Mr John Pierce AO
Chair
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Lodged online: www.aemc.gov.au

31 October 2019

Re: Submission on Primary Frequency Response rule change proposals

Dear Mr Pierce,

Tilt Renewables is a leading Australasian renewables developer engaged across all stages of project development through to operation. Tilt Renewables currently has 636 MW of operational wind farms across the NEM and New Zealand, plus a further 469 MW currently in construction and over 3 GW in its development pipeline.

While Tilt Renewables recognizes the need for action to arrest the decline in frequency control in the NEM, we are disappointed that an urgent "one size fits all" solution is being proposed rather than a more nuanced solution that is tailored to the strengths, weaknesses and costs of different technologies in providing PFR. In terms of the practical implementation, Tilt Renewables is concerned that older generators may face a significant financial penalty, that existing PPA obligations may complicate participation, and that modelling requirements may be complex. Finally, Tilt Renewables urges the AEMC to consider all technologies, not only generation, that could provide PFR or equivalent, to ensure the best value solution is found.

Different generation technologies are likely to face significantly different costs in providing PFR, and technologies that would have to spill energy (such as wind and solar) are likely to facing higher ongoing costs, even when only providing lower control, than technologies that are controlling their output. This was illustrated in the New Zealand context during an investigation into why different technologies were adopting different governor settings. This looked at a hypothetical geothermal and hydro plant (the two largest generating sources in New Zealand) and the opportunity cost of providing primary frequency (governor) response. For a geothermal station to provide this response they would need to forgo steam take, while a hydro plant would generally be moving off its maximum efficiency point. This results in markedly different opportunity costs for providing this service as illustrated in the graph below[1].

[1] Availability cost comparison from Appendix E of https://www.ea.govt.nz/dmsdocument/21992-frequency-keeping-strategic-review-information-paper

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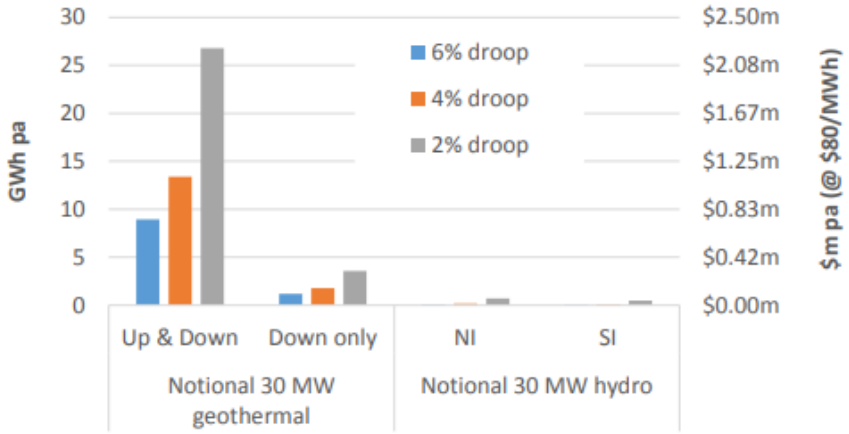
Table 3: Availability cost comparison



While the generation technologies prevalent in Australia differ from New Zealand, it is likely that similar discrepancies in service provision costs exist within the NEM. Tilt Renewables expects that wind and solar technologies would face similar proportionate costs to geothermal in the New Zealand example. As most semi-scheduled generation will be required to spill near-zero marginal input cost energy to provide primary frequency response, Tilt Renewables considers that the costs for providing this service will likely be higher for semi-scheduled generators compared to scheduled generators. We therefore consider that there is likely to be a case for different parameters (higher droop and deadband) to apply to semi-scheduled and scheduled generation to ensure that most of the response is provided by those technologies able to provide this service at the lowest cost, while response from technologies whose costs are higher are deployed when the response from the lower cost plant is insufficient. In this context, Tilt Renewables estimates that ongoing costs due to lost generation for the Tilt Renewables portfolio with the current proposals are likely to be in excess of 1% of NEM generation revenues, assuming the current frequency performance in the NEM.

There are several wind farms, with mainly older technology control systems, that will practically not be able to implement a primary frequency response. Where such a service is not reasonably able to be provided, such assets should be exempted from providing primary frequency response. While Tilt Renewables accepts that such plant will continue to be subject to causer pays based FCAS cost recovery, Tilt Renewables urges that the cost recovery mechanism is examined to ensure that the plant only pays the share of costs caused by it, and not costs from other generators that may still contribute to an extent to FCAS costs, but are not subject to cost recovery due their provision of primary frequency response. Tilt Renewables urges the AEMC to explore in detail the case where most generators have implemented PFR (as would be expected under the mandatory provision rule)

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to ensure a disproportionate share of FCAS costs is not then levied on the remaining generation.

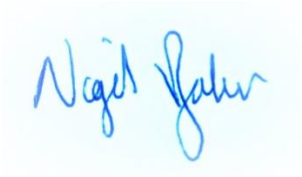
Many renewable generators operate under power purchase agreements (PPAs) which were written without considering such generators providing PFR, so may contain obligations on the generator which would be in conflict with some aspects of the proposed rule change. While a generator may negotiate with the PPA counterparty on an arrangement acceptable to both parties, this may not always be possible, and may depend on the specifics of the NER clauses. Tilt Renewables urges the AEMC to consider the implications of such contractual arrangements in the drafting of the rule changes.

Implementing the required primary frequency response on wind farms that are capable is likely to be relatively simple, however a significant uncertainty is the testing that will be required and whether generator models will be required to be adjusted in order to reflect the implemented and tested primary frequency response. Depending on the testing and model requirements, these costs could be many times higher and take much longer than the implementation itself. Tilt Renewables thus considers it imperative that clear guidelines on testing and model requirements are available well before the required implementation of primary frequency response.

In the longer term, Tilt Renewables considers that there is a significant opportunity for the provision of similar services from the load (DER) side, which may further reduce costs, notably from batteries whether they be stationary or mobile (EV charging and V2G). We would therefore urge that any changes now are not seen as a “fixed it and move on”, rather as the first step in a journey to improved frequency control in the NEM, while minimising costs for NEM users.

Tilt Renewables will be pleased to meet with you to further discuss this submission and will be happy to participate in further consultation processes. Please contact Marcelle Gannon at marcelle.gannon@tiltrenewables.com or 0409 799 095.

Regards,



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