

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

15<sup>th</sup> December 2018

*Submitted via e-mail*

Dear Mr Pierce,

### **Generator Registration Thresholds Rule Change Request**

As the power system's generation mix changes, it is becoming increasingly important that all registered generators with reasonable technical capability to follow dispatch processes be classified as scheduled or semi-scheduled by the Australian Energy Market Operator ("AEMO"), in order to maintain the accuracy of the market scheduling and forecasting process. The National Electricity Rules lay out an expectation that generators over 30MW will be normally be scheduled or semi-scheduled.

According to AEMO's current *Guide to Generator Exemptions and Classification of Generating Units* ("**Exemption Guide**"),<sup>1</sup> it offers standing generator registration exemptions for generating systems less than 5MW nameplate capacity and discretionary exemptions for generating systems 5MW or larger. Under the National Electricity Rules, AEMO also has discretion to decide whether generating units are classified as scheduled or non-scheduled.

Recently two generating systems with a combined nameplate capacity of 277MW and the technical capacity to follow dispatch processes were reclassified by AEMO from scheduled to non-scheduled.<sup>2</sup> While the full details are not public, the Australian Energy Council (the "**Energy Council**") suspects that this reclassification was not justified, and may have consequential market effects. Accordingly it submits this rule change proposal for the Australian Energy Market Commission's ("**AEMC's**") consideration to limit the circumstances under which AEMO can exercise this discretionary power.

The Energy Council also recognises the large growth in generating units less than 30MW in size, and reductions in the cost of implementing systems necessary to respond to scheduling instructions. The rule change proposes to change from 30MW to 5MW those thresholds relevant to scheduling and semi-scheduling. The 5MW threshold has been chosen based on AEMO's current practice of granting standing exemptions to generators which have a nameplate rating less than 5MW, as set out in the Exemption Guide.

For the avoidance of doubt, this rule change is intended to affect only plant at the time of its registration. For existing plant registered inconsistently with this new provision, AEMO's existing practice of grandfathering following changes to registration rules would apply.

#### **Name & Address of the Person making the Request**

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<sup>1</sup> AEMO, *National Electricity Market Guide to Generator Exemptions and Classification of Generating Units Version 3.1*, 16<sup>th</sup> November 2018, available at <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Participant-information/New-participants/Exemption-and-classification-guides>

<sup>2</sup> Australian Energy Regulator, *Quarterly Compliance Report: National Electricity and Gas Laws – 1 April – 30 June 2018*, p.11ff

## Description of the Proposed Rule

The proposed rule (as shown in the Appendix) has a number of parts.

Firstly, it reduces the size threshold for scheduled and semi-scheduled generation registration (Rules 2.2.2 and 2.2.7) from 30MW nameplate capacity to 5MW and makes consequential changes to Rules 2.2.3 (Non-Scheduled Generator) and 2.2.7 (Semi-Scheduled Generator). The effect of the reduction in threshold is to make the default classification for generating systems scheduled or semi-scheduled, but AEMO will retain the ability to consider exemptions for larger generating systems on a case-by-case basis.

Under Rule 2.2.1(c) AEMO may grant exemptions from registration as a generator, and presently AEMO provides standing exemptions for those under 5MW as per the Exemption Guide. This will not change. Under the proposed new Rule 2.2.1(c1), when AEMO does grant a specific exemption beyond the standing exemption, it will be obliged to publish its reasons for doing so, and any conditions attached to such exemption, within ten business days of making its decision. This will improve the transparency of AEMO's decision-making processes and ensure industry is well-informed of exceptions to the generator registration requirements. This will improve industry's understanding of the market, and has the potential for increasing market modelling accuracy, thereby leading to more efficient participation. In addition, having the reasoning in the public domain will allow parties to dispute AEMO's assessment, should they feel minded to do so.

Secondly, Rule 2.2.3(b)(1) has been deleted to remove the relevance of whether a generator commonly sends out generation above the threshold at the connection point. The presence of load between a generator's terminals and its network connection point is relevant only to market settlement, and is irrelevant to the generator's importance in the dispatch and scheduling process.

