

Dora Guzeleva
Director – Wholesale Markets
Energy Policy WA

29/09/2022

RE: WA Reserve Capacity Mechanism Review – Consultation Paper

Dear Dora,

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide Energy Policy WA (EPWA) with feedback on its review of WA's Reserve Capacity Mechanism (RCM). We support the effort that has gone into the development of this Consultation Paper including the thorough consultation undertaken with the Technical Working Group to date.

Tesla's mission is to accelerate the world's transition to sustainable energy. In Western Australia, forward looking market design will be critical to achieving this outcome and will need to facilitate policy ambitions to retire state-owned coal by 2030 and drive replacement capacity in wind, solar and fast-response, flexible assets such as storage. There is a clear pathway for all West Australians to enjoy a future that is predominantly reliant on renewable energy and storage and EPWA has a unique opportunity to ensure its RCM recommendations are focused on enabling this outcome. Inherent in this approach is a rapid transition away from emission-intensive assets, with significant investments in new, flexible capacity alongside structured procurement of services to match what will be needed in a renewables-based future. Within this context, we re-iterate our overarching design principles and provide detailed feedback on the proposed changes.

Recommended Overarching Design Principles for the RCM

1. Incentivise buildout of new, flexible capacity to enter market with mechanism implemented by end-2023.
2. Do not favour incumbents and non-flexible assets – i.e. don't just reward based on traditional measure of peak capacity (MW output) and ignore flexibility characteristics.
3. Include low-emission factor requirement (<200gCO₂/kWh) to avoid delaying exit of old/inefficient plant at expense of new, or worse – further incentivise the build out of new high emission plant.
4. Reward the true reliability and performance of assets based on system requirements operational goals: i.e. maintain 4-hour linear de-rate scaling factor for storage duration to avoid influx of short-duration assets (as experienced in UK and PJM) but avoid overly burdensome energy capacity requirements (e.g. no need to require availability of >14 hours if the peak system events are <4 hours).

Some potential risks that still need to be carefully monitored for RCM re-design:

- May not sufficiently incentivise low-emission flexible capacity before 2030, which creates reliability risks – some mechanisms in other jurisdictions have been used to prop up legacy thermal plant to provide system security services / incentivise additional gas generation at odds with stated emissions reduction targets.
- Uncertainty on requirements/barriers for DER participation given typical bias for utility-scale, centralised assets
- Risk of being a short-term fix – i.e. if it leads to excess generation built, it will dampen prices and halt case for future projects. In some US states with capacity payments, market prices are now too low to drive investment in new storage, requiring additional tax credits and procurement mandates. EPWA must carefully monitor the entire commercial value stack for storage and potential second order impacts on wholesale market revenues.

Feedback on Consultation on Reserve Capacity Design:

- Tesla supports the renewed focus on supporting and encouraging the development of new flexible capacity such as storage, aligning with the principles set by WA Government and planned retirement of WA's state-owned thermal coal fleet.
- Updated RCM payments must incentivise flexibility and low-emission characteristics to avoid favouring incumbents and risking these planned coal retirements, or artificially prolonging the operating life of privately owned thermal fleet, which is also ageing rapidly.
- By designing a new RCM product that strengthens investment signals for new, flexible capacity only - resource adequacy and provision of system services can be met in a way that is both technology neutral (allowing inverter-based resources to compete with synchronous machines) and scale neutral (allowing provision from DER and VPPs) to ensure lowest cost, highest benefit outcomes over the long-term for WEM consumers.
- Given the volatility of energy and FCAS revenue streams, and high sensitivity of RCM payments to +10% capacity oversupply, more certainty is needed to ensure new (high capex, low opex) projects are bankable.

