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FROM THE OFFICE OF THE  
CHIEF EXECUTIVE OFFICER

Dr John Tamblyn  
Chairman  
Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235

Level 12  
15 William Street  
Melbourne VIC 3000  
**Postal Address:**  
GPO Box 2008  
Melbourne VIC 3001  
T 03 9648 8777  
F 03 9648 8778

By online submission

Dear John

**Re | Aggregation of Ancillary Services Loads**

AEMO requests the AEMC consider making a Rule under section 91 of the *National Electricity Law*. The proposed Rule seeks to increase the opportunities available to Market Customers to participate in the National Electricity Market by allowing them to aggregate ancillary services loads to provide market ancillary services.

A description of the proposed Rule, a statement of the issues concerning the existing *National Electricity Rules*, and how the proposed Rule addresses those issues consistent with the national electricity objective are included in Attachment A. A draft of the proposed Rule is in Attachment B.

AEMO would be pleased if you could have these matters considered by the AEMC. For further details, please do not hesitate to contact Mark Johnston on 03 8664 65553.

Yours sincerely



 **Matt Zema**  
**Managing Director and Chief Executive Officer**

cc:

Attachment A: Request for Rule Change

Attachment B: Proposed Rule

## Attachment A

### 1. Statement of Issues

This section outlines the relevant background and identifies the issues with the National Electricity Rules (NER) relating to the aggregation of ancillary services loads to provide market ancillary services (MAS).

#### Background

Ancillary services are essential to the management of power system security, to facilitate orderly trading in electricity and ensure that electricity services are of acceptable quality. Ancillary services comprise MAS and non-market ancillary services (NMAS). Market Participants offer MAS into the central dispatch process while NMAS are acquired by AEMO under ancillary service agreements.<sup>1</sup> There are eight MAS which are also commonly referred to as frequency control ancillary services because they are used to control power system frequency.<sup>2</sup>

Before a load can be settled on-market and be used to provide MAS, a Market Customer must apply to AEMO to classify it as a market load and an ancillary services load.<sup>3</sup> Once approved, the Market Customer may submit MAS offers to AEMO for the ancillary services load and must comply with dispatch instructions in accordance with the NER.

Similarly, a Market Customer may also apply to AEMO to classify a market load as a scheduled load. Provided a group of scheduled loads meet certain technical requirements, the NER allows scheduled loads to be aggregated for the purpose of central dispatch. Although there is no requirement for an ancillary services load to be scheduled, a group of ancillary services loads may only be aggregated if they are also classified as scheduled loads (refer clause 3.8.3 of the NER<sup>4</sup>).

The technical requirements that must be met to aggregate a group of scheduled loads are:

- Aggregated loads must be connected at a single site with the same loss factor and be operated by the same Market Participant;

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<sup>1</sup> These NMAS agreements are entered into in accordance with clause 3.11 of the NER.

<sup>2</sup> See clause 3.11.2 of the NER for a list of each MAS and <http://www.aemo.com.au/electricityops/160-0163.html> for detailed descriptions of these services.

<sup>3</sup> A market load is defined in terms of the load associated with a single connection point.

<sup>4</sup> Clause 3.8.3(a) of the NER allows the bid aggregation for scheduled loads but omits non-scheduled loads.



- Power system security must not be materially affected; and
- Control systems must satisfy the NER after aggregation.

MAS and energy are dispatched and priced using similar principles and processes<sup>5</sup>, although there are two differences in the way MAS and energy are managed within a region:

- MAS do not use intra-regional locational price signals, whereas locational prices in the energy market reflect energy losses using fixed loss factors. This means there are unlikely to be significant distortions to central dispatch by allowing MAS to be aggregated across connection points within a region; and
- MAS do not require management of intra-regional constraints, whereas energy market constraints reflect the various physical limitations of transmission and distribution elements and ensure that the power system is operated in a secure state. This means power system security is unlikely to be materially affected by allowing MAS to be aggregated within a region.

### **Issue with the Current Provisions**

To date, AEMO has observed few demand-side participants involved in the provision of MAS and this has been limited to large loads, for example aluminium smelters.

AEMO considers that the NER imposes a barrier to loads providing MAS because:

- aggregation of ancillary services loads is allowable only for scheduled loads, even though this is not required for loads that are not to be aggregated. AEMO considers that the requirement to be scheduled to aggregate for MAS is not appropriate given the differences in dispatch and pricing that exist between MAS and the energy market (see above); and
- clause 3.8.7A(i) requires MAS offers to only include loads that are 1 MW or more, thus loads smaller than 1 MW are prevented from participating, even where aggregation would bring those loads above the 1 MW threshold.

