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Electricity Authority
PO Box 10041
Wellington 6143

Via email: connection.feedback@ea.govt.nz

Consultation Paper – Maximising benefits from local electricity generation

The WEL Networks appreciates the opportunity to provide feedback on the above consultation.

WEL Networks (WEL) is New Zealand's sixth largest electricity distribution company and is 100% owned by our community through our sole shareholder WEL Energy Trust. Our guiding statement of strategic intent is to be leading Waikato's energy future, and we work to ensure that our customers have access to reliable, affordable, and environmentally sustainable energy.

Overall WEL sees the proposed amendments as timely and beneficial for managing distributed generation (DG), provided they incorporate lessons from other countries and maintain flexibility for distributors.

Setting a default 10 kW export limit for Part 1A applications could lead to inequitable allocation of capacity, favouring early adopters and potentially restricting future customers. WEL believes export limits based on system capacity should be adopted and we recommend adopting the CSIP-AUS protocol early to manage distributed generation (DG) effectively and avoid issues experienced in Australia.

WEL supports using the latest inverter standards and aligning New Zealand's volt-watt and volt-var settings with Australian values to improve compliance and performance. We also endorse developing a unified export limit assessment methodology (ELAM) but note there may be scalability and cost considerations due to the variability of data availability across networks. We also have concerns that four months is insufficient time to fully implement an ELAM.

Our responses to the specific questions sought by the Authority are attached and should you require clarification on any part of this submission, please do not hesitate to contact me.

Yours sincerely

Andrew Maseyk
Regulatory Specialist



Questions	Comments
Q1. What are your views on the proposal to set a default 10kW export limit for Part 1A applications?	<p>Setting a default export limit of 10 kW risks a first in first served allocation for the customers. First customers will be given 10 kW, but future customers will have exports limited to any remaining capacity. Customer approvals should be limited to the maximum capacity of their system, to better distribute available capacity.</p> <p>Using a fixed export limit combined with DER growth, could result in what is happening in Australia with the requirement to enable an emergency backstop function to ensure grid stability. It would instead be better to adopt the CSIP-AUS protocol that most states in Australia have adopted/mandated to help manage solar. Early adoption of this protocol would prevent the emergency adoption pain that Australia have experienced. This would also remove the lack of integration with older model inverters and existing customer agreements that reduce adoption.</p> <p>Distribution networks are often built using an after diversity maximum demand (ADMD) method for load. ADMD models change for each EDB are often <5 KVA per customer (with some legacy areas being much lower, especially for customers with gas connections). With solar having an approximate 0.9 diversity factor for similar geographical locations, if customers install 10 kVA systems, networks will have thermal constraints appearing rapidly as DG penetration levels increase. If the authority wants adoption to increase further, distributors will need to upgrade their network to allow for this increased loading due to reverse power flow to align with a new ADMD of 9-10 kVA. This will either be captured in reduced export limits or higher connection fees/ongoing fees.</p>
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?	WEL does not limit nameplate capacity however we may, due to network performance, set an export limit.

<p>Q3. There are requirements for distributors in Proposal A1. Which of these do you support, or not support, and why?</p>	<p>WEL has developed an internal framework to provide automated assessment of applications. Currently this applies to single phase up to 10 kW and three phase up to 30 kW. This is an individual assessment of the ICP based on current network topology and allows instant automatic approval of these applications based on network capacity and has allowed WEL to remove application fees for these systems. Any change to how this capacity is calculated will require rework to these processes.</p>
<p>Q4. What are your views on the proposal for industry to develop an export limits assessment methodology?</p>	<p>WEL supports the idea of a unified assessment methodology. The biggest challenge is not all networks have access to the same data, for example, service voltage visibility, which is vital for determining export limits. As a result, we need to ensure that whatever process we agree too does not require Distributes to financially burden themselves to get the necessary data to complete the calculations. Any proposed ELAM should be scalable based on the availability and accuracy of data.</p>
<p>Q5. What would you do differently in Proposal A1, if anything?</p>	
<p>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?</p>	<p>WEL supports using the latest version of the standards.</p>
<p>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?</p>	<p>WEL agrees this will improve kW exports for the customer compared with the current settings.</p> <p>This will also improve actual in field compliance of inverters as AEMO worked with major manufacturers to ensure the Australia A is the default setting of inverters sold there which is the stock sold here. Often inverters being installed here in New Zealand are not configured correctly to the New Zealand set point within the configuration settings even though it is requested by the network. Through testing we have found that there are some major brands that even</p>



