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9 May 2017

John Rampton  
General Manager Market Design  
Electricity Authority

By email: [submissions@ea.govt.nz](mailto:submissions@ea.govt.nz)

Dear John

## Normal frequency management strategic review

We appreciate the opportunity to provide feedback to the Authority's information paper on the *normal frequency management strategic review*, published March 2017.

We consider the information paper and the technical appendices from the system operator are thorough and helpful in articulating the issues for consideration.

## We support maintaining frequency quality

We support the strategic review for provision of frequency keeping services given the impact to the market from HVDC frequency keeping control (FKC). We agree that the introduction of the HVDC control system has reduced the amount of frequency keeping procured as an ancillary service.

With reduced procurement of frequency keeping, frequency quality needs to draw more on the generators' governor response. The Authority observes, and we agree, that in the context of a diminishing frequency keeping market there have been changes in provision of governor response, specifically an increasing use of deadbands which reduces governor response.<sup>1</sup> We are concerned that remaining with the status quo could lead to degradation in frequency quality, with consequences for operation and management of the power system.

The review needs to consider both static (productive) and dynamic efficiency objectives i.e. to provide quality frequency keeping at lowest cost and maintaining incentives to invest in appropriate technology for providing effective governor response. We support the focus of the investigation towards increasing opportunities for providing effective governor response and the potential future role for smaller-scale technologies (e.g. inverters connected to solar PV and batteries) in service provision.

## Authority and system operator next steps

We agree with the Authority's next step to establish whether governor response measurement can be undertaken in a way that enables the system operator to trade-off the collective amount of

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<sup>1</sup> setting artificial ranges for frequency within which no governor response will occur

governor response against MFK requirements.<sup>2</sup> We consider though that the plan to “confirm a method of cost allocation for governor response costs<sup>3</sup>” should be developed more broadly with industry (rather than bilaterally between the system operator and the Authority as implied) for normal frequency incentives to be coherent with instantaneous reserves provision.

The technical report (TASC 58<sup>4</sup>) shows that the measurement aspect is underway. We note the report’s recommendation for measurement of governor response via the ‘modelled signal injection’ option, particularly the synergy with potential future contribution by other technologies.

We anticipate a future assessment of how the quantity of governor response can be compared with frequency keeping quantities to ensure frequency quality at lowest cost. Although we consider the (now reduced) quantity of frequency - keeping service may be technically substituted by governor response, there would need to be incentives for that substitution, to avoid withholding of governor response as identified currently.

Please contact me in the first instance if you have any questions about this submission

Yours sincerely



Micky Cave  
**Senior Regulatory Analyst**

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<sup>2</sup> Page iii

<sup>3</sup> Ditto

<sup>4</sup> System Operator TASC 58 report, October 2016

## Appendix – response to questions

Question	Response
<p>Do you have any comments on how governor availability costs / wear and tear costs / capacity carrying costs compare between MFK and governor response?</p>	<p>No.</p>
<p>Do you have any comments on the extent to which MFK can be substituted by governor response?</p>	<p>1MW of frequency keeping does not equal 1 MW of governor response, in terms of this hypothetical MW's ability to regulate frequency, governor response is more rapid for restoring frequency to nominal.</p> <p>Technically, we consider the (now reduced) quantity of frequency - keeping services offered from multiple parties could be technically (quantity) provided by governor response, under the right incentive.</p>
<p>Do you think that there are likely to be net benefits in progressing to a procured governor response service through tendering, given the technical challenges identified in this paper?</p>	<p>We consider the idea worth investigating, as an incentivisation scheme for governor response will be needed if the FK market is removed.</p>
<p>Which option or options in section 5 do you agree with and which do you not, and why?</p>	<p>All procurement options need to be assessed on criteria such as complexity, implementation time and cost, predictability, transparency, and ability to be understood.</p> <p>An obligation approach (codifying existing practice) could be inefficient and overly technical to implement.</p>
<p>Are there any other features or options you would like to suggest?</p>	<p>No.</p>

Do you have any comments on the indicative analysis of governor response costs in Appendix E?	No.
Are there any other issues you wish to bring to the Authority's attention?	No.