Further, AEMO considers that owners of loads may be discouraged from providing MAS because the cost of doing so may be prohibitive and administratively burdensome since the NER would require a Market Customer to classify each market load as a MAS load with AEMO and administer each load separately. The proposed Rule would reduce administrative costs by allowing a Market Customer to submit a single MAS offer.

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<sup>5</sup> Both energy and MAS arrangements are developed according to the market design principles in clause 3.1.4(a) of the NER. The central dispatch process, including the optimisation software, are common to both energy and MAS.



This administrative burden also applies to existing Market Participants who have classified ancillary services loads.

AEMO notes that it has raised these issues in its submission to Stage Two of the AEMC's Review of Demand Side Participation and the AEMC agreed in its subsequent draft and final reports that minor barriers to entry exist for Market Customers that wish to provide MAS.<sup>6</sup> The AEMC noted that minor changes could be made to the NER that would enable loads to be aggregated to provide MAS.<sup>7</sup> This Rule change proposal seeks changes to the NER to eliminate these minor barriers to entry for ancillary services loads.

## **2. Proposed Rule**

This section provides a description of the proposed Rules developed by AEMO, AEMO's right to submit the proposed Rule to the AEMC, and the power that the AEMC has under the *National Electricity Law (NEL)* to consider this proposed Rule change.

### **Description of Proposed Rule**

The proposed Rule would allow Market Customers to aggregate ancillary services loads for the purpose of providing MAS without requiring the load to be scheduled. AEMO considers that amending clause 3.8.3 to include ancillary services loads is sufficient to allow aggregation. AEMO notes that the conditions to be fulfilled by Market Participants who apply to aggregate ancillary services loads should be different than the conditions applying to the aggregation of energy market bids and offers. The conditions differ in that there is no need for ancillary services loads to be located at a single connection point and they may be located throughout a region.<sup>8</sup>

The proposed Rule would allow multiple market loads to be registered in a single application as a single aggregated ancillary services load. It would also reduce registration costs to that of a single registration and the number of ancillary services load offers to manage to a single offer. AEMO recognises that the ability to aggregate ancillary services loads could mean that a greater number of those wishing to register or who are already registered as a Market Participant will provide load for MAS.

AEMO's draft Rule is in Attachment B.

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<sup>6</sup> AEMC, *Demand-Side Participation in the National Electricity Market*, Final Report, 27 November 2009.

<sup>7</sup> AEMC, *Demand-Side Participation in the National Electricity Market*, Final Report, 27 November 2009, pp. 55-56.

<sup>8</sup> This is because the energy market has loss factors that relate the specific location of the generating unit or load to the regional reference node, while no such concept applies to the MAS.



## **AEMO's Right to Submit this Proposal**

AEMO is requesting that the AEMC make this proposed Rule in accordance with section 91 of the NEL.

AEMO has the following relevant functions under section 49 of the NEL:

- to operate and administer the national electricity market (**NEM**); and
- to promote the development and improve the effectiveness of the operation and administration of the NEM.

Under section 91(1) of the NEL, the AEMC may make a Rule at the request of any person, the MCE or the Reliability Panel. As such, AEMO may request the AEMC make a Rule.

## **Power of the AEMC to Make the Proposed Rule**

The subject matters about which the AEMC may make Rules are set out in section 34 of the NEL and, more specifically, in Schedule 1 to the NEL.

AEMO considers that the proposed Rule falls within the subject matters that the AEMC may make Rules about, as it relates to the activities of persons participating in the NEM.

## **Implementation**

AEMO considers that the proposed Rule would be ready for implementation after a period of six months following a determination by the AEMC. This estimate takes into consideration the time required for AEMO to complete a Market Ancillary Service Specification consultation and necessary procedural developments.

## **3. How the proposed Rule is likely to contribute to the National Electricity Objective**

Before the AEMC can make a Rule change it must apply the rule making test set out in the NEL which requires it to assess whether the proposed Rule will or is likely to contribute to the national electricity objective (**NEO**). Section 7 of the NEL states the NEO is:

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to –

- (a) price, quality, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.

AEMO submits that the proposed Rule is likely to promote the NEO by:



- reducing regulatory barriers to entry for Market Customers to provide MAS load, which would enhance the efficient operation of those loads; and
- minimising the administration of MAS offer costs to Market Customers, which in turn is likely to broaden the range of technologies available to provide MAS.

AEMO considers that the proposed Rule is likely to encourage participation of loads in the NEM which may increase competition for the provision of MAS. This is likely to reduce MAS prices and the costs of acquiring MAS, leading to lower prices for customers.

