

10 February 2016

Mr John Pierce  
Chairman  
Australian Energy Market Commission  
PO Box A2449  
SYDNEY SOUTH NSW 1235

Level 22  
530 Collins Street  
Melbourne VIC 3000

**Postal Address:**  
GPO Box 2008  
Melbourne VIC 3001

T 1300 858724  
F 03 9609 8080

Dear Mr Pierce

**Rule Change Request - Registration of Proponents of New Types of Generation**

The Australian Energy Market Operator (AEMO) requests the Australian Energy Market Commission (AEMC) consider making a rule change under section 91 of the National Electricity Law.

AEMO submits this rule change proposal should be treated as non-controversial under section 96 of the National Electricity Law.

The rule change proposal is attached. In essence, AEMO proposes to expand the definition of 'generating unit' so that it can have as broad an application as possible to facilitate the registration of proponents of non-conventional generation as Generators.

Any queries concerning this rule change proposal should be directed to Principal Corporate Lawyer, Evy Papadopoulos on ☎ 03 9609 8782 or ✉ [evy.papadopoulos@aemo.com.au](mailto:evy.papadopoulos@aemo.com.au).

AEMO respectfully requests the AEMC give consideration to making this rule as proposed.

Yours sincerely



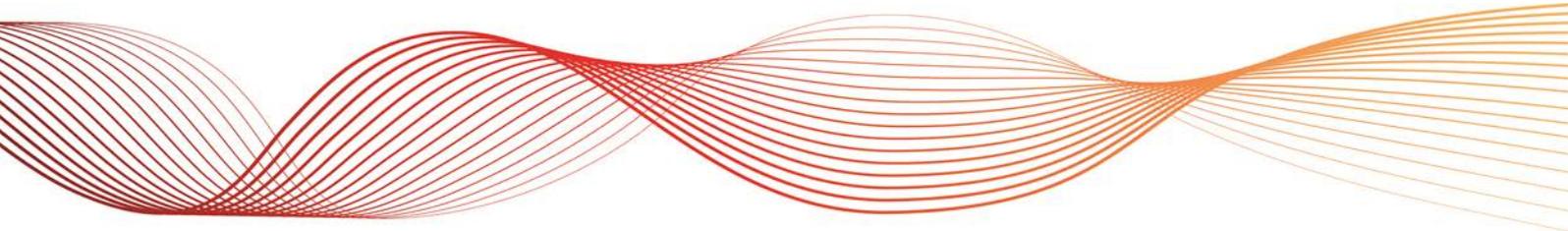
Brett Hausler  
**Executive General Manager, Governance**

Attachments: Rule Change Proposal



# ELECTRICITY RULE CHANGE PROPOSAL

REGISTRATION OF PROPONENTS OF NEW TYPES OF  
GENERATION





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# 1. SUMMARY

AEMO has received a number of inquiries from parties interested in participating the National Electricity Market (NEM) as *Generators* who AEMO believes are ineligible for registration because the type of generation they are proposing does not meet the National Electricity Rules (NER) definitions of eligibility.

As a result, AEMO proposes a rule to address the gap in a timely fashion as applications for registration from such applicants are expected in the near future.

The purpose of the proposed rule is to clarify that the rules for eligibility for registration as a *Generator* are technology-neutral.

The proposed rule is expected to expand the eligibility of parties for registration as *Generators* and, consequently, facilitate greater competition in the supply of electricity in the NEM, resulting in a more efficient use of the power system, especially at times of high demand.



## 2. RELEVANT BACKGROUND

### 2.1 Current Framework

The National Electricity Market (NEM) was created to facilitate the trading of electricity between large producers and consumers of electricity. The registration of participants in the NEM initially catered for providers of large-scale, *synchronous, generation* as *Generators* and, over time, the National Electricity Rules (NER) have been amended to accommodate smaller producers of electricity, such as wind farm operators and, more recently, the aggregation of small generation.<sup>1</sup>

This Rule Change Proposal seeks to clarify and expand who is eligible to participate in the NEM as *Generators*.

### 2.2 Narrative of Issue and Proposed Changes

Chapter 2 of the NER governs the eligibility for participation and process by which parties can apply to AEMO to participate in the NEM.

*Generators* are participants that produce electricity. The NER, however, contain a number of definitions that, read together, are too narrow to accommodate some forms of electricity production and thus preclude proponents of those forms of electricity production from being eligible for registration as *Generators*.

