Tesla Motors Australia Pty Ltd
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Cremorne, Victoria, 3121

Suzanne Falvi
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

8 November 2019

Re: Coordination of Generation and Transmission Investment – Discussion Paper (ref: EPR0073)

Dear Ms Falvi,

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide the Australian Energy Market Commission (AEMC) with feedback on its Discussion Papers on the Coordination of Generation and Transmission Investment (COGATI) Proposed Access Model and Renewable Energy Zones (collectively the Discussion Papers).

Tesla looks forward to working with the AEMC in addressing the overall objective to coordinate generation and transmission investment in the National Energy Market. At a high level our feedback on the latest Discussion Papers are as follows.

General comments

- Tesla commends AEMC's continued work incorporating industry feedback and considering the overarching regulatory framework that will drive the NEM towards its future state. The COGATI process is a key component, alongside AEMO's ISP work to outline the system requirements of the future, and the Energy Security Board (ESB) post 2025 market design that will ensure the right market frameworks are considered.
- Planning for a future grid necessitates significant investment in transmission infrastructure, renewable energy generation, and storage technologies. Introducing more dynamic pricing structures to address congestion and better reflect locational constraints will improve market efficiencies, but is unlikely to be sufficient to drive the scale of investment required to achieve the GWs of new generation or certainty for network investment.
- To this end, we would like to see improved, transparency on design and timing alignment with the work being developed by AEMO and the ESB in articulating and actioning the ISP – which already provides strong recommendations for priority transmission investments that will unlock the level of new generation and storage assets required in the years to come. We would also like to better understand how this interacts with the ESB's recommendations for a post 2025 market design.
- Operational efficiency is important, but we recommend concentrating on building out the infrastructure requirements ahead of fine-tuning market pricing. name Once requisite levels of transmission network has been built, many of the second-order pricing inefficiencies may be addressed, or at least much less impactful on market outcomes than is currently the case with increasing levels of congestion and losses being accrued year on year.

- The NEM awaits transformational levels of investment, which will require a balanced assessment of central planning approaches (as defined by the ISP) against the market-based frameworks the AEMC has been designing, to ensure this future grid delivers the lowest costs for consumers in the long-term.

Bidding and dispatch arrangements

- Tesla is supportive of the decision to treat storage similar to other scheduled generators and loads, and allow access to the local marginal price (and losses). As outlined in the AEMC's Discussion Paper, the principle of dynamic regional pricing more accurately represents the cost of electricity supply across the network and would, from first principles, provide additional opportunities to locate storage in areas of the grid experiencing constraint.
- Tesla would also like to see improved clarity on the potential impacts for current AEMO bidding and dispatch arrangements. Specifically we are interested in increased clarity on the following:
    - Impacts on forecasting. How will the new pricing components be incorporated into pre-dispatch forecasts?
    - Impacts on the solution time to clear the market and what "real-time" bidding will look like under the new dynamic regional pricing arrangements. The ability of fast responding assets to respond to, and alleviate, constraints will depend appropriate bidding times.
- Tesla would like to see additional detail on wholesale market price and contracting impacts for projects given the level of complexity that would be introduced under the AEMC's latest proposal – recognising that generation investment would be stymied (or price in the additional risk) until first-mover projects demonstrate the benefits and costs of the changes.

Access model and disorderly bidding

- It is unclear why the AEMC continues to focus on the theoretical inefficient / disorderly bidding of future battery storage under race to the floor bidding scenarios. A future state of locational-based pricing may not resolve disorderly bidding for any type of generator – it may just complicate it (e.g. generators knowing they will not be dispatched but still obtaining a transmission right). It would be useful for the AEMC to outline further detail on the issue of disorderly bidding as it stands, and propose several options to manage this risk. That will better allow us to pragmatically work on a solution.
- It may be that this issue can also be resolved through the creation of REZs with expanded network capacity to facility energy flows across the system. If it is still found that operational efficiencies could be gained by addressing any inefficient bidding, the issue may warrant further consideration at that point. It is also worth recognising that any perception of theoretical disorderly bidding by future storage assets would still be outweighed by the significant efficiency benefits that storage could unlock.
- Tesla recommends that the AEMC releases examples of pricing structures (or modelling) that would encourage appropriate bidding behaviour from storage assets and interactions with co-located generation plant, and recognising the rise in distributed assets providing generation and system security services, considers these impacts beyond just transmission connected generation assets.

Treatment of distribution connected assets – distributed energy resources (DER) and virtual power plants (VPPs)

- Tesla continues to seek clarification on what, if any, impacts would be faced by distribution connected assets when under constraint.
- We note the AEMC's proposal to include demand response service providers under locational pricing,

given their scheduled status. Further clarification is required for how locational pricing principles will apply to Virtual Power Plants (VPPs). As the AEMC acknowledge, locational pricing would provide the right signal for storage assets that reflect the short-run costs of network for both charging and discharging.

Dynamic marginal loss factors

- Tesla is supportive of a move to more dynamically assessed marginal loss factors (MLFs) that can more accurately reflect losses on the network.
- However, we request that the AEMC provide more detail on this specific aspect of the AEMC's access model proposal, given existing uncertainty and risk falling on existing generators that are already needing to manage changing loss factors on an annual basis.
- For example, it would be helpful for the AEMC to explore whether any bounds to MLF changes would be included and prescribed, and provide more detail on how the AEMC expects generators to mitigate increasing losses being applied dynamically through dispatch under the hedging arrangements that are outlined at a high level.

Additional detail relating to Tesla's position is included in the response following. For further information on any of the points raised in this submission please contact Emma Fagan at efagan@tesla.com.

Kind regards

Emma Fagan

Head of Energy Policy and Regulation