

30 June 2026

Electricity Authority
Level 7, AON Centre
1 Willis Street
Wellington

Vector Limited
110 Carlton Gore Road
PO Box 99882
Newmarket
Auckland 1149
+64 9 978 7788 / vector.co.nz

By email: fsr@ea.govt.nz

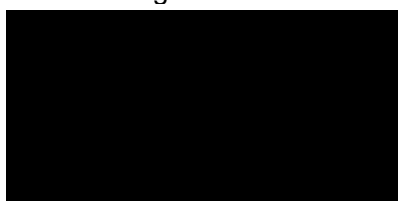
Promoting reliable electricity supply: Options to address a harmonics issue

1. Vector welcomes the opportunity to submit on the Electricity Authority's consultation paper, Promoting reliable electricity supply: Options to address a harmonics issue. No part of this submission is confidential. We are happy for it to be published in full.
2. This submission does not respond to each consultation question individually. Instead, we provide a short, high-level response focused on the options that should be progressed for further consideration and the need for any future framework to be practical, proportionate and nationally consistent.
3. Vector agrees that the current arrangements for managing harmonics are no longer fit for purpose. NZECP 36:1993 is outdated and does not adequately reflect the modern power system, including the increasing role of inverter-based resources, distributed generation, BESS and other power-electronic technologies.
4. Vector considers that Options 1 and 3 should remain in the shortlist for further consideration.
5. Option 1 appears to offer the clearest pathway towards a more standardised and nationally consistent approach across New Zealand. We support further consideration of a framework that better aligns with modern standards and provides greater consistency across transmission and distribution networks, provided any requirements are implemented in a proportionate and practical way.
6. Option 3 should also remain under consideration, particularly if it enables New Zealand to retain and update a familiar harmonics framework while addressing the known shortcomings of NZECP 36:1993. However, we recognise that this option may take longer and require careful technical development to avoid simply embedding another bespoke standard that becomes difficult to maintain over time.
7. Of the three options, Vector considers Option 2 to be the least preferable. While a non-mandatory, guidance-based approach may provide flexibility, it does not appear to deliver the level of standardisation across New Zealand that is needed. A framework that relies mainly

on guidance risks different approaches being applied across networks, which could increase uncertainty for connecting parties and lead to inconsistent outcomes for consumers and industry participants.

8. Vector supports harmonics requirements being proportionate to the size, type and likely harmonic risk of the relevant connection. We would be concerned if strict or overly prescriptive requirements were mandated in a way that imposed significant cost across the sector without clear evidence of benefit. In particular, requirements for detailed studies, monitoring or mitigation should be targeted to situations where there is a credible and material harmonics risk.
9. Similar caution is needed in relation to any harmonics measurement database. The questions on this topic appear to be directed mainly at customers, developers and other parties seeking access to harmonics data, rather than at distributors such as Vector. From Vector's perspective, any database should have a clearly defined purpose, appropriate privacy and cyber security protections, and should not create unrealistic expectations around data quality, completeness, interpretation or compliance.
10. If a database is progressed, Vector considers a staged and proportionate approach would be important. Any requirements to collect, curate, publish or respond to harmonics data could create material cost, particularly if applied broadly across distribution networks. Those costs would ultimately be borne by consumers unless the database delivers clear and demonstrable benefits.
11. In summary, Vector supports further consideration of Options 1 and 3, with a preference for an approach that delivers greater national consistency, supports efficient connection of new technologies, and avoids unnecessary cost. Vector does not support Option 2 being preferred, because it is unlikely to achieve the consistency and certainty needed across New Zealand's electricity system.

Kind regards



Bas van Esch
Market Regulation