A change to the NER is proposed to deem the production of electricity by whatever means to be *generation*. This is to facilitate the eligibility of proponents of non-conventional production technologies for registration as *Generators*.

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<sup>1</sup> Termed 'non-conventional' in this document, for the sake of convenience.

## 3. STATEMENT OF ISSUE

### 3.1 Current Rules

To be eligible as a *Generator*, person must:<sup>2</sup>

- (1) obtain the approval of *AEMO* to classify each of the *generating units* that form part of the *generating system* that the person owns, operates or controls, or from which it otherwise sources electricity, as:
  - (i) a *scheduled generating unit*;
  - (ii) a *semi-scheduled generating unit*; or
  - (iii) a *non-scheduled generating unit*;
- (2) classify the *generating units* in accordance with *AEMO*'s approval as referred to in subparagraph (1); and
- (3) satisfy *AEMO* that each *generating system* will be capable of meeting or exceeding its *performance standards*.

It is a fundamental requirement of these provisions that a person seeking registration as a *Generator* owns, operates or controls one or more *generating units* used to produce electricity.

A *generating unit* is defined as:

The actual generator of electricity and all the related equipment essential to its functioning as a single entity.<sup>3</sup>

A 'generator' in the context of this definition is commonly defined as plant that converts mechanical energy to electrical energy for use in an external circuit. 'Generators' that meet this definition include:

- Thermal generation systems
- Hydro generation systems
- Tidal generation systems

The word 'generator' is also used by industry participants when referring either to the plant used to generate electricity and the owner/operator of that plant, so that there are times when its meaning is unclear unless the context is clear. Hence, *AEMO* considers that there is no benefit in resorting to a 'common' meaning to understand what 'generator' means. This leads *AEMO* to conclude that it is likelier than not that a court will resort to a dictionary to identify the meaning of the term.

### 3.2 Issues with the Current Rule

As currently drafted, the *NER* do not permit *AEMO* to consider registering any person as a *Generator* if they produce electricity through the use of:

- solar PV systems
- battery storage systems
- fuel cell systems
- solid state systems
- any other technology that does not involve the conversion of mechanical energy into electrical energy

This is because to be eligible for registration as a *Generator*, the person needs to be using a *generating unit* to produce electricity, and a *generating unit* must be something that **converts mechanical energy to electrical energy for use in an external circuit**.

Hence, any plant or equipment that does not convert mechanical energy to electrical energy cannot be considered to be a *generating unit* for the purposes of the *NER* and the proponent of such a system cannot be eligible for registration as a *Generator*. In the case of solar PV or battery storage systems, they are converting chemical energy to electrical energy.

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<sup>2</sup> See clause 2.2.1(e) of the *NER*.

<sup>3</sup> See Chapter 10 of the *NER*. Note that a generating system is just a system of one or more *generating units*.



AEMO has also considered whether an applicant for registration could be registered under clause 2.2.1(b), which states:

- (b) A person who otherwise *supplies* electricity to a *transmission or distribution system* may, on application for registration by that person in accordance with rule 2.9, be registered by AEMO as a *Generator*.

This does not assist because, to be eligible for registration as a *Generator*, the applicant will need to classify its *generating units* under clause 2.2.1(e), which means that the *supply* of electricity under clause 2.2.1(b) can only be carried out using a *generating unit*.

Hence, it would appear that clause 2.2.1(b) provides no benefit to someone who wishes to supply electricity in the NEM using non-conventional systems of generation.

This is an era of rapid technological change. Electricity can be produced in any number of ways and, if unintended barriers to entry are to be minimised, it is necessary to ensure that the NER can accommodate these changes in technology and facilitate the participation in the NEM by producers of electricity by non-conventional means. AEMO recently reported in its Emerging Technologies Information Paper<sup>4</sup> that there is likely to be a significant rise in the uptake of non-conventional forms of electricity production in the NEM in the foreseeable future, particularly battery storage systems. It will become increasingly inefficient if the current narrow NER definitions remain in place to restrict or exclude parties with non-conventional systems of generation from participating in the NEM.

In their current form, the NER do not give AEMO the flexibility to permit the developers of these forms of electricity production to participate in the NEM.

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<sup>4</sup> Available at: <http://www.aemo.com.au/Electricity/Planning/Forecasting/National-Electricity-Forecasting-Report/NEFR-Supplementary-Information>



## 4. HOW THE PROPOSAL WILL ADDRESS THE ISSUES

### 4.1 How the Proposal will address the Issues

It is proposed that the definition of *generating unit* be amended to be technology-neutral and process-neutral.

