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Dear Chris,

**Preliminary Framework and Approach Regulatory Control Period Commencing 1 January 2021**

AEMO welcomes the opportunity to provide input to the AER's consultation on the Preliminary Framework and Approach for Victorian Distribution Network Service Providers (DNSPs).

AEMO is the independent National Electricity Market (NEM) and Western Australian Wholesale Electricity Market (WEM) market and systems operator, and the NEM National Electricity Transmission Planner, with primary responsibility to manage and maintain power system security and reliability. This role is undertaken within the legislated policy and market frameworks of the day and in adherence to the National Gas and Electricity Objectives and Rules.

AEMO's submission below sets out our view in response to AusNet Services' proposal for a new unregulated service, Transmission Network Support. AusNet have proposed this classification using the example of the switching of zone substation capacitors, at the request of AEMO, during light load conditions on the transmission network.

Should you have any queries in relation to our submission please contact Tess Fitzgerald on 03 9609 8877.

Yours sincerely



**Brett Hausler**  
**Executive General Manager - Regulation and Governance**

## 1. Background

In the AER's recent Preliminary Framework and Approach in respect of Victorian DNSPs, AusNet has submitted a proposal for a new unregulated service, 'Transmission Network Support'. At present AusNet Services does not receive revenue in respect to this service, however it is seeking to formalise and charge for this service as an unregulated service. AusNet Services considers that revenue earned in this manner should be treated in accordance with the Shared Asset Guideline.

On occasion, at the request of AEMO to maintain system security, AusNet Services will switch off zone substation capacitors during light load on the transmission network. Low power flow on the transmission network can lead to high voltage that can exceed defined operating limits. Switching off capacitors at zone substations within the distribution network can help reduce voltages on the transmission network by increasing the level of reactive power that is drawn from the transmission network. In the 2018 Victorian Annual Planning Report for transmission, AEMO stated that it has managed high transmission system voltages following the closure of the Hazelwood Power Station through a temporary arrangement with distributors to switch off a total of 350 MVAR reactive power of distribution substation capacitors.

## 2. Roles and responsibilities

### *AEMO's role*

As the independent market and system operator, AEMO has key responsibilities to maintain system security under the National Electricity Law and the National Electricity Rules. Those responsibilities include:

- In normal operation, operating the power system so it remains in a secure operating state to the extent practicable.
- When a contingency event occurs, taking all reasonable actions to adjust the conditions of the power system, where possible, with a view to restoring a secure operating state as soon as reasonably practicable.

AEMO adjusts power system flows and frequency control requirements every 5 minutes to maintain frequency balance and secure operation of power system equipment. This includes applying network constraints to restrict or prevent power flows in parts of the grid that are affected by outages or faults. These constraints are typically developed on advice from network service providers. In addition to adjusting the dispatch of energy and frequency control services, other options available to AEMO to manage power system security include:

- Working with service providers to reschedule non-urgent outages.
- Instructing NEM participants to take equipment out of service or bring it back into service if possible.
- Requiring generation or load to be temporarily disconnected.

AEMO also plays a role as Victoria's transmission planner. In this capacity, AEMO is responsible for planning and directing augmentation on the Victorian electricity transmission Declared Shared Network (DSN), and for publishing the Victorian Annual Planning Report (VAPR).

### *AusNet Service's role*

In Victoria, AusNet Transmission Group Pty Ltd is Transmission Network Service Operator and the declared transmission system operator. At the 66 kV level, or on occasion at the 22kV level, AusNet Electricity Services Pty Ltd is the Distribution Network Services Provider. Both AusNet entities are accordingly considered Network Services Providers (NSPs) under the National Electricity Rules.

Clause 5.2.3(e) of the National Electricity Rules sets out certain obligations of NSPs, which includes an obligation on the Network Service Provider to 'arrange for operation of that part of the national grid over which it has control in accordance with instructions given by AEMO'. This clause also applies to the declared transmission system operator under clause (g)(1).

When AEMO instructs AusNet to switch capacitor banks, clause 5.2.3(e) requires AusNet to do so as part of its core obligations. Failure to comply with clause 5.2.3(e) could attract civil penalties.

### **3. Operational Procedures/Processes involved**

As outlined above, AEMO's principal requirement in requesting AusNet to switch off substation capacitors is to maintain system security. Acknowledging that system security can change rapidly AEMO's requests can be made at very short notice and as a matter of some urgency. Conversely the requests may also be made in a planned manner in anticipation of changing circumstances on the network.

The operators' decisions are guided by AEMO's various voltage operation policies/manuals. Procedurally, the requests are made by AEMO's real time operations group, located in Brisbane and Norwest, predominantly via telephone call, but can be done electronically as required to their counterparts in the AusNet operations/control centre.

As an operational matter, the request to AusNet to switch off the capacitor banks is made by AEMO's control room in its capacity as system operator, and not as Victoria's transmission planner<sup>1</sup>. As AEMO operators note the fluctuation in voltage levels in real-time, they will determine the need for increasing the level of reactive power (or reducing voltages) and the amount of reactive support required via switching of the capacitor banks to be undertaken by AusNet.

Upon receipt of the request from AEMO, AusNet will facilitate the switching of the capacitor banks. This entails adjusting settings within the control room via computer system keyboard entries. It does not require physical access and presence at the substations, nor the physical and manual operation and adjustment of electrical switchgear or relays.

The respective capacities of AEMO and AusNet in this circumstance are illustrated by the way similar activities would occur in a state outside of Victoria. AEMO's control room has, from time to time requested a distributor outside of Victoria to switch off capacitor banks. In these cases, the request is made to the relevant TNSP, who in turn issues the request to the DNSP. In South Australia for example, ElectraNet as the TNSP will request SA Power

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<sup>1</sup> AEMO's role as transmission planner is administered by a team within AEMO that is separate to the system operator role where real-time operational decisions are made in the control room.

Networks as the DNSP to switch out capacitors to assist in managing voltage. The request may be made following a request by AEMO to ElectraNet, or ElectraNet may do so of its own accord. AEMO will not contact SA Power Networks directly.

#### *Impact on capacitor banks*

The capacitor banks themselves have a normal operating life of between 20-30 years, possibly longer depending upon the physical environment of their physical location. The very nature of their function, switching included, means that their operational lives will not be materially shortened by the switching requests made by AEMO. Nor does AEMO expect that AusNet will incur material additional expenditure or wear and tear on the assets as a result of the switching.

#### **4. Recommendation**

AEMO recognises that the transmission network is evolving and is supportive of innovation in the management and operation of the network, including the introduction of new services and associated charges where these support competition, efficiencies and ultimately benefit consumers. However, based on the information available to AEMO and for the reasons set out above, AusNet's switching of existing capacitors is required to maintain system security, and is not considered to be a separate service at this point in time. To the extent that switching off capacitor banks is considered a service (rather than the performance by AusNet of an obligation under the Rules), AEMO recommends that it is classified as a standard control service. AEMO believes that AusNet, in switching capacitor banks on instruction from AEMO, is fulfilling a key regulatory obligation.

Given AusNet's function as an NSP, it is obliged to operate the grid over which it has control in accordance with the instructions of AEMO. AEMO issues instructions to AusNet to assist in controlling voltage, consistent with AEMO's role operating the power system so it remains in a secure operating state. A failure of AusNet to comply with AEMO's instruction could give rise to a civil penalty under clause 5.2.3(e).

Further, AEMO considers that the national electricity objective is best served by our recommendation. We believe that requiring AEMO or TNSPs to pay a DNSP for a 'service' each time it operates the power system in accordance with its regulatory obligations does not serve the long-term interests of consumers.