

5 December 2019

Submissions
Electricity Authority
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INTEGRATED HOSTING CAPABILITY INTO SMALL-SCALE DISTRIBUTED GENERATION CONNECTIONS

Unison welcomes the opportunity to provide a submission to the Electricity Authority (Authority) on *Integrated hosting capability into small-scale distributed generation connections*.

Unison supports the Authority's approach to incorporating the EEA's Guidelines into the Code through mandating the adoption of specific advanced power quality modes of operation in inverters. To enhance the hosting capacity of distributors' networks the Authority is proposing to change the eligibility criteria for distributed generation applications that seek to use the Part 1A process for connection.

This change would require connection applications made under Part 1A to:

- Use an inverter that is capable of implementing specific power quality modes. The advanced power quality modes are included in the inverter standard AS/NZS 4777.2:2015, but only as optional modes.
- Comply with maximum export power criteria specified by the distributor in its congestion management policy.

Unison supports the proposed change, and agrees with the issues considered by the Authority:

- Clause ID(a) of Schedule 6.1 currently references a superseded standard. We agree by updating the referencing to AS/NZS 4777.1:2016 the uncertainty of which version applies will be removed.

Ideally the wording would ensure that the clause remains relevant to any future standard that supersedes AS/NZS 4777.1:2016.

- The change appears to be a low cost, high return opportunity to maximise low voltage network hosting capacity. It is prudent that the Authority is providing consideration to future proofing the impact of emerging technologies. We agree there is likely to be

emerging clusters of new technology adoption in some areas, giving rise to local congestion issues; and the rapid uptake of new technologies, like electric vehicle ownership.

Unison supports that the inverter must be capable of enabling two advanced power quality modes; *volt-var mode* and *volt-watt mode*. By making these *volt response modes* mandatory for all Part 1A applications the Authority is future proofing against the inherently dynamic nature of networks.

Although Unison agrees with the proposed amendments, we would also like to submit that in certain circumstances consumers could be generating far less than their install capacity due to the *volt-watt mode*. Depending on how the settings are configured, at the default NZ volt-watt settings this could happen even before voltage congestion that exceeds statutory limits occurs, and even if they are self-consuming all of the generation output at that moment. We are happy to discuss this view in more detail.

We also recommend that an individual distributor has the ability to mandate under Part 1A other volt response modes permitted under the current standard (AS/NZS 4777.1:2016) to account for technological advancements.

- The Part 1A process could better address connection applications to parts of the network subject to export congestion. We agree with the proposal to make it clear that a distributor can legally impose a maximum export power limit. An enforced limit would assist the sharing of scarce hosting capacity of an identified part of the network amongst current and future applicants' distributed generation.

Responses to the Authority's specific questions are attached. For any questions on this submission, please contact Amanda Watson, Senior Regulatory Affairs Advisor by phone (06) 873 9372 or email Amanda.Watson@unison.co.nz.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'Nathan Strong' with a stylized flourish at the end.

Nathan Strong
GENERAL MANAGER, BUSINESS ASSURANCE

Appendix: Responses to Electricity Authority's Questions

Question	Response
Q1. Do you agree the issues identified by the Authority? If not, why not?	Yes
Q2. Do you agree with the proposals identified by the Authority? If not, why not?	<p>Yes. We support:</p> <ul style="list-style-type: none"> the updating of the referencing to AS/NZS 4777.1:2016. The uncertainty of which version applies will be removed. It would be prudent to consider wording to ensure that the clause remains relevant to any future standard that supersedes AS/NZS 4777.1:2016. - that the inverter must be capable of enabling two advanced power quality modes; <i>volt-var mode</i> and <i>volt-watt mode</i>. It is prudent that the Authority is providing consideration to future proofing the impact of emerging technologies. We recommend that a distributor also has the ability to mandate under Part 1A other volt response modes permitted under the current standard (AS/NZS 4777.1:2016) to account for technological advancements. - the proposal to make it clear that a distributor can legally impose a maximum export power limit. An enforced limit would assist the sharing of scarce hosting capacity of an identified part of the network amongst current and future applicants' distributed generation.
Q3. Do you agree with the objectives of the proposed amendment? If not, why not?	Yes
Q4. Do you agree the benefits of the proposed amendment outweigh its costs? If you don't agree, please explain your reasons.	<p>The change appears to be a low cost, high return opportunity to maximise low voltage network hosting capacity.</p> <p>The amendment is likely to encourage applicants to use the simpler, faster and less costly Part 1A connection process, and therefore be incentivised to use an inverter that is capable of implementing the two specified optional power quality response modes in addition to the</p>

	mandatory capabilities set out in AS/NZS 4777.2:2015.
Q5. Do you agree the proposed amendment is preferable to the other options? If you disagree, please explain your preferred option in terms consistent with the Authority's statutory objective in section 15 of the Electricity Industry Act 2010.	Yes.
Q6. Do you agree the Authority's proposed amendment complies with section 32(1) of the Act? If you don't agree, please explain your reasons.	Yes.
Q7. Do you agree with the drafting of the proposed amendment? If not, why not?	Unison agrees with the drafting, subject to a review of the final drafting.