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Submissions
Electricity Commission
Level 7, ASB Bank Tower
2 Hunter Street
Wellington

By Email

Dear Sir/Madam

SUBMISSION ON NORMAL FREQUENCY GENERATOR ASSET OWNER PERFORMANCE OBLIGATIONS

Thank you for the opportunity to provide a submission on the Normal Frequency - Generator Asset Owner Performance Obligations. While TrustPower is very pleased to see the Electricity Commission beginning to address frequency related issues we do wish to highlight the following points relating to this particular submission:

1. TrustPower does not support the concept of unrestricted governor control as New Zealand's generation capacity is dominated by hydro generators with governing systems that contain a number of significant mechanical components which if exposed to unrestricted governor control would be subjected to accelerated wear and tear. These components include mechanical governor heads, hydraulic actuation valves and servos, wicket gate bushes etcetera.
2. TrustPower therefore supports the addition of a small deadband similar to that used in the UK, Ireland and a number of other jurisdictions as this is expected to provide the majority of the benefits associated with unrestricted governor control but with significantly lower maintenance costs than if no deadband were applied.
3. TrustPower considers the Australian frequency deviations market to be a very good mechanism as it incentivises both load and generation to perform prudently. Given that the cost of frequency keeping in New Zealand has averaged approximately \$60M per annum over the last 5 years and that with the introduction of further windfarms frequency keeping is expected to become more of an issue in the future, TrustPower firmly believes that a sophisticated frequency deviations market similar to that of Australia can be justified.
4. While the objective of these proposed rule changes is to "improve generation investment signals" TrustPower believe there should be an additional, and not necessarily secondary, objective of "optimising frequency management". Further to this TrustPower would have serious concerns if the proposed rule changes did not result in less instantaneous reserves being procured as this would imply that either: 1) insufficient instantaneous reserves are being procured at present, or 2) instantaneous reserves will be unnecessarily over procured in the future, or 3) the proposed changes are immaterial and therefore potentially unjustifiable.

Please find attached our response to your specific questions.

TrustPower wishes to thank the Electricity Commission for undertaking this consultation and wish to make ourselves available to answer any further questions you may have.

TrustPower Limited

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Yours sincerely

A handwritten signature in blue ink, appearing to read 'R. Spearman', with a period at the end. The signature is fluid and cursive.

Richard Spearman
OPERATIONS MANAGER

**Normal Frequency Generator Asset Owner Performance Obligations
Submission by TrustPower Limited**

	Question	Comment
Question 1	With respect to normal frequency management, are there features of other grid codes you think the Commission should consider	<p>Yes, TrustPower does not agree with the statement in paragraph 5.2.1 stating that "... <i>unrestricted governor control appears to be a standard feature in grid codes.</i>" By undertaking a quick Google search it is evident that many other jurisdictions such as BC Hydro, Ontario, Alberta, Finland, Romania and we expect many others allow a small deadband typically in the order of 50mHz (+/- 25mHz from nominal) to be introduced much like that of the UK and Ireland.</p> <p>TrustPower considers the Australian frequency deviations market to be a very good mechanism as it incentivises both load and generation to perform prudently. Given that the cost of frequency keeping in New Zealand has averaged approximately \$60M per annum over the last 5 years and that with the introduction of further windfarms, frequency keeping is expected to become more of an issue in the future, TrustPower firmly believes that a sophisticated frequency deviations market similar to that of Australia can be justified.</p>
Question 2	Do you agree with the proposal to clarify rule 2.1 so that generators must ensure their generating units operate under unrestricted governor control?	<p>No.</p> <p>New Zealand's generation capacity is dominated by hydro generators and the governing systems of hydro generators contain a number of reasonably significant mechanical components which are subject to reasonable levels of wear and tear. Mechanical governor heads, hydraulic actuation valves and servos, wicket gate bushes etcetera.</p> <p>TrustPower therefore believes that a small deadband, in the order of +/- 25mHz from nominal, such as that applied in the UK, Ireland, BC Hydro, Ontario, Alberta, Finland, Romania and we expect many other jurisdictions is prudent.</p> <p>TrustPower presently applies a small deadband to minimise wear and</p>

		<p>tear on hydro/mechanical plant and considers this prudent engineering practise. For avoidance of doubt, TrustPower does not configure it's governors with a deadband spanning the "normal band" (+/- 200mHz) as it considers this excessive.</p>
Question 3	Do you agree with the proposals for speed governor requirements?	<p>Yes, for non intermittent generation.</p> <p>TrustPower presently sets its hydro governors with a droop of less than 6% so does not expect the tightening this obligation to have an impact on TrustPower's performance or its ability to comply.</p>
Question 4	Do you agree with the proposal that initial and all subsequent changes to the speed governor settings be agreed by the System Operator?	<p>No.</p> <p>Modern digital governors, such as the one developed by TrustPower, can contain many configurable features in addition to speed governing. For example configurable user displays, test routines, diagnostics, data capture etc ... For this reason TrustPower wishes to see the wording limited to only include settings which have the potential to change the performance of the speed governor.</p> <p>While not presently an issue TrustPower has in the past experienced considerable delay in the processing of applications from the System Operator. TrustPower would therefore like to see an obligation on the System Operator to process applications with a reasonable timeframe once, of course, they have received all of the required information.</p>
Question 5	Do you agree with the Commission's analysis regarding the "catch-all" rules?	<p>TrustPower's experience of the "catch all" clauses contained within Part C of the rules is mixed. While to date the System Operator has tended to interpret the "catch all" clauses in a reasonable and prudent manner, non definitive clauses of this type are often a cause of great concern to equipment vendors when negotiating commercial contracts for the supply of new equipment. This uncertainty has resulted in transactions with very reputable equipment vendors and products unnecessarily breaking down - not because of technical capability but perceived regulatory risk.</p>
Question 6	Do you have any comments on the proposed rules?	<p>While the objective of these proposed rule changes is to "improve generation investment signals" TrustPower believe there should be an additional, and not necessarily secondary, objective of "optimising frequency management".</p> <p>The consultation paper is relatively silent on the financial implications associated with unrestricted governor control. TrustPowers expectation</p>

		<p>is that if unrestricted governor control is increased then primary frequency control will improve which implies that fewer instantaneous reserves will be required in the future than at present to arrest an underfrequency event of the same magnitude. This would in turn, assuming an efficient market, result in lower instantaneous reserves costs for New Zealand Inc.</p> <p>TrustPower would have serious concerns if these proposed rule changes did not result in less instantaneous reserves being procured as this would imply that either: 1) insufficient instantaneous reserves are being procured at present, or 2) instantaneous reserves will be unnecessarily over procured in the future, or 3) the proposed changes are immaterial and therefore potentially unjustifiable.</p>
Question 7	Do you think there are other reasonably practicable options the Commission should consider?	Yes, as stated above, we feel that the introduction of a small deadband to minimize unnecessary wear and tear is very practicable and prudent.
Question 8	Do you have any comments on the Commission's assessment of the options?	As per our response to Question 6 above.