



Tesla Motors Australia Pty Ltd
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Cremorne, Victoria, 3121

Sarah-Jane Derby
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

18 May 2018

Re: Reliability Frameworks Review Directions Paper (ref: EPR0060)

Dear Sarah-Jane,

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide the Australian Energy Market Commission (AEMC) with feedback on Reliability Frameworks Review – Directions Paper (ref: EPR0060).

Tesla previously outlined our support for the introduction of a demand response mechanism to better enable third party aggregators to participate in the wholesale energy markets. However, as we noted in our submission to the Interim Report, we also support a single mechanism that allows an aggregated asset base to provide the full suite of energy and system security services available.

The below provides a summary of our views on the demand response mechanism options presented in the Directions Paper; as well as further options to enable demand response to be co-optimised with other market services that can be provided by a distributed energy resource (DER) asset base.

Demand response mechanism

Introducing a demand response mechanism will better enable distributed energy resources to provide energy market services and be properly compensated for the market benefits they provide. It overcomes several of the barriers to wholesale energy market participation faced under the small generation aggregator (SGA) classification.

The existing SGA framework allows a participant to aggregate small generating units and sell the collective output directly into the wholesale energy market. However, as noted in the Directions Paper, in order to manage the requirements on the single financially responsible market participant (FRMP), the current SGA framework requires the small generating units to participate in the wholesale energy markets through a separate connection point or through managing the asset separately as an embedded generator¹.

This approach is appropriate for larger behind-the-meter assets, but is cost prohibitive for small scale residential and commercial assets looking to participate in virtual power plants (VPPs) or provide aggregated energy market services.

¹ AEMO, "Small Generator Aggregator Fact Sheet", available at <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Participant-information/New-participants/Small-Generation-Aggregator-Fact-Sheet>

As such, Tesla supports the introduction of a demand response mechanism, that will also allow these smaller scale assets to provide energy market services. Of the three options presented in the Directions Paper, Tesla believes that **Option 1** is preferable for the following reasons:

- It is the mechanism that will likely best reward energy consumers for the contribution that they provide for reducing energy in periods of high demand. Under this approach third party aggregators will benefit directly from wholesale energy market exposure, and will be able to pass through these benefits to the consumer.
- Managing the demand response through a scheduled bid will improve transparency for the Australian Energy Market Operator (AEMO) and, in turn, improve controllability of the DER assets. This provides more efficient energy market outcomes, and broader benefits for the distribution networks.
- It will improve competition and enable more innovation in behind-the-meter options. Retailers may be able to use creative partnerships under Option 1 to provide better value for their existing customers. Further, third party aggregators would also be able to directly provide value to participating energy consumers. The Directions Paper notes third party innovation that is currently underway – such as the GreenSync demand exchange platform. Option 1 is most likely to direct continued innovation in this space.
- Option 1 also allows existing asset owners, particularly residential solar and battery storage, to receive market benefits from their assets. Better managing the output of existing assets will also reduce the need for capital expenditure on new energy generation capacity.

The AEMC should, however, note the limitations associated with introducing a demand response mechanism. Any demand side mechanism introduced will limit the functionality of behind the meter assets to the load side. This is a particular issue in respect of behind the meter battery storage assets which are capable of providing both load and generation side services. This issue has recently arisen in respect of the current market ancillary service provider (MASP) mechanism which similarly limits frequency services from DER assets to the load side services; and which is subsequently being considered for expansion to generation side services through the AEMC Frequency Framework Review process. Noting the existing limitations outlined above in respect of the SGA framework, we would encourage AEMC to explore whether it is possible to create suggest a more comprehensive mechanism that also allows behind the meter storage assets to export excess energy not being used by the household.

Tesla recognises that Option 1 is also the most complex to implement in respect of establishing appropriate baselines – however we believe this can be managed through a combination of robust customer trials (aggregating smart meter and/ or behind the meter battery energy storage data) as well as stakeholder consultation.

Granular data available from both battery storage assets, and through cloud based communications platforms, can assist with establishing household behavioural patterns. A key component of establishing baselines will, however, be ensuring that the demand response provided by a battery is considered separately to the consumer baseline, so as not to inadvertently reduce the ability of the household or business to use the behind the meter battery asset to provide demand response services.

Co-optimising demand response with system security support

The National Electricity Market (NEM) is relatively unique in that it is fully co-optimised. Under current NEM operations a single utility scale asset can be dispatched to provide services in the wholesale energy market and multiple contingency and regulation FCAS markets within a single dispatch period.

Under Option 1, the AEMC is proposing scheduling of the wholesale demand response provided. From a practical sense it is preferable for market participants to be able to provide both scheduled wholesale market services and frequency services under a single participant classification.

As Tesla has noted in both our previous submission to the AEMC Reliability Frameworks Review Interim Report², as well as our recent submission to the AEMC Frequency Frameworks Review Draft Report³ we believe it is important that distributed assets are able to provide both energy and frequency services. We support an approach that allows for third party aggregators to co-optimize their wholesale demand response bids with any contingency or regulation FCAS bid submitted for the same period. This approach should remove operational inefficiencies and improve market outcomes.

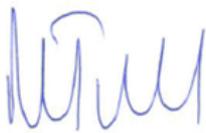
Tesla encourages the AEMC to consider an expanded MASP that integrates the introduction of a demand response mechanism, and allows aggregators to best manage the DER output to provide both energy and frequency market benefits.

As noted in the Directions Paper the MASP framework may prove to be instructive in understanding how the value of wholesale demand can be unbundled from the retail supply of energy. We would like to see the AEMC further consider how the current MASP settings can overlap with the demand response mechanism proposed, to unbundle the value of both wholesale demand and energy used for the purposes of controlling frequency from the retail supply of energy, in a streamlined manner. It would be inefficient for an aggregated asset base to register under two separate market classifications, if one can be established to enable full participation.

Conclusion

Tesla supports the ongoing work undertaken by the AEMC in improving access for DER resources. We welcome the opportunity to engage further and provide any additional information on any of the points raised above. Please contact Emma Fagan at (efagan@tesla.com) for more information.

Kind regards



Mark Twidell

APAC Director – Energy Products

² Tesla, "Reliability Frameworks Review Submission", available at <https://www.aemc.gov.au/sites/default/files/2018-02/Tesla%20Motors%20Australia%20Pty%20Ltd.pdf>

³ Tesla, "Frequency Frameworks Review Submission" available at <https://www.aemc.gov.au/sites/default/files/2018-04/Tesla.pdf>