Thirdly, Rule 2.2.3(b)(2) has been amended to have the exemption tests refer to generating systems rather than generating units. As the rule stands, a large generating system with many small units can readily be granted an exemption since the size of the generating units falls below the 30MW threshold. The proposed rule requires AEMO to consider the total size of the generating system when making its assessment as to whether an exemption should be granted.

Fourthly, a new Rule 2.2.3 (g) requires AEMO to publish its reasons for classifying any generator greater than 5MW as non-scheduled.

Chapters 4, 5 and 6 of the Rules contain a number of further references to 30MW thresholds in the areas of system security management and technical connection requirements. The functions of these thresholds are outside the scope of this rule change and no changes to them are proposed here. The Energy Council sees no need to maintain consistency between them and the scheduling threshold.

## Nature and Scope of the Issue that is proposed to be addressed

The National Electricity Market ("NEM") began in 1998 with 30MW as the default threshold for scheduling. At that time generators smaller than this had only a minor role in the power system, and 30MW was considered a reasonable trade-off between the value to the market of exposing a generator to scheduling, against the compliance costs which would be imposed should they be scheduled.

However the power system is moving to one characterised by progressively smaller unit sizes, and also more greatly affected by variations in supply and demand. To maintain both the proper control of the power system and the efficient operation of the market, AEMO's ability to dispatch plant needs to extend to reach these smaller units and therefore the size limit of 30MW for scheduled generation is no longer appropriate. While the AEMC found in its Non-scheduled Generation and Load in Central Dispatch Final Determination that establishment and ongoing costs were material,<sup>3</sup> the Energy Council considers that developments in controls and communications technologies have concurrently greatly reduced the individual costs in becoming scheduled, and therefore these costs are not material compared with the benefit of increasing the quantum of generation scheduled.

The Energy Council believes that reducing the size threshold for scheduled generation will assist AEMO in controlling the power system, ensure power system security and reliability, and assist the market, through the availability of more accurate forecasting information and more accurate price setting processes. The proposed

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<sup>3</sup> AEMC, *Non-scheduled Generation and Load in Central Dispatch Rule Determination*, 12<sup>th</sup> September 2017, p.132ff.

rule change to require exemption reasons and registration conditions will assist industry in understanding why particular generators have been granted exemptions, when, on face value, they should be scheduled generators like other apparently comparable generators.

When it comes to AEMO changing generating units' classification from scheduled to non-scheduled, the proliferation of small units aggregated to form large generating systems means that the 30MW size test is no longer appropriate for the changing market conditions. The Energy Council cites the case of the reclassification of the nine 30.8MW SA Temporary Generation units, which have registered capacities of 154MW (North) and 123.2MW (South), making a total of 277MW – more than 8% of South Australia's historical peak demand of 3,397MW.<sup>4</sup> Such large generating systems should remain as scheduled, to ensure that when their owner declares the units available, their output can be considered by AEMO in its forecasting and dispatch processes.

The existing Rule 2.2.3(b)(1) which links scheduling status to sent-out generation has allowed some large generators to avoid being scheduled purely by virtue of unusual connection point configurations. These configurations are relevant only to generators' treatment in the market settlement process, and do not affect either the ability of the generator to participate in dispatch, nor its impact on the market. This exemption appears to anomalously confuse settlement issues with dispatch.

For example, the now closed 150MW Anglesea coal power station in Victoria was able to be classified as non-scheduled as it was connected to the NEM via a radial line to the Point Henry aluminium smelter, some 40 kilometres distant. As the smelter and generator were owned by the one party, it was able to net the settlement of both activities at the point where the smelter connected to the rest of the grid. As a result the aggregate "sent-out generation" by this definition rarely exceeded the 30 MW scheduling threshold, despite the power station's operations impacting the NEM's supply-demand balance similarly to other scheduled coal plants of that size.

### **Explanation of how the Proposed Rule will contribute to the achievement of the National Electricity Objective**

The National Electricity Objective 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, safety, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.