This will enable proponents of non-conventional generation systems to be eligible for registration as *Generators*, so that the merits of each application can be considered on the basis of operational and market considerations as required by the NER, not restricted by an historical eligibility criterion that is no longer relevant in today's market.

### 4.2 AEMO Procedure Changes

There are no procedures mandated by the NER in the context of registration.

### 4.3 Stakeholder Engagement

AEMO has received a number of inquiries in the past few months from parties seeking to participate in the NEM as providers of electricity using battery storage systems connected either directly to the *national grid*, or (more likely in the near term) to existing *generating systems*. This has necessitated a close consideration of Chapter 2 of the NER that has led AEMO to conclude that it would not be acting in accordance with the NER if it were to register any such party as a *Generator*, or amend an existing classification to recognise battery storage systems as part of a *generating system* or *generating unit*.

AEMO has not engaged in any formal consultation with stakeholders on the form of the proposed rule.

## 5. PROPOSED RULE

### 5.1 Description of the Proposed Rule

It is proposed that the definition of *generating unit* be amended as follows:

The actual generator of plant used in the production of electricity and all the related equipment essential to its functioning as a single entity.<sup>5</sup>

It should be noted that the word 'plant' is not italicised, as it should be given as broad a meaning as possible, and not be restricted to the definition in Chapter 10 of the NER.

It is also proposed to delete clause 2.2.1(b).

### 5.2 Minor/Consequential Rule Changes

There are no other changes proposed.

AEMO proposes to review registrations following this change to the NER to identify whether any other changes are required to complete the incorporation of non-conventional generation systems into the NER framework. For example, Chapter 5 of the NER, which includes the specification of *performance standards* for *generating systems*, might require amendment following its application to these forms of generation.

AEMO would prefer to approach the AEMC with such a proposal after having been informed by operational experience rather than attempt to identify issues in the abstract.

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<sup>5</sup> See Chapter 10 of the NER. Note that a *generating system* is just a system of one or more *generating units*.

## 6. HOW THE PROPOSED RULE CONTRIBUTES TO THE NATIONAL ELECTRICITY OBJECTIVE (NEO)

It is anticipated that the proposed change will affect the market in the following ways:

### 1. Reduction in barriers to entry

- The current definition of *generating unit* acts to prevent the proponents of some emerging technologies from being registered as *Market Generators*. Classification of *generating units* as a *market generating units* would allow the owner/operator of the plant to receive income from the NEM, adding to the business case for such an investment. While that option is available to some technologies at present it is not available to others, creating a barrier to entry based on the type of technology deployed. Removal of this inequity will allow *Market Participants* to compete on a more level-playing field, rather than outcomes being distorted by offering more options to the operators of some technologies in comparison to others.
- A reduction in barriers to entry of this type advances the NEO by facilitating more efficient investment outcomes in the long term.

### 2. Impact on competition and price impacts on consumers.

If proponents of non-conventional generation are eligible to participate in the NEM as *Generators*, they will provide greater competition in the provision of electricity and should result in more competitive pricing which, in turn, should result in more efficient retail pricing of electricity.

Increasing the sources of *generation* in the NEM is also likely to increase the amount of peaking plant available, especially when supply and demand imbalances occur, when the increase in sources of supply could assist in reducing the imbalance and thus reducing *spot prices*. Ultimately, reductions in *spot prices* will reduce the price retailers pay for electricity purchases in the NEM and this would, in the long term, reduce prices for consumers.

### 3. Impact on efficient investment in, use and operation of, the power system.

An increase in the variety of sources of *generation* in the NEM should drive more efficient investment. The need for investment in network augmentations is based on forecast maximum demand, which is likely to reduce as a result of the proposed rule if more non-conventional, distributed *generation* is installed.

It is expected that the proposed rule will, over time, encourage demand side response by increased participation of distributed non-conventional *generation* in the NEM, and lead to lower *reserve* requirements.

Likewise, an increase in the sources of *Market Generator* bids should result in more efficient *dispatch* solutions.



## 7. EXPECTED BENEFITS AND COSTS OF THE PROPOSED RULE

The cost of implementing the proposed rule is negligible. The only changes that AEMO foresees are to its registration guides and forms.

On the other hand, to delay the implementation of such a change will result in an opportunity cost for both producers and consumers of electricity in the NEM as AEMO will not be in a position to address applications for registration from applicants with generation technology that AEMO considers to be ineligible for participation in the NEM.