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Lisa Shrimpton

Australian Energy Market Commission

Submitted via online portal

14 September 2023

RE: Unlocking CER benefits through flexible trading – Directions Paper (ERC0346)

Dear Lisa

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the chance to provide feedback to the Australian Energy Market Commission (AEMC) on the Unlocking consumer energy resources (CER) benefits through flexible trading Directions Paper (the Directions Paper). We provided an earlier response in February 2023 and this response follows.

Our general points on the content included in the Directions Paper is below:

- We accept the points made by the AEMC around the increased complexity of multiple settlement points and financially responsible market participants (FRMPs) for residential customers. Per our initial response, introducing the option for multiple participants behind a meter may create new business models, but this is not guaranteed. Noting the level of other market priorities we would support more of a focus on opening up VPP market access through the Integrating Price Responsive Assets Rule Change, and developing a more fit-for-purpose CER governance framework. These are the two priority areas.
- Noting the above, there does not seem to be value in continuing flexible trading work for small-scale assets. We do not see there being any current regulatory barriers to market participation for small scale assets (regarding markets that can already be accessed by CER), or the need for new classifications splitting flexible/ non-flexible capacity behind the meter. If there is no introduction of the potential for multiple FRMPs then there does not seem to be any need for, or value in, a Rule Change process to “separately identify and manage flexible CER”.
- We are still supportive of this Rule Change being progressed for large commercial customers. As we noted in our original submission, the low-hanging fruit and areas that could be addressed through this Rule Change process relate to creating more optionality for EV charging infrastructure and embedding two connection points.

Based on these points, we’ve responded to the first two elements considered in the Directions Paper to determine whether we think there are any actual barriers that need to be addressed through the FTA

1. Optimising the value of CER flexibility by examining opportunities for separately identifying and managing flexible CER; and
2. Flexible trading of CER with multiple energy service providers at residential and/or commercial premises.

The AEMC should consider the response below as initial content. We are happy to provide the AEMC with more content or any more information in respect of our current market participation, technical capabilities or thoughts on future market participation. We would also recommend reading this response as a sister piece to our Integrating Price Responsive Assets into the NEM response. Please contact Emma Fagan (efagan@tesla.com) with any questions or follow-up.

Kind regards

Emma Fagan

Energy Policy and Regulatory Manager

Optimising the value of CER flexibility by examining opportunities for separately identifying and managing flexible CER

Interrelationship between Flexible Trading Arrangements and Integrating Price Responsive Assets

Tesla does not view the two rule changes are being fully interlinked. In our experience CER can be fully market responsive regardless of whether it is installed behind a second meter or "separately managed and identified". A single financially responsible market participant (FRMP) operating a site is not going to benefit from differentiating between passive and active capacity and/or introducing a second settlement point. Depending on how it is implemented it is likely to add cost or complexity; and more importantly any Rule Change on this will be addressing a problem that does not currently exist.

We also do not see the Flexible Trading Rule Change as being a necessary pre-cursor to enabling market access to the extent considered in the Integrating Price Responsive Assets into the NEM

Our understanding of the FTA Rule Change was that it was designed to provide the customer with optionality in potentially working with more than one FRMP. I.e. a customer might elect to have a separate retailer or trader relationship. Enabling *multiple* FRMPs was the key reason why this shift was dependent on a Rule Change. In Tesla's experience and based on our understanding of the market rules:

- There is nothing stopping aggregators/ FRMPs from currently splitting flexible and non-flexible behind the meter capacity for market purposes.
- There is nothing stopping aggregators or FRMPs from adding a separate revenue grade meter to meter controllable assets (such as batteries and solar PV inverters) – in fact if there are PPA arrangements in place it is already a requirement that there is a separate revenue grade meter to ensure accurate customer billing.
- There is nothing preventing an NSP from approving a second connection point at a site – the issue here is that it is currently fully discretionary for NSPs.

Market services

As noted above, there are currently no market barriers for orchestrated CER stemming from an inability to "separately identify and manage flexible CER".

Firstly, in respect of market access, the only markets that residential aggregated CER currently have access to is contingency FCAS markets. Aggregators and FRMPs are already able to differentiate between assets capable of providing contingency services or not. In the AEMO registration process, FRMPs/ market participants are asked to specify the technology type that will be providing the service (thereby already "identifying" the flexible and market enabled capacity).

In respect of contingency FCAS, even though responses are measured at the connection point, AEMO have also made allowances for FRMPs/ market participants to provide AEMO with supporting device level data if there are any potential questions on non-compliance[1].

