

Australian Energy Market Commission

**Rule Determination**

**National Electricity Amendment (Minor  
Change to Technical Requirement for  
Generators) Rule 2008**

Rule Proponent(s)  
NEMMCO

07 August 2008

Signed: .....

  
**John Tamblyn**  
**Chairman**  
For and on behalf of  
Australian Energy Market Commission

**Commissioners**  
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## **Citation**

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## **About the AEMC**

The Council of Australian Governments, through its Ministerial Council on Energy, established the Australian Energy Market Commission (AEMC) in July 2005 to be the Rule maker for national energy markets. The AEMC is currently responsible for Rules and policy advice covering the National Electricity Market. It is a statutory authority. Our key responsibilities are to consider Rule change proposals, conduct energy market reviews and provide policy advice to the Ministerial Council as requested, or on AEMC initiative.

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## Abbreviations

AEMC	Australian Energy Market Commission
Commission	see AEMC
NEL	National Electricity Law
NEO	National Electricity Objective
NEM	National Electricity Market
NEMMCO	National Electricity Market Management Company
Rules	National Electricity Rules

## Summary

On 4 June 2008, the Commission received a Rule change request from NEMMCO entitled Minor Change to Technical Requirement for Generators.

The proposed Rule change seeks to rectify minor drafting errors with respect to clause S5.2.5.3(c)(6) of the Rules:

- the word “of” was omitted (Drafting Error I); and
- the word “or”, at the end sub-clause (i), should have been an “and” (Drafting Error II).

To rectify the drafting errors, NEMMCO proposed that clause S5.2.5.3(c)(6) be amended as follows:

“in respect of<sup>1</sup> a *generating system*:

- (i) of 30 MW or more; and ~~or~~<sup>2</sup>
- (ii) that does not have a *protection system* to trip the *generating unit* if the *frequency* exceeds a level agreed with NEMMCO,”

On 26 June 2008, the Commission commenced initial consultation on this Rule change proposal by publishing a notice under s.95 and s.96 of the National Electricity Law (NEL) for a non-controversial Rule change. The Rule change was open for public consultation for four weeks, with submissions closing on 24 July 2008. Interested parties were required to advise the Commission in writing by 10 July 2008 of an objection to expediting the making of the Rule on the grounds that it was non-controversial. The Commission did not receive any objections or submissions.

Having considered the issues raised in the proposal and its own analysis, the Commission is satisfied that the proposed Rule will contribute to the achievement of the national electricity objective (NEO) and satisfies the Rule making test in section 88 of the NEL. In accordance with sections 102 and 103 of the NEL, the Commission has therefore decided to make a Rule.

This Rule determination sets out the Commission’s reasons for making the Rule, in accordance with the requirements of the NEL.

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<sup>1</sup> To rectify Drafting Error I.

<sup>2</sup> To rectify Drafting Error II.

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# 1 NEMMCO's Rule change proposal

On 4 June 2008, the Commission received a Rule change request from NEMMCO entitled Minor Change to Technical Requirement for Generators.

## 1.1 Summary of the Rule change proposal

The proposed Rule change seeks to rectify minor drafting errors with respect to clause S5.2.5.3(c)(6) of the National Electricity Rules (Rules).

NEMMCO considered that the proposed Rule change to be non-controversial because it is unlikely to have a significant effect on the national electricity market (NEM). NEMMCO therefore requested that the Commission makes the Rules using an expedited consultation process, under s.96 of the National Electricity Law (NEL).

## 1.2 Context and background

### 1.2.1 The Commission's determination on the *minimum access standard* (8 March 2007)

On 8 March 2007, the Commission made a Rule determination Technical Standards for Wind Generation and Other Generator Connections (March 2007 Determination).<sup>1</sup>

Parts of this determination relate to the technical standard under clause S5.2.5.3(c) of the Rules. This clause sets out the *minimum access standard* a *generating unit* must meet in responding to *frequency* disturbances.

