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Australian Energy Market Operator
530 Collins Street
Melbourne VIC 3000
via email: 2024_security_consultations@aemo.com.au

2 August 2024

RE: Amendments to NSCAS Description and Quantity Procedure

Dear AEMO,

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide the Australia Energy Market Operator (AEMO) with a response to the final determination for Amendments to NSCAS Description and Quantity Procedure.

Tesla's mission is to accelerate the transition to sustainable energy. A key aspect of this will be using smart, grid-forming inverters to support increased penetration of variable renewable energy (VRE) in the grid. We believe that battery energy storage system (BESS) assets, particularly Tesla Megapacks operating with our virtual machine mode (VMM) technology, will be integral to providing a scaled, cost-effective system strength solution in all Australian jurisdictions.

Tesla has been actively engaged on this Rule Change, and associated AEMC led work on Improving Security Frameworks and associated Essential System Services over the last few years. Tesla is supportive of AEMO's regulated procurement mechanism to include inertia network services and system strength services in the NSCAS framework, to resolve any forecast inertia and system strength shortfalls within three years.

We support AEMO's proposed method for describing the additional NSCAS needs. In parallel to this submission, Tesla has also responded to AEMO's Amendments to the Inertia Requirements Methodology, which delves into more detail for section 3.2 of this consultation. Regarding the move from 'system normal' to 'system typical', Tesla is supportive of this change within NSCAS studies, as long as grid-based inverters (GBI) are accurately modelled and assessed, without being artificially and unfairly disadvantaged in the technical assessment relative to synchronous generators. Such barriers have been outlined in depth in our previous submissions, for instance, for the AEMC Rule Change for 'Efficient Provision of Inertia' (ERC0339).[1]

With regards to consideration for screening for NSCAS gaps, Tesla has concern with the following statement from AEMO: "*For inertia and system strength requirements, however, higher projected penetrations of inverter-based resources represent a more onerous condition as they tend to displace synchronous generation and lower the projected levels of inertia or system strength in the system.*"
While Tesla acknowledges that inverter-based VRE will displace synchronous generation and consequently inertia and system strength, there have been advancements in battery-technology that will support mitigating this change. Nearly all of the BESS that are in the process of coming online the NEM have grid-forming capabilities, whereas previously most BESS were grid-following. These incoming grid-forming assets will provide inertia and system strength to support greater VRE penetration in the system.

Tesla notes that grid-following BESS currently operating in the NEM can, and are, being converted into grid-forming BESS through a 5.3.9 process, with the Victoria Big Battery (300MW / 450 MWh) one prime example – both through support of ARENA funding[2] and independently. These conversions are currently excluded under AEMO's proposal of reviewing upcoming committed and actionable projects in table 1 of the consultation. Consequently, Tesla recommends AEMO expands their consideration of expected augmentation inclusion assumptions to identify potential NSCAS reports.

Tesla looks forward to continued engagement and actively participating in ongoing discussions.

Kind regards,

Tesla Energy Policy Team

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[1] https://www.aemc.gov.au/sites/default/files/2023-04/AEMC%20Efficient%20Provision%20of%20Inertia%20-%20Tesla%20response__FINAL.pdf
[2] https://arena.gov.au/blog/arena-backs-eight-big-batteries-to-bolster-grid/