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The Electricity Authority Te Mana Hiko
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Tēnā koutou,

Submission on the consultation paper – Export Limits - maximising benefits from local generation

Introduction

1. PowerNet Limited (PowerNet) appreciates the opportunity to make a submission to the Electricity Authority (the Authority) on the Export Limits - maximising benefits from local generation consultation paper.

2. PowerNet is an electricity management company with its head office based in Invercargill and is owned by The Power Company Limited (TPCL). PowerNet manages the non-exempt Electricity Distribution Business (EDB's) of Electricity Invercargill Limited (EIL), OtagoNet and Lakeland Network (LNL), the exempt EDB of TPCL and Ruakura EDB Limited Partnership (Tainui Group Holdings Limited).

3. With an asset base and investments in excess of NZ$1 billion, the aggregated electricity distribution asset base managed by PowerNet is the fourth largest in New Zealand. TPCL operates in Southland and West Otago, OtagoNet in rural and coastal Otago region that surrounds Dunedin City, EIL operates in Invercargill and Bluff, Lakeland Network (LNL) in the Frankton, Cromwell and Wānaka regions, and Ruakura in the Waikato.

4. PowerNet has long-term management agreements in place with TPCL, OtagoNet, LNL, EIL, and Ruakura, with the benefit of integrated business management systems in place, and a core purpose and expertise in asset management capability.

5. PowerNet supports, in principle, the submission made by Electricity Networks Aotearoa (ENA) and have included in our own submission key issues that we wish to raise with the Authority. We support aspiration to reach net zero emissions by 2050 and acknowledge the important role distribution networks will play in supporting New Zealand's transition to an electrified nation and a low emissions economy.

6. This submission can be published in full on the Authority's website.

Key discussion points

7. PowerNet is, in principle, supportive of the Authority's intent to introduce a kW limit that will likely lead to faster overall installation of solar capacity in New Zealand and see that this has benefits. However, we are concerned about the consequences of rushing through this change on an unprepared electricity industry. Not all EDBs have the ability to model their low voltage (LV) networks with accuracy due to limited data.

8. In our understanding, the 10kW exports is a shift that establishes two things
    - customers may benefit from the increased network capacity, however without sufficient analysis may lead to power quality issues in places.
    - allocation of network distributed generation (DG) hosting capacity shifts largely toward a first in first served approach.

    If this is what the Authority intends, we would encourage clarity that this decision has been made and provide reasoning.

9. We are further concerned that the consultation paper reads as if an outcome has been decided, and explanation has been created to fit that outcome. We note the Authority are open to feedback and acknowledge the willingness to discuss this issue through webinar and other means, however the above concerns remain.

10. We would prefer to see the benefits of increased solar in combination with sufficient energy storage to provide those benefits, rather than issues addressed in isolation. For example, some benefits (e.g. resilience) mentioned do not simply flow from more solar but also require additional investments like batteries. We would prefer that any benefits mentioned are not exaggerated beyond a part solution where they are being used as justification.

11. PowerNet is concerned that the lack of robust analysis has led to a predetermined outcome that aligns with existing regulation thresholds. Regulation of the export limits assessment methodology (ELAM) assumes that EDBs already have full modelling capability to assess network DG hosting capacity. What would be the process under this regulation in future when congestion is reached or now if congestion already exists. 10kW without any conditions designed to future proof a 'flexible exports' arrangement (as used in Australia) may be difficult to manage retrospectively. We therefore urge the Authority to consider these implications carefully.

Proposed timeframe

12. PowerNet is concerned that the proposed timing appears to not take into account the context of regulatory change that EDBs are adapting to or being consulted on.

13. The 10kW export limit is proposed to be enforced unless the ELAM is implemented to demonstrate that export limits should be set lower. However, the ELAM does not exist yet (being established by the same regulatory change process). While there is a transition period of four months in which the industry must create a robust ELAM, to meet this, the industry may assume the outcome of the consultation and get to work on this early.

14. We are concerned that even if an ELAM is available within the time that the regulatory changes come into effect, EDB's will not have time (and in many cases even the data, tools, or resources) to effectively and appropriately implement an ELAM. Therefore we can expect a period of time where 10kW exports have to be accepted, regardless of impact on networks, which raises concerns.

Increased capacity utilisation

15. While increasing voltage limits to +/-10% does effectively create more capacity in distribution networks, it does not automatically follow that export limits should be doubled to 10kW. The number 10 is common to both these limits, however PowerNet has concerns that there has been insufficient analysis to be credible. We would encourage the Authority to demonstrate that 10kW is a robustly determined export limit under the new +/-10% operating environment.