The proposed rule change will extend AEMO's control of the power system to smaller generating units, thus ensuring they participate in efficient, central dispatch. In addition, the proposed rule change will ensure that small units aggregated to form generating systems of appreciable size, or units that share a connection point with load, cannot avoid the responsibilities of participating in central dispatch, and, subject to their availability and bidding practices, contribute to the efficiency, security and reliability of the national electricity system.

### **Explanation of the Expected Benefits and Costs of the Proposed Change**

The expected benefit of the proposed rule change will be to ensure that as unit size becomes progressively smaller due to the replacement of conventional large-scale generation with flexible, small-scale generating technologies, AEMO's ability to coordinate the management of the power system is not compromised. Instead AEMO will be better able to manage the transition to more geographically and technologically diverse generation, thereby maintaining power system quality and safeguarding security and reliability in accordance with the relevant power system standards.

By capturing greater information into the forecasting systems, forecast accuracy will improve. Also, by having more dispatchable variables available to the dispatch engine, the dispatch process will be more efficient and produce more predictable pricing outcomes.

Finally, by capturing more generators with known locations, network congestion can be managed more efficiently by the dispatch process. Non-scheduled generators are effectively exempted from having to

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<sup>4</sup> On 31<sup>st</sup> January 2011, according to <https://www.aer.gov.au/wholesale-markets/wholesale-statistics/seasonal-peak-demand-occurrence-region>

manage congestion, and their resultant output can congest scheduled and semi-scheduled generators beyond a one-to-one impact.

There will be a cost to smaller generating units to install generation control systems, but as technology and communication costs continue to reduce, these additional costs are not considered to be appreciable.

There may also be minor additional assessment costs for AEMO as smaller plant will no longer be automatically exempt from registering as scheduled plant.

### **Conclusion**

In conclusion, the Energy Council believes the proposed rule change will enhance AEMO's ability to manage the power system as it goes through a transition from conventional, large-scale generation to a mix which incorporates new technologies and more smaller-scale generating units.

Any questions about this proposed rule change should be addressed to Duncan MacKinnon (Wholesale Policy Manager), by e-mail to [Duncan.MacKinnon@energycouncil.com.au](mailto:Duncan.MacKinnon@energycouncil.com.au) or by telephone on (03) 9205 3103.

Yours sincerely,



**Sarah McNamara**  
Chief Executive Officer  
Australian Energy Council

# APPENDIX

## Marked-up Changes to National Electricity Rules Version 113

### 2.2 Generator

#### 2.2.1 Registration as a Generator

- (a) Subject to clause 2.2.1(c), a person must not engage in the activity of owning, controlling or operating a *generating system* that is *connected* to a *transmission or distribution system* unless that person is registered by *AEMO* as a *Generator*.
- (b) **[Deleted]**
- (c) *AEMO* may, in accordance with guidelines issued from time to time by *AEMO*, exempt a person or class of persons from the requirement to register as a *Generator*, subject to such conditions as *AEMO* deems appropriate, where (in *AEMO*'s opinion) an exemption is not inconsistent with the *national electricity objective*.
- (c1) If *AEMO* does grant an exemption, and such exemption does not fall within the standing exemptions contained within the guidelines, *AEMO* must publish
- (1) the reasons for which the person sought the exemption;
- (2) *AEMO*'s reasons for granting the exemption; and
- (3) any conditions attached to such exemption
- within ten *business days* of making its decision.
- (d) Without limitation, an exemption may be given which only relieves a person or class of persons from the requirement to register as a *Generator* in relation to certain specified *generating systems* or classes of *generating systems*.
- (e) To be eligible for registration as a *Generator*, a person must:
- (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*.
- (f) Except in relation to a proposed *generating unit*, a person must also classify each of those *generating units* as either a *market generating unit* or a *non-market generating unit*.
- (f1) A *Generator* may also classify one or more of its *generating units* as an *ancillary service generating unit* where it has obtained the approval of *AEMO* to do so.

- (g) Nothing in clause 2.2.1(e) or (f) requires the classification of any *generating unit* which forms part of a *generating system* in respect of which an exemption under clause 2.2.1(c) applies.

