

11 November 2024

Future Security and Resilience Group
Electricity Authority
By e-mail: fsr@ea.govt.nz

Dear FSR

Re: Part 8 Code Amendment Proposal - Part 1

Lodestone Energy welcomes the opportunity to provide feedback on the Electricity Authority's consultation on the Part 8 Code Amendment Proposal - Part 1. This letter forms the entirety of our submission and includes some brief background on Lodestone.

Lodestone Energy was founded in 2019 with the mission to "harness the sun's energy to power Aotearoa's zero carbon future". We were the first company in NZ to deliver utility scale solar bid into the market and currently have two operating solar farms near Kaitaia and Edgecumbe. We have two more farms under construction in Waiotaha and near Whitianga, with a planned pipeline to deliver another nine sites over the next few years. Our position as an early mover has given us some unique insight into the challenges of integrating solar with the existing grid, in particular technical requirements when embedded within a distribution network.

Our specific feedback to your questions is outlined in the following pages.

Kind regards,



Peter Apperley
General Manager Engineering

FSR-001: Remove the exclusion for wind-powered generation from periodic testing requirements

Questions	Comments
<p>Q1.1. Do you support the Authority's proposal to apply the periodic testing requirements in Appendix B of Technical Code A of Schedule 8.3 to wind generation? If you disagree, please give reasons and provide alternatives that address the identified problem with wind generation being excluded from the periodic testing requirements.</p>	<p>Yes. However, we note there is still a potential ambiguity with the specific callout of wind generation for the time grace period. Our understanding is that such periodic testing would also apply to other inverter-based generation such as solar and BESS. It would be good to make this clear within the Code and whether the specific time grace period exemption also applies to this technology.</p>
<p>Q1.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>No. It is clear this will increase compliance costs for inverter based generation.</p>
<p>Q1.3. Do you agree the proposed Code amendment is preferable to the other option 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>Q1.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>Yes</p>

FSR-002: Clarify that embedded generators must provide an asset capability statement in a format specified by the system operator

Questions	Comments
<p>Q2.1. Do you support the Authority's proposal to amend the Code to clarify that:</p> <p>(a) embedded generators must provide asset capability statement information to the system operator in the form from time to time published by the system operator, and</p> <p>(b) the requirement to provide an asset capability statement to the system operator applies only to generators with a generating unit with rated net maximum capacity equal to or greater than 1MW?</p>	<p>Yes</p>
<p>Q2.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>No</p>
<p>Q2.3. Do you agree with the proposed Code amendment? 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>Q2.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>Yes</p>

FSR-003: Include distributors and energy storage systems as potential causers of under-frequency events

Questions	Comments
<p>Q3.1. Do you support the Authority's proposal to amend the definition of 'causer' in clause 1.1 of the Code so that it refers to the action that results in a UFE, including an increase in electricity demand (load), and the consequential amendments to clauses 8.60 to 8.66, including proposed new clause 8.64A?</p>	<p>No, see below.</p>
<p>Q3.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>Some. We note that Transpower currently likes to back-back any obligations they may have as an UFE causer onto a connected generator if the generator chooses to connect with N security to the grid, as is common with IBR connections. We would expect that EDBs will take a similar approach and this may cause some confusion and take time for EDBs to work out how to best manage this. The net effect would be to increase complexity of interconnection at EDB level, likely additional legal fees, and potential interconnection delays as EDBs work through the contractual implications.</p>
<p>Q3.3. 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>We are not convinced this change is worthwhile as most EDB connected generation will remain below the 60 MW threshold and therefore will not be captured by this change. Consequently, it is likely to create additional work and complication for EDB connections for little apparent gain to the power system.</p> <p>Furthermore, we believe the overall frequency management framework is not fit for purpose to provide the right incentives to market participants considering also the capabilities of new technology such as BESS. Consequently, we feel a more fulsome review of the frequency management approach including whether or not penalties for UFE should be retained would be a better approach.</p>
<p>Q3.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>No.</p>

FSR-004: Amend the requirement to have a speed governor

Questions	Comments
<p>Q4.1. Do you support the Authority's proposal to amend clause 1.1 of the Code, and clauses 3, 4 and 5 of Appendix B of Technical Code A of Schedule 8.3, to broaden them to apply to inverter-based generation technologies?</p>	<p>Yes</p>
<p>Q4.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>No</p>
<p>Q4.3. Do you agree the proposed Code amendment is preferable to the other option 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>Q4.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>Yes</p>

FSR-005: Amend the requirement to have an excitation system

Questions	Comments
<p>Q5.1. Do you support the Authority's proposal to amend the Code to replace the requirement for an excitation system with a requirement for a voltage control system, to encompass all generating technologies? Please explain your answers.</p>	<p>Yes</p>
<p>Q5.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>No</p>
<p>Q5.3. Do you agree the proposed Code amendment is preferable to the other option 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>Q5.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>Yes</p>

FSR-006: Amend the Code to apply to all dynamic reactive power compensation devices

Questions	Comments
<p>Q6.1. Do you support the Authority's proposal to amend the Code to require all dynamic reactive power compensation devices to undergo periodic testing?</p>	<p>Yes</p>
<p>Q6.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>No</p>
<p>Q6.3. Do you agree the proposed Code amendment is preferable to the other option 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>Q6.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>Yes</p>

FSR-007: Treat energy storage systems as only generation for the purposes of Part 8

Questions	Comments
<p>Q7.1. Do you support the Authority's proposal to amend the Code to treat ESSs as generation for the purposes of Part 8?</p>	<p>Yes</p>
<p>Q7.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>No</p>
<p>Q7.3. 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, although noting that a more comprehensive review of ESS obligations would be better.</p>
<p>Q7.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>Yes</p>

FSR-008: Clarify the definition of generating unit

Questions	Comments
<p>Q8.1. Do you support the Authority's proposal to amend the definition of generating unit in clause 1.1 of the Code so that it refers to a generating unit having a frequency and/or voltage control system?</p>	<p>Yes</p>
<p>Q8.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>No</p>
<p>Q8.3. Do you agree the proposed Code amendment is preferable to the other option 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>Q8.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>Yes</p>

FSR-009: Clarify the Code's fault ride through requirements

Questions	Comments
<p>Q9.1. Do you support the Authority's proposal to amend the Code to allow a machine-based synchronous generating unit to be deemed compliant with the Code's FRT requirements if full compliance is not possible due to the generating unit's inherent stability characteristics and the generator has taken all reasonable measures to support grid stability taking into account the generating unit's inherent stability characteristics?</p>	<p>Yes</p>
<p>Q9.2. Do you see any unintended consequences in making such an amendment? Please explain your answers.</p>	<p>No</p>
<p>Q9.3. Do you agree the proposed Code amendment is preferable to the other option 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, however, noting that a better ultimate solution is for the Authority to develop FRT curves specific to rotating plant and IBRs.</p>
<p>Q9.4. Do you agree with the analysis presented in this Regulatory Statement? If not, why not?</p>	<p>Yes</p>