Regarding energy market responsiveness, as noted VPPs and orchestrated DER currently cannot directly participate in energy markets, however assets can still be optimised to respond to wholesale energy market signals – see Figure 1 below which provides an example of Tesla's SAVPP fleet optimising to respond to market signals.

[1] Refer to pg. 63 of the "Amendment of the Market Ancillary Services Specification – DER and General Consultation - Second Draft Determination" where AEMO notes: *On the other hand, if a potential FCAS non-compliance is identified using the grid/net response, AEMO may request the measurements from the asset/s to confirm whether the change in active power was in line with each Ancillary Service Facility's droop setting, frequency deadband or frequency deviation trigger settings*. (https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2021/mass/third-stage/amendment-of-the-mass-der-general-consultation-second-draft-determination.pdf?la=en)

Figure 1: Example SAVPP response to wholesale energy market signals

For future market access, the type which is being considered through the Integrating Price Responsive Assets into the NEM Rule Change, it feels pre-emptive to address market access barriers before we know what that market access will look like.

As noted above, from a technical perspective aggregators are already above to respond to market price signals through isolation of market responsive assets behind the meter. We do not yet know how VPP/ CER market access will evolve (from an integration perspective) through the Integration of Price Responsive Assets Rule Change, but we know enough to make the following general statements:

- Technically assets can already respond directly to market price signals. Enabling a split in behind the meter capacity is not going to better enable this.
- If it becomes necessary to split flexible and non-flexible capacity under two separate meters for energy market settlement purposes this can be done without a rule change. As noted above, there are no regulatory barriers to this occurring and it is already mandatory in some instances.
    - We would also hope that during the design and implementation phase of Integrating Price Responsive Assets Rule Change, consideration is given to using the metering and measurement functionality from devices.
- We also think that flexible assets will already be able to follow a signal without needing this to be separately identified. In 2018, Tesla demonstrated what it would look like to aggregate a number of assets to follow simulated AGC signal (refer Figure 2). Depending on how energy and regulation FCAS market development progresses, we do not see any immediate need or barriers associated with differentiating flexible and non-flexible capacity behind the meter.

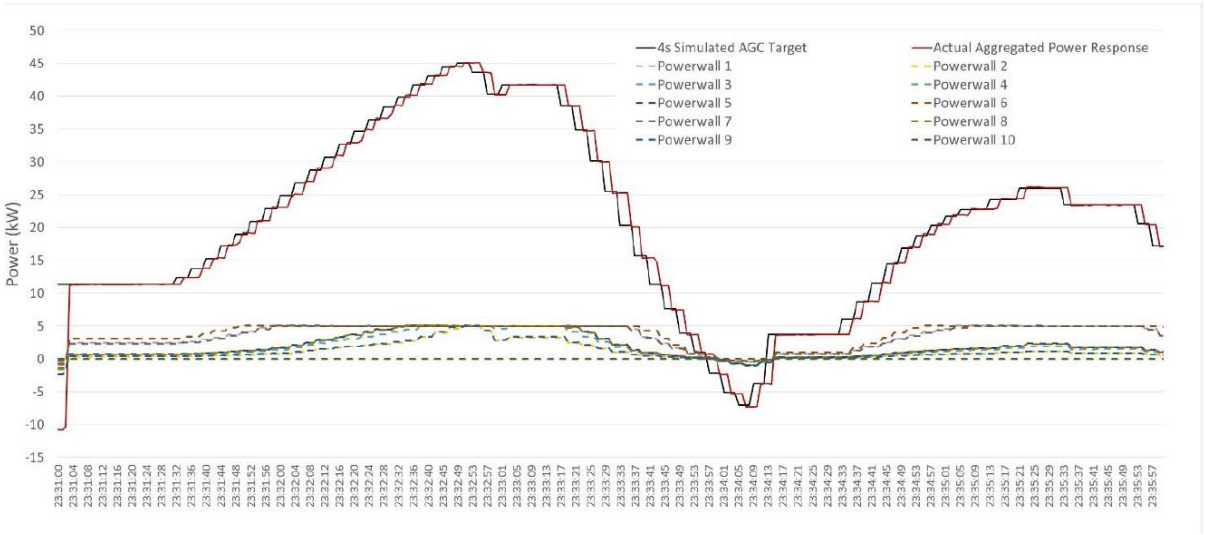

Figure 2: Tesla test VPP response to a simulated AGC signal

Network services are similar in that there does not seem to be any immediate need to identify and split out behind the meter "flexible capacity" to provide network services. In our experience Tesla has contracted with ElectraNet in South Australia to provide fast frequency response during an islanding event. To provide this service, again we nominated the asset that would be actively responding, and there was no need for any formal partitioning of capacity behind the meter to provide this service. Figure 3 below provides a visual of this response.