A copy of the *minimum access standard* is available in Appendix 1 of this document.

The Commission determined that, to meet the *minimum access standard*, a *generating system* and each of its *generating units* must be capable of *continuous uninterrupted operation* at *frequency* ranges and time ranges specified under clause S5.2.5.3(c) of the Rules.

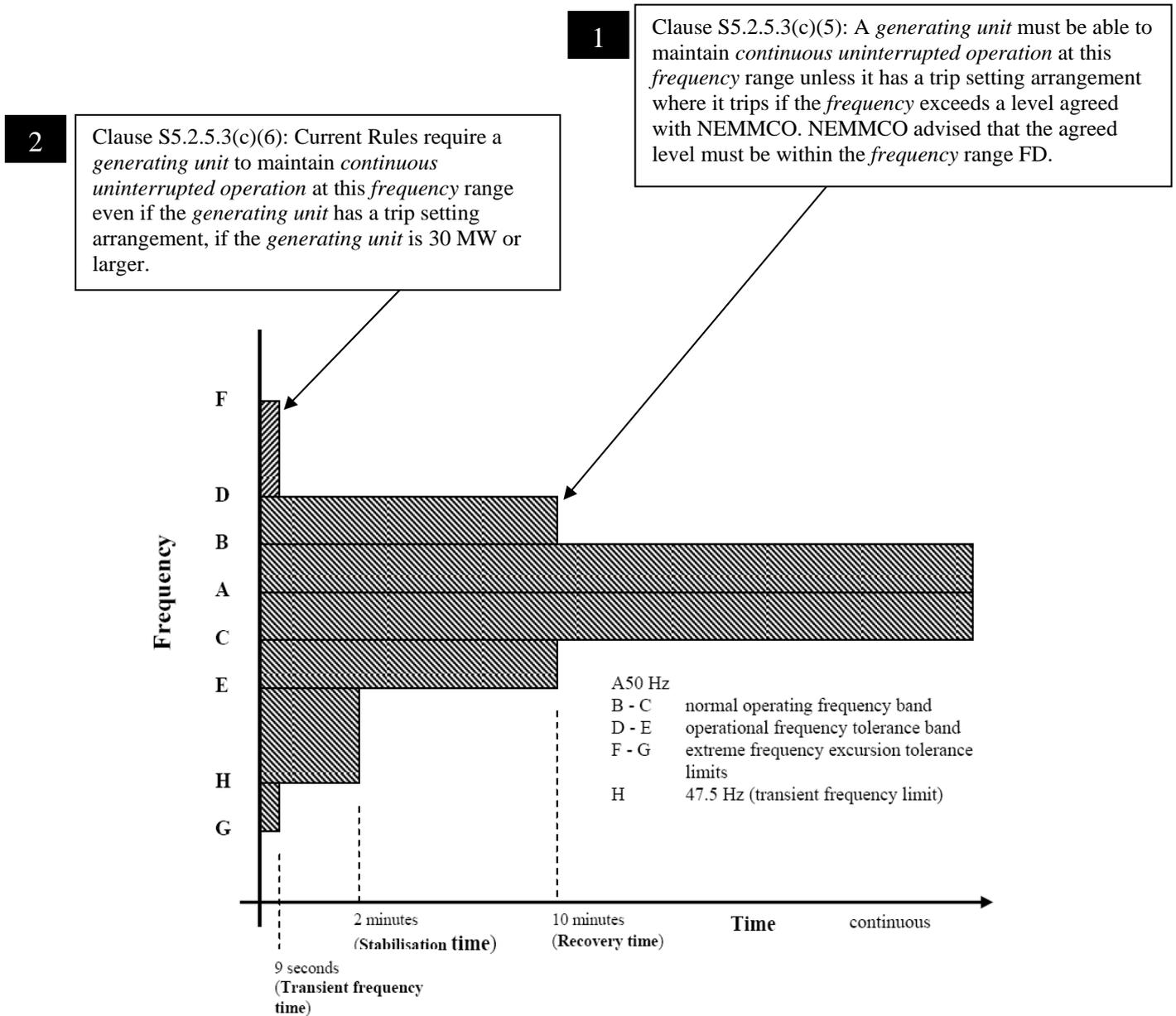
The *frequency* ranges and time ranges a *generating unit* must be capable of *continuous uninterrupted operation* are illustrated in the shaded areas of Figure 1.

