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Level 1 / 151 Pirie Street  
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*Lodged online via ESCOSA portal*

22/04/2021

**RE: Variation to electricity generation licence exemption - Tesla feedback on Authorisation of Virtual Power Plant operations Consultation Paper**

Dear Georgina,

Tesla is pleased to provide our feedback on the Essential Services Commission of South Australia's (ESCOSA) "Authorisation of Virtual Power Plant Operations" consultation ("**Consultation Paper**"). The Consultation Paper covers the proposed extension and variation of the current exemption from the requirement to hold an electricity generation licence for operators of virtual power plants (VPPs) in South Australia (SA) registered under the Australian Energy Market Operator's (AEMO) VPP Demonstrations Trial.

Tesla supports a proposed extension of the exemption timelines. Over the 12-month additional exemption period we would welcome the opportunity to work with ESCOSA as to whether licence requirements for VPP operators are appropriate at this point in time, the threshold requirements for being considered a VPP, and appropriate licencing requirements for VPPs noting that a different, more robust compliance framework already exists for distributed energy resources (DER) that could be well leveraged.

Our initial views are that a VPP licence should not be needed, given the additional activities that are captured related to the provision of frequency control ancillary services (FCAS) from ancillary services load. We also note that there is no equivalent, general requirement for entities registered with AEMO as a market ancillary services provider (MASP) to hold a generation licence and we believe the same principles should be applied to VPP operators.

If ESCOSA deems a licence necessary at the end of the 12 months, then Tesla sees some issues with the conditions proposed in the Consultation Paper. Our feedback on specific sections is provided below. Additionally, if a licence is required Tesla believes that ESCOSA could play an additional role in working with SA Power Networks in order to articulate the network conditions and requirements that apply to VPP operators.

For more information on any of the items raised, please contact Emma Fagan (details below).

Sincerely

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## About Tesla

Tesla Motors Australia, Pty Ltd (Tesla) is a global leader in manufacturing electric vehicle and clean energy products. Tesla produces a unique set of energy solutions such as Powerwall and Megapack, enabling homeowners, businesses, and utilities to manage renewable energy generation, storage, and consumption. Our mission is to accelerate the world's transition to sustainable energy and globally Tesla has deployed more than 6.2 GWh of residential and utility scale energy storage systems across 40 countries. In 2020 alone, Tesla deployed more than 3GWh of energy storage systems around the world.

Tesla is also a leader in delivering high quality virtual power plants (VPPs). The South Australia VPP (SAVPP), delivered by Tesla and Energy Locals with support from the Government of South Australia and the Australian Renewable Energy Agency (ARENA) currently has 13 MW registered to provide all six contingency frequency services – and has been providing high quality frequency response services for almost two years.

Tesla currently employs more than 120 people in Australia to undertake the full range of the development and deployment of utility scale energy storage and VPP work. Our permanent employees provide end-to-end development of all Tesla's local energy projects including Business Development, Engineering, Project Management, Project Deployment, Software Development, Market Integration, Service & Operations.

## Support for an extension to the exemption period

Tesla supports the proposed extension for an additional 12 months in respect of the current exemptions. We note that there are several review processes that are currently underway which should reach some form of resolution or at least progress over this 12-month period. Specifically:

- The AEMO review of the market ancillary services specification (MASS) which will look to transition the current AEMO approach from VPPs away from a trial basis to business as usual settings for VPP operators looking to provide FCAS.
- SA Power Networks is commencing a flexible exports trial for solar systems that will impact a small number of customers over the next 12 months.
- The Wholesale Demand Response Mechanism (WDRM) will become available for market participants from October 2021 and will allow demand response providers to actively participate in the wholesale energy markets.
- Integrating Energy Storage – the AEMC rule-change process which is looking at registration options for bi-directional assets (both utility scale and DER) is currently underway.
- Energy Security Board (ESB) Post 2025 work – the demand side participation workstream will also look at the future of how aggregated DER can and should participate in markets.

Each of these review processes will assist in creating a common language regarding what is or is not considered to be a VPP and should assist with establishing threshold parameters on when a licence is required.

## Need for a licence for a VPP operator

Taking into account the long-list of market changes that will progress over the next 12 months, Tesla suggests that ESCOSA should consider when and if it is appropriate for a fleet operator to be deemed as a VPP and to hold a licence, specifically whether it is suitable for these operators to hold a generation licence. We also believe that over this 12 month period ESCOSA should consider how the extension of the current SA licencing regime to VPP operators should be applied and whether it covers services that would normally be captured under the ESCOSA licencing regime, and are additional to those services already been captured through other licences.

