



Graham Mills
Reliability Panel
Australian Energy Market Commission
Sydney NSW 1235

22 September 2020

RE: AEMC – Review of the system restart standard 2020 (Ref: REL0077)

Dear Graham

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide a response to the AEMC's Review of the System Restart Standard Consultation Paper (Consultation Paper).

As a world-leading manufacturer of battery energy storage systems, Tesla is acutely aware of the role that new technologies can play in ensuring the secure and stable operation of our energy systems as we transition to predominantly renewables, given our mission to accelerate the world's transition to sustainable energy.

We are strongly motivated to work closely with AEMC, AEMO and the Reliability Panel to create a fit for purpose technical system framework to underpin the safe, secure and reliable operation of the national electricity market (NEM) in the decades to come. As such, Tesla is fully supportive of the Reliability Panel's review of the SRAS Standard (the Standard) to account for the National Electricity Amendment (System restart services, standards and testing) Rule recently made by the AEMC. As this rule change progresses, we provide the following considerations for AEMC:

- Tesla fully supports guideline updates that recognise the capability of new technologies, such as grid-forming battery storage systems, to provide SRAS services;
- Tesla analysis and experience to date suggests that current batteries have the capability to provide SRAS services as:
 - Black Start Services per s 3.3 standalone or in conjunction with a renewable generator depending on the final energy amount that is required by the service.
 - All Restoration Support Services per s 3.4.
- In particular, the 2020 South Australian separation event provides an instructive example of the existing capabilities of battery systems to respond rapidly to provide SRAS services and the critical role batteries will play going forward in a high renewables NEM;
- Nuances in the definition of black-start, system restart support, restoration and re-synchronisation services should be considered to ensure AEMO can procure necessary services efficiently, with adequate testing procedures undertaken with potential SRAS providers.

Additional detail relating to Tesla's position is included in the content below. To discuss any of the content included, please contact Emma Fagan (efagan@tesla.com).

Kind Regards

A handwritten signature in black ink, appearing to read 'Emma Fagan'.

Emma Fagan - Head of Energy Policy and Regulation

General feedback

Tesla supports the Reliability Panel's approach to amending the Standard to account for the recent SRAS rule change, and to incorporate the revised definition of SRAS.

Tesla strongly supports expanding the scope of the Standard in order to maintain maximum economic efficiency of system restart and restoration services, and to recognise the capability of new technologies such as grid-forming inverters to provide these services.

Battery energy storage systems have demonstrated ability¹ to provide black-start functions since 2017.

Tesla supports AEMC's objectives, expressed on page 21 of the Consultation Paper to update language of the SRAS Standard to remove elements which are overly prescriptive in terms of the specified technologies available for providing black-start capability and restoration services, and to include additional guidance specific to new technologies.

Whilst there are nuances in the technical capabilities across different technology providers, Tesla is confident in the ability of battery storage systems to meet the requirements of SRAS provision.

With future increases in asynchronous generation and declining real inertia, Tesla recognises the increasing potential for batteries to provide a 'Simulated' Inertia and restart service.

An approach that recognises the benefits of new technologies such as battery storage is also in line with the broader work program being progressed by the Energy Security Board's Essential System Services workstream as part of its post-2025 market reform agenda. As outlined by the ESB, a long-term, fit-for-purpose market framework to support reliability and system security will necessarily rely on the capabilities of fast-response and flexible resources, including demand side response, battery storage and distributed energy resource participation.

Further, ensuring appropriate frameworks now offers a much less volatile price discovery mechanism that will provide a more efficient pathway to supplement the planned exit of large volumes of incumbent synchronous generators that presently provide much of these system security services. A clear price signal for alternatives such as demand response and battery storage is required today if it is expected that these technologies will form the bulk provision of this service in the years to come, and this will also ensure a back-stop insurance against the early closure of thermal plant.

¹ www.energy-storage.news/news/california-batterys-black-start-capability-hailed-as-major-accomplishment-i



TESLA

Responses to individual questions in the Consultation Paper

Question	Associated Framework	Consultation question	Tesla's response
Question 1(a)	Assessment Framework	Do Stakeholders agree with the Panel's assessment framework?	Tesla agrees with the AEMC's assessment framework
Question 1(b)	Assessment Framework	Are there other relevant factors the Panel should consider when undertaking the review?	N/A

<p>Question 2(a)</p>	<p>Changes to account for the SRAS rule</p>	<p>Do stakeholders agree with the Panel's proposed approach to amending qualitative guidance in the Standard to remove possible barriers to AEMO's procurement of restoration support services and SRAS from non-traditional providers of black start capability?</p>	<p>Tesla is supportive of the AEMC's approach. Batteries have proven their capability in providing black-start services to the market.</p>
<p>Question 2(b)</p>	<p>Changes to account for the SRAS rule</p>	<p>Are stakeholders aware of any specific elements of the Standard that require amendment to facilitate this?</p>	<p>N/A</p>
<p>Question 2(c)</p>	<p>Changes to account for the SRAS rule</p>	<p>Do stakeholders have views on the changes considered and made in the SRAS rule and how this affects this review?</p>	<p>Tesla is strongly supportive of the AEMC's proposal to update the Standard to better reflect the available technologies able to provide SRAS, such as grid-forming inverters.</p>