Recommendations:

- **We support the creation of a new 'flexible capacity' product, to complement the 'peak capacity' product recognising that both services are tightly coupled yet still interdependent enough to warrant distinct and additive payments.**
- **To support new build, RCM payments should include an option of fixed price contracts with sufficient tenure (e.g. 10 – 15 years) with appropriate discount relative to highly sensitive RCM pricing.**
- **We recommend DER is eligible where it can be registered with AEMO (e.g. under VPP arrangements), as recently announced under Victoria's Storage Target.**
- **As an ongoing area of review, we encourage EPWA to look at additional incentives and alignment with the Essential System Services reforms – i.e. power electronic capabilities and grid forming storage assets can fully complement renewables with the entire suite of reliability and system security services provided, without falling back on synchronous generation.**
- **We also recommend future reviews consider how Network Access Quantities protect and favour incumbent investments (at the expense of new storage and renewable projects). We suggest further structural changes will need to be made to the RCM design to ensure investment in new projects keeps pace with the transition and WA Government ambitions for coal retirements.**

2. Eligibility Requirements & Accreditation:

- In principle, Tesla is supportive of the approach to create new market signals and ultimately unbundle and value peak and flexibility services, provided non-network and asynchronous solutions are afforded an equal playing field to incumbent technologies – i.e. technology & scale neutral with payment based on service performance not asset type.
- Availability and dispatchability are both important. But type of dispatchability should be defined - i.e. the focus on flexible, fast-response assets is a step in the right direction, but still relies on an outdated definition of fuel requirements. It is not yet clear if this applies to storage, or otherwise how storage will be treated (e.g. if they will qualify under de-rate parameters as created for peak accreditation). There is no use having slow and polluting dispatchable assets prolonged or even worse, incentivised to enter the market on the back of the RCM while zero emission, fast response flexible assets are penalised unless they have arbitrarily set duration.

- Related to point above, it would be helpful to see additional detail on how the RCM can be used to interplay with WA's planned state-owned coal generation retirements (e.g. support transition / provide buffer for unplanned early privately owned facility retirements). We note at a high-level capacity markets can either prolong coal plants or not. It would seem to be a natural working assumption (and align with overarching design principles and net zero by 2050 goals) to ensure all RCM review work supports decarbonisation of WA's energy supply.

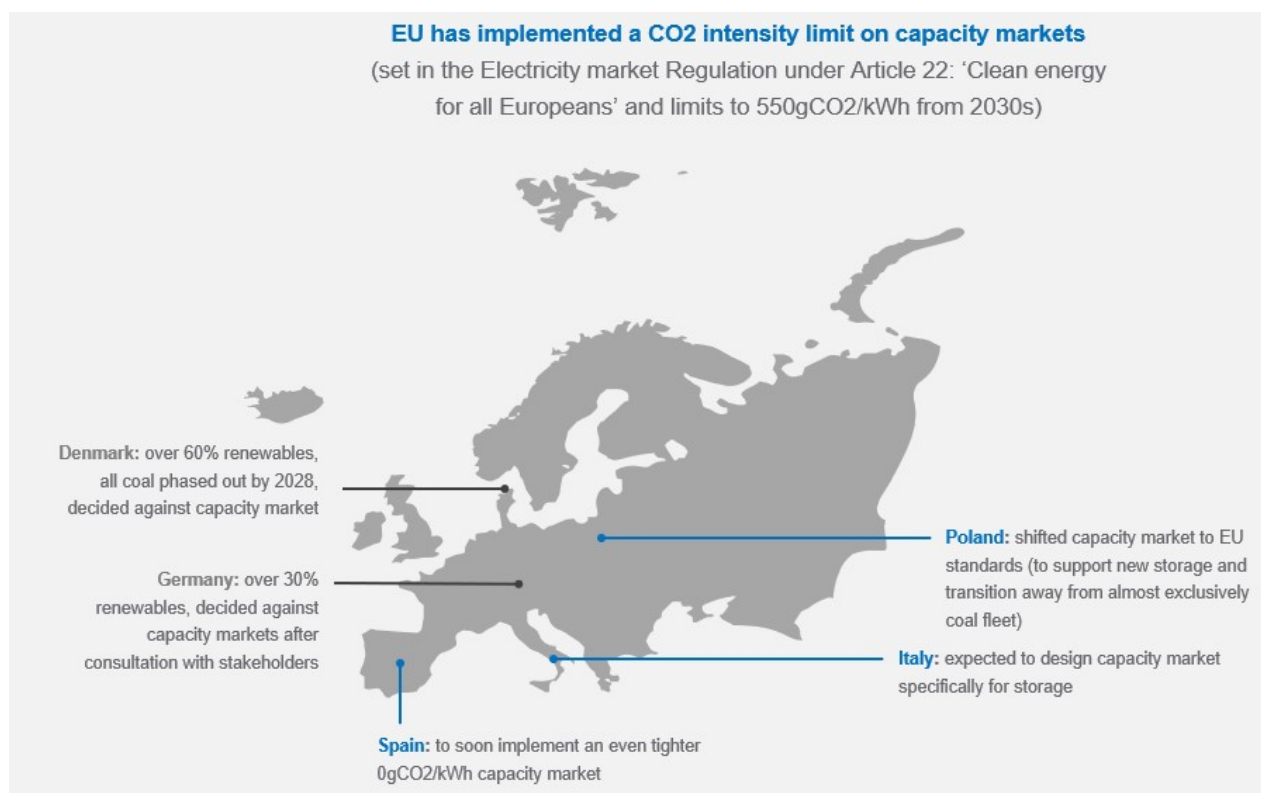
Recommendations:

