

## **Indicative changes to National Electricity Rules proposed in *Draft National Electricity Amendment (Integrating energy storage systems into the NEM) Rule 2021***

### **Note:**

This document shows changes to the relevant parts of the National Electricity Rules (NER) proposed by the *Draft National Electricity Amendment (Integrating energy storage systems into the NEM) Rule 2021*. The proposed changes are shown in a modified version of the NER that incorporates, where relevant, changes made by 21 June 2021 which take effect as of 1 May 2022. This modified version of parts of the NER is provided to assist in responding to the draft rule and should not be used for any other purpose. The Australian Energy Market Commission does not guarantee the accuracy, reliability or completeness of this version of the NER.

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**CHAPTER 2**





## 2. Registered Participants and Registration

### 2.1 Registered Participants

#### 2.1.2 General

- (a) ~~[Deleted]~~
- (b) ~~[Deleted]~~
- (c) The different categories of *Registered Participants* have different obligations under the *Rules*.
- (d) Rules ~~2.1A2.2~~ to 2.7 set out the *Registered Participant* categories and requirements which a person must satisfy in order to be registered by *AEMO* in relation to each of those *Registered Participant* categories.
- (e) Each prospective *Registered Participant* must apply to *AEMO* for registration in accordance with rule 2.9.
- (e1) Rule 2.9A sets out the process to be followed in order to transfer a *Registered Participant's* registration to another person.
- (f) Each *Registered Participant* must pay to *AEMO* the prescribed fees determined in accordance with the provisions of rule 2.11.

#### 2.1A Obligation to register (non-network categories)

##### 2.1A.1 Obligation to register for non-exempt generating systems and integrated resource systems

- (a) Subject to clause 2.1A.2, a person must not engage in the activity of owning, controlling or operating a generating system that is connected to a transmission system or distribution system unless that person is registered in relation to that generating system as either an Integrated Resource Provider or a Generator at the election of the person required to register.
- (b) Subject to clause 2.1A.2, a person must not engage in the activity of owning, controlling or operating an integrated resource system that is connected to a transmission system or distribution system unless that person is registered in relation to that integrated resource system as an Integrated Resource Provider.

##### 2.1A.2 Exemptions from registration in respect of certain generating systems and integrated resource systems

- (a) *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 in accordance with clause 2.1A.1, subject to such conditions as *AEMO* deems appropriate, where (in *AEMO's* opinion) an exemption is not inconsistent with the national electricity objective.
- (b) Without limitation, an exemption may be given which only relieves a person or class of persons from the requirement to register in accordance with clause 2.1A.1 in relation to certain specified generating systems or integrated resource systems or classes of generating systems or integrated resource systems.

(c) Nothing in rule 2.2 requires the classification of any *generating unit* or *integrated resource unit* which forms part of a *generating system* or *integrated resource system* in respect of which an exemption under paragraph (a) applies.

(d) An exemption under paragraph (a) does not exempt a person from any other requirements of this rule that may be applicable to the person.

### **2.1A.3 Purchasing and selling electricity directly in the market**

A person must not engage in the activity of selling or purchasing electricity directly in the *market* at any *connection point*, unless that person is registered by *AEMO* as a *Market Participant* and that *connection point* is classified as one of that person's *market connection points*.

### **2.1A.4 Providing wholesale demand response**

A person must not engage in the activity of offering and providing *wholesale demand response* in accordance with Chapter 3 unless that person is registered by *AEMO* as a *Demand Response Service Provider* and the relevant response is provided by a *wholesale demand response unit* classified by that person.

### **2.1A.5 Providing market ancillary services**

A person must not engage in the activity of offering and providing *market ancillary services* in accordance with Chapter 3 unless that person is registered by *AEMO* as an *Ancillary Service Provider* and the relevant service is provided by an *ancillary service unit* classified by that person.

## **2.1B Registration in relation to the sale or purchase of electricity and services**

### **2.1B.1 Registration as a Generator**

- (a) To register as a *Generator* in respect of a *generating system*, a person must:
- (1) obtain the approval of *AEMO* in accordance with rule 2.2 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);
  - (3) satisfy *AEMO* that the *generating system* will be capable of meeting or exceeding its *performance standards*; and
  - (4) satisfy the requirements in rule 2.4 for registration as a *Market Participant*.
- (b) Except in relation to a proposed *generating unit*, a *Generator* must also classify each of its *generating units* as either a *market generating unit* or a *non-market generating unit*.

## **2.1B.2 Registration as an Integrated Resource Provider**

- (a) To register as an *Integrated Resource Provider*, a person must do one or more of the following:

  - (1) register in accordance with paragraph (b) as an *Integrated Resource Provider* in respect of an *integrated resource system* or a *generating system*;
  - (2) satisfy *AEMO* that the person intends to classify, in accordance with clause 2.3.4(b) or (d), one or more *connection points* as a *market connection point*; or
  - (3) satisfy *AEMO* that the person intends to classify, in accordance with clause 2.2.8, the *connection point* for one or more *small generating units* or *small integrated resource units* as its *market connection point*, and in each case, must satisfy the requirements in rule 2.4 for registration as a *Market Participant*.
- (b) To register as an *Integrated Resource Provider* in respect of an *integrated resource system* or a *generating system*, a person must:

  - (1) in relation to an *integrated resource system*, obtain the approval of *AEMO* to classify in accordance with rule 2.2 any *integrated resource unit* that forms part of the *integrated resource system* that the person owns, operates or controls, or from which it otherwise sources electricity, as:

    - (i) a *scheduled integrated resource unit*; or
    - (ii) a *non-scheduled integrated resource unit*;
  - (2) in relation to an *integrated resource system* or *generating system*, obtain the approval of *AEMO* to classify in accordance with rule 2.2 any *generating unit* that forms part of the *integrated resource system* or *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*;
  - (3) classify the relevant *integrated resource units* or *generating units* in accordance with *AEMO*'s approval as referred to in subparagraph (1) or (2); and
  - (4) satisfy *AEMO* that the *integrated resource system* or *generating system* will be capable of meeting or exceeding its *performance standards*.
- (c) Except in relation to a proposed *generating unit*, an *Integrated Resource Provider* must also classify each of its *generating units* as either a *market generating unit* or a *non-market generating unit*.
- (d) Except in relation to a proposed *integrated resource unit*, an *Integrated Resource Provider* must also classify each of its *integrated resource units* as either a *market integrated resource unit* or a *non-market integrated resource unit*.

### **2.1B.3 Expected closure year notices**

(a) A person registered as:

- (1) a Generator or Integrated Resource Provider in respect of a scheduled generating unit or semi-scheduled generating unit; or
- (2) an Integrated Resource Provider in respect of a scheduled integrated resource unit,

must notify AEMO of the year in which the person expects the relevant generating unit or integrated resource unit to cease supplying electricity to the transmission network or distribution network at its connection point (expected closure year).

(b) The Generator or Integrated Resource Provider in respect of a scheduled generating unit, semi-scheduled generating unit or scheduled integrated resource unit must:

- (1) notify AEMO of the expected closure year for the unit promptly after AEMO approves classification of the unit under rule 2.2; and
- (2) immediately notify AEMO of any change to the expected closure year for the unit.

### **2.1B.4 Registration as a Customer**

(a) To register as a Customer, a person must:

- (1) satisfy the requirements in rule 2.4 for registration as a Market Participant; and
- (2) satisfy AEMO (acting reasonably) that:
  - (i) the person intends to classify, in its capacity as a Customer, one or more connection points as one of its market connection points; or
  - (ii) registration is for the purpose of acting as a RoLR.

(b) A Customer's activities only relate to connection points it has classified (in its capacity as a Customer) as market connection points or its activities as a RoLR and only while it is also registered with AEMO as a Customer.

### **2.1B.5 Registration as a Demand Response Service Provider**

(a) To register as a Demand Response Service Provider, a person must:

- (1) satisfy the requirements in rule 2.4 for registration as a Market Participant; and
- (2) obtain the approval of AEMO to classify:
  - (i) a qualifying load as a wholesale demand response unit in accordance with clause 2.3.6; or
  - (ii) plant as an ancillary service unit in accordance with clause 2.3D.1.

(b) A Demand Response Service Provider's activities only relate to qualifying loads it has classified as wholesale demand response units or plant it has classified as ancillary service units (in each case in its capacity as a Demand

*Response Service Provider) and only while it is also registered with AEMO as a Demand Response Service Provider.*

## 2.2 Classification of generating units and integrated resource units**Generator**

### 2.2.1 [Deleted]**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 system 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.~~

#### **Note:**

~~A person who is exempt from registration as a Generator, may register with AEMO as a Small Generation Aggregator under rule 2.3A.~~

~~(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);~~

~~(2A) if a generating unit is classified as a scheduled generating unit or a semi-scheduled generating unit in accordance with subparagraph (1):~~

~~(i) notify AEMO of the year in which the Generator expects the generating unit to cease supplying electricity to the transmission network or distribution network at its connection point (expected closure year); and~~

~~(ii) immediately notify AEMO of any change to the expected closure year; 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(e) applies.~~

## 2.2.2

### Scheduled generating units and scheduled integrated resource units~~Scheduled Generator~~

- (a) A generating unit which has a nameplate rating of 30 MW or greater or is part of a group of generating units connected at a common connection point with a combined nameplate rating of 30 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).
- (a1) An integrated resource unit which has a nameplate rating of 5 MW or greater for either production or consumption or is part of a group of integrated resource units connected at a common connection point with a combined nameplate rating of 5 MW or greater for either production or consumption must be classified as a scheduled integrated resource unit unless AEMO approves its classification as:
  - (1) a non-scheduled integrated resource unit in accordance with clause 2.2.3;
  - (2) a scheduled generating unit and a scheduled load in accordance with paragraph (b2);
  - (3) a semi-scheduled generating unit and a scheduled integrated resource unit in accordance with paragraph (b4); or
  - (4) a semi-scheduled generating unit in accordance with clause 2.2.7(c1).
- (b) A person must not classify a generating unit or integrated resource unit as a scheduled generating unit or scheduled integrated resource unit unless it has obtained the approval of AEMO to do so. Where the relevant classification is required under paragraph (a) or (a1), AEMO must approve the classification if it is satisfied that~~the person:~~
  - (1) the person has submitted data in accordance with schedule 3.1;~~and~~
  - (2) the person has adequate communications and/or telemetry to support the issuing of dispatch instructions and the audit of responses;~~and~~
  - (3) in the case of an integrated resource unit, the unit is capable of transitioning linearly from consuming to producing electricity and vice versa.
- (b1) AEMO may, on an application being made for the purposes of paragraph (b), approve the following classifications on such terms and conditions as AEMO considers appropriate and if it is satisfied of the matters in paragraphs (b)(1)



~~to (3): In relation to an application under clause 2.2.2(b) to classify as a scheduled generating unit~~

~~(1) classification as a scheduled generating unit of:~~

~~(i) a generating unit with a nameplate rating of less than 30 MW;<sup>15</sup> or~~

~~(ii) 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 30 MW;<sup>15</sup> or~~

~~(2) classification as a scheduled integrated resource unit of:~~

~~(i) an integrated resource unit with a nameplate rating of less than 5MW for either production or consumption; or~~

~~(ii) a group of integrated resource units connected at a common connection point with a combined nameplate rating of less than 5 MW for either production or consumption.~~

~~AEMO may approve the classification on such terms and conditions as AEMO considers appropriate.~~

~~(b2) AEMO must approve (and must only approve) a request for classification of an integrated resource unit as a scheduled generating unit if:~~

~~(1) AEMO is satisfied that the integrated resource unit is not capable of transitioning linearly from consuming to producing electricity and vice versa; and~~

~~(2) AEMO determines in accordance with clause 2.3.4A to classify that part of the plant that consumes electricity as a scheduled load.~~

~~(b3) In relation to an application under paragraph (b2) to classify an integrated resource unit as a scheduled generating unit, AEMO may approve the classification on such terms and conditions as AEMO considers appropriate.~~

~~(b4) AEMO may, on an application being made for the purposes of paragraph (a1)(3), approve on such terms and conditions as AEMO considers appropriate, classification of an integrated resource unit that is a coupled production unit as:~~

~~(1) a semi-scheduled generating unit in respect of any part of the plant that satisfies the criteria for classification as a semi-scheduled generating unit under clause 2.2.7(b); and~~

~~(2) a scheduled integrated resource unit in respect of any part of the plant that satisfies the criteria for classification under this clause or clause 2.2.3 as applicable.~~

(c) A person must comply with any terms and conditions imposed by AEMO as part of an approval under ~~paragraph (b1), (b3) or (b4)~~ clause 2.2.2(b1).

#### **Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

(d) **[Deleted]**

(e) A Generator or Integrated Resource Provider is taken to be:

- ~~(1) a Scheduled Generator only in so far as its activities relate to any scheduled generating unit; and~~
- ~~(2) a Scheduled Integrated Resource Provider only in so far as its activities relate to any scheduled integrated resource unit.~~
- (f) A Scheduled Generator must operate any scheduled generating unit, and a Scheduled Integrated Resource Provider must operate any scheduled integrated resource 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 generating units and non-scheduled integrated resource units** **Non-Scheduled Generator**

- (a) A generating unit with a nameplate rating of less than 30 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).
- ~~(a1) An integrated resource unit with a nameplate rating of less than 5 MW for both production and consumption (not being part of a group of integrated resource units described in clause 2.2.2(a1)) must be classified as a non-scheduled integrated resource unit unless AEMO approves its classification as a scheduled integrated resource unit under clause 2.2.2(b).~~
- (b) A person must not classify a generating unit as a non-scheduled generating unit or an integrated resource unit as a non-scheduled integrated resource unit unless the person has obtained the approval of AEMO to do so. AEMO must approve the classification if it is satisfied that:
  - (1) in the case of a generating unit, 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 unit or integrated resource unit are such that it is not practicable for it to participate in central dispatch.
- (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 or Integrated Resource Provider to comply with some of the obligations of a Scheduled Generator or Semi-Scheduled Generator for that generating unit or Scheduled Integrated Resource Provider for that integrated resource 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).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) A *Generator* or an *Integrated Resource Provider* is taken to be a *Non-Scheduled Generator* only in so far as its activities relate to a *non-scheduled generating unit*.

(e1) An *Integrated Resource Provider* is taken to be a *Non-Scheduled Integrated Resource Provider* only in so far as its activities relate to a *non-scheduled integrated resource unit*.

- (f) Subject to clause 3.8.2(e), ~~the non-scheduled generating units of a *Generator* and non-scheduled integrated resource units~~ do not participate in the co-ordinated *central dispatch* process operated by *AEMO*.

#### 2.2.4 Market generating units **Market Generator**

- (a) A *generating unit* must be classified as a *market generating unit* unless *AEMO* approves its classification as a *non-market generating unit* in accordance with clause 2.2.5(a).
- (b) A *Generator* or an *Integrated Resource Provider* is taken to be a *Market Generator* only in so far as its activities relate to any *market generating units*.
- (c) A *Market Generator* must sell all *sent out generation* through the *spot market* and accept payments from *AEMO* for *sent out generation* ~~at the spot price applicable at the connection point as determined for each trading interval~~ in accordance with the provisions of Chapter 3.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) A *Market Generator* must purchase all electricity *supplied* through the *national grid* ~~to the *Market Generator* at that to the connection point for each of its market generating units~~ from the *spot market* and make payments to *AEMO* for such electricity ~~supplied at the connection point as determined for each trading interval~~ in accordance with the provisions of Chapter 3.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

#### 2.2.5 Non-market generating units **Non-Market Generator**

- (a) A person must not classify a *generating unit* as a *non-market generating unit* unless the person has obtained the approval of *AEMO* to do so.

(a1) *AEMO* must approve a request for classification of a *generating unit* as a *non-market generating unit* if (and only if):

- (1) the *generating unit* is classified as a *non-scheduled generating unit*; and

(2) AEMO is satisfied that a Market Customer has classified the connection point for the generating unit as one of its market connection points under clause 2.3.4.

- ~~(a) A generating unit whose entire output is consumed by a market load at the same connection point, at which there is not expected to be any sent out generation, must be classified as a non-market generating unit.~~
- (b) A Generator or Integrated Resource Provider is taken to be a Non-Market Generator only in so far as its activities relate to any non-market generating unit.
- (c) A Non-Market Generator is not entitled to receive payment from AEMO for sent out generation except for any compensation that may be payable to it as a Directed Participant or Affected Participant.

### **2.2.5A Market integrated resource units**

- (a) An integrated resource unit must be classified as a market integrated resource unit unless AEMO approves its classification as a non-market integrated resource unit in accordance with clause 2.2.5B.
- (b) An Integrated Resource Provider must sell all sent out generation from its market integrated resource units through the spot market and accept payments from AEMO for sent out generation from its market integrated resource units in accordance with the provisions of Chapter 3.

#### **Note**

The AEMC proposes to recommend that clause 2.2.5A(b) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) An Integrated Resource Provider must purchase all electricity supplied through the national grid to the connection point for each of its market integrated resource units from the spot market and make payments to AEMO for such electricity in accordance with the provisions of Chapter 3.

#### **Note**

#### **Note**

The AEMC proposes to recommend that clause 2.2.5A(c) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

### **2.2.5B Non-market integrated resource units**

- (a) A person must not classify an integrated resource unit as a non-market integrated resource unit unless the person has obtained the approval of AEMO to do so.
- (b) AEMO must approve a request for classification of an integrated resource unit as a non-market integrated resource unit if (and only if):
- (1) the integrated resource unit is classified as a non-scheduled integrated resource unit; and
  - (2) AEMO is satisfied that a Market Customer has classified the connection point for the integrated resource unit as one of its market connection points under clause 2.3.4.

- (c) An Integrated Resource Provider is taken to be a Non-Market Integrated Resource Provider only in so far as its activities relate to any non-market integrated resource unit.
- (d) A Non-Market Integrated Resource Provider is not entitled to receive payment from AEMO for sent out generation except for any compensation that may be payable to it as a Directed Participant or Affected Participant.

## 2.2.6 **[Deleted]Ancillary services generating unit**

- (a) If the Market Generator in respect of a generating unit wishes to use that generating unit to provide market ancillary services in accordance with Chapter 3, then the Market Generator must apply to AEMO for approval to classify the generating unit as an ancillary service generating unit.
- (b) An application under clause 2.2.6(a) must be in the form prescribed by AEMO and specify the market ancillary services which the Market Generator wishes to provide using the relevant generating unit.
- (c) AEMO must, within 5 business days of receiving an application under clause 2.2.6(a), advise the applicant of any further information or clarification which is required in support of its application if, in AEMO's reasonable opinion, the application:
  - (1) is incomplete; or
  - (2) contains information upon which AEMO requires clarification.
- (d) If the further information or clarification required pursuant to clause 2.2.6(c) is not provided to AEMO's satisfaction within 15 business days of the request, then the Market Generator will be deemed to have withdrawn the application.
- (e) If AEMO is reasonably satisfied that:
  - (1) the generating unit is able to be used to provide the market ancillary services referred to in the application in accordance with the market ancillary service specification; and
  - (2) the Market Generator has adequate communication and/or telemetry to support the issuing of dispatch instructions and the audit of responses;then AEMO must approve the classification in respect of the particular market ancillary services.
- (f) If AEMO approves the classification of a generating unit as an ancillary service generating unit, then AEMO may impose on the relevant Market Generator such terms and conditions as AEMO considers necessary to ensure that the provisions of the Rules applying to market ancillary services can be met.
- (g) A Market Generator:
  - (1) must comply with any terms and conditions imposed by AEMO under clause 2.2.6(f);

### **Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- ~~(2) must ensure that the market ancillary services provided using the relevant ancillary services generating unit are provided in accordance with the co-ordinated central dispatch process operated by AEMO under the provisions of Chapter 3 and in accordance with the market ancillary service specification;~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

- ~~(3) may submit to AEMO market ancillary service offers in respect of the ancillary service generating unit in accordance with the provisions of Chapter 3; and~~
- ~~(4) if the Market Generator submits a market ancillary service offer in respect of the relevant ancillary service generating unit, must comply with the dispatch instructions from AEMO in accordance with the Rules.~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

- ~~(h) A Market Generator with an ancillary service generating unit must only sell the market ancillary services produced using that ancillary service generating unit through the spot market in accordance with the provisions of Chapter 3.~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

- ~~(i) A Market Generator is not entitled to receive payment from AEMO for market ancillary services except where those market ancillary services are produced using an ancillary service generating unit in accordance with Chapter 3 or pursuant to a direction or clause 4.8.9 instruction.~~

## 2.2.7 Semi-scheduled generating units**Semi-Scheduled Generator**

- (a) A generating unit which has a nameplate rating of 30 MW or greater or is part of a group of generating units connected at a common connection point with a combined nameplate rating of 30 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 or (for the purposes of paragraph (c1)) an integrated resource 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.

(c1) AEMO may, on an application being made for the purposes of paragraph (b), approve on such terms and conditions as AEMO considers appropriate, classification of an *integrated resource unit* that is a *coupled production unit* as a *semi-scheduled generating unit* if AEMO is satisfied that:

- (1) the output of some or all *generating plant* comprised in the *integrated resource unit* is *intermittent*;
- (2) except for *auxiliary load*, the *integrated resource unit* will not consume electricity delivered from the *national grid* at the *connection point* for the *integrated resource unit*; and
- (3) the person has satisfied the requirements in paragraphs (c)(1) to (3).

(c2) A person must comply with any terms and conditions imposed by AEMO as part of an approval under paragraph (c1).

**Note**

The AEMC proposes to recommend that clause 2.2.7(c2) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) AEMO must develop and *publish* guidelines in consultation with *Semi-Scheduled Generators* and such other persons 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 30 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 30 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).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) A *Generator* or *Integrated Resource Provider* 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.~~

### **2.2.8 Small generating units and small integrated resource units**

- (a) If electricity supplied through the national grid to or from a connection point that connects a small generating unit or a small integrated resource unit to the national grid is purchased or sold by any person (end user), an Integrated Resource Provider may, with the consent of the end user, classify the connection point as one of its market connection points.
- (b) An Integrated Resource Provider is taken to be a Small Resource Aggregator only in so far as its activities relate to connection points for small generating units or small integrated resource units that it has classified as market connection points.
- (c) A Small Resource Aggregator must sell all sent out generation from its market connection points through the spot market and accept payments from AEMO for the electricity in accordance with Chapter 3.

#### **Note**

The AEMC proposes to recommend that clause 2.2.8(c) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- ~~(d) A Small Resource Aggregator must purchase all electricity supplied through the national grid to its market connection points from the spot market and make payments to AEMO for the electricity in accordance with Chapter 3.~~

**Note**

~~The AEMC proposes to recommend that clause 2.2.8(d) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

## **2.3 Connection point classifications**

### **2.3.1 [Deleted]Registration as a Customer**

- ~~(a) A Customer is a person so registered by AEMO and who engages in the activity of purchasing electricity supplied through a transmission system or distribution system to a connection point.~~
- ~~(b) To be eligible for registration as a Customer, a person must satisfy AEMO (acting reasonably) that:~~
- ~~(1) the person intends to classify within a reasonable period of time its electricity purchased at one or more connection points as a first tier load, a second tier load or a market load or an intending load; or~~
- ~~(2) registration is for the purpose of acting as a RoLR.~~
- ~~(c) A person must not engage in the activity of purchasing electricity directly from the market at any connection point, unless that person is registered by AEMO as a Market Participant and that connection point is classified as one of that person's market connection points.~~
- ~~(d) A person who engages in the activity of purchasing electricity at any connection point otherwise than directly from the market may, but is not required to, apply for registration by AEMO as a First-Tier Customer, a Second-Tier Customer or an Intending Participant provided that person is entitled to classify its electricity purchased at that connection point based on the threshold criteria set out in clause 2.3.1(e).~~
- ~~(e) A person may not classify its electricity purchased at any connection point unless the person satisfies the requirements of the participating jurisdiction in which the connection point is situated so that (subject to compliance with the Rules) the person is permitted to purchase electricity in the spot market in relation to that connection point.~~
- ~~(f) A Market Customer may classify one or more of its market loads as an ancillary service load in accordance with clause 2.3.5.~~

#### **2.3.1A Jurisdictional classification requirements**

~~A person may not classify any connection point unless the person satisfies the requirements of the participating jurisdiction in which the connection point is situated so that (subject to compliance with the Rules) the person is permitted to purchase or sell electricity in the spot market in relation to that connection point.~~

### **2.3.2 [Deleted]First-Tier Customer**

- ~~(a) If any electricity supplied through the national grid is purchased by a person at a connection point directly and in its entirety from the Local Retailer, the~~

~~load at that connection point may be classified by that person as a first-tier load.~~

~~(b) A Customer is taken to be a First-Tier Customer only in so far as its activities relate to any first-tier load.~~

~~(c) A First-Tier Customer must not participate in the spot market for any first-tier load.~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

### 2.3.3 **[Deleted]Second-Tier Customer**

~~(a) Subject to clause 2.3.3(d), if any electricity supplied through the national grid is purchased by a person at a connection point other than directly from the Local Retailer or the spot market all electricity purchased by that person at that connection point may be classified by that person as a second-tier load.~~

~~(b) A Customer is taken to be a Second-Tier Customer only in so far as its activities relate to any second-tier load.~~

~~(c) A Second-Tier Customer must not participate in the spot market for any of its second-tier loads.~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

~~(d) A person's purchase of electricity at a connection point may only be classified as a second-tier load while a Market Customer, from whom the person directly or indirectly purchases the electricity, classifies the connection point as one of its market loads.~~

### 2.3.4 **Market connection point classification Market Customer**

~~(a) A connection point:~~

~~(1) which connects any market generating unit to the national grid is taken to be a market connection point of the Market Participant which has classified the generating unit as a market generating unit;~~

~~(2) which connects any market integrated resource unit to the national grid is taken to be a market connection point of the Market Participant which has classified the integrated resource unit as a market integrated resource unit;~~

~~(3) which has been classified by an Integrated Resource Provider under clause 2.2.8(a) is taken to be a market connection point of the Integrated Resource Provider; or~~

~~(4) where the network service connected at that connection point is a market network service is taken to be a market connection point of the Market Participant that has classified the network service as a market network service.~~



- (b) Subject to paragraph (c), if electricity supplied through the national grid to or from a connection point is purchased or sold by any person (end user), that connection point must be classified as a market connection point of:
- (1) the end user (if registered as a Customer or an Integrated Resource Provider); or
  - (2) with the consent of the end user, a Customer or an Integrated Resource Provider.
- (c) Paragraph (b) does not apply to any connection point:
- (1) taken to be a market connection point of another Market Participant under paragraph (a);
  - (2) classified by a Local Retailer in accordance with paragraph (i); or
  - (3) that is a child connection point.
- (d) A Customer or an Integrated Resource Provider may, with the consent of the retail customer at a child connection point, classify the connection point as one of its market connection points.
- (e) A Customer is taken to be a Market Customer only in so far as its activities relate to any market connection point.
- (f) An Integrated Resource Provider is taken to be a Market Customer only in so far as its activities relate to any market connection point it has classified under paragraph (b) or (d).
- (g) A Market Customer must purchase all electricity supplied to its market connection points from the spot market and make payments to AEMO for the electricity in accordance with Chapter 3.

**Note**

The AEMC proposes to recommend that clause 2.3.4(g) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g1) A Market Customer must sell all sent out generation from its market connection points through the spot market and accept payments from AEMO for the electricity in accordance with Chapter 3.

**Note**

The AEMC proposes to recommend that clause 2.3.4(g1) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- ~~(a) If electricity, supplied through the national grid to any person connected at a connection point, is purchased other than by a franchise customer from the Local Retailer, that load at the connection point must be classified by that person or, with the consent of that person, by some other person as a market load.~~
- ~~(b) A Customer is taken to be a Market Customer only in so far as its activities relate to any market load and only while it is also registered with AEMO as a Market Customer.~~
- ~~(c) A Market Customer must purchase all electricity supplied at that connection point from the spot market and make payments to AEMO for electricity~~

~~supplied at the connection point as determined for each trading interval in accordance with provisions of Chapter 3.~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

- ~~(d) A Market Customer may request AEMO to classify any of its market loads (excluding a load that has been classified as a wholesale demand response unit) as a scheduled load.~~
- ~~(e) AEMO must classify a market load as a scheduled load if it is satisfied that the Market Customer:~~
  - ~~(1) has submitted data in accordance with schedule 3.1;~~
  - ~~(2) has adequate communications and/or telemetry to support the issuing of dispatch instructions and the audit of responses; and~~
  - ~~(3) has requested that the load be so classified and has not withdrawn that request.~~
- ~~(f) A Market Customer may submit dispatch bids in respect of scheduled loads in accordance with the provisions of Chapter 3.~~
- ~~(g) A Market Customer who submits dispatch bids for scheduled loads and makes its scheduled loads available for central dispatch must comply with the dispatch instructions from AEMO in accordance with the Rules.~~
- (h) [Deleted]

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (i) A Customer who is also a Local Retailer must classify any load at a connection point in its local area as a market connection point market load if electricity supplied through the national grid to or from that connection point is purchased or sold by a franchise customer.

### **2.3.4A Scheduled load classification**

- (a) A Market Customer or an Integrated Resource Provider may request AEMO to classify plant (excluding generating plant) connected at one of its market connection points as a scheduled load.
- (b) An integrated resource unit that has been classified as a scheduled generating unit under clause 2.2.2(b2) must be classified as a scheduled load in relation to that part of the plant that consumes electricity.
- (c) AEMO must classify plant (subject to paragraph (b), excluding generating plant) as a scheduled load if it is satisfied that the Market Customer or Integrated Resource Provider:
  - (1) has submitted data in accordance with schedule 3.1;
  - (2) has adequate communications and/or telemetry to support the issuing of dispatch instructions and the audit of responses; and

- (3) is required by paragraph (b) to classify the *plant* as a *scheduled load* or has requested that the *plant* be so classified and has not withdrawn that request.

### 2.3.5 **[Deleted]Ancillary services load**

- ~~(a) If a *Demand Response Service Provider* in respect of a *load*, or the *Market Customer* in respect of a *market load*, wishes to use that *load* or *market load* to provide *market ancillary services* in accordance with Chapter 3, then the *Demand Response Service Provider* or *Market Customer* (as the case may be) must apply to *AEMO* for approval to classify the *load* or *market load* as an *ancillary service load*.~~
- ~~(b) An application under paragraph (a) must be in the form prescribed by *AEMO* and:~~
- ~~(1) specify the *market ancillary services* which the *Demand Response Service Provider* in respect of a *load* or *Market Customer* in respect of a *market load* (as the case may be) wishes to provide using the relevant *load* or *market load*;~~
  - ~~(2) in the case of an application made by a *Demand Response Service Provider*, not be in respect of a *market load* that is a *scheduled load*;~~
  - ~~(3) identify each of the *loads* to be used by the applicant to provide *market ancillary services*; and~~
  - ~~(4) demonstrate how the *loads* identified in subparagraph (3) have the required equipment to be used to provide *market ancillary services* and will be capable of meeting or exceeding the relevant *performance standards* and specifications to *AEMO's* satisfaction.~~
- ~~(c) *AEMO* must, within 5 *business days* of receiving an application under paragraph (a), advise the applicant of any further information or clarification which is required in support of its application if, in *AEMO's* reasonable opinion, the application:~~
- ~~(1) is incomplete; or~~
  - ~~(2) contains information upon which *AEMO* requires clarification.~~
- ~~(d) If the further information or clarification required pursuant to paragraph (c) is not provided to *AEMO's* satisfaction within 15 *business days* of the request, then the *Demand Response Service Provider* or *Market Customer* (as applicable) will be deemed to have withdrawn the application.~~
- ~~(e) If *AEMO* is reasonably satisfied that:~~
- ~~(1) the *load* is able to be used to provide the *market ancillary services* referred to in the application in accordance with the *market ancillary service specification*;~~
  - ~~(1A) the *Demand Response Service Provider* or the *Market Customer* (as the case may be) has an arrangement with the *retail customer* at the relevant *connection point* for the supply of *market ancillary services*; and~~
  - ~~(2) the *Demand Response Service Provider* or the *Market Customer* (as the case may be) has adequate communications and/or telemetry to support the issuing of *dispatch instructions* and the audit of responses;~~

~~Then subject to paragraph (e1), AEMO must approve the classification in respect of the particular market ancillary services.~~

~~(e1) AEMO must not give approval to a person under paragraph (e) in respect of a load that is classified as a wholesale demand response unit by a different person.~~

~~(f) If AEMO approves the classification of a load as an ancillary service load, then AEMO may impose on the relevant Demand Response Service Provider or Market Customer (as the case may be) such terms and conditions as AEMO considers necessary to ensure that the provisions of the Rules applying to market ancillary services can be met.~~

~~(g) A Demand Response Service Provider and Market Customer (as applicable):~~

~~(1) must comply with any terms and conditions imposed by AEMO under paragraph (f);~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

~~(2) must ensure that the market ancillary services provided using the relevant ancillary services load are provided in accordance with the co-ordinated central dispatch process operated by AEMO under the provisions of Chapter 3 and in accordance with the market ancillary service specification;~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

~~(3) may submit to AEMO market ancillary service offers in respect of the ancillary service load in accordance with the provision of Chapter 3; and~~

~~(4) if the Demand Response Service Provider or Market Customer (as applicable) submits a market ancillary service offer in respect of the relevant ancillary service load, must comply with the dispatch instructions from AEMO in accordance with the Rules.~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

~~(h) A Demand Response Service Provider or Market Customer (as applicable) with an ancillary service load must only sell the market ancillary services produced using that ancillary service load through the spot market in accordance with the provisions of Chapter 3.~~

**Note**

~~This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)~~

~~(i) A Demand Response Service Provider or Market Customer (as applicable) is not entitled to receive payment from AEMO for market ancillary services~~

~~except where those market ancillary services are produced using an ancillary service load in accordance with Chapter 3 or pursuant to a direction or clause 4.8.9 instruction.~~

- ~~(j) A Demand Response Service Provider and Market Customer (as applicable) must immediately notify AEMO if a load it has classified as an ancillary service load ceases to meet the requirements for classification under this clause 2.3.5.~~

### 2.3.6 Wholesale demand response units

- (a) If a Demand Response Service Provider in respect of a *qualifying load* wishes to use the ~~qualifying load load~~ to provide wholesale demand response in accordance with the Rules, the Demand Response Service Provider must apply to AEMO for approval to classify the *qualifying load* as a *wholesale demand response unit*.
- (b) An application under paragraph (a) must be in the form prescribed by AEMO and must:
- (1) identify the *qualifying load*;
  - (2) specify the proposed *maximum responsive component* of the *wholesale demand response unit*; and
  - (3) specify the proposed *baseline methodology* and *baseline settings* to apply to the *wholesale demand response unit*.
- (c) AEMO must, within 5 *business days* of receiving an application under paragraph (a), advise the applicant of any further information or clarification which is required in support of its application if, in AEMO's reasonable opinion, the application:
- (1) is incomplete; or
  - (2) contains information upon which AEMO requires clarification.
- (d) If the further information or clarification required pursuant to paragraph (c) is not provided to AEMO's satisfaction within 15 *business days* of the request, AEMO may, on notice to the Demand Response Service Provider at any time after expiry of that period, elect to treat the application as withdrawn and the Demand Response Service Provider will be deemed to have withdrawn the application.
- (e) AEMO must, subject to paragraph (f), approve the classification request under paragraph (a) of a load as a wholesale demand response unit if AEMO is reasonably satisfied that:
- (1) the request is made in respect of~~load is~~ a *qualifying load*;
  - (2) the ~~qualifying load load~~ is able to be used to provide *wholesale demand response* in accordance with the Rules;
  - (3) the ~~qualifying load load~~ is capable of providing a quantity of *wholesale demand response* at least equal to the *maximum responsive component*;
  - (4) the Demand Response Service Provider has adequate communications and/or telemetry in place to support the issuing of *dispatch instructions* in respect of the ~~qualifying load load~~;



- (5) the *baseline methodology*, when applied to the *qualifying load* and using the proposed *baseline settings* and historical *metering data* for the *qualifying load*:
    - (i) produces a *baseline* that satisfies the *baseline methodology metrics*; and
    - (ii) otherwise qualifies for application to the *wholesale demand response unit* having regard to any criteria in the *wholesale demand response guidelines*;
  - (6) the *Demand Response Service Provider* has submitted data in accordance with schedule 3.1; and
  - (7) the *qualifying load* satisfies each other requirement in the *wholesale demand response guidelines* for classification as a *wholesale demand response unit*.
- (f) AEMO must not give approval to a person under paragraph (e) in respect of a *qualifying load* that is classified as an *ancillary service unit* by a different person.
  - (g) If AEMO approves the classification of a *qualifying load* as a *wholesale demand response unit*, AEMO may impose on the relevant *Demand Response Service Provider* such terms and conditions as AEMO considers necessary to ensure that the provisions of the *Rules* applying to *wholesale demand response* can be met.
  - (h) A *Demand Response Service Provider* must comply with any terms and conditions imposed by AEMO under paragraph (g) in respect of its *wholesale demand response unit*.
  - (i) If a *Demand Response Service Provider* submits a *dispatch bid* in respect of a *wholesale demand response unit*, the *Demand Response Service Provider* must comply with *dispatch instructions* from AEMO in accordance with the *Rules*.
  - (j) A *Demand Response Service Provider* is not entitled to receive payment from AEMO for *wholesale demand response* except where the *wholesale demand response* is provided by a *wholesale demand response unit* in accordance with Chapter 3 or pursuant to a *clause 4.8.9 instruction*.
  - (k) A *Demand Response Service Provider* must notify AEMO if ~~any of its a load~~ *the Demand Response Service Provider has classified as a* *wholesale demand response unit* ceases to be a *qualifying load* as soon as practicable and in any event no later than 10 *business days* after becoming aware that the *wholesale demand response unit* ceases to be a *qualifying load*.
  - (l) Where a *Demand Response Service Provider* gives AEMO a notice under paragraph (k) in respect of a *wholesale demand response unit*, the *wholesale demand response unit* ceases to be classified as a *wholesale demand response unit* from the time the notice is given.
  - (m) In this ~~Chapter~~ *clause 2.3.6*:
    - (1) ~~the load~~ *a connection point* is a *qualifying load* if:

- (i) ~~the connection point~~~~the load~~ comprises a single *connection point* or a *parent connection point* in respect of all its associated *child connection points* that are not *market connection points*;
  - (ii) if the *connection point* is a *child connection point*, it is also a *market connection point*;
  - (iii) ~~no connection point associated with the load is a connection point for a~~ ~~the connection point is not a~~ *small customer load*;
  - (iv) the ~~connection point~~~~load~~ is not a ~~market connection point~~ ~~for market load that is~~ a *scheduled load*;
  - (v) the *Demand Response Service Provider* has the consent of the *retail customer* at the *connection point* to provide *wholesale demand response* by means of that ~~connection point~~~~load~~;
  - (vi) the *Demand Response Service Provider* has arrangements for the provision of *wholesale demand response* by means of that ~~connection point~~~~load~~; and
  - (vii) the *connection point* has a type 1, 2, 3, or 4 *metering installation*; and
- (2) a ~~load~~~~connection point~~ is a ***small customer load*** if a *retail customer* at ~~the~~ *connection point*, or any connection point associated with the connection point for the load (including any *child connection point*):
- (i) is or would be a *small customer* in relation to premises delivered electrical power at the *connection point*; and
  - (ii) the *retail customer* has not entered into an agreement with its retailer in accordance with rule 5(2)(a) of the *National Energy Retail Rules* to aggregate the premises referred to in subparagraph (2)(i) with other premises.

**Note**

Only a business customer within the meaning of the *National Energy Retail Law* can enter into an agreement with its *retailer* in accordance with rule 5(2)(a) of the *National Energy Retail Rules*.

## 2.3A ~~[Deleted]~~ **Small Generation Aggregator**

### 2.3A.1 ~~Registration~~

- ~~(a) A person who intends to supply electricity from one or more small generating units to a transmission system or distribution system may, upon application for registration by that person in accordance with rule 2.9, be registered by AEMO as a Small Generation Aggregator.~~
- ~~(b) To be eligible for registration as a Small Generation Aggregator, a person must satisfy AEMO that the person intends to classify, within a reasonable amount of time, one or more small generating units each as a market generating unit, with each market generating unit having a separate connection point.~~
- ~~(c) A person must not engage in the activity of selling electricity directly to the market at any connection point, unless that person is registered by AEMO as~~

~~a Market Participant and that connection point is classified as one of that person's market connection points.~~

- ~~(d) A person must not classify a small generating unit as a market generating unit for electricity supplied from any connection point unless the person satisfies the requirements of the participating jurisdiction in which the connection point is situated so that (subject to compliance with the Rules) the person is permitted to supply electricity in the spot market in relation to that connection point.~~
- ~~(e) A Market Small Generation Aggregator must classify each small generating unit from which it proposes to supply electricity as a market generating unit, with each market generating unit having a separate connection point.~~
- ~~(f) A Market Small Generation Aggregator's activities only relate to small generating units it has classified as market generating units, and only while it is also registered with AEMO as a Small Generation Aggregator.~~
- ~~(g) A Market Small Generation Aggregator must sell all sent out generation through the spot market and accept payments from AEMO for all sent out generation at the spot price applicable at the connection point for which it is financially responsible as determined for each trading interval in accordance with the provisions of Chapter 3.~~
- ~~(h) A Market Small Generation Aggregator must purchase all electricity supplied through the national grid to the Market Small Generation Aggregator at that connection point from the spot market and make payments to AEMO for such electricity supplied at the connection point for which it is financially responsible as determined for each trading interval in accordance with the provisions of Chapter 3.~~

## **2.3B [Deleted] Demand Response Service Provider**

### **2.3B.1 Registration**

- ~~(a) A person must not engage in the activity of offering and providing wholesale demand response or market ancillary services in accordance with Chapter 3 as a Demand Response Service Provider unless that person is registered by AEMO as a Demand Response Service Provider.~~
- ~~(b) To be eligible for registration as a Demand Response Service Provider, a person must obtain the approval of AEMO to classify a load as an ancillary service load in accordance with clause 2.3.5 or as a wholesale demand response unit in accordance with clause 2.3.6.~~
- ~~(c) A Demand Response Service Provider's activities only relate to loads it has classified (in its capacity as a Demand Response Service Provider) as ancillary service loads or as wholesale demand response units, and only while it is also registered with AEMO as a Demand Response Service Provider.~~

## **2.3C [Not used]**

## **2.3D Ancillary Service Units and Ancillary Service Providers**

### **2.3D.1 Classification of ancillary service units**

- ~~(a) If a:~~



- (1) Market Participant in respect of plant connected at a market connection point for which it is the financially responsible Market Participant; or
    - (2) Demand Response Service Provider in respect of plant connected at a market connection point,
  - wishes to use the plant to provide market ancillary services in accordance with Chapter 3, the Market Participant must apply to AEMO for approval to classify the relevant plant as an ancillary service unit.
  - (b) An application under paragraph (a) must be in the form prescribed by AEMO and must:
    - (1) specify the market ancillary services which the applicant wishes to provide using the relevant plant;
    - (2) in the case of an application made by a Demand Response Service Provider, not be in respect of a scheduled load;
    - (3) in the case of any application, not be in respect of a qualifying load that is classified as a wholesale demand response unit by a different person;
    - (4) identify the relevant plant at the connection point to be used by the applicant to provide market ancillary services; and
    - (5) demonstrate how the relevant plant identified in subparagraph (4) has the required capability to be used to provide market ancillary services and will be capable of meeting or exceeding the relevant performance standards and specifications to AEMO's satisfaction.
  - (c) AEMO must, within 5 business days of receiving an application under paragraph (a), advise the applicant of any further information or clarification which is required in support of its application if, in AEMO's reasonable opinion, the application:
    - (1) is incomplete; or
    - (2) contains information upon which AEMO requires clarification.
  - (d) If the applicant does not provide further information or clarification required pursuant to paragraph (c) to AEMO's satisfaction within 15 business days of the request, AEMO may, on notice to the applicant at any time after expiry of that period, elect to treat the application as withdrawn and the applicant will be taken to have withdrawn the application.
  - (e) If AEMO is reasonably satisfied that:
    - (1) the relevant plant is able to be used to provide the market ancillary services referred to in the application in accordance with the market ancillary service specification;
    - (2) the applicant has adequate communication and/or telemetry to support the issuing of dispatch instructions and the audit of responses, and
    - (3) in the case of an application made by a Market Customer or Demand Response Service Provider, the applicant has an arrangement with the retail customer at the relevant connection point for the supply of market ancillary services,
- AEMO must approve the classification of the ancillary service unit in respect of the particular market ancillary services.

- (f) If AEMO approves the classification of *plant* as an *ancillary service unit*, AEMO may impose on the relevant applicant such terms and conditions as AEMO considers necessary to ensure that the provisions of the Rules applying to *market ancillary services* can be met.
- (g) A *Market Participant* is taken to be an *Ancillary Service Provider* only in so far as its activities relate to *plant* it has classified as an *ancillary service unit*.

### **2.3D.2 Ancillary Service Providers**

- (a) An *Ancillary Service Provider* must comply with any terms and conditions imposed by AEMO under clause 2.3D.1(f).

#### **Note**

The AEMC proposes to recommend that clause 2.3D.2(a) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) An *Ancillary Service Provider*:

- (1) must ensure that the *market ancillary services* provided using the relevant *ancillary service unit* are provided in accordance with the co-ordinated *central dispatch* process operated by AEMO under Chapter 3 and in accordance with the *market ancillary service specification*;

#### **Note**

The AEMC proposes to recommend that clause 2.3D.2(b)(1) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (2) may submit to AEMO *market ancillary service bids* in respect of the *ancillary service unit* in accordance with Chapter 3; and
- (3) if the *Ancillary Service Provider* submits a *market ancillary service bid* in respect of the relevant *ancillary service unit*, must comply with *dispatch instructions* from AEMO in accordance with the Rules.

#### **Note**

The AEMC proposes to recommend that clause 2.3D.2(b)(3) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) An *Ancillary Service Provider* with an *ancillary service unit* must only sell the *market ancillary services* produced using that *ancillary service unit* in accordance with Chapter 3.

#### **Note**

The AEMC proposes to recommend that clause 2.3D.2(c) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) An *Ancillary Service Provider* is not entitled to receive payment from AEMO for *market ancillary services* except where those *market ancillary services* are produced using an *ancillary service unit* in accordance with Chapter 3 or pursuant to a *direction* or *clause 4.8.9 instruction*.

- ~~(e) A Market Participant must immediately notify AEMO if plant it has classified as an ancillary service unit ceases to meet the requirements for classification under clause 2.3D.1.~~

## 2.4 Market Participant

### 2.4.1 Registration as a category of Market Participant

- (a) A Market Participant is a person ~~registered by AEMO as in~~ any one or more of the following categories:
- ~~(1) Market Generator;~~
  - ~~(2) Integrated Resource Provider (other than a Non-Market Integrated Resource Provider);~~
  - ~~(3) Market Customer;~~
  - ~~(4) Demand Response Service Provider;~~
  - ~~(5) Market Network Service Provider.~~
  - ~~(1) Market Customer;~~
  - ~~(1A) Market Small Generation Aggregator;~~
  - ~~(1B) Demand Response Service Provider;~~
  - ~~(2) Market Generator;~~
  - ~~(3) Market Network Service Provider.~~
- (b) ~~[Deleted] A Market Participant may only participate in the market in the category in which it has been registered.~~
- (c) A Market Participant may only participate in any of the *markets* or trading activities conducted by AEMO if that Market Participant satisfies the relevant *prudential requirements* set out in Chapter 3 applicable to the relevant trading activity.

### 2.4.2 Eligibility

To be eligible to be registered as any category of *Market Participant*, a person must:

- (a) satisfy AEMO that it is and will be able to satisfy the *prudential requirements* as set out in rule 3.3 applicable to all *Market Participants* and those applicable to the relevant category of *Market Participant* in which that person wishes to participate in the *market*, taking into account the classifications intended by the applicant and notified at the time of registration;
- (b) ~~[deleted]; satisfy AEMO that it meets any relevant requirements imposed under relevant jurisdictional electricity legislation;~~
- (c) also be registered as a Network Service Provider, for registration as a Market Network Service Provider;~~satisfy AEMO that it is also registered:~~
- ~~(1) as a Generator, for registration as a Market Generator;~~
  - ~~(2) as a Customer, for registration as a Market Customer;~~
  - ~~(2A) as a Small Generation Aggregator, for registration as a Market Small Generation Aggregator; or~~

~~(3) as a *Network Service Provider*, for registration as a *Market Network Service Provider*;~~

- (d) satisfy *AEMO* that it is complying and will comply with other relevant obligations set out in the *Rules*, taking into account the classifications intended by the applicant and notified at the time of registration; and
- (e) pay the prescribed fees determined in accordance with rule 2.11.

## 2.4A Metering Coordinator

### 2.4A.2 Eligibility

- (a) To be eligible for registration as a *Metering Coordinator*, a person must:
  - (1) subject to paragraph (b), not be a *Market Customer*;
  - (2) satisfy *AEMO* that it is complying with and will comply with the *Rules* and the procedures authorised under the *Rules*;
  - (3) in respect of a *Metering Coordinator* who is appointed, or is proposed to be appointed, as *Metering Coordinator* at a *small customer metering installation*, have appropriate processes in place to determine that a person seeking access to a service listed in the *minimum services specification* is an *access party* in respect of that service;
  - (4) subject to paragraph (c), ensure that there is an appropriate security control management strategy and associated infrastructure and communications systems for the purposes of preventing unauthorised local access or remote access to *metering installations*, services provided by *metering installations* and *energy data* held in *metering installations*;
  - (5) have insurance as considered appropriate by *AEMO*; and
  - (6) pay the prescribed fees determined in accordance with rule 2.11.
- (b) Clause 2.4A.1(c) and subparagraph (a)(1) do not apply to:
  - (1) a person who is only appointed, or is proposed to be only appointed, as *Metering Coordinator* in respect of one or more *connection points* or proposed *connection points* on a *transmission network*; or
  - (2) a *Generator* or *Integrated Resource Provider* who is only appointed, or is proposed to be only appointed, as *Metering Coordinator* in respect of one or more *connection points* or proposed *connection points* that connect a *Generator's* or *Integrated Resource Provider's* generating unit or integrated resource unit to a *distribution network* (excluding, to avoid doubt, a *small generating unit* or *small integrated resource unit* classified by a *Small Resource Aggregator*).
- (c) Subparagraph (a)(4) does not apply to a *Generator* or *Integrated Resource Provider* who is only appointed, or is proposed to be only appointed, as *Metering Coordinator* in respect of one or more *connection points* or proposed *connection points* that connect a *Generator's* or *Integrated Resource Provider's* generating unit or integrated resource unit to a *distribution network*.

## 2.5 Network Service Provider

### 2.5.3 Scheduled Network Service

- (a) All *market network services* must be classified as *scheduled network services*.
- (b) A *network service* must not be classified as a *scheduled network service* unless it is also a *market network service*.
- (c) A *Network Service Provider* is taken to be a *Scheduled Network Service Provider* only in so far as its activities relate to the provision of *scheduled network services*.
- (d) AEMO may impose on a *Scheduled Network Service Provider* such terms and conditions as AEMO considers necessary to ensure that the provisions of the *Rules* applying to *scheduled network services* can be met.
- (e) A *Scheduled Network Service Provider*:
  - (1) must comply with any terms and conditions imposed by AEMO under clause 2.5.3(d);

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (2) must ensure that the *scheduled network services* are provided in accordance with the co-ordinated *central dispatch* process operated by AEMO under the provisions of Chapter 3;

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (3) must ensure that AEMO is notified of the availability of the *scheduled network services* in accordance with the provisions of Chapter 3; and

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (4) must submit to AEMO a schedule of ~~dispatch bids~~*dispatch offers* for the *scheduled network services* in accordance with the provisions of Chapter 3.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

## 2.7 Intention to Commence Activities or Functions

- (a) Any person intending to act in any *Registered Participant* category may, on application for registration by that person in accordance with rule 2.9, be registered by AEMO as an *Intending Participant* if that person can reasonably satisfy AEMO that it intends to carry out an activity in respect of which it must or may be registered as a *Registered Participant*.

- (b) *AEMO*:
  - (1) may from time to time require a person registered by *AEMO* as an *Intending Participant* to satisfy *AEMO* that it continues to meet the criteria for registration in clause 2.7(a) (the **registration criteria**); and
  - (2) must, no less than annually and by no later than 1 October of the relevant year, conduct a review of the registration status of *Intending Participants* to determine if they continue to meet the registration criteria.
- (b1) If an *Intending Participant* is unable to satisfy *AEMO* that it continues to meet the registration criteria then it will cease to be registered as an *Intending Participant* on the date specified by *AEMO* by written notice to the *Intending Participant* concerned.
- (c) An *Intending Participant* is taken to be an *Intending Participant* only in so far as its activities relate to its intention to commence an activity in respect of which it must or may be registered as a *Registered Participant*.
- (d) As a *Registered Participant*, an *Intending Participant* may exercise such rights and is bound by such obligations under the *Rules* as are specified by *AEMO* (on the basis of whether the *Intending Participant* intends to become a *Customer*, *Generator*, *Integrated Resource Provider*, *Network Service Provider* or *Special Participant*) and approved by the *AEMC*.

## 2.8 Registered Participant Rights and Obligations

### 2.8.1 Rights and obligations

- (a) A *Registered Participant* must not act in any one of the categories listed in rules 2.1A2.2 to 2.7 unless the *Registered Participant* is registered by *AEMO* in that category in accordance with the requirements of the *Rules*.
- (a1) A *Registered Participant* must comply with the provisions of the *Rules* applicable to that *Registered Participant*.
- (b) A *Registered Participant* may act in more than one of the categories described in rules 2.1A2.2 to 2.7 provided that the *Registered Participant* is registered by *AEMO* in relation to each of the relevant *Registered Participant* categories.

## 2.9 Application to be Registered as a Registered Participant

### 2.9.1 Applications for Registration

- (a) Applications to be registered in any category of *Registered Participant* must be submitted to *AEMO* in the form prescribed by *AEMO*.
- (b) *AEMO* must, within 5 *business days* of receiving an application, advise the applicant of any further information or clarification which is required in support of its application if, in *AEMO's* reasonable opinion, the application:
  - (1) is incomplete; or
  - (2) contains information upon which *AEMO* requires clarification.
- (c) If the further information or clarification required pursuant to clause 2.9.1(b) is not provided to *AEMO's* satisfaction within 15 *business days* of the request, *AEMO* may, on notice to the applicant at any time after expiry of that period,



elect to treat the application as withdrawn and the person will be deemed to have withdrawn the application.

## 2.9.2 Registration as a Registered Participant

(a) In this clause 2.9.2:

**receiving date** means the later date of *AEMO* receiving:

- (1) an application for registration referred to in clause 2.9.1;
- (2) further information or clarification referred to in clause 2.9.1(b); or
- (3) in relation to an application for registration as a *Generator* or *Integrated Resource Provider*, the information requested under clause S5.2.4(b).

(b) *AEMO* must, within 15 *business days* of the receiving date, determine that an applicant is to be registered in the category of *Registered Participant* applied for if *AEMO* is reasonably satisfied that:

- (1) the applicant meets the eligibility requirements specified for the category of *Registered Participant* to which the application relates;
- (2) if the application relates to registration in one of the categories of *Market Participant*, the applicant is and will be able to fulfil the applicable financial obligations under Chapter 3 of the *Rules*; and
- (3) the applicant has demonstrated an ability to comply with the *Rules*.

(c) If *AEMO* determines that an applicant does not satisfy the requirements referred to in paragraph (b), *AEMO* must determine that the applicant is not qualified to be registered as a *Registered Participant* in the relevant category and provide reasons for that determination.

## 2.9.3 Registration as an Intermediary

(a) A person (the "*applicant*") who is required to be registered under the *NEL* or under the *Rules* as a *Generator*, *Integrated Resource Provider* or a *Network Service Provider* may apply to *AEMO* or the *AER*, as applicable, ~~respectively~~ for an exemption from that requirement to register.

(b) *AEMO* or the *AER* (as the case may be) must allow that exemption if:

- (1) the applicant notifies *AEMO* or the *AER* (as the case may be) of the identity of a person (an "*intermediary*") to be registered instead of the applicant;
- (2) the applicant provides *AEMO* or the *AER* (as the case may be) with the written consent of the *intermediary* to act as *intermediary* in a form reasonably acceptable to *AEMO* or the *AER*; and
- (3) **[Deleted]**
- (4) *AEMO* or the *AER* (as the case may be) notifies the applicant that it approves of the *intermediary*.

(c) *AEMO* or the *AER* (as the case may be) must approve an *intermediary* if the applicant establishes to *AEMO's* reasonable satisfaction that, from a technical perspective, the *intermediary* can be treated for the purpose of the *Rules* as the applicant with respect to the relevant *generating system*, *integrated*

*resource system, distribution system or transmission system* with which the applicant is associated.

- (d) If the exemption is granted by *AEMO* or the *AER* (as the case may be) then:
- (1) provided the *intermediary* satisfies all relevant registration requirements that the applicant would have been required to satisfy, *AEMO* must register the *intermediary* as a *Registered Participant* as if it were the applicant;
  - (2) the *intermediary* will be considered for the purposes of the *Rules* to be the applicant;
  - (3) all references in the *Rules* to the applicant will be deemed to be references to the *intermediary* (unless the context requires otherwise);
  - (4) all acts, omissions, statements, representations and notices of the *intermediary* in its capacity as a *Registered Participant* under the *Rules* will be deemed to be the acts, omissions, statements, representations and notices of the applicant;
  - (5) the *intermediary* and the applicant will be jointly and severally liable for the acts, omissions, statements, representations and notices of the *intermediary* in its capacity as a *Registered Participant* under the *Rules*; and
  - (6) *AEMO* or any other *Registered Participant* may fulfil any obligations to the applicant under the *Rules* by performing them in favour of the *intermediary*.
- (e) The applicant may revoke the appointment of the *intermediary* by giving notice of such revocation to *AEMO*, whereupon *AEMO* must advise the *AER* that such notice has been given.
- (f) At 4.30 am, 2 *business days* after *AEMO* receives notice of such revocation, the *intermediary* will cease to be considered the applicant's *intermediary* for the purposes of the *Rules* and the applicant will not be liable under clause 2.9.3(d)(5) for any acts, omissions, statements, representations or notices of the *intermediary* occurring after that time.
- (g) If the applicant revokes the appointment of an *intermediary*, the exemption granted by *AEMO* or the *AER* (as the case may be) to the applicant as contemplated by clause 2.9.3(b) ceases at the time the *intermediary* ceases to be the applicant's *intermediary* in accordance with clause 2.9.3(f).
- (h) The applicant may notify *AEMO* or the *AER* (as the case may be) that the *intermediary* is the applicant's *intermediary* for part only of the applicant's business (provided that that part represents one or more discrete *generating systems, integrated resource systems, distribution systems or transmission systems*).
- (i) Nothing in the *Rules* requires the *intermediary* to be the agent of the applicant.

