Australian Energy Market Operator (AEMO)

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Dear DER Standards Team

Initial Distributed Energy Resource (DER) Minimum Technical Standard – Tesla response to consultation

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide feedback to the Australian Energy Market Operator (AEMO on the "Initial DER Minimum Technical Standard – for consultation" (DER Technical Standard).

As noted in our response to the Australian Energy Market Commission (AEMC) in respect of the "Technical Standards for DER" Rule Change, and to the Energy Security Board (ESB) in respect of their "Governance of DER" Consultation, Tesla broadly believes that reform of the governance of DER requirements is needed.

As a general rule, we support the following in respect of new DER requirements

- A coordinated approach across all jurisdictions (to the fullest extent possible).
- A complementary relationship with new DER market reform, so DER regulatory standards do not impact on the ability of DER to provide market services.
- Sufficient lead-time to enable full industry compliance with new requirements.

Tesla has the following comments in respect of the proposed requirements of the first AEMO DER Technical standard. For more information on any of the comments included in the response below, please contact Emma Fagan (efagan@tesla.com).

1. DER inverter capability to withstand power system disturbances

Compliance with the voltage disturbance ride-through (VDRT) test requirements released by AEMO is something that most inverter manufacturers will already be compliant with as a result of the South Australian inverter requirements.

Tesla has a couple of questions on compliance timelines for the VDRT:

- Figure 2 notes testing of inverters "from July 2020" with the text above noting "approximately 11 months from July 2020 … to test inverters". Does this indicate that compliance with the VDRT test will be required ahead of 31 March 2021 for inverters sold in South Australia and by June 2021 for inverters sold in all other jurisdictions?
- If inverters are not captured by the SA Government requirements, and the final version of AS4777.2 is released ahead of June 2021, can inverters just test to the whole of the revised AS4777.2? Or will they be required to test to the AEMO VDRT test standard and then again to AS4777.2?

In respect of future DER Standards released by AEMO, Tesla would suggest developing a coordinated plan in order to avoid redundant, and overlapping tests. In our early feedback to AEMO in respect of the

VDRT Standard, we raised concerns with the condensed timelines for lab testing and relisting of inverters with the Clean Energy Council (CEC). As AEMO develops future DER Standards, it will be absolutely critical that any new test requirements are provided to industry with adequate lead-time, and appropriate testing timelines.

2. DER Interoperability

Tesla supports further work on interoperability being undertaken by AEMO. In particular, we support the following:

- The development a coordinated industry consultation / implementation plan regarding DER data, communications and interoperability requirements and standards as soon as practicable, and
- Dedicated effort in building an understanding on DER data, communications and interoperability provisions into the Initial DER Standard to better inform how the interoperability requirements are developed over time.

We strongly urge AEMO to use international standards – IEEE1547, for instance, has a section on interoperability that industry is familiar with. As well as focusing on international standards, AEMO should focus on implementing a nationally consistent approach to interoperability, as opposed to state-specific approaches.

Tesla supports further work done on IEEE 2030.5 as a starting point for its work on data, communications and interoperability. This has formed the basis of framework used for the AEMO VPP API specification and the work that SA Power Networks is doing in developing their DER integration framework.

In respect of Question 9 asked by AEMO, the DER Standard could also consider using the device level telemetry data requirements (section 4.4) of the AEMO VPP Data Specification as the minimum set of data points required by DER.

3. Inclusion of AS4777.2 in the NER

Tesla generally supports the inclusion of AS4777.2 in the NER rather than in state regulations. There are, however, a number of governance issues that need to be addressed in respect of the development of DER standards and regulations, and this will not be addressed by including AS4777.2 in the NER. Tesla supports further work done on clarifying roles and responsibilities in respect of DER. If AS4777.2 is included in the NER, it is unclear as to whether any amendments would need to go through a rule change process as well as the Standards Australia development process.

If AS4777.2 is included in the NER, it would also be good to clarify the interaction between AS4777.2 and the market obligations of the NER, in the event that the two are contradictory. In Tesla's comments on AS4777.2 we noted some inconsistencies with the frequency response requirements of AS4777.2 compared with the frequency response requirements from DER registered to provide Frequency Control Ancillary Services (FCAS).

If AS4777.2 is referenced in entirety in the NER, then it should be explicit that these requirements are the minimum performance requirements, and if they are contradicted by market performance requirements, then those market performance requirements take precedence.

4. Interaction with new SA requirements

It is unclear how the Initial DER technical standard is intended to interact with the new South Australian rules. Will the AEMO standard replace the recently introduced SA requirements? How will AEMO and the SA Government ensure that the SA standards do not contradict the AEMO standard? Will the SA

requirement become obsolete as soon as AS/NZS 4777.2:2020 is introduced? Although the test required for South Australia is the same as that required for the proposed new AS/NZS 4777.2:2020, the AEMO test is only one component of a group of new voltage disturbance requirements in the public comment draft of AS/NZS 4777.2:2020. Presumably, when AS/NZS 4777.2:2020 comes into effect, all inverters will need to be re-tested for compliance with that standard. And presumably the South Australian undervoltage ride through test will then be obsolete. Can AEMO please confirm this is the case?

The South Australian government has also recently mandated use of multi-element smart meters for remote disconnection and reconnection. The multi-element smart meters are required, even when there is an inverter or other technology that will be used for remote disconnection and reconnection (we note that there are multiple deemed methodologies for remote connection and disconnection and dual element smart meters is only one option). It is not clear why multi-element smart meters should be mandated when there is an inverter with the capability required.

Smart meters are being rolled out across Australia. It would be helpful if AEMO could clarify why it proposed mandating use of multi-element smart meters and whether it will advocate this approach in any other jurisdictions.

Kind regards

Emma Fagan - Head of Energy Policy and Regulation