



Electricity Authority
By email: fsr@ea.govt.nz

17 June 2025

Frequency-related Code amendment proposal

We welcome the opportunity to submit on the Electricity Authority's (Authority's) consultation *Frequency-related Code amendment proposals* published 6 May 2025. This submission is from Transpower in its role as the system operator. We strongly support attending to these common quality-related Code changes. Alongside these, we encourage the Authority to urgently progress development of a frequency management strategy in the next year's programme to ensure we meet the needs of the future power system and take advantage of new technologies.

We support the decision to lower the excluded-generator threshold to 10MW

Clarity on frequency performance settings is critical to manage system stability and reliability for consumers.¹ Transpower supports the option to lower the excluded generation threshold for frequency obligations from 30MW to 10MW. While our prior analysis supported lowering the threshold to 5MW, we consider the decision for 10MW to be pragmatic.

Lowering the threshold is an effective means to ensure the responsibility for normal frequency management is shared equitably. Particularly, requiring generators from 10MW to 30MW capacity to remain connected during frequency excursions (8.19 of the Code) is likely to have a significant positive impact on the cost of managing contingencies on the power system. Without this contribution, we would need to schedule and dispatch more instantaneous reserve capacity to manage contingent events.

We also agree with the Authority's proposal to "*avoid imposing uneconomic upgrades on generators with existing generating stations that export 10MW or more but less than 30MW*" where such a generator "*notifies the system operator that the generating station is not able to comply with these provisions, via the asset capability statement for that generating station.*"

Looking forward, it is important to develop further technical understanding of whether frequency-related asset owner performance obligations should or could apply to energy storage systems when they are idle (neither charging nor discharging).

¹ [Transpower submission Common Quality Requirements in the Code](#), August 2024

We support the Authority's decision to introduce a dead band of $\pm 0.1\text{Hz}$.

Our prior analysis² led us to recommend implementing a dead band of 0.1 Hz for new generating units connecting to the power system. We also considered that generally this dead band should apply across all technologies.

If the inherent deadband of a particular technology is wider than 0.1 Hz, the system operator can consider dispensations as a way to manage this condition. As the Authority identifies in the paper, we consider a $\pm 0.1\text{Hz}$ maximum permitted dead band could maintain the effectiveness of the existing frequency keeping band of $\pm 15\text{MW}$. This will, however, depend on broader system conditions and future changes in generation.

The System operator's view is that once the new clause takes effect, past arrangements under Technical Code 5(1)(d) on setting the deadband will be revoked.

We encourage the Authority to progress a strategy for normal frequency management and review its FSR roadmap

The Authority's options are the 'least regrets' approach to maintaining current normal frequency management standards in the short-term. Alongside these, the development of a frequency management strategy should be progressed in the next year to ensure we meet the needs of the future power system.

We are seeing increased intermittent generation variability and reducing system inertia, plus the introduction of new technologies which either provide less frequency support or could provide more support than market settings currently enable and reward.

Implementing solutions to emerging challenges in frequency management are likely to require lengthy market and tool design. A frequency management strategy would ideally identify frequency management issues and develop a reform roadmap that ensures solutions meet the changing needs.

In the context of managing inertia, frequency management changes were originally assessed as less urgent in the Authority's FSR Roadmap. However, the FSR Roadmap is now nearly three years old. We recommend the FSR Roadmap be reviewed and, if necessary, workstreams reprioritised in response to emerging power system conditions. We also highlight the need for close integration of the Authority's common quality and market development activities, to balance regulatory obligation with market incentives.

Yours sincerely

Katherine Moore
Head of Power Systems

² [Future Security and Resilience – Review of Common Quality Requirements in the Code, Paper 1, Appendix D](#)

Appendix A- Response to Questions

Submitter	Transpower NZ Ltd.
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1. Lower the 30 megawatt (MW) threshold for generating stations to be excluded from frequency-related asset owner performance obligations and technical codes in Part 8.