## **2.9A Transfer of Registration to another person**

### **2.9A.2 Applications for Transfer of Registration**

- (a) If a Transferor wishes to transfer its registration to the Transferee, then the Transferor and Transferee must apply to *AEMO* for approval to do so.



- (b) An application under clause 2.9A.2(a) must be submitted to *AEMO* by the Transferor and Transferee in the form prescribed by *AEMO*.
- (c) *AEMO* must, within 5 *business days* of receiving an application under clause 2.9A.2(a), advise the Transferor and Transferee of any further information or clarification which is required in support of its application if, in *AEMO*'s reasonable opinion, the application:
  - (1) is incomplete; or
  - (2) contains information upon which *AEMO* requires clarification.
- (d) If the further information or clarification required pursuant to clause 2.9A.2(c) is not provided to *AEMO*'s satisfaction within 15 *business days* of the request, then *AEMO* may, on notice to the Transferor and Transferee at any time after expiry of that period, elect to treat the application as withdrawn and the Transferor and Transferee will be deemed to have withdrawn the application.

## **2.9B Transfer to Integrated Resource Provider and reclassification**

- (a) A person registered as a *Generator* or *Customer* may, with the consent of *AEMO*, change its registration category to *Integrated Resource Provider*.
- (b) An application under this paragraph must be submitted to *AEMO* in the form prescribed by *AEMO*.
- (c) *AEMO* must, within 5 *business days* of receiving an application under this rule, advise the applicant of any further information or clarification which is required in support of its application if, in *AEMO*'s reasonable opinion, the application is incomplete or contains information upon which *AEMO* requires clarification.
- (d) If the further information or clarification required pursuant to paragraph (c) is not provided to *AEMO*'s satisfaction within 15 *business days* of the request, *AEMO* may, on notice to the applicant at any time after expiry of that period, elect to treat the application as withdrawn and the applicant will be taken to have withdrawn the application.
- (e) *AEMO* must, within 15 *business days* of receiving an application under this rule, determine to change the applicant's registration category if *AEMO* is reasonably satisfied that the applicant meets the eligibility requirements for registration as an *Integrated Resource Provider*.

## **2.10 Ceasing to be a Registered Participant**

### **2.10.1 Notification of intention**

- (a) A person:
  - (1) may notify *AEMO* in writing that it wishes to cease to be registered in any category of *Registered Participant* or that it wishes to terminate any of its classifications of ~~loads~~, *generating units* or *integrated resource units* (other than a *generating unit* or *integrated resource unit* specified in subparagraph (2)), other plant or *network services*; and
  - (2) who is a *Scheduled Generator*, ~~or *Semi-Scheduled Generator*~~, or *Scheduled Integrated Resource Provider* must notify *AEMO* in writing

if it wishes to terminate any of its classifications of *generating units* or integrated resource units.

- (b) A person is not entitled to notify *AEMO* that it wishes to cease to be registered in relation to any category for which that person is required to be registered under the *NEL* or under the *Rules*.
- (c) In any notice given under subparagraph (a)(1), the *Registered Participant* must specify a date upon which it wishes to cease to be so registered or for an existing classification to be terminated and, in the case of a *Market Participant*, the date upon which it will cease to *supply* or acquire electricity or trade directly in the *market* and whether entirely or in relation to one or more *connection points* or *market network services*.
- (c1) In any notice given under subparagraph (a)(2), the *Registered Participant*:
  - (1) must specify a date (the *closure date*) by which:
    - (i) the classification of the generating unit or integrated resource unit will be terminated; and
    - (ii) it will cease to supply or acquire electricity or trade directly in the market whether entirely or in relation to one or more connection points; and
    - ~~(i) for a Non-Market Generator, by which the classification of the generating unit will be terminated; and~~
    - ~~(ii) for a Market Generator, by which:~~
      - ~~(A) the classification of the generating unit will be terminated; and~~
      - ~~(B) it will cease to supply electricity or trade directly in the market whether entirely or in relation to one or more connection points; and~~
  - (2) must provide an updated notice to *AEMO* under subparagraph (a)(2) of any amendments to the *closure date*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c2) A *Scheduled Generator*, ~~or Semi-Scheduled Generator's~~ or Scheduled Integrated Resource Provider must not specify a ~~first notified closure date~~ for a *generating unit* or integrated resource unit that ~~is~~ must be no earlier than 42 months from the date of the notice given under subparagraph (a)(2), except where the relevant *Generator* or Integrated Resource Provider has applied for, and is granted an exemption by the *AER* under paragraph (c4).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c3) A *Scheduled Generator*, ~~or Semi-Scheduled Generator's~~ or Scheduled Integrated Resource Provider giving ~~amended closure date~~ for a generating

~~unit provided in~~ a notice to *AEMO* under subparagraph (c1)(2) (**amended notice**):

- (1) may ~~specify an amended closure date~~ ~~be a date~~ that is later than the most recent *closure date* provided to *AEMO* under paragraph (a)(2); and
- (2) must not ~~specify an amended closure date~~ ~~be a date~~ that is earlier than the most recent *closure date* provided to *AEMO* under paragraph (a)(2) except where:
  - (i) the amended *closure date* is no earlier than 42 months from the date the amended notice is provided to *AEMO*; or
  - (ii) the *Generator* or *Integrated Resource Provider* has applied for, and is granted, an exemption by the *AER* under paragraph (c4).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c4) The *AER* may, in accordance with guidelines issued from time to time by the *AER*, exempt any *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* from the requirement to provide the *closure date* in accordance with paragraph (c2) and (c3).
- (c5) The *AER*, in accordance with the *Rules consultation procedures*:
  - (1) must develop and *publish* guidelines referred to in paragraph (c4) that include:
    - (i) the information to be provided by a *Generator* or *Integrated Resource Provider* to the *AER* when requesting an exemption; and
    - (ii) procedures for handling requests for exemption received from *Generators* or *Integrated Resource Providers*; and
  - (2) may amend these guidelines from time to time.
- (c6) The *AER* may make minor and administrative amendments to the guidelines under clause (c5) without complying with the *Rules consultation procedures*.
- (d) *AEMO* may reject a notice from a *Market Customer* that it wishes to terminate its classification of a *connection point* as one of its *market connection points*~~*market loads*~~ or otherwise cease to be a *Market Customer* in relation to any of its *market connection points*~~*market loads*~~ unless *AEMO* is satisfied that:
  - (1) another person has classified the *connection point* as one of its *market connection points*~~*market loads*~~ and is registered as a *Market Customer*;
  - (2) the relevant *Local Retailer* has agreed or is otherwise required by laws of the relevant *participating jurisdiction* to assume responsibility for payments to *AEMO* for electricity *supplied* to that *connection point*; or
  - (3) the *load* at that *connection point* will be *disconnected* on and from the date specified and, taking into consideration any relevant guidelines and procedures specified by the relevant *participating jurisdiction* to *AEMO*, that *disconnection* is not inappropriate.

- (d1) *AEMO* may reject a notice from ~~a *Small Resource Aggregator* a *Market Small Generation Aggregator*~~ which states that it wishes to terminate its classification of a *small generating unit* or *small integrated resource unit* as a *market generating unit* or *market integrated resource unit*, or otherwise cease to be ~~a *Small Resource Aggregator* a *Market Small Generation Aggregator*~~ in relation to any of its *market generating units* or *market integrated resource units*, unless *AEMO* is satisfied that:
- (1) another person has classified the *small generating unit* or *small integrated resource unit* as one of its *market generating units* or *market integrated resource units* and that person is registered as a ~~*Small Resource Aggregator*~~~~*Small Generation Aggregator*~~ and a ~~*Market Small Generation Aggregator*~~;
  - (2) the relevant *Local Retailer* has agreed or is otherwise required by laws of the relevant *participating jurisdiction* to assume responsibility for payments with *AEMO* for electricity supplied to the *connection points* of the *market generating units* or *market integrated resource units*; or
  - (3) the *small generating unit* or *small integrated resource unit* at that *connection point* will be *disconnected* on and from the date specified in the notice, and, after having regard to any relevant guidelines and procedures specified by the relevant *participating jurisdictions* to *AEMO*, *disconnection* is appropriate.
- (e) Upon receiving a notice which complies with clause 2.10.1 from a person who wishes to cease to be registered in any category of *Market Participant*, or to terminate the classification of any of its ~~*market connection points*~~~~*market loads*~~, *market generating units*, *market integrated resource units* or *market network services*, *AEMO* must deliver a notice to the *AER* and the *AEMC* and notify all *Registered Participants* stating that:
- (1) *AEMO* has received a notice under clause 2.10.1(a); and
  - (2) the person who gave the notice has stated that, from the date specified in the notice, the person intends to cease *supplying* or acquiring electricity or trading directly in the *market* and whether entirely or in relation to certain *connection points* or *market network services*.
- (f) If a *Market Customer* that is a *retailer* gives a notice under this clause, *AEMO* must, before deciding whether to reject the notice under paragraph (d), consult with the *AER*.

## 2.12 Interpretation of ~~r~~**References to various entities** **Registered Participants**

- (a) A person may register in more than one of the categories of *Registered Participant*.
- (b) Notwithstanding anything else in the *Rules*, a reference to:
  - (1) a "*Generator*" applies to a person registered as a *Generator* only in so far as it is applicable to matters connected with the person's *scheduled generating units*, *semi-scheduled generating units*, *non-scheduled generating units*, *market generating units* or *non-market generating units*;

- ~~(1A) a "Small Generation Aggregator" applies to a person registered as a "Small Generation Aggregator" only in so far as it is applicable to matters connected with the person's small generating units or market generating units;~~
- (1A) a "Small Resource Aggregator" applies to a person registered as an "Integrated Resource Provider" only in so far as it is applicable to matters connected with the person's market connection points classified under clause 2.2.8(a);
- (1B) a "Demand Response Service Provider" applies to a person registered as a "Demand Response Service Provider" only in so far as it is applicable to matters connected with the person's ancillary service units ~~ancillary service load~~ or wholesale demand response units;
- (2) a "Scheduled Generator", "Semi-Scheduled Generator", "Non-Scheduled Generator", "Market Generator" or "Non-Market Generator" applies to a person only in so far as it is applicable to matters connected with the person's *scheduled generating units, semi-scheduled generating units, non-scheduled generating units, market generating units or non-market generating units* respectively;
- (2A) a "Scheduled Integrated Resource Provider", "Non-Scheduled Integrated Resource Provider" or "Non-Market Integrated Resource Provider" applies to a person only in so far as it is applicable to matters connected with the person's scheduled integrated resource units, non-scheduled integrated resource units or non-market integrated resource units, respectively;
- (3) a "Customer" applies to a person registered as a *Customer* only in so far as it is applicable to matters connected with the person's market connection points ~~first-tier loads, second-tier loads or market loads~~;
- (3A) an "Ancillary Service Provider" applies to a person only in so far as it is applicable to matters connected with the person's ancillary service units;
- (4) a ~~"First Tier Customer", "Second Tier Customer" or "Market Customer"~~ applies to a Customer or Integrated Resource Provider ~~person~~ only in so far as it is applicable to matters connected with the person's market connection points classified under clause 2.3.4(b), (d) or (i) first-tier loads, second-tier loads or market loads respectively;
- (4A) a "Trader" applies to a person only in so far as it is applicable to matters connected with the person's activities as a *Trader*;
- (4B) a "Reallocator" applies to a person only in so far as it is applicable to matters connected with the person's activities as a *Reallocator*;
- (5) subject to clause 2.5.1A(f), a "Network Service Provider" applies to a person registered as a *Network Service Provider* only in so far as it is applicable to matters connected with the person's *network services*, including *market network services* and *scheduled network services*;
- (5A) a "Dedicated Connection Asset Service Provider" applies to a person only in so far as it is applicable to matters connected with the person's *dedicated connection assets*;



- (6) a "Market Network Service Provider" or "Scheduled Network Service Provider" applies to a person only in so far as it is applicable to matters connected with the person's *market network services* or *scheduled network services* respectively;
- (7) a "Market Participant" applies to a person who is a *Market Participant* and:
- (i) where the person is a *Market Generator, Integrated Resource Provider, Market Customer* or *Demand Response Service Provider*, in so far as it is applicable to its *market connection points* or *plant* it has classified under this Chapter;
  - ~~(i) where that person is registered as a *Market Generator*, in so far as it is applicable to matters connected with the person's *market generating units* or *ancillary services generating units*; and~~
  - (ii) ~~(i1) [deleted]; where that person is registered as a *Market Small Generation Aggregator*, in so far as it is applicable to matters connected with the person's *market generating units*; and~~
  - (ii) ~~(i2) [deleted]; where that person is registered as a *Demand Response Service Provider*, in so far as it is applicable to matters connected with the person's *ancillary service load* or *wholesale demand response unit*; and~~
  - (ii) ~~(ii) [deleted]; where that person is registered as a *Market Customer*, in so far as it is applicable to matters connected with the person's *market loads* or *market ancillary service loads*; and~~
  - (iii) where that person is registered as a *Market Network Service Provider*, in so far as it is applicable to matters connected with the person's *market network services*; and
  - (iv) where that person is registered in any category of *Market Participant* additional to a *Market Generator*, *Integrated Resource Provider*, and/or a *Market Customer* and/or a *Market Network Service Provider*, to the extent to which the reference would otherwise apply to the person if it were not taken to be a *Market Generator*, *Integrated Resource Provider*, *Market Customer* or *Market Network Service Provider*; and
- (8) a "Registered Participant" applies to a person who is registered under Chapter 2 and:
- (i) where the person is registered as a *Generator, Integrated Resource Provider, Customer* or *Demand Response Service Provider*, in so far as it is applicable to its *market connection points* or *plant* it has classified under this Chapter;
  - ~~(i) where that person is registered as a *Generator*, in so far as it is applicable to matters connected with any of the *Generator's scheduled generating units, semi-scheduled generating units, non-scheduled generating units, market generating units* and *non-market generating units*;~~

- (ii) ~~[deleted]; where that person is registered as a Customer, in so far as it is applicable to matters connected with any of the Customer's first-tier loads, second-tier loads or market loads; and~~
  - (iii) where that person is registered in any other *Registered Participant* category, to the extent to which the reference would apply to the person if it were not registered in another *Registered Participant* category.
- (c) In rule 2.12, "matter" includes any assets, liabilities, acts, omissions or operations (whether past, present or future).

**CHAPTER 3**







[Updated to 1 May 2022] Draft changes for Integrating Storage July 2021 MARKET RULES

### 3. Market Rules

#### 3.2 AEMO's Market Responsibilities

##### 3.2.2 Spot market

AEMO must do all things necessary to operate and administer a *spot market* for the sale and purchase of electricity and *market ancillary services* in accordance with this Chapter including:

- (a) ~~the provision of facilities for the receipt and processing of dispatch bids, dispatch offers and market ancillary service offers for the spot market;~~  
the provision of facilities for the receipt and processing of dispatch bids and market ancillary service bids for the spot market;
- (b) the management of a centralised national *dispatch* process, including the publication of *pre-dispatch schedules* and *spot price forecasts*;
- (c) the determination and publication of a *regional reference price* for each *region* for each *trading interval*;
- (c1) [Deleted]
- (d) the compilation and publication of *spot market* trading statistics;
- (e) the identification of *regions* and *regional reference nodes* for *spot price* and *ancillary service price* determination;
- (f) the determination and publication of *inter-regional loss factors* and *intra-regional loss factors*;
- (g) the suspension of the *spot market* under conditions prescribed in rule 3.14; and
- (h) the collection and dissemination of information necessary to enable the *market* to operate efficiently.

#### 3.3 Prudential Requirements

##### 3.3.14 Potential value of a transaction

At any time, the *potential value* of a *transaction*, or of any bid ~~or offer~~ by a *Market Participant* to effect a *transaction*, under which the *trading amount* payable to AEMO is determined by reference to one or more specified *regional reference prices* or *ancillary service prices*, is the dollar amount determined by this procedure:

- (a) the *transaction* is first tested to determine the *trading amount* which would result for the *Market Participant* if the *regional reference price* or *ancillary service price* applicable to the *transaction* was equal to the *scheduled high price*;
- (b) the *transaction* is then tested to determine the *trading amount* which would result for the *Market Participant* if the *regional reference price* or *ancillary*

*service price* applicable to the *transaction* was equal to the *scheduled low price*;

- (c) if the *trading amount* resulting for both tests is a positive amount or zero, then the *potential value* of the *transaction* is zero;
- (d) if the *trading amount* resulting for either test is a negative amount, then the *potential value* of the *transaction* is the absolute value of the negative amount (or, where both tests produce a negative amount, the *potential value* of the *transaction* is the absolute value of the most negative amount).

### 3.3.16 Limitation on entry of transactions

- (a) A *Market Participant* must not submit any bid ~~or offer~~ to effect any *transaction* with AEMO where the *potential value* of that *transaction*, plus the *potential value* of all other *uncompleted transactions*, exceeds the *trading margin* for the *Market Participant*.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) A *transaction* is an *uncompleted transaction* if some or all of the *trading intervals* to which that *transaction* relates have not yet occurred.

## 3.6 Network Losses and Constraints

### 3.6.1 Inter-regional losses

- (a) *Inter-regional losses* are *electrical energy losses* due to a notional transfer of electricity through *regulated interconnectors* from the *regional reference node* in one *region* to the *regional reference node* in an adjacent *region*.
- (b) *Inter-regional loss factors*:
  - (1) describe the *marginal electrical energy losses* for electricity transmitted through *regulated interconnectors* from a *regional reference node* in one *region* to the *regional reference node* in an adjacent *region* for a particular time period and a defined range of operating conditions;
  - (2) to apply between each pair of adjacent *regional reference nodes* are to be determined as part of the *central dispatch* process using *inter-regional loss factor* equations derived in accordance with the methodology determined by AEMO pursuant to clause 3.6.1(c); and
  - (3) are to be used in the *central dispatch* process as a notional adjustment to relate the *regional reference prices* in adjacent *regions* so as to reflect the cost of *inter-regional losses*.
- (c) AEMO must determine, *publish* and maintain, in accordance with the *Rules consultation procedures*, a methodology for the determination of *inter-regional loss factor* equations for a *financial year*, describing *inter-regional loss factors* between each pair of adjacent *regional reference nodes* in terms of significant variables.

- (d) In preparing the methodology for the determination of *inter-regional loss factor* equations referred to in clause 3.6.1(c), AEMO must implement the following principles:
- (1) *Inter-regional loss factor* equations are to apply for a *financial year*.
  - (2) *Inter-regional loss factor* equations must be suitable for use in *central dispatch*.
  - (3) *Inter-regional loss factors* are determined as part of the *central dispatch* process using *inter-regional loss factor* equations. The *inter-regional loss factors* must:
    - (i) as closely as is reasonably practicable, describe the *marginal electrical energy losses* for electricity transmitted through the relevant *regulated interconnector* between the 2 relevant *regional reference nodes* in adjacent *regions* for each *trading interval* of the *financial year* in respect of which the relevant *inter-regional loss factor* equations apply; and
    - (ii) ~~aim to minimise the impact on the central dispatch process of generation and scheduled load as compared to the dispatch of generation and scheduled load which would result from a fully optimised dispatch process taking into account the effect of losses.~~ aim to minimise the impact on dispatch of scheduled resources as compared to the dispatch of scheduled resources which would result from a fully optimised central dispatch process taking into account the effect of losses.
  - ~~(4) *Inter-regional loss factor* equations are determined using forecast load and generation data and, if required, modelled load and generation data for the financial year in which the *inter-regional loss factor* equations are to apply. The forecast load and generation data and modelled load and generation data, if any, used must be that load and generation data prepared by AEMO pursuant to clause 3.6.2A.~~
  - ~~(4) *Inter-regional loss factor* equations are determined using:~~
    - ~~(i) forecast load and generation data; and~~
    - ~~(ii) if required, modelled load and generation data,~~~~prepared by AEMO pursuant to clause 3.6.2A for the financial year in which the *inter-regional loss factor* equations are to apply.~~
  - (5) *Inter-regional loss factor* equations are determined by using the load and generation data referred to in clause 3.6.1(d)(4) to determine:
    - (i) the variables which have a significant effect on the *marginal electrical energy losses* for electricity transmitted through each *regulated interconnector* for both directions of flow on those *regulated interconnectors*; and
    - (ii) the parameters that represent the relationship between each of those variables and the *marginal electrical energy losses*.

- (e) *AEMO* must determine the *inter-regional loss factor* equations used to calculate *inter-regional loss factors* in each *financial year* in accordance with the methodology prepared and *published* by *AEMO* under clause 3.6.1(c).
- (f) *AEMO* must *publish* the *inter-regional loss factor* equations determined under clause 3.6.1(e) by 1 April prior to the *financial year* in which they are to apply.

### 3.6.2 Intra-regional losses

- (a) *Intra-regional losses* are *electrical energy losses* that occur due to the transfer of electricity between a *regional reference node* and *transmission network connection points* in the same *region*.
- (b) *Intra-regional loss factors*:
  - (1) notionally describe the *marginal electrical energy losses* for electricity transmitted between a *regional reference node* and a *transmission network connection point* in the same *region* for a defined time period and associated set of operating conditions;
  - (2) will be either:
    - (i) two *intra-regional loss factors* where *AEMO* determines, in accordance with the methodology determined under clause 3.6.2(d), that one *intra-regional loss factor* does not, as closely as is reasonably practicable, describe the average of the *marginal electrical energy losses* for electricity transmitted between a *transmission network connection point* and the *regional reference node* for the *active energy* generation and consumption at that *transmission network connection point*; or
    - (ii) one static *intra-regional loss factor* in all other circumstances;
  - (2A) must be determined in accordance with the methodology determined by *AEMO* under clause 3.6.2(d) for each *transmission network connection point*;
  - (2B) apply for a *financial year*; and
  - (3) may, with the agreement of the *AER*, be averaged over an adjacent group of *transmission network connection points* within a single *region*. If averaging is used, the relevant *transmission network connection points* will be collectively defined as a *virtual transmission node* with a *loss factor* calculated as the volume weighted average of the *intra-regional loss factors* of the constituent *transmission network connection points*.
- (b1) If *AEMO* determines two *intra-regional loss factors* for a *transmission network connection point* under clause 3.6.2(b)(2), *AEMO* must apply the *intra-regional loss factors* in *central dispatch* and *spot market transactions* in accordance with the procedure determined by *AEMO* under clause 3.6.2(d1).
- (c) An *intra-regional loss factor* is to be used as a price multiplier that can be applied to the *regional reference price* to determine the *spot price* at each *transmission network connection point* and *virtual transmission node*.

- (d) *AEMO must determine, publish and maintain, in accordance with Rules consultation procedures, a methodology for the determination of intra-regional loss factors to apply for a financial year for each transmission network connection point.*
- (d1) *AEMO must determine, publish and maintain, in consultation with Registered Participants, a procedure that includes a description of the manner in which AEMO will, if two intra-regional loss factors apply to a transmission network connection point, apply two intra-regional loss factors in central dispatch and spot market transactions. The procedure determined under this paragraph (d1) must describe how AEMO will identify and measure the generation and load at each transmission network connection point and apply the relevant intra-regional loss factor against that generation or load.*
- (e) In preparing the methodology referred to in clause 3.6.2(d), *AEMO must implement the following principles:*
  - (1) *Intra-regional loss factors are to apply for a financial year.*
  - (2) *An intra-regional loss factor must, as closely as is reasonably practicable, describe the average of the marginal electrical energy losses for electricity transmitted between a transmission network connection point and the regional reference node in the same region for each trading interval of the financial year in which the intra-regional loss factor applies.*
  - (2A) ~~*Intra-regional loss factors must aim to minimise the impact on the central dispatch process of generation and scheduled load compared to that which would result from a fully optimised dispatch process taking into account the effect of losses.*~~ *Intra-regional loss factors must aim to minimise the impact on the dispatch of scheduled resources as compared to the dispatch of scheduled resources which would result from a fully optimised central dispatch process taking into account the effect of losses.*
  - (3) ~~*An intra-regional loss factor is to be determined using forecast load and generation data prepared by AEMO pursuant to clause 3.6.2A for the financial year in which the intra-regional loss factor is to apply.*~~ *Forecast load and generation data for the financial year for which the intra-regional loss factor is to apply must be used. The forecast load and generation data used must be that load and generation data prepared by AEMO pursuant to clause 3.6.2A.*
  - (4) *The load and generation data referred to in clause 3.6.2(e)(3) must be used to determine marginal loss factors for each transmission network connection point for the financial year to which the ~~load and generation~~ data relates.*
  - (5) *An intra-regional loss factor for a transmission network connection point is determined using a volume weighted average of the marginal loss factors for the transmission network connection point.*
- (f) *AEMO must calculate intra-regional loss factors for each transmission network connection point for each financial year in accordance with the methodology prepared and published by AEMO under clause 3.6.2(d).*

- (f1) By 1 April in each year, *AEMO* must *publish* the *intra-regional loss factors* revised under clause 3.6.2(f) and to apply for the next *financial year*.
- (g) *AEMO* must, in accordance with the *Rules consultation procedures*, determine, *publish* and maintain the methodology which is to apply to the calculation of average *intra-regional loss factors*, determined in accordance with clause 3.6.2(b)(3), for each *virtual transmission node* proposed by a *Distribution Network Service Provider*.
- (h) As soon as practicable after the *publication* of the methodology referred to in clause 3.6.2(g), and thereafter by 1 April in each year, *AEMO* must calculate and *publish* the *intra-regional loss factors* for each *virtual transmission node*, determined in accordance with clause 3.6.2(b)(3), that are to apply for the next *financial year*.
- (i) Notwithstanding clauses 3.6.2(a) to (f1), *AEMO* must:
  - (1) determine an *intra-regional loss factor* in the *financial year* in which an *intra-regional loss factor* is to apply for a *transmission network connection point* which is established in that *financial year* in accordance with the procedure for establishing *connection* set out in rule 5.3, provided that *AEMO* did not determine an *intra-regional loss factor* for the *transmission network connection point* pursuant to clause 3.6.2(f1) in the *financial year* preceding that in which the *connection point* is established; or
  - (2) revise an *intra-regional loss factor* in the *financial year* in which an *intra-regional loss factor* is to apply for a *transmission network connection point* which is modified in that *financial year* in accordance with the procedure for modifying *connection* set out in rule 5.3, provided that, in *AEMO's* reasonable opinion, the modification to that *connection point* results in a material change in the capacity of the *connection point*.
- (j) *AEMO* must, where required to determine an *intra-regional loss factor* for an established or modified *transmission network connection point* under clause 3.6.2(i), do so as far as practicable in accordance with the methodology *published* by *AEMO* pursuant to clause 3.6.2(d).
- (k) For the purposes of clause 3.6.2(j), the forecast *load* and *generation* data used to calculate an *intra-regional loss factor* for the *transmission network connection point* must be determined using the forecast *load* and *generation* data determined by *AEMO* under clause 3.6.2A for other *transmission network connection points* in the same *region* for that *financial year* adjusted to take into account the effect of the established or modified *connection point*. Notwithstanding this clause 3.6.2(k), *Registered Participants* must comply with their obligations with respect to the provision of information to *AEMO*, for the purpose of determining new or revised *intra-regional loss factors* for *connection points* that are established or modified during the *financial year* in which the *intra-regional loss factors* are to apply, specified by the methodology developed and *published* by *AEMO* under clause 3.6.2A.
- (l) In the case of a *connection point* that is established in the *financial year* in which an *intra-regional loss factor* is to apply:



- (1) an *intra-regional loss factor* determined by *AEMO* in accordance with clause 3.6.2(i) will apply from the time an *intra-regional loss factor* is determined and *published* by *AEMO*; and
  - (2) *AEMO* must use reasonable endeavours to determine and *publish* an *intra-regional loss factor* at least 45 *business days* prior to the commencement of operation of the established *connection point*, where the relevant *Registered Participants* comply with any applicable requirements and deadlines for the provision of information to *AEMO* specified by the methodology *published* by *AEMO* under clause 3.6.2A.
- (m) In the case of a *connection point* that is modified in the *financial year* in which an *intra-regional loss factor* is to apply:
  - (1) an *intra-regional loss factor* determined by *AEMO* in accordance with clause 3.6.2(i) will apply from the date when the modification to the *connection point* takes effect; and
  - (2) *AEMO* must use reasonable endeavours to *publish* an *intra-regional loss factor* at least 45 *business days* prior to the date when the modification to the *connection point* takes effect, where the relevant *Registered Participants* comply with any applicable requirements and deadlines for the provision of information to *AEMO* specified by the methodology *published* by *AEMO* under clause 3.6.2A.
- (n) For the avoidance of doubt, where *AEMO* determines an *intra-regional loss factor* for a *transmission network connection point* under clause 3.6.2(i), which is to apply in the *financial year* in which the *transmission network connection point* is established or modified, the *intra-regional loss factors* for all other *transmission network connection points* for that *financial year*, determined in accordance with clauses 3.6.2(a) to (g), must remain unchanged.

### **3.6.2A Load and generation data used to determine inter-regional loss factor equations and intra-regional loss factors**

- (a) *AEMO* must prepare *load* and *generation* data for each *financial year* to be used in both the determination of *inter-regional loss factor* equations under clause 3.6.1 and *intra-regional loss factors* under clause 3.6.2 in accordance with the methodology determined, *published* and maintained by *AEMO* for this purpose, under clause 3.6.2A(b).
- (b) *AEMO* must determine, *publish* and maintain, in accordance with the *Rules consultation procedures*, a methodology for:
  - (1) forecasting the *load* and *generation* data to be used in both the determination of *inter-regional loss factor* equations and *intra-regional loss factors*, including new or revised *intra-regional loss factors* for *connection points* that are established or modified, respectively, during the *financial year* in which the *intra-regional loss factors* are to apply;
  - (2) modelling additional *load* and *generation* data, where required, to be used in determining *inter-regional loss factor* equations; and

- (3) the collection of relevant data from *Registered Participants*, including without limitation deadlines for the provision of that data by *Registered Participants*.
- (c) The methodology developed and *published* by *AEMO* under clause 3.6.2A(b) must specify information reasonably required by *AEMO* to fulfil its obligations under clause 3.6.2A, including without limitation historic *load* and *generation* data, forecast *energy* and *maximum demand* data for a *connection point* and forecast data for any new loads including loads of new integrated resource units. In particular, the methodology must specify information to be provided by *Registered Participants* that is in addition to the information provided by those *Registered Participants* under other provisions of the *Rules*.
- (d) In preparing the methodology for forecasting and modelling *load* and *generation* data under clause 3.6.2A(b), *AEMO* must implement the following principles:
  - (1) The forecast *load* and *generation* data must be representative of expected *load* and *generation* in the *financial year* in which the *inter-regional loss factor* equations or *intra-regional loss factors* are to apply having regard to:
    - (i) actual *load* and *generation* data available for a 12 month period defined by the methodology with the objective to use the most recent *load* and *generation* data practicable;
    - (ii) projected ~~load growth~~ changes in load between each calendar month to which the actual *load* and *generation* data referred to in clause 3.6.2A(d)(1)(i) relates and the same calendar month in the *financial year* for which the forecast *load* and *generation* data is determined; and
    - (iii) the projected *network* configuration and projected *network* performance for the *financial year* in which the *inter-regional loss factor* equation or *intra-regional loss factor*, as the case may be, is to apply.
  - (2) Additional modelled *load* and *generation* data sets must only be used:
    - (i) in the determination of *inter-regional loss factor* equations under clause 3.6.1; and
    - (ii) where the range of forecast *load* and *generation* data is not sufficient to derive *inter-regional loss factor* equations to apply over the full range of transfer capability of the *regulated interconnector*.
- (e) *Registered Participants* must comply with the obligations to provide information set out in the methodology developed and *published* by *AEMO* under this clause 3.6.2A, including the deadlines for the provision of that information and any other obligations with respect to the provision of that information set out in the methodology.

### 3.6.3 Distribution losses

- (a) *Distribution losses* are electrical energy losses incurred in the conveyance of electricity over a *distribution network*.
- (b) *Distribution loss factors*:
  - (1) notionally describe the *average electrical energy losses* for electricity transmitted on a *distribution network* between a *distribution network connection point* and a *transmission network connection point* or *virtual transmission node* for the financial year in which they apply;
  - (2) will be either:
    - (i) a site specific *distribution loss factor* derived in accordance with the methodology determined by the *AER* or the *Distribution Network Service Provider* pursuant to clause 3.6.3(h), for each *distribution network connection point* of the following types:
      - (A) a *connection point* for an *embedded generating unit* or embedded integrated resource unit with actual generation of more than 10MW, based on the most recent data available for a consecutive 12 month period at the time of determining the *distribution loss factor*. Where relevant data is not available for a consecutive 12 month period as a *distribution network connection point* is newly established or has been modified, a *Network Service Provider* may determine whether an *embedded generating unit* or embedded integrated resource unit has generation of more than 10MW, based on its best projection of *generation* in the *financial year* in which the *distribution loss factor* is to apply, taking into account the terms of the relevant *connection agreement*;
      - (B) a *connection point* for an ~~end-user~~ end user with actual or forecast ~~load~~ annual consumption of electricity of more than 40GWh or ~~an electrical demand~~ actual or forecast peak load of more than 10MW, based on the most recent data available for a consecutive 12 month period at the time of determining the *distribution loss factor*. Where relevant data is not available for a consecutive 12 month period as a *distribution network connection point* is newly established or has been modified, a *Network Service Provider* may determine whether an ~~end-user~~ end user has ~~load~~ forecast annual consumption of electricity of more than 40GWh or forecast *peak load* of more than 10MW, based on its best projection of *load* in the *financial year* in which the *distribution loss factor* is to apply, taking into account the terms of the relevant *connection agreement*;
      - (C) a *connection point* for a *Market Network Service Provider*; and
      - (D) a *connection point* between two or more *distribution networks*; or

- (ii) derived, in accordance with the methodology determined by the *AER* or the *Distribution Network Service Provider* pursuant to clause 3.6.3(h), using the volume weighted average of the *average electrical energy loss* between the *transmission network connection point* or *virtual transmission node* to which it is assigned and each *distribution network connection point* in the relevant *voltage class* (determined in accordance with clause 3.6.3(d)(2)) assigned to that *transmission network connection point* or *virtual transmission node*, for all *connection points* on a *distribution network* not of a type described in clause 3.6.3(b)(2)(i);

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (3) are to be used in the settlement process as a notional adjustment to the *electrical energy*, expressed in MWh, flowing at a *distribution network connection point* in a *trading interval* to determine the *adjusted gross energy* amount for that *connection point* in that *trading interval*, in accordance with clause 3.15.4.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b1) Where a *Generator*, ~~or a *Small Generation Aggregator*~~*Integrated Resource Provider or Small Resource Aggregator*, meets the reasonable cost of the *Distribution Network Service Provider* in performing the necessary calculation in respect of a *generating unit* or integrated resource unit of actual or forecast annual production of electricity of up to 40GWh or production capacity of up to 10MW~~of up to 10MW or 40GWh per annum capacity~~, the *Distribution Network Service Provider* must calculate a site specific *distribution loss factor* that, notwithstanding any other provision of the *Rules* to the contrary, for the purposes of the *Rules* is to apply in respect of that *generating unit* or integrated resource unit as though the generating unit or integrated resource unit were a unit of more than 10MW production capacity or more than 40GWh annual production~~on the same basis as applies for a generating unit of more than 10MW or 40GWh per annum capacity as though the generating unit were a unit of more than 10MW or 40GWh per annum capacity~~.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) Each *Distribution Network Service Provider* must assign each *connection point* on its *distribution network*, of a type described in clause 3.6.3(b)(2)(i), to a single *transmission network connection point* taking into account normal *network configurations* and *predominant load flows*.

- (d) Each *Distribution Network Service Provider* must assign each *connection point* on its *distribution network*, not of a type described in clause 3.6.3(b)(2)(i):
- (1) where practicable, to a single *transmission network connection point* or otherwise, to a *virtual transmission node*, taking into account normal network configurations and predominant *load flows*; and
  - (2) to a class of *distribution network connection points* based on the location of, *voltage* of and pattern of electrical *energy flows* at the *distribution network connection point*.
- (e) So far as practicable, the assignment of *connection points* on the *distribution network* to:
- (1) *transmission network connection points* under clause 3.6.3(c); or
  - (2) *transmission network connection points* or *virtual transmission nodes* and a class of *distribution network connection points* under clause 3.6.3(d),
- must be consistent with the geographic boundaries of the *pricing zones* for use in *distribution service pricing*, and the *voltage* levels incorporated within those *pricing zones*.
- (f) The assignment of *connection points* on a *distribution network*:
- (1) to a single *transmission network connection point* under clause 3.6.3(c); or
- or
- Note**
- This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)
- (2) to a *transmission network connection point* or *virtual transmission node* and a class of *distribution network connection points* under clause 3.6.3(d),
- is subject to the approval of the *AER* and the *Distribution Network Service Provider* must inform *AEMO* of such approved assignments.
- (g) *Distribution loss factors* must be determined by a *Distribution Network Service Provider* for all *connection points* on its *distribution network* either individually, for all *connection points* assigned to a single *transmission network connection point* under clause 3.6.3(c), or collectively, for all *connection points* assigned to a *transmission network connection point* or a *virtual transmission node* and a particular *distribution network connection point* class under clause 3.6.3(d), in accordance with:
- (1) the methodology developed, *published* and maintained by the *AER* for the determination of *distribution loss factors*; or
  - (2) where the *AER* has not *published* a methodology under clause 3.6.3(g)(1), the methodology developed, *published* and maintained by the *Distribution Network Service Provider* for the determination of *distribution loss factors*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) The methodology for the determination of *distribution loss factors* referred to in clause 3.6.3(g) must be developed having regard to the following principles:
- (1) The aggregate of the *adjusted gross energy* amounts for a *distribution network*, determined in accordance with clause 3.15.4 using the *distribution loss factors* for the *financial year* in which the *distribution loss factors* are to apply should equal, as closely as is reasonably practicable, the sum of:
    - (i) the amount of electrical *energy*, expressed in MWh, flowing at all *connection points* in the *distribution network* in the *financial year* in which the *distribution loss factors* are to apply; and
    - (ii) the total *electrical energy losses* incurred on the *distribution network* in the *financial year* in which the *distribution loss factors* are to apply.
  - (2) The methodology used to determine *distribution loss factors* for a *financial year* should incorporate provisions requiring a *Distribution Network Service Provider* to undertake a reconciliation between the aggregate of the *adjusted gross energy* amounts for its *distribution network* for the previous *financial year* determined in accordance with clause 3.15.4 using the *distribution loss factors* that applied for *connection points* in that *distribution network* in the previous *financial year* and the sum of:
    - (i) the amount of electrical *energy*, expressed in MWh flowing, at all *connection points* in its *distribution network* in the previous *financial year*; and
    - (ii) the total *electrical energy losses* incurred on its *distribution network* in the previous *financial year*.
  - (3) The *distribution loss factor* for a *distribution network connection point*, other than those described in clause 3.6.3(b)(2)(i), is determined using a volume weighted average of the *average electrical energy loss* between the *transmission network connection point* or *virtual transmission node* to which it is assigned and each *distribution network connection point* in the relevant class of *distribution network connection points* assigned to that *transmission network connection point* or *virtual transmission node* for the *financial year* in which the *distribution loss factor* is to apply.
  - (4) The *distribution loss factor* for a *distribution network connection point* described in clause 3.6.3(b)(2)(i) is determined using the *average electrical energy loss* between the *distribution network connection point* and the *transmission network connection point* to which it is assigned in the *financial year* in which the *distribution loss factor* is to apply.

- (5) In determining the *average electrical energy losses* referred to in clauses 3.6.3(h)(3) and (4), the *Distribution Network Service Provider* must use the most recent actual *load* and *generation* data available for a consecutive 12 month period but may adjust this *load* and *generation* data to take into account projected ~~*load and / or generation growth*~~ *changes in load and/or generation* in the *financial year* in which the *distribution loss factors* are to apply.
- (6) In determining *distribution loss factors*, flows in *network elements* that solely or principally provide *market network services* will be treated as invariant, as the methodology is not seeking to calculate the *marginal losses* within such *network elements*.
- (i) Each year the *Distribution Network Service Provider* must determine the *distribution loss factors* to apply in the next *financial year* in accordance with clause 3.6.3(g) and provide these to AEMO for *publication* by 1 April. Before providing the *distribution loss factors* to AEMO for *publication*, the *Distribution Network Service Provider* must obtain the approval of the AER for the *distribution loss factors* it has determined for the next *financial year*.

### 3.6.4 Network constraints

- (a) Conveyance of electricity between *regions* through a *regulated interconnector* is *constrained* when for operational reasons it is not acceptable for the *regulated interconnector* to transfer the level of electricity between *regions* that would be transferred if the limitation was removed and the condition impacts on the *dispatch* of other *regulated interconnectors* ~~*or scheduled resources, generation, scheduled network services or loads*~~.
- (a1) Conveyance of electricity between *regions* by means of a *scheduled network service* is *constrained* when the *dispatch* of the relevant *scheduled network service* is limited by the notified *available capacity* or *ramp rate* and the limitation impacts on the *dispatch* of ~~*generation, regulated interconnectors or scheduled resources, other scheduled network services or loads*~~.
- (b) Conveyance of electricity within a *region* is *constrained* when for operational reasons it is not acceptable for a *network* to transfer the level of electricity between different parts of the *region* that would be transferred if the limitation was removed and the condition impacts on the *dispatch* of ~~*generation, scheduled network services or loads*~~ *scheduled resources*.
- (c) For every *trading interval* AEMO must record any *constraints* including a description and the duration of the *constraint*.
- (d) Any *constraints* which occur within a *region* or between *regions* must be taken into account in the *dispatch* process under clause 3.8.10.

### 3.6.5 Settlements residue due to network losses and constraints

#### Definitions

- (a0) In this clause 3.6.5:

**importing region** means the *region* to which electricity is transferred during the relevant *trading interval* from another *region* through *regulated interconnectors*.



- (a) *Settlements residue* will be allocated, and distributed or recovered by AEMO in accordance with the following principles:
  - (1) full effect is to be given to the *jurisdictional derogations* contained in Chapter 9 relating to *settlements residue*;
  - (2) the portion of the *settlements residue* attributable to *regulated interconnectors* (as adjusted to take into account the effect of any applicable *jurisdictional derogations* referred to in subparagraph (1)) will be distributed or recovered in accordance with rule 3.18;
  - (3) the remaining *settlements residue*, including the portion of *settlements residue* due to *intra-regional loss factors*, will be distributed to or recovered from the appropriate *Transmission Network Service Providers* (which will not include *Market Network Service Providers*);
  - (3A) **[Deleted]**
  - (4) if the *settlements residue* arising in respect of a *trading interval*, after taking into account any relevant adjustment in accordance with clauses 5.7.7(aa)(3) or (ab), is a negative amount then, in respect of the *billing period* in which the negative *settlements residue* arises ~~then~~:
    - (i) AEMO must recover the amount from the appropriate *Transmission Network Service Provider* at a payment time, interval, and by a method, determined by AEMO following consultation with *Transmission Network Service Providers*. AEMO may determine that the appropriate *Transmission Network Service Provider* is to pay the negative *settlements residue* amount by a date prior to the date for payment of *final statements* under clause 3.15.16;
    - (ii) the appropriate *Transmission Network Service Provider* must pay the negative *settlements residue* amount in accordance with AEMO's determination under subparagraph (4)(i);
  - (4A) if interest costs are incurred by AEMO in relation to any unrecovered negative *settlements residue* amount referred to in subparagraph (4), then, in respect of the *billing period* in which the negative *settlements residue* arises ~~then~~:
    - (i) AEMO must recover the interest costs from the appropriate *Transmission Network Service Provider* at a payment time, interval, and by a method, determined by AEMO following consultation with *Transmission Network Service Providers*. AEMO may determine that the appropriate *Transmission Network Service Provider* is to pay the interest cost amount by a date prior to the date for payment of *final statements* under clause 3.15.16; and
    - (ii) the appropriate *Transmission Network Service Provider* must pay the interest cost amount in accordance with AEMO's determination under subparagraph (4A)(i);
  - (4B) for the purposes of subparagraphs (3), (4) and (4A), the appropriate *Transmission Network Service Provider* is:



- (i) in the case of *inter-regional settlements residue*:
  - (A) if there is more than one *Transmission Network Service Provider* in the importing region, the *Co-ordinating Network Service Provider*; or
  - (B) if there is no *Co-ordinating Network Service Provider* in the importing region, the *Transmission Network Service Provider* to which a *transmission determination* currently applies in that *region*;
- (ii) in the case of *intra-regional settlements residue*:
  - (A) if there is more than one *Transmission Network Service Provider* in the *region*, the *Co-ordinating Network Service Provider*; or
  - (B) if there is no *Co-ordinating Network Service Provider* in the *region*, the *Transmission Network Service Provider* to which a *transmission determination* currently applies in that *region*;
- (4C) **[Deleted]**
- (4D) **[Deleted]**
- (5) **[Deleted]**
- (6) any portion of *settlements residue* distributed to a *Network Service Provider* or amount paid on that portion under clause 3.15.10A (if any), or rule 3.18 to a *Network Service Provider*, including any such payments as adjusted by a *routine revised statement* or *special revised statement* issued under rule 3.15, net of any portion of *settlements residue* recovered from the *Network Service Provider* in accordance with clause 3.6.5(a)(4), will be used to offset *network service charges*.
- (b) A *Transmission Network Service Provider* or its jurisdictional delegate is a *Market Participant* for the purposes of clause 3.3.1 and rule 3.15 (excluding clause 3.15.1(b)) but not otherwise.
- (c) **[Deleted]**

## **3.7 Projected Assessment of System Adequacy**

### **3.7.1 Administration of PASA**

- (a) *AEMO* must administer medium term and short term *projected assessment of system adequacy processes* to be known as *PASA*.
- (b) The *PASA* is a comprehensive program of information collection, analysis, and disclosure of medium term and short term *power system security* and reliability of *supply* prospects so that *Registered Participants* are properly informed to enable them to make decisions about *supply*, demand and *outages* of *transmission networks* in respect of periods up to 2 years in advance (or up to 3 years in advance, where specified).
- (c) On a weekly basis *AEMO* must:

- (1) collect and analyse information from all *Scheduled Generators*, *Scheduled Integrated Resource Providers*, *Market Customers*, *Transmission Network Service Providers* and *Market Network Service Providers* about their intentions for:
  - (i) ~~generation, transmission and market network service~~*plant* maintenance scheduling;
  - (ii) intended *plant* availabilities;
  - (iii) *energy constraints*;
  - (iv) other *plant* conditions which could materially impact upon *power system security* and reliability of *supply*; and
  - (v) significant changes to *load* forecasts previously notified to *AEMO*,for the following 24 months in respect of subparagraphs (i), (iii), (iv) and (v), and for the following 36 months in respect of subparagraph (ii);
- (2) prepare the *unconstrained intermittent generation forecasts* for the following 24 months; and
- (3) following analysis and assessment of the information referred to in subparagraphs (1) and (2), *publish* information that will inform the *market* regarding forecasts of *supply* and demand.
- (d) *AEMO* must use its reasonable endeavours to ensure that it publishes sufficient information to allow the *market* to operate effectively with a minimal amount of intervention by *AEMO*.

### 3.7.2 Medium term PASA

- (a) The *medium term PASA* covers the 24 month period (or, in the case of paragraphs (d)(1)(i) and (f)(5) the 36 month period), commencing from the Sunday after the *day* of publication with a daily resolution. Every week, *AEMO* must review and *publish* the outputs of the *medium term PASA* in accordance with the *timetable*.
- (b) *AEMO* may publish additional updated versions of the *medium term PASA* in the event of changes which, in the judgment of *AEMO*, are materially significant.
- (c) The following *medium term PASA inputs* are to be prepared by *AEMO*:
  - (1) forecast *load* information for each *region* which is:
    - (i) forecasts of the 10% probability of exceedence daily *peak load*, forecasts of the most probable daily *peak load* and forecasts of the time of the peak, on the basis of past trends, day type and special events, including all forecast *scheduled load* and other *load* except for ~~pumped storage loads~~*loads classified as scheduled load in accordance with clause 2.3.4A(b) and load of scheduled integrated resource units*;
    - (ii) subsequently to be adjusted by an amount anticipated in the forecast as ~~scheduled load by load bidders; and the dispatched~~

*load of scheduled integrated resource units or scheduled load;  
and*

- (iii) an indicative half hourly *load* profile for each day type for each *region* for each month of the year;
  - (2) the capabilities of *generating units* *or integrated resource units* for which formal commitments have been made for construction or installation;
  - (3) forecast *network constraints* known to *AEMO* at the time;
  - (4) an *unconstrained intermittent generation forecast* for each *semi-scheduled generating unit* for each day.
- (d) The following *medium term PASA inputs* must be submitted by each relevant ~~*Scheduled Generator*~~ or *Market Participant* in accordance with the *timetable* and must represent the ~~*Scheduled Generator's*~~ or *Market Participant's* current intentions and best estimates:
- (1) *PASA availability* of each *scheduled generating unit*, *scheduled integrated resource unit*, *scheduled load* or *scheduled network service* for each *day* taking into account the ambient weather conditions forecast at the time of the 10% probability of exceedence *peak load* (in the manner described in the procedure prepared under paragraph (h)):
    - (i) for a 36 month period in respect of each *scheduled generating unit* *and scheduled integrated resource unit*; and
    - (ii) for a 24 month period in respect of each *scheduled load* or *scheduled network service*; and
  - (2) *weekly energy constraints* applying to each *scheduled generating unit*, *scheduled integrated resource unit* or *scheduled load* for a 24 month period.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) *Network Service Providers* must provide to *AEMO* an outline of planned *network outages* in accordance with the *timetable* and provide to *AEMO* any other information on planned *network outages* that is reasonably requested by *AEMO* to assist *AEMO* to meet its obligations under paragraph (f)(6).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) *AEMO* must prepare and *publish* the following information in respect of each *day* (unless otherwise specified in subparagraphs (1) to (6)) covered by the *medium term PASA* in accordance with clause 3.13.4(a):
  - (1) forecasts of the 10% probability of exceedence *peak load*, and most probable *peak load*, excluding the relevant aggregated MW allowance referred to in subparagraph (2), and adjusted to make allowance for *scheduled loads* *and the load of scheduled integrated resource units*;

- (1A) the maximum and minimum values of the forecasts of the 10% probability of exceedence *peak load* and the forecasts of the most probable *peak load*, prepared by *AEMO* in accordance with paragraph (c)(1);
- (2) the aggregated MW allowance (if any) to be made by *AEMO* for generation from *non-scheduled generating systems* and non-scheduled integrated resource systems in each of the forecasts of the 10% probability of exceedence *peak load* and most probable *peak load* referred to in subparagraph (1);
- (3) in respect of each of the forecasts of the 10% probability of exceedence *peak load* and most probable *peak load* referred to in subparagraph (1), a value that is the sum of that forecast and the relevant aggregated MW allowance referred to in subparagraph (2);
- (4) forecasts of the most probable weekly *energy* for each *region*;
- (5) for a 36 month period, aggregate *PASA* availability of generating units and integrated resource units to produce electricity for each region and *PASA* availability of each scheduled generating unit and scheduled integrated resource unit;~~for a 36 month period, aggregate generating unit *PASA* availability for each region and individual scheduled generating unit *PASA* availability;~~
- (5A) aggregate capacity for each *region* that can be *generated* continuously, calculated by adding the following categories:
  - (i) the generation capacity of *scheduled generating units* and scheduled integrated resource units in the *region* that are able to operate at the *PASA* availability; and
  - (ii) the forecast generation of *semi-scheduled generating units* in the *region* as provided by the *unconstrained intermittent generation forecasts*;
- (5B) aggregate electricity production capacity for each *region* that cannot be *generated* continuously at the *PASA* availability of the *scheduled generating units* or scheduled integrated resource units in the *region* due to specified weekly *energy constraints*;
- (5C) the adjusted maximum and minimum aggregate *PASA* availability of scheduled generating units and scheduled integrated resource units for each region following adjustment for the inclusion of Scheduled Generator and Scheduled Integrated Resource Provider probabilistic forced outage information;~~and the adjusted maximum and minimum aggregate scheduled generating unit *PASA* availability for each region following adjustment for the inclusion of Scheduled Generator probabilistic forced outage information; and~~
- (6) identification and quantification of:
  - (i) any projected *violations* of *power system security*;
  - (ii) any projected failure to meet the *reliability standard* as assessed in accordance with the *reliability standard implementation guidelines*;

- (iii) **[Deleted]**
  - (iv) forecast *interconnector* transfer capabilities and the discrepancy between forecast *interconnector* transfer capabilities and the forecast capacity of the relevant *interconnector* in the absence of *outages* on the relevant *interconnector* only; and
  - (v) when and where *network constraints* may become binding on the dispatch of ~~generation or loads~~*scheduled resources*.
- (g) For the purpose of paragraph (f) (other than subparagraphs (f)(4) and (f)(6)), *AEMO* must *publish* forecast information in a format consistent with the format of the demand information published under clause 3.13.4(x).
- (h) *AEMO* must publish the procedure it uses for preparation of the *medium term PASA*.

### 3.7.3 Short term PASA

- (a) The *short term PASA* must be *published* at least daily by *AEMO* in accordance with the *timetable*.
- (b) The *short term PASA* covers the period of six *trading days* starting from the end of the *trading day* covered by the most recently *published pre-dispatch schedule* with a 30-minute period resolution.
- (c) *AEMO* may *publish* additional updated versions of the *short term PASA* in the event of changes which, in the judgement of *AEMO*, are materially significant.
- (d) The following *short term PASA inputs* are to be prepared by *AEMO*:
- (1) forecast *load* information for each *region* which is to include:
    - (i) the 10% probability of exceedence half-hourly *load* and most probable half hourly *load* on the basis of past trends, day type, and special events; and
    - (ii) all *scheduled load* and other *load* (including *wholesale demand response units*) except for *loads classified as scheduled load in accordance with clause 2.3.4A(b) and load of scheduled integrated resource units*~~pumped storage loads~~,which must subsequently be adjusted in accordance with *dispatch bids* for *scheduled load* and *dispatch bids* for *wholesale demand response units*;
  - (2) **[Deleted]**
  - (3) forecast *network constraints* known to *AEMO* at the time; and
  - (4) an *unconstrained intermittent generation forecast* for each *semi-scheduled generating unit* for each 30-minute period.
- (e) The following *short term PASA inputs* must be submitted by each relevant ~~Scheduled Generator and~~ *Market Participant* in accordance with the *timetable* and must represent the ~~Scheduled Generator's or~~ *Market Participant's* current intentions and best estimates:

- (1) *available capacity* of each *scheduled generating unit*, *scheduled integrated resource unit*, *wholesale demand response unit*, *scheduled load* or *scheduled network service* for each 30-minute period under expected market conditions;
- (2) *PASA availability* of each *scheduled generating unit*, *scheduled integrated resource unit*, *wholesale demand response unit*, *scheduled load* or *scheduled network service* for each 30-minute period;
- (3) projected daily *wholesale demand response* availability for *wholesale demand response units* that are *wholesale demand response constrained*; ~~and~~
- (4) projected daily *energy* availability for *energy constrained scheduled generating units* and *energy constrained scheduled loads*; ~~and-~~
- (5) projected *energy* availability for *energy constrained scheduled integrated resource units* for each 30-minute period.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) If *AEMO* considers it reasonably necessary for adequate *power system* operation and the maintenance of *power system security* and reliability of *supply*, *Registered Participants* who may otherwise be exempted from providing inputs for the *PASA* must do so to the extent specified by *AEMO*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) *Network Service Providers* must provide to *AEMO* an outline of planned *network outages* in accordance with the *timetable* and provide to *AEMO* any other information on planned *network outages* that is reasonably requested by *AEMO* to assist *AEMO* to meet its obligations under clause 3.7.3(h)(5).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) *AEMO* must prepare and *publish* the following information for each 30-minute period (unless otherwise specified in subparagraphs (1) to (5)) in the period covered by the *short term PASA* in accordance with clause 3.13.4(c):
  - (1) forecasts of the most probable *load* (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) plus *reserve* requirement (as determined under clause 3.7.3(d)(2)), adjusted to make allowance for *scheduled load*, and for *wholesale demand response units* for each *region*;
  - (2) forecasts of *load* (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region* with 10% and 90% probability of exceedence;



- (3) forecasts of the most probable *energy* (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region* and *trading day*;
- (4) aggregate ~~*generating unit*~~ availability of generating units and integrated resource units (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region*;
- (4AA) aggregate electricity production capacity (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region*, after allowing for the impact of *network constraints*, that can be *generated* continuously, calculated by adding the following categories:
  - (i) the *available capacity* of *scheduled generating units* and integrated resource units to produce electricity that are able to operate at the availability as notified to ~~AEMO~~ AEMO under paragraph (e)(1); and
  - (ii) the forecast *generation* of *semi-scheduled generating units* as provided by the *unconstrained intermittent generation forecasts*;
- (4AB) aggregate capacity (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region*, after allowing for the impact of *network constraints*, that cannot be *generated* continuously at the *available capacity* referred to in subparagraph (4AA)(i) due to specified daily *energy constraints*;
- (4A) aggregate ~~*generating unit*~~ *PASA* availability of generating units and integrated resource units to produce electricity (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region*;
- (4B) the aggregated MW allowance (if any) to be made by *AEMO* for generation from *non-scheduled generating systems* and non-scheduled integrated resource systems in each forecast:
  - (i) of the most probable *load* referred to in clause 3.7.3(h)(1); and
  - (ii) referred to in clauses 3.7.3(h)(2), (3), (4), (4A), (4AA) and (4AB);
- (4C) in respect of each forecast:
  - (i) of the most probable *load* referred to in clause 3.7.3(h)(1);
  - (ii) referred to in clauses 3.7.3(h)(2), (3), (4), (4A), (4AA) and (4AB), a value that is the sum of that forecast and the relevant aggregated MW allowance (if any) referred to in clause 3.7.3(4B); and
- (5) identification and quantification of:
  - (i) any projected *violations* of *power system security*;
  - (ii) any projected failure to meet the *reliability standard* as assessed in accordance with the *reliability standard implementation guidelines*;
  - (iii) **[Deleted]**



- (iv) forecast *interconnector* transfer capabilities and the discrepancy between forecast *interconnector* transfer capabilities and the forecast capacity of the relevant *interconnector* in the absence of outages on the relevant *interconnector* only; and
  - (v) when and where *network constraints* may become binding on ~~the dispatch-of-generation-or-load~~.
- (i) If in performing the *short term PASA AEMO* identifies any projected failure to meet the *reliability standard* in respect of a *region* as assessed in accordance with the *reliability standard implementation guidelines*, then *AEMO* must use its reasonable endeavours to advise the *Jurisdictional System Security Coordinator* who represents a *participating jurisdiction* in that *region* of any potential requirements during such conditions to shed *sensitive loads*.
- (j) *AEMO* must publish the procedure it uses for preparation of the *short term PASA*.

