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Alexandria NSW 2015

Rebecca Holland  
A/g General Manager Compliance & Enforcement  
Australian Energy Regulator  
GPO Box 520 Melbourne, VIC, 3001

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Dear Rebecca,

**RE: Tesla's Response to the AER's Rebidding and Technical Parameters Guideline Consultation**

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide feedback to the AER on its consultation paper to update the rebidding and technical parameters guideline.

Tesla is a global leader in electric vehicles and clean energy products, producing a vertically integrated suite of energy solutions including Powerwall, Megapack, and Superchargers. In 2025 alone, Tesla deployed 46.7 GWh of energy storage globally, and in Australia, has 8 GWh of energy storage in operation, and a further 8 GWh+ contracted or under construction.

Tesla's proprietary Autobidder software product is a real-time trading and control platform integrated with Tesla storage resources that automates and optimises battery dispatch 24/7/365 based on owner preferences and needs. Tesla's Autobidder – noting the overlap in nomenclature with generic auto-bidding software – enables owners and operators to configure operational strategies according to their individual business objectives and risk preferences.

The NEM Review opened opportunity to discuss the appropriate regulatory frameworks for an emerging technology, and Tesla welcomes the AER's review of the Rebidding and Technical Parameters Guideline as an opportunity to clarify how frameworks apply to algorithmic bidding software and has structured this response as follows.

1. Implications of the IPRR rule change for the guideline (Q1-3)
2. Treatment of Minimum Safe Operating Limits and ramp rates (Q4-7)
3. Technological developments – AI utilisation in the NEM (Q8, Q13-16)
4. Reviewing the need for rebidding reform (Q9-12)

We welcome the opportunity to discuss any of the points here, and to also hold a general workshop to share our insights and learnings from other markets on algorithmic bidding.

Yours sincerely,

Kaavya Jha  
Senior Energy Policy Advisor



## **1. Implications of the IPRR rule change for the guideline**

Tesla welcomes the IPRR rule changes and acknowledges the significant work by the market bodies to date to establish a framework to enable aggregators and consumer energy resources (CER) to participate in central dispatch.

**Question 1.** *Are there any other items related to the IPRR rule change that may need to be addressed in the Guideline outside of those set out in sections 2.1.1 and 2.1.2, and if so, what are they?*

None identified at this stage.

**Question 2.** *Given the policy intent and broader benefits of the IPRR rule change, do you consider that it would be appropriate for the 'other abnormal operating requirement' categorisation to be used for VSRs in circumstances where the dispatch mode mechanism does not allow the accurate offering of VSR capacity during certain conditions (such as during a supply scarcity event)? Why?*

Yes, we support this categorisation to be used. It is almost impossible to reserve capacity for market participation to meet the sites net obligation to the market. Therefore, there needs to be an appropriate rebid reason or allowance for non-conformance in such situations. Not fussy about what that rebid reason is so long as there is a recognised avenue.

**Question 3.** *Do you have any views on other ways in which this passive load issue could be addressed, for example, by rebidding a unit's ramp rate down to zero if required?*

In regard to EV charging (both wall connectors and Superchargers), Tesla sees this as a partial solution when to ensure AEMO doesn't dispatch targets that the load cannot meet, however, given the customer shares control over the load, is only a partial solution. Tesla is able to provide a reliable average load profile but cannot fully hedge against people unplugging or plugging in, leading to challenges in maintaining compliance.

## **2. Treatment of Minimum Safe Operating Limits and ramp rates**

**Question 4.** *Does the Guideline need to provide greater detail in relation to establishing the MSOL of a unit, and if so, what further detail is required? What criteria should be used to evaluate a unit's MSOL?*

No further detail recommended at this stage, as current guidelines are sufficient.

**Question 5.** *Would further specificity regarding the MSOL in specific conditions (for example, any time that a unit may need to be dispatched out of merit order to manage network constraints) be useful? If so, what specific guidance would be of use?*

No further specificity recommended at this stage, as current guidelines are sufficient.

**Question 6.** *What additional guidance on ramp rates would be of use? Do you think the Guideline clearly explains that ramp rates should not be utilised to manage the commercial impacts of network constraints?*

The Guideline does not explicitly state that ramp rates should not be used for managing the commercial impacts of network constraints. To address this, Tesla recommends that the AER incorporate clear, explicit language into the rules prohibiting such practices. The absence of



explicit guidance currently enables a grey area that could allow some market participants to gain a commercial advantage through employing ramp rates in this manner.

**Question 7.** *What guidance (outside of reference to the ST PASA Procedures) would be beneficial in relation to the ST PASA Recall Period?*

None identified at this stage.

### **3. Technological developments – AI utilisation in the NEM**

Auto-bidding software does not function with unchecked autonomy; instead, they adhere rigorously to human-established strategies, operational constraints, and risk thresholds to ensure transparent and compliant behaviour in dynamic markets like the NEM. While the software is able to automate real-time bid adjustments for BESS, optimising across energy, FCAS, and ancillary services based on precise forecasts and grid signals, it remains firmly under human control, with operators defining key parameters like price thresholds, state-of-charge limits, and multi-objective priorities to prevent unintended actions and align with both market rules and non-market obligations.