## 2.2.2 Scheduled Generator

- (a) A *generating unit* which has a *nameplate rating* of ~~530~~ MW or greater or is part of a group of *generating units connected* at a common *connection point* with a combined *nameplate rating* of ~~530~~ MW or greater must be classified as a *scheduled generating unit* unless AEMO approves its classification as:
- (1) a *semi-scheduled generating unit* under clause 2.2.7(b); or
  - (2) a *non-scheduled generating unit* in accordance with clause 2.2.3(b).
- (b) A person must not classify a *generating unit* as a *scheduled generating unit* unless it has obtained the approval of AEMO to do so. AEMO must approve the classification if it is satisfied that the person:
- (1) has submitted data in accordance with schedule 3.1; and
  - (2) has adequate communications and/or telemetry to support the issuing of *dispatch instructions* and the audit of responses.
- (b1) In relation to an application under clause 2.2.2(b) to classify as a *scheduled generating unit* a *generating unit* with a *nameplate rating* of less than ~~530~~ MW, or a *generating unit* that is part of a group of *generating units connected* at a common *connection point* with a combined *nameplate rating* of less than ~~530~~ MW, AEMO may approve the classification on such terms and conditions as AEMO considers appropriate.
- (c) A person must comply with any terms and conditions imposed by AEMO as part of an approval under clause 2.2.2(b1).
- (d) **[Deleted]**
- (e) A *Generator* is taken to be a *Scheduled Generator* only in so far as its activities relate to any *scheduled generating unit*.
- (f) A *Scheduled Generator* must operate any *scheduled generating unit* in accordance with the co-ordinated *central dispatch* process operated by AEMO under the provisions of Chapter 3.
- (g) As described in Chapter 3, a *Scheduled Generator* must notify AEMO of the availability of each *scheduled generating unit* in respect of each *trading interval*.
- (h) A *Scheduled Generator* may submit to AEMO a schedule of *dispatch offers* for each *scheduled generating unit* in respect of each *trading interval* for *dispatch* by AEMO.

## 2.2.3 Non-Scheduled Generator

- (a) A *generating unit* with a *nameplate rating* of less than ~~530~~ MW (not being part of a group of *generating units* described in clause 2.2.2(a)) must be classified as a *non-scheduled generating unit* unless AEMO approves its classification as:
- (1) a *scheduled generating unit* under clause 2.2.2(b); or
  - (2) a *semi-scheduled generating unit* under clause 2.2.7(b).

- (b) A person must not classify a *generating unit* as a *non-scheduled generating unit* unless the person has obtained the approval of *AEMO* to do so. *AEMO* must approve the classification if it is satisfied that:
- ~~(1) the primary purpose for which the relevant *generating unit* operates is local use and the aggregate *sent out generation* at its *connection point* rarely, if ever, exceeds 30 MW; or~~
  - (2) the physical and technical attributes of the relevant *generating system comprising the generating units* ~~is are~~ such that it is not practicable for it to participate in *central dispatch*.
- (b1) If *AEMO* classifies a *generating unit* of 5MW or greater or a group of *generating units* connected at a common *connection point* with a combined *nameplate rating* of 5MW or greater as *non-scheduled*, *AEMO* must publish
- (1) the reasons for which the person sought the reclassification;
  - (2) *AEMO*'s reasons for granting the reclassification; and
  - (3) any conditions attached to such classification
- within ten *business days* of making its decision
- (c) If, in relation to an application under paragraph (b), in *AEMO*'s opinion it is necessary for any reason (including *power system security*) for the relevant *Generator* to comply with some of the obligations of a *Scheduled Generator* or *Semi-Scheduled Generator* for that *generating unit*, *AEMO* may approve the classification on such terms and conditions as *AEMO* considers reasonably necessary.
- (d) A person must comply with any terms and conditions imposed by *AEMO* under paragraph (c).
- (e) A *Generator* is taken to be a *Non-Scheduled Generator* only in so far as its activities relate to a *non-scheduled generating unit*.
- (f) Subject to clause 3.8.2(e), the *non-scheduled generating units* of a *Generator* do not participate in the co-ordinated *central dispatch* process operated by *AEMO*.