### 3.7B Unconstrained intermittent generation forecast

- (a) *AEMO* must prepare a forecast of the *available capacity* of each *semi-scheduled generating unit* (to be known as an *unconstrained intermittent generation forecast*) in accordance with this rule 3.7B for the purposes of:
  - (1) the *PASA*;
  - (2) *dispatch*; and
  - (3) *pre-dispatch*.
- (b) A *Semi-Scheduled Generator* must:
  - (1) submit to *AEMO*, in accordance with the *timetable*, the *plant availability* for each *semi-scheduled generating unit* for the purpose of paragraph (a) as soon as the *Semi-Scheduled Generator* becomes aware that the *plant availability* of the unit is at least 6MW below or above the *nameplate rating* of the unit; and
  - (2) where the *Semi-Scheduled Generator* has submitted *plant availability* in accordance with subparagraph (1), notify *AEMO* in accordance with the *timetable* as soon as the *Semi-Scheduled Generator* becomes aware of any changes to the *plant availability* of that *semi-scheduled generating unit* until such time as the *plant availability* of that *semi-scheduled generating unit* is no longer at least 6MW below or above the *nameplate rating* of the unit.

#### Note

This rule is classified as a civil penalty provision under the National Electricity (South Australia) Regulations.

- (c) When preparing an *unconstrained intermittent generation forecast* for the purposes referred to in paragraph (a), *AEMO* must take into account:
  - (1) the maximum *generation* of the *semi-scheduled generating unit* provided by the *Semi-Scheduled Generator* as part of its ~~*bid-and-offer validation data*~~ *bid validation data*;

- (2) the *plant availability* of the *semi-scheduled generating unit* submitted by the *Semi-Scheduled Generator* under paragraph (b);
- (3) the information obtained for the *semi-scheduled generating unit* from the *remote monitoring equipment* specified in clause S5.2.6.1;
- (4) the forecasts of the energy available for input into the electrical power conversion process for each *semi-scheduled generating unit*;
- (5) the *energy conversion model* for each *semi-scheduled generating unit*;
- (6) the assumption that there are no *network constraints* otherwise affecting ~~*supply the generation*~~ from that *semi-scheduled generating unit*; and
- (7) the timeframes of:
  - (i) *pre-dispatch*;
  - (ii) *dispatch*,
  - (iii) *medium term PASA*; and
  - (iv) *short term PASA*.
- (d) NEMMCO must prepare the first *unconstrained intermittent generation forecast* for each *semi-scheduled generating unit* by 31 March 2009 and there must be an *unconstrained intermittent generation forecast* for each *semi-scheduled generating unit* available at all times after that date.

### 3.7C Energy Adequacy Assessment Projection

#### Purpose of EAAP

- (a) The purpose of the *EEAP* is to make available to *Market Participants* and other interested persons an analysis that quantifies the impact of *energy constraints* on *energy* availability over a 24 month period under a range of scenarios.

#### EAAP principles

- (b) The *EAAP* must:
  - (1) cover a 24 month period; ;
  - (2) be *published* at least once in every 12 month period and more frequently if required under paragraph (d);
  - (3) provide a probabilistic assessment of projected *energy* availability for each *region*;
  - (4) provide projected *unserved energy* levels for each *region* with a monthly resolution;
  - (5) provide aggregated information on the adequacy of *energy* availability for each scenario that *AEMO* defines for the purposes of the *EAAP*, based on information received from *Registered Participants* and on anticipated *power system* constraints;
  - (6) take into account:
    - (A) where relevant, the information and *medium term PASA* inputs referred to in clauses 3.7.1 and 3.7.2;

- (B) where relevant, the matters *AEMO* considers in, and for the purposes of, preparing the *Integrated System Plan*;
  - (C) *Generator Energy Limitation Frameworks* provided in accordance with paragraph (g), including *GELFs* that apply to more than one *scheduled generating unit* or *scheduled integrated resource unit* under clause 3.7C(k)(6) where those *GELFs* adequately represent the relevant *scheduled generating units* or *scheduled integrated resource units*; and
  - (D) *GELF parameters* for each *GELF* which are provided in accordance with the *EAAP guidelines* and are updated in accordance with the *timetable*.
- (c) *AEMO* must comply with the *EAAP principles* in preparing the *EAAP*.

#### **Administration of EAAP**

- (d) *AEMO* must *publish* the *EAAP*:
  - (1) at least once in every 12 month period in accordance with the *timetable*; and
  - (2) as soon as practicable after becoming aware of any new information that may materially alter the most recently published *EAAP*.
- (e) For the purposes of preparing the *EAAP*, a *Scheduled Generator* or *Scheduled Integrated Resource Provider* must provide *AEMO* with the following information in accordance with the *timetable*:
  - (1) updated *GELF parameters* for each *GELF* provided by it in accordance with paragraph (g); and
  - (2) other information that supplements the data provided under subparagraph (1) that is reasonably required by *AEMO* to study the scenarios defined in the *EAAP guidelines*.
- (f) In considering whether information referred to in subparagraph (e)(2) is reasonably required, *AEMO* must have regard to the likely costs that may be incurred by the *Scheduled Generator* or *Scheduled Integrated Resource Provider* in preparing and providing that information compared to the likely benefits from the use of that information for the purposes of the *EAAP*.

#### **Generator Energy Limitation Framework**

- (g) A *Scheduled Generator* or *Scheduled Integrated Resource Provider* must prepare and submit to *AEMO*, in accordance with the *EAAP guidelines* and for the purposes of the *EAAP*, a description of the *energy constraints* that affect the ability of each of its *scheduled generating units* or *scheduled integrated resource units* to ~~produce~~*generate* electricity (*GELF* or *Generator Energy Limitation Framework*). The *GELF* must be in a form that adequately represents that *scheduled generating unit* or *scheduled integrated resource unit* sufficient for *AEMO* to include the *GELF* in the *EAAP*.
- (h) A *GELF* submitted under paragraph (g) must be supplemented by *GELF parameters* for that *GELF* as defined in the *EAAP guidelines*, and those parameters must be updated:

- (1) at least every 12 months in accordance with the *timetable*; and
  - (2) in accordance with the *EAAP guidelines*, if *AEMO* is required to *publish* an *EAAP* under paragraph (d)(2).
- (i) Without limiting paragraph (h), if a *Scheduled Generator* or *Scheduled Integrated Resource Provider* has submitted a *GELF* under paragraph (g) and there has been a material change to any of its *scheduled generating units* or *scheduled integrated resource units* which has an impact on the *energy constraints* associated with that *GELF*, the *Scheduled Generator* or *Scheduled Integrated Resource Provider* must revise and re-submit the *GELF* in accordance with that paragraph.
  - (j) Subject to paragraph (r), a *GELF* or information provided in relation to a *GELF* to *AEMO* must be treated by *AEMO* as *confidential information*.

### **EAAP guidelines**

- (k) *AEMO* must develop and *publish* guidelines (the *EAAP guidelines*) that:
  - (1) define scenarios that *AEMO* must study in preparing the *EAAP*, including any scenarios that the *Reliability Panel* has identified for study for the purposes of preparing the *EAAP*;
  - (2) define modelling assumptions for the *EAAP*;
  - (3) define the components of a *GELF* that a *Scheduled Generator* or *Scheduled Integrated Resource Provider* must include in a *GELF* submitted under paragraph (g);
  - (4) provide detail on the forms of the *GELF* sufficient for a *Scheduled Generator* or *Scheduled Integrated Resource Provider* to meet the requirements of paragraph (g);
  - (5) define variable parameters specific to a *GELF* (*GELF parameters*) that are likely to have a material impact on the *GELF* and therefore the *EAAP*, and which may include, but are not limited to, parameters in relation to:
    - (i) hydro storage including pump storage;
    - (ii) thermal generation fuel;
    - (iii) cooling water availability; and
    - (iv) gas supply limitations;
  - (6) define circumstances where a *GELF* submitted under paragraph (g) can apply to a collection of *scheduled generating units* or *scheduled integrated resource units* that face common *energy constraints* due to their geographic location, access to fuel source or another similar reason;
  - (7) define the form of information to be submitted by each *Scheduled Generator* or *Scheduled Integrated Resource Provider* in accordance with paragraph (e);
  - (8) define arrangements for managing the confidentiality of information submitted to *AEMO* under this rule 3.7C; and

- (9) specify when a *Scheduled Generator* or *Scheduled Integrated Resource Provider* is required to update a *GELF* under paragraph (h)(2).
- (l) The scenarios that are defined for the purposes of subparagraph (k)(1) may include, but are not limited to:
  - (1) water conditions such as normal rainfall and drought;
  - (2) material restrictions on the supply of a significant fuel source;
  - (3) other limits on a fuel source for a major form of generation electricity production; and
  - (4) any other scenario that *AEMO* reasonably considers will have a material impact on the *EAAP*.
- (m) *AEMO* must comply with the *EAAP principles* in preparing the *EAAP guidelines*.
- (n) *AEMO* must comply with the *EAAP guidelines* in preparing the *EAAP*.
- (o) *AEMO* must develop and *publish* the *EAAP guidelines* in accordance with the *Rules consultation procedures*.
- (p) **[Deleted]**
- (q) *AEMO* may from time to time in accordance with the *Rules consultation procedures* amend or replace the *EAAP guidelines*.

**Provision of information to Scheduled Generators and Scheduled Integrated Resource Providers**

- (r) *AEMO* must provide to each *Scheduled Generator* and *Scheduled Integrated Resource Provider*, based on the relevant *GELF*, an estimate of the total energy production of ~~the—its~~ *scheduled generating units* or *scheduled integrated resource units* ~~of that *Scheduled Generator*~~ for the period of the *EAAP*.

**Review**

- (s) **[Deleted]**.

### 3.7D Demand side participation information

**Definitions**

- (a) In this rule:
  - contracted demand side participation** means, in relation to a *Registered Participant*, a contractual arrangement under which a person and the *Registered Participant* agree to the adjustment of *non-scheduled load* or the provision of *unscheduled generation* in certain specified circumstances, or the provision of *wholesale demand response* by a *wholesale demand response unit*.
  - demand side participation information guidelines** means the guidelines as made and amended by *AEMO* in accordance with paragraphs (e) to (i).

~~unscheduled generation means generation from a generating system connected to a transmission system or distribution system which is not a scheduled generating system or semi-scheduled generating system.~~

unscheduled generation means generation from the following plant connected to a transmission system or distribution system:

- (1) a generating system which is not a scheduled generating system or semi-scheduled generating system; and
- (2) an integrated resource system which is not a scheduled integrated resource system.

### **Registered Participants to provide demand side participation information to AEMO**

- (b) A *Registered Participant* must provide to *AEMO* in accordance with the demand side participation information guidelines:
  - (1) *demand side participation information*; or
  - (2) if the *Registered Participant* has no *demand side participation information* to report in respect of the relevant period, a statement to that effect.

### **AEMO to report on demand side participation information**

- (c) *AEMO* must *publish*, no less than annually, an analysis of volumes and types of demand response reported under paragraph (b), which must include:
  - (1) information on the types of tariffs used by *Network Service Providers* to facilitate demand response and the proportion of *retail customers* on those tariffs; and
  - (2) an analysis of trends, including year-on-year changes, in the information reported under paragraph (b), in respect of each relevant category of *Registered Participant*.
- (d) *AEMO* must *publish* details, no less than annually, on the extent to which, in general terms, *demand side participation information* received under this rule 3.7D has informed *AEMO's* development or use of *load* forecasts for the purposes of the exercise of its functions under the *Rules*.

#### **Note**

*AEMO* is required under clause 4.9.1(c) to take into account *demand side participation information* received under this rule 3.7D when developing *load* forecasts.

### **Demand side participation information guidelines**

- (e) *AEMO* must develop, maintain and *publish* guidelines that specify:
  - (1) the information *Registered Participants* must provide to *AEMO* in relation to:
    - (i) *contracted demand side participation*; and
    - (ii) to the extent not covered by subparagraph (1)(i), the adjustment of *non-scheduled load* or the provision of *unscheduled generation* in response to the demand for, or price of, electricity,



which may include, but is not limited to:

- (iii) the circumstances under which *non-scheduled load* may be adjusted or *unscheduled generation* or *wholesale demand response* may be provided;
    - (iv) the location at which *non-scheduled load* may be adjusted or *unscheduled generation* or *wholesale demand response* may be provided;
    - (v) the quantity of *non-scheduled load* that may be adjusted or *unscheduled generation* or *wholesale demand response* that may be provided; and
    - (vi) historic or current information;
  - (2) when *Registered Participants* must provide and update *demand side participation information*;
  - (3) how *demand side participation information* is to be provided, including, for example:
    - (i) the format in which the information must be provided; and
    - (ii) any information *AEMO* requires to assess the accuracy of the information;
  - (4) *AEMO's* methodology for assessing the accuracy of *demand side participation information* provided to it under this rule 3.7D;
  - (4A) the requirements for a statement under paragraph (b)(2), if a *Registered Participant* has no *demand side participation information* to report; and
  - (5) the manner and form in which *AEMO* will *publish* details, in accordance with paragraph (d), on the extent to which *demand side participation information* has informed its *load* forecasts.
- (f) In developing and amending the demand side participation information guidelines, *AEMO* must:
- (1) have regard to the reasonable costs of efficient compliance by *Registered Participants* with the guidelines compared to the likely benefits from the use of *demand side participation information* provided under this rule 3.7D in forecasting *load* for the purposes of the exercise of its functions under the *Rules*; and
  - (2) subject to paragraph (g), consult with:
    - (i) *Registered Participants*; and
    - (ii) such other persons who, in *AEMO's* reasonable opinion, have, or have identified themselves to *AEMO* as having, an interest in the demand side participation information guidelines,
- in accordance with the *Rules consultation procedures*.
- (g) *AEMO* is not required to comply with the *Rules consultation procedures* when making minor or administrative amendments to the demand side participation information guidelines.

- (h) The demand side participation information guidelines must include a minimum period of 3 months between the date of *publication* and the date when the guidelines commence other than when the guidelines are amended under paragraph (g), in which case the guidelines may commence on the date of *publication*.
- (i) There must be demand side participation information guidelines in place at all times after the first demand side participation information guidelines are published by *AEMO* under the *Rules*.

### 3.7E Register of DER information

#### Definitions

- (a) In this rule:

**emergency** means an emergency due to the actual or imminent occurrence of an event (such as fire, flood, storm, earthquake, explosion, accident, act of terrorism or cyber attack) that in any way endangers or threatens to endanger the safety or health of any person or animal, or that destroys or damages, or threatens to destroy or damage, any property.

**emergency services agency** means an agency or person prescribed, approved or accredited under jurisdictional emergency management legislation as an emergency services agency or equivalent (and includes without limitation the ambulance service, state emergency service, police force, fire and rescue service, community and rural fire agencies, and first responder agencies).

**jurisdictional emergency management legislation** means legislation of a *participating jurisdiction* that relates to the management of emergencies.

#### AEMO must establish a DER register

- (b) *AEMO* must establish, maintain and update a *DER register*. The *DER register*:
  - (1) must include *DER generation information* reported to *AEMO* by *Network Service Providers* in accordance with paragraph (d);
  - (2) must include any *demand side participation information* provided to *AEMO* by *Registered Participants* in accordance with rule 3.7D(b) which in *AEMO's* reasonable opinion will assist *Network Service Providers* to meet their *regulatory obligations or requirements* and/or assist *AEMO* in the exercise of its statutory functions under the *Rules*; and
  - (3) may include information of a type similar to the information referred to in subparagraphs (1) and (2) provided to *AEMO* by any person in connection with the performance of *AEMO's* statutory functions and which in *AEMO's* reasonable opinion will assist *Network Service Providers* to meet their *regulatory obligations or requirements*.
- (c) *AEMO* will be taken to satisfy the requirement to establish and maintain a *DER register* in paragraph (b) if it stores *DER register information* in one or more databases, including without limitation the databases it maintains under the *Market Settlement and Transfer Solution Procedures*.



### **Obligation on NSPs to provide DER generation information to AEMO**

- (d) *Network Service Providers* must provide to *AEMO* in accordance with the *DER register information guidelines*, *DER generation information* in relation to *connection points* on their *network* which they are entitled to collect under the *Rules*, including but not limited to *DER generation information* they are entitled to collect under clauses 5.3.3(c)(4a), 5.3A.5(c)(1a), 5A.B.2, 5A.B.4, or 5A.C.3.

### **AEMO may use DER register information in performing its functions**

- (e) For the avoidance of doubt, *AEMO* may use *DER register information* for the purpose of the exercise of its statutory functions under the *NEL* or *Rules*, including performing its *power system security* responsibilities.

#### **Note**

Under section 53D of the *NEL*, *AEMO* may use information it collects under the *Rules* for any purpose connected with its statutory functions unless otherwise specified in the *NEL*, these *Rules* or the Regulations made under the *NEL*.

- (f) *AEMO* must *publish* details, no less than annually, on the extent to which, in general terms, *DER register information* has informed *AEMO's* development or use of *load* forecasts, or the performance of its *power system security* responsibilities under the *Rules*.

#### **Note**

*AEMO* is required under clause 4.9.1(c) to take into account *DER register information* received under this rule 3.7E when developing *load* forecasts.

### **DER register information guidelines**

- (g) *AEMO* must develop, maintain and *publish* guidelines that specify:
- (1) details of the *DER generation information* that *Network Service Providers* must provide to *AEMO* under paragraph (d), including any minimum size of *small generating units* or *small integrated resource units* for which a *Network Service Provider* is required to provide *DER generation information*;
  - (2) the type of *demand side participation information* provided to *AEMO* by *Registered Participants* under rule 3.7D(b) that *AEMO* will include in the *DER register*;
  - (3) when *Network Service Providers* must provide and update *DER generation information*;
  - (4) how *DER generation information* should be provided to *AEMO* by *Network Service Providers*, including, for example:
    - (i) the format in which the information must be provided; and
    - (ii) any additional information *AEMO* requires to assess the accuracy of the information;
  - (5) how the information in the *DER register* is stored by *AEMO*;
  - (6) the manner and form in which *AEMO* will publish details, in accordance with paragraph (f), on the extent to which *DER register information* has

- informed its *load* forecasts or the performance of its *power system security* responsibilities;
- (7) details of how *AEMO* will provide *Network Service Providers* with access to *DER register information* under paragraph (n);
  - (8) the contents, form and timing of the *DER register report* to be published by *AEMO* in accordance with paragraph (l) and how the *DER register information* to be included in that report will be aggregated; and
  - (9) *AEMO's* approach to the protection of any *confidential information* and personal information contained in the *DER register*.
- (h) In developing and amending the *DER register information guidelines*, *AEMO* must:
- (1) have regard to the reasonable costs of efficient compliance by *Network Service Providers* with the guidelines compared to the likely benefits from the use of *DER generation information* as contemplated under this rule 3.7E;
  - (2) consider any risk of unauthorised use or disclosure of *confidential information* or personal information that may arise from including information in the *DER register* compared to the likely benefits of including that information in the register; and
  - (3) subject to paragraph (i), comply with the *Rules consultation procedures*.
- (i) *AEMO* is not required to comply with the *Rules consultation procedures* when making minor or administrative amendments to the *DER register information guidelines*.
- (j) The *DER register information guidelines* must include a minimum period of 3 months between the date of *publication* and the date when the guidelines commence other than when the guidelines are amended under paragraph (i), in which case the guidelines may commence on the date of *publication*.
- (k) There must be *DER register information guidelines* in place at all times after the first *DER register information guidelines* are published by *AEMO* under the *Rules*.

### **Reporting by AEMO**

- (l) *AEMO* must prepare and publish on its website a report of aggregated *DER register information* (*DER register report*) in accordance with the *DER register information guidelines*.
- (m) The information in the *DER register report* must be aggregated such that it does not:
  - (1) directly or indirectly disclose *confidential information*; or
  - (2) result in a breach of applicable privacy legislation.

### **Enabling access to DER register information**

- (n) *AEMO* must provide or give access to *DER register information* to each *Network Service Provider* in relation to that *Network Service Provider's network* in accordance with the *DER register information guidelines*.
- (o) A *Network Service Provider* must only use the *DER register information* it receives or accesses under paragraph (n) for the purposes of meeting a *regulatory obligation or requirement*.
- (p) Any information received or accessed by a *Network Service Provider* under paragraph (n) must be treated as *confidential information* by the *Network Service Provider*.

### **AEMO may provide DER register information to emergency services**

- (q) If requested by an emergency services agency, *AEMO* may provide relevant *DER register information* to that emergency services agency for the purpose of the agency's response to an emergency or for planning in relation to emergency responses.

### **Protection of DER register information**

- (r) Nothing in this rule 3.7E:
  - (1) requires *AEMO* to make available *DER register information* where the collection, use or disclosure of that information by *AEMO* would breach applicable privacy laws; or
  - (2) precludes *AEMO* from disclosing *confidential information* in the circumstances in which disclosure of *confidential information* is permitted under the *NEL* or the *Rules*.

## **3.7F Generation information page**

- (a) *AEMO* must establish, maintain and publish on its website an information resource to inform *Registered Participants* and other interested persons of the extent and nature of *generating plant connected*, or proposed to be *connected*, to the *national grid*.

### **Content of generation information page**

- (b) The *generation information page* must contain at least the following information:
  - (1) a list of all *scheduled generating units*, *semi-scheduled generating units* and *non-scheduled generating units*, including information on their respective capabilities and whether the *generating units* are in service;
  - (1a) a list of all *scheduled integrated resource units* and *non-scheduled integrated resource units*, including information on their respective capabilities and whether the *integrated resource units* are in service;
  - (2) a list of *generating units* and *integrated resource units* for which formal commitments have (and have not) been made for construction or installation, to the extent it is reasonably practicable to do so;
  - (3) *key connection information* received by *AEMO* pursuant to paragraph (g); and

- (4) in respect of *key connection information* received by AEMO pursuant to paragraph (g):
  - (i) the name of the *Transmission Network Service Provider* from whom AEMO received that *key connection information*; and
  - (ii) a statement as to whether the *Transmission Network Service Provider* received the *key connection information* in a valid *connection* enquiry under rule 5.3, a valid *application to connect* under rule 5.3, or under clause 5.3.8(d1) or 5.3.8(e).
- (c) For the avoidance of doubt and without limiting AEMO's obligations under rule 8.6, AEMO may include information on the *generation information page* in addition to the information set out in paragraph (b) including, without limitation, *key connection information* that is received by AEMO other than *key connection information* received pursuant to paragraph (g).
- (d) AEMO must update the information contained on the *generation information page* no less than quarterly.

#### **Generation information guidelines**

- (e) AEMO must develop, publish on its website and maintain, in accordance with the *Rules consultation procedures*, guidelines in relation to the *generation information page*, which must include:
  - (1) the type of information set out in paragraphs (b) and (c) to be included on the *generation information page* and the source of that information;
  - (2) the intervals for updating the *generation information page*;
  - (3) the manner, timing, and format in which *key connection information* is to be provided by *Transmission Network Service Providers* to AEMO under paragraph (g); and
  - (4) guidance as to the evidence that is required to be submitted to AEMO for the purposes of clause 3.13.3AA(c).
- (f) AEMO may make minor or administrative amendments to the *generation information guidelines* without complying with the *Rules consultation procedures*.

#### **Provision of key connection information**

- (g) A *Transmission Network Service Provider* must provide *key connection information* received:
  - (1) in a valid *connection* enquiry under rule 5.3;
  - (2) in a valid *application to connect* under rule 5.3; and
  - (3) under clause 5.3.8(d1) or 5.3.8(e),to AEMO in accordance with the *generation information guidelines*.

## 3.8 Central Dispatch and Spot Market Operation

### 3.8.1 Central Dispatch

- (a) AEMO must operate a *central dispatch* process to dispatch ~~*scheduled generating units, semi-scheduled generating units, wholesale demand response units, scheduled loads, scheduled network services*~~*scheduled resources* and *market ancillary services* in order to balance power system supply and demand, using its reasonable endeavours to maintain *power system security* in accordance with Chapter 4 and to maximise the value of *spot market trading* on the basis of ~~*dispatch offers and*~~ *dispatch bids*.
- (b) The *central dispatch* process should aim to maximise the value of *spot market trading* i.e. to maximise the value of *dispatched load* based on *dispatch bids* less the combined cost of *dispatched generation* ~~based on *generation dispatch offers*~~, *dispatched market network services* ~~and *dispatched wholesale demand response*~~ based on ~~*network dispatch offers, dispatched wholesale demand response based on wholesale demand response*~~ *dispatch bids*, and *dispatched market ancillary services* based on *market ancillary service bids* ~~market ancillary service offers~~ subject to:
  - (1) ~~*dispatch offers, dispatch bids*~~ and *market ancillary service bids* ~~market ancillary service offers~~;
  - (2) *constraints*:
    - (i) due to availability and *commitment*; or
    - (ii) in the case of *semi-scheduling generating units*, identified by the *unconstrained intermittent generation forecast*;
  - (3) *non-scheduled load* requirements in each *region*;
  - (4) *power system security* requirements determined as described in Chapter 4 and the *power system security standards*;
  - (5) *network constraints*;
  - (6) *intra-regional losses* and *inter-regional losses*;
  - (7) *constraints* consistent with *dispatch bid* ~~and *dispatch offer*~~ data;
  - ~~(8) *current levels of dispatched generation, dispatched wholesale demand response, load and market network services*;~~
  - ~~(8) *current levels of dispatched generation, dispatched load, dispatched market network services and dispatched wholesale demand response*;~~
  - (9) *constraints* imposed by *ancillary services* requirements;
  - (10) arrangements designed to ensure pro-rata loading of tied *dispatch bid* ~~and *dispatch offer*~~ data; and
  - (11) the management of negative *settlements residue*, in accordance with clause 3.8.10 and any guidelines issued by AEMO under clause 3.8.10(c).
- (c) AEMO must establish procedures to allow relaxation of *power system constraints* listed in clause 3.8.1(b) in order to resolve infeasible *dispatch solutions*, subject to the following principles:

- (1) the procedures are developed in consultation with *Registered Participants* to achieve a reasonable *dispatch* outcome while maintaining consistency with *AEMO's* obligations to maintain *power system security* and the pricing principles listed in clause 3.9.1; and
- (2) *AEMO* must report to *Registered Participants* any events requiring the relaxation of these *constraints*.
- (d) *AEMO* must develop and *publish* a *dispatch algorithm* to be used by *AEMO* for the purpose of *central dispatch* and pricing in accordance with rules 3.8 and 3.9.
- (e) *AEMO* must use the *dispatch algorithm* to determine the *loading level* in MW for each ~~*scheduled generating unit, semi-scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled loads*~~*scheduled resource* in each *trading interval* in accordance with the principles set out in clause 3.8.1(b).
- (e1) *AEMO* must use the *dispatch algorithm* to determine the quantity of each *market ancillary service* which will be *enabled* for each ~~*ancillary service unit*~~*ancillary service generating unit or ancillary service load*.
- (e2) When *AEMO* determines the quantity of each *market ancillary service* which will be *enabled*, *AEMO* must determine:
  - (1) the required quantity of each *market ancillary service* that may be sourced from any *region* (referred to as the *global market ancillary service requirement*); and
  - (2) any required quantity of such *market ancillary service* which must only be sourced from one or more nominated *regions* (referred to as a *local market ancillary service requirement*).
- (f) *AEMO* may investigate from time to time:
  - (1) the scope for further development of the *dispatch algorithm* beyond the minimum requirements specified in clause 3.8.1(b); and
  - (2) the sufficiency of the *dispatch algorithm* in meeting the minimum requirements specified in clause 3.8.1(b),and following compliance with the *Rules consultation procedures*, *publish* a report setting out its recommendations.

### 3.8.2 Participation in central dispatch

- (a) A *Generator* ~~*or Integrated Resource Provider*~~ must submit ~~*generation dispatch offers*~~*dispatch bids* in respect of its *scheduled generating units*, ~~*or semi-scheduled generating units*~~ *or scheduled integrated resource units* (as the case may be) for each *trading day* in accordance with clause 3.8.6.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) ~~*Generation dispatch offers*~~*Dispatch bids* for a *scheduled generating unit* must include a specified *self-dispatch level* and may include prices and MW

quantities for increased or decreased levels of *generation* above or below this *self-dispatch level*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b1) A *Scheduled Network Service Provider* must submit ~~network dispatch offers~~ dispatch bids in respect of each of its *scheduled network services* for each *trading day* in accordance with clause 3.8.6A.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) Subject to clause 3.8.2(d), *dispatch bids* may be submitted by *Market Participants* in respect of *scheduled loads*, in accordance with clause 3.8.7, and may specify prices and MW quantities for any *trading interval* either for reductions or increases in *load*.
- (c1) ~~Market ancillary service bids~~ Market ancillary service offers may be submitted by *Ancillary Service Providers* in respect of *market ancillary services* in accordance with clause 3.8.7A.
- (d) *Dispatch bids* and ~~market ancillary service bids~~ market ancillary service offers will only be included in the *central dispatch* process by *AEMO* if it is satisfied that adequate communication and/or telemetry is available to support the issuing of *dispatch instructions* and the audit of responses.
- (e) If *AEMO* considers it reasonably necessary for adequate system operation and the maintenance of *power system security*, *Registered Participants* who may otherwise be exempted from participating in the *central dispatch* process must do so to the extent and in the capacity specified by *AEMO*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

### 3.8.3 Central dispatch aggregation guidelines ~~Bid and offer aggregation guidelines~~

- (a) ~~Scheduled Generators, Semi-Scheduled Generators or~~ *Market Participants* who wish to aggregate any of their ~~relevant~~ generating units, integrated resource units, *scheduled network services* or *scheduled loads* for the purpose of *central dispatch* must apply to *AEMO* to do so.
- (a1) ~~Market Participants Market Customers or Demand Response Service Providers (as applicable)~~ who wish to aggregate two or more ancillary service units ~~loads~~ so they are treated as one ancillary service unit ~~ancillary service load~~ for the purpose of *central dispatch*, must apply to *AEMO* to do so.
- (a2) *Demand Response Service Providers* who wish to aggregate two or more *wholesale demand response units* so they are treated as one *wholesale*



*demand response unit* for the purpose of *central dispatch* must apply to *AEMO* to do so.

**Note**

*Wholesale demand response* units are not aggregated for the purposes of clause 3.15 and calculations under that clause even if aggregated for the purpose of *central dispatch*.

- (b) *AEMO* must approve applications for aggregation made under paragraph (a) if the following conditions are fulfilled:
- (1) aggregated *generating units*, *integrated resource units* or *scheduled loads* must be:
    - (i) *connected* at a single site with the same *intra-regional loss factor* or, 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*; ~~and~~
    - (ii) operated by a single ~~*Scheduled Generator*~~, ~~*Semi-Scheduled Generator*~~ ~~or~~ *Market Participant*; ~~and~~
    - (iii) the same technology type and classification and (where relevant) have similar *energy conversion models*;
  - (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 *AGCs* 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 service units* ~~*ancillary services loads*~~ must be *connected* within a single *region* and be operated by a single person (whether ~~or not in the same *Market Participant* capacity~~ ~~in its capacity as a *Market Customer*, *Demand Response Service Provider* or both~~);
  - (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)(1) and (2) after aggregating.
- (b2) *AEMO* must approve applications for aggregation made under paragraph (a2) if the following conditions are fulfilled:
- (1) aggregated *wholesale demand response units* must be *connected* within a single *region* and must have been classified under clause 2.3.6 by a single person in its capacity as a *Demand Response Service Provider*;
  - (2) *power system security* must not be materially affected by the proposed aggregation;
  - (3) *control systems* must satisfy the requirements of clause 2.3.6(e) after aggregation; and



- (4) each other requirement for aggregation in the *wholesale demand response guidelines* must have been satisfied in respect of the proposed aggregation.
- (b3) If *AEMO* approves an application for aggregation made under paragraph (a2), *AEMO* may impose on the relevant *Demand Response Service Provider* such terms and conditions as *AEMO* determines, which may include specification of the *maximum responsive component* of the aggregated *wholesale demand response units* and the circumstances in which *AEMO* may require aggregated *wholesale demand response units* to be disaggregated.
- (b4) A *Demand Response Service Provider* must comply with any conditions imposed by *AEMO* under paragraph (b3) in respect of its *wholesale demand response unit*.
- (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 integrated resource unit*, *scheduled load* and *scheduled network service* is only taken as a reference to aggregated *generating units*, *aggregated integrated resource units*, aggregated *scheduled network services* and aggregated *scheduled loads* 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 integrated resource unit*, *scheduled network service* or *scheduled load* availability and operating status to *AEMO* in the *PASA* under rule 3.7 to allow *power system security* to be effectively monitored.
- (f1) *Demand Response Service Providers* that have been granted aggregated status with respect to *wholesale demand response units* must, if required by *AEMO*, declare individual *wholesale demand response unit* availability and operating status to *AEMO* in the *short term PASA* process under clause 3.7.3 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, wholesale demand response units, scheduled network services, scheduled loads and ancillary services loads and their components.*~~ *AEMO must maintain a database of aggregated scheduled resources and aggregated ancillary service units 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.

### 3.8.3A Ramp rates

~~(a) This clause 3.8.3A applies to a *Scheduled Generator, Semi-Scheduled Generator or Market Participant* with generating units, *scheduled network services and/or scheduled loads* providing ramp rates to AEMO in accordance with the following clauses:~~

(a) This clause 3.8.3A applies to a *Registered Participant* who is required to provide ramp rates to AEMO for its *scheduled resource* in accordance with the following clauses:

(1) with respect to notification of scheduled capacity prior to *dispatch*:

- (i) clause 3.8.4(c);
- (ii) clause 3.8.4(e);
- (iii) clause 3.8.4(d);

(2) with respect to ~~offers for dispatch~~dispatch bids:

- (i) clause 3.8.6(a)(2);
- (ii) clause 3.8.6(g);
- (iii) clause 3.8.6A(b);
- (iv) clause 3.8.7(c); and

(3) with respect to *rebids*, clause 3.8.22(b).

(b) Subject to clauses 3.8.3A(c) and 3.8.3A(i), a ~~*Scheduled Generator, Semi-Scheduled Generator or Market Participant*~~ to which this clause 3.8.3A applies must provide an up ramp rate and a down ramp rate to AEMO for each generating unit, *scheduled integrated resource unit*, *scheduled network service* and/or *scheduled load* that is:

(1) at least:

- (i) in the case of a *scheduled resource* ~~*scheduled network service or scheduled load*~~ that is not aggregated in accordance with clause 3.8.3, ~~3MW/minute; or~~ the resource minimum ramp rate requirement; or
- (ii) in the case of a *scheduled network service* ~~or *scheduled load*~~ that is aggregated in accordance with clause 3.8.3, the amount equal to the product of ~~3MW/minute and the number of individual scheduled network services or individual scheduled loads (and for the avoidance of doubt clause 3.8.3 does not apply to this paragraph (b)(1)(ii); or~~ the resource minimum ramp rate and the number of individual *scheduled network services* (and for the avoidance of doubt clause 3.8.3 does not apply to this subparagraph (ii)); or

- (iii) ~~[deleted] in the case of a scheduled generating unit, or semi-scheduled generating unit that is not aggregated in accordance with clause 3.8.3, the generating unit minimum ramp rate requirement; or~~
  - (iv) in the case of a *scheduled generating unit*, ~~or semi-scheduled generating unit~~, scheduled integrated resource unit or scheduled load that is aggregated in accordance with clause 3.8.3, the sum of ~~the generating unit minimum ramp rate requirements for each individual generating unit (and for the avoidance of doubt clause 3.8.3 does not apply to this paragraph (b)(1)(iv)); and the resource minimum ramp rate requirement for each individual scheduled resource (and for the avoidance of doubt clause 3.8.3 does not apply to this subparagraph (iv)); and~~
- (2) at most the relevant *maximum ramp rate* provided in accordance with clause 3.13.3(b).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- ~~(c) A Scheduled Generator, Semi-Scheduled Generator or Market Participant to which this clause 3.8.3A applies may provide a ramp rate to AEMO that is less than that specified in clause 3.8.3A(b)(1) if the ramp rate is affected by an event or other occurrence that:~~
- ~~(1) physically prevents the relevant generating unit, scheduled load or scheduled network service from attaining a ramp rate of at least that specified in clause 3.8.3A(b)(1); or~~
  - ~~(2) makes it unsafe for the relevant generating unit, scheduled load or scheduled network service to operate at a ramp rate of at least that specified in clause 3.8.3A(b)(1),~~
- ~~for the period of time in which the ramp rate is so affected by that event or other occurrence.~~
- (c) A Market Participant to which this clause 3.8.3A applies may provide a ramp rate to AEMO that is less than the minimum ramp rate requirement if the ramp rate is affected by an event or other occurrence that:
- (1) physically prevents the relevant generating unit, scheduled integrated resource unit, scheduled load or scheduled network service from attaining a ramp rate of at least the minimum ramp rate requirement; or
  - (2) makes it unsafe for the relevant generating unit, scheduled integrated resource unit, scheduled load or scheduled network service to operate at a ramp rate of at least the minimum ramp rate requirement,
- for the period of time in which the ramp rate is so affected by that event or other occurrence.
- (d) If a ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant to which this clause 3.8.3A applies provides a *ramp rate* that is less than the minimum ramp rate requirement~~that specified in clause 3.8.3A(b)(1)~~, it must

provide a *ramp rate* to *AEMO* that is the maximum the relevant *generating unit*, *scheduled integrated resource unit*, *scheduled load* or *scheduled network service* can safely attain at that time.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) ~~If a *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* to which this clause 3.8.3A applies provides a *ramp rate* that is less than that specified in clause 3.8.3A(b)(1), it must simultaneously provide *AEMO* with a brief, verifiable and specific reason why the *ramp rate* is below that specified in clause 3.8.3A(b)(1).~~ If a *Market Participant* to which this clause applies provides a *ramp rate* that is less than the *minimum ramp rate requirement*, it must simultaneously provide *AEMO* with a brief, verifiable and specific reason why the *ramp rate* is below the *minimum ramp rate requirement*.
- (f) The *AER* may require, upon written request, the ~~*Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant*~~ to provide such additional information as it may require from time to time to substantiate and verify the reason provided in clause 3.8.3A(e).
- (g) The *AER* must exercise its powers under clause 3.8.3A(f) in accordance with any guidelines issued by the *AER* from time to time in accordance with the *Rules consultation procedures*.
- (h) ~~If a *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* to which this clause 3.8.3A applies provides a *maximum ramp rate* in accordance with clause 3.13.3(b) of less than that specified in clause 3.8.3A(b)(1), it must provide *AEMO* with a brief, verifiable and specific reason why the *ramp rate* is below that specified in clause 3.8.3A(b)(1).~~ If a *Market Participant* to which this clause applies provides a *maximum ramp rate* in accordance with clause 3.13.3(b) of less than the *minimum ramp rate requirement*, it must provide *AEMO* with a brief, verifiable and specific reason why the *ramp rate* is below the *minimum ramp rate requirement*.
- (i) Clauses 3.8.3A(b), 3.8.3A(c) and 3.8.3A(e) do not apply to a ~~*Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant*~~ to which this clause 3.8.3A applies if:
  - (1) it has provided a *maximum ramp rate* in accordance with clause 3.13.3(b) which is less than ~~that specified in clause 3.8.3A(b)(1)~~ the *minimum ramp rate requirement*; and
  - (2) it has notified *AEMO* of this in accordance with clause 3.8.3A(h).
- (j) In addition to the obligations in clause 3.8.3A(d), if clause 3.8.3A(i) applies, the ~~*Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant*~~ must only provide *ramp rates* that are, at most, the *maximum ramp rate* for the relevant *generating unit*, *scheduled integrated resource unit*, *scheduled load* or *scheduled network service* in accordance with clause 3.13.3(b).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

### 3.8.4 Notification of scheduled capacity

~~All Scheduled Generators and Market Participants with scheduled generating units, wholesale demand response units, scheduled network services and/or scheduled loads must inform AEMO of their available capacity as follows in accordance with the timetable: A Market Participant must inform AEMO of the available capacity of each of its scheduled resources (other than its semi-scheduled generating units) as follows in accordance with the timetable:~~

- (a) ~~Scheduled Generators and a~~ Market Participants must notify AEMO of the available capacity of each of its scheduled resources ~~scheduled generating unit, wholesale demand response unit, scheduled network service and/or scheduled load~~ for each trading interval of the trading day;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) subsequent changes may only be made to the information provided under clause 3.8.4(c), (d), (e) and (f) in accordance with clause 3.8.22;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) for ~~Scheduled Generators~~ scheduled generating units and scheduled integrated resource units, two days ahead of each trading day:

- (1) a MW capacity profile that specifies the MW available for each of the 288 trading intervals in the trading day;
- (2) estimated commitment or decommitment times for scheduled generating units;
- (3) daily energy availability for energy constrained scheduled generating units; ~~and~~  
(3A) energy availability for energy constrained scheduled integrated resource units for the trading intervals in the trading day; and
- (4) an up ramp rate and a down ramp rate;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) for *scheduled loads*, two days ahead of each trading day:
- (1) a MW capacity profile that specifies the MW available for dispatch for each of the 288 trading intervals in the trading day;
  - (2) daily energy availability for energy constrained *scheduled load*; and



- (3) an up *ramp rate* and a down *ramp rate*;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) for *scheduled network services*, two *days* ahead of each *trading day*:
- (1) a MW capacity profile that specifies the *power transfer capability* in each direction available for each of the 288 *trading intervals* in the *trading day*; and
- (2) an up *ramp rate* and a down *ramp rate*; and

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) for *wholesale demand response units*, two *days* ahead of each *trading day*:
- (1) a MW capacity profile that (subject to clauses 3.8.2A(b), (c), (d) and (e)) specifies the *wholesale demand response* available for *dispatch* for each of the 288 *trading intervals* in the *trading day*; and
- (2) an up *ramp rate* and a down *ramp rate*.

### 3.8.5 Submission timing

- (a) To be valid for inclusion in the *central dispatch* process, a *dispatch bid* or ~~*market ancillary service bid*~~ ~~*dispatch offer*~~ ~~*or market ancillary service offer*~~ must be submitted according to the *timetable*.
- (b) Subject to clause 3.8.22, changes to the MW quantities in a dispatch bid may be made after the relevant deadline in the timetable.:
- ~~(1) MW quantities in the dispatch bids;~~
- ~~(2) MW quantities and off-loading prices in the generation dispatch offers;~~  
and
- ~~(3) MW quantities in the network dispatch offers;~~  
~~may be made after the relevant deadline in the timetable.~~
- (c) The submission of *dispatch bids*, ~~*dispatch offers*~~ and ~~*market ancillary service bids*~~ ~~*market ancillary service offers*~~ to AEMO must be made using the *electronic communication system* unless otherwise approved by AEMO.

### 3.8.6 Dispatch bids - generating units and integrated resource units~~Generating unit offers for dispatch~~

- ~~(a0) A Scheduled Generator, Semi-Scheduled Generator and Scheduled Integrated Resource Provider must comply with the applicable requirements of this clause 3.8.6 when submitting a dispatch bid.~~

#### Scheduled Generator~~Scheduled generating units~~

- (a) A ~~*dispatch bid for a scheduled generating unit*~~ ~~*Scheduled Generator's dispatch offer*~~ must:

- (1) contain its intended *self-dispatch level* for each *trading interval*, and may contain up to 10 *price bands* which may be for:
    - (i) possible *dispatch* above the intended *self-dispatch level*; or
    - (ii) possible *off-loading* below the intended *self-dispatch level*,  
by *dispatch instruction*;
  - (2) specify for each of the 288 *trading intervals* in the *trading day*:
    - (i) a MW capacity for the intended *self-dispatch level*;
    - (ii) an incremental MW amount for each *price band* specified in the ~~*dispatch bid*~~*dispatch offer*; and
    - (iii) an up *ramp rate* and a down *ramp rate*;
  - (3) where the ~~*offer-dispatch bid*~~ specifies a *self-dispatch level* of more than zero, specify at least one *price band* for *off-loading* below the intended *self-dispatch level* and the total MW quantity in *price bands* specified for *off-loading* in each *trading interval* must equal the MW quantity of the *self-dispatch level* for that *trading interval* to enable possible *off-loading* to a zero *dispatch level*; and
  - (4) specify a *loading price* or an *off-loading price* for each *price band* specified in the ~~*dispatch bid*~~*dispatch offer*, in dollars and whole cents per MWh, and this price is to apply to the *price band* throughout the *trading day*.
- (b) A *Scheduled Generator's* ~~*dispatch offer*~~ *may-dispatch bid must* specify the daily energy available for energy constrained scheduled generating units.
- (c) ~~A Scheduled Generator's loading prices offered must be equal to or greater than \$0/MWh and may not exceed the product of the market price cap multiplied by the relevant intra-regional loss factor at the Scheduled Generator's transmission network connection point for the scheduled generating unit. The loading price for a scheduled generating unit must be equal to or greater than \$0/MWh and may not exceed the product of the market price cap and the relevant intra-regional loss factor at the transmission network connection point for the scheduled generating unit.~~
- (d) A *loading price* ~~of a Scheduled Generator~~ specified for a *price band* is to be interpreted as the minimum price at which up to the specified MW increment is to be loaded in the *central dispatch* process.
- (e) ~~A Scheduled Generator's off-loading prices must be less than \$0/MWh, that is, negative in sign and may not be less than the product of the market floor price multiplied by the relevant intra-regional loss factor at the Scheduled Generator's transmission network connection point for the scheduled generating unit. The off-loading prices for a scheduled generating unit must be less than \$0/MWh, that is, negative in sign and may not be less than the product of the market floor price and the relevant intra-regional loss factor at the transmission network connection point for the scheduled generating unit.~~
- (f) An *off-loading price* ~~of a Scheduled Generator~~ specified for a *price band* is to be interpreted as the maximum price payable to AEMO by the *Scheduled*



Generator in respect of the ~~scheduled generating unit's generating unit's~~ sent out generation with the ~~scheduled generating unit's generating unit's~~ output reduced below its specified self-dispatch level in the central dispatch process by an amount less than the specified MW increment.

### **Semi-Scheduled Generator**~~Semi-scheduled generating units~~

- ~~(g) A Semi-Scheduled Generator's dispatch offer may contain up to 10 price bands and must specify for each of the 288 trading intervals in the trading day:~~
- ~~(1) an incremental MW amount for each price band specified in the dispatch offer; and~~
  - ~~(2) an up ramp rate and a down ramp rate.~~
- ~~(g) A dispatch bid for a semi-scheduled generating unit may contain up to 10 price bands and must:~~
- ~~(1) specify for each of the 288 trading intervals in the trading day:~~
    - ~~(i) an incremental MW amount for each price band specified in the dispatch bid; and~~
    - ~~(ii) an up ramp rate and a down ramp rate; and~~
  - ~~(2) specify a price for each price band specified in the dispatch bid, in dollars and whole cents per MWh, and this price is to apply to the price band throughout the trading day.~~

### **Scheduled integrated resource units**

- ~~(g1) A dispatch bid for a scheduled integrated resource unit may contain up to 10 price bands for generation and 10 price bands for load and must:~~
- ~~(1) specify for each of the 288 trading intervals in the trading day:~~
    - ~~(i) an incremental MW amount for each price band specified in the dispatch bid; and~~
    - ~~(ii) an up ramp rate and a down ramp rate; and~~
  - ~~(2) specify a price for each price band specified in the dispatch bid, in dollars and whole cents per MWh, and this price is to apply to the price band throughout the trading day.~~
- ~~(g2) A Scheduled Integrated Resource Provider's dispatch bid must specify the energy available for energy constrained scheduled integrated resource units for the trading intervals in the trading day.~~

### **Scheduled and semi-scheduled generating units and scheduled integrated resource units**~~Semi-Scheduled and Scheduled Generators~~

- ~~(h) A dispatch offer of a Semi-Scheduled Generator or Scheduled Generator must meet the following requirements:~~~~A dispatch bid for a scheduled generating unit, semi-scheduled generating unit or scheduled integrated resource unit must meet the following requirements:~~
- ~~(1) the MW quantities specified are to apply at the terminals of the semi-scheduled generating unit or scheduled generating unit or, with~~

~~AEMO's agreement, at any other point in the relevant Generator's electrical installation or on the network;~~ the MW quantities specified are to apply at the terminals of the scheduled generating unit, semi-scheduled generating unit or scheduled integrated resource unit or, with AEMO's agreement, at any other point in the relevant Generator's or Scheduled Integrated Resource Provider's electrical installation or on the network;

- (2) prices specified for each price band specified in the dispatch ~~biddispatch offer~~ must increase monotonically with an increase in available MWs;
- (3) prices specified are to apply at the connection point of the ~~semi-scheduled generating unit or the~~ semi-scheduled generating unit or scheduled integrated resource unit (as the case may be) and for the purposes of central dispatch shall be referred to the regional reference node to which that connection point is assigned as follows:

$$RP = DOP \div LF$$

where

RP is the price specified in the dispatch ~~biddispatch offer~~ when referred to the appropriate regional reference node and must not be greater than the market price cap or less than the market floor price;

DOP is the price as specified in the dispatch ~~biddispatch offer~~; and

LF where the connection point:

- (i) is a transmission network connection point, is the relevant intra-regional loss factor at that connection point; or
  - (ii) is a distribution network connection point, is the product of the distribution loss factor at that connection point ~~multiplied by and~~ the relevant intra-regional loss factor at the transmission network connection point to which it is assigned; and
- (4) the MW quantity specified in each price band in each trading interval must be specified in whole MW.

#### Note

Where two intra-regional loss factors are determined for a transmission network connection point under clause 3.6.2(b)(2), AEMO will determine the relevant intra-regional loss factor for use under this clause in accordance with the procedure determined under clause 3.6.2(d1).

### 3.8.6A Scheduled network service dispatch bids ~~Scheduled network service offers for dispatch~~

~~The following requirements apply to a network dispatch offer to provide scheduled network services:~~ Scheduled Network Service Providers must comply with the following requirements when submitting a dispatch bid to provide scheduled network services:

- (a) the dispatch bid ~~network dispatch offer~~ may contain up to a maximum of ten price bands for each direction of power flow for the scheduled network service;

- (b) the ~~dispatch bidnetwork dispatch offer~~ must specify for each of the 288 trading intervals in the trading day:
  - (1) an incremental power delivery range for each price band specified in the ~~dispatch bidnetwork dispatch offer~~; and
  - (2) an up ramp rate and a down ramp rate;
- (c) the ~~dispatch bidnetwork dispatch offer~~ must specify a price for each price band in dollars and whole cents per MWh and this price is to apply to the price band throughout the trading day;
- (d) within the set of price bands applying to a particular direction of power flow, prices specified for each price band specified in the ~~dispatch bidnetwork dispatch offer~~ must increase monotonically with an increase in available MWs;
- (e) if negative prices are employed, the absolute value of the most negative price in one direction cannot exceed the price for the first price band in the opposite direction, after adjustment for losses;
- (f) the price specified in a price band for power transfer from the scheduled network service's connection point A to connection point B is to be interpreted in the central dispatch process as meaning that the Scheduled Network Service Provider is willing to deliver an increment of power to connection point B, within the power delivery range of the power band, provided that the net revenue which is expected to be derived from that increment per MWh delivered to connection point B is not less than the specified price;
- (g) for the purposes of this clause 3.8.6A, the net revenue that a Scheduled Network Service Provider expects to receive for energy delivered by the scheduled network service to connection point B is to be determined as follows:

$$\text{net revenue} = \text{PB} \times \text{FB} - \text{PA} \times \text{FA}$$

where

PA and PB are the prices at the scheduled network service's connection points A and B, which are assumed not to change as a result of the incremental transfer;

FA and FB are the energy transfers scheduled by central dispatch for receipt by the scheduled network service at connection point A and delivery at connection point B respectively; and

FA and FB are deemed to be related by the loss vs flow relationship published by AEMO;

- (h) for the purposes of this clause 3.8.6A, the price at a connection point will be deemed to be related as follows to the price at the regional reference node to which that connection point is assigned:

$$P = \text{RP} \times \text{LF}$$

where

P is the price at the connection point;

RP is the price at the appropriate regional reference node; and

LF where the *scheduled network service's connection point* is a *transmission network connection point*, is the relevant *intra-regional loss factor* at that *connection point*, or where the *scheduled network service's connection point* is a *distribution network connection point*, is the product of the *distribution loss factor* at that *connection point* ~~multiplied by~~ and the relevant *intra-regional loss factor* at the *transmission network connection point* to which it is assigned;

- (i) prices specified in the ~~dispatch bid~~*network dispatch offer* must not exceed the *market price cap* or be less than the *market floor price*; and
- (j) the power delivery range specified in each *price band* in each *trading interval* must be specified in whole MW.

**Note**

Where two *intra-regional loss factors* are determined for a *transmission network connection point* under clause 3.6.2(b)(2), AEMO will determine the relevant *intra-regional loss factor* for use under this clause in accordance with the procedure determined under clause 3.6.2(d1).

**3.8.7**

**Scheduled load dispatch bids**~~Bids for scheduled load~~

~~The following requirements apply to a dispatch bid for scheduled loads:~~*Market Customers and Integrated Resource Providers must comply with the following requirements when submitting a dispatch bid for a scheduled load:*

- (a) the *dispatch bid* must specify whether the *scheduled load* is to be considered as *normally on* or *normally off*;
- (b) the *dispatch bid* may contain up to a maximum of ten *price bands*;
- (c) the *dispatch bid* must specify for each of the 288 *trading intervals* in the *trading day*:
  - (1) an incremental MW amount for each *price band* specified in the *dispatch bid*; and
  - (2) an up *ramp rate* and a down *ramp rate*;
- (d) the *dispatch bid* must specify a price for each *price band* in dollars and whole cents per MWh and this price is to apply to the *price band* throughout the *trading day*;
- (e) prices specified for each *price band* specified in the *dispatch bid* must increase monotonically with an increase in available MWs;
- (f) prices specified are to apply at the *scheduled load's connection point* and for the purposes of *central dispatch* shall be referred to the *regional reference node* to which that *connection point* is assigned as follows:

$$RP = DOP \div LF$$

where

RP is the price specified in the *dispatch bid* when referred to the appropriate *regional reference node*;

DOP is the price as specified in the *dispatch bid*; and

LF where the *scheduled load's connection point* is a *transmission network connection point*, is the relevant *intra-regional loss factor* at that *connection*

point, or where the *scheduled load's connection point* is a *distribution network connection point*, is the product of the *distribution loss factor* at that *connection point* ~~multiplied by and~~ the relevant *intra-regional loss factor* at the *transmission network connection point* to which it is assigned;

- (g) MW quantities specified for a *price band* are to apply at the *scheduled load's connection point* or at any other point in the *Market Participant's* electrical installation or on the *network* as agreed to by *AEMO*;
- (h) prices specified must be:
  - (1) more than the product of the *market floor price* ~~multiplied by and~~ the relevant *intra-regional loss factor* at the *scheduled load's transmission network connection point*; and
  - (2) less than the product of the *market price cap* ~~multiplied by and~~ the relevant *intra-regional loss factor* at the *scheduled load's transmission network connection point*;
- (i) for a *scheduled load* specified in the *dispatch bid* as being *normally on*, the price specified for a *price band* is to be interpreted in the *central dispatch process* as the price at or above which the *scheduled load* will reduce electricity consumed by up to the MW increment specified in that *price band*;
- (j) for a *scheduled load* specified in the *dispatch bid* as being *normally off*, the price specified for a *price band* is to be interpreted in the *central dispatch process* as the price at or below which the *scheduled load* will increase electricity consumed by up to the MW increment specified in that *price band*;
- (k) the MW capacity quantity specified in each *price band* in each *trading interval* must be specified in whole MW;
- (l) the sum of the MW quantities specified in each *price band* in any *trading interval* must not exceed the maximum capacity of the *scheduled load*; and
- (m) the *dispatch bid* ~~may~~must specify the daily *energy* available for *energy constrained scheduled loads*.

**Note**

Where two *intra-regional loss factors* are determined for a *transmission network connection point* under clause 3.6.2(b)(2), *AEMO* will determine the relevant *intra-regional loss factor* for use under this clause in accordance with the procedure determined under clause 3.6.2(d1).