This structured approach mitigates risks of anti-competitive behaviour, as the system cannot independently deviate or coordinate with others without explicit human input, thereby promoting fair participation while maximising grid value through rapid, data-driven responses. Tesla welcomes further discussions with the AER and other market and government bodies to demonstrate the internal schematics of how Autobidder operates, which inherently negates the concerns that may arise from using a common third-party AI technology.

Tesla welcomes the creation of a working group with relevant regulatory bodies and the inclusion of industry participants – which is key to designing a framework that does not distort outcomes in operating behaviour. We believe this would be helpful in demonstrating how AI is integrated into auto-bidding software, which functions within clear, human-defined boundaries and strategies, and is very different from consumer-facing generative AI and LLMs.

**Question 8.** *Do you consider additional guidance relating to the expectations for Market Participants utilising Auto-bidding software (including third party software) and for the third party-providers would be useful? If so, what guidance would be of assistance?*

Tesla does not perceive an additional benefit from further guidance relating to expectations for Market Participants (MPs) at this stage, and rather underscores the need for a single, consistent set of rules that all market participants must follow equally. A uniform framework ensures fairness by treating all bidders—whether manual or automated—the same, based on their technical capabilities rather than their tools. This aligns with core NEM principles of promoting competition, efficient dispatch, and reliable outcomes without favouring one type of participant over another.

Adding special provisions just for market participants using autobidders would complicate the rules unnecessarily. This could lead to inconsistencies in enforcement, disputes, or even unintended advantages for non-autobidder participants who exploit gaps. Instead, keeping one



clear set of rules simplifies compliance for everyone, reduces administrative burdens on the AER and AEMO, and supports a level playing field that encourages broader adoption of efficient technologies like algorithmic tools.

**Question 13.** *What are your views regarding the utilisation of AI in Auto-bidding technology? What do you consider the potential benefits and harms as this technology becomes more utilised and sophisticated?*

Tesla identifies significant benefits from the utilisation auto-bidding technology through enhancing market efficiency in the NEM. Algorithmic bidding streamlines the complex, real-time co-optimised bidding process for energy assets in the NEM, enabling operational dispatch across energy and ancillary services markets to ensure compliance, optimise performance, and respond dynamically to grid needs. Batteries must utilise algorithmic bidding to remain compliant with market rules, as their state of charge can change quickly and unexpectedly—such as from unpredictable energy throughput during FCAS or ancillary services dispatch—allowing participants to adjust economic bids that accurately reflect the latest expectations of battery availability to the market operator and ensure physical delivery on committed awards.

Moreover, batteries often provide additional non-market services, like those under the Hornsdale SA government contract or Victoria Big Battery's System Integrity Protection Scheme (SIPS), necessitating an optimisation solution that simultaneously handles multiple objectives, including market participation and reserved power/energy for these obligations, while dynamically maintaining compliance with both market rules and bilateral contracts with AEMO or NSPs.

As highly flexible assets, batteries can swiftly respond to evolving market signals, adjusting bids to prioritise the grid's highest needs and maximise their overall utility and services. Algorithmic bidding does not only facilitate the operations for the individual generator but also is a necessary part of the NEM's energy-only operating structure. Unlike fossil fuel plants, which base bids on the marginal cost of inputs like gas or coal, batteries are inherently energy-limited resources whose marginal cost is defined by market opportunity costs; thus, as forecasts for energy and ancillary services prices shift, they require continuous re-optimisation to deliver maximum value to the grid. In the NEM, all batteries are limited to 10 price intervals (with another 10 for charging). Algorithmic bidding is effectively constrained by these bid bands, which promote structured and disciplined participation, thereby supporting the NEM's integrity while accommodating the unique dynamics of battery storage.

In addition to managing compliance obligations, algorithmic bidding enables operators to manage operational requirements from OEM warranties on cycling and throughput to manage technical limitations, enable settlement validation, and audit battery dispatch and market awards against market operator invoices. These obligations will only grow in complexity as we see a growing number of true, co-optimised hybrid plants in the market.

Today's AI technologies have been intentionally developed with very good explanatory capabilities. Algorithmic bidding software can be instructed to articulate clearly the train of thought that brought it to the final decision on rebidding. Overall, this technology has significant



benefits to the system, as rebidding is a core mechanism for batteries to manage renewables intermittency, delivering maximum grid value in the NEM's energy-only structure.

**Question 14.** *How can the AER ensure sufficient transparency and accountability of technology being utilised for bidding and rebidding?*

Ultimately, ensuring sufficient transparency is through clearly identifying the appropriate market participant, or human trader, that is accountable at any given moment – making sure the frameworks are clear, and they are aware of the liability they are taking on. Any regulatory response should be balanced against the risk of deterring participation of flexible resources and should promote competitive markets rather than restricting algorithmic bidders.

