ELECTRICITY AUTHORITY
TE MANA HIKO

Maximising benefits from local generation

Submitter	**Scott Wilkinson – Commercial Manager**
Submitter's organisation	**Marlborough Lines Limited (MLL)**

Questions	Comments
Q1. What are your views on the proposal to set a default 10kW export limit for Part 1A applications?	MLL is broadly supportive of consumers having choices regarding their connection to, and use of, the network. Where safe and efficient to do so, allowing an increased export limit is a pragmatic approach. We are pleased that the Authority, under 4.6, 4.7 and section 7, has acknowledged that choices by consumers surrounding DG can impose costs and challenges on networks. The impacts of increased costs on EDBs should be carefully considered. In MLL's view, the proposal should also be considered in parallel with changes to the distributed generation pricing principles. There is a direct relationship between the connection and operation of DG, operation and management of networks, and the efficient allocation of costs for network usage. Most distribution networks in New Zealand were originally designed for load only, with ADMD values typically in the 3kW to 15kW range. Many residential areas are effectively designed for around 4kW per household. As solar penetration increases, an increased number of households will be exporting rather than consuming power (at certain times). Once export diversity is exhausted on a given street, the available capacity is gone, and any new applications will need to be set to 0kW export. This is not a fair outcome for all consumers. As a consumer trust-owned EDB, one of our core values is "For Marlborough", and we believe network access should be shared as evenly as possible. A default 10kW limit risks early adopters consuming all available export headroom (first mover advantage) with consumers who later want to connect not being able to do so. A 5kW export limit (for single-phase connections) has been adopted historically which allows sharing of available network capacity with more consumers. A 5kW export limit more closely aligns with our load ADMD value and was the value recommended from independent expert advice we received regarding network DG hosting capacity. We intend to expand our existing DSO capabilities and introduce dynamic export limits, allowing consumers to maximise their generation while still maintaining safe and efficient network operation. While we are actively working toward the visibility and systems needed to support this, we are not yet at the point where dynamic operating envelopes can be deployed.

Q2. What are your views on the Code clarifying that a distributor cannot limit the nameplate capacity of a Part 1A application, unless the capacity exceeds 10kW?	MLL assumes that "unless the capacity exceeds 10kW" is meant to read "unless the maximum export power exceeds 10kW", which would better reflect the consultation paper's 3.11, 5.25 and proposed Code amendment 6.3A (1). MLL notes that some inverter controls, including the Volt-VAR and Volt-Watt voltage response modes, are referenced against the inverter rated apparent power (i.e., nameplate capacity). For example, when Volt-Watt is fully engaged, by default, it will reduce the inverter's maximum active power output level to 20% of the rated apparent power. 5.41 to 5.43, and Figures 6 and 10 of the consultation paper appear to indicate that Volt-Watt reduces an inverter's "maximum export power". Restricting Distributors from limiting the nameplate capacity of a Part 1A application may result in DG installations having oversized inverter capacity relative to their intended export power. Depending on the extent of the oversizing, this could significantly alter the behaviour of voltage response modes. In an extreme case, MLL believes this could undermine the effectiveness of the Volt-Watt response mode.
Q3. There are requirements for distributors in Proposal A1. Which of these do you support, or not support, and why?	MLL supports the ENA submission's response to this question.
Q4. What are your views on the proposal for industry to develop an export limits assessment methodology?	In principle MLL would be supportive of an industry developed ELAM. As we would not directly be responsible for developing the ELAM and BELAM, we don't feel best placed to comment on the timeframe. We do, however, support the development of an industry wide methodology that can be adopted by EDBs. There are questions around what happens if the timeframe for developing the methodology (four months from gazetting is proposed) is not met, and in what circumstances updates to the ELAM and BELAM might be required in future, and who would then be responsible for those updates, if required. MLL notes that wording in the proposed Code amendment 6.3A (3) (b) would allow Distributors performing an ELAM study to only consider already connected DG and DG that is currently being assessed to connect (i.e., has an in-progress application). This may limit Distributors from considering future DG uptake when performing an ELAM study. 5.30 and 5.34 of the Consultation paper suggests the EEA guide *Connection of Small-Scale Inverter-Based Distributed Generation* as a good basis for developing the ELAM. This guide details a method for determining "DG Hosting Capacity", and importantly, it recommends that Distributors estimate long-term DG penetration levels (i.e. a forward-looking approach). The proposed Code amendment appears to limit the inclusion