**3.8.7A Market ancillary service bids ~~Market ancillary services offers~~**

*Ancillary Service Providers must comply with the following requirements when submitting a market ancillary service bid for any type of market ancillary service: The following requirements apply to all market ancillary service offers for each type of market ancillary service:*

- (a) the *market ancillary service bid*~~*market ancillary service offer*~~ may contain up to 10 *price bands*;
- (b) the *market ancillary service bid*~~*market ancillary service offer*~~ must specify for each of the 288 *trading intervals* in the *trading day* an incremental MW amount for each *price band* specified in the *market ancillary service bid*~~*market ancillary service offer*~~;



- (c) the MW quantities specified are to apply at the nominated *connection point* or, with AEMO's agreement, at any other point in the relevant electrical installation or on the *network*;
- (d) the ~~*market ancillary service bid*~~*ancillary service offer* must specify a price for each *price band* specified in the ~~*market ancillary service bid*~~*ancillary service offer*, in dollars and whole cents per MW per hour (an *enabling price*), and this price is to apply to the *price band* throughout the *trading day*;
- (e) *enabling prices* for each *price band* specified in the ~~*market ancillary service bid*~~*ancillary service offer* must increase monotonically with an increase in available MWs;
- (f) *enabling prices* are to apply at the nominated *connection point* or, with AEMO's agreement, at any other point in the relevant electrical installation or on the *network*;
- (g) *enabling prices* offered must be equal to or greater than \$0 per MW per hour and may not exceed the *market price cap*;
- (h) the *enabling price* for a *price band* is to be interpreted as the minimum price at which up to the specified MW response is to be enabled in the *central dispatch* process;
- (i) the MW quantity in each *price band* in each *trading interval* must be specified in whole MW;
- (j) the ~~*market ancillary service bid*~~*ancillary service offer* must include the following values:
  - (1) the *response breakpoint*;
  - (2) the upper and lower *enablement limits*; and
  - (3) the *response capability*;
- (k) an *Ancillary Service Provider* that submits a ~~*market ancillary service bid*~~*ancillary service offer* must ensure that the ~~*ancillary service unit*~~*ancillary service generating unit or ancillary service load*, as the case may be, is at all times capable of responding in the manner contemplated by the *market ancillary service specification*;
- (l) the values associated with a ~~*market ancillary service bid*~~*ancillary service offer* referred to in clause 3.8.7A(j) must represent technical characteristics of the ~~*ancillary service generating unit or ancillary service load*~~*ancillary service unit*; and

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (m) rebids made under clause 3.8.22 of the values associated with the ~~*market ancillary service bid*~~*ancillary service offer* referred to in clause 3.8.7A(j) must represent technical characteristics at the time of *dispatch* of the ~~*ancillary service unit*~~*ancillary service generating unit or ancillary service load*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

**3.8.7B Wholesale demand response dispatch bids**

~~The following requirements apply to all wholesale demand response dispatch bids:~~ Wholesale Demand Response Providers must comply with the following requirements when submitting wholesale demand response dispatch bids:

- (a) the *dispatch bid* may contain up to 10 *price bands*;
- (b) the *dispatch bid* must specify:
  - (1) an incremental MW amount for each *price band* specified in the *dispatch bid*;
  - (2) an up *ramp rate* and a down *ramp rate*;
- (c) the MW quantities specified are to apply at the *connection points* for the *wholesale demand response unit*;
- (d) the *dispatch bid* must specify a price for each *price band*;
- (e) prices specified are to apply at the *connection points* for the *wholesale demand response unit* and for the purposes of *central dispatch* shall be referred to the *regional reference node* as follows:

$$RP = DOP \div LF$$

where

RP is the price specified in the *dispatch bid* when referred to the appropriate *regional reference node*;

DOP is the price as specified in the *dispatch bid*; and

LF is:

- (1) unless paragraph (2) applies, if the *connection point* for the *wholesale demand response unit* is:
    - (i) a *transmission network connection point*, the relevant *intra-regional loss factor* at that *connection point*; or
    - (ii) a *distribution network connection point*, the product of the *distribution loss factor* at that *connection point* ~~multiplied by~~ and the relevant *intra-regional loss factor* at the *transmission network connection point* to which it is assigned; and
  - (2) where two or more *wholesale demand response units* have been aggregated in accordance with clause 3.8.3, a deemed loss factor of 1;
- (f) prices specified must be:
- (1) greater than or equal to the *market floor price* multiplied by LF for the *wholesale demand response unit*; and
  - (2) less than or equal to the *market price cap* multiplied by LF for the *wholesale demand response unit*,



where LF has the meaning given in paragraph (e);

- (g) the price specified for a *price band* is to be interpreted in the *central dispatch* process as the price at or above which the *wholesale demand response unit* will, as applicable:
  - (1) reduce the consumption of electricity;
  - (2) increase the export of electricity; or
  - (3) reduce electricity consumption and start to export electricity,at the *connection point* by up to the MW increment specified in that *price band*;
- (h) the MW quantity in each *price band* in each *trading interval* must be specified in whole MW;
- (i) the sum of the MW quantities specified in each *price band* in each *trading interval* must not exceed the *maximum responsive component* of the *wholesale demand response unit*; and
- (j) the *dispatch bid* may specify the daily *wholesale demand response* available for *wholesale demand response units* that are *wholesale demand response constrained*.

### 3.8.8

#### **Validation of dispatch bids**~~Validation of dispatch bids and offers~~

- ~~(a) If a *dispatch offer*, *dispatch bid* or *market ancillary service offer* is made in accordance with clauses 3.8.6, 3.8.6A, 3.8.7, 3.8.7A or 3.8.7B (whichever is applicable), AEMO must make available to the *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* who submitted the *dispatch offer*, *dispatch bid* or *market ancillary service offer* the following information without delay:~~
  - ~~(1) acknowledgement of receipt of a valid *dispatch offer*, *dispatch bid* or *market ancillary service offer*; and~~
  - ~~(2) the data contained in the *dispatch offer*, *dispatch bid* or *market ancillary service offer* as it will be used by AEMO in the *central dispatch* process.~~
- (a) If a *dispatch bid* or *market ancillary service bid* is made in accordance with clauses 3.8.6, 3.8.6A, 3.8.7, 3.8.7A or 3.8.7B (whichever is applicable), AEMO must make available to the *Market Participant* who submitted the *dispatch bid* or *market ancillary service bid* the following information without delay:
  - (1) acknowledgement of receipt of a valid *dispatch bid* or *market ancillary service bid*; and
  - (2) the data contained in the *dispatch bid* or *market ancillary service bid* as it will be used by AEMO in the *central dispatch* process.
- (b) It is the responsibility of each ~~*Scheduled Generator*, *Semi-Scheduled Generator* and *Market Participant*~~ to check that the data contained in its ~~*dispatch offer*, *dispatch bid* or *market ancillary service bid*~~*market ancillary service offer* as received and to be used by AEMO in the *central dispatch* process is correct.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) ~~If a dispatch offer, dispatch bid or market ancillary service offer is not made in accordance with clauses 3.8.6, 3.8.6A, 3.8.7, 3.8.7A or 3.8.7B (whichever is applicable), AEMO must not include that dispatch offer, dispatch bid or market ancillary service offer in the central dispatch process and must without delay notify the Scheduled Generator, Semi-Scheduled Generator or Market Participant submitting the dispatch offer, dispatch bid or market ancillary service offer of its invalidity and provide to that Scheduled Generator, Semi-Scheduled Generator or Market Participant details of the invalid data. If a dispatch bid or market ancillary service bid is not made in accordance with clauses 3.8.6, 3.8.6A, 3.8.7, 3.8.7A or 3.8.7B (whichever is applicable), AEMO must not include that dispatch bid or market ancillary service bid in the central dispatch process and must without delay notify the Market Participant submitting the dispatch bid or market ancillary service bid of its invalidity and provide to that Market Participant details of the invalid data.~~
- (d) ~~If any details contained within a dispatch offer, dispatch bid or market ancillary service offer are inconsistent with the bid and offer validation data provided by the relevant Scheduled Generator, Semi-Scheduled Generator or Market Participant then AEMO has the right to treat that dispatch offer, dispatch bid or market ancillary service offer as invalid and if it does so must notify the Scheduled Generator, Semi-Scheduled Generator or Market Participant without delay. If any details contained within a dispatch bid or market ancillary service bid are inconsistent with the bid validation data provided by the relevant Market Participant then AEMO has the right to treat that dispatch bid or market ancillary service bid as invalid and if it does so must notify the Market Participant without delay.~~

**3.8.9 Default bids ~~Default offers and bids~~**

- (a) A Market Participant may, at any time, submit a default bid.
- (b) A Market Participant may vary or withdraw a default bid at any time prior to the deadline for submissions of dispatch bids and market ancillary service bids for a trading day in accordance with the timetable.
- (c) Subject to any procedures published in accordance with paragraph (d), a default bid applicable to a trading day must be included by AEMO in the central dispatch process when the deadline for submission of dispatch bids and market ancillary service bids for that trading day arrives in accordance with the timetable if, and only if, no later valid dispatch bid or market ancillary service bid has been submitted pursuant to clauses 3.8.6, 3.8.6A, 3.8.7, 3.8.7A, 3.8.7B or paragraph (b).
- (d) AEMO, in consultation with Market Participants in accordance with the Rules consultation procedures, must develop and publish procedures to determine the circumstances when AEMO may use a prior dispatch bid or market ancillary service bid lodged by a Market Participant as a substitute for a default bid.

- ~~(c) AEMO may disregard a default bid and substitute a prior dispatch bid or market ancillary service bid lodged by a Market Participant determined in accordance with a procedure developed under paragraph (d) as inputs to PASA, pre-dispatch and central dispatch.~~
- ~~(a) A Scheduled Generator, Semi-Scheduled Generator or Market Participant may, at any time, submit a dispatch offer, a dispatch bid or a market ancillary service offer in respect of a scheduled generating unit, semi-scheduled generating unit, wholesale demand response unit, scheduled load, scheduled network service, ancillary service generating unit or ancillary service load to apply from a specified future trading day.~~
- ~~(b) A Scheduled Generator, Semi-Scheduled Generator or Market Participant may vary or withdraw a default dispatch bid, default dispatch offer or market ancillary service offer at any time prior to the deadline for submissions of dispatch offers, dispatch bids and market ancillary service offers for a trading day in accordance with the timetable.~~
- ~~(c) Subject to any procedures published in accordance with clause 3.8.9(d), default dispatch offer, default dispatch bid or market ancillary service offer applicable to a trading day must be included by AEMO in the central dispatch process when the deadline for submission of dispatch offers, dispatch bids and market ancillary service offers for that trading day arrives in accordance with the timetable if, and only if, no later valid dispatch offer, dispatch bid or market ancillary service offer has been submitted pursuant to clauses 3.8.6, 3.8.6A, 3.8.7, 3.8.7A, 3.8.7B or 3.8.9(b).~~
- ~~(d) AEMO, in consultation with Scheduled Generators, Semi-Scheduled Generators and Market Participants in accordance with the Rules consultation procedures, must develop and publish procedures to determine the circumstances when AEMO may use a prior dispatch offer or dispatch bid lodged by a Scheduled Generator, Semi-Scheduled Generator or Market Participant as a substitute for a default dispatch offer or default dispatch bid.~~
- ~~(e) AEMO may disregard a default dispatch offer or a default dispatch bid and substitute a prior dispatch offer or dispatch bid or market ancillary service offer lodged by a Scheduled Generator, Semi-Scheduled Generator or a Market Participant determined in accordance with a procedure developed under clause 3.8.9(d) as input to PASA, pre-dispatch and central dispatch.~~

### 3.8.10 Network constraints

- (a) In accordance with the AEMO power system security responsibilities and any other standards set out in Chapter 4, AEMO must determine any constraints on the dispatch of scheduled resources or ancillary service units ~~scheduled generating units, semi-scheduled generating units, wholesale demand response units, scheduled network services, scheduled loads, ancillary service generating units or ancillary service loads~~ which may result from planned network outages.
- (b) Subject to paragraph (e), AEMO must determine and represent network constraints in dispatch which may result from limitations on intra-regional or inter-regional power flows and, in doing so, must use a fully co-optimised network constraint formulation.

- (c) *AEMO* must, in accordance with the *Rules consultation procedures*, develop and *publish* by 1 June 2010, and, where necessary, amend *network constraint* formulation guidelines, to address, amongst other things, the following matters:
- (1) the circumstances in which *AEMO* will use *alternative network constraint formulations* in *dispatch*;
  - (2) the process by which *AEMO* will identify or be advised of a requirement to create or modify a *network constraint* equation, including in respect of:
    - (i) the methodology to be used by *AEMO* in determining *network constraint* equation terms and co-efficients; and
    - (ii) the means by which *AEMO* will obtain information from, and disseminate information to, ~~*Scheduled Generators, Semi-Scheduled Generators and relevant*~~ *Market Participants*;
  - (3) the methodology to be used by *AEMO* in selecting the form of a *network constraint*, equation including in respect of the location of terms on each side of the equation;
  - (4) the process to be used by *AEMO* for applying, invoking and revoking *network constraint* equations in relation to different types of *network constraints*, including in respect of:
    - (i) the circumstances in which *AEMO* will use *alternative network constraint formulations* and *fully co-optimised network constraint formulations*; and
    - (ii) the dissemination of information to ~~*Scheduled Generators, Semi-Scheduled Generators and relevant*~~ *Market Participants* in respect of this process; and
  - (5) *AEMO's* policy in respect of the management of negative *settlements residue*, by intervening in the *central dispatch* process under clause 3.8.1 through the use of *fully co-optimised network constraint formulations*, including in respect of the process to be undertaken by *AEMO* to manage negative *settlements residue*.
- (d) *AEMO* must at all times comply with the *network constraint* formulation guidelines issued in accordance with paragraph (c).
- (e) Where, in *AEMO's* reasonable opinion, a specific *network constraint* is such that use of a *fully co-optimised network constraint formulation* is not appropriate, *AEMO* may apply an *alternative network constraint formulation* for the expected duration of that *network constraint*, if *AEMO*:
- (1) has previously identified, in guidelines issued in accordance with paragraph (c), that it may use an *alternative network constraint formulation* in respect of that type of *network constraint*; and
  - (2) ~~reasonably considers that it can apply an alternative network constraint formulation without prejudicing its obligation to operate a central dispatch process to dispatch scheduled generating units, semi-scheduled generating units, wholesale demand response units, scheduled loads, scheduled network services and market ancillary~~

~~services in order to balance power system supply and power system demand, consistent with using its reasonable endeavours to maintain power system security in accordance with Chapter 4 of the Rules and to maximise the value of spot market trading on the basis of dispatch offers and dispatch bids, in accordance with clause 3.8.1(a) and (b). reasonably considers that it can apply an alternative network constraint formulation without prejudicing its obligation to operate a central dispatch process to dispatch scheduled resources and market ancillary services in order to balance power system supply and power system demand, consistent with using its reasonable endeavours to maintain power system security in accordance with Chapter 4 of the Rules and to maximise the value of spot market trading on the basis of dispatch bids and market ancillary service bids, in accordance with clause 3.8.1(a) and (b).~~

- (f) AEMO must represent *network constraints* as inputs to the *dispatch* process in a form that can be reviewed after the *trading interval* in which they occurred.
- (g) [Deleted]

### 3.8.11 Ancillary services constraints

- (a) AEMO must determine the quantity and nature of *ancillary services* which:
  - (1) have been provided or procured in accordance with the *AEMO power system security responsibilities* set out in clause 4.3.1 or are otherwise available;
  - (2) are required to be managed in conjunction with *dispatch*; and
  - (3) may impose constraints on *central dispatch*.
- (a1) For each *trading interval* AEMO must impose constraints upon the *dispatch algorithm* to determine the quantity of each *global market ancillary service requirement* and any *local market ancillary service requirements*.

### 3.8.12 System scheduled reserve constraints

AEMO must use its reasonable endeavours to ensure that the *dispatch* process meets all requirements for *scheduled reserves* as described in Chapter 4.

### 3.8.13 Notification of constraints

AEMO must *publish* the parameters used in the *dispatch algorithm* for the modelling of *network constraints*, *regulating capability constraints*, *power system reserve constraints* and *ancillary services*.

### 3.8.14 Dispatch under conditions of supply scarcity

- (a) During times of *supply scarcity*:
  - (1) AEMO must use its reasonable endeavours to ensure all valid and physically realisable *dispatch bids submitted by Market Participants* ~~dispatch bids and dispatch offers submitted by Scheduled Generators, Semi-Scheduled Generators or Market Participants~~ are *dispatched*, including those priced at the *market price cap*; and



- (2) if *AEMO* determines that it will be necessary, after *dispatching* all ~~*dispatch bids and dispatch offers*~~ in accordance with subparagraph (a)(1), to take additional action to address the conditions of *supply scarcity*, *AEMO* must determine which *supply scarcity mechanism*, or combination of *supply scarcity mechanisms*, to use in accordance with paragraph (b) and the procedures developed under clause 3.8.14A(a).
- (b) For the purposes of subparagraph (a)(2), when determining which *supply scarcity mechanism*, or combination of *supply scarcity mechanisms*, to use, *AEMO* must use its reasonable endeavours to choose the mechanism, or combination of mechanisms, that is effective in addressing the conditions of *supply scarcity* while minimising the direct and indirect costs of using such a mechanism or mechanisms.
- (c) Without limitation, examples of the types of direct costs referred to in paragraph (b) include:
  - (1) pre-activation and activation costs payable under *reserve contracts* if *AEMO* *dispatches* or *activates reserves*; and
  - (2) paying compensation to a *Market Customer* that is entitled to compensation under clause 3.12.2, a *Directed Participant* and an *Affected Participant*.
- (d) Without limitation, examples of the types of indirect costs referred to in paragraph (b) include:
  - (1) distortionary effects on the operation of the *market*; and
  - (2) the implied value of lost *load* when *load shedding* occurs as a result of a *clause 4.8.9 instruction*, the value of which may be determined by *AEMO* having regard to the value of customer reliability.

### 3.8.16 Equal priced dispatch bids ~~and dispatch offers~~

If there are ~~*scheduled resources (other than scheduled network services)*~~~~*scheduled generating units, wholesale demand response units, semi-scheduled generating units or scheduled loads*~~, in the same *region*, for which the prices submitted in *dispatch bids* ~~or *dispatch offers*~~ for a particular *trading interval* result in identical prices at their *regional reference node*, then the MW quantities specified in the relevant *price bands* of those *dispatch bids* ~~or *dispatch offers*~~ must be *dispatched* on a pro-rata basis, where this can be achieved without imposing undue costs on any party, or violating other constraints.

### 3.8.17 Self-commitment

- (a) *Slow start generating units* are *generating units* which are unable to *synchronise* and increase *generation* within 30 minutes of receiving an instruction from *AEMO*.
- (b) *Slow start generating units* must *self-commit* to be eligible for *dispatch*.
- (c) A *Scheduled Generator* may only *self-commit* a *scheduled generating unit* in accordance with this clause.
- (d) A *Scheduled Generator* or a *Semi-Scheduled Generator* has a right to *synchronise* its *scheduled generating unit* or *semi-scheduled generating unit*

(as the case may be) to the *power system* and have *AEMO dispatch* that *generating unit* subject to the *dispatch* procedures set out in this rule 3.8.

- (e) A *Scheduled Generator* must advise *AEMO* of its intention to *self-commit* and *synchronise* a *scheduled generating unit* with a *nameplate rating* of 30MW or more.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) Unless otherwise agreed with *AEMO*, the *Scheduled Generator* must advise of its intention under paragraph (e) through *PASA* and *pre-dispatch* by submitting an amended *available capacity* profile of the *scheduled generating unit* into the *market information bulletin board*.
- (g) The exact time of *synchronisation* for a *scheduled generating unit* will be subject to directions from *AEMO* in accordance with Chapter 4.
- (h) A *Scheduled Generator* or *Market Participant* must notify *AEMO* of any changes to *self-commitment* decisions without delay.
- (i) *AEMO* must notify all *Scheduled Generators* and *Market Participants* of any changes to *self-commitment* decisions without delay.

### 3.8.18 Self-decommitment

- (a) A *Scheduled* Generator may only *self-decommit* a *scheduled generating unit* in accordance with this clause.
- (b) *Scheduled Generators* must notify *AEMO* of their planned *self-decommitment* decisions in relation to *slow start generating units* at least 2 days in advance of *dispatch*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) A *Scheduled Generator* must advise *AEMO* of its intention to *self-decommit* and de-synchronise a *generating unit* with a *nameplate rating* of 30 MW or more.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) Unless otherwise agreed with *AEMO*, the *Scheduled Generator* must advise of its intention under paragraph (c) through *PASA* and *pre-dispatch* by submitting an amended *available capacity* profile of the *scheduled generating unit* into the *market information bulletin board*.
- (e) A *Scheduled Generator* ~~or Market Participant~~ must notify *AEMO* as soon as practicable of any changes in their *self-decommitment* decisions.
- (f) *AEMO* must notify all *Scheduled Generators* and *Market Participants* of any changes to *self-decommitment* decisions as soon as practicable.



### 3.8.19 Dispatch inflexibilities

- (a) Subject to ~~paragraph (a2)~~clause 3.8.19(a2), if a ~~Scheduled Generator or Market Participant~~ reasonably expects one or more of its ~~scheduled generating units, wholesale demand response units, scheduled network services or scheduled loads~~scheduled resources (other than semi-scheduled generating units) to be unable to operate in accordance with *dispatch instructions* in any *trading interval*, due to abnormal *plant* conditions or other abnormal operating requirements in respect of ~~that scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load~~the relevant scheduled resource, it must advise AEMO through the PASA or in its ~~dispatch offer or dispatch bid~~ in respect of that ~~scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load~~scheduled resource, as appropriate under this Chapter, that the ~~scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load~~relevant scheduled resource is inflexible in that *trading interval* and must specify a fixed loading level at which the ~~relevant scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load~~scheduled resource is to be operated in that *trading interval*.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (a1) Subject to ~~paragraph (a2)~~clause 3.8.19(a2), if a *Semi-Scheduled Generator* reasonably expects one or more of its *semi-scheduled generating units* to be unable to operate in accordance with *dispatch instructions* in any *trading interval* due to abnormal *plant* conditions or other abnormal operating requirements in respect of that *semi-scheduled generating unit*, it must advise AEMO in its ~~dispatch bid~~dispatch offer in respect of that *semi-scheduled generating unit*, as appropriate under this Chapter, that the *semi-scheduled generating unit* is inflexible in that *trading interval* and must specify a maximum loading level at or below which the *semi-scheduled generating unit* is to be operated in that *trading interval*. Where the specified maximum loading level in these circumstances exceeds the *unconstrained intermittent generation forecast* for the *semi-scheduled generating unit*, the *dispatch level* for the *semi-scheduled generating unit* will nonetheless not exceed the *unconstrained intermittent generation forecast*.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (a2) ~~If clause 3.8.19(a) or clause 3.8.19(a1) applies, the Scheduled Generator, Market Participant or Semi-Scheduled Generator:~~If paragraph (a) or paragraph (a1) applies, the relevant Market Participant:
- (1) must not advise AEMO that a scheduled resource is inflexible under paragraph (a) or paragraph (a1) unless it reasonably expects the scheduled resource to be unable to operate in accordance with dispatch instructions in any trading interval, due to abnormal plant conditions

~~or other abnormal operating requirements in respect of that *scheduled resource*; and must not advise AEMO that a *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled network service* or *scheduled load* is inflexible under clause 3.8.19(a) or clause 3.8.19(a1) unless it reasonably expects the *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled network service* or *scheduled load* to be unable to operate in accordance with dispatch instructions in any trading interval, due to abnormal plant conditions or other abnormal operating requirements in respect of that *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled network service* or *scheduled load*; and~~

- (2) ~~must, as soon as practicable, advise AEMO that a *scheduled resource* is not inflexible once it no longer reasonably expects the *scheduled resource* to be unable to operate in accordance with dispatch instructions in any trading interval, due to abnormal plant conditions or other abnormal operating requirements in respect of that *scheduled resource*. must, as soon as practicable, advise AEMO that a *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled network service* or *scheduled load* is not inflexible once it no longer reasonably expects the *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled network service* or *scheduled load* to be unable to operate in accordance with dispatch instructions in any trading interval, due to abnormal plant conditions or other abnormal operating requirements in respect of that *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled network service* or *scheduled load*.~~

- (b) ~~Where a Market Participant advises AEMO that a *scheduled resource* is inflexible in accordance with paragraph (a) or paragraph (a1) the Market Participant must~~Where a *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* advises AEMO that a *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled network service* or *scheduled load* is inflexible in accordance with clause 3.8.19(a) or 3.8.19(a1) the *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* must:

- (1) provide AEMO with a brief, verifiable and specific reason why the ~~*scheduled resource*~~*scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled network service* or *scheduled load* is inflexible at the same time as it advises AEMO of the inflexibility; and

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (2) provide to the AER, upon written request, in accordance with the guidelines issued by the AER from time to time in accordance with the *Rules consultation procedures* such additional information to

substantiate and verify the reason for such *inflexibility* as the *AER* may require from time to time. The *AER* must provide information provided to it in accordance with this ~~subparagraph (b)(2)~~ clause 3.8.19(b)(2) to any *Market Participant* that requests such information, except to the extent that the information can be reasonably claimed to be *confidential information*.

- (c) ~~Other than in trading intervals for which it has been specified by a Market Participant in the relevant dispatch bid for a scheduled resource that the scheduled resource is inflexible, AEMO will dispatch the scheduled resource in accordance with the prices and price bands specified in the relevant dispatch bid. Other than in trading intervals for which it has been specified by a Scheduled Generator, Semi-Scheduled Generator or Market Participant in the relevant dispatch offer or dispatch bid for a scheduled generating unit, semi-scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load that the scheduled generating unit, semi-scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load is inflexible, AEMO will dispatch the scheduled generating unit, semi-scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load in accordance with the prices and price bands specified in the relevant dispatch offer or dispatch bid.~~
- (d) ~~In respect of scheduled resources which are not slow start generating units, Market Participants may provide AEMO, as part of a dispatch bid in respect of the relevant scheduled resource, with a dispatch inflexibility profile. In respect of scheduled loads, wholesale demand response units, scheduled generating units or semi-scheduled generating units which are not slow start generating units, Scheduled Generators, Semi-Scheduled Generators and Market Participants may provide AEMO, as part of a dispatch offer or dispatch bid in respect of those scheduled loads wholesale demand response units, or generating units or semi-scheduled generating units, with a dispatch inflexibility profile.~~
- (e) A *dispatch inflexibility profile* for a *generating unit* or integrated resource unit must contain the following parameters to indicate its MW capacity and time related *inflexibilities*:
  - (1) The time, T1, in minutes, following the issue of a *dispatch instruction* by *AEMO* to increase its *loading level* from 0 MW, which is required for the *plant* to begin to vary its *dispatch* level from 0 MW in accordance with the instruction;
  - (2) The time, T2, in minutes, that the *plant* requires after T1 (as specified in subparagraph (1)) to reach a specified minimum MW *loading level*;
  - (3) The time, T3, in minutes, that the *plant* requires to be operated at or above its minimum *loading level* before it can be reduced below that level;
  - (4) The time, T4, in minutes, following the issue of a *dispatch instruction* by *AEMO* to reduce *loading level* from the minimum *loading level* (specified under subparagraph (2)) to zero, that the *plant* requires to completely comply with that instruction;

- (5) T1, T2, T3 and T4 must all be equal to or greater than zero;
- (6) The sum (T1 + T2) must be less than or equal to 30 minutes; and
- (7) The sum (T1 + T2 + T3 + T4) must be less than 60 minutes.
- (f) A *dispatch inflexibility profile* for a *scheduled load* must contain parameters to indicate its MW capacity and time related *inflexibilities*.
- (f1) A *dispatch inflexibility profile* for a *wholesale demand response unit* must contain parameters to indicate its MW capacity and time related *inflexibilities*.
- (g) AEMO must use reasonable endeavours not to issue a *dispatch instruction* which is inconsistent with an applicable ~~Scheduled Generator's, Semi-Scheduled Generator's or~~ Market Participant's *dispatch inflexibility profile*.

### 3.8.20 Pre-dispatch schedule

- (a) Each *day*, in accordance with the *timetable*, AEMO must prepare and *publish* a *pre-dispatch schedule* covering each *trading interval* of the period commencing from the next *trading interval* after the current *trading interval* up to and including the final *trading interval* of the last *trading day* for which all valid *dispatch bids* ~~and dispatch offers~~ have been received in accordance with the *timetable* and applied by the *pre-dispatch* process.
- (b) The *pre-dispatch* process is to have a resolution of:
  - (1) one *30-minute period*; and
  - (2) one *trading interval*, for the period of 60 minutes from the time that the relevant *pre-dispatch schedule* is *published* by AEMO, provided that AEMO may at any stage provide the resolution required by this clause 3.8.20(b)(2) for a period longer than 60 minutes,and no analysis will be made of operations within the *trading interval*, other than to ensure that *contingency capacity reserves* are adequate as set out in Chapter 4.
- (c) Subject to paragraph (b), AEMO must determine the *pre-dispatch schedule* on the basis of:
  - (1) *dispatch bids*, ~~dispatch offers~~ and market ancillary service bids ~~market ancillary service offers~~ submitted for the relevant *trading interval* or *trading intervals*;
  - (2) AEMO's forecast of total load ~~power system load~~ for each *region* for the relevant *trading interval* or *trading intervals*; and
  - (3) the *unconstrained intermittent generation forecasts*,and by using a process consistent with the principles for *central dispatch* as set out in clause 3.8.1.
- (d) **[Deleted]**
- (e) Any inputs made to the *pre-dispatch* process by AEMO for the purpose of achieving a physically realisable schedule or to satisfy *power system security* requirements must be made prior to release of the *pre-dispatch schedule* and recorded by AEMO in a manner suitable for audit.
- (f) The *pre-dispatch schedule* must include the details set out in clause 3.13.4(f).

- (g) ~~Each Scheduled Generator, Demand Response Service Provider, Scheduled Network Service Provider and Market Customer which has classified a scheduled load and Market Participant (which has classified an ancillary service generating unit or ancillary service load) The Market Participant in respect of a scheduled resource or an ancillary service unit~~ must ensure that it is able to *dispatch* the relevant *plant* as required under the *pre-dispatch schedule* and is responsible for changing inputs to the *central dispatch* process, if necessary to achieve this, via the rebidding provisions under clause 3.8.22.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) The *pre-dispatch schedule* must be re-calculated and the results re-published by *AEMO* regularly in accordance with the *timetable*, or more often if a change in circumstances is deemed by *AEMO* to be likely to have a significant effect on the operation of the *market*.
- (i) *AEMO* must fully document the operation of the *pre-dispatch* process, including the principles adopted in making calculations required to be included and all such documentation must be made available to ~~Scheduled Generators, Semi-Scheduled Generators and~~ *Market Participants* at a fee to be set by *AEMO* to cover its costs of supplying such documentation.
- (j) Subject to clause 3.8.20(b), the following *pre-dispatch* outputs relating specifically to a ~~scheduled resource or an ancillary service unit generating unit, wholesale demand response unit, scheduled network service, scheduled load or ancillary service load~~ operated by a ~~Scheduled Generator, Semi-Scheduled Generator or Market Participant (as the case may be)~~ must be made available electronically to the relevant ~~Generator or~~ *Market Participant* on a confidential basis:
- (1) the scheduled times of *commitment* and de-commitment of individual *slow start generating units*;
  - (2) scheduled *trading interval* or *30-minute period loading level* (as applicable) for each ~~scheduled resource or ancillary service unit~~ *scheduled entity*;
  - (3) scheduled provision of *market ancillary services*;
  - (4) scheduled *constraints* for the provision of *market ancillary services*;
  - (5) scheduled *constraints* due to *network* limitations;
  - (6) *unconstrained intermittent generation forecasts* for each *trading interval* or *30-minute period* (as applicable); and
  - (7) for each *semi-scheduled generating unit* and *trading interval* or *30-minute period* (as applicable), whether or not a condition for setting a *semi-dispatch interval* or *semi-dispatch intervals* applies.
- (k) ~~Where the pre-dispatch schedule may have failed to dispatch a scheduled generating unit or a semi-scheduled generating unit to maximise the joint value of energy and ancillary services pre-dispatch outputs of a scheduled~~



~~generating unit or semi-scheduled generating unit, due to the generating unit operating outside its enablement limit, AEMO must notify the Scheduled Generator or Semi-Scheduled Generator operating the relevant generating unit electronically on a confidential basis. Where the pre-dispatch schedule may have failed to dispatch a scheduled generating unit, a semi-scheduled generating unit, a scheduled integrated resource unit or a scheduled load, to maximise the joint value of energy and ancillary services pre-dispatch outputs of the relevant scheduled resource, due to the relevant scheduled resource operating outside its enablement limit, AEMO must notify the relevant Market Participant electronically on a confidential basis.~~

### 3.8.21 On-line dispatch process

- (a) ~~Dispatch bids and dispatch offers~~ must be centrally dispatched by AEMO using the dispatch algorithm.
- (a1) [Deleted]
- (b) The dispatch algorithm is to be run by AEMO for each trading interval. If the dispatch algorithm is not successfully run for any trading interval then the values of the last successful run of the dispatch algorithm must be used for that trading interval.
- (c) Central dispatch results in the setting of spot prices and ancillary services prices for each trading interval in accordance with rule 3.9.
- (d) ~~AEMO will issue dispatch instructions to Market Participants electronically. Where possible, dispatch instructions will be issued electronically via the AGC or via an electronic display in the plant control room (which may be onsite or offsite) of the Scheduled Generator, Semi-Scheduled Generator or Market Participant (as the case may be).~~
- (e) AEMO may issue dispatch instructions in some other form if in its reasonable opinion ~~issuing dispatch instructions electronically is not reasonably possible~~ the methods described in paragraph (d) are not possible.
- (f) A ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant must ensure it has facilities to receive dispatch instructions in the manner described in this clause 3.8.21.
- (g) Dispatch instructions that are issued via the AGC system are to be issued progressively at intervals of no more than 5 minutes following re-evaluation of central dispatch to achieve a prompt and smooth implementation of the outcomes of each central dispatch update.
- (h) With the exception of instructions issued by telephone, all dispatch instructions and the times at which they are issued are to be logged automatically and dispatch instructions that are issued by telephone must be recorded by AEMO.
- (i) AEMO may modify or override the dispatch algorithm outcome in accordance with the requirements of clause 4.8.9 or due to plant not conforming to dispatch instructions and in such circumstances AEMO must record the details of the event and the reasons for its action for audit purposes.
- (j) If a ~~scheduled load, wholesale demand response unit, scheduled generating unit or semi-scheduled generating units~~ scheduled resource, in respect of

which a *dispatch inflexibility profile* has been notified to AEMO in accordance with clause 3.8.19, is *dispatched* from 0 MW in any *trading interval* by the *central dispatch process*, then the specified *dispatch inflexibility profile* must be used by AEMO as a *constraint* on the *dispatch* of that ~~*plant-scheduled resource*~~ for the relevant subsequent *trading intervals*.

- (k) A ~~*scheduled load, wholesale demand response unit or generating unit*~~*scheduled resource* whose *dispatch* is constrained in any *trading interval* due to a *dispatch inflexibility profile* submitted under clause 3.8.19 cannot be used as the basis for setting the *spot price* in that *trading interval* at any location.
- (l) AEMO must fully document the operation of the process described in this clause 3.8.21, including the software, algorithms, and the principles adopted in making judgments where they are required in the process and all such documentation must be made available to ~~*Scheduled Generators, Semi-Scheduled Generators and*~~ *Market Participants* at a price reflective of costs incurred by AEMO in providing such documentation.
- (m) Where the *central dispatch process* may have failed to *dispatch* a *scheduled generating unit*, ~~*or semi-scheduled generating unit*~~, *integrated resource unit or scheduled load* to maximise the joint value of *energy* and *ancillary services* due to the relevant ~~*generating unit*~~*scheduled resource* operating outside its *enablement limit*, AEMO must notify the ~~*relevant Scheduled Generator or Semi-Scheduled Generator*~~*Market Participant* operating the relevant ~~*generating unit*~~ electronically on a confidential basis.
- (n) When a *wholesale demand response unit* is *dispatched* to provide *wholesale demand response*, AEMO must as soon as practicable after giving the relevant *dispatch instruction* notify that fact to the *financially responsible Market Participant* for the *connection points* comprised in the *wholesale demand response unit* on a confidential basis.

### 3.8.22 Rebidding

- (a) Prices for each *price band* that are specified in *dispatch bids*, ~~*dispatch offers*~~ and ~~*market ancillary service bids*~~*market ancillary service offers* are firm and no changes to the price for any *price band* are to be accepted under any circumstances.
- (b) Subject to clauses 3.8.3A, 3.8.7A, 3.8.7B, 3.8.19(a) and 3.8.22A, a *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* may submit a *rebid* to vary:
  - (1) its *available capacity*, *daily energy constraints*, *daily wholesale demand response constraints*, *dispatch inflexibilities* and *ramp rates* of ~~*scheduled resource*~~*generating units*, ~~*scheduled network services*~~, ~~*wholesale demand response units and scheduled loads*~~; and
  - (2) the *response breakpoints*, *enablement limits* and *response limits* of *market ancillary services*,

previously notified in a ~~*dispatch offer*~~, a *dispatch bid* or a previous *rebid*.
- (c) A *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* must provide:



- (1) all *rebids* to *AEMO* electronically unless otherwise approved by *AEMO*;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (2) to *AEMO*, at the same time as the *rebid* is made:
  - (i) a brief, verifiable and specific reason for the *rebid*; and
  - (ii) the time at which the event(s) or other occurrence(s) adduced by the relevant *Generator* or *Market Participant* as the reason for the *rebid*, occurred;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

Clause 3.8.22(c)(2) applies in respect of any *rebid* submitted during the *late rebidding period*.

- (3) to the *AER*, upon written request, in accordance with guidelines published by the *AER*, such additional information to substantiate and verify the reason for a *rebid* (including any record made under paragraph (ca)) as the *AER* may require from time to time.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (ca) A *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* who makes a *rebid* during the *late rebidding period* must make a contemporaneous record in relation to the *rebid*, which must include a record of:
  - (i) the material conditions and circumstances giving rise to the *rebid*;
  - (ii) the *Generator's* or *Market Participant's* reasons for making the *rebid*;
  - (iii) the time at which the relevant event(s) or other occurrence(s) occurred; and
  - (iv) the time at which the *Generator* or *Market Participant* first became aware of the relevant event(s) or other occurrence(s).

**Notes**

Clause 1.9 applies to records made under paragraph (ca).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) The *AER* must provide information provided to it in accordance with paragraph (c)(3) to any *Scheduled Generator*, *Semi-Scheduled Generator* or

*Market Participant* that requests such information, except to the extent that the information can be reasonably claimed to be *confidential information*.

- (e) The guidelines referred to in paragraphs (c)(3) must be developed in accordance with the *Rules consultation procedures* and must include:
  - (1) the amount of detail to be included in the information provided to *AEMO* under paragraph (c)(2); and
  - (2) procedures for handling claims by *Scheduled Generators*, *Semi-Scheduled Generators* or *Market Participants* in accordance with paragraph (d) or clause 3.8.19(b)(2) that the information provided to the *AER* by such *Generators* or *Market Participants* under those clauses is *confidential information*.
- (f) The *AER* must *publish* the guidelines developed under this clause 3.8.22 and may amend such guidelines from time to time.
- (g) *AEMO* must:
  - (1) subject to the *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* complying with paragraphs (c)(1) and (c)(2)(i) and (ii), accept the *rebid*; and
  - (2) *publish*, in accordance with clause 3.13.4(p), the time the *rebid* was made and the reason provided by the *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* under paragraph (c)(2)(i).

### 3.8.22A **Offers, bids**~~Bids~~ and rebids must not be false or misleading

- (a) A *Scheduled Generator*, *Semi-Scheduled Generator* or *Market Participant* must not make a ~~dispatch offer~~, *dispatch bid* or *rebid* that is false, misleading or likely to mislead.
  - (a1) For the purposes of paragraph (a), the making of a ~~dispatch offer~~, *dispatch bid* or *rebid* is deemed to represent to other *Generators* or *Market Participants* through the *pre-dispatch schedules* published by *AEMO* that the ~~offer, bid~~*dispatch bid* or *rebid* will not be changed, unless the *Generator* or *Market Participant* becomes aware of a change in the material conditions and circumstances upon which the ~~offer, bid~~*dispatch bid* or *rebid* are based.
  - (a2) For the purposes of paragraph (a), the making of a *wholesale demand response dispatch bid* by a *Demand Response Service Provider* is deemed to represent to other *Market Participants* through the *pre-dispatch schedules* published by *AEMO* that:
    - (1) any *baseline deviation* of the *wholesale demand response unit* in response to a *dispatch instruction* will be the result of *wholesale demand response activity* in relation to the *wholesale demand response unit*; and
    - (2) there will be no *baseline deviation offset* in relation to the *baseline deviation* of the *wholesale demand response unit* in the period for which the *wholesale demand response unit* is *dispatched*.
- (b) Without limiting paragraph (a), a ~~dispatch offer~~, *dispatch bid* or *rebid* is deemed to be false or misleading if, at the time of making ~~such an offer, bid~~

*the ~~dispatch bid~~ or rebid, a Scheduled Generator, Semi-Scheduled Generator or Market Participant:*

- (1) does not have a genuine intention to honour; or
- (2) does not have a reasonable basis to make;

the representations made by reason of paragraph (a1) or paragraph (a2).

- (b1) In any proceeding in which a contravention of paragraph (a) is alleged, in determining whether a *Scheduled Generator, Semi-Scheduled Generator or Market Participant* made a ~~dispatch offer~~, *dispatch bid or rebid* that was false, misleading or likely to mislead, a court must have regard to the market design principle set out in clause 3.1.4(a)(2).
- (c) A *Scheduled Generator, Semi-Scheduled Generator or Market Participant* may be taken to have contravened paragraph (a) notwithstanding that, after all the evidence has been considered, the false or misleading character of the ~~dispatch offer~~, *dispatch bid or rebid* (including either of the matters referred to in subparagraphs (b)(1) and (2)) is ascertainable only by inference from:
  - (1) other ~~dispatch offers~~, *dispatch bids or rebids* made by the *Generator or Market Participant*, or in relation to which the *Generator or Market Participant* had substantial control or influence;
  - (2) other conduct (including any pattern of conduct), knowledge, belief or intention of the relevant *Generator or Market Participant*;
  - (3) the conduct (including any pattern of conduct), knowledge, belief or intention of any other person;
  - (4) information published by *AEMO* to the relevant *Generator or Market Participant*; or
  - (5) any other relevant circumstances.
- (d) A *rebid* must be made as soon as practicable after the *Scheduled Generator, Semi-Scheduled Generator or Market Participant* becomes aware of the change in material conditions and circumstances on the basis of which it decides to vary its ~~dispatch offer or~~ *dispatch bid*.
- (e) In any proceeding in which a contravention of paragraph (d) is alleged, in determining whether the *Generator or Market Participant* made a *rebid* as soon as practicable, a court must have regard to:
  - (1) the market design principle set out in clause 3.1.4(a)(2); and
  - (2) the importance of *rebids* being made, where possible, in sufficient time to allow reasonable opportunity for other *Market Participants* to respond (including by making responsive *rebids*, by bringing one or more *generating units* or integrated resource units into operation or increasing or decreasing the *loading level* of any *generating units* or integrated resource units, or by adjusting the *loading level* of any *load or wholesale demand response units*) prior to the commencement of the *trading interval* to which the *rebid* relates, and may have regard to any other relevant matter, including any of the matters referred to in subparagraphs (c)(1) to (5).

**Note**

This clause is a rebidding civil penalty provision for the purposes of the *NEL*. (See clause 6(2) of the National Electricity (South Australia) Regulations.)

**3.8.23 Failure to conform to dispatch instructions excluding wholesale demand response units**

- (a) If a *scheduled generating unit*, *scheduled integrated resource unit*, *scheduled network service* or *scheduled load* fails to respond to a *dispatch instruction* within a tolerable time and accuracy (as determined in *AEMO's* reasonable opinion), then the *scheduled generating unit*, *scheduled integrated resource unit*, *scheduled network service* or *scheduled load* (as the case may be):
  - (1) is to be declared and identified as non-conforming; and
  - (2) cannot be used as the basis for setting *spot prices*.
- (b) If a *semi-scheduled generating unit* fails to respond to a *dispatch instruction* within a tolerable time and accuracy (as determined in *AEMO's* reasonable opinion) in a *semi-dispatch interval* where the unit's actual *generation* is more than the *dispatch level*, the unit is to be declared and identified as non-conforming and cannot be used as the basis for setting *spot prices*.
- (c) If a ~~*scheduled resource*~~ *scheduled generating unit*, ~~*semi-scheduled generating unit*~~, ~~*scheduled network service*~~ or ~~*scheduled load*~~ is identified as non-conforming under paragraphs (a) or (b):
  - (1) *AEMO* must advise the relevant *Market Participant* that the relevant ~~*scheduled resource*~~ *Scheduled Generator*, ~~*Semi-Scheduled Generator*~~, ~~*Scheduled Network Service Provider*~~ or ~~*Market Customer*~~ that the ~~relevant generating unit~~, *scheduled network service* or *scheduled load* is identified as non-conforming, and request and log a reason for the non-compliance with the *dispatch instruction*;
  - (2) if in *AEMO's* opinion modification of *plant* parameters is necessary or desirable, *AEMO* must request the relevant *Market Participant* ~~*Scheduled Generator*~~, ~~*Semi-Scheduled Generator*~~, ~~*Scheduled Network Service Provider*~~ or ~~*Market Customer*~~ to submit modified *plant* parameters to satisfy *AEMO* that a realistic real time *dispatch* schedule can be carried out;
  - (3) should a *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* fail to meet the requests set out subparagraphs (1) and (2) or if *AEMO* is not satisfied that the *generating unit* or *scheduled integrated resource unit* will respond to future *dispatch instructions* as required, *AEMO* must direct the ~~*generating unit*~~ *or scheduled integrated resource unit* ~~*generating unit's output*~~ to follow, as far as is practicable, a specified output and (where applicable) *consumption* profile to be determined at its discretion by *AEMO*;
  - (4) should a *Scheduled Network Service Provider* fail to meet the requests set out in subparagraphs (1) and (2) or if *AEMO* is not satisfied that the *scheduled network service* will respond to future *dispatch instructions* as required, *AEMO* must direct the *scheduled network service* to follow,

as far as is practicable, a specified transfer profile to be determined at its discretion by *AEMO*; and

- (5) should a *Market Customer* not meet the requests set out in subparagraphs (1) and (2) within a reasonable time of the request, or if *AEMO* is not satisfied that the *scheduled load* will respond to future *dispatch instructions* as required, *AEMO* acting reasonably may invoke a ~~default dispatch bid~~*default bid* lodged by the relevant *Market Customer* or apply *constraints* as it deems appropriate.
- (d) Until a ~~Market Participant Scheduled Generator, Semi-Scheduled Generator, Scheduled Network Service Provider or Market Customer~~ satisfactorily responds to the requests under paragraphs (c)(1) and (2) and *AEMO* is satisfied that the ~~relevant scheduled resource generating unit, scheduled network service or scheduled load (as the case may be)~~ will respond to future *dispatch instructions* as required, ~~that scheduled resource the generating unit, scheduled network service or scheduled load (as the case may be)~~ continues to be non-conforming.
- (e) If ~~a scheduled resource a generating unit, scheduled network service or scheduled load (as the case may be)~~ continues to be non-conforming under this clause 3.8.23 after a reasonable period of time, *AEMO* must prepare a report setting out the details of the non-conformance and forward a copy of the report to the ~~relevant Market Participant Scheduled Generator, Semi-Scheduled Generator, Scheduled Network Service Provider or Market Customer~~ (as the case may be) and the *AER*.
- (f) The direction referred to in paragraphs (c)(3) and (4) must remain in place until the ~~relevant Market Participant Scheduled Generator, Semi-Scheduled Generator or Scheduled Network Service Provider (whichever is relevant)~~ satisfies *AEMO* of rectification of the cause of the non-conformance.
- (g) If an ~~ancillary service unit ancillary service generating unit or ancillary service load~~ is enabled to provide a *market ancillary service* and fails to respond in the manner contemplated by the *market ancillary service specification* (as determined in *AEMO*'s reasonable opinion), then:
  - (1) the ~~ancillary service generating unit or ancillary service load~~*ancillary service unit* is to be declared and identified as non-conforming;
  - (2) *AEMO* must advise the relevant *Market Participant* that the ~~ancillary service generating unit or ancillary service load~~*ancillary service unit* is identified as non-conforming, and request a reason for the non-conformance. The relevant *Market Participant* must promptly provide a reason if requested to do so, and the reason is to be logged; and
  - (3) *AEMO* may set a fixed level for the relevant *ancillary service* (in this clause 3.8.23 called the 'fixed constraint') for the ~~ancillary service unit ancillary service generating unit or ancillary service load~~ and the relevant *Market Participant* must ensure that the ~~ancillary service unit ancillary service generating unit or ancillary service load~~ complies with the fixed constraint set by *AEMO*.
- (h) *AEMO* must lift the fixed constraint in respect of an ~~ancillary service generating unit or ancillary service load~~*ancillary service unit* when *AEMO*

is reasonably satisfied (as a result of a test or otherwise) that the ~~ancillary service generating unit or ancillary service load~~ancillary service unit is capable of responding in the manner contemplated by the *market ancillary service specification*.

- (i) In assessing a report of non-conformance with a *dispatch instruction* by a *scheduled load*, the *AER* shall have regard to whether a ~~default dispatch bid~~default bid had been lodged with *AEMO* and was, or could have reasonably been, applied in the circumstances applicable to that *scheduled load*.

## 3.9 Price Determination

### 3.9.1 Principles applicable to spot price determination

- (a) The principles applying to the determination of prices in the *spot market* are as follows:
  - (1) **[Deleted]**
  - (2) a *spot price* at a *regional reference node* is determined by the *central dispatch process* at that *regional reference node* for each *trading interval*;
  - (2A) the *central dispatch process* must determine an *ancillary service price* for each *market ancillary service* at each *regional reference node* for each *trading interval*;
  - (3) *spot prices* determine *dispatch* such that a *generating unit*, integrated resource unit, *wholesale demand response unit* or scheduled load whose *dispatch bid* ~~or dispatch offer~~ at a location is below the *spot price* at that location will normally be *dispatched*;
  - (3A) ~~scheduled resources, market generating units and non-scheduled integrated resource units~~generating units, scheduled network services or scheduled loads which operate in accordance with a *direction*, are to be taken into account in the *central dispatch process*, but the dispatch bid for the relevant plant~~dispatch offer, in the case of a generating unit or scheduled network service, which operates in accordance with a direction, or the dispatch bid, in the case of a scheduled load which operates in accordance with a direction~~, will not be used in the calculation of the *spot price* for the relevant *trading interval*;
  - (3B) ~~ancillary service generating units and ancillary service loads~~ancillary service units the subject of a fixed constraint (within the meaning of clause 3.8.23(g)) are to be taken into account in the *central dispatch process*, but the price in a market ancillary service bid in respect of the relevant ancillary service unit~~market ancillary service offer which operates in accordance with a fixed constraint~~ will not be used in the calculation of the *ancillary service price* for that *market ancillary service* for the relevant *trading interval*;
  - (3C) ~~generating units or loads~~scheduled resources, market generating units and non-scheduled integrated resource units which operate in accordance with a *direction* to provide an *ancillary service* are to be taken into account in the *central dispatch process*, but the price in a



- ~~market ancillary service bid in respect of the relevant plant~~  
~~ancillary service offer which operates in accordance with a direction,~~  
 will not be used in the calculation of the ancillary service price for that  
 market ancillary service for the relevant trading interval;
- (4) network losses, network constraints, the availability of scheduled network services and ~~dispatch bids for scheduled network services~~~~network dispatch offers~~ are taken into account in the determination of dispatch and consequently affect spot prices and (apart from network losses) ancillary services prices;
  - (5) where the energy output of a ~~Market Participant~~~~Registered Participant~~ is limited above or below the level at which it would otherwise have been dispatched by AEMO on the basis of its ~~dispatch offer or~~ dispatch bid due to ~~a direction to provide an~~ ancillary services ~~direction~~, the ~~Registered Participant's dispatch offer or~~ dispatch bid is taken into account in the determination of dispatch but the ~~dispatch offer or~~ dispatch bid will not be used in the calculation of the spot price for the relevant trading interval;
  - (5A) ~~market ancillary service bids~~~~market ancillary service offers~~, in other ancillary services markets, due to an ancillary services direction are taken into account in the determination of dispatch and consequently affect ancillary service prices in those other ancillary services markets;
  - (6) when the spot price is determined, it applies to both sales and purchases of electricity (including through the provision of wholesale demand response) at a particular location and time;
  - (6A) when an ancillary service price is determined for an ancillary service, it applies to purchases of that ancillary service;
  - (6B) when an ancillary service price is determined under paragraph (6A) for a regulation service, it applies to purchases of that regulation service and, where appropriate, purchases of a delayed service;
  - (7) spot prices provide Market Participants with signals as to the value of providing or cost of consuming electricity at a particular location at a particular time; and
  - (7A) ancillary service prices provide Ancillary Service Providers with signals as to the value of providing the relevant market ancillary service within a particular region at a particular time.
- (b) A single regional reference price provides a reference from which the spot prices are determined within each region.
  - (c) The local spot price at each transmission network connection point is the spot price at the regional reference node for the region to which the connection point is assigned multiplied by the relevant intra-regional loss factor applicable to that connection point.

#### Note

Where two intra-regional loss factors are determined for a transmission network connection point under clause 3.6.2(b)(2), AEMO will determine the relevant intra-regional loss factor for use under this clause in accordance with the procedure determined under clause 3.6.2(d1).



### 3.9.2 Determination of spot prices

- (a) [Deleted]
- (b) [Deleted]
- (c) Each time the *dispatch algorithm* is run by *AEMO*, it must determine a *spot price* for each *regional reference node* for a *trading interval* in accordance with clause 3.8.21(b), provided that if *AEMO* fails to run the *dispatch algorithm* to determine *spot prices* for any *trading interval* then the *spot price* for that *trading interval* is the last *spot price* determined by the *dispatch algorithm* prior to the relevant *trading interval*.
- (d) The *spot price* at a *regional reference node* represents the marginal value of *supply* at that location and time, this being determined as the price of meeting an incremental change in *load* at that location and time in accordance with clause 3.8.1(b).
- (e) Notwithstanding paragraphs (c) or (d), for any *trading interval* if:
  - (1) the *spot price* for that *trading interval* has not already been set by the *central dispatch* process and *AEMO* reasonably determines that the *central dispatch* process may determine that all *load* in a *region* could not otherwise be supplied and *AEMO* issues instructions that are current for that *trading interval* to *Network Service Providers* or *Market Participants* ~~for load shedding to shed load~~, then *AEMO* must set the *spot price* at that *region's regional reference node* to equal the *market price cap*;
  - (2) *AEMO* has declared a *trading interval* to be an *intervention trading interval* under clause 3.9.3(a), then subject to clauses 3.9.3(b2) and 3.9.3(c) *AEMO* must set the *spot price* in accordance with clause 3.9.3;
  - (3) [Deleted]
  - (4) an *administered price period* in accordance with rule 3.14.2 applies, then *AEMO* must limit the *spot price* in accordance with clause 3.14.2(d1); and
  - (5) *AEMO* has made a declaration that the *spot market* in a *region* is suspended under clause 3.14.3, then *AEMO* must set the *spot price* for each *trading interval* during the period for which the *spot market* is suspended in accordance with clause 3.14.5.
- (f) [Deleted]
- (g) [Deleted]
- (h) [Deleted]
- (i) [Deleted]
- (j) [Deleted]
- (k) If a test is being conducted on a *generating unit*, *scheduled integrated resource unit* or *scheduled load* in accordance with clause 3.11.2 and for the purpose of conducting that test, the *generating unit*, *scheduled integrated resource unit* or *scheduled load* is excluded from *central dispatch*, then ~~that generating unit or scheduled load~~ the prices in a dispatch bid for the relevant

scheduled resource cannot be used to set the *spot price* for the relevant *trading interval*.

### 3.9.2A Determination of ancillary services prices

- (a) Each time the *dispatch algorithm* is run by AEMO, it must determine an *ancillary service price* for each *market ancillary service* for each *regional reference node* which is to apply until the next time the *dispatch algorithm* is run, provided that if AEMO fails to run the *dispatch algorithm* to determine *ancillary service prices* for any *trading interval* then the *ancillary service price* for that *trading interval* is the last *ancillary service price* determined by the *dispatch algorithm* prior to the relevant *trading interval*.
- (b) For each *market ancillary service*, including the *regulating raise service* and the *regulating lower service*, each time the *dispatch algorithm* is run by AEMO where a local *ancillary services* constraint has been applied, AEMO must:
  - (1) calculate the marginal price of meeting any *global market ancillary service requirement* for that service;
  - (2) calculate the marginal price of meeting each *local market ancillary service requirement* for that service and;
  - (3) identify for each *local market ancillary service requirement* the *regions* requiring the service.
- (b1) An *ancillary service price* for a *region* is the sum of:
  - (1) the marginal price of meeting any *global market ancillary service requirement* for that service; and
  - (2) the marginal price of meeting each *local market ancillary service requirement* for that service in that *region*.
- (c) If an *ancillary service price* determined using the *dispatch algorithm* under clause 3.9.2A(a):
  - (1) is less than zero, then the *ancillary service price* is reset to zero; and
  - (2) is greater than the *market price cap*, then the *ancillary service price* is reset to the *market price cap*.
- (c1) If a marginal price calculated pursuant to clause 3.9.2A(b) is greater than the *market price cap*, then that marginal price is reset to the *market price cap*.
- (d) If a test is being conducted on ~~a generating unit or scheduled load~~ any scheduled resource in accordance with clause 3.11.2 and for the purpose of conducting that test, the ~~generating unit or scheduled load~~ relevant scheduled resource is excluded from *central dispatch*, then ~~that generating unit or scheduled load~~ the prices in a market ancillary service bid relating to that plant cannot be used to set *ancillary service prices*.

### 3.9.2B Pricing where AEMO determines a manifestly incorrect input

#### Definitions

- (a) In this clause 3.9.2B:

**affected dispatch interval** has the meaning given to it by clause 3.9.2B(d).

**automated procedures** has the meaning given to it by clause 3.9.2B(h).

**dispatch interval subject to review** has the meaning given to it by clause 3.9.2B(b).

**input** means any value that is used by the *dispatch algorithm* including measurements of *power system* status, five minute demand forecast values, *constraint* equations entered by *AEMO*, or software setup but not including *dispatch bids* ~~and dispatch offers~~ submitted by *Registered Participants*.

**Last correct trading interval** means the most recent *trading interval* preceding the affected *trading interval* that is not itself an affected *trading interval*.

