Tesla Motors Australia, Pty. Ltd.
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North Sydney NSW 2060
Australia

Ms Anna Collyer
Chair
Australian Energy Market Commission
PO BOX A2449
Sydney South NSW 1235

20 Jan 2025

RE: Response to the draft determination on improving the NEM access standards

Dear Ms Collyer,

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide the Australian Energy Market Commission (AEMC) with feedback on the draft determination for improving the NEM access standards (package 1).

Tesla's global mission is to accelerate the world's 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. Tesla has been an active participant in this workstream throughout AEMO's review of technical requirements for connection in 2022 and is highly encouraged to see the developments in the proposal to improve the access standards.

Tesla has also been engaged in various connection reform projects, including with the Connection Reform Initiative (CRI), the associated AEMC led work on Improving Security Frameworks and Essential System Services, alongside ongoing engagement with the AER, AEMO and transmission utilities directly, and looks forward to continued engagement and expediting the connection process to achieve the best market outcomes in support of the NEO.

Tesla welcomes the AEMC's acknowledgement that some existing access standards are no longer fit for purpose, unintentionally disincentivising beneficial grid-forming responses and not fully utilising available plant performance. Currently there is no special provision or acknowledgment in the NER of the unique operating characteristics of grid forming assets. They are treated the same, and subject to the same connection requirements as all asynchronous plant. However, they have different technical performance characteristics. This creates unnecessary burdens on new plant, such as grid forming battery storage systems, that would otherwise be able to connect to the grid faster, and/or provide a broader suite of essential system services.

Overall, Tesla generally supports the proposed changes to schedule 5.2 (see specific feedback below), and welcomes "leveling the playing field" by broadening access standards applications to synchronous condenser connection.

Tesla looks forward to continued engagement and actively participating in ongoing discussions. We welcome a workshop with AEMC to discuss any items raised below or more broadly on this topic.

Kind regards,

Tesla Energy Policy Team

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Draft determination – Improving the NEM access standards - Package 1

Impacted Clause/Definition	Tesla Response
S5.2.5.1 — Reactive power capability	Tesla is supportive of the draft position proposed by AEMC to reduce the voltage range for full reactive power requirements, and for requirements for the compensation of reactive power when units are out of service. Tesla is also supporting of the proposed changes to amending reactive power capability requirements considering temperature derating. In particular, Tesla is supportive that the AAS is strictly applied to temperatures below 50 degrees Celsius, and clearly outlines that there is no temperature derating below 50 degrees. This is inline with global practices in EMEA.
S5.2.5.2 — Quality of electricity generated	N/A.
S5.2.5.4 — Response to voltage disturbances	Tesla is supportive of the draft position proposed by AEMC.
S5.2.5.5 — Disturbance ride-through capability	Tesla reiterates its position from AEMO's round of consultation that adding site-specific studies for MFRT will lead to additional costs and delays to the connection process, and point to the same results, and recommends modelling to verify MFRT requirements.
S5.2.5.5A — Responses to disturbances following contingency events	While Tesla is supportive of the underlying rationale for this rule change, Tesla proposes revised wording to clause S5.2.5.5A(f)(1)(iii) "negative sequence current or equivalent contributions to oppose unbalanced voltages during a disturbance"; to replace this with "negative sequence current or equivalent contributions to reduce over voltage in unfaulted phases". This is due to the original phrasing not fully capturing the actual physical mechanism at play, as negative sequence current does not "oppose" unbalanced voltages but rather reduces overvoltage in the unfaulted phases. Additionally, Tesla proposes removing clause S5.2.5.5A(t) or limiting its application to grid-following inverters, as it is not applicable to grid-forming inverters or synchronous generators. The clause requires the GPS to record functions which are fundamentally based on Ohm's Law, and also mandates sequence components conversions — standard theoretical concepts that do not provide additional practical value. For systems employing direct unbalanced control, these requirements impose unnecessary documentation of well-established sequence components calculations, thus adding unnecessary complexity to the GPS without delivering meaningful benefits, undermining its intended purpose to focus on practical, actionable standards that enhance system operation.
S5.2.5.7 — Partial load rejection	Tesla is supportive of the draft position proposed by AEMC.
S5.2.5.8 — Protection from power system disturbances	Tesla is supportive of the draft position proposed by AEMC.
S5.2.5.10 — Detection and response to unstable operation	Tesla supports the objective of maintaining system stability during local high-frequency oscillations but has significant concerns about the proposed clause's lack of detail for implementation and risk of unintended consequences. While the goal is clear, the clause lacks explicit criteria for compliance within the GPS and does not provide sufficient detail on its operational and technical impacts. Tesla highlights that enforcement could lead to scenarios where generators are disconnected even if they are not the source of instability, potentially worsening

	oscillations rather than addressing them. Moving from AEMO's current offline, time-consuming processes to an online detection and response system would require substantial investment, particularly in SCADA interfaces and local detection mechanisms. Tesla recommends further consultation, trials, and testing before any changes to the NER are finalised. Further work, including more industry consultation, is needed on monitoring systems and tripping hierarchies. Developing a local oscillation detection method would require significant time and resources, and real-time implementation poses considerable challenges. Collaborative efforts are essential to address these concerns and prevent unintended outcomes.
S5.2.5.13 — Voltage and reactive power control	Tesla is supportive of the draft position proposed by AEMC.
Definitions of continuous uninterrupted operation, rise time and settling time	Tesla is supportive of the draft position proposed by AEMC.
Definitions of rated active power and rated maximum demand	Tesla is supportive of the draft position proposed by AEMC.
Clarifying and streamlining related NER clauses	N/A.