	of potential future DG uptake, which may be inconsistent with the recommended guidance.
Q5. What would you do differently in Proposal A1, if anything?	We support the ENA submission's response to this question.
Q6. What concerns, if any, do you have about requiring the 2024, rather than 2016, version of the inverter installation standard for Part 1A applications?	No concerns – MLL supports the most relevant and up to date standards being required where it is pragmatic to do so.
Q7. Do you support amending the New Zealand volt-watt and volt-var settings to match the Australian values for Part 1A applications - why or why not – what do you think are the implications?	We note that requiring installers to select the "Australia" profile while "New Zealand" remains an available option in inverter menus is counter-intuitive and likely to lead to confusion and inconsistent commissioning outcomes in the short term. Comparing ourselves directly with Australia is also risky. Australia introduced its current PQ settings in response to significant operational issues already present on their networks. New Zealand is in a stronger position: we have not yet experienced these issues at scale, and we could implement any changes in a controlled and staged manner rather than reacting under pressure. A more robust process would involve developing new power-quality setpoints through meaningful industry consultation and incorporating them into an updated AS/NZS 4777.2. This would ensure changes flow through to manufacturers and installers in a structured and traceable way. We are also concerned that widening the permitted voltage operating range for new inverters may negatively affect existing distributed generation systems. Existing inverters could experience increased curtailment or even cease operation under the new conditions. This creates unnecessary cost impacts for current customers, who may be forced to upgrade their systems simply to maintain normal performance. These concerns suggest the proposed approach may not deliver the long-term consumer benefits the Authority is obliged to prioritise. Introducing avoidable costs, creating uncertainty for installers and manufacturers, and causing inconsistencies between new and existing systems all run counter to an efficient, reliable, and consumer-focused outcome. MLL does not believe that these response modes are "dynamic export limits" (refer to response to Q2).
Q8. What would you do differently in Proposal A2, if anything?	MLL supports the ENA submission's response to this question.
Q9. Do you have any concerns about the Authority citing the	No concerns provided the Volt-Watt and Volt-Var settings are developed as per our response to Q7 above.

Australian disconnection settings for inverters when high voltage is sustained?	
Q10. Do you have any concerns about the Authority requiring the latest version of the inverter performance standard for Part 1A applications?	MLL supports the ENA submission's response to this question.
Q11. What are your views on the proposal that where distributors set bespoke export limits for Part 2 applications, they must do so using the industry developed assessment methodology?	MLL supports the ENA submission's response to this question.
Q12. What are your views on the several requirements that must be adhered to regarding the distributors' documentation (see paragraph 5.96) relating to setting export limits under Part 2?	MLL supports the ENA submission's response to this question.
Q13. Do you agree it is fair and appropriate that where distributors set export limits for Part 2 applications, applicants can dispute the limit? If so, what sort of process should that entail?	MLL supports the ENA submission's response to this question, particularly that it is not clear on what grounds a dispute can be raised. Where a Distributor has adhered to the BELAM and provided results to an applicant, any dispute of the export limits must be compelling and technically informed, e.g., situations where the applicant reasonably believes the export limits contravene the BELAM or that the results are incorrect. MLL encourages the Authority to consider limiting against unreasonable disputes which may result in potential inefficient allocation of resource by Distributors.
Q14. What would you do differently in Proposal B, if anything?	MLL supports the ENA submission's response to this question.
Q15. What are your thoughts on requiring the inverter performance standard (AS/NZS 4777.2:2020 incorporating Amendments 1 and 2) for low voltage DG applications in New Zealand?	MLL considers that Proposal C, if implemented, would override paragraph 5.82 (c) subject to the timing of transitional arrangements in paragraph 6.8. Paragraph 5.102 states that New Zealand settings would be adhered to, except for voltage response modes and the sustained operation for voltage variations, which would instead use the Australia A settings.