- (b) *AEMO* may apply the automated procedures developed in accordance with paragraph (h), to identify a *trading interval* as subject to review ("a **trading interval subject to review**").
- (c) *AEMO* may also determine that a *trading interval* is subject to review if *AEMO* considers that it is likely to be subject to a manifestly incorrect input, but only where the *trading interval* immediately preceding it was a *trading interval* subject to review.
- (d) *AEMO* must determine whether a *trading interval* subject to review contained a manifestly incorrect input to the *dispatch algorithm* ("**an affected trading interval**").
- (e) Where *AEMO* determines an affected *trading interval* *AEMO* must:
  - (1) replace all *spot prices* and *ancillary service prices* with the corresponding prices for the last correct *trading interval*; and
  - (2) recalculate, in accordance with paragraph (h), and adjust the *spot price* for each affected *trading interval*.
- (f) *AEMO* may only carry out the action described in paragraph (e) if no more than 30 minutes have elapsed since the publication of the *spot prices* for the *trading interval* subject to review.
- (g) As soon as reasonably practicable after the action as described in clause 3.9.2B(e), *AEMO* must *publish* a report outlining:
  - (1) The reasons for the determination under clause 3.9.2B(d);
  - (2) Whether that determination was correct;
  - (3) What action will be taken to minimise the risk of a similar event in future.
- (h) *AEMO* must, in consultation with *Registered Participants*, develop procedures for the automatic identification of *trading intervals* subject to review under paragraph (b) ("the **automated procedures**").
- (i) The purpose of the automated procedures is to detect instances where manifestly incorrect inputs may have resulted in material differences in pricing outcomes.
- (j) **[Deleted]**

- (k) At least once each calendar year, *AEMO* must review the effectiveness of the automated procedures referred to in clause 3.9.2B(h).
- (l) *AEMO* must report on the findings of the review under paragraph (k) and must include in that report details of all *trading intervals* subject to review that were not affected *trading intervals* and an analysis of why such intervals were identified as subject to review.
- (m) [Deleted]

### 3.9.3 Pricing in the event of intervention by AEMO

- (a) In respect of a *trading interval* where one or more *AEMO intervention event(s)* is in effect, *AEMO* must declare that *trading interval* to be an *intervention trading interval*.
- (b) Subject to subparagraphs (b2)(1) and (b2)(2), if, in *AEMO's* reasonable opinion, the reason for an *AEMO intervention event* is to obtain either:
  - (1) a service for which a *spot price* or *ancillary service price* is determined by the *dispatch algorithm*; or
  - (2) a service that is a direct substitute for a service for which a *spot price* or *ancillary service price* is determined by the *dispatch algorithm*,then, subject to paragraph (c), *AEMO* must in accordance with the methodology or assumptions *published* pursuant to paragraph (e), set the *spot price* and *ancillary service prices* for an *intervention trading interval* at the value which *AEMO*, in its reasonable opinion, considers would have applied as the *spot price* and *ancillary service prices* for that *trading interval* in the relevant *region* had the *AEMO intervention event* not occurred.
- (b1) Without limitation, examples of the types of service referred to in paragraph (b) include:
  - (1) *energy* that is capable of being provided by any *generating unit* or integrated resource unit within a *region*;
  - (2) *energy* which, as a result of a *network constraint* or other *constraint*, is only capable of being provided by any *generating unit* or integrated resource unit located in the part of the *region* that includes the *regional reference node*;
  - (3) *market ancillary services* that are capable of being provided by any ~~*ancillary service generating unit*~~ *ancillary service unit* within a *region*;
  - (4) *market ancillary services* which, as a result of a *network constraint* or other *constraint*, are only capable of being provided by any ~~*ancillary service generating unit*~~ *ancillary service unit* located in the part of the *region* that includes the *regional reference node*; and
  - (5) demand response that reduces the need for the provision of *energy* or *market ancillary services* within a *region*.
- (b2) *AEMO* must continue to set *spot prices* pursuant to clause 3.9.2 and *ancillary service prices* pursuant to clause 3.9.2A if the reason for an *AEMO intervention event* is to obtain:

- (1) *energy and market ancillary services* which, as a result of a *network constraint* or other *constraint*, are only capable of being provided by a generating unit, *integrated resource unit* or *ancillary service unit* ~~*ancillary service generating unit*~~ in a part of the *region* which, due to the *constraint*, does not include the *regional reference node*; or
  - (2) demand response which, as a result of a *network constraint* or other *constraint*, is needed to reduce demand for *energy* or *market ancillary services* in a part of the *region* which, due to the *constraint*, does not include the *regional reference node*; or
  - (3) a service for which a *spot price* or *ancillary service price* is not determined by the *dispatch algorithm*, regardless of whether *energy* or *market ancillary services* are also provided incidental to the provision of that service.
- (b3) Without limitation, examples of the services referred to in subparagraph (b2)(3) include the provision of:
- (1) *inertia*;
  - (2) *voltage control*;
  - (3) *system strength*; and
  - (4) *non-market ancillary services*.
- (b4) In respect of any *intervention price trading interval* in which more than one *AEMO intervention event* is in effect, *AEMO* must in accordance with the methodology or assumptions *published* pursuant to paragraph (e) set *spot prices* and *ancillary service prices* pursuant to paragraph (b) as if:
- (1) the services described in paragraph (b) were not provided; and
  - (2) *energy* or *market ancillary services* provided incidental to the provision of any services described in subparagraph (b2)(3) were taken into account.
- (c) *AEMO* may continue to set *spot prices* pursuant to clause 3.9.2 and *ancillary service prices* pursuant to clause 3.9.2A until the later of:
- (1) the second *trading interval* after the first *trading interval* in which the *AEMO intervention event* occurred; or
  - (2) if applicable, the second *trading interval* after the restoration of the *power system* to a *secure operating state* after any *direction* which constitutes the *AEMO intervention event* was issued,
- provided that *AEMO* must use its reasonable endeavours to set *spot prices* and *ancillary service prices* pursuant to clause 3.9.3(b) as soon as practicable following the *AEMO intervention event*.
- (d) **[Deleted]**
- (e) Subject to paragraph (g), *AEMO* must develop in accordance with the *Rules consultation procedures* and *publish* details of the methodology it will use, and any assumptions it may be required to make, to determine *spot prices* and *ancillary service prices* for the purposes of paragraph (b).

- (f) The methodology developed by *AEMO* under paragraph (e) must wherever reasonably practicable:
  - (1) be consistent with the principles for *spot price* determination set out in clause 3.9.1;
  - (2) enable *AEMO* to determine and *publish* such prices in accordance with clause 3.13.4; and
  - (3) be consistent with the principles for *ancillary service price* determination set out in clauses 3.9.2 and 3.9.2A.
- (g) *AEMO* may make minor and administrative amendments to the methodology developed under paragraph (e) without complying with the *Rules consultation procedures*.

### 3.9.3C Reliability standard and interim reliability measure

- (a) The *reliability standard* for *generation* and *inter-regional transmission elements* in the *NEM* is a maximum expected *unserved energy (USE)* in a *region* of 0.002% of the total *energy* demanded in that *region* for a given *financial year*.
- (a1) The *interim reliability measure* for *generation* and *inter-regional transmission elements* in the *NEM* is a maximum expected *unserved energy* in a *region* of 0.0006% of the total *energy* demanded in that *region* for a given *financial year*.

**Note:**

The *interim reliability measure* is relevant for contracting interim reliability reserves under rule 11.128 and for the Retailer Reliability Obligation under rule 11.132.

- (b) For the purposes of paragraph (a) and (a1), *unserved energy* is to:
  - (1) include *unserved energy* that results from *power system reliability* incidents caused by an event or events that include (but is not limited to):
    - (i) a single *credible contingency event* on a *generating unit*, *integrated resource unit* or an *inter-regional transmission element*, that may occur concurrently with *generating unit*, *integrated resource unit* or *inter-regional transmission element outages*; or
    - (ii) delays to the construction or commissioning of new *generating units*, *integrated resource units* or *inter-regional transmission elements*, including delays due to industrial action or acts of God; and
  - (2) exclude *unserved energy* that results from *power system security* incidents caused by an event or events that include (but is not limited to):
    - (i) multiple *credible contingency events*, a single *non-credible contingency event* or multiple *non-credible contingency events* on a *generating unit*, *integrated resource unit* or an *inter-regional transmission element*, that may occur concurrently with



- generating unit, integrated resource unit or inter-regional transmission element outages;*
- (ii) *outages of transmission network or distribution network elements that do not significantly impact the ability to transfer power into the region where the USE occurred; or*
- (iii) *industrial action or acts of God at existing electricity production facilities ~~generating facilities~~ or inter-regional transmission facilities.*
- (c) For the purpose of paragraph (b)(1), a "power system reliability incident" is an incident that AEMO considers would have been avoided only if additional active energy had been available to the relevant region or regions from generation, demand response or inter-regional transmission elements. The reference to "inter-regional transmission elements" in this paragraph (c) includes only those transmission elements that materially contribute to inter-regional power transfer.

### 3.9.7 Pricing for constrained-on units

- (a) In the event that a network constraint causes a *scheduled generating unit, scheduled integrated resource unit or a wholesale demand response unit* to be constrained-on in any trading interval, that ~~*scheduled generating unit or wholesale demand response unit*~~ *scheduled resource* must comply with dispatch instructions from AEMO in accordance with its availability as specified in its ~~*dispatch offer or dispatch bid*~~ *as applicable* but may not be taken into account in the determination of the spot price in that trading interval.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) A *Scheduled Generator, Scheduled Integrated Resource Provider or Demand Response Service Provider* that is constrained-on in accordance with paragraph (a) is not entitled to receive from AEMO any compensation due to its spot price being less than its ~~*dispatch bid price*~~ *dispatch offer price*.
- (c) In the event that:
- (1) an *inertia network service* under an *inertia services agreement* is enabled such that an ~~*inertia generating unit*~~ *inertia unit* is constrained on in any trading interval to provide inertia; or
- (2) a *system strength service* under a *system strength services agreement* is enabled such that a ~~*system strength generating unit*~~ *system strength unit* is constrained on in any trading interval to provide a system strength service,

the relevant ~~*generating unit*~~ *inertia unit or system strength unit* must comply with dispatch instructions from AEMO in accordance with its availability as specified in its ~~*dispatch bid*~~ *dispatch offer* but may not be taken into account in the determination of the spot price in that trading interval except to the

extent that the ~~*inertia unit or system strength unit*~~*generating unit* is dispatched at a level above its minimum *loading level*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) A *Scheduled Generator* ~~*or Scheduled Integrated Resource Provider*~~ that is *constrained on* in accordance with paragraph (c) is not entitled to receive from AEMO any compensation due to its *spot price* being less than its ~~*dispatch offer price*~~*dispatch bid price*.

### 3.11 Ancillary Services

#### 3.11.2 Market ancillary services

- (a) The *market ancillary services* are:
- (1) the *fast raise service*;
  - (2) the *fast lower service*;
  - (3) the *slow raise service*;
  - (4) the *slow lower service*;
  - (5) the *regulating raise service*;
  - (6) the *regulating lower service*;
  - (7) the *delayed raise service*; and
  - (8) the *delayed lower service*.
- (b) AEMO must make and *publish* a *market ancillary service specification* containing:
- (1) a detailed description of each kind of *market ancillary service*; and
  - (2) the performance parameters and requirements which must be satisfied in order for a service to qualify as the relevant *market ancillary service* and also when a *Market Participant* provides the relevant kind of *market ancillary service*.
- (c) AEMO may amend the *market ancillary service specification*, from time to time.
- (d) AEMO must comply with the *Rules consultation procedures* when making or amending the *market ancillary service specification*.
- (e) An amendment to the *market ancillary service specification* must not take effect until at least 30 days after the amendment has been *published*.
- (f) In addition to the requirements under rule 4.15, ~~*an Ancillary Service Provider*~~*a Market Participant which has classified a generating unit as an ancillary service generating unit or a load as an ancillary service load* must install and maintain in accordance with the standards referred to in clause 3.11.2(g) monitoring equipment to monitor and record the response of ~~*its ancillary service unit*~~*the ancillary service generating unit or ancillary service load* to changes in the frequency of the power system.

- (g) *AEMO* must develop, and may amend from time to time, standards which must be met by ~~Market Participants~~ *Ancillary Service Providers* in installing and maintaining the equipment referred to in paragraph 3.11.2(f).
- (h) *AEMO* may request ~~a Market Participant with an ancillary service generating unit or an ancillary service load~~ *an Ancillary Services Provider* to provide to *AEMO* a report detailing how the relevant ~~facility~~ *ancillary service unit* responded to a particular change or particular changes in the frequency of the power system. ~~An Ancillary Service Provider~~ *A Market Participant* must provide a report requested under this paragraph 3.11.2(h) promptly but, in any event, in no more than 20 *business days* after notice to do so.
- (i) *AEMO* may from time to time require ~~a Registered Participant which provides a market ancillary service under the Rules~~ *an Ancillary Service Provider* to demonstrate the relevant ~~plant's~~ *ancillary service unit's* capability to provide the *market ancillary service* to the satisfaction of *AEMO* according to standard test procedures. ~~An Ancillary Service Provider~~ *A Registered Participant* must promptly comply with a request by *AEMO* under this clause.

## 3.12 Market Intervention by AEMO

### 3.12.2 Affected Participants and Market Customers entitlements to compensation in relation to AEMO intervention

- (a) In respect of each *intervention pricing 30-minute period*:
  - (1) an *Affected Participant* is entitled to receive from *AEMO*, or must pay to *AEMO*, an amount as determined in accordance with this clause 3.12.2 that will put the *Affected Participant* in the position that the *Affected Participant* would have been in regarding the *scheduled generating unit*, *scheduled integrated resource unit* or *scheduled network service*, as the case may be, had the *AEMO intervention event* not occurred, taking into account solely the items listed in paragraph (j);
  - (2) a *Market Customer*, other than a *Market Customer* which was the subject of any *direction* that constituted the *AEMO intervention event*, is entitled, in respect of one or more of its *scheduled loads*, to receive an amount calculated by applying the following formula:

$$DC = ((RRP \times LF) - BidP) \times QD$$

where:

DC (in dollars) is the amount the *Market Customer* is entitled to receive in respect of that *scheduled load* for the relevant *intervention pricing 30-minute period*;

RRP (in dollars per MWh) is the *regional reference price* in the relevant *intervention pricing 30-minute period* determined in accordance with clause 3.9.3(b);

LF where the *scheduled load's connection point* is a *transmission connection point*, is the relevant *intra-regional loss factor* at that *connection point* or where the *scheduled load's connection point* is a *distribution network connection point*, is the product of the *distribution*

*loss factor* at that *connection point* ~~multiplied by~~ and the relevant *intra-regional loss factor* at the *transmission connection point* to which it is assigned;

*BidP* (in dollars per MWh) is the price of the highest priced *price band* specified in a *dispatch bid* for the *scheduled load* in the relevant *intervention pricing 30-minute period*;

*QD* (in MWh) is the difference between the amount of electricity consumed by the *scheduled load* during the relevant *intervention pricing 30-minute period* determined from the *metering data* and the amount of electricity which *AEMO* reasonably determines would have been consumed by the *scheduled load* if the *AEMO intervention event* had not occurred,

provided that if *DC* is negative for the relevant *intervention pricing 30-minute period*, then the adjustment that the *Market Customer* is entitled to claim in respect of that *scheduled load* for that *intervention pricing 30-minute period* is zero.

**Note**

Where two *intra-regional loss factors* are determined for a *transmission network connection point* under clause 3.6.2(b)(2), *AEMO* will determine the relevant *intra-regional loss factor* for use under this clause in accordance with the procedure determined under clause 3.6.2(d1).

- (b) In respect of a single *AEMO intervention event*, an *Affected Participant* or *Market Customer* is not entitled to receive from, or obliged to pay to, *AEMO* an amount pursuant to this clause 3.12.2 if such an amount is less than \$5,000.
- (c) In respect of each *intervention pricing 30-minute period*, *AEMO* must, in accordance with the *intervention settlement timetable*, notify, in writing:
  - (1) each *Affected Participant* (except *eligible persons*) of:
    - (i) the estimated level of *dispatch* in MW that its *scheduled network service*, ~~or~~ *scheduled generating unit* or *scheduled integrated resource unit* would have been *dispatched* at had the *AEMO intervention event* not occurred; and
    - (ii) an amount equal to:
      - (A) the estimated *trading amount* that it would have received had the *AEMO intervention event* not occurred based on the level of *dispatch* in subparagraph (i), less:
      - (B) the *trading amount* for that *Affected Participant* (excluding from that *trading amount* the amount referred to in clause 3.15.10C(a)) as set out in its *final statement* provided pursuant to clause 3.15.14 for the *billing period* in which the *intervention pricing 30-minute period* occurs;
  - (2) each *eligible person* of:
    - (i) the estimated level of flow in MW of all relevant *directional interconnectors* that would have occurred had the *AEMO intervention event* not occurred; and
    - (ii) an amount equal to:

- (A) the estimated amount that person would have been entitled to receive pursuant to clause 3.18.1(b) had the *AEMO intervention event* not occurred based upon the flows referred to in subparagraph (i); less
  - (B) the actual entitlement of that person under clause 3.18.1(b); and
- (3) each *Market Customer*, the amount calculated by *AEMO* in accordance with paragraph (a)(2) for that *Market Customer*.
- (d) **[Deleted]**
- (e) Subject to paragraph (b), if the figure calculated in accordance with paragraph (c) is:
  - (1) negative, the absolute value of that amount is the amount payable to *AEMO* by the relevant person; and
  - (2) positive, the absolute value of that amount is the amount receivable from *AEMO* by the relevant person.
- (f) Subject to paragraphs (h) and (i), within 15 *business days* of receipt of the notice referred to in paragraph (c) an *Affected Participant* or *Market Customer* may make a written submission to *AEMO* in accordance with paragraph (g) claiming that the amount set out in the notice is greater than or less than its entitlement pursuant to paragraph (a)(1) as an *Affected Participant* or paragraph (a)(2) as a *Market Customer*, as the case may be.
- (g) A written submission made by an *Affected Participant* or *Market Customer* pursuant to paragraph (f) must:
  - (1) itemise each component of the claim;
  - (2) contain sufficient data and information to substantiate each component of the claim;
  - (3) if the *Affected Participant* claims that the amount calculated by *AEMO* pursuant to paragraphs (c)(1) or (c)(2) is less than the amount the *Affected Participant* is entitled to receive pursuant to paragraph (a)(1), specify the difference between such amounts (such difference being the *affected participant's adjustment claim*);
  - (4) if the *Market Customer* claims that the amount calculated by *AEMO* pursuant to paragraph (c)(3) is less than the amount the *Market Customer* is entitled to receive pursuant to paragraph (a)(2), specify the difference between such amounts (such difference being the *market customer's additional claim*); and
  - (5) be signed by an authorised officer of the *Affected Participant* or *Market Customer* certifying that the written submission is true and correct.
- (h) If an *Affected Participant* or *Market Customer* does not deliver to *AEMO* a written submission in accordance with paragraph (f) it shall cease to have an entitlement to compensation under this clause 3.12.2.
- (i) In respect of a single *AEMO intervention event* an *Affected Participant* or *Market Customer* may only make a claim pursuant to paragraph (f) in respect

of that *AEMO intervention event* if it claims that its entitlement or liability pursuant to this clause 3.12.2 is greater than \$5,000.

- (j) In determining the amount for the purposes of paragraph (a)(1), the following must, as appropriate, be taken into account:
  - (1) the direct costs incurred or avoided by the *Affected Participant* in respect of that *scheduled generating unit*, *scheduled integrated resource unit* or *scheduled network service*, as the case may be, as a result of the *AEMO intervention event* including:
    - (i) fuel costs in connection with the *scheduled generating unit*, *scheduled integrated resource unit* or *scheduled network service*;
    - (ii) incremental maintenance costs in connection with the *scheduled generating unit*, *scheduled integrated resource unit* or *scheduled network service*; and
    - (iii) incremental manning costs in connection with the *scheduled generating unit*, *scheduled integrated resource unit* or *scheduled network service*;
  - (2) any amounts which the *Affected Participant* is entitled to receive under clauses 3.15.6 and 3.15.6A; and
  - (3) the *regional reference price published* pursuant to clause 3.13.4(m).
- (k) *AEMO* must in accordance with the *intervention settlement timetable* calculate the *additional intervention claim* being the total of:
  - (1) the sum of the *affected participant's adjustment claims* and *market customer's additional claims* in respect of an *AEMO intervention event*, or in respect of, in *AEMO's* reasonable opinion, a series of related *AEMO intervention events*; plus
  - (2) the total claims by *Directed Participants* pursuant to clauses 3.15.7B(a) and 3.15.7B(a2) in respect of that *AEMO intervention event*, or in respect of that series of related *AEMO intervention events*.
- (l) *AEMO* must in accordance with the *intervention settlement timetable*:
  - (1) refer an *affected participant's adjustment claim* or *market customer's additional claim* to an independent expert to determine such claim in accordance with clause 3.12.3 if the claim is equal to or greater than \$20,000 and the *additional intervention claim* that includes that claim is equal to or greater than \$100,000; and
  - (2) determine in its sole discretion whether all other *affected participants' adjustment claims* and *market customers' additional claims* are reasonable and if so pay the amounts claimed in accordance with clause 3.15.10C.
- (m) If *AEMO* determines pursuant to paragraph (l) that an *affected participant's adjustment claim* or *market customer's additional claim* in respect of a *AEMO intervention event* is unreasonable, it must in accordance with the *intervention settlement timetable*:



- (1) advise the *Affected Participant* or *Market Customer*, as the case may be, in writing of its determination including its reasons for the determination; and
  - (2) refer the matter to an independent expert to determine the claim for compensation in accordance with clause 3.12.3.
- (n) For the purposes of clauses 3.15.8 and 3.15.10C(b) any payment pursuant to paragraph (a) must include interest on the sum of that amount less the payment made in accordance with 3.15.10C(a)(1), computed at the average *bank bill rate* for the period from the date on which payment was required to be made under clauses 3.15.16 and 3.15.17 in respect of the *final statement* for the *billing period* in which the *AEMO intervention event* occurred to the date on which payment is required to be made pursuant to clause 3.15.10C.

### 3.13 Market Information

#### 3.13.1 Provision of information

- (a) In addition to any specific obligation or power of *AEMO* under the *Rules* to provide information, *AEMO* must make available to ~~*Scheduled Generators, Semi-Scheduled Generators and Market Participants*~~ on request any information concerning the operation of the *market* not defined by the *AEMC* or the *Rules* as confidential or commercially sensitive and may charge a fee reflecting the cost of providing any information under this clause 3.13.1(a).
- (b) *AEMO* must make information available to the public on request in respect of *regional reference prices* and, where requested and available, reasons for any significant movements in prices.

#### 3.13.2 Systems and procedures

- (a) Information must be provided to *AEMO* and by *AEMO* on the *electronic communication system* unless:
  - (1) the *electronic communication system* is partially or wholly unavailable, then information will, to the extent of that unavailability, be provided to *AEMO* and by *AEMO* by means of the backup procedures specified by *AEMO* from time to time; or
  - (2) otherwise approved by *AEMO*.
- (b) Information must be provided by using the templates supplied in the *electronic communication system* unless otherwise approved by *AEMO*.
- (c) Where approved by *AEMO*, information may be transmitted to and from *AEMO* and the ~~*Scheduled Generator, Semi-Scheduled Generator or Market Participant*~~ concerned in any agreed format.
- (d) If possible, information provided to *AEMO* must be *time stamped* by *AEMO* on receipt by *AEMO* of the information by the *electronic communication system* and, if stamped, is deemed to be provided at the time indicated by the *time stamp*.
- (e) Information that is *published* by *AEMO* is deemed to be *published* when the information is placed on the *market information bulletin board*.

- (f) The *market information bulletin board* must be accessible by ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants via the *electronic communication system* subject to applicable security requirements.
- (g) Information published or notified to a ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant must be capable of being reviewed by that ~~Generator or~~ Market Participant and be capable of being downloaded from the *market information bulletin board* to the relevant ~~Generator or~~ Market Participant via the *electronic communication system*.
- (h) A ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant must notify AEMO of, and AEMO must publish, any changes to submitted information within the times prescribed in the *timetable*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (i) AEMO must make a copy of all changes to the data available to ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants for verification and resubmission by the relevant ~~Generator or~~ Market Participant as necessary.
- (j) All revisions must be provided on the *electronic communication system* and in the same format as the original information.
- (k) A ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant may withhold information from AEMO which must otherwise be provided under the *Rules* if:
  - (1) the information is of a confidential or commercially-sensitive nature and is not information of a kind that, in the reasonable opinion of the AEMC, is fundamental to the efficient operation of the *market*; or
  - (2) disclosure of the information would have the likely effect of causing detriment to the person required to provide it unless, in the reasonable opinion of the AEMC, the public benefit resulting from the provision of the information outweighs that detriment.
- (l) Nothing in paragraph (k) allows a *Scheduled Generator, Semi-Scheduled Generator or Market Participant* to avoid providing information to AEMO under the *Rules* where that information is generally available.

### 3.13.3 Standing data

- (a) AEMO must establish, maintain, update and publish:
  - (1) a list of all of the ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants and a list of all applications to become a ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant, including *bid validation data*~~bid and offer validation data~~;
  - (2) a list of all of the ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants who will cease to be ~~Scheduled Generators, Semi-Scheduled Generators or~~ Market Participants and the time that each listed ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market

*Participant will cease to be a ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant;*

- (2A) a list of the *expected closure years and closure dates* for all *scheduled generating units, ~~and~~ semi-scheduled generating units and scheduled integrated resource units* notified under clauses 2.1B.3 2.2.1(e)(2A) and 2.10.1(c1), and make such information available on AEMO's website;
- (3) a list of all of the ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants who are or are going to be suspended and the time at which each listed ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant was suspended or will be suspended.
- (b) All ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants must provide AEMO with the ~~bid and offer validation data~~ bid validation data relevant to their ~~scheduled loads, scheduled network services, wholesale demand response units and generating units~~ scheduled resource in accordance with schedule 3.1.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b1) In addition to the information provided to AEMO in paragraph (b), all ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants which have aggregated their ~~scheduled resources~~ scheduled loads, scheduled network services, wholesale demand response units and generating units in accordance with clause 3.8.3, must provide AEMO with:
  - (i) the maximum generation of each individual *scheduled generating unit, ~~or~~ semi-scheduled generating unit or scheduled integrated resource unit* to which the individual *scheduled generating unit, ~~or~~ semi-scheduled generating unit or scheduled integrated resource unit* may be dispatched;
  - (ii) the number of individual *scheduled loads* that have been aggregated in accordance with clause 3.8.3;
  - (iii) the number of *scheduled network services* that have been aggregated in accordance with clause 3.8.3; or
  - (iv) the number of individual *wholesale demand response units* that have been aggregated in accordance with clause 3.8.3.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) All ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants will be required to provide AEMO with information as set out below:
  - (1) forecasts for *connection points* as prescribed in clause 5.11.1; and

- (2) metering information for *settlements* purposes as prescribed in Chapter 7.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) *Network Service Providers* are to maintain a register of data provided by ~~*Scheduled Generators, Semi-Scheduled Generators and Market Participants*~~ for planning and design purposes in accordance with schedule 5.7 of Chapter 5 and are to provide a copy of this register of data to *AEMO* on request and in a form specified by *AEMO*.
- (e) *Network Service Providers* must, without delay, notify and provide *AEMO* with details of any additions or *changes* to the register of data described in clause 3.13.3(d).
- (f) Each year, by a date to be specified by *AEMO*, *Network Service Providers* must provide *AEMO* with the following information:
- (1) expected *network capability* under normal, *outage* and emergency conditions;
  - (2) electrical data sufficient to allow *power system* modelling under steady state and dynamic conditions, this data to be made available in hard copy and an acceptable industry standard electronic format approved by *AEMO*; and
  - (3) operating procedures and practices for *network* operation and maintenance.
- (g) *Network Service Providers* must notify *AEMO* of any changes to the information provided under clause 3.13.3(f) as soon as practicable.
- (h) ~~*Scheduled Generators, Semi-Scheduled Generators and Market Participants*~~ must notify *AEMO* of any changes to ~~*bid validation databid and offer validation data*~~ 6 weeks prior to the implementation of planned changes and without unreasonable delay in the event of unplanned changes.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (i) *Network Service Providers* must notify *AEMO* of any changes or additions to technical data one month prior to the implementation of planned changes and without unreasonable delay in the event of unplanned changes.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (j) ~~*AEMO must conduct an annual review of Scheduled Generator, Semi-Scheduled Generator and Market Participant bid and offer validation data in consultation with Scheduled Generators, Semi-Scheduled Generators and Market Participants and Scheduled Generators, Semi-Scheduled Generators*~~

~~and Market Participants must advise AEMO of any required changes to the data. AEMO must conduct an annual review of bid validation data in consultation with relevant Market Participants, who must advise AEMO of any required changes to the data.~~

- (k) A *Registered Participant* may request from AEMO:
- (1) ~~bid validation data~~*bid and offer validation data*;
  - (2) information that is reasonably required by the *Registered Participant* to carry out *power system* simulation studies (including load flow and dynamic simulations) for planning and operational purposes; and
  - (3) operation and maintenance procedures and practices for *transmission network* or *distribution network* operation, developed for the purposes of schedule 5.1 sufficient to enable the *Registered Participant* to carry out *power system* modelling under normal, *outage* and emergency conditions.

**Note**

In accordance with clause 3.13.3AA, *project developers* may request from AEMO the information set out in clauses 3.13.3(k)(1)-(3) and must treat such information as *confidential information* under clause 3.13.3(l).

- (k1) AEMO must set out in the *Power System Model Guidelines* the circumstances in which AEMO will consider the information under paragraph (k)(2) to be reasonably required by a *Registered Participant*.
- (l) If AEMO holds information requested under clause 3.13.3(k), AEMO must provide the requested information to the *Registered Participant* as soon as practicable, subject to the following requirements:
- (1) If AEMO holds and is required under this paragraph (l) to provide a *releasable user guide* that AEMO received under clause S5.2.4(b)(8), AEMO must provide the *releasable user guide* to the *Registered Participant* in an unaltered form.
  - (2) If AEMO holds and is required under this paragraph (l) to provide a form of the model source code that AEMO received under clauses S5.2.4(b)(6) and S5.2.4(d) or from any other source, AEMO must provide that information:
    - (i) only in the form of, at AEMO's discretion:
      - (A) compiled information (such as, for example, compiled Fortran code in object code or dynamic link library (DLL) form);
      - (B) encrypted information; or
      - (C) a secured format agreed by the provider of the model source code,unless AEMO has the written consent of the person who provided the information to AEMO to provide it in another form; and
    - (ii) in a form that can be interpreted by a software simulation product nominated by AEMO.

- (3) Any information provided by *AEMO* under clause 3.13.3(l) to a *Registered Participant* must be treated as *confidential information*.
- (4) Any information provided by *AEMO* under this clause 3.13.3(l) to a person who is a *project developer* must be treated by that person as *confidential information* even where that person ceases to be a *project developer*.
- (11) *AEMO* may charge a fee, except where the information is requested by a *Network Service Provider* under clause 3.13.3(l5), to recover all reasonable costs incurred in providing information to a *Registered Participant* under this clause 3.13.3.
- (12) For the purposes of clause 3.13.3(l), the provider of the model source code is:
  - (1) the *Generator* or *Integrated Resource Provider* (or the person required under the *Rules* to register as such) if the model source code was received from that ~~*Generator-person*~~ under clause S5.2.4(b)(6) or S5.2.4(d); or
  - (2) ~~[deleted]the person required under the *Rules* to register as a *Generator* in respect of a generating system comprised of generating units with a combined nameplate rating of 30 MW or more, if the model source code was received from that person under clause S5.2.4(b)(6) or S5.2.4(d); or~~
  - (3) the *Generator* or *Integrated Resource Provider*, if the model source code was provided to *AEMO* by a *Network Service Provider* and that same *Network Service Provider* advises *AEMO* that the provider of the model source code is the *Generator* or *Integrated Resource Provider*; or
  - (4) the relevant *Network Service Provider*, if that same *Network Service Provider* advises *AEMO* that the provider of the model source code is itself; or
  - (5) otherwise, the relevant Transmission Network Service Provider.
- (13) If *AEMO* is required under clause 3.13.3(l) to provide information requested under clause 3.13.3(k)(2), *AEMO* may provide:
  - (1) historical information relating to the operating conditions of the *power system*;
  - (2) information and data provided to *AEMO* under clauses 3.13.3(f)(1) and 3.13.3(f)(3) and information of the same type provided under clause 3.13.3(g);
  - (3) *network* dynamic model parameter values obtained under clauses 3.13.3(f)(2) and 3.13.3(g);
  - (4) model parameter values and load flow data derived from a *releasable user guide*;
  - (5) a *network* model of the *national grid*, suitable for load flow and fault studies; and
  - (6) other technical data as listed in Schedules 5.5.3 and 5.5.4.



- (14) Despite clause 3.13.3(1), *AEMO* must not provide information relating to *plant* that is the subject of an *application to connect* or a *connection agreement*, until the earlier of:
- (1) the date when a *connection agreement* relating to that *plant* is executed; or
  - (2) three months before the proposed start of commissioning of that *plant*.
- (15) Subject to clause 3.13.3(16), if a *Transmission Network Service Provider* is responsible for provision of *network* limit advice relating to *power system* stability limits to *AEMO* under clause S5.1.2.3, *AEMO* must, on request from that *Transmission Network Service Provider*, provide all *power system* and *generating system* or integrated resource system model information that is reasonably required for planning and operational purposes, if *AEMO* holds that information, including:
- (1) functional block diagram information, including information provided to *AEMO* under clause S5.2.4(b)(5);
  - (2) *generating unit*, *generating system*, integrated resource unit, integrated resource system and *power system* static and dynamic model information, including model parameters and parameter values; and
  - (3) information provided to *AEMO* in accordance with clause S5.2.4(a).
- (16) If *AEMO* is required to provide information to a *Transmission Network Service Provider* under paragraph (15), this must not include:
- (1) model source code provided to *AEMO* under clauses S5.2.4(b)(6) and S5.2.4(d), except as allowed under clause 3.13.3(1); and
  - (2) information relating to *plant* that is the subject of an *application to connect* until after the execution of the relevant *connection agreement*.
- (17) Any information provided by *AEMO* under clause 3.13.3(15) to a *Transmission Network Service Provider* must be treated as *confidential information*.
- (m) Where special approvals or exemptions have been granted by *AEMO*, including approval to aggregate *generating units*, integrated resource units, *market network services*, *loads for central dispatch*, or exemptions from *central dispatch*, details of such special arrangements must be *published* by *AEMO*.
- (n) *AEMO* must determine and *publish intra-regional loss factors* in accordance with clause 3.6.2 by 1 April each year and whenever changes occur.
- (o) *Network Service Providers* must advise *AEMO* of their *distribution loss factors*, duly authorised by the *AER*, and *AEMO* must *publish* such *distribution loss factors* in accordance with clause 3.6.3(i).
- (p) *AEMO* must *publish* on a quarterly basis details of:
- (1) *interconnector* transfer capability; and
  - (2) the discrepancy between *interconnector* transfer capability and the capacity of the relevant *interconnector* in the absence of *outages* on the relevant *interconnector* only,

for each day of the preceding quarter for all *interconnectors*.

- (p1) *AEMO* must establish, maintain and *publish* a register which identifies:
  - (1) the *Registered Participant* to whom any information is provided under clause 3.13.3(l), including whether the *Registered Participant* is a *project developer*; and
  - (2) the date on which such information was provided.
- (q) In relation to the *declared transmission system* of an *adoptive jurisdiction*:
  - (1) *AEMO* must maintain the register referred to in paragraph (d); and
  - (2) a *declared transmission system operator* must provide *AEMO* with information reasonably required by *AEMO* for maintaining the register and keeping it up to date.

### 3.13.3A Statement of opportunities

#### ESOO information

- (a) By 31 August in each year, *AEMO* must prepare and *publish* at a reasonable charge to cover the cost of production, a *statement of opportunities*, including at least the following information for the subsequent 10 year period:
  - (1) projections of aggregate MW demand and *energy* requirements for each *region*;
  - (2) capabilities of existing *generating units* and *generating units* for which formal commitments have been made for construction or installation;
  - (2A) capabilities of existing *integrated resource units* and *integrated resource units* for which formal commitments have been made for construction or installation;
  - (3) capabilities of proposed *generating units* and *integrated resource units* for which formal commitments have not been made for construction or installation, to the extent it is reasonably practicable to do so;
  - (4) planned *plant retirements* (including *expected closure years* and *closure dates* for any *generating units* and *integrated resource units* in the subsequent 10 year period);
  - (5) a summary of *network capabilities* and *constraints* based upon *Transmission Annual Planning Reports*;
  - (6) proposed *network* developments for which formal commitments have been made for construction or installation;
  - (7) proposed *network* developments for which formal commitments have not been made for construction or installation to the extent it is reasonably practicable to do so;
  - (8) the operational assumptions made by *AEMO* in relation to *generating units*, *integrated resource units*, *wholesale demand response units* and *contracted demand side participation*, including outage information and auxiliary supply information;

- (9) operational and economic information about the *market* to assist planning by *Market Participants and potential Market Participants; and:*
  - ~~(i) *Scheduled Generators, Semi-Scheduled Generators and Market Participants; and*~~
  - ~~(ii) *potential Scheduled Generators, Semi-Scheduled Generators and Market Participants; and*~~
- (10) a *reliability forecast* for each *region* for the *financial year* in which the *statement of opportunities* is published on its website and the subsequent four *financial years* and an *indicative reliability forecast* for the remaining *financial years*.

### Updates

- (b) If after the publication of the most recent *statement of opportunities*, new information becomes available to AEMO relating to the matters set out in subparagraphs (a)(1) to (a)(8) that in AEMO's reasonable opinion materially changes the *statement of opportunities*, AEMO must, as soon as practicable, publish that information in a descriptive form that is consistent with the *statement of opportunities* and, if it considers appropriate, publish on its website an updated *reliability forecast* in accordance with the *Reliability Forecast Guidelines*.

### ESOO information requests

- (c) AEMO may by written notice request a *jurisdictional planning body* to provide AEMO with information that AEMO requires for the preparation of a *statement of opportunities* and the *jurisdictional planning body* must comply with that notice.
- (d) AEMO may, by written request, require provision of information relevant to the matters specified in paragraph (a) from *Registered Participants* that AEMO reasonably requires for the preparation of a *statement of opportunities* or an update under paragraph (b). A request for information must comply with the *Reliability Forecast Guidelines*.
- (e) A *Registered Participant* must comply with an information request under paragraph (d) in accordance with the *Reliability Forecast Guidelines*.
- (f) As soon as practicable after a ~~*Scheduled Generator, Semi-Scheduled Generator, Market Participant*~~ or *Network Service Provider* becomes aware of a material change to any information required for publication by AEMO under paragraph (a), that information must be provided to AEMO by that ~~*Scheduled Generator, Semi-Scheduled Generator, Market Participant*~~ or *Network Service Provider*.
- (g) A *Registered Participant* must ensure that the information provided in response to an information request under paragraph (d) or under paragraph (f) is:
  - (1) not false or misleading in a material particular;
  - (2) in relation to information of a technical nature, is prepared in accordance with *good electricity industry practice*; and

- (3) represents the *Registered Participant's* current intentions and best estimates.

### ESOO reviews

- (h) *AEMO* must, no less than annually, prepare and publish on its website information on:
  - (1) the accuracy to date of the demand and supply forecasts, and any other inputs determined by *AEMO* to be material to *reliability forecasts*; and
  - (2) any improvements made by *AEMO* or other relevant parties to the forecasting process that will apply to the next *statement of opportunities*,in accordance with the *Reliability Forecast Guidelines* (as applicable). Where availability of information makes comparisons to older *statement of opportunities* necessary, *AEMO* may include the *statement of opportunities* for the preceding 24 months.
- (i) A *jurisdictional planning body* must provide assistance *AEMO* reasonably requests in connection with the preparation of a report under paragraph (h).

### 3.13.4 Spot market

- (a) Each week, in accordance with the *timetable*, *AEMO* must *publish* details of the outputs of the *medium term PASA*.
- (b) The details to be *published* by *AEMO* under clause 3.13.4(a) must include the information specified in clause 3.7.2(f).
- (c) Each *day*, in accordance with the *timetable*, *AEMO* must *publish* details of the outputs of the *short term PASA* for each *30-minute period* covered.
- (d) The details of the *short term PASA* *published* each *day* by *AEMO* under clause 3.13.4(c) must include the information specified in clause 3.7.3(h).
- (e) Each *day*, in accordance with the *timetable*, *AEMO* must *publish* a half hourly *pre-dispatch schedule* for the period described in clause 3.8.20(a).
- (f) Subject to clause 3.8.20(b), details of the *pre-dispatch schedule* to be *published* must include the following for each *trading interval* or *30-minute period* (as applicable) in the period covered:
  - (1) forecasts of the most probable *peak load for the total power system ~~load~~* taking into account the most probable availability of *wholesale demand response units* plus required *scheduled reserve* for each *region* and for the total *power system*;
  - (2) forecasts of the most probable *energy* consumption for each *region* and for the total *power system*;
  - (3) forecast *inter-regional loss factors*;
  - (4) aggregate *generating plant and integrated resource units* availability for each *region* and aggregate availability of each type of *market ancillary service* for each *region*;

- (5) projected *supply* surpluses and deficits for each *region*, including shortages of *scheduled reserve* and projected *market ancillary service* surpluses and deficits for each *region*;
- (5A) the aggregated MW allowance (if any) made by *AEMO* for *generation* from *non-scheduled generating systems* and *non-scheduled integrated resource systems* in each forecast under:
  - (i) subparagraphs (f)(1), (f)(2) and (f)(3); and of the most probable peak power system load referred to in clause 3.13.4(f)(1);
  - (ii) [deleted] referred to in clause 3.13.4(f)(2);
  - (iii) [deleted] of aggregate generating plant availability referred to in clause 3.13.4(f)(4); and
  - (iv) subparagraph (f)(5), of projected supply surpluses and deficits referred to in clause 3.13.4(f)(5) but not including shortages of *scheduled reserve* or projected *market ancillary service* surpluses and deficits for each *region*.
- (5B) in respect of each forecast referred to in:
  - (i) subparagraphs (f)(1), (f)(2) and (f)(3); and of the most probable peak power system load referred to in clause 3.13.4(f)(1);
  - (ii) [deleted] referred to in clause 3.13.4(f)(2);
  - (iii) [deleted] of aggregate generating plant availability referred to in clause 3.13.4(f)(4); and
  - (iv) of projected supply surpluses and deficits referred to in clause 3.13.4(f)(5), but not including shortages of *scheduled reserve* or projected *market ancillary service* surpluses and deficits for each *region*,a value that is the sum of that forecast and the relevant aggregated MW allowance (if any) referred to in clause 3.13.4(f)(5A); and
- (6) identification and quantification of:
  - (i) where a projected *supply* deficit in one *region* can be supplemented by a surplus in a neighbouring *region* (dependent on forecast *interconnector* capacities) and the expected *interconnector flow*;
  - (ii) forecast *interconnector* transfer capabilities and the projected impact of any *inter-network tests* on those transfer capabilities; and
  - (iii) when and where *network constraints* may become binding on *dispatch*~~*the dispatch of generation or load*~~.
- (g) Each *day*, in accordance with the *timetable*, *AEMO* must *publish* forecasts of *spot prices* and *ancillary service prices* at each *regional reference node* for each *trading interval* or *30-minute period* (as applicable) ~~of the period~~ described in clause 3.8.20(a), with such forecasts being based on the *pre-dispatch schedule* information.



- (h) Together with its forecast *spot prices*, *AEMO* must *publish* details of the expected sensitivity of the forecast *spot prices* for each *30-minute period* to changes in the forecast *load* or *generating unit* or integrated resource unit availability.
- (h1) Together with its forecast *spot prices*, *AEMO* may *publish* details of the expected sensitivity of the forecast *spot prices* for each *trading interval* to changes in the forecast *load* or *generating unit* or integrated resource unit availability.
- (i) In accordance with the *timetable* or more often if there is a change in circumstances which in the opinion of *AEMO* results in a significant change in forecast *spot price*, or in any event no more than 3 hours after the previous such publication, *AEMO* must prepare and *publish* updated *pre-dispatch schedules* and *spot price forecasts*, including the details specified in clause 3.13.4(f).
- (j) If *AEMO* considers there to be a significant change in a forecast *spot price*, *AEMO* must identify and *publish* the cause of such a change in terms of the aggregate *supply* and demand situation and any *network constraints* in or between the affected *region(s)*.
- (k) *AEMO* must specify and *publish* its criteria for a significant change in forecast *spot price* for the purposes of activating an update in the *published* forecasts.
- (l) Within 5 minutes of each time *AEMO* runs the *dispatch algorithm*, *AEMO* must *publish* the *spot price* for each *regional reference node* calculated in accordance with clause 3.9.2 and the *ancillary service price* for each *market ancillary service* for each *regional reference node* calculated in accordance with clause 3.9.2A.
- (11) In addition to the *spot price*, *AEMO* must *publish* a *30-minute price* for a *regional reference node* for each *30-minute period*.
- (m) Within 5 minutes of the conclusion of each *trading interval*, *AEMO* must *publish* the *regional reference prices* for each *region* for that *trading interval*.
- (n) Each *day*, in accordance with the *timetable*, *AEMO* must *publish* the actual *regional reference prices*, *ancillary service prices*, ~~regional and total MW load and generation for each region and the power system interconnected system loads and energies~~, *inter-regional loss factors* and details of any *network constraints* for each *trading interval* in the previous *trading day*.
- (n1) In accordance with the *timetable*, *AEMO* must *publish* the *inter-regional flows*.
- (o) **[Deleted]**
- (p) Each *day*, in accordance with the *timetable*, *AEMO* must *publish* details of final ~~dispatch offers~~, *dispatch bids* and ~~market ancillary service offers~~ market ancillary service bids and received and actual availabilities of scheduled resources generating units, wholesale demand response units, scheduled network services, scheduled loads and *market ancillary services* for the previous *trading day*, including:
  - (1) the number and times at which *rebids* were made, and the reason provided by the relevant Scheduled Generator, Semi-Scheduled



- ~~Generator or~~ Market Participant for each rebid under clause 3.8.22(c)(2);
- (2) identification of the ~~Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant submitting the ~~dispatch bid, dispatch offer or market ancillary service bid~~~~market ancillary offer~~;
  - (3) the ~~dispatch bid prices or dispatch offer prices~~;
  - (4) quantities for each trading interval;
  - (5) the ~~telemetered~~ ramp rate of each generating unit, ~~integrated resource unit, scheduled load and scheduled network service as measured by AEMO's telemetry system~~;
  - (6) identification of trading intervals for which the plant was specified as being inflexible in accordance with clause 3.8.19 and the reasons provided by the ~~relevant Scheduled Generator, Semi-Scheduled Generator or~~ Market Participant in accordance with clause 3.8.19(b)(1);
  - (7) in respect of a semi-scheduled generating unit, the availability of that generating unit specified in the relevant unconstrained intermittent generation forecast for each trading interval; and
  - (8) in respect of semi-scheduled generating units, the aggregate of the availability of the semi-scheduled generating units referred to in subparagraph (7) in respect of each region for each trading interval.
- (q) Each day, in accordance with the timetable, AEMO must publish details of:
- (1) ~~dispatched generation, dispatched wholesale demand response, dispatched network service or dispatched load for each scheduled generating unit, semi-scheduled generating unit, wholesale demand response unit, scheduled network service and scheduled load respectively in each trading interval; and for each scheduled resource, dispatched generation, dispatched wholesale demand response, dispatched network service or dispatched load (as applicable) in each trading interval; and~~
  - (2) for each semi-scheduled generating unit in each trading interval, whether or not a condition for setting a semi-dispatch interval applied, for the previous trading day.
- (r) In accordance with the timetable, AEMO must publish details of:
- (1) actual generation for each scheduled generating unit, semi-scheduled generating unit and non-scheduled generating unit or non-scheduled generating system;
  - ~~(1A) actual generation for each scheduled integrated resource unit and non-scheduled integrated resource unit or non-scheduled integrated resource system;~~
  - (2) actual network service for each scheduled network service; and
  - (3) actual load for each ~~scheduled integrated resource unit and~~ scheduled load.

- (s) Where *AEMO publishes* details as referred to in clause 3.13.4(r), the requirement to *publish* applies only to data available to *AEMO*.
- (t) *AEMO* may, in *publishing* the details referred to in clause 3.13.4(s), *publish* aggregated information of actual generation for *non-scheduled generating units* or *non-scheduled generating systems* that have a nameplate rating that is less than 30 MW or non-scheduled integrated resource units or non-scheduled integrated resource systems that have a nameplate rating that is less than 5 MW.
- (u) Each time *AEMO* runs the *dispatch algorithm* it must, within 5 minutes, *publish* for the relevant *trading interval*:
  - (1) details of any MW allowance made by *AEMO* for generation from *non-scheduled generating systems* or non-scheduled integrated resource systems in its forecast regional demand;
  - (2) for each *regional reference node* the sum of the actual generation for each *non-scheduled generating unit*, ~~or non-scheduled generating system,~~ non-scheduled integrated resource unit or non-scheduled integrated resource system; and
  - (3) for each *regional reference node*, a value that is the sum of the MW load for the relevant region ~~regional demand value~~ used by *AEMO* in its *dispatch algorithm* to calculate the *spot price* referred to in clause 3.13.4(l) and the sum of the actual generation referred to in clause 3.13.4(u)(2).
- (v) Where *AEMO publishes* the information referred to in clause 3.13.4(u), the requirement for *AEMO* to *publish* applies only to data available to *AEMO*.
- (w) Each *day*, in accordance with the *timetable*, *AEMO* must *publish* details of any operational irregularities arising on the previous *trading day* including, for example, any circumstances in which there was prima facie evidence of a failure to follow *dispatch instructions*.
- (x) Each *trading interval*, *AEMO* must, for each *regional reference node*, *publish* the demand for that *trading interval*, both inclusive and exclusive of the aggregate actual generation from *non-scheduled generating systems* and non-scheduled integrated resource systems.
- (y) In accordance with the *timetable* and no more than 3 hours after the last such notification, *AEMO* must notify electronically on a confidential basis each *Semi-Scheduled Generator* of the *unconstrained intermittent generation forecast* for its *semi-scheduled generating units* that was taken into account for each *trading interval* of the last *pre-dispatch schedule* published by *AEMO* under paragraph (e).
- (z) At intervals to be determined by *AEMO* under rule 3.7A(e), *AEMO* must, in accordance with the *timetable*, *publish* updates to the *congestion information resource*.

### 3.13.7 Monitoring of significant variation between forecast and actual prices by AER

- (a) The *AER* must, after consulting with the *AEMC*, specify and make available to *Registered Participants* and the public, criteria which the *AER* will use to

determine whether there is a significant variation between the *spot price forecast published* by AEMO in accordance with clause 3.13.4 and the actual *spot price* in any *trading interval*. The AER must, in accordance with these criteria, monitor in each *trading interval* whether any such significant variation has occurred.

- (b) The AER must prepare and *publish* a report in respect of each three month period commencing on 1 January, 1 April, 1 July and 1 October in each year. The report must:
  - (1) be *published* no later than 4 weeks after the end of each three month period;
  - (2) identify and review each occasion when, in accordance with the criteria specified under clause 3.13.7(a), the AER considers that a significant price variation has occurred;
  - (3) state why the AER considers that the significant price variation occurred;
  - (4) be available to members of the public on request; and
  - (5) be provided to the AEMC.
- (c) The ACCC or the AEMC may request the AER to report to it on a particular *market outcome*. If the ACCC or the AEMC makes a request of this type, the AER may provide a report on that *market outcome*. The report must review the *market outcome* raised by the ACCC or the AEMC (as the case may be) and state why the AER considers that the *market outcome* occurred.
- (d) The AER must, within 40 *business days* of the end of a week in which any 30 *minute price published* under clause 3.13.4(11) exceeded \$5,000/MWh, prepare and *publish* a report which must:
  - (1) describe the significant factors that contributed to the 30 *minute price* exceeding \$5,000/MWh, including the withdrawal of *generation capacity* and *network availability*;
  - (2) assess whether *rebidding* pursuant to clause 3.8.22 contributed to the 30 *minute price* exceeding \$5,000/MWh; and
  - (3) identify the marginal *scheduled generating units*, ~~and~~ *semi-scheduled generating units* and *scheduled integrated resource units* for the relevant period and all *scheduled generating units*, ~~and~~ *semi-scheduled generating units* and *scheduled integrated resource units* for which any ~~*dispatch bid*~~ *dispatch offer* for a *trading interval* in the relevant period was equal to or greater than \$5,000/MWh and compare these *dispatch bids* ~~*dispatch offers*~~ to relevant *dispatch bids* ~~*dispatch offers*~~ in previous *trading intervals*.
- (e) Where:
  - (1) prices at a *regional reference node* for a *market ancillary service* over a period significantly exceed the relevant *spot price*; and
  - (2) prices for that *market ancillary service* exceed \$5,000 for a number of 30-*minute periods* within that period,the AER must prepare and *publish* a report which:

- (3) describes the significant factors that contributed to the *ancillary service prices* exceeding \$5,000/MWh;
- (4) identifies any linkages between *spot prices* in the *energy market* and *ancillary service prices* contributing to the occurrence; and
- (5) assesses whether *rebidding* pursuant to clause 3.8.22 contributed to prices exceeding \$5,000/MWh.

### 3.13.8 Public information

- (a) AEMO must *publish* on a daily basis the following information for the previous *trading day*:
  - (1) *regional reference price by trading interval*;
  - (2) ~~power system~~ *MW load* for each *region* referred to the *regional reference node* by *trading interval*;
  - (3) *regional electricity consumption in MWh by trading interval*;
  - (4) *inter-regional power flows by trading interval*; and
  - (5) *network constraints by trading interval*.
- (b) All *market information* that AEMO is required to *publish* in accordance with the *Rules* shall also be made available by AEMO to persons other than *Registered Participants* using the *electronic communications system* on the fee basis described in clause 8.7.6. AEMO may make the *market information* available to persons other than *Registered Participants* using a mechanism other than the *market information bulletin board* on the fee basis described in clause 8.7.6, so long as that information is also available on the *market information bulletin board*.
- (c) AEMO must make available for purchase by any party the *statement of opportunities* from the date of *publication* of such statement.
- (d) AEMO must retain all information provided to it under the *Rules* for at least 6 years in whatever form it deems appropriate for reasonably easy access.

### 3.13.12 NMI Standing Data

#### Note:

Clause 3.13.12 only applies in a participating jurisdiction that has not applied the *NERL* as a law of that jurisdiction. In a participating jurisdiction that has applied the *NERL*, the scheme developed by AEMO under clause 3.13.12A supersedes clause 3.13.12 and clause 3.13.12 is revoked (see clause 3.13.12A(d)).

- (a) The authority responsible for administering the *jurisdictional electricity legislation* in for each *participating jurisdiction* may provide AEMO with a *Jurisdictional NMI Standing Data schedule* setting out the categories of *NMI Standing Data* which:
  - (1) *Registered Participants* are required by the *participating jurisdiction's* legislation or licensing requirements to provide to AEMO in relation to *connection points* in that *participating jurisdiction*; and

- (2) *AEMO* must make available to *Market Customers*, ~~or~~ a class of *Market Customers* or *Small Resource Aggregators* on request pursuant to its disclosure obligations under clauses 3.13.12(d) and (e).

Any such schedule must contain the matters set out in clause 3.13.12(c).

- (b) A responsible authority may from time to time amend the *Jurisdictional NMI Standing Data schedule* in respect of the relevant *participating jurisdiction*, which amendments must be consistent with the matters set out in clause 3.13.12(c), and must promptly provide the amended schedule to *AEMO*.
- (c) A valid *Jurisdictional NMI Standing Data schedule* must contain the following items:
- (1) a specification of the categories of *NMI Standing Data* which *AEMO* must provide to *Market Customers*, ~~or~~ a specified class of *Market Customers* or *Small Resource Aggregators*, on request, pursuant to its disclosure obligations under clauses 3.13.12(d) and (e), in respect of *connection points* in the relevant *participating jurisdiction*;
  - (2) details of the *Jurisdictional NMI Standing Data suppliers*, including which *Registered Participants* are required to provide that data in respect of particular *connection points* within that *participating jurisdiction*;
  - (3) the timetable which the relevant *participating jurisdiction* will implement to ensure *Jurisdictional NMI Standing Data suppliers* supply *NMI Standing Data* in respect of *connection points* in that *participating jurisdiction* to *AEMO*;
  - (4) the criteria which *AEMO* must use to identify whether *AEMO* must disclose *NMI Standing Data* for *connection points* in that *participating jurisdiction* to particular *Market Customers* or *Small Resource Aggregators*, pursuant to its disclosure obligations under clauses 3.13.12(d) and (e);
  - (5) the purposes connected with the facilitation of the wholesale electricity market for which the *Market Customer* or *Small Resource Aggregator* may use *NMI Standing Data*;
  - (6) any additional information or criteria as may be determined by the authority responsible for administering the *jurisdictional electricity legislation* as necessary or appropriate in relation to the obligations of *Jurisdictional NMI Standing Data suppliers* and the release by *AEMO* of *NMI Standing Data* for *connection points* in that *participating jurisdiction*.
- (d) *AEMO* must:
- (1) *publish* the *Jurisdictional NMI Standing Data schedules* and any amendments to those schedules provided to it by the responsible authorities under clauses 3.13.12(a) and (b); and
  - (2) subject to clause 3.13.12(e), make available to *Market Customers* and *Small Resource Aggregators* on request *NMI Standing Data* within the relevant categories in respect of *connection points* in a *participating*



*jurisdiction* described in the *Jurisdictional NMI Standing Data schedule* for that *participating jurisdiction*.