This figure also illustrates the major issue in relation to this Rule change proposal.

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<sup>1</sup> AEMC, *Technical Standards for Wind Generation and Other Generator Connections*, viewed 17 June 2008, <http://www.aemc.gov.au/electricity.php?r=20060324.143345>.

**Figure 1: Frequency ranges and time ranges for the *minimum access standard***



Box 1: During a *frequency* disturbance event where the *frequency* falls within the range FD, a *generating unit* with a trip setting arrangement would have tripped (required by clause S5.2.5.3(c)(5)).

Box 2: However, clause S5.2.5.3(c)(6) requires the *generating unit* (if it is 30 MW or larger) to maintain *continuous uninterrupted operation* at *frequency* band FD.

One clause of the Rules requires the *generating unit* to trip whilst the other clause requires the *generating unit* to maintain *continuous uninterrupted operation*. This is physically impossible.

### 1.2.2 Errors in the *minimum access standard*

In this Rule change proposal, NEMMCO noted that the *minimum access standard* contains two minor drafting errors. They are as the following:

- the word “of” was omitted (Drafting Error I); and
- the word “or”, at the end of sub-clause (i), should have been an “and” (Drafting Error II).

The Commission considers Drafting Error II was caused by a series of communication errors which occurred during the Rule determination process for the March 2007 Determination.

### 1.2.3 NEMMCO’s Rule change proposal to rectify drafting errors

To rectify the drafting errors, NEMMCO proposed that clause S5.2.5.3(c)(6) be amended as follows:

“The *minimum access standard* is a *generating system* and each of its *generating units* must be capable of *continuous uninterrupted operation* for frequencies in the following ranges:

....

(6) in respect of<sup>2</sup> a *generating system*:

- (i) of 30 MW or more; and ~~or~~<sup>3</sup>
- (ii) that does not have a *protection system* to trip the *generating unit* if the *frequency* exceeds a level agreed with NEMMCO,

the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits (including and “island” condition) for at least the transient frequency time.”

### 1.3 Consultation on NEMMCO’s proposal

The consultation process for this Rule change request is illustrated in Table 1.

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<sup>2</sup> To rectify Drafting Error I.

<sup>3</sup> To rectify Drafting Error II.

**Table 1: Determination process for the Rule change proposal**

Date	Determination process
26 June 2008	The Commission commenced the Rule determination process by publishing a notice under s.95 and s.96 of the NEL.
10 July 2008	Closing date for objections to the expedited process.
24 July 2008	Close of consultation.
7 August 2008	Final Rule determination.

On 26 June 2008, the Commission commenced initial consultation on this Rule change proposal by publishing a notice under s.95 and s.96 of the NEL for a non-controversial Rule change. The Rule change was open for public consultation for four weeks, with submissions closing on 24 July 2008. Interested parties were required to advise the Commission in writing by 10 July 2008 of an objection to expediting the making of the Rule on the grounds that it was non-controversial. The Commission did not receive any objections or submissions.

## 2 Methodology for making the final Rule determination

The Commission has determined in accordance with s.102 of the NEL to make, with amendments, this Rule determination and in accordance with s.103, the Rule. The Rule to be made is in Appendix 2 of this determination. The Rule commences operation on 23 October 2008.