**Question 15.** *What, if any, amendments to the NER are required to address the utilisation of AI in the bidding process?*

As mentioned in Question 8, Tesla does not support the creation of additional obligations and requirements for participants based on their use of certain tools, and rather that any fundamental principles are applied fairly. Consequently, Tesla would be supportive of changes to the NER that are relevant for all – including not interfering with efficiency and integrity of the market, and preventing conduct that is false, misleading, or manipulative within a market and across markets. However, on the final point, Tesla notes that there is already work being done in increasing obligations to avoid this through DCCEE's consultation on 'Strengthening the Prohibiting Energy Market Misconduct provisions', including specifically on cross-market manipulation.

Regarding the other proposed obligations, Tesla does not support adding requirements in the NER to certify, recertify post-updates, test, and govern auto-bidding models, and note that AEMO's MMS portal already enforces strict criteria and checks on the bid format. Additional certification on auto-bidding software releases to meet the suggested obligations here would require modelling all outcomes in scenarios in the NEM, adding redundant testing and would be unfeasible computationally for any participant to do so. This would lead to fewer participants being able to be the market participant for dispatchable capacity (as auto-bidders are essential for BESS), leading to a concentration in resource ownership, going against the intended objective and also the broader market trends.

Instead, Tesla suggests fostering a "trust but verify" culture and welcomes the opportunity to discuss how this could be developed directly with the AER and market bodies. The software platform developers themselves have far more extensive internal checks than could be feasibly run by MPs or other third parties due to taking place at the source code level, by running a series of internally run test suites every time code is added to the code base. A third-party certification requirement in the NER could potentially gate improvements such as bug fixes – which could have adverse consequences including risking operational failures.

**Question 16.** *Do you consider there are AI issues that are directly relevant to the Guideline which require it to be amended? If so, how?*

No further issues identified at this stage. Tesla reiterates its offer to run a knowledge sharing workshop with interested parties at the AER or other market bodies.

#### **4. Reviewing the need for rebidding reform**

**Question 9.** *Do you consider there would be any benefit from adding additional transparency on the utilisation of Auto-bidding in a rebid reason? Why?*

Tesla does not see any benefit in adding specific transparency requirements for the utilisation of auto-bidding in rebid reasons. BESS naturally rebid in response to evolving market conditions and distinguishing between automated and manual processes would introduce unnecessary complexity without enhancing market integrity. The actions of a market participant should be evaluated based on their compliance and economic merit, not the underlying technology, to maintain a level playing field and encourage innovation in bidding tools.

Nonetheless, Tesla would be supportive of a broader overview of rebidding standard categories to ensure they fully capture the reasons for rebidding. Current rebid categories fail to adequately reflect BESS behaviour, including updating a strategy because of errors in AEMO or in-house forecasts, as well as creating a new category for 'change in market conditions'. However, as long as the rebid of the algorithm operates along the rules and the rebid falls into one of the standard categories, there is no reason to introduce a new flag. Batteries are going to re-optimize and therefore rebid as per the price forecast changes, and this is a natural consequence of the role it plays in redistribution of the different generation profiles due to the generation mix.

**Question 10.** *Explain whether the proposed methodology for receiving this information listed above would be effective in providing market transparency.*

Tesla is not supportive of the introduction of additional fields. The current framework already clearly identifies auto-bidder rebids from the volume and types of bids, and it is easily verifiable with customer in audit logs when a human intervened or not. Tesla questions what this additional information would be used for and also notes that the AER has already raised issues with handling volumes of data, so adding more superfluous information for collection would exacerbate the issues raised.

**Question 11.** *How could the volume of battery rebids (particularly when we are seeing numerous rebids within the same dispatch interval) be reduced, whilst maintaining the necessary market integrity?*

Tesla is supportive of the AER's objective of preventing mass rebidding within the same dispatch interval – except in the scenarios in which a human trader is manually overriding a select few algorithmic bidding suggestions. A potential solution could introduce a limitation of one autobidder rebid per dispatch interval, with additional rebids expected to be manual and tagged as E rebids in the case of an autobidder rebid being erroneous.

Beyond the challenge of multiple rebids within a single dispatch period, Tesla emphasises that rebidding and re-optimisation to the price forecast is a necessary part of efficient market operation that BESS' play with regards to enabling their intermittency of renewables. Frequent rebidding improves market clearing efficiency and market surplus and has broad economic benefit when compared to stale bids by traditional participants that don't change for days at a time.

Within the consultation paper, AER states, *'that the sheer volume of rebids that are being submitted by batteries (particularly when we are seeing a significant volume of rebids within a*



single dispatch interval), **increases the risks to the market**'. Tesla seeks further clarity on what the risk posed to the market here is, and greater articulation for what the potential problem that high rebid volumes from batteries specifically might cause. Excluding the case of multiple rebids within an interval, Tesla does not support limiting rebidding for autobidders as this would undermine efficient market allocation and transparency.

**Question 12.** *Do you consider there are any changes to the requirements for the recording of contemporaneous notes for battery rebids that could be implemented to help to reduce regulatory burden whilst still providing necessary integrity?*

None identified at this stage as Tesla considers the existing processes as sufficient.