	MLL anticipates some difficulty achieving this in practice. In our experience, some solar installers will apply a grid code during installation but are not able to modify individual settings thereafter.
Q16. Do you consider the transitional arrangements workable regarding requirements and timeframes? If not, what arrangements would you prefer?	MLL supports the ENA submission's response to this question.
Q17. What are your views on the objective of the proposed amendments?	The objective is narrow and does not consider wider implications and/or unintended consequences to the level of detail that might be considered necessarily in the context of the statutory objective. Clearly there would be benefits to DG owners, but the consultation paper does not clearly illustrate how, or to what degree, all consumers will benefit. The consultation paper notes (4.6 and 4.7) that there may be "costs and challenges on networks" and "the added benefit for generators could result in higher added costs for other network users". With reference to the Authority's statutory objective, the possibility that the costs associated with the proposal outweighing the assessed benefits does not appear to have been considered. Is the Authority suggesting that that scenario is not a possibility – could the proposal result in increased cost to (at least some) consumers which may place the proposal at odds with the Authority's statutory objective? The Authority's statutory objective also includes reliability of supply – the proposed Code amendments will likely introduce more complex bi-directional power flows on networks, which will need to be carefully managed by Distributors.
Q18. Do you agree the benefits of the proposed amendments outweigh their costs? If not, why not?	MLL supports the ENA submission's response to this question. Additionally, 7.4 (b) suggests that making more DG available for Distributors to use to manage load peaks and congestion, thus reducing need for expensive network upgrades – MLL would like to highlight that DG is not "available" to Distributors. DG owners will utilise their own DG in their own best interests. For solar DG (with a capacity factor of approximately 0.2), the coincidence of export (unless batteries are installed) with network constraints is unlikely. MLL's view is that there is no certainty that further DG connected to a network will reduce future network investment, without any contractual mechanism in place between a Distributor and a DG owner(s).
Q19. What are your views on the Authority's estimate of costs of lost benefits from a 5kW export limit?	MLL supports the ENA submission's response to this question. Additionally, it assumes that energy that cannot be exported is "spilled" but does not consider an alternative of consumers shifting their consumption to reduce spillage, or, the storage of

	electricity for later consumption (and the avoidance of cost from purchasing energy).
Q20. Are there costs or benefits to any parties (e.g., distributors, DG owners, consumers, other industry stakeholders) not identified that need to be considered?	MLL supports the ENA submission's response to this question. Additionally, to support greater penetration of and increased export limits for DG, access to low voltage data is essential. Acquisition of metering data and LV analytics is a significant cost to Distributors. MLL is in the process of acquiring metering data and LV analytics. The presence of DG on the network is a driver for acquiring this data and the analytics tool.
Q21. Do you agree the proposed Code amendments are preferable to the other options? If you disagree, please explain your preferred option in terms consistent with the Authority's main statutory objective in section 15 of the Electricity Industry Act 2010	MLL supports the ENA submission's response to this question.
Q22. Do you agree the Authority's proposed amendments comply with section 32(1) of the Act?	MLL believes so but notes that the outcomes from the proposed amendments are of course yet to be realised.
Q23. Do you have any comments on the drafting of the proposed amendment?	As highlighted in the response to Q4, MLL notes the wording of proposed Clause 6.3A (3) (b) may limit Distributors from considering future DG uptake when performing an ELAM study. This may lead to iterative repeating of studies as DG penetration increases. If these repeated ELAM studies showed that lower export limits (<10kW) were required, the limits would then likely apply to subsequent DG connections rather than requiring existing DG connections to be export limited below 10kW. It is not clear to MLL from the proposed amendment if this is the intended approach.