This determination sets out the Commission's reasons for making the final Rule. The Commission has taken into account:

1. the Commission's powers under the NEL to make the Rule (see section 2.1);
2. the proponent's Rule change proposal and proposed Rule ; and
3. the Commission's analysis as to the ways in which the Rule will or is likely to contribute to the promotion of the national electricity objective (NEO) so that it satisfies the statutory Rule making test (see section 2.2).

### 2.1 The Commission's power to make the Rule

The Commission is satisfied that the final Rule falls within the subject matters for which the Commission may make Rules, as set out in section 34 of the NEL.

The final Rule relates specifically to item 34(1) of the NEL, which states that:

"...the AEMC, in accordance with this Law and the Regulations, may make Rules, to be known, collectively, as the "National Electricity Rules", for or with respect to –

(a) regulating –

....

(ii) the operation of the national electricity system for the purposes of the safety, security and reliability of that system;"

The proposed Rule relates to a *generator unit's* requirements to respond to *frequency* disturbances. This relates to the operation of the national electricity system for the purposes of the safety, security and reliability of that system.

### 2.2 Assessment of the proposed Rule: the Rule making test and the national electricity objective (NEO)

The Rule making test requires the Commission to be satisfied that a Rule that it proposes to make will contribute to the NEO.

The test requires the Commission to consider the implications of the proposed new Rule, for efficient investment in, and efficient operation and use of, electricity services, in respect of:

(a) price, quality, reliability and security of supply of electricity; and

(b) the reliability, safety and security of the NEM,

which impact on the long term interests of end users of electricity.

The NEL also requires the Commission to have regard to any MCE statements of policy principles in applying the Rule making test. The Commission notes that currently, there are no relevant MCE statements of policy principles for this proposal.

The Commission addresses the following issues raised in the Rule change proposal:

- Drafting Error I; and
- Drafting Error II.

### **2.2.1 Drafting Error I: the missing “of”**

The Commission considers rectifying Drafting Error I will amend a grammatical error in clause S5.2.5.3(c)(6) of the Rules.

The Commission anticipates that the grammatical amendment is likely to contribute to achieving the NEO because it improves the clarity and consistency in this clause of the Rules.

### **2.2.2 Drafting Error II: amending an “or” to an “and”**

The Commission considers that although the proposed Rule is an incremental improvement, it is likely to contribute to achieving the NEO because it improves the clarity and consistency of clauses S5.2.5.3(c)(5) and (6) of the Rules.

#### **2.2.2.1 Barrier to entry due to requirements that can not be met**

The Commission considers that clauses S5.2.5.3(c)(5) and S5.2.5.3(c)(6), in concert, create a barrier to entry for persons seeking registration of a *generating system*. This is because, in some circumstances, the two clauses contradict each other. Such contradiction makes it physically impossible for a *generating unit* to satisfy both clauses at the same time.

The Commission considers such a barrier to entry is inconsistent with the NEO.

#### Physically impossible to satisfy clauses S5.2.5.3(c)(5) and S5.2.5.3(c)(6) at the same time

Under clause S5.2.5.3(c)(5) of the current Rules, a person registering a *generating system* may negotiate, with NEMMCO, for a *frequency* trip setting arrangement. This arrangement would trip a *generating unit* (within the *generating system*) if the *frequency* exceeds a level agreed with NEMMCO. NEMMCO advised that this *frequency* level must be between the upper bound of the operational frequency tolerance band and

the upper bound of the extreme frequency excursion tolerance band (*frequency range FD* of Figure 1).

During a *frequency* disturbance event where the *frequency* falls within the band FD (see Figure 1), clause S5.2.5.3(c)(5) would require a *generating unit* (within a *generating system* that has a trip setting arrangement) to trip. On the other hand, clause S5.2.5.3(c)(6) requires the *generating unit* (if it is in a *generating system* that is 30 MW or larger) to maintain a continuous *uninterrupted operation* at *frequency range FD*.

This gives rise to circumstances where it is physically impossible to meet both clauses S5.2.5.3(c)(5) and S5.2.5.3(c)(6) at the same time.