16. It is our view that many of the justifications provided by the Authority are loosely relevant factors that may have benefits if other significant changes are also in place. For example, increased resilience sounds good however only materialises in insignificant proportions for customers that also have batteries. In addition, the rate a customer can export to the network is not directly relevant to what may be stored in a battery to contribute to resilience.

17. We would ask the Authority to ensure all these factors have been considered before implementing regulatory change.

First in first served

18. The 5kW limit adopted widely in NZ reflects not only the +/-6% voltage limit environment but also the reserving of capacity for equitable access.

19. PowerNet is progressing modelling to understand network hosting capacity. Early results suggest that much of the network becomes congested where 20-30% of customers install 10kW solar systems. However we have not yet determined the range (and variance distribution) of hosting capacity across the networks including worst case lower hosting capacity areas.

20. This suggests that in some locations we may reach congestion reasonably quickly (e.g. South Australia is already at 45% penetration while the trend in NZ is towards larger installations) and a guarantee of 10kW becomes a first in first serve approach to hosting capacity allocation.

21. The network is paid for by all connected customers and they should all have equitable access to the network including DG hosting capacity (which EDBs are unable to set line charges for).

22. If this is the desired approach we would question why the Authority seek to establish a limit of 10kW? We are concerned that the lack of robust analysis has led to a predetermined outcome that aligns with existing regulation thresholds. Regulation of the ELAM assumes that EDBs already have full modelling capability to assess network DG hosting capacity, so we therefore question the need to state any separate limit. What would be the process under this regulation in future when congestion is reached or now if congestion already exists.

Summary

23. PowerNet favours an approach whereby customers may equitably access the capacity that is available. In our view, an optimal approach would be to allow customers to access whatever hosting capacity is available in the local network, and when constraints arise ensure that DG hosting capacity for new connections is able to be allocated equitably as hosting capacity decreases (due to increasing competition for network access).

24. We encourage the Authority to consider further work to provide confidence that it will support equitable DG hosting capacity allocation as required in the future. This may include writing inverter functionality and future control establishment into Part 6 as terms of DG connection approval.

25. We note again to the Authority the excessive number of consultations (at the time of writing there are 10 open consultations over an 8 week period) that results in a perception of disingenuous engagement, rather than a more wholistic approach to the changes required for the sector to step-change through electrification. It is difficult for the industry to respond constructively and proactively with this level of feedback sought from the Authority.

26. We also encourage the Authority to ensure any timeframes for changes to regulation are appropriate and do not place undue burden on EDBs.

27. While we support the intent of the Authority to seek a more resilient electricity supply, more efficient network management and lessen the need for costly infrastructure, we believe further analysis is required to understand the limit being proposed, and without concurrent workstreams around storage and the future implications for congestion and power quality.

28. PowerNet is committed to ensuring there is a consistent application process for consumers and ultimately ensuring a safe and efficient power supply that lowers costs to the consumer. We are proactive in providing a clear path for DG seekers to enable electricity to be consumed closer to its point of generation, which reduces the need for maintenance and repairs across our infrastructure.

29. We thank the Authority for the opportunity to submit through this consultation.

For more information please contact:

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Appendix B Format for submissions

Maximising benefits from local generation

Submitter	Michelle Fowler-Stevenson
Submitter's organisation	**PowerNet Limited**

Please send your submission to connection.feedback@ea.govt.nz by **5pm, Wednesday 19 November 2025**

Questions	Comments
Q1. What are your views on the proposal to set a default 10kW export limit for Part 1A applications?	The modelling we have completed to date indicates that export limits are in many cases essentially a mechanism for equitable long-term allocation of hosting capacity. New connections of exporting DER at 10kW are often not going to cause immediate congestion/constraints on the network. However, what it does do is weight network hosting capacity allocation heavily toward a first-in-first-served methodology. Once congestion is reached minimal additional exporting DER will be able to be accommodated without upgrading the network. The consultation paper does not appear to sufficiently appreciate these implications. At this point network upgrades are of course possible, but not likely to be cost effective and we will have a significantly inequitable hosting capacity allocation, considering all consuming customers pay for the network. Certainly, an incremental cost of upgrades approach to the next connecting customer is unfair, as is spreading cost across all consuming customers that do not have DG installed. We believe the EA should determine what happens at this point before making 10kW exports mandatory. If the intent is to move to a first-in-first serve approach and future connections miss out, then the EA should state that they believe this is acceptable in order to accelerate exporting DER uptake. We also note the first constraint reached (esp. under the 230V±10% voltage limits) will often be a thermal limit rather than a voltage limit and as such inverters will not automatically curtail to prevent network overload (they cannot sense upstream thermal constraints locally). Where voltage limits are reached as the first constraint, PowerNet are again concerned

