

30 May 2023

Submissions
Electricity Authority
Level 7, Harbour Tower
2 Hunter Street
Wellington

By email: fsr@ea.govt.nz

Consultation Paper - Issues Paper—Review of common quality requirements in Part 8 of the Code

Contact welcomes the opportunity to provide comment on the Authority's consultation paper above. We generally agree that changes do need to be made to Part 8 to enable new technology generation. Please see the comments below to specific references in the consultation.

1. Excluded Generating Stations

The consultation refers on a number of occasions to the apparent incentive to build generation that is less than the 30MW threshold (excluded generation station) to avoid Part 8 obligations. Contact disagrees with this assumption. The inputs into the size of a proposed project are driven by land and fuel availability, and network capacity. Generation connected within a distribution network may be limited to less than 30MW due to network constraints and the cost to remedy those constraints. If the proposed project is greater than 30MW then the Part 8 obligations are covered off as part of the procurement scope. Perhaps there is an option to put in place an intermediary step which has a subset of the Part 8 requirements for connections lower than 30MW and larger than a practical minimum MW value.

2. Frequency and Voltage Performance and Management

There is also reference made to frequency and voltage performance of inverter-based technologies, or lack of. The performance of these technologies is equivalent to (or can exceed) conventional technologies dependant on their location of connection with respect to system strength. The assumption is that forecasted system strength is expected to decline. This forecast needs to consider that existing hydro generation will remain on the system, and the increase in geothermal generation projects, which contribute positively to both system frequency and voltage performance complimenting inverter-based technologies. It should also be noted that not all inverter-based technologies will have an adverse effect on frequency, a BESS for example can offer services to maintain system security with respect to frequency management.

Reference is also made to applying deadbands and their negative effect on normal frequency management. These are applied to larger thermal and geothermal units to avoid adverse wear and tear degrading the life of the unit. Unlike fast acting hydro plant, these larger units are not designed to respond to momentary frequency fluctuations. The issues of deadbands have been raised in past consultations (refer Normal Frequency Management – Strategic Review 2017) and we are unaware of any reason to revisit those decisions. If there are concerns around maintaining frequency within the normal band in the future, then consideration should be given to increasing the current MFK bands.

3. Harmonic Obligations

Contact agrees that harmonic standards require updating for both existing and new connections. With respect to harmonic allocations for new connections, these can be quite prohibitive and impractical to comply with if there is already a high level of background noise at the point of connection and our view is that allocations should be on a case by case basis.

4. Information Sharing

Contact agrees that increased sharing of information would give more visibility to network operators in managing their networks. However, it is not clear that this increase should apply to routine testing of individual assets at wind farm generation sites, given the relatively small size of an individual turbine units and its negligible effect on system security. We agree that obtaining propriety information for new technologies can be difficult at present, but this issue will diminish over time as these technologies become more common. Mandating the supply of this information publicly may limit competition for supply, as suppliers may not be willing to submit tenders to disclose, which will increase overall costs.

5. Existing Code Review and Application

As mentioned above, Contact agrees that Part 8 as it stands may need an overhaul to fully enable and recognise the capabilities of new technology generation and to remove existing ambiguities or issues.

The ambiguity over connection types does need to be addressed. Point of connection is currently interpreted on a case-by-case basis with regards to embedded generation connections and requires more clarity, as often this type of generation connection is restricted in meeting Part 8 voltage obligations due to distributor power quality standards.

There is also the need to address clause 8.23 regarding the voltage ranges that reactive power is required to either export or import. This range is impractical and has resulted in inefficient overbuild of generator capability and tap changer range, the latter being at risk of failure.

Contact would also encourage the review of clause 8.19 (3) relating to under frequency ride through in the South Island and have it increased inline with North Island requirements. This is a legacy setting based on hydro generation capability and will be an impediment into investment in newer technologies.

Finally, if code changes are anticipated then these should not be applied retrospectively, as existing generation stations were designed and built to the code as it applied then, not what may be anticipated in the future.

Should you have any questions on the above, please let us know.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Gerard Demler".

Gerard Demler

Transmission Manager, Contact Energy