The Commission considers the impossibility, of satisfying both clauses S5.2.5.3(c)(5) and S5.2.5.3(c)(6) at the same time, is due to the word “or” (instead of the intended “and”) in the current clause S5.2.5.3(c)(6)(i) of the Rules.

Such impossibility may deter some generating facilities from entering and participating in the NEM, creating a barrier of entry for these generating facilities.

#### Rule change allows Rule requirements to be met

The Commission considers rectifying Drafting Error II would allow generators to meet the requirements in the Rules that is otherwise impossible to meet. This reduces the barrier to entry and contributes to achieving the NEO, especially for generators who are not able to meet clauses S5.2.5.3(c)(5) and S5.2.5.3(c)(6) concurrently under the current Rules.

#### **2.2.2.2 Barrier to entry due to a contradiction in the Rules**

The contradiction between clauses S5.2.5.3(c)(5) and S5.2.5.3(c)(6) creates ambiguity in relation to the intended objectives of those clauses. This ambiguity can create a barrier to entry for some generating facilities intending to enter and participant in the NEM.

The Commission considers such a barrier to entry is inconsistent with the NEO.

The Commission considers rectifying Drafting Error II would clarify NEMMCO’s intention that only generators with combined capacity at 30 MW or more, and<sup>4</sup> that do not have a *protection system*, would be required to maintain *continuous uninterrupted operation* at *frequency range FD* (of Figure 1) for at least the transient frequency time<sup>5</sup>. This would reduce the barrier to entry for generating facilities by promoting certainty in the regulatory environment. This is likely to contribute towards achieving the NEO.

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<sup>4</sup> Instead of “or”.

<sup>5</sup> The transient frequency time is 9 seconds. See Figure 1.

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## Appendix 1: *Minimum access standard* (Clause S5.2.5.3(c)(6) of the Rules)

### Minimum access standard

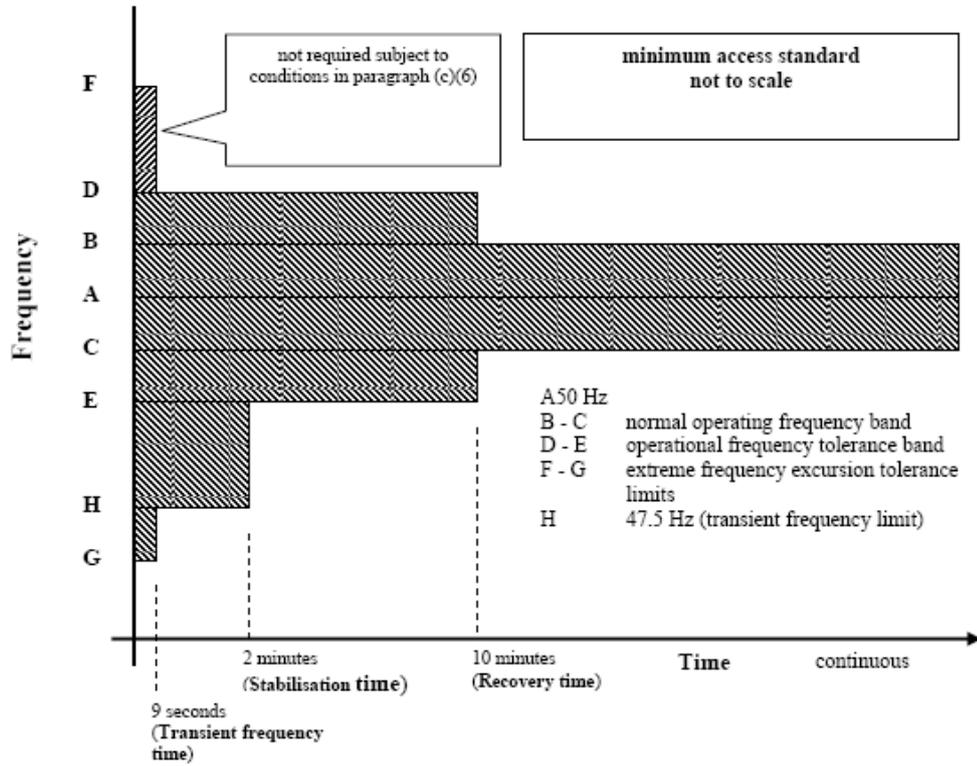
The *minimum access standard* is a *generating system* and each of its *generating units* must be capable of *continuous uninterrupted operation* for *frequencies* in the following ranges:

