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Submissions
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SUBMISSION ON OPERATIONAL REVIEW OF PART 6

- 1 Orion New Zealand Limited (**Orion**) welcomes the opportunity to comment on the “An Operational Review of Part 6 of the Code: Connections of Distributed Generation” consultation paper (the **paper**) released by the Authority in September 2012.
- 2 Our submission is in two parts:
 - Comments on key aspects of the paper, and
 - Responses to the paper’s specific questions.
- 3 Note that in the time available we have not been able to review all of the “proposals” and “items” in the Appendices to the paper, and thus have not included detailed comments on them as suggested by the very lengthy response templates. However we have touched on some of them in the body of this submission.

Part 1A amendment

- 4 The paper proposes that certain types of SSDG be able to connect without the application currently required under Part 1 of Schedule 6.1. This includes connecting SSDG to an existing installation or (as we interpret para 3.2.2) creating a new connection. Orion does not support this proposal.
- 5 We appreciate that a key rationale for this change is that some DG is currently



connected without application, and the proposed change may reduce the chances of that happening. However we do not think that the proposed solution will necessarily solve the problem as we suspect most cases of this currently are based on ignorance of the process, not the complexity or cost of it. We are also particularly concerned at the implication that a *new* connection to our network might be made without application. Aside from cutting across one of our key business controls, we suspect this might be at odds with our obligations around establishing ICPs under the Code.

- 6 We are not aware of any instances of non-compliant SSDG being connected on our network, and furthermore we have established, through our arrangements with retailers, processes that mean they should not connect the metering at such sites without sighting our approval. In our experience this process works well.
- 7 The paper links the change to the supposed transaction costs of the application process, yet these are not quantified and nor are they put in the context of the overall DG investment being made. The paper also does not in our view acknowledge adequately that transaction costs do not just apply to the applicant. Distributors will clearly have to develop new processes to deal with the proposed change, and that will not be free.
- 8 We note there would still be costs faced by the SSDG in relation to design, installation, inspection and certification (3.2.2 (b) and (d)). By comparison Orion's SSDG application form would, we estimate, take only a few minutes to complete and send. Moreover we generally approve applications for SSDG within two working days (if it is AS4777 compliant and electrical COC is guaranteed). In short we do not consider that the transactions costs associated with the application process are material.
- 9 We further note that, in most SSDG cases, a system provider is likely to be involved in the process, and will quite likely be the party engaging with the distributor. It is also likely that the provider will have multiple interactions with a distributor. As such transactions costs, at the margin, should be very low, and in addition the provider will have the ability to establish relationships and *voluntary* arrangements with distributors to, for example, streamline the application process *by agreement*. There is no need for the Code to make this a general requirement on distributors irrespective of the quality of the applicant. We note that most distributors already have broadly analogous arrangements in other areas whereby, for example, contractors go through a process to be authorised to work on the network. The paper's mention of Vector's "simplified approval process" (para 3.1.25) is instructive here: the paper presents this as a reason why mandating via the Code is Ok, when actually it is an example of the value of voluntary arrangements. We also note that what Vector is doing is still an approval process (albeit streamlined), not a notification process.

- 10 If the applying party is not already aware of the requirements for DG, then having to go through and application process is a good way to help ensure the applicant develops the necessary understanding. This is good for everyone.
- 11 Perhaps most importantly, the proposed change fails to recognise developments in the deployment of SSDG that make it even more problematic to move to a no application process. This is that there are some subdivision developments where it is conceivable that most or even all properties will have SSDG (particularly PV). Orion has already had such an experience, although thankfully we have been in a position to engage with the developer.
- 12 While it is probably true that most distribution networks as built can support the occasional SSDG installation with no issues, this becomes less true as SSDG becomes more concentrated. Where potentially whole subdivisions could have SSDG at every installation, there could well be issues with power quality (in particular voltage) and export capacity at particular times (sunny, summer, holiday days when loads are very low and PV output very high). Distributors must have the ability to involve themselves at the design stage and *before* the decisions are made, not afterwards. This is for the good of all network users, including those with the SSDG. Clearly it would be unfortunate if a distributor had to tell people they could not have or operate the DG *after* they have made the investment.¹
- 13 Moreover technology and associated issues can run ahead of standards and it is a sensible safety net for distributors to be able to respond to such issues in a timely fashion as part of the approval process rather than having to wait for standards to catch up.
- 14 In conclusion in relation to part 1A, Orion's view is that the paper does not demonstrate, within the "CRE" framework, that the proposed amendment will provide any material benefit in terms competition and efficiency, yet it clearly poses real risks for reliability, quality and safety.