In addition, encouraging new market loads into the NEM to provide MAS would promote the NEO because it supports the efficient operation and use of electricity services regarding the security of the supply of electricity. This would occur because more market load would be available to be switched off to control power system security at times when the frequency of the power system needs to be controlled. The proposed Rule would also allow more flexible arrangements for Market Participants who would be able to aggregate existing ancillary services loads within a region.

#### **4. Expected Benefits and Costs of the Proposed Rule**

Consumers of electricity services would benefit from this rule by the potential increase in the supply of MAS resulting from the increased competition for the delivery of services.

The proposed Rule provides the ability to those wishing to register, or who are already registered, for MAS to make more efficient use of their loads. In the long term, AEMO also expects that Market Participants would benefit because the costs of MAS, which are ultimately recovered from them, will be subject to competitive pressures during its acquisition.

AEMO would not need to make any changes to its market management systems to implement the proposed Rule. However, AEMO would incur minor costs associated with conducting a NER consultation which is necessary to change the Market Ancillary Services Specification.

AEMO expects that those wishing to register or who are already registered as Market Customers to provide MAS load would still incur the usual costs associated with providing MAS, such as installation of:

- compliant frequency monitoring and response measurement equipment; and
- communications equipment between MAS loads to provide bid information that accurately reflects the capability to AEMO.

## Glossary

TERM OR ABBREVIATION	Explanation
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
MAS	Market Ancillary Services
NMAS	Non-Market Ancillary Services
NEM	National Electricity Market
NEL	National Electricity Law
NEO	The national electricity objective as stated in section 7 of the NEL
NER	National Electricity Rules



## ATTACHMENT B

This draft is based on the National Electricity Rules – Version 33

### 3.8.3 Bid and offer aggregation guidelines

- (a) *Scheduled Generators, Semi-Scheduled Generators or Market Participants* who wish to aggregate their relevant *generating units, scheduled network services or scheduled loads* for the purpose of *central dispatch* must apply to AEMO to do so.
- (a1) *Market Customers* who wish to aggregate their relevant *ancillary services loads* for the purpose of *central dispatch* must apply to AEMO to do so.
- (b) AEMO must approve applications for aggregation made under paragraph (a) if the following conditions are fulfilled:
  - (1) aggregated *generating units or loads* must be *connected* at a single site with the same *intra-regional loss factor* and be operated by a single *Scheduled Generator, Semi-Scheduled Generator or Market Participant*;
  - (2) aggregated *scheduled network services* must be *connected* at the same two sites, have the same *intra-regional loss factors*, have the same *distribution loss factors* where applicable and be operated by the same *Generator or Market Participant*;
  - (3) *power system security* must not be materially affected by the proposed aggregation; and
  - (4) *control systems* such as *automatic generation control systems* must satisfy the *Rules* after aggregating.
- (b1) AEMO must approve applications for aggregation made under paragraph (a1) if the following conditions are fulfilled:
  - (1) aggregated *ancillary services loads* must be *connected* within a single *region* and be operated by a single *Market Customer*;
  - (2) *power system security* must not be materially affected by the proposed aggregation; and
  - (3) *control systems* must satisfy the requirements of clause 2.3.5(e) after aggregating.
- (c) Notwithstanding that one or more of the conditions set out in paragraph (b) may not have been fulfilled by the *Scheduled Generator, Semi-Scheduled Generator or Market Participant*, AEMO may approve an application for aggregation provided that such aggregation would not materially distort *central dispatch*.
- (d) Subject to paragraph (f), for the purposes of Chapter 3 (except rule 3.7B) and rule 4.9, a reference to a *generating unit, scheduled load and scheduled network service and ancillary services load* is only taken as a reference to aggregated



*generating units, aggregated scheduled network services and aggregated scheduled loads and aggregated ancillary services load that are aggregated in accordance with this clause 3.8.3.*

- (e) *AEMO must evaluate applications for aggregation and reply within 20 business days of receipt of the application setting out whether the application is to be approved and the conditions that apply to the proposed approval.*
- (f) *Scheduled Generators and Market Participants that have been granted aggregated status must, if required by AEMO, declare individual scheduled generating unit, scheduled network service or scheduled load availability and operating status to AEMO in the PASA process under rule 3.7 to allow power system security to be effectively monitored.*
- (g) *If a Scheduled Generator, Semi-Scheduled Generator or Market Participant's application for aggregation is denied by AEMO, AEMO must provide that applicant with reasons for that denial.*
- (h) *AEMO must maintain a database of aggregated scheduled generating units, semi-scheduled generating units, scheduled network services, and scheduled loads and ancillary services loads and their components.*
- (i) *For the avoidance of doubt, semi-scheduled generating units which are registered as a single semi-scheduled generating unit under clause 2.2.7 are not aggregated semi-scheduled generating units for the purposes of Chapter 3 and rule 4.9.*