- **More clarity is required on how availability of storage technologies will be assessed, given historic fuel requirements are no longer relevant as we transition to renewables and storage.**
- **If no new parameters are planned, Tesla does not support the maintenance of a 14-hour availability requirement to qualify as firm, unrestricted capacity (with penalties for non-compliance). Additional analysis on system stress event duration is required to justify just an onerous threshold. For example, we recommend progressing a shorter requirement (e.g. 4 to 6 hours aligned with peak stress duration) with additional incentives for longer duration as it is deemed necessary. This is consistent with system stress analysis from the UK and US, also aligns with the ERA's findings from its Effectiveness Review.**
- **We recommend additional consideration of the market power risk that EPWA has previously identified, with the WEM's thermal plant concentrated amongst a limited set of participants. Accordingly, we do not support the introduction of any revisions that would artificially extend the life of existing thermal generators.**
- **More clarity on overlaps and interactions with ESS workstream would be beneficial. While Technical Working Group sessions touched on the interface with essential system security measures (for unplanned generation or network outages), we note they are different from long-term resource adequacy mechanisms (targeting reliability) yet there is often confusion or conflation of this point, potentially underpinning the onerous availability requirements. This also links back to the desired definition of dispatchability, as some assets (e.g. battery storage) can serve multiple roles – further reinforcing economic efficiency of outcomes within and across inter-related energy, reserve, and ESS market design initiatives.**

3. Emissions Reduction:

- EPWA should explore including a metric for emissions reduction in all assessment frameworks – as well as providing transparency around how carbon costs and risks are being incorporated into future market designs to prevent ongoing market distortions (i.e. where contributors are not being allocated costs to pay). This is already being incorporated into the private sector's commercial analysis of projects and will be increasingly critical in assessing future investment decisions across all large infrastructure domains.
- We support progressing the Minister's policy principles outlined in the draft statement ¹as a matter of priority.
- The EU provides a clear precedent of capacity mechanisms including strict emissions intensity thresholds (see Figure below).
- In general, we support the approach taken by the European capacity markets. Each market is undertaking distinct, yet effective approaches to enhance the provision of market services – focusing on the integration of new technologies such as battery storage through a combination of centrally planned targets, direct contracting, and capacity availability payments that complement existing wholesale market dynamics.

¹ Including to "examine options of using the quantum of the penalties which may include incentives for the early entry of alternative "firming" technologies in the market to ensure reliability of supply is maintained in the transition to net zero emissions energy sector by 2050"



Recommendation:

- **RCM to include an CO2 emissions threshold limit for participation in both peak and flexibility capacity products. This is required to avoid delaying exit of old/inefficient plant at expense of new, or worse – further incentivise the build out of new high emission plant.**
- **We support exploration of penalties for high emission technologies in the WEM.**

For more information on any of the content included, please contact Dev Tayal (atayal@tesla.com).

Sincerely,

Emma Fagan

Head of Energy Policy and Regulation
Tesla Energy