- (e) *AEMO* must only provide *NMI Standing Data* under this clause 3.13.12 to a *Market Customer* or *Small Resource Aggregator*:
  - (1) that is a *Market Customer*, ~~or~~ a member of a class of *Market Customers* or a *Small Resource Aggregator* fitting the criteria stated in the relevant *Jurisdictional NMI Standing Data schedule* as being entitled to receive that data;
  - (2) in accordance with the relevant valid *Jurisdictional NMI Standing Data schedule*; and
  - (3) for the purposes described in clause 3.13.12(g).
- (f) Each *Registered Participant* which is a *Jurisdictional NMI Standing Data supplier* must provide the *NMI Standing Data* to *AEMO* which it is required to provide in accordance with the relevant *Jurisdictional NMI Standing Data schedule*, if any such *Jurisdictional NMI Standing Data schedule* has been provided to *AEMO* under clause 3.13.12(a):
  - (1) at no charge and in the format reasonably required by *AEMO*; and
  - (2) after having first done whatever may be required or otherwise necessary under any applicable privacy legislation (including if appropriate making relevant disclosures or obtaining relevant consents from end-use customers) taking into account that *AEMO* will use and disclose the *NMI Standing Data* in accordance with the *Rules*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) *Market Customers* or *Small Resource Aggregators* must only use *NMI Standing Data* provided to it by *AEMO* under this clause 3.13.12 for the purposes permitted by the relevant *Jurisdictional NMI Standing Data schedule*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) Where a responsible authority has provided *AEMO* with a *Jurisdictional NMI Standing Data schedule* for the relevant *participating jurisdiction* and a *Registered Participant* which is a *Jurisdictional NMI Standing Data supplier* fails to provide *AEMO* with *NMI Standing Data* in accordance with clause 3.13.12(f) and *AEMO* becomes aware of that failure, then:
  - (1) *AEMO* must advise the *Registered Participant* that, in its opinion, the *Registered Participant* is failing to comply with clause 3.13.12(f);
  - (2) if the *Registered Participant* fails to provide *AEMO* with the *NMI Standing Data* within 5 *business days* of the notice provided under clause 3.13.12(h)(1), *AEMO* must notify the *AER* and the relevant responsible authority of the failure and the failure by the *Registered*



- Participant* to provide the *NMI Standing Data* is to be dealt with by the responsible authority under the relevant *participating jurisdiction's* legislation or licensing requirements unless the responsible authority notifies *AEMO* otherwise in accordance with clause 3.13.12(h)(3); and
- (3) if, after receiving a notice from *AEMO* under clause 3.13.12(h)(2), the responsible authority notifies *AEMO* that the relevant *participating jurisdiction's* legislation or licensing requirements do not contain a regime which empowers the responsible authority to compel the *Registered Participant* to provide the *NMI Standing Data* to *AEMO*, *AEMO* must notify the *AER* of the failure by the *Registered Participant* to provide the *NMI Standing Data* under clause 3.13.12(f).
- (i) Where a responsible authority has provided *AEMO* with a *Jurisdictional NMI Standing Data schedule* for the relevant *participating jurisdiction* and a *Market Customer* or *Small Resource Aggregator*, that has been provided with *NMI Standing Data* by *AEMO* under clause 3.13.12(d) in accordance with that schedule, fails to use that *NMI Standing Data* in accordance with clause 3.13.12(g), and *AEMO* becomes aware of that failure, then:
    - (1) *AEMO* must advise the *Market Customer* or *Small Resource Aggregator* that, in its opinion, the ~~*Market Customer*~~ the relevant *Market Participant* is failing to comply with clause 3.13.12(g);
    - (2) if the *Market Customer* or *Small Resource Aggregator* does not remedy the failure within 5 *business days* of the notice provided under clause 3.13.12(i)(1), *AEMO* must notify the relevant responsible authority of the failure and the failure by the *Market Customer* or *Small Resource Aggregator* to use the *NMI Standing Data* in accordance with this clause 3.13.12 is to be dealt with by the responsible authority under the relevant *participating jurisdiction's* legislation or licensing requirements unless the responsible authority notifies *AEMO* otherwise in accordance with clause 3.13.12(i)(3); and
    - (3) if, after receiving a notice from *AEMO* under clause 3.13.12(i)(2), the responsible authority notifies *AEMO* that the relevant *participating jurisdiction's* legislation or licensing requirements do not contain a regime which empowers the responsible authority to regulate the use of the *NMI Standing Data* by a *Market Customer* or *Small Resource Aggregator*, *AEMO* must notify the *AER* of the failure by the *Market Customer* or *Small Resource Aggregator* to use the *NMI Standing Data* in accordance with clause 3.13.12(g).
  - (j) *AEMO* must if requested by a responsible authority:
    - (1) develop a regime for monitoring and reporting to the responsible authority on requests received by *AEMO* to provide *NMI Standing Data* to *Market Customers* and *Small Resource Aggregators* for *connections points* in the relevant *participating jurisdiction*, in consultation with the responsible authority; and
    - (2) provide information to the responsible authority in accordance with the monitoring and reporting regime developed under this clause 3.13.12(j).

- (k) Nothing in this clause 3.13.12:
- (1) requires *AEMO* to make available *NMI Standing Data* if that *NMI Standing Data* has not been provided to *AEMO*;
  - (2) requires *AEMO* to make available *NMI Standing Data* where the collection, use or disclosure of that information by *AEMO* would breach applicable privacy laws;
  - (3) precludes *AEMO* from providing *NMI Standing Data* to a *Registered Participant* where the provision of that information is required to give effect to other provisions of the *Rules*;
  - (4) precludes *AEMO* from disclosing *confidential information* in the circumstances in which the disclosure of *confidential information* is permitted under the *NEL* or the *Rules*; and
  - (5) requires *AEMO* to provide information which its software systems cannot provide without modification.

### 3.13.14 Carbon Dioxide Equivalent Intensity Index

#### Carbon dioxide equivalent intensity index procedures

- (a) *AEMO* must develop, review and amend *carbon dioxide equivalent intensity index procedures* in consultation with *Registered Participants* and such other persons as *AEMO* thinks appropriate, in accordance with the *Rules consultation procedures* and paragraphs (b), (c) and (e)
- (a1) For the purposes of this clause, reference to a *market generating unit* is not taken to include a *small generating unit* and reference to a market integrated resource unit is not taken to include a small integrated resource unit.
- (b) The *carbon dioxide equivalent intensity index procedures* must include:
- (1) the methodology for calculating the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators*;
  - (2) where relevant, any assumptions used to calculate the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators*;
  - (3) the form of the *emission factors* for the *scheduled generating units*, *scheduled integrated resource units*, ~~and~~ *market generating units* and *market integrated resource units* included in the calculation of the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators*;
  - (4) the methodology for estimating an *emission factor* where the data on the *emission factor* for a *scheduled generating unit*, *scheduled integrated resource unit*, ~~or~~ *market generating unit* or *market integrated resource unit* included in the calculation of the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators* is not publicly available;
  - (5) the form of the energy measurements (in MWh) for the *scheduled generating units*, *scheduled integrated resource units*, ~~and~~ *market*

- generating units and market integrated resource units included in the calculation of the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators*;
- (6) the time interval for updating and publishing the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators*; and
  - (7) the time interval for conducting a review of the *emission factors* under paragraph (j).
- (c) In developing the *carbon dioxide equivalent intensity index procedures*, *AEMO* must:
- (1) ensure that the methodology used to calculate the *carbon dioxide equivalent intensity index* under paragraph (b)(1) represents the volume weighted average of the carbon dioxide equivalent greenhouse gas emissions from all the *scheduled generating units*, *scheduled integrated resource units*, ~~and~~ *market generating units and market integrated resource units* included in the calculation of the *carbon dioxide equivalent intensity index* for the time interval described in paragraph (b)(6);
  - (2) ensure that the methodology used to calculate any *supplementary carbon dioxide equivalent intensity indicators* under paragraph (b)(1) represents the volume weighted average of the carbon dioxide equivalent greenhouse gas emissions from all the *scheduled generating units*, *scheduled integrated resource units*, ~~and~~ *market generating units and market integrated resource units* included in the calculation of the *supplementary carbon dioxide equivalent intensity indicators* for the time interval described in paragraph (b)(6);
  - (3) use reasonable endeavours to obtain the data used to calculate the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators* from reliable sources; and
  - (4) have regard to the methodology for determining *emission factors* under the *Australian Government's National Greenhouse and Energy Reporting System* when determining the methodology for estimating the *emission factors* under paragraph (b)(4).
- (d) *AEMO* must publish the first *carbon dioxide equivalent intensity index procedures* by no later than 22 July 2011 and such procedures must be available at all times after this date.
- (e) *AEMO* must conduct a review of the *carbon dioxide equivalent intensity index procedures* at least once every 3 years after the first *carbon dioxide equivalent intensity index procedures* are published.

**Carbon dioxide equivalent intensity index and supplementary carbon dioxide equivalent intensity indicators**

- (f) *AEMO* must calculate, update and publish a *carbon dioxide equivalent intensity index* for the *NEM* in accordance with the *carbon dioxide equivalent intensity index procedures* and this clause 3.13.14.

- (g) The first *carbon dioxide equivalent intensity index* must be published as soon as practicable after the first *carbon dioxide equivalent intensity index procedures* are published under paragraph (d).
- (h) If AEMO elects to publish any *supplementary carbon dioxide equivalent intensity indicators*, AEMO must calculate, update and publish the *supplementary carbon dioxide equivalent intensity indicators* in accordance with the *carbon dioxide equivalent intensity index procedures*.
- (i) At the same time as it publishes the first *carbon dioxide equivalent intensity index* under paragraph (g), AEMO must publish a table which lists:
  - (1) all the *scheduled generating units*, *scheduled integrated resource units*, ~~and~~ *market generating units* ~~and~~ *market integrated resource units* included in the calculation of the *carbon dioxide equivalent intensity index*; and
  - (2) for each *scheduled generating unit*, *scheduled integrated resource unit*, ~~or~~ *market generating unit* ~~or~~ *market integrated resource unit* referred to in subparagraph (1), the *emission factor* and the source of that information.
- (j) AEMO must conduct a review of the *emission factors* for the *scheduled generating units*, *scheduled integrated resource units*, ~~and~~ *market generating units* ~~and~~ *market integrated resource units* included in the calculation of the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators* in accordance with the *carbon dioxide equivalent intensity index procedures* to determine whether the *emission factors* have changed since the last update of the *emission factors*.
- (k) As soon as practicable after a review under paragraph (j), AEMO must update the *carbon dioxide equivalent intensity index* and where appropriate, any *supplementary carbon dioxide equivalent intensity indicators* with any new *emission factors*, if the *emission factor* for any *scheduled generating units*, *scheduled integrated resource units*, ~~or~~ *market generating units* ~~or~~ *market integrated resource units* included in the calculation of the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators* has changed since the last update of the *emission factors*.
- (l) In addition to the obligation under paragraph (k), AEMO must update the *carbon dioxide equivalent intensity index* and where appropriate, any *supplementary carbon dioxide equivalent intensity indicators* with any new *emission factors* as soon as practicable if:
  - (1) AEMO is advised that the *emission factor* for any *scheduled generating units*, *scheduled integrated resource units*, ~~or~~ *market generating units* ~~or~~ *market integrated resource units* included in the calculation of the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators* has changed since the last update of the *emission factors*; and
  - (2) the data on the *emission factor* is publicly available and, in AEMO's opinion, is from a reliable source.
- (m) If:

- (1) a *generating unit* is classified as a *scheduled generating unit* or *market generating unit*, or an integrated resource unit is classified as a scheduled integrated resource unit or market integrated resource unit, under Chapter 2 after the first *carbon dioxide equivalent intensity index* is published under paragraph (g); and
- (2) data for that *generating unit* or integrated resource unit is not included in the calculation of the *carbon dioxide equivalent intensity index*,  
then *AEMO* must as soon as practicable update the *carbon dioxide equivalent intensity index* to include data for that *generating unit* or integrated resource unit.
- (n) For the avoidance of doubt, in updating the *carbon dioxide equivalent intensity index* under paragraph (m), *AEMO* may use the methodology for estimating an *emission factor* under the *carbon dioxide equivalent intensity index procedures* to calculate the *carbon dioxide equivalent intensity index* if the *emission factor* for any *generating units* or integrated resource units described in paragraph (m) is not publicly available.
- (o) *AEMO* must, as soon as practicable after it updates the *carbon dioxide equivalent intensity index* and any *supplementary carbon dioxide equivalent intensity indicators* under paragraphs (k) to (m):
  - (1) update the table described in paragraph (i) with the new *emission factor(s)*, the source of that information and where appropriate, any new *scheduled generating units*, *scheduled integrated resource units*, ~~or~~ *market generating units* or *market integrated resource units* included in the calculation of the *carbon dioxide equivalent intensity index*; and
  - (2) publish the table.
- (p) *AEMO* must amend the *timetable* to include the time interval in which it must publish the *carbon dioxide equivalent intensity index* under the *carbon dioxide equivalent intensity index procedures* (as amended under this clause 3.13.14).
- (q) Despite clause 3.4.3(b), *AEMO* may amend the *timetable* under paragraph (p) without following the *Rules consultation procedures*.

### 3.14 Administered Price Cap and Market Suspension

#### 3.14.5A Payment of compensation due to market suspension pricing schedule periods

##### Compensation - objective

- (a) The objective for the payment of compensation under this clause 3.14.5A and clause 3.14.5B is to maintain the incentive for:
  - (1) *Scheduled Generators* and *Scheduled Integrated Resource Providers* to supply energy;
  - (2) *Ancillary Service Providers* to supply *market ancillary services*; and
  - (3) *Demand Response Service Providers* to supply *wholesale demand response*,



during *market suspension pricing schedule periods*.

### **Payment to Market Suspension Compensation Claimants**

- (b) Subject to paragraph (c), *AEMO* must pay compensation to *Market Suspension Compensation Claimants* calculated in accordance with paragraph (d) and clause 3.14.5B (as the case may be).
- (c) For the purpose of clauses 3.15.8A and 3.15.10C, the amount of compensation due to a *Market Suspension Compensation Claimant* pursuant to paragraph (b) must include interest on that amount computed at the average *bank bill rate* beginning on the day on which payment was required to be made under clauses 3.15.16 and 3.15.17 in respect of the *final statement* for the *billing period* in which the *market suspension pricing schedule period* occurred and ending on the day on which payment is required to be made pursuant to clause 3.15.10C.
- (d) Subject to clause 3.14.5B, the compensation payable to each *Market Suspension Compensation Claimant* is to be determined in accordance with the formula set out below:

$$C = CO - RE$$

where:

C = the amount of compensation the *Market Suspension Compensation Claimant* is entitled to receive.

CO = the costs the *Market Suspension Compensation Claimant* is deemed to have incurred during the *market suspension pricing schedule period*, to be determined in accordance with the formula set out below:

$$CO = (SOG \times BVG) + (MWE \times BVAS) + (MWDR \times BVDR)$$

where:

SOG = the sum of the *Market Suspension Compensation Claimant's* sent out generation (in MWh) during the *market suspension pricing schedule period*.

BVG = the amount (in \$/MWh) calculated in accordance with paragraph (e) below.

MWE = the sum of the relevant *market ancillary services* (in MW) which the *Market Suspension Compensation Claimant's* ~~*ancillary service unit*~~ ~~*ancillary service generating unit*~~ has been enabled to provide



during the *market suspension pricing schedule period*.

BVAS = the amount (in \$/MWh) calculated in accordance with paragraph (f) below.

MWDR = the sum of the *wholesale demand response settlement quantities* of the *Market Suspension Compensation Claimant* (in MWh) during the *market suspension pricing schedule period*.

BVDR = the amount (in \$/MWh) calculated in accordance with paragraph (f1) below.

RE = the sum of the *trading amounts* determined pursuant to clauses 3.15.6 and 3.15.6A payable to the *Market Suspension Compensation Claimant* during the *market suspension pricing schedule period*,

and where C is a negative number, it will be deemed to be zero.

If a quantity of energy is both *sent out generation* and *wholesale demand response*, it must be included in the calculation of MWDR and not SOG.

- (e) The benchmark value for *generation* (BVG) at paragraph (d) is to be determined in accordance with the formula set out below and the *market suspension compensation methodology* developed under paragraph (h):

$$\text{BVG} = \text{BC}_{(\text{av})} \times 1.15$$

where:

$\text{BC}_{(\text{av})}$  = the capacity-weighted average of the benchmark costs (BC) (in \$/MWh) of all *Scheduled Generators* or *Scheduled Integrated Resource Providers* in the same class ~~of Generator~~ and same *region* as the *Market Suspension Compensation Claimant*, with each benchmark cost to be determined in accordance with the formula below:

$$\text{BC} = (\text{FC} \times \text{E}) + \text{VOC}$$

where:

FC = the fuel cost (in \$/GJ) for the relevant *Generator* or *Scheduled Integrated Resource Provider*.

E = the efficiency (in GJ/MWh) for the relevant *Generator* or *Scheduled Integrated Resource Provider*.

VOC = the variable operating cost (in \$/MWh) for the relevant *Generator* or *Scheduled Integrated Resource Provider*.

In each case, the above inputs (FC, E and VOC) are to be the same as the equivalent inputs published in the *ISP database*. If there is no equivalent *NTNDP input* for "FC" or "E", it will be deemed to be 1. If there is no equivalent *NTNDP input* for "VOC", it will be deemed to be zero.

- (f) The benchmark value for *market ancillary services* (BVAS) at paragraph (d) is to be determined in accordance with the formula below:

$$BVG = BC_{(av)} \times \left( \frac{0.15}{n} \right)$$

where:

$BC_{(av)}$  has the same meaning as in paragraph (e) above.

$n$  means the number of *trading intervals* within a one hour period.

- (f1) The benchmark value for *wholesale demand response* (BVDR) at paragraph (d) is to be determined in accordance with the formula below:

$$BVDR = BCE_{(av)} \times 1.15$$

where:

$BCE_{(av)}$  means the value of  $BC_{(av)}$  determined under paragraph (e) above (in \$/MWh) for a class of *Scheduled Generator* in the same *region* as the *Market Suspension Compensation Claimant*, as selected by *AEMO* in accordance with the *market suspension compensation methodology*.

- (g) *AEMO* must, in accordance with the *intervention settlement timetable*, advise each *Market Suspension Compensation Claimant* in writing:
- (1) whether the *Market Suspension Compensation Claimant* is entitled to receive compensation pursuant to paragraph (b); and
  - (2) if so, the amount of compensation payable, as calculated in accordance with paragraph (d).

### **Market suspension compensation methodology and schedule of benchmark values**

- (h) *AEMO* must develop, *publish* and make available on its website a methodology (*market suspension compensation methodology*) that specifies:

- (1) the classes of *Scheduled Generator*, *Scheduled Integrated Resource Provider* and *Ancillary Service Provider* to be used for the purpose of calculating benchmark values;
  - (2) the approach to be adopted by *AEMO* in calculating the benchmark values for each class of *Scheduled Generator*, *Scheduled Integrated Resource Provider* and *Ancillary Service Provider* in each *region*, including determining the equivalent inputs published in the *ISP database* for the purpose of the calculation in paragraph (e);
  - (2A) the approach to be adopted by *AEMO* in selecting the class of *Scheduled Generator* to be used when determining the value of  $BC_{(av)}$  for the calculation in paragraph (f1); and
  - (3) *AEMO*'s administrative fees associated with a claim for compensation under clause 3.14.5B or the manner in which those fees are to be determined.
- (i) *AEMO* may amend the *market suspension compensation methodology* from time to time in accordance with the *Rules consultation procedures*. Notwithstanding this paragraph (i), *AEMO* may make minor and administrative amendments to the *market suspension compensation methodology* without complying with the *Rules consultation procedures*.
  - (j) *AEMO* must develop a schedule of benchmark values (**schedule of benchmark values**) for each class of *Scheduled Generator* and *Ancillary Service Provider* in each *region*, calculated in accordance with the formula set out in paragraphs (e) and (f), and using (where appropriate) the equivalent inputs published in the *ISP database*.
  - (k) *AEMO* must *publish* and make available on its website an updated schedule of benchmark values no later than one month after each publication of the *Inputs, Assumptions and Scenario Report*.

### 3.14.5B Claims for additional compensation due to market suspension pricing schedule periods

- (a) Subject to paragraphs (b) and (c), *Market Suspension Compensation Claimants* may, within 15 *business days* of receipt of the notice referred to in clause 3.14.5A(g), make a written submission to *AEMO* claiming an amount equal to the amount by which its direct costs of supplying *energy*, *market ancillary services* or *wholesale demand response* during the *market suspension pricing schedule period* exceed the sum of:
  - (1) any compensation payable to the *Market Suspension Compensation Claimant* under clause 3.14.5A with respect to that *market suspension pricing schedule period*;
  - (2) the *Market Suspension Compensation Claimant's* "RE" as calculated under clause 3.14.5A(d); and
  - (3) any other compensation which the *Market Suspension Compensation Claimant* has received or is entitled to receive in connection with the relevant *generating unit* or integrated resource unit supplying *energy* or *market ancillary services* or the relevant *wholesale demand response*

*unit supplying wholesale demand response during that market suspension pricing schedule period.*

- (b) Where a *Market Suspension Compensation Claimant* is a *Directed Participant* with respect to any *trading interval* during a *market suspension pricing schedule period*, such *Market Suspension Compensation Claimant*:
  - (1) is entitled to make a claim under clause 3.15.7B(a); and
  - (2) is not entitled to make a claim under this clause 3.14.5B.
- (c) A written submission made by a *Market Suspension Compensation Claimant* pursuant to paragraph (a) must:
  - (1) itemise each component of the claim;
  - (2) contain sufficient data and information to substantiate each component of the claim; and
  - (3) be signed by an authorised officer of the *Market Suspension Compensation Claimant* certifying that the written submission is true and correct.
- (d) For the purposes of paragraph (a), the direct costs incurred by the *Market Suspension Compensation Claimant* means, in respect of a *generating unit* or integrated resource unit supplying *energy* or *market ancillary services*:
  - (1) fuel costs in connection with the relevant *generating unit* or integrated resource unit;
  - (2) incremental maintenance costs in connection with the relevant *generating unit* or integrated resource unit;
  - (3) incremental manning costs in connection with the relevant *generating unit* or integrated resource unit; and
  - (4) other direct costs reasonably incurred in connection with the relevant *generating unit* or integrated resource unit, where such costs are incurred to enable the *generating unit* or integrated resource unit to supply *energy* or *market ancillary services* during the *market suspension pricing schedule period*.
- (d1) For the purposes of paragraph (a), the direct costs incurred by the *Market Suspension Compensation Claimant* means, in respect of a *wholesale demand response unit* supplying *wholesale demand response*:
  - (1) fuel costs in connection with the relevant *wholesale demand response unit*;
  - (2) incremental maintenance costs in connection with the relevant *wholesale demand response unit*;
  - (3) incremental manning costs in connection with the relevant *wholesale demand response unit*; and
  - (4) other direct costs reasonably incurred in connection with the relevant *wholesale demand response unit*, where such costs are incurred to enable the *wholesale demand response unit* to supply *wholesale demand response* during the *market suspension pricing schedule period*.

- (e) *AEMO* may recover from a *Market Suspension Compensation Claimant* an administrative fee to assist in recouping some of the costs incurred in carrying out its functions under this clause 3.14.5B (which costs may include fees for services rendered by an independent expert under clause 3.12.3). The administrative fees will be determined in accordance with the *market suspension compensation methodology* developed pursuant to clause 3.14.5A(h).
- (f) *AEMO*:
  - (1) may (but is not required to) refer a claim by a *Market Suspension Compensation Claimant* under paragraph (a) to an independent expert to determine such claim in accordance with clause 3.12.3 where the claim is equal to or greater than \$50,000; and
  - (2) must determine in its sole discretion if any claims by a *Market Suspension Compensation Claimant* made under paragraph (a) and not referred to an independent expert under subparagraph (f)(1) are reasonable, and if so, pay the amount claimed in accordance with clause 3.15.10C,

in accordance with the *intervention settlement timetable*.
- (g) Where *AEMO* considers a claim made by a *Market Suspension Compensation Claimant* under paragraph (a) to be unreasonable, it must:
  - (1) advise the *Market Suspension Compensation Claimant* of its determination in writing, setting out its reasons; and
  - (2) refer the claim to an independent expert to determine the claim in accordance with clause 3.12.3.

### **3.14.6 Compensation due to the application of an administered price cap or administered floor price**

#### **Definitions**

- (a) For the purposes of this clause 3.14.6:
 

**compensation guidelines** means the guidelines made by the *AEMC* under paragraph (e).

**direct costs** means the costs directly incurred by the claimant due to a price limit event

**direct cost only claim** means a claim made under paragraph (i) that does not include a claim for opportunity costs.

**draft opportunity cost methodology** has the meaning given to it in clause 3.14.6(o)(2).

**eligibility period** means the period starting at the beginning of the first *trading interval* in which the price limit event occurs in a *trading day* and ending at the end of the last *trading interval* of that *trading day*.

**opportunity costs** means the value of opportunities foregone by the claimant due to the price limit event as defined in the compensation guidelines.

**price limit event** means:

- (1) for *Scheduled Generators*, *Scheduled Integrated Resource Providers*, *Non-Scheduled Generators* and *Demand Response Service Providers*:
  - (i) the *spot price* for a *trading interval* is set by the *administered price cap* during an *administered price period*; or
  - (ii) the *spot price* for a *trading interval* is set as a result of the application of clause 3.14.2(e)(2);
- (2) for *Market Participants* in respect of *scheduled load*:
  - (i) the *spot price* for a *trading interval* is set by the *administered floor price* during an *administered price period*; or
  - (ii) the *spot price* for a *trading interval* is set as a result of the application of clause 3.14.2(e)(4); and
- (3) for *Scheduled Network Service Providers*:
  - (i) the *spot price* for a *trading interval* for a *region* towards which the *Scheduled Network Service Provider* is transporting power is set by the *administered price cap* during an *administered price period*; or
  - (ii) the *spot price* for a *trading interval* for a *region* towards which the *Scheduled Network Service Provider* is transporting power is set as a result of the application of clause 3.14.2(e)(2).
- (4) for *Ancillary Service Providers*, in respect of an ~~*ancillary generating unit or an ancillary service load*~~*ancillary service unit*, the *ancillary service price* for a *trading interval* is set by the *administered price cap* during an *administered price period*.

**relevant region** means a *region* in which the *spot price* or *ancillary service price* (as relevant) is set by the price limit event.

**submission closing date** has the meaning given to it in clause 3.14.6(o)(3).

**total costs** means the direct costs and opportunity costs determined in accordance with the compensation guidelines provided that, in the case of a claimant that is a *Market Network Service Provider*, the total costs must be the costs incurred due to transporting power towards the relevant region and must not include costs incurred, or revenues earned, due to transporting power away from the relevant region.

### Eligibility for compensation

- (b) If a price limit event occurs then the following are eligible to claim *Registered Participants* compensation for the eligibility period:
  - (1) a *Scheduled Generator*, *Non-Scheduled Generator* (~~*other than a Non-Scheduled Generator that is also a Non-Market Generator*~~), *Scheduled Integrated Resource Provider*, *Non-Scheduled Integrated Resource Provider* (~~*other than a Non-Scheduled Integrated Resource Provider that is also a Non-Market Integrated Resource Provider*~~) or *Demand Response Service Provider* in the relevant region;
  - (2) a *Market Participant* in respect of a *scheduled load* that has been *dispatched* in the relevant region in that eligibility period;



- (3) a *Scheduled Network Service Provider* that transported power towards the relevant region; and
- (4) an *Ancillary Service Provider* that provided *market ancillary services* in the relevant region in the eligibility period,

provided that the relevant claimant has incurred total costs during the eligibility period that exceed the total revenue it received from the *spot market* during that period.

#### **Compensation - objective and basis**

- (c) The objective of the payment of compensation under this clause 3.14.6 is to maintain the incentive for:
  - (1) *Scheduled Generators, Non-Scheduled Generators, Scheduled Integrated Resource Providers, Non-Scheduled Integrated Resource Providers* and *Scheduled Network Service Providers* to supply energy;
  - (2) *Ancillary Service Providers* to supply *ancillary services*;
  - (3) *Market Participants* with *scheduled load* to consume energy; and
  - (4) *Demand Response Service Providers* to supply *wholesale demand response*,during price limit events.
- (d) The amount of compensation payable in respect of a claim under this clause 3.14.6 must be based on direct costs and opportunity costs.

#### **Compensation guidelines**

- (e) The *AEMC* must, in accordance with the *transmission consultation procedures*, develop and *publish* guidelines (**compensation guidelines**) that are consistent with paragraphs (c) and (d) and that:
  - (1) define the types of opportunity costs in relation to which a person can make a claim under this clause 3.14.6;
  - (2) outline the methodology to be used to calculate the amount of any compensation payable in respect of a claim under this clause, including the methodology for calculating direct costs and opportunity costs; and
  - (3) set out the information *AEMO* and a claimant must provide to enable the *AEMC* to make a determination as to compensation under this clause 3.14.6.
- (f) The *AEMC* must ensure that there are compensation guidelines in place at all times.

#### **Note:**

The first compensation guidelines were made on 30 June 2009 and have been amended from time to time since that date. The current version of the compensation guidelines are available on the AEMC's website [www.aemc.gov.au](http://www.aemc.gov.au).

- (g) The *AEMC* may from time to time, in accordance with the *transmission consultation procedures*, amend or replace the compensation guidelines.

### **Process for making a claim**

- (h) A person who is eligible under paragraph (b) may make a claim for compensation by providing the *AEMC* and *AEMO* with written notice of its claim in the form required by the compensation guidelines.
- (i) A claim under paragraph (h) must be made within 5 *business days* of notification by *AEMO* that an *administered price period* has ended.

### **Initial steps on receipt of claim**

- (j) Following its receipt of a notice under paragraph (h), the *AEMC* must promptly:
  - (1) publish a notice on its website stating that it has received a claim under paragraph (h). The notice must:
    - (i) provide information on the general nature of the claim;
    - (ii) state whether or not the claim is a direct cost only claim; and
    - (iii) state that the *AEMC* will publish a notice when it commences formal assessment of the claim; and
  - (2) seek such information from the claimant that the *AEMC* reasonably considers is required to enable assessment of the claim including, in the case of a claim other than a direct cost only claim, the methodology used by the claimant to determine its opportunity costs.

### **Formal commencement of claim**

- (k) As soon as practicable after the *AEMC* is reasonably satisfied that it has sufficient information from the claimant to assess its claim, the *AEMC* must publish a notice on its website that it has formally commenced its assessment of the claim specifying whether or not the claim is a direct cost only claim.

### **Determination of direct cost only claims**

- (l) Not later than 45 *business days* after publication of the notice under paragraph (k) in respect of a direct cost only claim, the *AEMC* must *publish* its final decision as to:
  - (1) whether compensation should be paid by *AEMO* in relation to the claim; and
  - (2) if so, the amount of compensation that should be paid.
- (m) Before making its final decision under paragraph (l) the *AEMC* must consult with the claimant.
- (n) In making its final decision under paragraph (l), the *AEMC* must apply the compensation guidelines unless it is satisfied that there are compelling reasons not to do so.

### **Determination of claims other than direct cost only claims**

- (o) In relation to a claim other than a direct cost only claim, the *AEMC* must, as soon as practicable but not later than 35 *business days* after publication of the notice under paragraph (k) *publish*:

- (1) the claimant's proposed methodology for determining the claimant's opportunity costs;
  - (2) the methodology the *AEMC* proposes to use in determining the claimant's opportunity costs (**draft opportunity cost methodology**); and
  - (3) an invitation for written submissions to be made to the *AEMC* on the draft opportunity cost methodology by a date not less than 20 *business days* after the invitation is made (**submission closing date**).
- (p) Any person may make a written submission to the *AEMC* on the draft opportunity cost methodology by the submission closing date.
- (q) Not later than 35 *business days* after the submission closing date the *AEMC* must *publish* its final decision on:
  - (1) the methodology it will use in determining the claimant's opportunity costs; and
  - (2) whether compensation should be paid by *AEMO* in relation to the claim; and
  - (3) if so, the amount of compensation that should be paid.
- (r) Before making its decision on the matters referred to in paragraph (q), the *AEMC* must consult with the claimant.
- (s) In making its final decision as to the matters referred to in paragraph (q), the *AEMC* must:
  - (1) take into account the submissions made in response to the invitation to in subparagraph (o)(3); and
  - (2) apply the compensation guidelines unless it is satisfied that there are compelling reasons not to do so.

#### **Extensions of time**

- (t) Despite anything to the contrary in this clause 3.14.6, the *AEMC* may extend a period of time specified in this clause if it considers the extension reasonably necessary to enable it to properly assess the claim because of the complexity or difficulty of assessing the claim or because of a material change in circumstances.
- (u) The *AEMC* must publish any extension of time made under paragraph (t).

#### **Costs of claim**

- (v) The *AEMC* may recover from a claimant for compensation under this clause any costs that are incurred by the *AEMC* in carrying out their functions under this clause in respect of that claim. For this purpose the *AEMC* may require the claimant to pay all or a proportion of those costs to the *AEMC* prior to the claim being considered or determined.

### 3.15 Settlements

#### 3.15.3 Connection point and virtual transmission node responsibility

- (a) For each *market connection point* there is one person that is *financially responsible* for that *connection point*. The person that is *financially responsible* for such a *connection point* is:
- (1) the *Market Participant* which has classified the *connection point* as a *market connection point*~~*market load*~~;
  - (2) the *Market Participant* which has classified the *generating unit* connected at that *connection point* as a *market generating unit*; ~~or~~
  - (3) the *Market Participant* which has classified the *network service* connected at that *connection point* as a *market network service*; ~~or~~
  - (4) the *Market Participant* which has classified the *integrated resource unit* connected at that *connection point* as a *market integrated resource unit*.
- (b) No person is *financially responsible* for a *virtual transmission node* or a *connection point* which *connects* a *local area* to another part of the *power system*.
- (c) Any difference between:
- (i) the *energy flow metered* at a *transmission network connection point* that is not a *market connection point*; and
  - (ii) the *aggregate loss factor-adjusted metered energy* amounts for all *market connection points* assigned to that *transmission network connection point*,

is to be determined and allocated in accordance with clause 3.15.4 and 3.15.5.

#### 3.15.4 Adjusted gross energy amounts – connection points

- (a) For each *market connection point*, the *adjusted gross energy* amount for a *trading interval* is calculated by *AEMO* by applying the following formula:
- $$\text{AGE} = \text{ACE} + \text{ASOE}$$
- where:
- AGE is the *adjusted gross energy* amount to be determined;
- ACE is the *adjusted consumed energy* amount for the *market connection point* and *trading interval* calculated by *AEMO* by applying the formula in subparagraph (b)(1) or (b)(2) as applicable to the *market connection point*; and
- ASOE is the *adjusted sent out energy* amount for the *market connection point* and *trading interval* calculated by *AEMO* by applying the formula in subparagraph (c)(1) or (c)(2) as applicable to the *market connection point*.
- (b) The *adjusted consumed energy* or ACE for a *market connection point* for a *trading interval* is calculated by *AEMO* as follows:
- (1) for a *market connection point* that is a *transmission network connection point*;

ACE = ME-

where:

ACE is the *adjusted consumed energy* amount to be determined; and

ME- has the meaning in paragraph (d); and

- (2) for a *connection point* that is not a *transmission network connection point*:

ACE = (ME- x DLF) + UFEA

where:

ACE is the *adjusted consumed energy* amount to be determined;

ME- has the meaning given in paragraph (d);

DLF is the *distribution loss factor* applicable to the *market connection point*; and

UFEA is the share of unaccounted for *energy* allocated to that *market connection point* under clause 3.15.1.

- (c) The *adjusted sent out energy* or ASOE for a *market connection point* for a *trading interval* is calculated by AEMO as follows:

- (1) for a *market connection point* that is a *transmission network connection point*:

ASOE = ME+

where:

ASOE is the *adjusted sent out energy* amount to be determined; and

ME+ has the meaning given in paragraph (e); and

- (2) for a *market connection point* that is not a *transmission network connection point*:

ASOE = (ME+ x DLF)

where:

ASOE is the *adjusted sent out energy* amount to be determined;

ME+ has the meaning given in paragraph (e); and

DLF is the *distribution loss factor* applicable to the *market connection point*.

- (d) ME- means, for a *connection point* for a *trading interval*, the amount of *electrical energy*, expressed as a negative value in MWh, flowing at the *connection point* in the *trading interval*, as recorded in the *metering data* in respect of that *connection point* and that *trading interval*, where the flow is away from the *transmission network connection point* to which the *connection point* is assigned.

- (e) ME+ means, for a *connection point* for a *trading interval*, the amount of *electrical energy*, expressed as a positive value in MWh, flowing at the *connection point* in the *trading interval*, as recorded in the *metering data* in respect of that *connection point* and that *trading interval*, where the flow is

towards the transmission network connection point to which the connection point is assigned.

- ~~(a) For each market connection point that is a transmission network connection point, the adjusted gross energy amount for a trading interval is the metered energy, being the amount of electrical energy, expressed in MWh, flowing at the connection point in the trading interval, as recorded in the metering data in respect of that connection point and that trading interval (expressed as a positive value where the flow is towards the transmission network connection point to which the connection point is assigned and a negative value where the flow is in the other direction).~~
- ~~(b) Where a connection point is not a transmission network connection point, the adjusted gross energy amount for that connection point for a trading interval is calculated by AEMO by applying the following formula:~~

$$\text{AGE} = (\text{ME} \times \text{DLF}) + \text{UFEA}$$

~~where:~~

~~AGE is the adjusted gross energy amount to be determined;~~

~~ME is the amount of electrical energy, expressed in MWh, flowing at the connection point in the trading interval, as recorded in the metering data in respect of that connection point and that trading interval (expressed as a positive value where the flow is towards the transmission network connection point to which the connection point is assigned and a negative value where the flow is in the other direction)~~

~~DLF is the distribution loss factor applicable at that connection point; and~~

~~UFEA is the share of unaccounted for energy allocated to that connection point under clause 3.15.5.~~

### 3.15.5 Unaccounted for energy adjustment – local areas

- (a) For each local area, an amount representing unaccounted for energy is determined by AEMO for each trading interval by the following formula:

$$\text{UFE} = \text{TME} - \text{DDME} - \text{ADME}$$

where:

UFE is the total unaccounted for energy amount (in MWh) to be determined;

TME is the amount of electrical energy, expressed in MWh, flowing at each of the transmission network connection points in the local area in the trading interval, as recorded in the metering data in respect of each of the transmission network connection points for that trading interval (expressed as a positive value where the flow is towards the transmission network, and negative value where the flow is in the other direction);

DDME is the amount of electrical energy, expressed in MWh, flowing at each of the distribution network connection points in the local area which are connected to an adjacent local area, in the trading interval, as recorded in the metering data in respect of each of those distribution network connection points for that trading interval (expressed as a negative value where the flow is towards the adjacent distribution network, and positive value where the



flow is in the other direction) adjusted by the *distribution loss factor* applicable at that *connection point*; and

ADME is the aggregate of the amounts represented by ~~(ME- x DLF)~~ ~~(ME- x DLF)~~ for that *trading interval* for each *connection point* assigned to the *transmission network connection point* or *virtual transmission node*, for which a *Market Participant* (other than a suspended *Market Participant*) is *financially responsible* ~~(and in that aggregation positive and negative adjusted gross energy amounts are netted out to give a positive or negative aggregate amount).~~

**Note**

The DDME value for a local area that is connected to an adjacent local area will appear in the calculation of UFE for both local areas. A positive energy flow for the calculation of UFE for one local area would correspond to a negative flow for the calculation of UFE for the other local area.

- (b) The unaccounted for *energy* amount determined by *AEMO* under paragraph (a) in a *local area* is to be allocated to all *market connection points* ~~that are classified as market loads~~ in that *local area* by calculating UFEA for the market connection point in accordance with paragraph (c) and including UFEA in the calculation of ACE as provided for in clause 3.15.4(b), where the amount of electrical energy flowing at the connection point is expressed as a negative value.
- (c) The allocation of the total unaccounted for *energy* amount determined under paragraph (a) to a market connection point in a local area in accordance with paragraph (b) for every distribution network connection point in a local area that is classified as a market load where the amount of electrical energy flowing at the connection point is expressed as a negative value is determined by *AEMO* by the following formula:

$$\text{UFEA} = \text{UFE} \times (\text{DME} / \text{ADMELA})$$

where:

UFEA is the allocation of the unaccounted for *energy* amount (in MWh) for the relevant *market connection point* and *trading interval*;

UFE is the unaccounted for *energy* amounts determined under paragraph (a) for the *local area*;

DME is the amount represented by (ME- x DLF) for the relevant *market connection point* and *trading interval* where:

ME- has the meaning given in clause 3.15.4(d); and

~~ME is the amount of electrical energy, expressed in MWh, flowing at the market connection point in the trading interval, as recorded in the metering data in respect of that market connection point and that trading interval (where the flow is away from the transmission network connection point to which the market connection point is assigned);~~

DLF is the distribution loss factor applicable at that *market connection point*; and

ADMELA is the aggregate of the amounts represented by DME for that *trading interval* for each *market connection point* in that *local area*, ~~for which~~

~~a Market Customer (other than a suspended Market Customer) is financially responsible.~~

- (d) AEMO must publish information to enable ~~a Market Participant~~~~each Market Customer~~ in a local area to verify the unaccounted for energy amounts allocated to ~~that Market Customer's~~ market connection points ~~of the Market Participant~~ in that local area ~~under paragraph (b)~~ for each trading interval in accordance with a procedure developed and published by AEMO.

### 3.15.6 Spot market transactions

- (a) In each trading interval, in relation to each *market* connection point and to each virtual transmission node for which a Market Participant is financially responsible, a spot market transaction occurs, which results in a trading amount for that Market Participant determined in accordance with the formula:

$$TA = AGE \times TLF \times RRP$$

where

TA is the trading amount to be determined (which will be a positive or negative dollar amount for each trading interval);

AGE is the adjusted gross energy for that *market* connection point or virtual transmission node for that trading interval, expressed in MWh;

TLF for a transmission network connection point or virtual transmission node, is the relevant intra-regional loss factor at that connection point or virtual transmission node respectively, and for any other connection point, is the relevant intra-regional loss factor at the transmission network connection point or virtual transmission node to which it is assigned in accordance with clause 3.6.2(b)(2); and

RRP is the regional reference price for the regional reference node to which the connection point or virtual transmission node is assigned, expressed in dollars per MWh.

#### Note

Where two intra-regional loss factors are determined for a transmission network connection point under clause 3.6.2(b)(2), AEMO will determine the relevant intra-regional loss factor for use under this clause in accordance with the procedure determined under clause 3.6.2(d1).

Where one connection point is assigned to both a single transmission network connection point and a virtual transmission node, the intra-regional loss factor for the virtual transmission node will apply.

- (b) Except with respect to any trading interval in a market suspension pricing schedule period in relation to which AEMO has issued a direction to a Market Suspension Compensation Claimant, AEMO is entitled to the trading amount resulting from a AEMO intervention event and, for the purposes of determining settlement amounts, any such trading amount is not a trading amount for the relevant Market Participant.
- (c) A Directed Participant is entitled to the trading amount resulting from any service, other than the service the subject of the AEMO intervention event, rendered as a consequence of that event.

### 3.15.6A Ancillary service transactions

#### Definitions

(a0) In this clause 3.15.6A:

~~customer energy~~ in respect of a ~~Market Customer~~ for a ~~trading interval~~ means the sum of the ~~adjusted gross energy~~ figures calculated for that ~~trading interval~~ in respect of that ~~Market Customer's~~ relevant ~~connection points~~;

~~a connection point~~ is a relevant ~~connection point~~ of a ~~Market Customer~~ if:

- ~~(1) the Market Customer is financially responsible for the connection point; and~~
- ~~(2) the load at that connection point has been classified (or is deemed to be classified) as a market load.~~

~~generator energy~~ in respect of a ~~Market Generator~~ for a ~~trading interval~~ means the sum of the ~~adjusted gross energy~~ figures calculated for that ~~trading interval~~ in respect of that ~~Market Generator's~~ applicable ~~connection points~~, provided that, if the sum of those figures is negative, then the ~~Market Generator's~~ ~~generator energy~~ for that ~~trading interval~~ is zero;

~~a connection point~~ is an applicable ~~connection point~~ of a ~~Market Generator~~ if:

- ~~(1) the Market Generator is financially responsible for the connection point; and~~
- ~~(2) the connection point connects a market generating unit to the national grid.~~

**regional benefit ancillary services procedures** means the procedures to determine the relative benefit that each *region* is estimated to receive from the provision of *NMAS*.

**regional benefit factors** means the factors to allocate, between *regions*, the costs associated with the provision of *NMAS* under each *ancillary services agreement* in accordance with the regional benefit ancillary services procedures.

**Scheduled Participant** has the meaning given to it by subparagraph (k)(5) clause 3.15.6A(k)(5).

~~small generator energy~~ in respect of a ~~Market Small Generation Aggregator~~ for a ~~trading interval~~ means the sum of the ~~adjusted gross energy~~ figures calculated for that ~~trading interval~~ in respect of that ~~Market Small Generation Aggregator's~~ applicable ~~connection points~~, provided that, if the sum of those figures is negative, then the ~~Market Small Generation Aggregator's~~ ~~small generator energy~~ for that ~~trading interval~~ is zero; and

~~a connection point~~ is an applicable ~~connection point~~ of a ~~Market Small Generation Aggregator~~ if:

- ~~(1) the Market Small Generation Aggregator is financially responsible for the connection point; and~~
- ~~(2) the connection point connects a small generating unit classified as a market generating unit to the national grid.~~

### Trading amount calculation for the provision of ancillary services

- (a) In each *trading interval*, in relation to each *enabled ~~ancillary service unit~~ancillary service generating unit or enabled ancillary service load*, an ancillary services transaction occurs, which results in a *trading amount* for the relevant *Market Participant* determined in accordance with the following formula:

$$TA = \text{the aggregate of } \frac{EA \times ASP}{(12)} \text{ ~~for each trading interval~~}$$

where:

TA (in \$)	=	the <i>trading amount</i> to be determined (which is a positive number);
EA (in MW)	=	the amount of the relevant <i>market ancillary service</i> which the <del>ancillary service generating unit or ancillary service load</del> <i>ancillary service unit</i> has been <i>enabled</i> to provide in the <i>trading interval</i> ; and
ASP (in \$ per MW per hour)	=	the <i>ancillary service price</i> for the <i>market ancillary service</i> for the <i>trading interval</i> for the <i>region</i> in which the <del>ancillary service generating unit or ancillary service load</del> <i>ancillary service unit</i> has been <i>enabled</i> .

- (b) In relation to each *NMAS provider* who provides *non-market ancillary services* under an *ancillary services agreement*, an *ancillary services transaction* occurs, which results in an amount payable by *AEMO* to the *NMAS provider* determined in accordance with that agreement.

### General provisions

- (b1) Where an amount is payable by *AEMO*:

- (1) under clause 4.3.6(o); or
- (2) under paragraph (b) where it is not determined on a *trading interval basis*,

that amount is recovered in accordance with the relevant paragraphs (c8), (c9), (d) and (e), except that a reference to *trading interval* in the calculation of RBF, ~~AGE, AAGE, TGE, ATGE, TSGE, ATSGE~~, TCE ~~and~~, ATCE is to be read as "the relevant period", and any other reference to *trading interval* in those paragraphs is to be read as the "relevant *billing period*".

- (c) **[Deleted]**

- (c1) **[Deleted]**

- (c2) Subject to paragraph (b1), *AEMO* must recover its liabilities under ancillary services agreements from Cost Recovery Market Participants in each region as follows:

- (1) in relation to NSCAS, in accordance with paragraphs (c8) and (c9); and
- (2) in relation to SRASs, in accordance with paragraphs (d) and (e).
- ~~(c2) Subject to paragraph (b1), AEMO must recover its liabilities under ancillary services agreements for the provision of:~~
  - ~~(1) NSCAS from Market Customers in each region in accordance with paragraphs (c8) and (c9); and~~
  - ~~(2) SRASs, from:~~
    - ~~(i) Market Generators and Market Small Generation Aggregators in each region in accordance with paragraph (d); and~~
    - ~~(ii) Market Customers in each region in accordance with paragraph (e).~~

**Regional benefit ancillary services procedures and regional benefit factors**

- (c3) In the statements to be provided under clauses 3.15.14 and 3.15.15 to a Cost Recovery Market Participant~~Market Customer~~, AEMO must separately identify the portion of the total amount payable by AEMO in respect of the relevant *billing period* under *ancillary services agreements* for the provision of NSCAS that:
  - (1) benefits specific *regions* in which there is a *connection point* for which the Cost Recovery Market Participant ~~Market Customer~~ is *financially responsible* (being the *regional* amounts given by the first summated term in the paragraph (c8) formula); and
  - (2) does not benefit specific *regions* (being the amount TNSCAS~~TNSCASp~~ in the paragraph (c9) formula).
- (c4) AEMO must develop and *publish* the regional benefit ancillary services procedures in accordance with the *Rules consultation procedures*. Without limiting the matters to be included in the regional benefit ancillary services procedures, they must require AEMO to take into account:
  - (1) for an NSCAS, the estimated increase for each *region* of the gross economic benefit from increased *power transfer capability*; and
  - (2) for an SRAS, that can be used to restart *generating units* or integrated resource units in two or more *regions*, the relative benefit provided by that service to each *region*.
- (c5) Subject to paragraph (c6), AEMO may amend the regional benefit ancillary services procedures from time to time in accordance with the *Rules consultation procedures*.
- (c6) AEMO may make minor and administrative amendments to the regional benefit ancillary services procedures without complying with the *Rules consultation procedures*.
- (c7) From time to time, AEMO must determine the regional benefit factors in accordance with the regional benefit ancillary services procedures and publish those factors.

### Trading amount calculation for NSCAS cost recovery

- (c8) In each *trading interval*, in relation to each Cost Recovery Market Participant ~~Market Customer~~ for each *region*, an *ancillary services* transaction occurs, which results in a *trading amount* for the Cost Recovery Market Participant ~~Market Customer~~ determined in accordance with the following formula:

$$TA_{P,R} = \left( \sum_{\text{for all 'S'}} (TNSCAS_{S,P} \times RBF_{S,P,R}) \right) \times \frac{AGE_{P,R}}{AAGE_{P,R}} \times -1$$

$$TA_{i,R} = \left( \sum_{\text{for all S}} (TNSCAS_{S,i} \times RBF_{S,i,R}) \right) \times \frac{ACE_{i,R}}{AACE_{i,R}} \times -1$$

Where

Subscript 'P' is the relevant period;

Subscript 'R' is the relevant

Subscript 'S' is the relevant NSCAS;

$TA_{P,r}$  (in \$) = ~~trading amount payable by the Market Customer in respect of the relevant region and trading interval;~~

$TNSCAS_{S,p}$  the total amount payable by AEMO for the provision of the relevant NSCAS under an *ancillary services agreement* in respect of the relevant *trading interval*;

$RBF_{S,p,r}$  (number) = ~~the latest regional benefit factor assigned to the provision of the relevant NSCAS under an ancillary services agreement in respect of the relevant region and trading interval, as determined by AEMO under paragraph (c7);~~

$AGE_{P,r}$  (in MWh) = ~~the sum of the adjusted gross energy figures in respect of the Market Customer's relevant connection points located in the region for the relevant trading interval; and~~

$AAGE_{P,r}$  (in MWh) = ~~the aggregate  $AGE_{P,r}$  figures for all Market Customers in respect of the relevant region and trading interval.~~

where:

subscript i refers to the relevant trading interval;

subscript R refers to the relevant region;

subscript S refers to the relevant NSCAS;

$TA_{i,R}$  (in \$)  $\equiv$  the trading amount payable by the Cost Recovery Market Participant in respect of the relevant region and trading interval;



<u>TNSCAS<sub>S,i</sub> (in \$)</u>	≡	<u>the total amount payable by AEMO for the provision of the relevant NSCAS under an ancillary services agreement in respect of the relevant trading interval;</u>
<u>RBF<sub>S,i,R</sub> (number)</u>	≡	<u>the latest regional benefit factor assigned to the provision of the relevant NSCAS under the ancillary services agreement in respect of the relevant region and trading interval, as determined by AEMO under paragraph (c7);</u>
<u>ACE<sub>i,R</sub> (in MWh)</u>	≡	<u>the sum, for all connection points of the Cost Recovery Market Participant located in the region, of the adjusted consumed energy amount for the connection point for the trading interval; and</u>
<u>AACE<sub>i,R</sub> (in MWh)</u>	≡	<u>the sum, for all connection points located in the region, of the adjusted consumed energy amount for the connection point for the trading interval.</u>

**Note**

~~The values of AGE<sub>P,R</sub> and AAGE<sub>P,R</sub> are subject to substitution in accordance with clause 3.15.6AA~~

- (c9) In each trading interval, in relation to each Cost Recovery Market Participant~~Market Customer~~, an ancillary services transaction occurs, which results in a trading amount for the Cost Recovery Market Participant~~Market Customer~~ determined in accordance with the following formula:

$$TA_P = TNSCAS_P \times \frac{AGE_P}{AAGE_P} \times -1$$

$$TA_P = TNSCAS_i \times \left( \frac{ACE_i}{AACE_i} \right) \times -1$$

Where

Subscript 'P' is the relevant period;

~~TA<sub>P</sub> (in \$) = the trading amount payable by the Market Customer in respect of the relevant trading interval;~~

~~TNSCAS<sub>P</sub> (in \$) = the sum of all amounts payable by AEMO for the provision of NSCAS under ancillary services agreements in respect of the relevant trading interval minus the sum of the trading amounts calculated for all~~

~~Market Customers in respect of all of the relevant trading interval under paragraph (e8);~~

~~AGE<sub>p</sub> (in MWh) = the sum of the adjusted gross energy figures in respect of all the Market Customer's relevant connection points for the relevant trading interval; and~~

~~AAGE<sub>p</sub> (in MWh) = the aggregate AGE<sub>p</sub> figures for all Market Customers in respect of the relevant trading interval.~~

where:

subscript i refers to the relevant trading interval;

TA (in \$) = the trading amount payable by the Cost Recovery Market Participant in respect of the relevant trading interval;

TNSCAS<sub>i</sub> (in \$) = the sum of all amounts payable by AEMO for the provision of NSCAS under ancillary services agreements in respect of the relevant trading interval minus the sum of the trading amounts calculated for all Cost Recovery Market Participants in respect of all of the relevant trading interval under paragraph (c8);

ACE<sub>i</sub> (in MWh) = the sum, for all connection points of the Cost Recovery Market Participant, of the adjusted consumed energy amount for the connection point for the trading interval; and

AACE<sub>i</sub> (in MWh) = the sum, for all connection points, of the adjusted consumed energy amount for the connection point for the trading interval.

**Note**

~~The values of AGE<sub>p</sub> and AAGE<sub>p</sub> are subject to substitution in accordance with clause 3.15.6AA.~~

- (c10) ~~[deleted] AEMO must publish the regional benefit factors determined under paragraph (e7);~~

**Trading amount calculation for SRAS and SRAS tests cost recovery**

- (d) In each trading interval, in relation to each Cost Recovery Market Participant ~~Market Generator and each Market Small Generation Aggregator~~ for each region, an ancillary services transaction occurs, which results in a trading amount for the Cost Recovery Market Participant ~~Market Generator or the Market Small Generation Aggregator~~ determined in accordance with the following formula:

$$TA = \sum \left( \left( \frac{SRP_i \times RBF_{Ri}}{2} \right) \times \left( \frac{TGE_R + TSGE_R}{ATGE_R + ATSGE_R} \right) \right) \times -1$$

$$TA = \sum \left( \left( SRP_i \times \frac{RBF_{Ri}}{2} \right) \times \left( \frac{TSGE_R}{ATSGE_R} \right) \right) \times -1$$

Where

~~TA (in \$) = the trading amount to be determined in respect of the relevant region and trading interval (which is a negative number);~~

~~SRP<sub>i</sub> (in \$) = the amount payable by AEMO in respect of the trading interval under an individual ancillary services agreement in respect of the provision of a specific SRAS or, for the purposes of clause 4.3.6(q), the compensation payable by AEMO under clause 4.3.6(o) for the relevant billing period;~~

~~RBF<sub>Ri</sub> (number) = the latest regional benefit factor assigned to the provision of the relevant SRAS under an individual ancillary services agreement in respect of the relevant region and trading interval, as determined by AEMO under paragraph (c7);~~

~~TGE<sub>R</sub> (in MWh) = the generator energy for the Market Generator for the trading interval in that region;~~

~~TSGE<sub>R</sub> (in MWh) = the small generator energy for the Market Small Generator Aggregator for the trading interval in that region;~~

~~ATGE<sub>R</sub> (in MWh) = the aggregate of the generator energy figures for all Market Generators for the trading interval in that region; and~~

~~ATSGE<sub>R</sub> (in MWh) = the aggregate of the small generator energy figures for all Market Small Generator Aggregators for the trading interval in that region.~~

where:

subscript i refers to the relevant trading interval;

subscript R refers to the relevant region;

TA (in \$) ≡ the trading amount payable by the Cost Recovery Market Participant in respect of the relevant trading interval and region;

SRP<sub>i</sub> (in \$) ≡ the amount payable by AEMO in respect of the trading interval under an individual ancillary services agreement in respect of the provision of a specific SRAS or, for the purposes of clause 4.3.6(q), the compensation payable by AEMO under clause 4.3.6(o) for the relevant billing period;

RBF<sub>Ri</sub> (number)  $\equiv$  the latest regional benefit factor assigned to the provision of the relevant SRAS under the ancillary services agreement in respect of the relevant region and trading interval, as determined by AEMO under paragraph (c7);

TSOE<sub>R</sub> (in MWh)  $\equiv$  the sum, for all connection points of the Cost Recovery Market Participant located in the region, of the adjusted sent out energy amount for the connection point for the trading interval; and

ATSOE<sub>R</sub> (in MWh)  $\equiv$  the sum, for all connection points located in the region, of the adjusted sent out energy amount for the connection point for the trading interval.