	that while volt-watt response will curtail exports to limit overvoltage the allocation of hosting capacity may be significantly inequitable. In the extreme scenario one customer may export at their full rated export level pushing up voltage that impacts customers down the street causing significant curtailment of their exports (e.g. dependant on how close they happen to be connected to the distribution transformer). PowerNet believe an ideal outcome would be to learn from Australia and move toward a 'flexible exports' approach rather than simple increased but fixed export limits that create a first in first served approach without future proofing for future equitable hosting capacity allocation. The CSIP-Aus (based on IEEE2030.5) protocol enables connectivity with inverters and curtailment using a remote signal allow congestion management by curtailing export under an equitable allocation methodology. Ensuring inverters are CSIP-Aus compatible as well as establishing appropriate connectivity agreements at the time of connection would avoid creating a significant future challenge of trying to retrospectively establish these systems. Given the overlap between the Australian and New Zealand markets and standards the CSIP-Aus protocol would seem to be a reasonable minimum requirement. With this future proofing in place 10kW export limits could be implemented with much less risk of future regret and potentially (static) export limits could be removed altogether. Despite the above-mentioned analysis, PowerNet recognises not all networks are built to the same standards so the EA must be careful not to assume all LV networks have hosting capacity equivalent to the examples it has assessed in setting export limits to 10kW. An example is the 8kVA connection capacity offered on PowerNet managed networks with reduced line charges on condition that customers have a 32A circuit breaker installed on their meter/distribution board. The LV voltage limits have increased, and this does unlock additional network capacity, including export hosting capacity. It does not directly follow that exports hosting capacity has doubled. This raises the question of why we stop at 10kW when the first customer can likely connect larger systems. The EA paper describes 5kW limits as an arbitrary blanket approach while proposing 10kW as a blanket default that is equally arbitrary.

	It is proposed an ELAM may be used to justify lower limits. At the same time the EA notes not all EDBs have LV visibility and acknowledges this is often due to a lack of data availability. It follows that these EDBs will not be able to fast track an assessment of hosting capacity for their networks and will essentially be forced to approve 10kW connections without due assessment. This is concerning. Also, an ELAM does not currently exist, and the EA should surely allow reasonable notice for its development ahead of mandating its use (where the alternative is taking undue risk with network power quality). Four months is a very short timeframe for the industry to collaborate to create the standard, publish it for use and for EDBs to implement it and to reflect results in their standards and processes. Where an ELAM is implementable, it is likely fairly bespoke limits for exporting DER connections are able to be determined (although this may require additional resource to process) and a mandatory limit at a fixed level may not be needed or appropriate. Overall, PowerNet view the sequencing and rapidity of regulatory updates and proposals related to moving to 10kW export limits as the most concerning consultation process to date.
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?	No concerns. Export from the ICP is more important than what the inverter can supply behind the meter as it is the impact on the network that is the EDBs main concern. We note that we must assume that the full nameplate kW (as max of energy source or inverter ratings) may be exported from the ICP from time to time due to full generation coinciding with minimal consumption unless there is an export limiter installed. Where export limiters are in place we believe these can be relied on but if not export potential and name plate capacity should be assumed equal.
Q3. There are requirements for distributors in Proposal A1. Which of these do you support, or not support, and why?	PowerNet is already progressing LV visibility work with a focus on hosting capacity (comments on ELAM below for Q4). If suitable timeframes are adopted this would certainly help compliance however, we are concerned that some EDBs will struggle to meet these requirements and implementation will be messy.

	Publishing a signed statement by the CEO stating ELAM compliance seems strange and unnecessary.
Q4. What are your views on the proposal for industry to develop an export limits assessment methodology?	PowerNet see it as unnecessary. EDBs should develop the means to understand their network capacity promptly (to the extent it is in their control considering data availability), but the standardisation of process is not necessarily adding value, though the current guideline from the EEA is useful. PowerNet is more concerned with equitable allocation of hosting capacity and future proofing to allow inverter control to this end when networks do become congested in future.
Q5. What would you do differently in Proposal A1, if anything?	First future proof inverter control (aligned with a philosophy of interoperable and open communication protocols). Ensure EDBs have the means to understand congestion on their networks. Once the above is completed it is likely blanket fixed export limits are unnecessary.
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?	The latest standards should generally be adopted promptly when updates are made.
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?	PowerNet recently adopted the Australia A region standard for voltage response settings in our distributed generation standard and have reflected this in our DG connection process and webpage content. We felt we had to make a rapid decision to adopt an updated standard as the new voltage limits came into effect. Rather than invent our own settings we hoped to align with a national standard however unfortunately there was no such standard at the time we made our decision. We adopted the Australian A region volt response settings standard as: - they were designed for the same upper voltage limit that NZ has now moved to and seemed to be the only widely available setting standard that stands a chance of becoming the NZ standard.