Other technical and operational amendments

- 15 In the time available we have not been able to review all of the other technical and operational amendments in detail, but most would appear to make the Code clearer and more consistent. (It could be argued that the Code in most of these

¹ Another potential development not relevant to this specific submission is that energy storage systems could change the uptake of PV by giving the generated energy a greater value. Thus far, most SSDG appears to be sized so that its primary benefit is from offsetting energy consumption in real time as opposed to storing the output for times of possibly greater value. Storage of DG output could well significantly increase its value.

areas, while not perfect, works well enough, and that this is therefore not really a high priority workstream.)

16 However:

- Much of the discussion around prioritisation in section 4.4 of the paper ignores the fact that this is an issue *because* the incremental cost approach to DG pricing creates an inefficient incentive to be first to get the “free” capacity. Moreover, the implication in para 4.4.12 that the two options presented for congestion management are indeed options, and therefore exclusive, is incorrect. As happens on the national grid, the fact that the distribution network *normally* has sufficient capacity to support full injection by all plant on a circuit does not mean that it *always* will do. Congestion management will inevitably be required from time to time, and this will not necessarily have anything to do with when applications were received. Approval of connection, with or without payment for additional network capacity, does not imply a right to that capacity.
- With respect to section 4.6 of the paper, we have documents from other parties related to DG developments in NZ and overseas which the Authority may find valuable in considering the proposed amendments. Although the full content is confidential, and not included here, the documents can be summarised as follows:
 - (a) Densely deployed PV SSDG can and does (in Australia and Germany at least) create voltage issues (in particular voltages well in excess of those allowed in AS4777)
 - (b) The sensitivity of inverters to voltage can in turn create stability issues via tripping
 - (c) When significant amounts of PV are deployed, overall system stability can be compromised (eg Germany)
 - (d) There may be scope to change inverter settings to improve “ride through” and therefore stability. Due to the possible wider system stability issues, the system operator, as well as the local distributor may have an interest in these settings

We would be happy to discuss these documents and related matters with the Authority, and/or put the Authority in touch with the authors; and

- We note the changing environment for AUFLS. The under and over frequency settings for SSDG need to be compatible with AUFLS changes

and giving distributors a chance to request settings not covered in AS4777 is useful.

Out of scope matters

- 17 We tend to agree with the Authority's classification of the out of scope matters. However there is a potential issue of sequencing here. For example, it is fairly obvious that the low fixed charge (LFC) regulations contribute to the over rewarding of DG and, other things equal, will be causing over-investment in SSDG currently. We can see no reason why this very obvious flaw cannot be fixed quite simply, and without completely reviewing the LFC regulations, by not *requiring* distributors and retailers to offer LFC compliant pricing where the connection otherwise qualifies but has DG, just as they are not required to offer such pricing for holiday homes. We believe it is inevitable that this sort of change will happen in future, and the longer it is left unaddressed the greater the potential number of disappointed small scale distributed generators there will be when it does.
- 18 Likewise the review of distribution pricing more generally could well impact on the economics of DG, with similar opportunities for eventual investor disappointment. All distribution pricing inevitably involves some level of averaging based on models of typical consumers and load profiles. Installation of DG will almost certainly move an installation well away from the average profile without (at least with PV SSDG) decreasing the cost of network provision. Any material deployment of SSDG will inevitably lead to changes in distribution pricing which more accurately reflect the economics.

Concluding remarks

- 19 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 Bruce Rogers (Pricing Manager), DDI 03 363 9870, email bruce.rogers@oriongroup.co.nz.