3.5.3 Tesla Virtual Power Plant

Tesla VPP facility performed as expected by providing its contracted 20 MW FFR when frequency deviated outside the defined response trigger range (Figure 23).

Figure 23 Tesla VPP generation during the incident

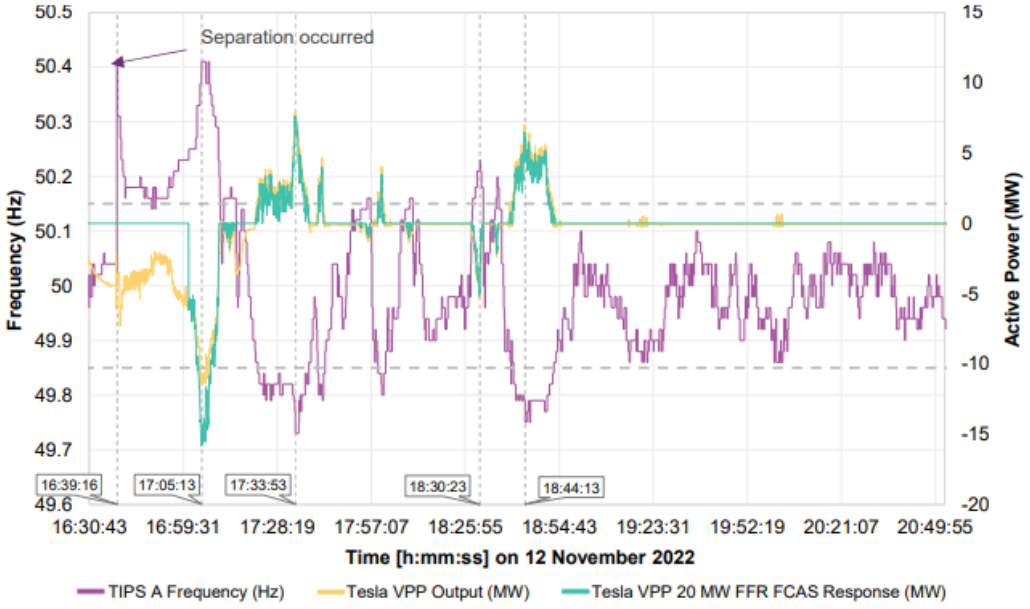

Figure 3: Tesla SAVPP provision of FFR for ElectraNet[2]

[2] https://aemo.com.au/-/media/files/electricity/nem/market_notices_and_events/power_system_incident_reports/2022/trip-of-south-east-tailem-bend-275-kv-lines-november-2022.pdf?la=en

In summary, for all existing market and network services we do not see any need for, or value in, formally being able to partition flexible and non-flexible behind the meter capacity. Given that we do not think this will address any existing market or regulatory barriers, we are concerned that at best it is wasted effort and at worst it might create new barriers.

We would be particularly concerned with any continued pursuing of this topic if it involved the introduction of a second revenue grade meter. Our concerns and points on this were made in our initial submission.

Flexible trading of CER with multiple energy service providers at residential and/or commercial premises

As noted in our previous response to the AEMC we think that this Rule Change has positive application for commercial EV charging at large commercial sites.

> *The retail arrangements for EV charging in commercial buildings is still a relatively new and emerging area. A major reform in this area is the updated National Construction Code which mandates all commercial carparks be EV ready. This new version of the NCC comes into force in March 2023 and has the potential to significantly increase the number of EV chargers that are installed in residential and commercial buildings.*
>
> *As this sector continues to grow, having in-built flexibility in partitioning out EV charging load from the rest of the commercial or apartment building provides huge opportunity for emerging retail and customer models, providing greater competition in the provision of EV charging services and benefits to the consumer.*

Of the three options considered in more detail in the Directions Paper, we make the following comments:

- **Status Quo – using a second connection point** - as noted in our earlier submission to the AEMC, the issue with the status quo is that the ability to add a second connection point is at the discretion of each DNSP. We would be interested in working with the AEMC to understand whether there are minor changes that could be made to the NER that would strengthen the ability to add a second connection point at large customer sites?
- **Embedded networks** – as noted by the AEMC embedded networks were not necessarily built for the purpose envisaged by AEMO, specifically for flexible capacity to be managed by a separate FRMP for retail/ market purposes. We have no experience in embedded networks and so no clear views or positions on the barriers, and would be interested in the AEMC extrapolating what a potential model might look like.