	- the EA have proposed to make Australia A settings mandatory - there is the benefit that these settings are often default settings in inverters that are common to the Australian market so would likely improve settings compliance. Again, the regulatory update process followed by MBIE and EA has been concerning. Volt limit changes were implemented quickly while advising a vague 'Q3' effect date that did not give the industry sufficient time to prepare. PowerNet believe the EEA would have provided (still may provide?) recommended settings for EDBs to standardise with that may be more suitable for NZ. At this point it is unclear whether this option has been shut down or whether the EA will accommodate this in their decision. PowerNet believe customers should not have to react to multiple changes to inverter setting standards that come at a cost and inconvenience to them where it can be avoided. While our standard has now been updated, we have advised customers they may wish to wait until there is more certainty on a longer-term national inverter voltage response setting standard, noting that PowerNet would align with whatever national standard arises, and that minimal curtailment would affect customers currently due to network operation parameters in place until now.
Q8. What would you do differently in Proposal A2, if anything?	Given the voltage limit changes are already in effect, it seems the EA have essentially forced this decision in a consultation paper. It is acknowledged that PowerNet did not have a better alternative standard available to adopt (as noted we preferred to align with a national standard rather than create our own). However, coordination of regulatory changes with the industry's ability to adapt appears to have failed to lead to best outcomes for customers. It would have been better to allow the industry (as experts) to develop a standard for these settings specific to New Zealand, as proposed with the ELAM/BELAM, with sufficient time for this to be developed. Instead the proposal indicates the direction of travel against the above ideal (at the time volt limit change came into effect), but with the decision being too late regarding the volt limit changes coming into

	effect. If standardisation is to be required (which in itself we support) it needed to be communicated prior to the volt limit changes and preferably supporting the industry development of the standard with sufficient time allowed. We acknowledge the EA does not control all regulatory change involved.
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
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?	PowerNet views a standard methodology for determining bespoke limits as unnecessary given it is just a matter of competent people building an accurate model and interpreting the results; there aren't multiple divergent options to choose from in determining available capacity. Perhaps the application of certain principles would be more useful to avoid overly cautious assumptions, prevent withholding available capacity, being transparent with results and providing least cost upgrade options where appropriate. If a standard is to be required, PowerNet commend the approach of having industry experts collaborate to develop the standard to which all EDBs must then align.
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?	PowerNet view it as obvious to share results with the applicant, however it is unlikely they want too much detail regarding method beyond the results as it affects their application. If deviation from the BELAM is allowed, why do we have one?
Q13. Do you agree it is fair and appropriate that where distributors set export limits for Part 2 applications, applicants	It seems appropriate that a customer would have recourse if they were not given appropriate capacity information, pricing and access to the network. It is not clear how a customer would be able to determine

can dispute the limit? If so, what sort of process should that entail?	if they are not given accurate information regarding available capacity.
Q14. What would you do differently in Proposal B, if anything?	As above making the principles for responding to applications clear would seem to be the more valuable approach. The BELAM does not seem to be adding value to current process.
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?	The latest standards should be adopted promptly when updates are made.
Q16. Do you consider the transitional arrangements workable regarding requirements and timeframes? If not, what arrangements would you prefer?	Finalising an ELAM is different to EDBs' ability to implement it. PowerNet request as much warning as possible of the actual dates we are expected to work to.
Q17. What are your views on the objective of the proposed amendments?	As above
Q18. Do you agree the benefits of the proposed amendments outweigh their costs? If not, why not?	PowerNet does not consider it so much an issue of cost benefit but of concern of due process and equitable approach.
Q19. What are your views on the Authority's estimate of costs of lost benefits from a 5kW export limit?	There is a lot of uncertainty as to the rising cost of electricity supply and pricing methodologies and if and how solar saturation impacts solar installations in future.
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?	As above
Q21. Do you agree the proposed Code amendments are preferable to the other options? If you disagree, please explain your preferred option in terms	As above

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?	No concerns
Q23. Do you have any comments on the drafting of the proposed amendment?	It reads like EA have started with 10kW exports as an outcome and found as much supporting evidence as it could find.