

Appendix A Format for submissions: Integrating hosting capacity into Part 6 on low voltage networks

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A.1 Please use the following table to provide your feedback on the questions included in this paper.

Question	Response
Q1. Have we adequately outlined the issues with increasing levels of SSDG, particularly inverter-connected solar PV systems?	Yes
Q2. What other factors are relevant to these technical network considerations?	No Comment
Q3. Do you agree these options broadly represent the range of actions we could consider at this time? Are there other broad conceptual options we should consider that are not covered by these three approaches?	Yes, we agree with these options and believe that this is a pragmatic approach.
Q4. Do you think the Authority should pursue the types of measures that Option B would require? If not, please outline your alternative preferred approach, including if possible the costs and benefits. If you consider there is a valid Option C-style alternative, please provide details, including your view on how your alternative would meet the Authority's statutory objective.	We agree with Option B
Q5. Do you have any comments on the draft EEA	We support the EEA objectives.

guide's stated objectives?	
Q6. What advanced power quality capabilities do inverters sold into the New Zealand market possess?	A quick poll of the 3 most common inverters already installed on our network shows that they are compliant with AS/NZS4777 but only have DRM0 mode and do not appear to have volt-var or volt-watt functionality
Q7. Is it reasonable to assume that the advanced power quality modes outlined are currently available in the marketplace at no additional cost? If not, what are the likely incremental costs involved to obtain these modes?	No comment.
Q8. Would a default requirement to provide volt-var and volt-watt modes for all future inverter installations that use the Part 1A connection process have any unintended adverse consequences (for example, leaving a stock of unsold inverters that are otherwise compliant with the superseded AS4777:2005 standard suite)? Are these adverse consequences surmountable?	No adverse consequence from our point of view.
Q9. What comments do you have about the hosting capacity assessment process described in detail in the draft EEA guide?	This seems conservative and to be an efficient way to analyse hosting capacity. As EDBs get more complete information on their LV networks and need to design to closer tolerances more detailed models can be used.
Q10. Do you support the Code amendment request discussed in the draft EEA guide? If not, please explain why and, if possible, suggest an alternative approach.	The criteria allow the distributor to decide on the relevant Power Quality modes which we support. We would like to see this expanded to include the ability to require Demand Response Modes 1 to 8. We agree with the requirement to comply with a published threshold limit for maximum export power.
Q11. Do you think there is a problem or conflict with the '10 kW total' versus '5 kW per phase' thresholds respectively adopted in the Code and AS/NZS 4777.2:2015? If so, would you support aligning the	We support aligning the code with the inverter standard in due course.

Code threshold with the inverter standard?	
<p>Q12. Do you think there are emerging problems with capacity or power quality from in-home electric vehicle chargers, or is it too early to tell? We are keen to hear industry views and experiences and from parties that supply electric vehicle charging equipment.</p>	<p>We have not yet experienced issues from in-home EV chargers. As EV penetration increases so too will the effects on LV networks. Issues may first appear in clusters around more affluent neighbourhoods.</p> <p>We believe the most prudent way to manage the effects of EV chargers, and to schedule investment to augment our LV networks, is to:</p> <ul style="list-style-type: none"> a) know where all EV chargers are located. b) be able to measure, in real time, voltage and current at our consumer premises or Point of Supply. c) Have the ability to time-shift, or as a last resort throttle charge rates of individual EVs to ensure that our LV voltages remain within regulated levels. <p>We believe that a) is essential and could be achieved with a connection process similar to SSDG Part 1a.</p> <p>b) is essential for us to monitor the effects that EV chargers will have on our network. Ideally, we would be able to get this information from the existing retailer smart meters on our network but failing this we will need to install our own duplicate smart meters.</p> <p>c) can be managed by volt-var or volt-watt response but we believe this could be augmented by allowing EDBs to require DRM modes 1-8 which would allow us greater control in managing any congestion.</p>