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### King Country Energy submission– Review of the common quality requirements in the Code

King Country Energy (KCE) is hydro generation company with its assets based in the central North Island. KCE assets are all embedded in the network areas of Electra and The Lines Company. KCE is submitting on the review of the common quality requirements in the code. KCE is a member of the Independent Electricity Generators Association (IEGA) and has an operations contract with Manawa Energy, both who have submitted on this issue.

KCE is aligned with the views shared by Manawa Energy and the IEGA in their submissions on the Electricity Authority (the **Authority**)’s current review of the common quality requirements in the Code (the **Consultation Papers**). The Consultation Papers are a collection of three documents that look to address more frequency variability (**Paper A**), larger voltage deviations (**Paper B**), and the governance and management of harmonics (**Paper C**), in New Zealand’s power system. KCE’s submission focuses on Paper A, option 1.

KCE would like to reiterate the below estimates from Manawa’s submission to make sure they are included in a thorough cost benefit analysis by the Authority. Given the costs to KCE are expected to be substantial, a rigorous cost benefit analysis is vital.

KCE’s assets are embedded in networks and will provide no further value to frequency (and voltage). Furthermore, it’s likely that the cost to upgrade the assets would be too high and so dispensations would need to be sought. This would provide no additional benefit to the system either.

In contrast, the costs to KCE’s existing generation would be significant:

- KCE’s assets are old and have unique features. Retrofitting these plants in the manner that would be required is not commonly done and so may not be achievable or bespoke solutions would be needed. The cost estimate could be in the \$5M – 10M or more.

- The technical studies required to confirm compliance cost the same irrespective of generator size, making them disproportionately more expensive for smaller generation. It's noted in Paper A that placing less onerous testing requirements could lower this cost, but it's currently estimated at \$70k - \$200k per unit.
- Some schemes have ramp rate and spilling restrictions that would hinder their ability to comply, meaning resource consent variations would need to be sought. Again, this is difficult to estimate depending on what is required to vary the consent but could range from \$10k - \$100k. It should be noted that similar to technical studies, costs are not proportionate to size making consenting more costly for smaller stations.
- Paper A raises the option of applying to the system operator (SO) for a dispensation from full compliance. However, this is also not without cost. This cost again is difficult to estimate but given a technical report may be required to prove a dispensation is required the cost could be in the range of \$70k - \$100k. There are also ongoing costs to continue to prove compliance which would be in the order of \$30k every 6 to 8 years.

There is real concern for KCE that the costs of meeting compliance, via modification to plant and consents or through dispensation, could make some schemes unviable. Shutting down plant that could not comply (either physically or because the economics no longer stack up) would be the worst outcome for a power system that is needing to significantly increase generation. It's important to note that many of the costs cited above not only have upfront costs but ongoing costs that need to be considered.

Given this concern, KCE does not support option 1 and sees that the 30MW threshold should be retained. Alternatively, KCE may consider supporting option 1 if existing generation was grandfathered and was in context with other changes.

We thank you for the opportunity to submit on these issues and look forward to considered and structured path going forward,

Kind Regards

A handwritten signature in blue ink, appearing to read 'Chris Fincham', with a long horizontal flourish extending to the right.

Chris Fincham

General Manager – King Country Energy