- (1) the lower bound of the extreme frequency excursion tolerance limits to the transient frequency limit for at least the transient frequency time;
- (2) the transient frequency limit to the lower bound of the operational frequency tolerance band for at least the stabilisation time;
- (3) the lower bound of the operational frequency tolerance band to the lower bound of the normal operating frequency band for at least the recovery time including any time spent in the ranges under subparagraphs (1) and (2);
- (4) the normal operating frequency band for an indefinite period;
- (5) the upper bound of the normal operating frequency band to the upper bound of the operational frequency tolerance band for at least the recovery time including any time spent in the ranges under subparagraph (6) unless the *generating system* has a *protection system* to trip a *generating unit* if the *frequency* exceeds a level agreed with NEMMCO; and
- (6) in respect a *generating system*:
  - (i) of 30 MW or more; or
  - (ii) that does not have a *protection system* to trip the *generating unit* if the *frequency* exceeds a level agreed with NEMMCO,

the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits (including an “island” condition) for at least the transient frequency time,

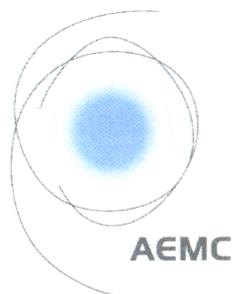
unless the rate of change of *frequency* is outside the range of -1 Hz to 1 Hz per second for more than one second or such other range as determined by the *Reliability Panel* from time to time.

**Note:** The minimum access standard is illustrated in the following diagram. To the extent of any inconsistency between the diagram and paragraph (c), paragraph (c) prevails.



## Appendix 2: Rule as made

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## **National Electricity Amendment (Minor Change to Technical Requirement for Generators) Rule 2008 No. 7**

under the National Electricity Law as applied by:

- (a) the National Electricity (South Australia) Act 1996;
- (b) the Electricity (National Scheme) Act 1997 of the Australian Capital Territory;
- (c) the National Electricity (New South Wales) Act 1997 of New South Wales;
- (d) the Electricity - National Scheme (Queensland) Act 1997 of Queensland;
- (e) the Electricity - National Scheme (Tasmania) Act 1999 of Tasmania;
- (f) the National Electricity (Victoria) Act 2005 of Victoria; and
- (g) the Australian Energy Market Act 2004 of the Commonwealth.

The Australian Energy Market Commission makes the following Rule under the National Electricity Law.



John Tamblyn  
Chairman  
Australian Energy Market Commission

## **National Electricity Amendment (Minor Change to Technical Requirement for Generators) Rule 2008 No. 7**

### **1. Title of Rule**

This Rule is the *National Electricity Amendment (Minor Change to Technical Requirement for Generators) Rule 2008 No 7*.

### **2. Commencement**

This Rule commences operation on 23 October 2008.

### **3. Amendment of the National Electricity Rules**

The National Electricity Rules are amended as set out in Schedule 1.

**Schedule 1      Minimum access standard**

(Clause 3)

**[1]    Clause S5.2.5.3(c)(6)      Minimum access standard**

In clause S5.2.5.3(c)(6), insert “of” after “respect”.

**[2]    Clause S5.2.5.3(c)(6)(i)      Minimum access standard**

Omit clause S5.2.5.3(c)(6)(i) and substitute:

- (i)      of 30MW or more; and

END OF RULE AS MADE

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