- (e) In each trading interval, in relation to each Cost Recovery Market Participant~~Market Customer~~, for each region, an ancillary services transaction occurs, which results in a trading amount for the Cost Recovery Market Participant~~Market Customer~~ determined in accordance with the following formula:

$$TA = \sum \left( \left( \frac{SRP_i \times RBF_{Ri}}{2} \right) \times \frac{TCE_R}{ATCE_R} \right) \times -1$$

~~Where~~

~~TA (in \$) = the trading amount to be determined in respect of the relevant region and trading interval (which is a negative number);~~

~~SRP<sub>i</sub> (in \$) = has the meaning given in clause 3.15.6A(d);~~

~~RBF<sub>Ri</sub> (number) = the latest regional benefit factor assigned to the provision of the relevant SRAS under an individual ancillary services agreement in respect of the relevant region and trading interval, as determined by AEMO under paragraph (c7);~~

~~TCE<sub>R</sub> (in MWh) = the customer energy for the Market Customer for the trading interval in that region; and~~

~~ATCE<sub>R</sub> (in MWh) = the aggregate of the customer energy figures for all Market Customers for the trading interval in that region.~~

where:

subscript i refers to the relevant trading interval;

subscript R refers to the relevant region;

TA (in \$)  $\equiv$  the trading amount payable by the Cost Recovery Market Participant in respect of the relevant region and trading interval;

<u>SRP<sub>i</sub> (in \$)</u>	≡	<u>the amount payable by AEMO in respect of the trading interval under an individual ancillary services agreement in respect of the provision of a specific SRAS or, for the purposes of clause 4.3.6(q), the compensation payable by AEMO under clause 4.3.6(o) for the relevant billing period;</u>
<u>RBF<sub>Ri</sub> (number)</u>	≡	<u>the latest regional benefit factor assigned to the provision of the relevant SRAS under an individual ancillary services agreement in respect of the relevant region and trading interval, as determined by AEMO under paragraph (c7); the latest regional benefit factor assigned to the provision of the relevant SRAS under an individual ancillary services agreement in respect of the relevant region and trading interval, as determined by AEMO under paragraph (c7);</u>
<u>TCE<sub>R</sub> (in MWh)</u>	≡	<u>the sum, for all connection points of the Cost Recovery Market Participant located in the region, of the adjusted consumed energy amount for the connection point for the trading interval; and</u>
<u>ATCE<sub>R</sub> (in MWh)</u>	≡	<u>the sum, for all connection points located in the region, of the adjusted consumed energy amount for the connection point for the trading interval.</u>

**Note**

~~The values of TCE<sub>R</sub> and ATCE<sub>R</sub> are subject to substitution in accordance with clause 3.15.6AA.~~

**Trading amount calculation for fast raise service, slow raise service or delayed raise service**

- (f) The total amount calculated by AEMO under ~~paragraph (a) clause 3.15.6A(a)~~ for each of the *fast raise service*, *slow raise service* or *delayed raise service* in respect of each *trading interval* must be allocated to each *region* in accordance with the following procedure and the information provided under clause 3.9.2A(b). AEMO must:
- (1) allocate for each *region* and for the relevant *trading interval* the proportion of the total amount calculated by AEMO under ~~paragraph (a) clause 3.15.6A(a)~~ for each of the *fast raise service*, *slow raise service* or *delayed raise service* between *global market ancillary services requirements* and *local market ancillary service requirement* pro-rata to the respective marginal prices for each such service;

- (2) calculate for the relevant *trading interval* the sum of the costs of acquiring the *global market ancillary service requirements* for all *regions* and the sum of the costs of acquiring each *local market ancillary service requirement* for all *regions*, as determined pursuant to ~~subparagraph (f)(1)~~ clause 3.15.6A(f)(1); and
- (3) allocate for the relevant *trading interval* the sum of the costs of the *global market ancillary service requirement* and each *local market ancillary service requirement* calculated in ~~subparagraph (f)(2)~~ clause 3.15.6A(f)(2) to each *region* as relevant to that requirement pro-rata to the aggregate of the *adjusted sent out energy for all Cost Recovery Market Participants in each region during the trading interval*~~*generator energy for the Market Generators and small generator energy for the Market Small Generation Aggregators in each region during the trading interval*~~.

~~For the purpose of this clause 3.15.6A(f) RTCRSP is the sum of:~~

- ~~(i) the global market ancillary service requirement cost for that region, for the relevant trading interval, as determined pursuant to clause 3.15.6A(f)(3); and~~
- ~~(ii) all local market ancillary service requirement costs for that region, for the relevant trading interval, as determined pursuant to clause 3.15.6A(f)(3).~~

~~(f1) In each trading interval, in relation to each Cost Recovery Market Participant, for each region, Market Generator and each Market Small Generation Aggregator in a given region, an ancillary services transaction occurs, which results in a trading amount for that Cost Recovery Market ParticipantMarket Generator and that Market Small Generation Aggregator determined in accordance with the following formula:~~

$$TA = RTCRSP \times \frac{TGE + TSGE}{RATGE + RATSGE} \times -1$$

$$TA = RTCRSP \times \left( \frac{TSGE}{RATSOG} \right) \times -1$$

where:

TA (in \$) = the trading amount payable by the Cost Recovery Market Participant in respect of the relevant region and trading interval;~~the trading amount to be determined (which is a negative number);~~

RTCRSP (in \$) = ~~the total of all amounts calculated by AEMO as appropriate to recover from the given region as calculated in this clause 3.15.6A(f) for the fast raise service, slow raise service~~



		<del>or delayed raise service in respect of the trading interval;</del>
<u>RTCRSP (in \$)</u>	=	the sum of: <ul style="list-style-type: none"> <li>(1) <u>the global market ancillary service requirement cost for that region, for the relevant trading interval, as determined pursuant to paragraph (f)(3); and</u></li> <li>(2) <u>all local market ancillary service requirement costs for that region, for the relevant trading interval, as determined pursuant to paragraph (f)(3);</u></li> </ul>
<u>TSOE (in MWh)</u>	=	<u>the sum, for all connection points of the Cost Recovery Market Participant located in the region, of the adjusted sent out energy for the trading interval; and</u>
<u>RATSOE (in MWh)</u>	=	<u>the sum, for all connection points located in the region, of the adjusted sent out energy for the trading interval.</u>
<u>TGE (in MWh)</u>	=	<del>the generator energy for the Market Generator in that region for the trading interval;</del>
<u>TSGE (in MWh)</u>	=	<del>the small generator energy for the Market Small Generator Aggregator in that region for the trading interval;</del>
<u>RATGE (in MWh)</u>	=	<del>the aggregate of the generator energy figures for all Market Generators in that region for the trading interval; and</del>
<u>RATSGE (in MWh)</u>	=	<del>the aggregate of the small generator energy figures for all Market Small Generator Aggregators in that region for the trading interval.</del>

**Trading amount calculation for fast lower service, slow lower service or delayed lower service**

- (g) The total amount calculated by AEMO under paragraph (a) clause 3.15.6A(a) for each of the *fast lower service*, *slow lower service* or *delayed lower service* in respect of each the *trading interval* must be allocated to each *region* in accordance with the following procedure and the information provided under clause 3.9.2A(b). AEMO must:

- (1) allocate for each *region* and for the relevant *trading interval* the proportion of the total amount calculated by AEMO under paragraph (a) clause 3.15.6A(a) for each of the *fast lower service*, *slow lower service* or *delayed lower service* between *global market ancillary service requirements* and *local market ancillary service requirement* pro rata to the respective marginal prices of each such service;
- (2) calculate for the relevant *trading interval* the sum of the costs of acquiring the *global market ancillary service requirements* for all *regions* and the sum of the costs of acquiring each *local market ancillary service requirement* for all *regions*, as determined pursuant to subparagraph (g)(1) clause 3.15.6A(g)(1); and
- (3) allocate for the relevant *trading interval* the sum of the costs of the *global market ancillary service requirement* and each *local market ancillary service requirement* calculated in subparagraph (g)(2) clause 3.15.6A(g)(2) to each *region* as relevant to that requirement pro-rata to the aggregate of the adjusted consumed energy amounts for all Cost Recovery Market Participants in each region during the trading interval ~~customer energy figures for all Market Customers in each region during the trading interval.~~

For the purpose of this clause 3.15.6A(g) ~~RTCLSP~~ is the sum of:

- (i) ~~the global market ancillary service requirement cost for that region, for the relevant trading interval, as determined pursuant to clause 3.15.6A(g)(3); and~~
- (ii) ~~all local market ancillary service requirement costs for that region, for the relevant trading interval, as determined pursuant to clause 3.15.6A(g)(3).~~

**Note**

~~The values of TCE and RATCE are subject to substitution in accordance with clause 3.15.6AA.~~

- (g1) In each *trading interval*, in relation to each Cost Recovery Market Participant, for each region, Market Customer in a given region, an ancillary services transaction occurs, which results in a *trading amount* for that Cost Recovery Market Participant ~~Market Customer~~ determined in accordance with the following formula:

$$TA = RTCLSP \times \frac{TCE}{RATCE} \times -1$$

where:

TA (in \$) = the trading amount payable by the Cost Recovery Market Participant in respect of the relevant region and trading interval; ~~the trading amount to be determined (which is a negative number);~~

RTCLSP (in \$) = the sum of:

- (1) the global market ancillary service requirement cost for that region, for the relevant trading interval, as determined pursuant to paragraph (g)(3); and
- (2) all local market ancillary service requirement costs for that region, for the relevant trading interval, as determined pursuant to paragraph (g)(3);

~~RTCLSP (in \$) = the total of all amounts calculated by AEMO as appropriate to recover from the given region as calculated in this clause 3.15.6A(g) for the fast lower service, slow lower service or delayed lower service in respect of the trading interval;~~

~~TCE (in MWh) = the sum, for all connection points of the Cost Recovery Market Participant located in the region, of the adjusted consumed energy amount for the connection point for the trading interval; and the customer energy for the Market Customer in that region for the trading interval; and~~

~~RATCE (in MWh) = the sum, for all connection points located in the region, of the adjusted consumed energy amounts for the trading interval. the aggregate of the customer energy figures for all Market Customers in that region for the trading interval.~~

- (h) The total amount calculated by AEMO under paragraph (a) for the *regulating raise service* or the *regulating lower service* in respect of each *trading interval* must be allocated by AEMO to each *region* in accordance with the following procedure and the information provided under clause 3.9.2A(b):
  - (1) allocate on a pro-rata basis for each *region* and for the relevant *trading interval* the proportion of the total amount calculated by AEMO under paragraph (a) for the *regulating raise service* and *regulating lower service* between *global market ancillary service requirements* and *local market ancillary service requirements* to the respective marginal prices for each such service; and
  - (2) calculate for the relevant *trading interval* the sum of the costs of acquiring the *global market ancillary service requirements* for all *regions* and the sum of the costs of acquiring *local market ancillary service requirements* for all *regions*, as determined under subparagraph (1).

(i) In each *trading interval* in relation to:

- (1) each Cost Recovery Market Participant ~~Market Generator, Market Small Generation Aggregator or Market Customer~~ which has metering to allow their individual contribution to the aggregate deviation in frequency of the power system to be assessed, an ancillary services transaction occurs, which results in a *trading amount* for that Cost Recovery Market Participant ~~Market Generator, Market Small Generation Aggregator or Market Customer~~ determined in accordance with the following formula:

$$TA = PTA \times -1$$

and

$$PTA = \text{the aggregate of} \left( TSFCAS \times \frac{MPF}{AMPF} \right)$$

for each *trading interval* for global market ancillary service requirements and local market ancillary service requirements where:

TA (in \$) = the trading amount payable by the Cost Recovery Market Participant in respect of the relevant region and trading interval; ~~the trading amount to be determined (which is a negative number);~~

TSFCAS (in \$) = the total of all amounts calculated by AEMO under paragraph (h)(2) for the *regulating raise service* or the *regulating lower service* in respect of a *trading interval*;

MPF (a number) = the contribution factor last set by AEMO for the Cost Recovery Market Participant ~~Market Generator, Market Small Generation Aggregator or Market Customer~~, as the case may be, under paragraph (j) for the *region* or *regions* relevant to the *regulating raise service* or *regulating lower service*; and

AMPF (a number) = the aggregate of the MPF figures for all Cost Recovery Market Participants ~~Market Participants~~ for the *trading interval* for the *region* or *regions* relevant to the *regulating raise service* or *regulating lower service*.

or

- (2) in relation to each *Cost Recovery Market Participant Market Customer* for whom the *trading amount* is not calculated in accordance with the formula in subparagraph (1), an ancillary services transaction occurs, which results in a trading amount for that *Cost Recovery Market Participant Market Customer* determined in accordance with the following formula:

$$TA = PTA \times -1$$

and

$$PTA = \text{the aggregate of} \left( TSFCAS \times \frac{MPF}{AMPF} \times \frac{TCE}{ATCE} \right)$$

for each *trading interval* for *global market ancillary service requirements* and *local market ancillary service requirements* where:

TA (in \$) = *the trading amount payable by the Cost Recovery Market Participant in respect of the relevant region and trading interval; the trading amount to be determined (which is a negative number);*

TSFCAS (in \$) = has the meaning given in subparagraph (1);

MPF (a number) = the aggregate of the contribution factor set by AEMO under paragraph (j) for *Cost Recovery Market ParticipantsMarket Customers*, for whom the *trading amount* is not calculated in accordance with the formula in subparagraph (1) for the *region* or *regions* relevant to the *regulating raise service* or the *regulating lower service*;

AMPF (a number) = the aggregate of the MPF figures for all *Cost Recovery Market ParticipantsMarket Participants* for the *trading interval* for the *region* or *regions* relevant to the *regulating raise service* or *regulating lower service*;

TCE (in MWh) = the *adjusted consumed energy amounts customer energy* for the *Cost Recovery Market Participant Market Customer* for the *trading interval* in the *region* or *regions* relevant to the *regulating raise service* or *regulating lower service*; and

ATCE (in MWh) = the aggregate of the adjusted consumed energy amounts ~~customer energy figures~~ for all Cost Recovery Market Participants~~Market Customers~~, for whom the *trading amount* is not calculated in accordance with the formula in subparagraph (1), for the *trading interval* for the region or regions relevant to that *regulating raise service* or *regulating lower service*.

**Note**

~~The values of TCE and ATCE are subject to substitution in accordance with clause 3.15.6AA.~~

- (j) AEMO must determine for the purpose of paragraph (i):
  - (1) a contribution factor for each Cost Recovery Market Participant~~Market Participant~~; and
  - (2) notwithstanding the estimate provided in paragraph (nb), if a *region* has or *regions* have operated asynchronously during the relevant *trading interval*, the contribution factors relevant to the allocation of *regulating raise service* or *regulating lower service* to that *region* or *regions*, in accordance with the procedure prepared under paragraph (k).
- (k) AEMO must prepare a procedure for determining contribution factors for use in paragraph (j) and, where AEMO considers it appropriate, for use in paragraph (nb), taking into account the following principles:
  - (1) the contribution factor for a Cost Recovery Market Participant ~~Market Participant~~ should reflect the extent to which the Cost Recovery Market Participant ~~Market Participant~~ contributed to the need for *regulation services*;
  - (2) the contribution factor for all Cost Recovery Market Participants~~Market Customers~~ that do not have metering to allow their individual contribution to the aggregate need for *regulation services* to be assessed must be equal;
  - (3) for the purpose of paragraph (j)(2), the contribution factor determined for a group of *regions* for all Cost Recovery Market Participants ~~Market Customers~~ that do not have metering to allow the individual contribution of that Cost Recovery Market Participants ~~Market Customer~~ to the aggregate need for *regulation services* to be assessed, must be divided between *regions* in proportion to the aggregate of the adjusted consumed energy amounts ~~total customer energy~~ for the *regions*;
  - (4) the individual Cost Recovery Market Participant's~~Market Participant's~~ contribution to the aggregate need for *regulation services* will be determined over a period of time to be determined by AEMO;
  - (5) a *Registered Participant* which has classified a *scheduled generating unit*, scheduled integrated resource unit, *scheduled load*, ~~or ancillary~~



~~service-generating unit or ancillary service load~~*ancillary service unit*  
(called a **Scheduled Participant**) will not be assessed as contributing to the deviation in the *frequency* of the *power system* if within a *trading interval*:

- (i) subject to the provision of *primary frequency response* by that Scheduled Participant in accordance with the *Primary Frequency Response Requirements*, the Scheduled Participant achieves its *dispatch* target at a uniform rate;
  - (ii) the Scheduled Participant is *enabled* to provide a *market ancillary service* and responds to a control signal from *AEMO* to *AEMO's* satisfaction; or
  - (iii) the Scheduled Participant is not *enabled* to provide a *market ancillary service*, but responds to a need for *regulation services* in a way which tends to reduce the aggregate deviation;
- (6) where contributions are aggregated for *regions* that are operating asynchronously during the calculation period under paragraph (i), the contribution factors should be normalised so that the total contributions from any non-synchronised *region* or *regions* is in the same proportion as the ~~total demand~~ ~~total customer energy~~ for that *region* or *regions*; and
- (7) a *Semi-Scheduled Generator* will not be assessed as contributing to the deviation in the *frequency* of the *power system* if within a *trading interval*, the *semi-scheduled generating unit*:
  - (i) subject to the provision of *primary frequency response* by that *semi-scheduled generating unit* in accordance with the *Primary Frequency Response Requirements*, achieves its *dispatch level* at a uniform rate;
  - (ii) is *enabled* to provide a *market ancillary service* and responds to a control signal from *AEMO* to *AEMO's* satisfaction; or
  - (iii) is not *enabled* to provide a *market ancillary service*, but responds to a need for *regulation services*.
- (l) *AEMO* may amend the procedure referred to in clause 3.15.6A(j) from time to time.
- (m) *AEMO* must comply with the *Rules consultation procedures* when making or amending the procedure referred to in clause 3.15.6A(k).
- (n) *AEMO* must *publish*, in accordance with the *timetable*, the historical data used in determining a factor for each *Market Participant* for the purposes of clauses 3.15.6A(h) and (i) in accordance with the procedure contemplated by clause 3.15.6A(k).
- (na) Notwithstanding any other provisions of the *Rules*, *AEMO* must *publish* the factors determined in accordance with clause 3.15.6A(j)(1) at least 10 *business days* prior to the application of those factors in accordance with clauses 3.15.6A(h) and 3.15.6A(i).
- (nb) When a *region* is or *regions* are operating asynchronously, *AEMO* must *publish* (where appropriate in accordance with the procedure developed under

paragraph (k)), an estimate of the contribution factors referred to in paragraph (j)(2) to be applied for information purposes only by Cost Recovery Market Participants ~~Market Participants~~ for the duration of the separation.

(o) **[Deleted]**

(p) When AEMO dispatches a quantity of *regulating raise service* or *regulating lower service* in addition to the quantity it determines in accordance with the *dispatch algorithm*, AEMO must:

- (1) for the purposes of paragraphs (f) and (g), include the additional quantity in the cost of *delayed services*; and
- (2) for the purposes of paragraphs (h) and (i), exclude the additional quantity in the cost of *regulation services*,

taking into account the requirements in clauses 3.8.1(a) and (b) to maximise the value of *spot market* trading.

### 3.15.6AA **[Deleted]** Substitution of regional customer energy values for insufficient net demand recovery periods

(a) ~~In this clause:~~

~~**demand substitution reference period** means the last four complete *billing periods* prior to the start of the relevant recovery period, or another period determined by AEMO following a review in accordance with paragraph (d).~~

~~**relevant recovery period** means a *trading interval* or other period consisting of multiple *trading intervals* for which AEMO must calculate amounts to be recovered from *Market Customers* under:~~

- (1) ~~clause 3.15.6A(e8), (e9), (e), (g) or (i), to fund payments for *ancillary services*;~~
- (2) ~~clause 3.15.8(b), (f) or (g), to fund compensation for *directions*; or~~
- (3) ~~clause 3.15.8A(b) or (f), to fund compensation for *market suspension pricing schedule periods*.~~

(b) ~~Where the following conditions apply:~~

- (1) ~~amounts are to be recovered by AEMO from *Market Customers* in respect of a relevant recovery period by reference to a formula that includes the value of AAGE, ATCE, RATCE or  $\Sigma E$ ; and~~
- (2) ~~the applicable value of AAGE, ATCE, RATCE or  $\Sigma E$  for the relevant recovery period is equal to or less than 150MWh,~~

~~AEMO must calculate the amounts to be recovered from each *Market Customer* under clauses 3.15.6A and 3.15.8 upon substituted values determined under paragraph (c) for each of the following corresponding terms in each formula (as applicable):~~

- (3) ~~AGE and AAGE;~~
- (4) ~~TCE and either ATCE or RATCE; and~~
- (5) ~~E and  $\Sigma E$ .~~

- ~~(c) For each *trading interval* that makes up a relevant recovery period to which paragraph (b) applies:~~
- ~~(1) the substituted value of AGE for each *Market Customer* is the average per *trading interval* of the total *adjusted gross energy* figures over the demand substitution reference period for that *Market Customer's* relevant *connection points* in the relevant *region*;~~
  - ~~(2) the substituted value of AAGE is the aggregate of the substituted AGE amounts under subparagraph (1);~~
  - ~~(3) the substituted value of TCE for each *Market Customer* is the average per *trading interval* of the total *customer energy* figures over the demand substitution reference period for that *Market Customer's* relevant *connection points* in the relevant *region*;~~
  - ~~(4) the substituted value of ATCE is the aggregate of the substituted TCE amounts under subparagraph (3);~~
  - ~~(5) the substituted value of E for each *Market Customer* is the average per *trading interval* of the sum of the *adjusted gross energy* figures over the demand substitution reference period at each *connection point* for which that *Market Customer* is financially responsible in the relevant *region*;~~
  - ~~(6) for the purpose of clause 3.15.8(b), the *adjusted gross energy* amount representing any *scheduled load* is to be excluded from the substituted value of E for the relevant *Market Customer* and *intervention price trading interval*; and~~
  - ~~(7) the substituted value of  $\sum E$  is the aggregate of the substituted E amounts under subparagraphs (5) and (6).~~
- ~~(d) If required under paragraph (c), AEMO must review whether the current demand substitution reference period is a suitable period for the purpose of determining a representative average *adjusted gross energy* value for *Market Customers* in respect of potential relevant recovery periods, and may vary the demand substitution reference period based on its findings. In conducting the review AEMO must:~~
- ~~(1) consult with *Market Customers* on the suitability of the relevant demand substitution reference period and any proposed alternatives;~~
  - ~~(2) publish a report on the review on its website, including reasons for varying the demand substitution reference period (if applicable); and~~
  - ~~(3) specify an effective date for the application of any varied demand substitution reference period in *settlements* calculations (including revisions) with such date being no earlier than four weeks after the date of publication of the report.~~
- ~~(e) AEMO is required to conduct a review under paragraph (d) if:~~
- ~~(1) values have been substituted under this clause 3.15.6AA for relevant recovery periods occurring in at least 5 *billing periods* since 1 September 2021 or, if applicable, since the date of the report on the previous review; and~~

~~(2) — AEMO, or a Market Customer by notice to AEMO, reasonably considers the current demand substitution reference period may not be suitable for the purpose of determining a representative average adjusted gross energy value for Market Customers;~~  
~~provided that AEMO is not required to conduct a review more than once in any 12 month period.~~

### 3.15.7 Payment to Directed Participants

- (a) Subject to paragraphs (b) and (d1), *AEMO* must pay compensation to *Directed Participants* calculated in accordance with clauses 3.15.7, 3.15.7A and 3.15.7B, as the case may be, for any service which the *Directed Participant* was required to provide in order to comply with the *direction*.
- (a1) *AEMO* must compensate each *Directed Participant* for the provision of:
  - (1) *energy* or *market ancillary services* pursuant to a *direction*, under this clause 3.15.7 and clause 3.15.7B, as the case may be; and
  - (2) services, other than *energy* or *market ancillary services*, pursuant to a *direction* (**other compensable services**), in accordance with the fair payment compensation for those services determined under clause 3.15.7A.
- (a2) For the purpose of paragraph (a1) a *Directed Participant* provides *energy* or *market ancillary services* if it was *directed* to provide one or more of the following services:
  - (1) *energy*;
  - (2) any one of the *market ancillary services*;
  - (3) a service that is a direct substitute for *energy* or a *market ancillary service*; or
  - (4) a service that was provided by the *Directed Participant* where *energy* or *market ancillary services* are provided incidental to the provision of that service, including without limitation:
    - (i) *inertia*;
    - (ii) *voltage* control; and
    - (iii) system strength.
- (b) For the purpose of clause 3.15.8 and 3.15.10C the amount of compensation due to a *Directed Participant* pursuant to clause 3.15.7(a) must include interest on the sum of that amount less any payment made in accordance with clause 3.15.10C(a), computed at the average *bank bill rate* for the period beginning on the day on which payment was required to be made under clauses 3.15.16 and 3.15.17 in respect of the *final statement* for the *billing period* in which the *direction* was issued and ending on the day on which payment is required to be made pursuant to clause 3.15.10C.
- (c) Subject to clause 3.15.7(d) and clause 3.15.7B, the compensation payable to each *Directed Participant* for the provision of *energy* or *market ancillary services* pursuant to a *direction* is to be determined in accordance with the formula set out below

$$DCP = AMP \times DQ$$

where:

DCP = the amount of compensation the *Directed Participant* is entitled to receive;

AMP = the price below which are 90% of the *spot prices* or *ancillary service prices* (as the case may be) for the relevant service provided by *Scheduled Generators*, *Semi-Scheduled Generators*, *Scheduled Integrated Resource Providers*, *Scheduled Network Service Providers*, *Demand Response Service Providers* or *Market Customers* in the region to which the *direction* relates, for the 12 months immediately preceding the *trading day* in which the *direction* was issued; and

DQ = is either:

- (A) the difference between the total adjusted consumed energy amounts or total adjusted sent out energy amounts (as applicable)~~adjusted gross energy~~ delivered or consumed by the *Directed Participant* and the total adjusted consumed energy amounts or total adjusted sent out energy amounts (as applicable)~~adjusted gross energy~~ that would have been delivered or consumed by the *Directed Participant* had the *direction* not been issued; or
- (B) the amount of the relevant *market ancillary service* which the *Directed Participant* has been *enabled* to provide in response to the *direction*.

(d) If at the time *AEMO* issues a *direction*:

- (1) the *Directed Participant* had submitted a *dispatch bid*, ~~*dispatch offer*~~ or *rebid* acknowledged by *AEMO* in accordance with clause 3.8.8 for *dispatch* of the service that is to be *dispatched* in accordance with the *direction*; and
- (2) the *direction* was issued because *AEMO* was prevented from *dispatching* the *Directed Participant's plant* in accordance with that *dispatch bid*, ~~*dispatch offer*~~ or *rebid* due to a failure of the *central dispatch* process,

the *Directed Participant* is entitled to receive compensation for the provision of that service at a price equal to the price in that *dispatch bid*, ~~*dispatch offer*~~ or *rebid* acknowledged by *AEMO* in accordance with clause 3.8.8, as the case may be.

- (d1) Where a *Directed Participant* is also a *Market Suspension Compensation Claimant* with respect to any *trading interval* in relation to which *AEMO* has issued a *direction*, such *Directed Participant*:
  - (1) may be entitled to compensation calculated in accordance with clause 3.14.5A(d); and
  - (2) is not entitled to compensation calculated in accordance with paragraph (c).
- (e) *AEMO* must, in accordance with the *intervention settlement timetable*, advise each *Directed Participant* in writing of the amount the *Directed Participant* is entitled to receive pursuant to clause 3.15.7(c) or clause 3.15.7(d).

### **3.15.7A Payment to Directed Participants for services other than energy and market ancillary services**

#### **AEMO to determine if Directed Participant provided an other compensable service**

- (a) If *AEMO* has issued a *direction*, *AEMO* must, in its reasonable opinion, determine whether the *Directed Participant* that was issued the *direction* was required to provide an *other compensable service* in order to comply with that *direction*.
- (b) *AEMO* must within 10 *business days* of issuing the *direction* referred to in paragraph (a), notify the relevant *Directed Participant* of *AEMO's* determination under paragraph (a), and such notice must include:
  - (1) the date and time of the relevant *direction*;
  - (2) the ~~*directed resource scheduled plant or market generating unit*~~ the subject of the relevant *direction*;
  - (3) the circumstances of the relevant *direction*;
  - (4) *AEMO's* determination as to whether an *other compensable service* was provided in order to comply with the *direction* and, if applicable, a description of the *other compensable service* provided; and
  - (5) *AEMO's* reasons for its determination.
- (c) If *AEMO* determines pursuant to paragraph (a) that the *Directed Participant* was not required to provide an *other compensable service* in order to comply with the relevant *direction*, the *Directed Participant* may, within 10 *business days* of receipt of the notice referred to in paragraph (b), make a written submission to *AEMO* setting out its reasons for why it considers that an *other compensable service* was required to be provided by the *Directed Participant* in complying with that *direction*.
- (d) *AEMO* must take into consideration any submissions referred to in paragraph (c), and must within 10 *business days* of receipt of such submissions, notify the *Directed Participant* of its final determination as to whether an *other compensable service* was required to be provided by the *Directed Participant* in complying with the relevant *direction*, including *AEMO's* reasons for its determination.



**Directed Participant not required to provide an other compensable service not entitled to compensation**

- (e) A *Directed Participant* that was not required to provide an *other compensable service* in order to comply with a *direction*:
  - (1) is not entitled to compensation under this clause 3.15.7A; and
  - (2) is not entitled to claim additional compensation under clause 3.15.7B.

**Directed Participant required to provide an other compensable service can claim fair payment compensation**

- (f) If *AEMO* determines pursuant to paragraph (a) that the *Directed Participant* was required to provide an *other compensable service* in order to comply with the relevant *direction*, the *Directed Participant* may, within 15 *business days* of receipt of the notice referred to in paragraph (b), make a written submission to *AEMO* claiming compensation under this clause 3.15.7A at the fair payment compensation of the *other compensable services* provided pursuant to that *direction*.
- (g) For the purpose of determining the fair payment compensation under this clause 3.15.7A, the following must be taken into account:
  - (1) relevant contractual arrangements which specify a price for the relevant service;
  - (2) the loss of revenue incurred by the *Directed Participant* in respect of ~~its directed resource a scheduled generating unit, semi-scheduled generating unit, scheduled load, ancillary service generating unit, market generating unit, ancillary services load or scheduled network services, as the case may be,~~ as a result of the provision of the *other compensable service* under *direction*;
  - (3) the net direct costs incurred by the *Directed Participant* in respect of that ~~directed resource scheduled generating unit, semi-scheduled generating unit, scheduled load, ancillary service generating unit, market generating unit, ancillary services load or scheduled network services, as the case may be,~~ as a result of the provision of the *other compensable service* under *direction* including without limitation:
    - (i) fuel costs in connection with the relevant ~~directed resource generating unit, or scheduled network services;~~
    - (ii) incremental maintenance costs in connection with the relevant ~~directed resource generating unit, load or scheduled network services;~~
    - (iii) incremental manning costs in connection with the relevant ~~directed resource generating unit, load or scheduled network services;~~
    - (iv) acceleration costs of maintenance work in connection with the relevant ~~directed resource generating unit, load or scheduled network services,~~ where such acceleration costs are incurred to enable the ~~directed resource generating unit, load or scheduled network services~~ to comply with the *direction*;

- (v) delay costs for maintenance work in connection with the relevant ~~*directed resource generating unit, load or scheduled network services*~~, where such delay costs are incurred to enable the ~~*directed resource generating unit, load or scheduled network services*~~ to comply with the *direction*; and
- (vi) other costs incurred in connection with the relevant ~~*directed resource generating unit, load or scheduled network services*~~, where such costs are incurred to enable the ~~*directed resource generating unit, load or scheduled network services*~~ to comply with the *direction*.

#### **AEMO must refer claims to an independent expert in certain circumstances**

- (h) *AEMO* must, in accordance with the *intervention settlement timetable* refer a claim by a *Directed Participant* pursuant to paragraph (f) to an independent expert to determine such claim in accordance with clause 3.12.3 if:
  - (1) the claim is equal to or greater than \$20,000; or
  - (2) *AEMO* considers that the claim is unreasonable; or
  - (3) *AEMO* considers that the assessment of the claim involves issues of complexity or difficulty.
- (i) If *AEMO* considers that either of paragraphs (h)(2) or (h)(3) apply, *AEMO* must, in accordance with the *intervention settlement timetable* advise the *Directed Participant* in writing of its decision, setting out its reasons.
- (j) *AEMO* must include as part of the terms of appointment of an independent expert all the requirements set out in clause 3.12.3(c), and the additional following requirements:
  - (1) that the independent expert must, in determining the fair payment compensation of the relevant *other compensable service* for the purposes of this clause 3.15.7A, only take into account:
    - (i) the factors referred to in paragraph (g) and:
    - (ii) the following principles:
      - (A) the disinclination of *Directed Participants* to provide the *other compensable service* the subject of the *direction* must be disregarded; and
      - (B) the urgency of the need for the *other compensable service* the subject of the *direction* must be disregarded;
  - (2) that the independent expert's draft report must set out a description of the *other compensable services* provided in response to the *direction*;
  - (3) that the independent expert's final report must set out the description of the *other compensable services* provided in response to the *direction*.

#### **AEMO may determine compensation itself in some circumstances**

- (k) If none of the factors set out in paragraph (h) apply, then *AEMO* may, after taking into account any submissions received in accordance with paragraph (f), determine in its sole discretion the amount of compensation payable to a

*Directed Participant* under this clause 3.15.7A in relation to that *Directed Participant's* claim pursuant to paragraph (f).

- (l) Subject to paragraph (h), if a *Directed Participant* entitled to make a written submission pursuant to paragraph (f) has not provided such a submission to AEMO within 15 *business days* of receipt of the notice referred to in paragraph (b), then AEMO may at its sole discretion determine the amount of compensation payable to that *Directed Participant* under this clause 3.15.7A at the fair payment compensation of the *other compensable services* provided pursuant to the relevant *direction*.
- (m) If AEMO decides in accordance with either of paragraphs (k) or (l) to determine compensation payable to a *Directed Participant* under this clause 3.15.7A in relation to that *Directed Participant's* claim pursuant to paragraph (f) AEMO must in accordance with the *intervention settlement timetable*:
  - (1) *publish* and deliver in writing to the relevant *Directed Participant* a draft determination detailing AEMO's calculation of the amount of compensation receivable by that party pursuant to clause 3.15.7A, and request submissions from the *Directed Participant* on that draft determination;
  - (2) take into consideration any written submissions made by the relevant *Directed Participant* in relation to the draft determination, if AEMO receives those submissions within 15 *business days* of delivering the draft assessment to that *Directed Participant*; and
  - (3) prepare, *publish* and deliver in writing to the relevant *Directed Participant* its final determination of the amount of compensation receivable by that *Directed Participant* pursuant to this clause 3.15.7A.
- (n) The final determination by AEMO in accordance with paragraph (m)(3) is final and binding.

### **3.15.7B Claim for additional compensation by Directed Participants**

- (a) Subject to clause 3.15.7B(a4), a *Directed Participant* entitled to compensation pursuant to clause 3.14.5A(d) or clause 3.15.7 may, within 15 *business days* of receipt of the advice referred to in clauses 3.14.5A(g) or 3.15.7(e), make a written submission to AEMO claiming an amount equal to the sum of:
  - (1) the aggregate of the loss of revenue and additional net direct costs incurred by the *Directed Participant* in respect of ~~its directed resource a scheduled generating unit, semi-scheduled generating unit or scheduled network services, as the case may be,~~ as a result of the provision of the service under *direction*; less
  - (2) the amount notified to that *Directed Participant* pursuant to clause 3.14.5A(g) or clause 3.15.7(e); less
  - (3) the aggregate amount the *Directed Participant* is entitled to receive in accordance with clause 3.15.6(c) for the provision of a service rendered as a result of the *direction*.
- (a1) [Deleted]

- (a2) Subject to clause 3.15.7B(a4), if a *Directed Participant* entitled to compensation pursuant to clause 3.15.7(d) considers that the amount notified pursuant to clauses 3.15.7(e) is less than the amount it is entitled to receive pursuant to that clause, the *Directed Participant* may, in accordance with the *intervention settlement timetable*, make a written submission to AEMO requesting compensation from AEMO for that difference.
- (a3) For the purposes of the calculation of additional net direct costs pursuant to paragraph (a)(1), the additional net direct costs incurred by the *Directed Participant* in respect of ~~*directed resource that scheduled generating unit, semi-scheduled generating unit or scheduled network services (as the case may be)*~~ includes without limitation:
- (1) fuel costs in connection with the relevant ~~*directed resource generating unit or scheduled network services*~~;
  - (2) incremental maintenance costs in connection with the relevant ~~*directed resource generating unit or scheduled network services*~~;
  - (3) incremental manning costs in connection with the relevant ~~*directed resource generating unit or scheduled network services*~~;
  - (4) acceleration costs of maintenance work in connection with the relevant ~~*directed resource generating unit or scheduled network services*~~, where such acceleration costs are incurred to enable the ~~*Directed Participant generating unit or scheduled network services*~~ to comply with the *direction*;
  - (5) delay costs for maintenance work in connection with the relevant ~~*directed resource generating unit or scheduled network services*~~, where such delay costs are incurred to enable the ~~*Directed Participant generating unit or scheduled network services*~~ to comply with the *direction*;
  - (6) other costs incurred in connection with the relevant ~~*directed resource generating unit or scheduled network services*~~, where such costs are incurred to enable the ~~*Directed Participant generating unit or scheduled network services*~~ to comply with the *direction*; and
  - (7) any compensation which the *Directed Participant* receives or could have obtained by taking reasonable steps in connection with the relevant ~~*directed resource generating unit or scheduled network services*~~ being available.
- (a4) In respect of a single *direction*, a *Directed Participant* may only make a claim pursuant to clauses 3.15.7B(a) or 3.15.7B(a2) if the amount of the claim is greater than \$5,000.
- (b) The submissions pursuant to clauses 3.15.7B(a) and 3.15.7B(a2) must:
- (1) itemise each component of a claim;
  - (2) contain sufficient data and information to substantiate each component of a claim for loss of revenue and additional direct costs incurred, as the case may be; and
  - (3) be signed by an authorised officer of the applicant certifying that the written submission is true and correct.

- (c) *AEMO* must, in accordance with the *intervention settlement timetable*:
- (1) refer a claim by a *Directed Participant* under clause 3.15.7B(a) or 3.15.7B(a2) to an independent expert to determine such claim in accordance with clause 3.12.3 if the claim is equal to or greater than \$20,000 and the *additional intervention claim* that includes that claim is equal to or greater than \$100,000; and
  - (2) determine in its sole discretion if all other claims by a *Directed Participant* in respect of that *direction* pursuant to clauses 3.15.7B(a) and 3.15.7B(a2) are reasonable and if so pay the amount claimed in accordance with clause 3.15.10C.
- (d) If *AEMO* considers that a claim by a *Directed Participant* under clause 3.15.7B(a) or 3.15.7B(a2) is unreasonable, it must, in accordance with the *intervention settlement timetable*:
- (1) advise the *Directed Participant* of its determination in writing, setting out its reasons; and
  - (2) refer the matter to an independent expert to determine the claim for compensation in accordance with clause 3.12.3.

### 3.15.8 Funding of Compensation for directions

#### Definitions

- (a0) In this clause 3.15.8:

**ancillary service compensation recovery amount** has the meaning given to it in clause 3.15.8(e).

~~customer energy in respect of a Market Customer for a trading interval means the sum of the adjusted gross energy figures calculated for that trading interval in respect of that Market Customer's relevant connection points;~~

~~a connection point is a "relevant connection point" of a Market Customer if:~~

- ~~(1) the Market Customer is financially responsible for the connection point; and~~
- ~~(2) the load at that connection point has been classified (or is deemed to be classified) as a market load.~~

~~generator energy in respect of a Market Generator for a trading interval means the sum of the adjusted gross energy figures calculated for that trading interval in respect of that Market Generator's applicable connection points, provided that, if the sum of those figures is negative, then the Market Generator's generator energy for that trading interval is zero;~~

~~a connection point is an "applicable connection point" of a Market Generator if:~~

- ~~(1) the Market Generator is financially responsible for the connection point; and~~
- ~~(2) the connection point connects a market generating unit to the national grid.~~

~~small generator energy in respect of a Market Small Generation Aggregator for a trading interval means the sum of the adjusted gross energy figures calculated for that trading interval in respect of that Market Small Generation Aggregator's applicable connection points, provided that, if the sum of those figures is negative, then the Market Small Generation Aggregator's small generator energy for that trading interval is zero; and~~

~~a connection point is an "applicable connection point" of a Market Small Generation Aggregator if:~~

~~(1) the Market Small Generation Aggregator is financially responsible for the connection point; and~~

~~(2) the connection point connects a small generating unit classified as a market generating unit to the national grid.~~

(a) AEMO must, in accordance with the *intervention settlement timetable*, calculate the *compensation recovery amount* being:

(1) the sum of:

(i) the total of the compensation payable to AEMO by *Affected Participants* and *Market Customers* under clause 3.12.2 in respect of a *direction* for the provision of energy; plus

(ii) the total of the amounts retained by AEMO pursuant to clause 3.15.6(b) in respect of a *direction* for the provision of energy;

(2) less the sum of:

(i) the total of the compensation payable by AEMO to *Affected Participants* and *Market Customers* pursuant to clause 3.12.2 in respect of a *direction* for the provision of energy; plus

(ii) the total of the compensation payable by AEMO to *Directed Participants* (other than *Directed Participants* who are also *Market Suspension Compensation Claimants*) pursuant to clause 3.15.7(a) in respect of a *direction* for the provision of energy; plus

(iii) the total amount payable by AEMO to the independent expert pursuant to clause 3.12.3(c).

(b) AEMO must, in accordance with the *intervention settlement timetable*, calculate a figure for each Cost Recovery Market Participant Market Customer in each region applying the following formula:

$$MCP = \frac{E}{\sum E} \times \frac{RB}{\sum RB} \times CRA$$

$$CRP = \frac{E}{\sum E} \times \frac{RB}{\sum RB} \times CRA$$

where:

CRPMCP is the amount payable or receivable by a Cost Recovery Market Participant Market Customer pursuant to this paragraph (b) ~~clause 3.15.8(b)~~;

E is the sum of the Cost Recovery Market Participant's adjusted consumed energy Market Customer's adjusted gross energy amounts at each connection



point for which the ~~Cost Recovery Market Participant Market Customer~~ is financially responsible in a region, determined in accordance with clauses 3.15.4 and 3.15.5 in respect of the relevant intervention pricing 30-minute period excluding ~~adjusted consumed energy of scheduled loads or integrated resource units~~~~any loads~~, in respect of which the ~~Cost Recovery Market Participant Market Customer~~ submitted a dispatch bid for the relevant intervention pricing 30-minute period in that region; and

RB is the regional benefit determined by AEMO pursuant to clause 3.15.8(b1) at the time of issuing the direction.

CRA is the compensation recovery amount.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

**Note**

~~The values of E and  $\Sigma E$  are subject to substitution in accordance with clause 3.15.6AA.~~

- (b1) AEMO must, as soon as practicable following the issuance of a direction, determine the relative benefit each region received from the issuance of a direction in accordance with the regional benefit directions procedures.
- (b2) AEMO must develop in accordance with the Rules consultation procedures a procedure to determine the relative benefit each region receives from the issuance of a direction (the regional benefit directions procedures). Such procedures must take into account, where applicable to the reason the direction was given, the load at risk of not being supplied if the direction were not issued or the extent of improvement in available energy reserve in the region, capability to control voltage in the region, and capability to control power system frequency within the region and any other relevant matters.
- (c) If the figure calculated for a ~~Cost Recovery Market Participant Market Customer~~ under clause 3.15.8(b) is negative, the absolute value of that amount is the amount payable by the ~~Cost Recovery Market Participant Market Customer~~ to AEMO pursuant to clause 3.15.8(b).
- (d) Subject to clause 3.15.22, if the figure calculated for a ~~Cost Recovery Market Participant Market Customer~~ under clause 3.15.8(b) is positive, such amount is the amount receivable by the ~~Cost Recovery Market Participant Market Customer~~ from AEMO pursuant to clause 3.15.8(b), subject to the provisions of clause 3.15.22.
- (e) AEMO must, in accordance with the intervention settlement timetable, calculate for each ancillary service the subject of a direction, the "ancillary service compensation recovery amount" being:
  - (1) the sum of:
    - (i) the total of the compensation payable to AEMO by Affected Participants and Market Customers under clause 3.12.2 in respect of a direction for the provision of that ancillary service; plus

- (ii) the total of the amounts retained by *AEMO* pursuant to clause 3.15.6(b) in respect of a *direction* for the provision of that *ancillary service*;
- (2) less the sum of:
  - (i) the total of the compensation payable by *AEMO* to *Affected Participants* and *Market Customers* pursuant to clause 3.12.2 in respect of a *direction* for the provision of that *ancillary service*; plus
  - (ii) the total of the compensation payable by *AEMO* to *Directed Participants* pursuant to clause 3.15.7(a) in respect of a *direction* for the provision of that *ancillary service*; plus
  - (iii) the total amount payable by *AEMO* to the independent expert pursuant to clause 3.12.3(c), if the *direction* the subject of the independent expert's determination was with respect to that *ancillary service*.
- (f) The *trading amount* must be calculated as follows:
  - (1) subject to clause 3.15.8(f)(2) and (3) *AEMO* must use the appropriate formula set out in clause 3.15.6A(c8), (c9), (d), (e), (f), (g), (h) or (i) depending on which *ancillary service* was the subject of the *direction*;
  - (2) ~~TNSCASTNSCASP, TSRP,~~ RTCRSP, RTCLSP or TSFCAS (as applicable) in the relevant formula is equal to the *ancillary service compensation recovery amount* for the relevant *ancillary service* in respect of the *direction*; and
  - (3) if TCE, ~~TSOETGE, TSGE,~~ AGE, ATCE, ~~ATSOE ATGE, ATSGE~~ or AAGE is used in the relevant formula, then the words 'the *trading interval*' in the definitions of those terms in the formula are to be read as 'all of the *trading intervals* during which the *direction* applied'.

**Note**

The values of TCE, AGE, ATCE and AAGE are subject to substitution in accordance with clause 3.15.6AA.

- (g) Any compensation payable by *AEMO* under clause 3.12.2 and 3.15.7 not recovered under clauses 3.15.8(b) and 3.15.8(e) must be recovered from Cost Recovery Market Participants~~Market Customers, Market Generators and Market Small Generation Aggregators~~. *AEMO* must, in accordance with the *intervention settlement timetable*, calculate a figure for each Cost Recovery Market Participant~~Market Customer, Market Generator and Market Small Generation Aggregator~~ in each *region* applying the following formula:

$$MCP = \frac{TGE + TSGE - TCE}{RATGE + RATS GE - RATCE} \times \frac{RB}{\Sigma RB} \times CRA \times -1$$

$$CRP = \frac{TSOE - TCE}{RATSOE - RATCE} \times \frac{RB}{\Sigma RB} \times CRA \times -1$$

where:

<u>CRPMCP (in \$)</u>	=	the amount payable or receivable by a <u>Cost Recovery Market Participant Market Customer, Market Generator or Market Small Generation Aggregator</u> under this paragraph (g) <del>clause 3.15.8(g);</del>
<u>TSOETGE (in MWh)</u>	=	the sum, for all <u>connection points</u> of the <u>Cost Recovery Market Participant</u> located in the <u>region</u> , of the <u>adjusted sent out energy</u> in all <u>relevant intervention price trading intervals</u> ; <del>the generator energy for the Market Generator in that region of the relevant trading interval for the period of the direction;</del>
<u>TSGE</u>	=	<del>the small generator energy for the Market Small Generation Aggregator in that region of the relevant trading interval for the period of the direction;</del>
<u>TCE (in MWh)</u>	=	the sum, for all <u>connection points</u> of the <u>Cost Recovery Market Participant</u> located in the <u>region</u> , of the <u>adjusted consumed energy</u> amounts in all <u>relevant intervention price trading intervals</u> ; <del>the customer energy for the Market Customer in that region of the relevant trading interval for the period of the direction;</del>
<u>RATSOE (in MWh)</u>		the sum, for all <u>connection points</u> located in the <u>region</u> of all <u>Cost Recovery Market Participants</u> , of the <u>adjusted consumed energy</u> amounts in all <u>relevant intervention price trading intervals</u> ;
<u>RATGE</u>	=	<del>the aggregate of the generator energy for all Market Generators in that region of the relevant trading interval for the period of the direction;</del>
<u>RATSGE</u>	=	<del>the aggregate of the small generator energy for all Market Small Generation Aggregation in that region of the relevant trading interval for the period of the direction;</del>
<u>RATCE (in MWh)</u>	=	the sum, for all <u>connection points</u> located in the <u>region</u> of all <u>Cost Recovery Market</u>

*Participants, of the adjusted consumed energy amounts in all relevant intervention price trading intervals; the aggregate of the customer energy for all Market Customers in that region of the relevant trading interval for the period of the direction;*

RB (number) = the regional benefit determined by AEMO under clause 3.15.8(b1) at the time of issuing the *direction*; and

CRA = the *compensation recovery amount*.

**Note**

~~The values of TCE and RATCE are subject to substitution in accordance with clause 3.15.6AA.~~

### 3.15.8A Funding of compensation for market suspension pricing schedule periods

#### Definitions

(a0) In this clause:

**ancillary service compensation recovery amount** has the meaning given to it in clause 3.15.8A(f).

(a) AEMO must, in accordance with the *intervention settlement timetable*, calculate the *market suspension compensation recovery amount* being the sum of:

- (1) the total of the compensation payable by AEMO to *Market Suspension Compensation Claimants* calculated in accordance with clauses 3.14.5A(d), 3.14.5B and 3.15.7B (as the case may be) for the provision of energy during a *market suspension pricing schedule period*; plus
- (2) the total amount payable by AEMO to the independent expert pursuant to clause 3.12.3(c); less
- (3) any administrative costs payable by *Market Suspension Compensation Claimants* pursuant to clause 3.14.5B(e).

(b) AEMO must, in accordance with the *intervention settlement timetable*, calculate a figure for each Cost Recovery Market Participant Market Customer in each *region* applying the following formula:

$$MCP = \frac{E}{\sum E} \times \frac{RB}{\sum RB} \times CRA$$

$$CRP = \frac{E}{\sum E} \times \frac{RB}{\sum RB} \times CRA$$

where:

CRPMCP is the amount payable by a Cost Recovery Market Participant Market Customer pursuant to this paragraph (b) ~~clause 3.15.8A(b)~~.

E is the sum of the *Cost Recovery Market Participant's adjusted consumed energy* ~~Market Customer's adjusted gross energy~~ amounts at each *connection point* for which the *Cost Recovery Market Participant* ~~Market Customer~~ is *financially responsible* in a *region*, determined in accordance with clauses 3.15.4 and 3.15.5, in respect of the *trading intervals* that occur during a *market suspension pricing schedule period*.

RB is the regional benefit determined by AEMO pursuant to paragraph (e).

CRA is the *market suspension compensation recovery amount*.

**Note**

The values of E and  $\sum E$  are subject to substitution in accordance with clause 3.15.6AA.

- (c) If the figure calculated for a *Cost Recovery Market Participant* ~~Market Customer~~ under ~~clause 3.15.8A~~ paragraph (b) is negative, the *Cost Recovery Market Participant* ~~Market Customer~~ is liable to pay the absolute value of that amount to AEMO.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) If the figure calculated for a *Cost Recovery Market Participant* ~~Market Customer~~ under clause 3.15.8A(b) is positive, then the amount payable by the *Cost Recovery Market Participant* ~~Market Customer~~ to AEMO is deemed to be zero.
- (e) AEMO must, as soon as practicable, determine the relative benefit each *region* received from the payment of compensation under clauses 3.14.5A and 3.14.5B (as the case may be). In determining the relative benefit each *region* received from the payment of such compensation, AEMO must take into account, where applicable, the reason the compensation was paid, the *load* at risk of not being supplied if the compensation was not paid or the extent of improvement in available *energy* reserves in the *region*, capability to control *voltage* in the *region* and capability to control *power system frequency* within the *region*, and any other relevant matters.
- (f) AEMO must, in accordance with the *intervention settlement timetable*, calculate for each *market ancillary service* the subject of a *direction*, the "*ancillary service compensation recovery amount*" being:
- (1) the total of the compensation payable by AEMO to *Market Suspension Compensation Claimants* calculated in accordance with clauses 3.14.5A(d), 3.14.5B and 3.15.7B (as the case may be) for the provision of *market ancillary services* during a *market suspension pricing schedule period*; plus
  - (2) the total amount payable by AEMO to the independent expert pursuant to clause 3.12.3(c); less
  - (3) any administrative costs payable by *Market Suspension Compensation Claimants* pursuant to clause 3.14.5B(e).
- (g) The *trading amount* must be calculated as follows:

- (1) subject to clause 3.15.8A(g)(2) and (3) *AEMO* must use the appropriate formula set out in clause 3.15.6A(c8), (c9), (d), (e), (f), (g), (h) or (i) depending on which *market ancillary service* was provided during a *market suspension pricing schedule period*;
- (2) ~~TNSCASP, TSRP,~~ RTCRSP, RTCLSP or TSFCAS (as applicable) in the relevant formula is equal to the *ancillary service compensation recovery amount* for the relevant *ancillary service* in respect of that *market suspension pricing schedule period*; and
- (3) if TCE, ~~TGE, TSGE,~~ AGE, ATCE, ATGE, ~~TSOE, ATSOE, ATSGE~~ or AAGE is used in the relevant formula, then the words 'the *trading interval*' in the definitions of those terms in the formula are to be read as 'all of the *trading intervals* within the *market suspension pricing schedule period* in which the *Market Suspension Compensation Claimant* provided *market ancillary services*'.

**Note**

The values of TCE, AGE, ATCE and AAGE are subject to substitution in accordance with clause 3.15.6AA\_;

**3.15.9 Reserve settlements**

- (a) *AEMO's* costs incurred in contracting for the provision of *reserves* are to be met by fees imposed on *Cost Recovery Market Participants* ~~*Market Customers*~~ in accordance with this clause 3.15.9.
- (a1) If clause 3.15.9A applies in respect of a *region*, fees imposed under this clause 3.15.9 may be subject to subsequent adjustment under clause 3.15.9A.
- (b) *AEMO* must, in accordance with the *intervention settlement timetable*, calculate:
  - (1) the aggregate of the amounts payable by *AEMO* under *reserve contracts* in respect of the relevant *billing period*;
  - (2) any amounts determined as payable by *AEMO*:
    - (i) by the independent expert under clause 3.12.3 in respect of an *AEMO intervention event* that is an exercise of the *RERT* during the relevant *billing period*; or
    - (ii) as a result of a *scheduled generating unit*, *scheduled integrated resource unit*, *scheduled network service*, *wholesale demand response unit* or *scheduled load* under a *scheduled reserve contract* being *dispatched* or *generating units*, *integrated resource units* or ~~*other plantloads*~~ under an *unscheduled reserve contract* being *activated*; or
    - (iii) to *Affected Participants* and *Market Customers* pursuant to clause 3.12.2 in respect of an *AEMO intervention event* that is an exercise of the *RERT* during the relevant *billing period*,

in respect of the relevant *billing period*;

- (3) the aggregate of the amounts receivable by *AEMO* under the *Rules* in respect of *reserve contracts* during the relevant *billing period*; and



- (4) any amounts determined as receivable by *AEMO*:
  - (i) by the independent expert under clause 3.12.3 in respect of an *AEMO intervention event* that is an exercise of the *RERT* during the relevant *billing period*; or
  - (ii) from *Affected Participants* and *Market Customers* pursuant to clause 3.12.2 in respect of an *AEMO intervention event* that is an exercise of the *RERT* during the relevant *billing period*,  
in respect of the relevant *billing period*.
- (c) Separate amounts must be calculated under paragraph (b):
  - (1) for *reserve contracts* entered into by *AEMO* specifically in respect of the *Market Participant's region* in accordance with paragraph (d); and
  - (2) for *reserve contracts* other than those entered into for and allocated to a specific *region* or *regions*.
- (d) Where either:
  - (1) without the intervention in the *market* of *AEMO* a *region* would otherwise, in *AEMO's* reasonable opinion, fail to meet the minimum *power system security standards* or the *reliability standard*; or
  - (2) a *region* requires a level of *power system reliability* or *reserves* which, in *AEMO's* reasonable opinion, exceeds the level required to meet the *reliability standard*,then *AEMO* must:
  - (3) recover its net liabilities, or distribute its net profits, under the terms of *reserve contracts* entered into to meet these requirements; and
  - (4) recover any amounts determined as payable by *AEMO* to *Affected Participants* and *Market Customers* (less any amounts determined as receivable by *AEMO* from *Affected Participants* and *Market Customers*) pursuant to clause 3.12.2 in respect of an *AEMO intervention event* that is an exercise of the *RERT*; and
  - (5) recover any amounts determined as payable by *AEMO* by the independent expert under clause 3.12.3 in respect of an *AEMO intervention event* that is an exercise of the *RERT*,from or to the *Cost Recovery Market Participants* ~~*Market Customers*~~ in that *region* in accordance with paragraph (e).
- (e) In respect of:
  - (1) *reserve contracts* entered into by *AEMO*; and
  - (2) any amounts determined as payable by *AEMO* to *Affected Participants* and *Market Customers* (less any amounts determined as receivable by *AEMO* from *Affected Participants* and *Market Customers*) pursuant to clause 3.12.2 in respect of an *AEMO intervention event* that is an exercise of the *RERT*; and

- (3) any amounts determined as payable by *AEMO* by the independent expert under clause 3.12.3 in respect of an *AEMO intervention event* that is an exercise of the *RERT*,

*AEMO* must calculate in relation to each *Cost Recovery Market Participant* ~~*Market Customer*~~ for each *region* in respect of each *billing period* a sum determined by applying the following formula:

$$MCP = \left[ \frac{E_{UC} \times UC}{\sum E_{UC}} \right] + \left[ \frac{E_{OC} \times OC}{\sum E_{OC}} \right]$$

$$CRP = \left[ \frac{(E_{UC} \times UC)}{\sum E_{UC}} \right] = \left[ \frac{(E_{OC} \times OC)}{\sum E_{OC}} \right]$$

where:

*CRPMCP* is the amount payable by a *Cost Recovery Market Participant* ~~*Market Customer*~~ for a *region* in respect of a *billing period*;

UC is:

- (1) the total usage charges (or equivalent charges) paid by *AEMO* under *reserve contracts*, as allocated in accordance with paragraph (e1); and
- (2) the total amount determined as payable by *AEMO* to *Affected Participants* and *Market Customers* (less any amounts determined as receivable by *AEMO* from *Affected Participants* and *Market Customers*) pursuant to clause 3.12.2 in respect of an *AEMO intervention event* that is an exercise of the *RERT*; and
- (3) the total amount determined as payable by *AEMO* by the independent expert under clause 3.12.3 in respect of an *AEMO intervention event* that is an exercise of the *RERT*.

$E_{UC}$  is the sum of all that *Cost Recovery Market Participant's adjusted consumed energy* ~~*Market Customer's adjusted gross energy*~~ amounts in the relevant *region* (the "**relevant region**") in each *trading interval* during which *reserves* were *dispatched* or *activated* under a *reserve contract* in the *billing period*, excluding any *loads* in that *region* in respect of which the *Cost Recovery Market Participant* ~~*Market Customer*~~ submitted a *dispatch bid* for any such *trading interval*;

$\sum E_{UC}$  is the sum of all amounts determined as " $E_{UC}$ " in accordance with this paragraph (e) in respect of that *region* for the relevant *billing period*;

OC is the total amount paid by *AEMO* under *reserve contracts* in the relevant *region* in the *billing period*, other than:

- (1) amounts determined as "UC" in accordance with this paragraph (e) in respect of that *billing period*; and
- (2) operational and administrative costs described in paragraph (g);

$E_{OC}$  is the sum of all that *Cost Recovery Market Participant's adjusted consumed energy* ~~*Market Customer's adjusted gross energy*~~ amounts in the relevant *region* in the *billing period*, excluding any *loads* in that *region* in respect of which the *Cost Recovery Market Participant* ~~*Market Customer*~~

submitted a *dispatch bid* for any *trading interval* during that *billing period*; and

$\sum E_{OC}$  is the sum of all amounts determined as "E<sub>OC</sub>" in accordance with this paragraph (e) in respect of that *region* for the relevant *billing period*.

