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## **Re: MASS amendments – Primary Frequency Response under Normal Operating Conditions**

Dear Matthew,

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide AEMO with feedback on its latest amendments to the Market Ancillary Services Specification (MASS). We understand this consultation is primarily targeting changes to ensure the Mandatory Primary Frequency Response (PFR) rule change can take effect, without adverse consequences to existing contingency services and payments. However, Tesla would like to use this opportunity to raise broader issues inherent in the MASS, to ensure that if they are not addressed through the current amendment process, AEMO commits to include them as part of the next MASS review, alongside more detail on its intended timeframes (we understand there have been some indications for it to take place "in due course" later in 2020).

Tesla views it as critical that the broader MASS review considers the implications of the introduction of mandatory PFR. This represents a major change for frequency control across the NEM and should trigger a more detailed MASS review than that proposed by AEMO in 2018. We believe that AEMO should be considering areas that had previously been deemed out of scope of a MASS review, specifically:

- Options for re-definition of the eight ancillary service markets.
- Introduction of new or alternative markets (to the extent that this can be managed through the MASS), or clear articulation of market gaps.
- Revision of procurement mechanisms (to the extent that this can be managed through the MASS).

### **Issues**

Tesla is concerned that the existing frequency control ancillary service (FCAS) registration route for technologies such as battery storage systems (BESS) is not transparent or consistent. As the first grid-scale BESS in Australia's National Electricity Market, the 100MW Hornsdale Power Reserve received a bespoke level of FCAS contingency registration (ultimately approved for 63MW in 6sec; 19MW in 60sec; and 41MW in 5min contingency services). The droop, limited at 1.7% (full power at 49Hz), was agreed bilaterally in order to comply with MASS requirements and provide AEMO comfort that the first utility scale BESS asset would provide benefit to the power system. To satisfy the Frequency Operating Standard, FCAS contingency registration levels also appear to be limited by reference to the generation/load containment band of 49.5 - 50.5Hz, however it is not clear how or if the standard frequency ramp rates outlined in the MASS interact with these values.

In addition, the premium frequency response from batteries is increasingly being used (albeit unpaid) for network events to address the largest disturbances to frequency (despite only being valued as a service within the generation/load containment band). The incidence of network events is not insignificant - AEMO

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list 16 power system incidents through 2019 alone – and the value of fast response will only continue to rise as the level of inertia continues to decrease. Most recently demonstrated by the SA islanding event, grid-scale batteries were critical to support SA grid stability ahead of resynchronization with Victoria<sup>1</sup>.

Relying on the provision of an unvalued service from battery storage is not sustainable. Enabling assets to register full technical potential could improve the investment signal for storage by up to 30% - lowering costs to consumers and reducing system security risks in parallel.

Tesla is keen to work with the AEMO (and the AEMC as appropriate) on developing both short and long-term solutions to address these issues. We understand these issues may also align with the frequency control work plan being progressed in parallel to the mandatory primary frequency response rule change.

### Proposed Next Steps

As AEMO has previously acknowledged, fast response frequency control can be valuable, particularly following a large disturbance, or when the power system is operating with low inertia. Tesla is keen to continue working closely with AEMO in addressing the technical barriers currently limiting the value recognition of frequency response provided by battery storage. Enhancing the ability for all technologies to offer the full extent of their capability to the market will provide technical and economic benefits to the NEM overall.

Therefore, as part of the critical 2020 frequency work program, Tesla requests more certainty from AEMO regarding:

- **A technology focused review of the MASS by Q3 2020** – this should consider opportunities for market setting improvements for utility scale and DER assets across all FCAS and energy markets (e.g. through exploring performance-based rewards, accuracy and speed factors, appropriateness of existing contingency time bands, and exploration of additional fast frequency services to specifically address network contingency events). This necessarily requires a full-scope MASS review (as outlined above), and must be expedited given the impact mandatory PFR will have on existing FCAS markets as early as summer 2020/21. Clarity on timeframes would also be highly beneficial to industry.
- **Staged implementation of PFR** – as per AEMO and AEMCs previous guidance, capacity thresholds (e.g. >200MW scheduled plant) should be implemented for the interim PFR arrangements, and only expanded should frequency performance not improve sufficiently.
- **Market based mechanism for long-term primary frequency response provision** – introduced as quickly as possible, given the investment signal impacts on new entrants (see Tesla's response to the mandatory PFR consultation<sup>2</sup> and draft determination<sup>3</sup>).

Tesla looks forward to continued engagement on these items and actively participating in ongoing discussions to support AEMO in the development of its frequency control work program and refining the scope of the broader MASS review.

For further information on any of the points raised please contact Dev Tayal ([atayal@tesla.com](mailto:atayal@tesla.com)) with any questions.

Kind regards



Emma Fagan  
Head of Energy Policy and Regulation

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<sup>1</sup> See separate appendix for data on HPR response to 2020 SA islanding event

<sup>2</sup> [www.aemc.gov.au/sites/default/files/2019-11/Rule%20Change%20Submission%20ERC0274%20-%20Tesla%20-%2020191101.pdf](http://www.aemc.gov.au/sites/default/files/2019-11/Rule%20Change%20Submission%20ERC0274%20-%20Tesla%20-%2020191101.pdf)

<sup>3</sup> [www.aemc.gov.au/sites/default/files/documents/rule\\_change\\_submission\\_erc0274-tesla-20200214.pdf](http://www.aemc.gov.au/sites/default/files/documents/rule_change_submission_erc0274-tesla-20200214.pdf)