	<p>when set to New Zealand settings actually use Australia set points.</p> <p>With the amendment to the Electricity (Safety) Regulations 2010 WEL has adopted the 'Australia A' regional settings for:</p> <ul style="list-style-type: none"> o Volt-Watt response o Volt-VAR response o Overvoltage protection o Undervoltage protection <p>These settings will be used until AS/NZS 4777 is updated to reflect the changes in New Zealand's voltage bands.</p> <p>With the move to use the Australia A voltage settings there is a risk that frequency response settings are also changed. It needs to be reinforced that they continue to be set to the New Zealand frequency response settings.</p>
Q8. What would you do differently in Proposal A2, if anything?	
Q9. Do you have any concerns about the Authority citing the Australian disconnection settings for inverters when high voltage is sustained?	No
Q10. Do you have any concerns about the Authority requiring the latest version of the inverter performance standard for Part 1A applications?	No. WEL supports using the latest standards.
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?	<p>There are benefits to setting a common framework.</p> <p>Export limits are set by the data available to the distributors, if they can demonstrate that they are using industry accepted practices to derive export limits then they should be able to do so. No methodology will be applicable in every situation.</p>
Q12. What are your views on the several requirements that must be adhered to regarding the distributors'	Currently WEL does a review of network capacity and assesses the current available export capacity and assesses options and associated cost to allow the applicant to export

documentation (see paragraph 5.96) relating to setting export limits under Part 2?	the requested amount. Sometimes these amounts are the same. After an approved initial application, the applicant is always able to have an engineering study completed by themselves or a consultant to challenge our findings.
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?	Yes, customer can dispute export limits. Distributors can review and challenge if they were completed incorrectly. Transparent distributor specific assessment criteria will ensure consistency and clarity around assessed export limits.
Q14. What would you do differently in Proposal B, if anything?	
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?	Agree. It should be noted that many distributors already mandate AS/NZS 4777.2:2020 compliance in their connection standards.
Q16. Do you consider the transitional arrangements workable regarding requirements and timeframes? If not, what arrangements would you prefer?	No, four months is not enough time to develop an ELAM or BELAM. If a distributor already has a process to determine export limits, they should be able to use that and if they have none then they must then use an ELAM or BELAM.
Q17. What are your views on the objective of the proposed amendments?	Overall, the amendments tackle existing challenges distributors face. New Zealand is still in the infancy stage of DG adoption and now is the best time to take the learnings of other countries and apply it to New Zealand to ensure a smoother transition for consumers and distributors.
Q18. Do you agree the benefits of the proposed amendments outweigh their costs? If not, why not?	
Q19. What are your views on the Authority's estimate of costs of lost benefits from a 5kW export limit?	These calculations assume that all EDBs have a fixed 5 kW limit. Some EDBs like WEL have variable limits up to 10 kW and have implemented these for some time. Based on this,

	these calculations may overestimate the number of systems that are operating with a fixed 5 kW capacity limit.
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?	
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	
Q22. Do you agree the Authority's proposed amendments comply with section 32(1) of the Act?	
Q23. Do you have any comments on the drafting of the proposed amendment?	<p>6.3A (3) refers to ICPs of lower than 10 kW – this should read lower than or equal to 10 kW to be consistent with Part 1.</p> <p>Considerations should be given to 6.3A (3) (b). This approach may not provide the best economic benefit as capacity is allocated to the initial applications. In addition, this wording would require recalculating export limits following any application. This may not be feasible for all Distributors.</p>