Under the current AEMO arrangements, aggregators can operate a VPP by registering ancillary services load under existing market customer (retailer) arrangements, or independently as a market ancillary services provider (MASP). Aggregated fleets of assets are operated the same way from an FCAS perspective under both registration scenarios.

The current exemptions listed in the ESCOSA consultation paper appear to cover VPPs that are registered under both the MASP and market customer registration classifications. At the same time, we note that there is already ~30MW of MASP capacity registered with AEMO in South Australia that do not currently hold a licence or exemption with ESCOSA. It would be helpful to understand how ESCOSA plans to draw the boundaries around who does, or does not, need to hold a licence under the proposed changes. Will every entity registered with AEMO as a MASP be required to hold a licence? How will these new licence requirements be extrapolated to the wholesale demand response mechanism (WDRM) when that is introduced and supersedes the MASP registration.

As part of this broader consideration we believe ESCOSA should consider the additional services that are being provided under the current VPP arrangements. The AEMO trial, and subsequent MASS review will simply enable more distributed energy resources (DER) to provide FCAS services. This is the only additional service that is currently enabled through the AEMO VPP Demonstrations trial. All energy market activity that occurs through the VPP operators is already covered under existing retail licence arrangements.

The current aggregation framework within the national electricity rules (NER) is complex and evolving and it would be very valuable for ESCOSA to be quite explicit on why a generation licence is needed, what is considered to be a VPP under the generation licence arrangements, and how this approach is future-proofed to take account of changing market settings.

## Tesla feedback on proposed licence conditions

Notwithstanding our feedback above, on whether a VPP licencing framework is appropriate and the work that needs to be done in defining the boundaries, Tesla also has concerns with a number of the proposed conditions in the Consultation Paper. As a general statement, it appears as though a lot of the conditions that are being suggested are those applied to larger scale assets, which are not going to be readily applicable to the majority of small scale DER that does, and will, make up the bulk of VPP plant in SA. There is already a range of standards and state-based regulations that apply to these systems, and existing compliance regimes that should be leveraged to reduce the cost burden for both ESCOSA and VPP operators. Our feedback on specific sections is included below.

## 5. Access

Access as proposed in , which stipulates (emphasis ours):

### *5.1 The licensee must:*

- a) in accordance with, and to the extent required by, the Electricity Transmission Code, grant to a network service provider, **rights to use, or have access to**, those parts of the licensee's electricity generating plant that are interconnected or interface with the network service provider's assets for the purpose of ensuring the proper integrated operation of the South Australian power system and the proper conduct of the operations authorised by the network service provider's transmission licence or distribution licence; and*
- b) in the absence of agreement as to the terms on which such rights are to be granted, comply with a determination of the Commission as to those terms.*

Tesla is not entirely sure what is meant by this requirement and how it relates to the broader requirements of the Smarter Homes program?

There is currently no requirement in the SAPN TS129 connection requirement that grants SA Power Networks the right to control, access or otherwise use DER connected to the SAPN network. Under the Smarter Homes requirements, any residential solar PV connection is required to nominate a relevant agent for remote disconnect and reconnect. SAPN is one such agent that can provide this service, however there are a number of other approved relevant agents in SA.

Additionally, relevant agent requirements are codified by the Office of the Technical Regulator and all inverters installed in South Australia by 28 September 2020 are already compliant. Noting that this requirement is already embedded in state regulations, we do not believe that this additional access condition would be needed within any VPP licence framework that is adopted in South Australia. This is particularly so given how broad and open-ended this condition reads. At face-value this condition would give SAPN unfettered control over all DER / VPP plant connected to the SAPN network which would go far beyond the requirements of the Smarter Homes program and is not something Tesla supports.

A better approach would be to outline exactly what access rights SAPN will have and specify that this will not apply where the Smarter Homes requirements apply.

## 8. Safety, reliability, maintenance and technical management plan

*The licensee must prepare, maintain and periodically revise a safety, reliability, maintenance and technical management plan dealing with matters prescribed by regulation; and*

*(b) obtain the approval of the Technical Regulator.*

This requirement is likely to be quite onerous and unnecessary for VPP operators. The vast majority of VPPs will operate using small scale DER, and these systems already go through a far higher level of rigour in standard and regulatory

compliance requirements when compared to larger scale assets. This is necessarily so given the higher risk of installing systems on residential properties.

