



17 July 2025

Submissions
Electricity Authority
Level 7, Harbour Tower
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Wellington

By email: fsr@ea.govt.nz

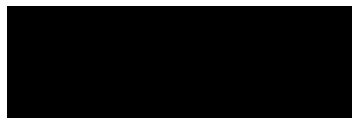
Subject: Consultation Paper- Promoting reliable electricity supply: Voltage-related Code amendment proposals

Contact welcomes the opportunity to provide comment on the Authority's consultation paper above.

Contact agrees that there is a need for code changes to address voltage related grid issues due to the investment and connection of new technology generation, but consideration must be given to the selection of these technologies and the ability of existing technologies to meet those changes. Specifically, mandating grid forming inverters addresses the issues identified in the proposal without the need to focus on existing excluded generating stations that have technologies that may never be able to comply with the proposed changes.

Please see our feedback to the specific questions in Appendix A for more detail. Should you have any questions on the above, please let us know.

Yours sincerely



Gerard Demler

Transmission Manager, Contact Energy

Appendix A

Submitter	Contact Energy
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Questions	Comments
Q1 Do you agree the issues identified by the Authority are worthy of attention?	Yes, we agree that the grid will experience issues in the future with the increased use of grid following inverters associated with new renewable energy generation connections, but there is no mention or consideration given to grid forming inverters in this problem definition. We understand that inverter manufacturers can enable this enhanced capability by firmware/control upgrades at a competitive cost. Consideration should be given to making this capability mandatory in the code for new generation connections and existing connections that have that upgrade capability. This approach is directly addressing the issue identified.
Q2 Do you agree with the objective of the proposed amendment? If not, why not?	<p>Somewhat agree. In practical terms the ability of embedded generation being able to meet the reactive power requirements of the code (or a subset thereof) is governed by the operating voltage range at 33kV, and power quality requirements within the local network. As mentioned in the paper, generators are often bound by contractual terms in the distributor's connection agreement with reference to voltage range limits and/or power factor, so there is no actual capability to do anything above what's agreed.</p> <p>With regards to voltage fault ride through (VFRT), the technology of an excluded station can limit its ability to comply with the code regardless of any performance upgrades, and an uplift in MW capability does not imply that the plant is any more capable of being compliant. We support the alternative of a high-level assessment of VFRT compliance rather than in-depth studies; this would result in the same outcome but with a significant cost reduction.</p>
Q3 Do you agree we have correctly identified the benefits and costs of the proposed amendment?	Somewhat agree. We think the benefits have been overestimated. The grid scenario(s) where a generator may be VFRT non-compliant are often extreme, and therefore the resultant percentage of time is small. The risk of sympathetic tripping can also be marginal given the highly locational nature of a voltage deviation event, therefore the cumulative additional reserve costs can be minimal.

	<p>With regards to avoided grid investment costs we are not aware of any non-transmission solutions that have been approved over major capex reactive power grid investments to meet grid scale reactive power needs. This indicates that these investments would proceed regardless of whether excluded generating stations are compliant or not. In addition to this the system operator has not signaled the need for voltage support ancillary services in the future so listing these grid level options as a deferred or saved cost is a very subjective approach.</p> <p>There is also a statement that the costs of VFRT studies are not additional to what is already required by the distributor. This statement is inaccurate as Part 8 compliance is a generator requirement, so these studies are not considered by the distributor, and our agreements do not have that requirement. As mentioned above, we propose a high-level assessment rather than in-depth studies that would result in the same outcome.</p>
Q4 Do you agree the benefits of the proposed amendment outweigh its costs?	Please see our response to Q3.
Q5 Do you agree the proposed amendment is preferable to 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.	Somewhat agree. Please refer to our response to Q1 referencing grid forming inverters as an option.
Q6 Do you agree the proposed amendment complies with sections 17(1) and 32(1) of the Act?	Somewhat agree.

<p>Q7 Do you have any comments on the drafting of the proposed amendment?</p>	<p>Yes. Remove 8.21 4(b) and Schedule 8.3 5 (2D)(b). A station can increase its output, but its technology remains the same with respect to meeting VFRT requirements, and/or its contracted voltage or power factor range has remained unchanged regarding agreed reactive power obligations. Remove Schedule 8.3 5 (2F) as it stands as this is not applicable based on our Q3 response above, and replace with or wording similar to <i>“When preparing the information required under subclause (2E), an embedded generator is not required to undertake and provide power system studies if the technology of this existing generation allows for a high-level assessment to determine compliance”</i></p>
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