### 2.2.7 Semi-Scheduled Generator

- (a) A *generating unit* which has a *nameplate rating* of ~~530~~ MW or greater or is part of a group of *generating units* connected at a common *connection point* with a combined *nameplate rating* of ~~530~~ MW or greater, must be classified as a *semi-scheduled generating unit* where the output of the *generating unit* is *intermittent* unless *AEMO* approves its classification as:
- (1) a *scheduled generating unit* under clause 2.2.2(b); or
  - (2) a *non-scheduled generating unit* under clause 2.2.3(b).
- (b) A person must not classify a *generating unit* as a *semi-scheduled generating unit* unless the person has obtained the approval of *AEMO* to do so.
- (c) *AEMO* must approve a request for classification as a *semi-scheduled generating unit* if it is satisfied that the output of the *generating unit* is *intermittent* and that the person:

- (1) has submitted data in accordance with schedule 3.1;
  - (2) has submitted an *energy conversion model* which contains the information described in the guidelines referred to in paragraph (d); and
  - (3) has adequate communications and telemetry to support the issuing of *dispatch instructions* and the audit of responses.
- (d) *AEMO* must develop and *publish* guidelines in consultation with *Semi-Scheduled Generators* and such other person that *AEMO*, acting reasonably, considers appropriate setting out the information to be contained in *energy conversion models*. Any amendments to the guidelines are also to be made in consultation with *Semi-Scheduled Generators* and such other person that *AEMO*, acting reasonably, considers appropriate.
- (e) In relation to an application under paragraph (b) to classify a *generating unit* with a *nameplate rating* of less than ~~530~~ MW, or a *generating unit* that is part of a group of *generating units connected* at a common *connection point* with a combined *nameplate rating* of less than ~~530~~ MW, as a *semi-scheduled generating unit*, *AEMO* may approve the classification on such terms and conditions as *AEMO* considers appropriate.
- (f) A person must comply with any terms and conditions imposed by *AEMO* as part of an approval under paragraph (e).
- (g) A *Generator* is taken to be a *Semi-Scheduled Generator* only in so far as its activities relate to a *semi-scheduled generating unit*.
- (h) A *Semi-Scheduled Generator* must operate a *semi-scheduled generating unit* in accordance with the co-ordinated *central dispatch* process operated by *AEMO* under the provisions of Chapter 3.
- (i) At the time that a person makes a request for *AEMO* to classify a *semi-scheduled generating unit* under paragraph (c), that person may request to register two or more *generating units* as one *semi-scheduled generating unit* when the *generating units*:
- (1) are connected at a single site with:
    - (i) the same *intra-regional loss factor*; or
    - (ii) if two *intra-regional loss factors* are determined for the site under clause 3.6.2(b)(2), the same two *intra-regional loss factors*;
  - (2) each have a capacity of not more than 6MW; and
  - (3) have similar *energy conversion models*,

and *AEMO* must approve the request unless, in *AEMO*'s opinion, registering the relevant *generating units* as one *semi-scheduled generating unit* could adversely impact on *power system security*.

- (j) Notwithstanding that one or more of the conditions set out in paragraph (i) may not have been fulfilled by the *Semi-Scheduled Generator*, *AEMO* may approve a request received under paragraph (i) if registration as a single *semi-scheduled generating unit* would not materially distort *central dispatch* or adversely affect *power system security*.



- (k) Where *AEMO* approves a request to register two or more *generating units* as one *semi-scheduled generating unit* in accordance with paragraph (i) or (j), the *generating units* will be taken to be one *semi-scheduled generating unit* for the purposes of the *Rules*.
- (l) For the avoidance of doubt, a *Semi-Scheduled Generator* which operates two or more *semi-scheduled generating units* that could have been registered as a single *semi-scheduled generating unit* under paragraph (i) but were not so registered, may subsequently aggregate those *generating units* in accordance with clause 3.8.3.

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