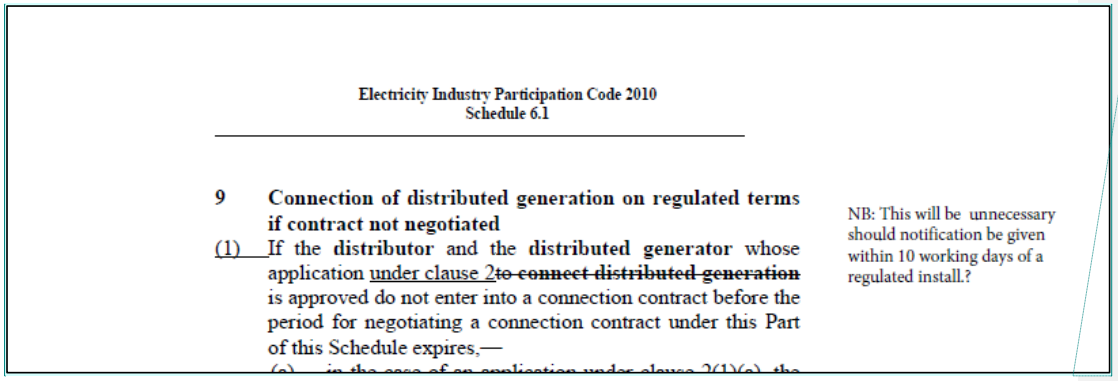
(4) Subclause (3) does not prevent the **distributed generator** from making a new application ~~**for connection of distributed generation**~~ under Part 6 of this Code.

Compare: SR 2007/219 clause 5 Schedule 1

DELETE. **Unless** this part is ALL that is required - ie the one and only notification (and no application) required.

Comment [AU10]: Authority response: These provisions apply to the application framework under Part 1 of Schedule 6.1, along with the other requirements set out in that Part.

Page 19:



Electricity Industry Participation Code 2010
Schedule 6.1

9 Connection of distributed generation on regulated terms if contract not negotiated

(1) If the **distributor** and the **distributed generator** whose application under clause 2~~to connect distributed generation~~ is approved do not enter into a connection contract before the period for negotiating a connection contract under this Part of this Schedule expires,—

NB: This will be unnecessary should notification be given within 10 working days of a regulated install.?

Comment [AU11]: Authority response The 10-day timeframe does not apply to application process under clause 2 (which is for applications under Part 1) of Schedule 6.1.

Page 61:

Application fee under clause 2(2)(c) of Schedule 6.1	200
Fee for observation of testing and inspection under clause 7(5) of Schedule 6.1	60
Part 1A of Schedule 6.1 ~~notice~~application	
Fee for ~~notice~~application under clause 9B(~~3~~4)(e) of Schedule 6.1	100
Fee for inspection under clause 9D(3) of Schedule 6.1	60
Deficiency fee under clause 9~~E~~F(~~6~~7) of Schedule 6.1	~~100~~80
Part 2 of Schedule 6.1 application	
Application fee for **distributed generation** with a **nameplate capacity** of more than 10 kW but less than 100 kW under clause 11(2)(c) of Schedule 6.1	500
Application fee for **distributed generation** with a **nameplate capacity** of 100 kW or more in total but less than 1 **MW** under clause 11(2)(c) of Schedule 6.1	1,000
Application fee for **distributed generation** with a **nameplate capacity** of 1 **MW** or more under clause 11(2)(c) of Schedule 6.1	5,000
Fee for observation of testing and inspection of **distributed generation** with a **nameplate capacity** of more than 10 kW but less than 100 kW under clause 22(5) of Schedule 6.1	120
Fee for observation of testing and inspection of **distributed generation** with a **nameplate capacity** of 100 kW or more under clause 22(5) of Schedule 6.1	1,200

DELETE.

Comment [AU12]: Authority response: The Authority considers that this fee is appropriate for the application to connect distributed generation under clause 2(2)(c) of Schedule 6.1. Furthermore, no reasoning is provided for the submission that it be deleted.