As a specific example – all systems currently registered in the AEMO trial are small scale battery systems Each of these systems is currently included on the CEC Approved Battery list<sup>1</sup>. These systems need to comply with Battery Best Practice Safety Guide<sup>2</sup>. In order for the CEC to deem a system as compliant with that guide, a manufacturer must provide the CEC with an overview of the maintenance requirements and maintenance guide for installers.

Given the unique nature of assets participating in the market under a VPP type arrangement, and the additional compliance requirements already in place, Tesla would recommend that ESCOSA licencing leverages existing CEC product lists as much as possible, and only requires approval from the OTR for systems are not already included on the CEC lists.

#### 9. Switching manual

Similarly, to comments on 8. above, most plant that is being installed to operate under a VPP arrangement will be compliant with AS4777.2 (current 2015 version and will be compliant with the 2020 version from Dec-21). As such the Switching Manual will be irrelevant as compliance with AS4777.2 will take precedence over any of the compliance elements established in the Switching Manual. Tesla suggests that ESCOSA leverages the CEC Inverter list for compliant plant, and requires any DER not listed with the CEC to develop their own internal Switching Manual. This expectation shouldn't apply to all plant.

#### 11. Information to AEMO

*The licensee must, following a request from AEMO, provide to AEMO such documents and information as AEMO may reasonably require for the performance of its functions.*

On principle, Tesla is supportive of this clause, however we would like to understand the motivations for its inclusion and the exact information that ESCOSA foresees VPP operators sharing with AEMO under this stipulation, and through what communication platform.

#### 18. Insurance

*The licensee must undertake and maintain during the term of this licence insurance against liability for causing bush fires.*

*The licensee must provide to the Commission a certificate of the insurer or the insurance broker by whom the insurance was arranged (in a form acceptable to the Commission) to the effect that such insurance is adequate*

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<sup>1</sup> <https://www.cleanenergycouncil.org.au/industry/products/batteries/approved-batteries>

<sup>2</sup> [https://batterysafetyguide.files.wordpress.com/2020/01/bestpracticeguide\\_batterystorageequipment\\_final\\_04.07.18.pdf](https://batterysafetyguide.files.wordpress.com/2020/01/bestpracticeguide_batterystorageequipment_final_04.07.18.pdf)

*and appropriate, given the nature of the licensee's activities conducted under this licence and the risks associated with those activities.*

As per the comments above, this requirement does not appear to be necessary or well-suited to for DER systems that will be operating under a VPP arrangement. Unlike stand-alone electricity generation infrastructure (and particularly network infrastructure), VPP assets are installed behind the meter at a customer premises – either residential or commercial – and as such do not create any bushfire risk.

In addition, in Tesla's experience there are no off-the-shelf insurance solutions for third parties looking to insure VPP assets. Insurance for Australian DER is universally through a customer or business home insurance policy. As such VPP operators will not be able to meet this condition.

## 22. Information to Network Service Provider

*The licensee must, following a request from a Network Service Provider provide such documents and information as the Network Services Provider may reasonably require for the performance of its functions, in a format and within a timeframe reasonably required by the Network Services.*

As above, Tesla would like to understand the motivations for its inclusion and the exact information that ESCOSA foresees VPP operators sharing with the network service provider under this stipulation, and through what communication platform.

### **Interaction with flexible exports**

SAPN recently announced a new trial to introduce flexible exports, whereby solar systems<sup>3</sup> connecting to certain parts of the SAPN network will have the option of opting in to flexible export settings or be offered a lower static export limit.

Ahead of broader expansion to flexible exports across the state, there is a potential role for ESCOSA to work with SAPN to determine a standard set of VPP connection parameters, requirements and options for exemptions for specific services.

The exact details of these exemptions, and the reasons given for doing so should be the content of a separate consultation process that involves VPP operators, SAPN, AEMO and ESCOSA to develop an appropriate and technology neutral framework, while maintaining the integrity of market frameworks, network infrastructure and system security.

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<sup>3</sup> <https://reneweconomy.com.au/south-australia-to-introduce-flexible-export-option-for-rooftop-solar/>