Questions	Comments
Q1.1 Do you support the Authority's proposal to amend the Code to require smaller generating stations to comply with frequency-related asset owner performance obligations?	<p>Yes.</p> <p>The system operator strongly supports the Authority's proposal to amend the Code to require smaller generating stations to comply with frequency-related asset owner performance obligations. In future, there will be more generating stations smaller than the present excluded generating station threshold. Lowering this threshold provides the system operator the visibility and assurance that the smaller generating stations can ride through an under-frequency event, reducing sympathetic tripping risk and potential AUFLS events, and reducing the need to procure more reserve. In addition, the power system having more stations that can support frequency lessens the burden on larger stations to regulate system frequency.</p>
Q1.2 Do you consider the 'legacy clause' provisions in the Code amendment proposal should apply to a generating station for a finite period of time (eg. 10 years)? Please explain your answer.	<p>5.60 (d) (ii)</p> <p>We do not support applying the "legacy clause" <i>for a finite period of time</i> (eg. 10 years). The asset's capability to become compliant with the performance obligations does not depend on time. It depends on whether the asset has been modified to improve performance, hence meeting the obligations.</p>

Questions	Comments
<p>Q1.3 Do you see any unintended consequences in making such an amendment? Please explain your answer.</p>	<p>It is not clear whether this question applies to the proposed amendment in Q1.2 or Q1.1. We have assumed it applies to Q1.1.</p> <p>Whilst we do not think there are unintended consequences in making the amendment to require smaller generating stations to comply with frequency-related asset owner performance obligations, the amendment as it reads in this consultation paper may be confusing as it applies a different excluded generation threshold to the Fault Ride-Through obligations. We note that the consultation paper on the voltage obligations has since been published and recommends the same change in excluded generation threshold for Fault Ride-Through. We recognise there are timing issues.</p>
<p>Q1.4 Do you agree the proposed Code amendment is preferable to the other options identified? If you disagree, please explain why and give your preferred option in terms consistent with the Authority's main statutory objective in section 15 of the Electricity Industry Act 2010.</p>	<p>Yes.</p>
<p>Q1.5 Do you agree with the analysis presented in the Regulatory Statement? If not, why not?</p>	<p>Yes. However, we note that part of the Regulatory Statement refers to the work that is ongoing with the System Operator on a new system operation document that can be incorporated by reference in the Code. Paragraph 6.25 of the consultation document suggests that this document will explore options for a simplified testing approach. As system operator we are interested in exploring such options but these are not included in the proposed document mentioned.</p>

Questions	Comments
	With respect to the system operator's day-to-day work, we expect there to be an increase in the costs of providing engineering assessment, monitoring and compliance activities as a result of these changed obligations. We will work with the Authority and the industry to mitigate the impacts of these increased costs (for example through considering a simplified testing approach.)
Q 1.6 Do you have any comments on the drafting of the proposed amendment?	No – only as mentioned above in relation to the Fault Ride-Through obligations.

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2. Set a permitted maximum dead band beyond which a generating station must contribute to frequency management and frequency support

Questions	Comments
Q2.1 Do you consider there to be any type of generation technology that cannot, and never will be able to, comply with a dead band of $\pm 0.1\text{Hz}$? Please explain your answer.	Yes. We anticipate geothermal technology will have difficulty meeting this obligation.
Q2.2 Do you support the Authority's proposal to amend the Code to specify a permitted maximum dead band of $\pm 0.1\text{Hz}$, beyond which a generating station must contribute to frequency management and support?	We strongly support the proposal to amend the Code to specify a permitted maximum dead band of $\pm 0.1\text{ Hz}$. This proposal should increase the number of generating units that have the capability to assist frequency regulation within the normal band. With this change, we expect better frequency quality and less burden on frequency keeping and other generating units that have a smaller dead band.
Q2.3 Do you see any unintended consequences in making such an amendment? Please explain your answer.	Yes. As there is no "legacy clause" related to this proposal, system operator is expecting more dispensation applications.
Q2.4 Do you agree the proposed Code amendment is preferable to the other options identified? If you disagree, please explain why and give your preferred option in terms consistent with the Authority's main statutory objective in section 15 of the Electricity Industry Act 2010.	Yes.
Q2.5 Do you agree with the analysis presented in the Regulatory Statement? If not, why not?	Yes.
Q2.6 Do you have any comments on the drafting of the proposed amendment?	No.