Yours sincerely



Bruce Rogers
Pricing Manager

Appendix 1: Responses to specific questions

	Question	Response
1	Do you agree the proposed Code amendment to introduce a lower cost connection process promotes the Authority's statutory objective? If not, please explain why not.	No. We believe the change will compromise safety, and potentially quality and reliability.
2	What improvements should the Authority consider to the proposed Part 1A process?	We see no need to change the process at all.
3	Which organisations should undertake education and awareness initiatives relating to the connection of DG? If so, what specific initiatives do you think should be considered?	The Authority is well placed to do this. System suppliers are probably the best target audience as we believe they will be well placed to influence behavior of the investing parties. Orion would be happy to participate in such initiatives.
4	Do you consider a three month implementation period gives distributors a reasonable time period in which to prepare for the proposed changes?	We do not consider that the process should be changed. However, if it is changed, three months is not sufficient. A minimum of six months would be required.
5	Do you agree that the proposed technical and operational Code amendments promote the Authority's objective? Feedback on the individual proposals	Given that the Authority's objective is expressed in terms of consumers, not generators, we thought the paper would focus on the possible implications for safety and reliability, rather than generator ease of access. Increased penetration of SSDG may, just may, help place downward pressure on energy prices, but it will almost certainly place upward pressure on delivery prices, and definitely has the potential to

	Question	Response
	from Table 5 in Appendix D should be included using Table 3 in Appendix A.	create issues for other consumers.
6	Do you have any new proposed amendments to Part 6 of the Code that you consider would be of long-term benefit to consumers? Please describe the proposal and its intended purpose.	No, but see our comments about “out of scope” matters.
7	Are you satisfied that the Authority and the Rulings Panel are the most appropriate bodies to resolve disputes in respect of the regulated terms, as provided for in clause 6.8(1)(a) and Schedule 6.3? If not, what alternative would you favour?	We do not know if disputes are common. However, provided the Rulings Panel is resourced and qualified for the task we have no objection to it remaining the relevant body for disputes under the regulated terms.
8	What options should be considered by the Authority for improving the existing dispute resolution process?	No comment.
9	What amendments to clause 6.11, if any, do you propose in order to promote the long-term benefit of consumers?	We note that “generators” are not “consumers” even if DG is often installed at sites where consumption occurs.
10	In your view, is there a problem with the priority of applications under clause 17 of Schedule 6.1 or the approach to managing congestion on distribution networks? If so, what is/are the problem(s), the options, and your	We are not aware of any cases so it is hard to judge. The “problem” is to a large extent created by the DG pricing principle that gives first movers an inefficient cost advantage. We note that if the same approach was applied to load, the cost of entire upgrade projects could be laid at the door (or more accurately the wallet) of small consumers, while everyone that joined before them got free access.

	Question	Response
	preferred solution to promote the long-term benefit of consumers?	
11	In your view, is there a problem with the requirements of clause 18 of Schedule 6.1 relating to the distributor's imposition of conditions on an application for connection of DG? If so, what is/are the problem(s), the options and your preferred solution to promote the long-term benefit of consumers?	It appears there is some potential ambiguity, but we are not sure if this is a material problem in practice?
12	Do you consider the liability limits under the regulated terms best promote the long-term benefit of consumers? If not, what limits would be more suitable?	No comment.
13	Would there be a long-term benefit for consumers in seeking to develop nationally consistent inverter protection settings (as set out in paragraph 4.6.3) that are also consistent with distributors' connection and operation standards?	Possibly as there is a risk that large scale concentrated deployment of SSDG has the potential to impact on power quality and reliability both locally and, with sufficient scale, nationally.
14	Would you prefer a regulatory or non-regulatory measure to create nationally consistent protection settings for inverters? In the case of a non-regulatory measure, would an Authority guideline, an industry guideline or a New Zealand	Standards, developed as part of a good consultative process, are a good way to achieve this. Depending on how much local conditions vary there may be a regulatory need to be clearer about distributors' rights to impose more onerous requirements. Relates a little to question 11 above.

	Question	Response
	Standard be preferable?	
15	What settings, or ranges of settings, would be appropriate?	We would be happy to discuss this as part of a standards setting process. We note the work carried out in other jurisdictions, eg Germany, that may inform the process. This is not our IP to share in this forum, but we would be happy to discuss this with the Authority.