- (e1) For the purposes of determining amount "UC" in paragraph (e), *AEMO* must reasonably allocate usage charges (or equivalent charges) under *reserve contracts* to the *trading intervals* during which *reserves* were *dispatched* or *activated* in the relevant *region* in the *billing period*.
- (f) A *Market Customer* is liable to pay *AEMO* an amount equal to the sum calculated under paragraph (e) in respect of that *Market Customer*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) Operational and administrative costs incurred by *AEMO* in arranging for the provision of *reserves*, other than its liabilities under the terms of the *reserve contracts* into which it has entered, are to be recovered by *AEMO* from all *Market Participants* as part of the fees imposed in accordance with rule 2.11.
- (h) For the purposes of clause 3.15.19, a re-determination by a panel established under clause 3.12.2 is to be taken to be an agreement between *AEMO* and each of the *Market Participants* and *Scheduled Generators*.

### 3.15.10 Administered price cap or administered floor price compensation payments

- (a1) In this clause 3.15.10:

**cost recovery region** means the *region* in which:

- (1) the *spot price* was set by the *administered price cap* or *administered floor price*; or
- (2) the *ancillary service price* was set by the *administered price cap*, in the *eligibility period*.

**eligibility period** has the same meaning as in clause 3.14.6(a).

- (a) If the *AEMC* awards compensation to a *Scheduled Generator*, *Non-Scheduled Generator*, *Market Participant*, *Scheduled Network Service Provider*, *Demand Response Service Provider* or *Ancillary Service Provider* under clause 3.14.6, then *AEMO* must determine an amount which shall be payable by each *Cost Recovery Market Participant* ~~*Market Customer*~~ who purchased electricity from the *spot market* in the *cost recovery region*.
- (b) *AEMO* shall determine the amounts payable for each *eligibility period* by each of the *Cost Recovery Market Participants* ~~*Market Customers*~~ referred to in clause 3.15.10(a) as follows:

$$\frac{APC \times E_i}{\sum E_i}$$

where

APC is the total amount of any compensation payments awarded by the AEMC to *Scheduled Generators, Non-Scheduled Generators, Market Participants, Scheduled Network Service Providers or Ancillary Service Providers* in respect of that *eligibility period* in accordance with clause 3.14.6.

$E_i$  is the sum of all of the ~~*Cost Recovery Market Participant's adjusted consumed energy*~~~~*Market Customer's adjusted gross energy*~~ amounts, determined in accordance with clauses 3.15.4 and 3.15.5, in respect of each *trading interval* in the *eligibility period* and each *connection point* for which the ~~*Cost Recovery Market Participant Market Customer*~~ is *financially responsible* in the cost recovery region.

$\sum E_i$  is the sum of all amounts determined as " $E_i$ " in accordance with this clause 3.15.10 for all *Market Customers* in the cost recovery region.

- (c) Within 25 *business days* of being notified by the AEMC that compensation is to be paid to a *Scheduled Generator, Non-Scheduled Generator, Market Participant, Scheduled Network Service Providers or Ancillary Service Provider* in accordance with clause 3.14.6, AEMO shall include in statements provided under clauses 3.15.14 and 3.15.15 separate details of any amounts payable by or to ~~*Cost Recovery Market Participants Market Participants*~~ as determined in accordance with this clause 3.15.10.

### 3.15.10C Intervention and Market Suspension Pricing Schedule Period Settlements

- (a) AEMO must include in the *final statements* provided under clause 3.15.15 for a *billing period* in which one or more *intervention pricing 30-minute periods* occurred:
- (1) for each *Affected Participant* and *Market Customer* in relation to the relevant *AEMO intervention event* the amount calculated pursuant to clause 3.12.2(c);
  - (2) for each *Directed Participant* in relation to the relevant *AEMO intervention event* the amount calculated pursuant to clause 3.15.7(c) or clause 3.15.7(a1)(2), as the case may be;
  - (3) for each ~~*Cost Recovery Market Participant Market Customer*~~ in relation to an *AEMO intervention event* that is a *direction*, the amount calculated pursuant to clause 3.15.8(b) by application of clause 3.15.8 mutatis mutandis provided that the amount for the purposes of:
    - (i) clause 3.15.8(a)(1)(i) shall be the total amount payable to AEMO by *Affected Participants* and *Market Customers* calculated pursuant to clause 3.12.2(c);
    - (ii) clause 3.15.8(a)(1)(ii) shall be the amount calculated in accordance with that clause;
    - (iii) clause 3.15.8(a)(2)(i) shall be the total amount payable by AEMO to *Affected Participants* and *Market Customers* calculated pursuant to clause 3.12.2(c);

- (iv) clause 3.15.8(a)(2)(ii) shall be the sum of the total amount payable by *AEMO* to *Directed Participants* calculated pursuant to clause 3.15.7(c) and 3.15.7(a1)(2); and
    - (v) clause 3.15.8(a)(2)(iii) shall be zero;
  - (4) for each *Market Customer*, *Market Generator*, *Integrated Resource Provider* and *Small Resource Aggregator*~~*Market Small-Generation Aggregator*~~ in relation to an *AEMO* intervention event that is a *direction* an amount calculated pursuant to clause 3.15.8(e) by application of clause 3.15.8 mutatis mutandis provided that for the purposes of clause 3.15.8(f)(2) TNSCAS~~*P*~~, ~~*TSRP*~~, *RTCRSP*, *RTCLSP* and *TSFCAS* shall be the total compensation payable by *AEMO* for the relevant *ancillary service* calculated in accordance with clause 3.15.7(c) or clause 3.15.7(a1)(2), as the case may be; and
  - (4A) for each *Cost Recovery Market Participant*~~*Market Customer*~~ in relation to an *AEMO* intervention event that is an exercise of the *RERT*, the amounts calculated pursuant to clause 3.15.9(b)(1), (b)(2)(ii) and (b)(3), and clause 3.15.9(e).
- (a1) *AEMO* must include in the final statement provided under clauses 3.15.14 and 3.15.15 for a *billing period* in which a *market suspension pricing schedule period* occurred:
- (1) for each *Market Suspension Compensation Claimant* in relation to that *market suspension pricing schedule period*:
    - (i) the amount calculated in accordance with clauses 3.14.5A(d), 3.14.5B and 3.15.7B (as the case may be); and
    - (ii) any administrative fees payable under clause 3.14.5B(e); and
  - (2) for each *Cost Recovery Market Participant*~~*Market Customer*~~ in relation to that *market suspension pricing schedule period*, the amount payable pursuant to clause 3.15.8A(b) and clause 3.15.8A(c).
- (b) *AEMO* must include in each statement it provides under clause 3.12.1(a) following a final determination of all total amounts payable or receivable by it pursuant to clauses 3.12.2, 3.14.5A, 3.14.5B, 3.15.7(a), 3.15.8, 3.15.8A and 3.15.9, separate details of the amount:
- (1) receivable by each *Directed Participant* pursuant to clause 3.15.7(a) less the amount, if any, paid to that *Directed Participant* pursuant to clause 3.15.10C(a)(2);
  - (1A) receivable by each *Market Suspension Compensation Claimant* pursuant to clauses 3.14.5A(b) and 3.14.5B (as the case may be);
  - (2) receivable by each *Affected Participant* or *Market Customer* pursuant to clause 3.12.2:
    - (i) less the amount paid to that *Affected Participant* or *Market Customer*, in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(1), if any; or

- (ii) plus the amount paid by that *Affected Participant* or *Market Customer* in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(1), if any;
- (3) payable by each *Affected Participant* or *Market Customer* pursuant to clause 3.12.2:
  - (i) less the amount paid by that *Affected Participant* or *Market Customer*, in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(1), if any; or
  - (ii) plus the amount paid to that *Affected Participant* or *Market Customer* in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(1), if any;
- (4) receivable by each *Cost Recovery Market Participant* ~~*Market Customer*~~ pursuant to clause 3.15.8(b):
  - (i) less the amount paid to that *Cost Recovery Market Participant* ~~*Market Customer*~~ in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(3), if any; or
  - (ii) plus the amount paid by that *Cost Recovery Market Participant* ~~*Market Customer*~~ in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(3), if any;
- (5) payable by each *Cost Recovery Market Participant* ~~*Market Customer*~~ pursuant to clause 3.15.8(b) or clause 3.15.9(e):
  - (i) less the amount paid by that *Cost Recovery Market Participant* ~~*Market Customer*~~ in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(3), if any; or
  - (ii) plus the amount paid to that *Cost Recovery Market Participant* ~~*Market Customer*~~ in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(3), if any;
- (6) if an *Affected Participant* or *Market Customer* is not entitled to any compensation pursuant to clause 3.12.2, the amount:
  - (i) receivable by that person equal to the amount paid by that person pursuant to clause 3.15.10C(a); or
  - (ii) payable by that person equal to the amount paid to that person pursuant to clause 3.15.10C(a);
- (7) payable by each *Cost Recovery Market Participant* ~~*Market Customer*~~, ~~*Market Generator*~~ and ~~*Market Small Generation Aggregator*~~ equal to:
  - (i) the amount payable by the *Cost Recovery Market Participant* ~~*Market Customer*~~, ~~*Market Generator*~~ or ~~*Market Small Generation Aggregator*~~, as the case may be, pursuant to clause 3.15.8(e) by application of clause 3.15.8 mutatis mutandis provided that for the purposes of clause 3.15.8(f)(2) TNSCAS<sub>P</sub>, ~~TSRP~~, RTCRSP, RTCLSP and TSFCAS shall be the total compensation payable by AEMO for the relevant ancillary service calculated in accordance with clause 3.15.7(a1)(2); less



- (ii) the amount paid by the ~~Cost Recovery Market Participant~~~~Market Customer, Market Generator or Market Small Generation Aggregator~~, as the case may be, in accordance with the statement issued to it pursuant to clause 3.15.10C(a)(4); and
- (8) payable by *Registered Participants* pursuant to clause 3.15.8(g).
- (c) If on application by the *AER* a court determines, in relation to a *direction*, that a *Directed Participant* has breached clause 4.8.9(c2) then:
  - (1) the *Directed Participant* shall not be entitled to, and must repay, any compensation plus interest pursuant to clauses 3.15.7, 3.15.7A and 3.15.7B, in relation to that *direction*; and
  - (2) the *AER* must forward to *AEMO* a written notice of the court's determination.
  - (3) *AEMO* must include in the first relevant statement it provides under clauses 3.15.14 and 3.15.15 following receipt of the notice from the *AER* issued pursuant to clause 3.15.10C(c)(2) separate details of:
    - (i) an amount payable to *AEMO* by the *Directed Participant* equal to the total compensation received by that *Directed Participant* in accordance with clauses 3.15.7, 3.15.7A and 3.15.7B plus interest on that total compensation computed at the average *bank bill rate* for the period from the date of payment of such amount to the *Directed Participant* until the date of that first statement;
    - (ii) an amount payable by *AEMO* to each relevant ~~Cost Recovery Market Participant~~~~Market Customer~~ calculated by applying clause 3.15.8(b) mutatis mutandis except that:
      - (A) ~~CRPMCP~~ shall equal the amount receivable by the ~~Cost Recovery Market Participant~~~~Market Customer~~; and
      - (B) *CRA* shall equal that part of the amount, including interest, calculated pursuant to clause 3.15.10C(c)(3)(i) attributable to the provision of *energy* by the *Directed Participant*; and
    - (iii) an amount payable by *AEMO* to each relevant ~~Cost Recovery Market Participant~~~~Market Customer, Market Generator and Market Small Generation Aggregator~~ calculated by applying clause 3.15.8(f)(2) mutatis mutandis except that:
      - (A) all *trading amounts* determined by this clause 3.15.10C(c)(3)(iii) shall be positive; and
      - (B) *TNSCAS<sub>i</sub>P*, ~~TSRP~~, *RTCRSP*, *RTCLSP*, and *TSFCAS* shall all be an amount equal to that part of the amount, including interest, calculated pursuant to clause 3.15.10C(c)(3)(i) attributable to the provision of the relevant *ancillary service*.

### 3.15.21 Default procedure

#### Definitions

- (a0) In this clause 3.15.21:

**default notice** has the meaning given to it in clause 3.15.21(b).

- (a) Each of the following is a *default event* in relation to a *Market Participant*:
- (1) the *Market Participant* does not pay money due for payment to *AEMO* under the *Rules* by the appointed *time* on the due date;
  - (2) *AEMO* does not receive payment in full of any amount claimed by *AEMO* under any *credit support* in respect of a *Market Participant*, within 90 minutes after the due time for payment of that claim;
  - (3) the *Market Participant* fails to provide *credit support* required to be supplied under the *Rules* by the appointed time on the due date;
  - (4) it is unlawful for the *Market Participant* to comply with any of its obligations under the *Rules* or any other obligation owed to *AEMO* or it is claimed to be so by the *Market Participant*;
  - (5) it is unlawful for any *credit support provider* in relation to the *Market Participant* to comply with any of its obligations under the *Rules* or any other obligation owed to *AEMO* or it is claimed to be so by that *credit support provider*;
  - (6) an authorisation from a government body necessary to enable the *Market Participant* or a *credit support provider* which has provided *credit support* for that *Market Participant* to carry on their respective principal business or activities ceases to be in full force and effect;
  - (7) the *Market Participant* or a *credit support provider* which has provided *credit support* for that *Market Participant* ceases or threatens to cease to carry on its business or a substantial part of its business;
  - (8) the *Market Participant* or a *credit support provider* which has provided *credit support* for that *Market Participant* enters into or takes any action to enter into an arrangement (including a scheme of arrangement), composition or compromise with, or assignment for the benefit of, all or any class of their respective creditors or members or a moratorium involving any of them;
  - (9) the *Market Participant* or a *credit support provider* which has provided *credit support* for that *Market Participant* states that it is unable to pay from its own money its debts when they fall due for payment;
  - (10) a receiver or receiver and manager is appointed in respect of any property of the *Market Participant* or a *credit support provider* which has provided *credit support* for that *Market Participant*;
  - (11) an administrator, provisional liquidator, liquidator, trustee in bankruptcy or person having a similar or analogous function is appointed in respect of the *Market Participant* or a provider of *credit support* for the *Market Participant*;
  - (12) an order is made, or a resolution is passed, for the winding up of the *Market Participant* or a provider of *credit support* for the *Market Participant*;
  - (13) A notice under section 601AB(3) of the Corporations Act is given to the *Market Participant* or a *credit support provider* which has provided

- credit support* for that *Market Participant* unless the registration of that *Market Participant* or *credit support provider* is reinstated under section 601AH of the Corporations Act;
- (14) the *Market Participant* or a *credit support provider* which has provided *credit support* for that *Market Participant* dies or is dissolved unless such notice of dissolution is discharged;
  - (15) the *Market Participant* or a *credit support provider* which has provided *credit support* for that *Market Participant* is taken to be insolvent or unable to pay its debts under any applicable legislation.
- (b) Where a *default event* has occurred in relation to a *Market Participant*, *AEMO* may:
- (1) issue a "*default notice*" specifying the alleged default and requiring the *Market Participant* to remedy the default by 1.00 pm (*Sydney time*) the next day following the date of issue of the *default notice*; and/or
  - (2) if it has not already done so, make claim upon any *credit support* held in respect of the obligations of the *Market Participant* for such amount as *AEMO* determines represents the amount of any money actually or contingently owing by the *Market Participant* to *AEMO* pursuant to the *Rules*.
- (c) If a *default event* that is not an *external administration default event* is not remedied by 1.00 pm (*Sydney time*) the next day following the date of issue of the *default notice* or any later deadline agreed to in writing by *AEMO*, or if *AEMO* receives notice from the *defaulting Market Participant* that it is not likely to remedy the default, then *AEMO* may issue a *suspension notice*. For the avoidance of doubt, nothing in paragraphs (c1) to (c6) limits *AEMO*'s discretion in relation to issuing a *suspension notice* under this paragraph (c).
- (c1) If an *external administration default event* is not remedied by 1.00 pm (*Sydney time*) the next day following the date of issue of the *default notice* or any later deadline agreed to in writing by *AEMO*, or if *AEMO* receives notice from the *defaulting Market Participant* that it is not likely to remedy the default, then *AEMO* must:
- (1) issue a *suspension notice* to the *defaulting Market Participant* under which the *Market Participant* is suspended from all activities in relation to each category of *Market Participant* for which it is registered (each a *registration category*); or
  - (2) make a *non-suspension decision* in relation to all activities in relation to each *registration category* of the *Market Participant*; or
  - (3) issue a *suspension notice* to the *defaulting Market Participant* under which the *Market Participant* is suspended from some specified activities or *registration categories* of the *Market Participant* and make a *non-suspension decision* in relation to the activities or *registration categories* that are not the subject of the suspension notice issued under this subparagraph (3).
- (c2) *AEMO* may only make a *non-suspension decision* in relation to any activities or *registration categories* of a *defaulting Market Participant* if:

- (1) the external administrator has requested or consented to the *non-suspension decision* and has undertaken that the *defaulting Market Participant* will meet its relevant liabilities under the *Rules*; and
- (2) taking into account the following matters, *AEMO* considers that the *defaulting Market Participant* should not be suspended in relation to that activity or *registration category*:
  - (i) the likelihood that the *defaulting Market Participant* will comply with its obligations under the *Rules* relevant to that registration;
  - (ii) ~~in the case where the defaulting Market Participant is a Market Generator, Market Small Generator Aggregator or Market Network Service Provider, the potential impact of the suspension of that registration on the reliability of the power system; the potential impact of the suspension of the registration of a Market Participant on the reliability of the power system; and~~
  - (iii) ~~in the case where the Market Participant is not in a category referred to in subparagraph (ii), the potential impact of the suspension of that registration on the reliability of the power system if AEMO considers that matter to be relevant; and [deleted]~~
  - (iv) any other matters *AEMO* considers relevant to the making of the *non-suspension decision*.
- (c3) *AEMO* may make a *non-suspension decision* conditional on the *defaulting Market Participant* continuing to satisfy specified obligations including, without limitation, conditions relating to compliance with the *Rules*.
- (c4) A *defaulting Market Participant* must comply with any conditions specified in a *non-suspension decision*.
- (c5) Promptly after making a *non-suspension decision* in relation to a *defaulting Market Participant*, *AEMO* must:
  - (1) notify the *defaulting Market Participant* of its decision and any conditions that must be satisfied by the *defaulting Market Participant* if the *non-suspension decision* is to remain in effect; and
  - (2) *publish* a notice specifying:
    - (i) that an *external administration default event* has occurred in respect of the *defaulting Market Participant*;
    - (ii) that *AEMO* has made a *non-suspension decision* in accordance with paragraph (c2);
    - (iii) the *registration categories* of the *defaulting Market Participant* affected by the *non-suspension decision* and the activities (or subset of activities) of those *registration categories* that are the subject of the *non-suspension decision*; and
    - (iv) that despite the *non-suspension decision*, *AEMO* may issue a *suspension notice* in relation to the *registration categories* and activities covered by the *non-suspension decision* in the circumstances set out in subparagraphs (c6)(1) to (3).

- (c6) Despite paragraph (c), if at any time after the issue of a *non-suspension decision*:
- (1) *AEMO* considers that the *defaulting Market Participant* has failed to satisfy any of the conditions that apply to the *non-suspension decision*;
  - (2) a further *default event* occurs in respect of the *defaulting Market Participant*; or
  - (3) *AEMO* is not satisfied that the *defaulting Market Participant* will meet its relevant liabilities under the *Rules*,
- then *AEMO* may immediately issue a *suspension notice* to the *defaulting Market Participant* in relation to the *registration categories* and activities of the *defaulting Market Participant* covered by that *non-suspension decision*.
- (d) At the time of issue of a *suspension notice*, or as immediately thereafter as is practicable, *AEMO* must forward a copy of the *suspension notice* to the *AER* and to each *Market Participant* which is *financially responsible* for a *transmission network connection point* to which is allocated a *connection point* for which the *defaulting Market Participant* is *financially responsible*.
- (e) *AEMO* must lift a *suspension notice* if the *default event* is remedied and there are no other circumstances in existence which would entitle *AEMO* to issue a *suspension notice*.
- (f) *AEMO* must issue a public announcement that the *Market Participant* has been suspended from the *market* including details of the extent of the suspension, simultaneously with, or at any time after, a *suspension notice* is issued. *AEMO* must issue a public notice promptly after a *suspension notice* is lifted.
- (g) From the time of suspension that *AEMO* stipulates in a *suspension notice* to a *Market Participant* the *Market Participant* is ineligible to trade or enter into any *transaction* in the *market* to the extent specified in the notice, until such time that *AEMO* notifies the *Market Participant* and all other *Market Participants* of the date and time that the suspension has been lifted.
- (h) The *defaulting Market Participant* must comply with a *suspension notice*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (i) Following the issue of a *suspension notice*, *AEMO* may do all or any of the following to give effect to the *suspension notice*:
- (1) reject any *dispatch bid* ~~or dispatch offer~~ submitted by the *defaulting Market Participant*;
  - (2) withhold the payment of any amounts otherwise due to the *defaulting Market Participant* under the *Rules*; or
  - (3) deregister or reject any *reallocation request* to which the *defaulting Market Participant* is a party.

The issue of a *suspension notice* which has not been lifted is a "**relevant disconnection event**" (ie. an event for which a *Registered Participant's* loads

~~market loads~~ may be *disconnected*) within the meaning of section 63(2) of the *National Electricity Law*.

### 3.16 Participant compensation fund

#### 3.16.1 Establishment of Participant compensation fund

- (a) *AEMO* must continue to maintain, in the books of the corporation, a fund called the *Participant compensation fund* for the purpose of paying compensation to *Scheduled Generators*, *Semi-Scheduled Generators*, *Scheduled Integrated Resource Providers* and *Scheduled Network Service Providers* as determined by the *dispute resolution panel* for *scheduling errors* under this Chapter 3.
- (b) *AEMO* must pay to the *Participant compensation fund* that component of *Participant fees* under rule 2.11 attributable to the *Participant compensation fund*.
- (c) The funding requirement for the *Participant compensation fund* for each *financial year* is the lesser of:
  - (1) \$1,000,000; and
  - (2) \$5,000,000 minus the amount which *AEMO* reasonably estimates will be the balance of the *Participant compensation fund* at the end of the relevant *financial year*.
- (d) The *Participant compensation fund* is to be maintained by *AEMO* and is the property of *AEMO*.
- (e) Any interest paid on money held in the *Participant compensation fund* will accrue to and form part of the *Participant compensation fund*.
- (f) *AEMO* must pay from the *Participant compensation fund* all income tax on interest earned by the *Participant compensation fund* and must pay from the *Participant compensation fund* all bank account debit tax, financial institutions duty and bank fees in relation to the *Participant compensation fund*.
- (g) ~~Upon ceasing to be a *Scheduled Generator* or a *Semi-Scheduled Generator*, the relevant *Generator*—~~A person is not entitled to a refund of any contributions made to the *Participant compensation fund* upon ceasing to be a *Scheduled Generator*, *Semi-Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Scheduled Network Service Provider*.
- (h) ~~[Deleted] Upon ceasing to be a *Scheduled Network Service Provider*, a *Scheduled Network Service Provider* is not entitled to a refund of any contributions made to the *Participant compensation fund*.~~

#### 3.16.2 Dispute resolution panel to determine compensation

- (a) Where a *scheduling error* occurs, a *Market Participant* may apply to the *dispute resolution panel* for a determination as to compensation under this clause 3.16.2.



- (b) Where a *scheduling error* occurs, the *dispute resolution panel* may determine that compensation is payable to *Market Participants* and the amount of any such compensation payable from the *Participant compensation fund*.
- (c) A determination by the *dispute resolution panel* as to compensation must be consistent with this clause 3.16.2.
- (d) A *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* who receives an instruction in respect of a *scheduled generating unit*, ~~or~~ *semi-scheduled generating unit* or *scheduled integrated resource unit* (as the case may be) to operate at a *loading level different to the loading level* ~~lower level than the level~~ at which it would have been instructed to operate had the *scheduling error* not occurred, will be entitled to receive in compensation an amount determined by the *dispute resolution panel*.
- (e) A *Scheduled Network Service Provider* who receives an instruction in respect of its *scheduled network services* to transfer less power on the *scheduled network service* than it would have been instructed to transfer had the *scheduling error* not occurred, will be entitled to receive in compensation an amount determined by the *dispute resolution panel*.
- (f) A *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* who receives a *dispatch instruction* in respect of a *generating unit* or *integrated resource unit* to operate at a level consistent with a ~~*dispatch offer price*~~ *dispatch bid price* (with reference to the relevant *regional reference node*) which is higher than the *spot price*, due to the operation of clause 3.9.2B, is entitled to receive in compensation an amount determined by the *dispute resolution panel*.
- (g) A *Scheduled Network Service Provider* who receives an instruction in respect of its *scheduled network services* to transfer power on the *scheduled network service* consistent with a ~~*network dispatch offer price*~~ *dispatch bid price* but receives less net revenue than would be expected under clause 3.8.6A(f) due to adjustment of the *spot price* for a trading interval under clause 3.9.2B, is entitled to receive in compensation an amount determined by the *dispute resolution panel*.
- (h) In determining the level of compensation to which *Market Participants* are entitled in relation to a *scheduling error*, the *dispute resolution panel* must:
  - (1) where the entitlement to compensation arises under clause 3.16.2(f), determine compensation on the basis of the actual *loading level* and not the *dispatch instruction* applicable to the relevant *scheduled generating unit*, ~~or~~ *semi-scheduled generating unit* or *scheduled integrated resource unit* for that *trading interval*;
  - (2) where the entitlement to compensation arises under clause 3.16.2(g), determine compensation on the basis of the actual *loading level* and not the *dispatch instruction* applicable to the relevant *scheduled network service* for that *trading interval*;
  - (3) use the *spot price* as determined under rule 3.9, including any *spot prices* that have been adjusted in accordance with clause 3.9.2B;

- (4) take into account the current balance of the *Participant compensation fund* and the potential for further liabilities to arise during the year;
- (5) recognise that the aggregate liability in any year in respect of *scheduling errors* cannot exceed the balance of the *Participant compensation fund* that would have been available at the end of that year if no compensation payments for *scheduling errors* had been made during that year.
- (i) The manner and timing of payments from the *Participant compensation fund* are to be determined by the *dispute resolution panel*.
- (j) To the maximum extent permitted by law, *AEMO* is not liable in respect of a *scheduling error* except out of the *Participant compensation fund* as contemplated in this clause 3.16.2.

### 3.18 Settlements Residue Auctions

#### 3.18.2 Auctions and eligible persons

- (a) *AEMO* may conduct *auctions* to determine which *eligible persons* will be issued with *SRD units* under *SRD agreements* with *AEMO*.
- (b) *AEMO* may only enter into a *SRD agreement* with a person (called an *eligible person*) who satisfies the following criteria:
  - (1) the person is a *Market Customer*, a *Generator*, an *Integrated Resource Provider* or a *Trader*, or a person seeking to be eligible for registration as a *Trader* under rule 2.5A; and
  - (2) the person satisfies any criteria specified in the *auction rules*, which criteria must comply with paragraph (g).
- (c) *Auctions* must be conducted in accordance with this rule 3.18 and the *auction rules*.
- (d) *AEMO* may, with the approval of the *settlement residue committee*, suspend, or remove a suspension, on conducting *auctions* for one or more *directional interconnectors* for a specified period if *AEMO* believes it is not practicable to conduct those *auctions* or those *auctions* are unlikely to lead to the entry into of *SRD agreements* in relation to all of the *settlements residues* being auctioned.
- (e) *AEMO* may, after complying with the *Rules consultation procedures*, cease conducting *auctions*.
- (f) If *AEMO* takes any action under paragraph (d) or (e), then it must post a notice on its website specifying the action taken as soon as practicable after taking it.
- (g) Any criteria specified in the *auction rules* concerning persons with whom *AEMO* may enter into *SRD agreements* must be consistent with paragraph (b), not exclude any persons other than those specified in subparagraphs (1) – (6) below and must exclude the persons specified in subparagraphs (1), (2), (5) and (6) below:
  - (1) persons who have not entered into an *auction participation agreement*;

- (2) *Transmission Network Service Providers*;
- (3) **[Deleted]**
- (4) persons:
  - (i) who have previously defaulted on payment obligations under an *auction participation agreement* or a *SRD agreement*; or
  - (ii) in relation to whom a *default event* has occurred;
- (5) any person who *AEMO* considers is acting on behalf of or in concert with a person described in subparagraphs (1) or (2);
- (5a) any person who *AEMO* considers is acting on behalf of or in concert with a person described in subparagraph (4); or
- (6) any person who would be a **retail client** as defined in section 761GA of the *Corporations Act 2001* (Cth), if they entered into an *SRD agreement* with *AEMO*.
- (h) **[Deleted]**

### 3.18.5 Settlement residue committee

- (a) *AEMO* must establish a *settlements residue committee*.
- (b) The functions of the *settlement residue committee* are to:
  - (1) approve any suspension, or removal of a suspension, imposed by *AEMO* on the conducting of *auctions*;
  - (2) approve proposed amendments to the *auction rules* developed by *AEMO*;
  - (3) monitor, review and report on the *auctions* conducted by *AEMO* under this rule 3.18; and
  - (4) approve the costs and expenses incurred by *AEMO* in conducting *auctions* under this rule 3.18 and in entering into and administering *auction participation agreements* and *SRD agreements* under this rule 3.18.
- (c) The *settlement residue committee* is to consist of:
  - (1) an employee of *AEMO* appointed by *AEMO*, who will act as chairman of the committee;
  - (2) a person representing *Generators* or *Integrated Resource Providers*;
  - (3) a person representing *Market Customers*;
  - (4) a person representing *Transmission Network Service Providers*;
  - (5) a person representing *Traders*;
  - (6) a person appointed jointly by the relevant *Ministers* of the *participating jurisdictions*; and
  - (7) a person appointed by the *AEMC* to represent *retail customers*.
- (d) *AEMO* may remove the person referred to in clause 3.18.5(c)(1) at any time for any reason.

- (e) The persons referred to in clauses 3.18.5(c)(2), (3), (4) and (5) must be appointed and removed by *AEMO* after consultation with the class of *Registered Participants* the person is to represent, and *AEMO* must:
  - (1) appoint a person agreed to by at least one third in number of the relevant class of *Registered Participants*; and
  - (2) commence consultation on the removal of such a person if requested to do so by a member of the relevant class of *Registered participants*, and must remove that person if so agreed by at least one third in number of the relevant class of *Registered Participants*.
- (f) The *Ministers* of the *participating jurisdictions* acting jointly may remove the person referred to in clause 3.18.5(c)(6) at any time for any reason.
- (g) The *AEMC* may remove the person referred to in clause 3.18.5(c)(7) at any time for any reason.
- (h) A person holds office as a member of the *settlement residue committee* until that person:
  - (1) resigns from office;
  - (2) if the person is the person referred to in clause 3.18.5(c)(1), is removed from office by *AEMO* in accordance with clause 3.18.5(d);
  - (3) if the person is a person referred to in clauses 3.18.5(c)(2), (3), (4) or (5), is removed from office by *AEMO* in accordance with clause 3.18.5(e)(2);
  - (4) if the person is the person referred to in clause 3.18.5(c)(6), is removed from office by the *Ministers* of the *participating jurisdictions* in accordance with clause 3.18.5(f); or
  - (5) if the person is the person referred to in clause 3.18.5(c)(7), is removed from office by the *AEMC* in accordance with clause 3.18.5(g),
 and such a person is eligible for re-appointment.
- (i) A person may resign as a member of the *settlement residue committee* by giving notice in writing to that effect to *AEMO*.

## 3.20 Reliability and Emergency Reserve Trader

### 3.20.3 Reserve contracts

- (a) Subject to paragraph (f), and in order to ensure that the reliability of *supply* in a *region* meets the *reliability standard* for the *region*, *AEMO* may enter into one or more contracts with any person in relation to the capacity of:
  - (1) *scheduled generating units*, *scheduled integrated resource units*, *wholesale demand response units*, *scheduled network services* or *scheduled loads* (being *scheduled reserve contracts*); and
  - (2) *unscheduled reserves* (being *unscheduled reserve contracts*).
- (b) Subject to paragraph (f), *AEMO* may:
  - (1) enter into *reserve contracts*; or
  - (2) vary existing *reserve contracts*,

in addition to the contracts already entered into by *AEMO* under this rule 3.20.

- (c) If, at any time *AEMO* determines that it is necessary to commence contract negotiations for the provision of additional *reserves* under this rule 3.20, *AEMO* must *publish* a notice of its intention to do so.

#### **Consultation with jurisdictions**

- (d) *AEMO* must consult with persons nominated by the relevant *participating jurisdictions* in relation to any determination to enter into contracts under this rule 3.20.
- (e) In entering into *reserve contracts* under this rule 3.20, *AEMO* must agree with the relevant nominated persons referred to in paragraph (d) cost-sharing arrangements between the *regions* for the purpose of clause 3.15.9.

#### **Procurement trigger and lead time**

- (f) *AEMO* must not enter into a *reserve contract* for a *region* (or vary a *reserve contract* for a *region* that was entered into following a previous declaration under clause 4.8.4 for that *region*):
  - (1) unless it has made a declaration under clause 4.8.4 for that *region*; and
  - (2) more than 12 months prior to the:
    - (i) commencement of any time period specified in the declaration in accordance with clause 4.8.5(a1)(2); or
    - (ii) where no such time period is specified, the date *AEMO* reasonably expects that the *reserves* under that contract may be required to address the *low reserve* or *lack of reserve* condition, having regard to the *reliability standard implementation guidelines*.

For the avoidance of doubt, *AEMO* may negotiate with potential tenderers in relation to *reserve contracts* at any time.

#### **Offering scheduled reserves into the market**

- (g) When contracting for the provision of *scheduled reserves* under *scheduled reserve contracts*, *AEMO* must not enter contracts in relation to capacity of *scheduled generating units*, *scheduled integrated resource units*, *wholesale demand response units*, *scheduled network services* or *scheduled loads* for which ~~*dispatch offers*~~ or *dispatch bids* have been submitted or are considered by *AEMO* to be likely to be submitted or be otherwise available for *dispatch* at any time during:
  - (1) the period from the date of execution of the *scheduled reserve contract* until the end of its term; and
  - (2) the 12 month period immediately preceding the date of execution of the *scheduled reserve contract*, except where that capacity was *dispatched* under a *reserve contract*.
- (h) A person must not enter into a *scheduled reserve contract* in relation to capacity for which ~~*dispatch offers*~~ or *dispatch bids* were submitted, or that was otherwise available for *dispatch* at any time during the 12 month period

immediately preceding the date of execution of the *scheduled reserve contract*, except where that capacity was *dispatched* under a *scheduled reserve contract*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

**Offering unscheduled reserves during specified trading intervals**

- (i) A person must not enter into an *unscheduled reserve contract* if the person is party to another contract or arrangement under which it is required to offer the *unscheduled reserves* the subject of the *unscheduled reserve contract* in the market for the *trading intervals* to which the contract with AEMO relates.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

**Terms and conditions of a contract**

- (j) If AEMO seeks to enter into a *reserve contract* with a *Registered Participant* then the *Registered Participant* must negotiate with AEMO in good faith as to the terms and conditions of the contract.
- (k) AEMO may only enter into a *scheduled reserve contract* if the contract contains:
  - (1) a provision that the other party to the contract has not and will not otherwise offer the *scheduled reserve* the subject of the contract in the market at any time during the period from the date of execution of that contract until the end of its term; and
  - (2) a nominal MW value reflecting AEMO's view of the likely available capacity of that *reserve contract*.
- (l) AEMO may only enter into ~~ana~~ *unscheduled reserve contract* if the contract contains:
  - (1) a provision that the other party to the contract has not and will not otherwise offer the *unscheduled reserve* the subject of the contract in the market for the *trading intervals* to which the contract with AEMO relates; and
  - (2) a nominal MW value reflecting AEMO's view of the likely available capacity of that *reserve contract*.
- (m) AEMO must use reasonable endeavours to ensure that:
  - (1) subject to subparagraph (f)(2), the term of a *reserve contract* is no longer than AEMO considers is reasonably necessary to address the relevant *low reserve* or *lack of reserve* condition; and
  - (2) the amount of *reserve* procured under a *reserve contract* is no more than AEMO considers is reasonably necessary to address the relevant *low reserve* or *lack of reserve* condition.



having regard to the *RERT principles*.

### 3.20.4 Dispatch pricing methodology for unscheduled reserve contracts

- (a) Subject to paragraph (c), *AEMO* must develop in accordance with the *Rules consultation procedures* and *publish* details of the methodology it will use to request that *generating units*, *integrated resource units* or *other connected plant~~loads~~* under *unscheduled reserve contracts* be activated.
- (b) *AEMO* may develop and *publish* the methodology developed in accordance with this clause 3.20.4 as part of the methodology *AEMO* is required to develop under clause 3.9.3(e).
- (c) *AEMO* may make minor and administrative amendments to the methodology developed in accordance with this clause 3.20.4 without complying with the *Rules consultation procedures*.

### 3.20.6 Reporting on RERT by AEMO

#### Post-dispatch or activation report

#### Definitions

- (a0) In this clause 3.20.6:

**RERT report** has the meaning given to it in clause 3.20.6(b).

- (a) If *AEMO* *dispatches* or *activates reserves*, then *AEMO* must, as soon as practicable, and in any event no later than *5 business days* thereafter, *publish* and make available on its website a report that includes details of:
  - (1) the total estimated payments made under *reserve contracts*;
  - (2) the total estimated volume (in MWh) of *reserves dispatched* or *activated* under *reserve contracts*; and
  - (3) if applicable, the information required under clause 3.8.14A(c),for the relevant *region*. In circumstances where *reserves* are *dispatched* or *activated* over consecutive days, the reference to "*5 business days*" in this clause 3.20.6(a) is to be read as "*5 business days* from the final consecutive day in which the *reserves* were *dispatched* or *activated*".

#### RERT report

- (b) *AEMO* must:
  - (1) *publish* a report (**RERT report**) that includes the information specified in paragraphs (d) to (f); and
  - (2) update the RERT report from time to time, in accordance with paragraph (c).
- (c) *AEMO* must:
  - (1) *publish* the first RERT report no later than *30 business days* after 31 December 2019;
  - (2) *publish* any updated RERT report no later than *30 business days* after the end of each calendar quarter; and

- (3) maintain on its website a copy of the RERT report as updated.

**Information to include in RERT report – reserve contracts**

- (d) The RERT report must, with respect to any *reserve contracts* entered into by AEMO, include a detailed explanation of:
  - (1) the estimated average amount payable by AEMO under *reserve contracts* for each *region*, broken down by payment type;
  - (2) AEMO's modelling, forecasts and analysis used to determine:
    - (i) whether to enter into those *reserve contracts*; and
    - (ii) the amount of *reserve* procured under those *reserve contracts*, including how those amounts were determined in accordance with the methodology specified in clause 3.20.7(e)(2),  
and where AEMO procured an amount of *reserves* greater than any shortfall identified in the relevant declaration under clause 4.8.4, an explanation of why a greater amount was procured;
  - (3) the periods in which the *reserves* are expected to be required to address the relevant *low reserve* or *lack of reserve* condition, including whether they align with any periods identified in the relevant declaration under clause 4.8.4;
  - (4) the term of the *reserve contract*, including the basis on which AEMO considered the term to be reasonably necessary to address the relevant *low reserve* or *lack of reserve* condition; and
  - (5) the basis on which AEMO had regard to the *RERT principle* in clause 3.20.2(b)(3) when entering into those *reserve contracts*, and where the average amount payable by AEMO under *reserve contracts* exceeded the estimated average VCR for the relevant *region*, an explanation of why this had occurred.

**Information to include in RERT report – dispatch or activation of reserves**

- (e) The RERT report must, with respect to any *reserves dispatched* or *activated* under *reserve contracts*, include a detailed explanation of:
  - (1) the circumstances giving rise to the need for the *dispatch* of *scheduled reserves* or *activation* of *unscheduled reserves*, including the modelling, forecasts and analysis used by AEMO to determine the need for such *dispatch* or *activation* of *reserves*;
  - (2) the basis on which it determined the latest time for that *dispatch* of *scheduled reserves* or *activation* of *unscheduled reserves* and on what basis it determined that a market response would not have avoided the need for the *dispatch* of *scheduled reserves* or the *activation* of *unscheduled reserves*;
  - (3) the changes in *dispatch* outcomes due to the *dispatch* of *scheduled reserves* or *activation* of *unscheduled reserves*;
  - (4) the processes implemented by AEMO to *dispatch* the *scheduled reserves* or *activate* the *unscheduled reserves*;

- (5) if applicable, reasons why *AEMO* did not follow any or all of the processes set out in rule 4.8 either in whole or in part prior to the *dispatch* of *scheduled reserves* or the *activation* of *unscheduled reserves*;
- (6) the basis upon which *AEMO* determined its approach to setting *spot prices* and *ancillary service prices* in accordance with clause 3.9.3;
- (7) the total amount of *reserves dispatched* or *activated*, and if applicable, why such amounts were different to those previously forecast or modelled by *AEMO*;
- (8) the periods in which *reserves* were *dispatched* or *activated*, and if applicable, why such periods were different to those previously forecast or modelled by *AEMO*;
- (9) the estimated costs of *load shedding* (including an amount expressed in \$/MWh) in a *region* avoided as a result of the *dispatch* or *activation* of *reserves*; and
- (10) the impact of the *dispatch* of *scheduled reserves* or *activation* of *unscheduled reserves* on:
  - (i) the reliability of *supply* into the market; or
  - (ii) where applicable, *power system security*.
- (f) Where *AEMO* has, in accordance with clause 3.15.9, included the amounts arising under a *reserve contract* in a *final statement* provided under clause 3.15.15, the RERT report must include a detailed explanation of:
  - (1) *AEMO's* costs associated with exercising the *RERT* (including an amount expressed in \$/MWh), including the payments under the *reserve contract* for the relevant *billing periods*; and
  - (2) a breakdown of the recovery of those costs (including an amount expressed in \$/MWh) from each *Market Customer* or *Integrated Resource Provider*, as determined by *AEMO*, in each *region*.

#### Information to include in RERT report – end of financial year

- (g) The first updated RERT report following the end of each *financial year* must, in addition to the requirements of paragraphs (d) to (f) specify:
  - (1) each occasion during the *financial year* on which it secured the availability of *reserves* by entering into *reserve contracts*;
  - (2) each occasion during the *financial year* when a ~~*scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load*~~*scheduled resource* under a *scheduled reserve contract* was *dispatched* or *unscheduled reserves available generating units or loads* under an *unscheduled reserve contract* were *activated*; and
  - (3) its costs and finances in connection with its *RERT* activities during the *financial year* according to appropriate accounting standards including profit and loss, balance sheet, sources and applications of funds (including an amount expressed in \$/MWh).

### 3.20.7 AEMO's exercise of the RERT

- (a) Notwithstanding clauses 4.8.5A and 4.8.5B, if *AEMO* considers the latest time for exercising the *RERT* by:

- (1) the *dispatch* of *scheduled reserves* it has available under *scheduled reserve contracts*; or
- (2) the *activation* of *unscheduled reserves* it has available under *unscheduled reserve contracts*,

has arrived, *AEMO* may *dispatch* such *scheduled reserves* or *activate* such *unscheduled reserves* to ensure that the reliability of supply in a *region* or *regions* meets the *reliability standard* or, where practicable, to maintain *power system security*.

- (b) *AEMO* must follow the relevant procedures in this rule ~~3.20~~ prior to *dispatching* a *scheduled resource* ~~*scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load*~~ the subject of a *scheduled reserve contract* or *activating* *unscheduled reserves it has available under generating units or loads the subject of an unscheduled reserve contract* unless it is not reasonably practicable to do so.

- (c) Subject to paragraph (b), *AEMO* must only *dispatch* a *scheduled resource* ~~*scheduled generating unit, a wholesale demand response unit, a scheduled network service or a scheduled load*~~ the subject of a *scheduled reserve contract* or *activate* *unscheduled reserves it has available under generating units or loads the subject of an unscheduled reserve contract* in accordance with the procedures developed pursuant to paragraph (e).

- ~~(d) In order to effect the dispatch of a scheduled resource the subject of a scheduled reserve contract or the activation of unscheduled reserves it has available under an unscheduled reserve contract, AEMO may:~~

- ~~(1) submit, update or vary dispatch bids in relation to all or part of such a scheduled resource which is the subject of a scheduled reserve contract; or~~
- ~~(2) change other inputs to the dispatch process to give effect to the dispatch of scheduled resources the subject of a scheduled reserve contract or the activation of unscheduled reserves it has available under an unscheduled reserve contract.~~

- ~~(d) In order to effect the dispatch of a scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load the subject of a scheduled reserve contract or the activation of generating units or loads the subject of an unscheduled reserve contract AEMO may:~~

- ~~(1) submit, update or vary dispatch bids or dispatch offers in relation to all or part of such a scheduled generating unit, wholesale demand response unit, scheduled network service or scheduled load which is the subject of a scheduled reserve contract; or~~
- ~~(2) change other inputs to the dispatch process to give effect to the dispatch of scheduled generating units, wholesale demand response units, scheduled network services or scheduled loads the subject of a~~

~~scheduled reserve contract or the activation of generating units or loads the subject of an unscheduled reserve contract.~~

- (e) AEMO must develop, publish, and may amend from time to time, in accordance with the *Rules consultation procedures*, procedures for the exercise of the *RERT* under this rule 3.20 that take into account the *RERT principles* and *RERT guidelines*. These procedures must include:
  - (1) the methodology, information and assumptions that AEMO uses to satisfy itself that a person complies with:
    - (i) ~~paragraph (i) clause 3.20.3(i)~~ in relation to unscheduled reserves it has available under generating units or loads that are the subject of unscheduled reserve contracts and
    - (ii) ~~paragraph (h) clause 3.20.3(h)~~ in relation to *wholesale demand response units* that are the subject of *scheduled reserve contracts*;
  - (1A) the measures AEMO will adopt in order to reduce the possibility that unscheduled reserves generating units or loads likely to be activated under *unscheduled reserve contracts* are otherwise engaged at the time the *unscheduled reserve contracts* are required to be activated by AEMO;
  - (2) a methodology to be used by AEMO to determine the appropriate term of a *reserve contract* and the amount of *reserves* to procure in accordance with clause 3.20.3(m); and
  - (3) the basis on which AEMO determines the estimated average VCRs for the purposes of the *RERT principle* in clause 3.20.2(b)(3).
- (e1) If AEMO develops standardised forms of *reserve contracts*, it:
  - (1) must *publish* and maintain on its website a document that specifies the standard terms, conditions and specifications for each type of *reserve contract*, including permitted variations from those standard terms, conditions and specifications; and
  - (2) may amend such document from time to time.
- (f) When exercising the *RERT* under this rule 3.20, AEMO must take into account the *RERT guidelines*.
- (g) [Deleted]

### Schedule 3.1 ~~Bid and Offer Validation Data~~ Bid Validation Data

- (a) The bid validation data~~bid and offer validation data~~ are the standard data requirements for verification and compilation of *dispatch bids*~~and dispatch offers~~ on the *trading day schedule*.
- (b) ~~Scheduled Generators, Semi-Scheduled Generators and~~ Market Participants must notify AEMO of their bid validation data~~bid and offer validation data~~ in accordance with this schedule 3.1 in respect of each of their *scheduled loads*, *wholesale demand response units*, *semi-scheduled generating units*, ~~and~~ scheduled generating units and scheduled integrated resource units at least six weeks prior to commencing participation in the market.

- (c) ~~*Scheduled Generators, Semi-Scheduled Generators and*~~ Market Participants must review their ~~*bid validation data*~~~~*bid and offer validation data*~~ annually in accordance with the *timetable* advised by AEMO and provide details of any changes to AEMO.
- (d) A ~~*Scheduled Generator, Semi-Scheduled Generator or*~~ Market Participant must notify AEMO of any proposed change to its ~~*bid validation data*~~~~*bid and offer validation data*~~ in accordance with clause 3.13.3(h) at least six weeks prior to the date of the proposed change and any proposed change may be subject to audit at AEMO's request and must be consistent with AEMO's register of *performance standards* referred to in rule 4.14(n) in respect of the relevant *plant*.
- (e) A copy of all changes to the data must be returned to each ~~*Scheduled Generator, Semi-Scheduled Generator and*~~ Market Participant for verification and resubmission by the ~~*Scheduled Generator, Semi-Scheduled Generator or*~~ Market Participant as necessary.
- (f) [Deleted]

**Scheduled Generating Unit Data:**

Data	Units of Measurement
<b>Power station information:</b>	
<i>power station name</i>	
<b>Scheduled generating unit information:</b>	
<b>Note:</b> Repeat the following items for each <i>scheduled generating unit</i> where there are two or more <i>scheduled generating units</i> in the <i>power station</i> .	
<i>scheduled generating unit name</i>	
<b>Note:</b> This may be the same name as the <i>power station name</i> when the <i>power station</i> has only one single or aggregated <i>scheduled generating unit</i> .	
<i>Dispatchable unit identifier</i>	
maximum generation of the <i>scheduled generating unit</i> , to which the <i>scheduled generating unit</i> may be dispatched.	MW ( <i>generated</i> )
maximum ramp rate of the <i>scheduled generating unit</i>	MW/minute



### Semi-Scheduled Generating Unit Data:

Data	Units of Measurement
<b>Power station information:</b>	
<i>power station name</i>	
<b>Semi-scheduled generating unit information:</b>	
<b>Note:</b> Repeat the following items for each <i>semi-scheduled generating unit</i> where there are two or more <i>semi-scheduled generating units</i> in the <i>power station</i> .	
<i>semi-scheduled generating unit name</i>  <b>Note:</b> This may be the same name as the <i>power station name</i> when the <i>power station</i> has only one <i>semi-scheduled generating unit</i> .	
<i>Dispatchable unit identifier</i>	
maximum generation of the <i>semi-scheduled generating unit</i> , to which the <i>semi-scheduled generating unit</i> may be dispatched	MW ( <i>generated</i> )
maximum ramp rate of the <i>semi-scheduled generating unit</i>	MW/minute

### Scheduled Load Data:

Data	Units of Measurement
<b>Load installation information:</b>	
<i>load installation name</i>	
<b>Scheduled load information:</b>	
<b>Note:</b> Repeat the following items for each scheduled load where there are two or more scheduled loads.	
<i>scheduled load name</i>  <b>Note:</b> This may be the same name as the <i>load installation name</i> when the <i>load installation</i> has only one <i>scheduled load</i> .	
<i>Dispatchable unit identifier</i>	
maximum load of the <i>scheduled load</i> , to which the <i>scheduled load</i> may be dispatched	MW
maximum ramp rate of the <i>scheduled load</i>	MW/minute

**Scheduled Integrated Resource Unit Data**

<b><u>Data</u></b>	<b><u>Units of measurement</u></b>
<i><u>Facility information</u></i>	
<i><u>Facility name</u></i>	
<i><u>Scheduled integrated resource unit information</u></i>  <u>Note:</u>  Repeat the following items for each <i><u>scheduled integrated resource unit</u></i> where there are two or more <i><u>scheduled integrated resource units</u></i> in the <i><u>power station</u></i>	
<i><u>Scheduled integrated resource unit name</u></i>  <u>Note:</u>  This may be the same as the <i><u>power station</u></i> name when the <i><u>power station</u></i> has only one single or aggregated <i><u>scheduled integrated resource unit</u></i>	
<i><u>Dispatchable unit identifier</u></i>	
<i><u>Maximum generation of the scheduled integrated resource unit, to which the scheduled integrated resource unit may be dispatched.</u></i>	<i><u>MW (produced)</u></i>
<i><u>Maximum load of the scheduled integrated resource unit, to which the scheduled integrated resource unit may be dispatched.</u></i>	<i><u>MW (consumed)</u></i>
<i><u>Maximum ramp rate of the scheduled integrated resource unit.</u></i>	<i><u>MW/minute</u></i>

**Scheduled Network Service Data:**

<b>Data</b>	<b>Units of Measurement</b>
installation/link name	
<i>Dispatchable Unit Identifier</i>	
<i>connection point</i> identifiers for terminal nodes A and B	
maximum <i>power transfer capability</i> to node A	MW
maximum <i>power transfer capability</i> to node B	MW
maximum <i>ramp rate of power transfer capability</i> of the installation	MW/minute

**Ancillary Service ~~Generating Unit and Ancillary Service Load~~ Unit Data:**

<u>Data</u>	<u>Units of measurement</u>
<u>Power station/load installation information</u>	
<u>Power station/load installation name</u>	
<u>Ancillary service unit information</u>  <u>Note:</u>  <u>Repeat the following items for each dispatchable unit identifier where there are two or more ancillary service units in a power station or connected at the same connection point</u>	
<u>Unit/load name</u>	
<u>Dispatchable unit identifier</u>	
<u>Market ancillary service*</u>	
<u>maximum market ancillary service capacity*</u>	<u>MW</u>
<u>minimum enablement level*</u>	<u>MW</u>
<u>maximum enablement level*</u>	<u>MW</u>
<u>maximum lower angle*</u>	<u>Degrees</u>
<u>minimum lower angle*</u>	<u>Degrees</u>

Data	Units of Measurement
<b>Power station/load installation information:</b>	
<i>power station/load installation name</i>	
<b>Ancillary service generating unit and ancillary service load information</b>	
<b>Note:</b> Repeat the following items for each <i>dispatchable unit identifier</i> where there are two or more of them in the <i>power station/installation</i> .	
Unit/load name	
<i>Dispatchable unit identifier</i>	
<i>market ancillary service*</i>	
maximum <i>market ancillary service capacity*</i>	MW
minimum <i>enablement level*</i>	MW
maximum <i>enablement level*</i>	MW
maximum <i>lower angle*</i>	Degrees
maximum <i>upper angle*</i>	Degrees

**Note:**

For those items marked with an asterisk, repeat the block of data for each *market ancillary service* offered.

**Wholesale demand response unit data:**

Data	Units of Measurement
<b>Wholesale demand response unit information:</b>	
<i>Wholesale demand response unit name</i>	
<i>Dispatchable unit identifier</i>	
Maximum <i>responsive component of the wholesale demand response unit</i>	MW
Maximum <i>ramp rate</i>	MW/minute

**Dispatch Inflexibility Profile:**

[Deleted]

**Aggregation Data:**

[Deleted]

## **CHAPTER 4**



## 4. Power System Security

### 4.1 Introduction

#### 4.1.1 Purpose

- (a) This Chapter:
- (1) provides the framework for achieving and maintaining a secure *power system*;
  - (2) provides the conditions under which *AEMO* can intervene in the processes of the *spot market* and issue *directions* to *Registered Participants* so as to maintain or re-establish a secure and reliable *power system*;
  - (3) has the following aims:
    - (i) to detail the principles and guidelines for achieving and maintaining *power system security*;
    - (ii) to establish the processes for the assessment of the adequacy of *power system reserves*;
    - (iii) to establish processes to enable *AEMO* to plan and conduct operations within the *power system* to achieve and maintain *power system security*; and
    - (iv) to establish processes for the actual *dispatch* of ~~*scheduled generating units, semi-scheduled generating units, wholesale demand response units, scheduled loads, scheduled network services*~~ *scheduled resources* and *ancillary services* by *AEMO* and for *AEMO* to *enable inertia network services* or *system strength services*.
- (b) By virtue of this Chapter and the *NEL*, *AEMO* has responsibility to maintain and improve *power system security*. This Chapter also requires the *Jurisdictional System Security Coordinator* for each *participating jurisdiction* to advise *AEMO* of the requirements of the *participating jurisdiction* regarding *sensitive loads* and priority of *load shedding* and requires *AEMO* to provide copies of the relevant *load shedding procedures* and *EFCS settings schedules* to the *Jurisdictional System Security Coordinator*.

### 4.2 Definitions and Principles

This rule sets out certain definitions and concepts that are relevant to this Chapter.

#### 4.2.3 Credible and non-credible contingency events and protected events

- (a) A *contingency event* means an event affecting the *power system* which *AEMO* expects would be likely to involve the failure or removal from operational service of one or more *generating units* and/or *integrated resource units* and/or *transmission elements*.

- (b) A **credible contingency event** means a *contingency event* the occurrence of which AEMO considers to be reasonably possible in the surrounding circumstances including the *technical envelope*. Without limitation, examples of *credible contingency events* are likely to include:
  - (1) the unexpected automatic or manual *disconnection* of, or the unplanned reduction in capacity of, one operating *generating unit* or one operating integrated resource unit; or
  - (2) the unexpected *disconnection* of one major item of *transmission plant* (e.g. *transmission line*, *transformer* or *reactive plant*) other than as a result of a three phase electrical fault anywhere on the *power system*.
- (c) [Deleted]
- (d) [Deleted]
- (e) A **non-credible contingency event** is a *contingency event* other than a *credible contingency event*. Without limitation, examples of *non-credible contingency events* are likely to include:
  - (1) three phase electrical faults on the *power system*; or
  - (2) simultaneous disruptive events such as:
    - (i) multiple *generating unit* or integrated resource unit failures; or
    - (ii) double circuit *transmission line* failure (such as may be caused by tower collapse).
- (f) A **protected event** means a *non-credible contingency event* that the *Reliability Panel* has declared to be a *protected event* under clause 8.8.4, where that declaration has come into effect and has not been revoked. *Protected events* are a category of *non-credible contingency event*.

#### 4.2.6 General principles for maintaining power system security

The *power system security* principles are as follows:

- (a) To the extent practicable, the *power system* should be operated such that it is and will remain in a *secure operating state*.
- (b) Following a *contingency event* (whether or not a *credible contingency event*) or a significant change in *power system* conditions, AEMO should take all reasonable actions:
  - (1) to adjust, wherever possible, the operating conditions with a view to returning the *power system* to a *secure operating state* as soon as it is practical to do so, and, in any event, within thirty minutes; or
  - (2) if any principles and guidelines have been *published* under clause 8.8.1(a)(2a), to adjust, wherever possible, the operating conditions, in accordance with such principles and guidelines, with a view to returning the *power system* to a *secure operating state* within at most thirty minutes.
- (c) *Emergency frequency control schemes* should be available and in service to:
  - (1) restore the *power system* to a *satisfactory operating state* following *protected events*; and

- (2) significantly reduce the risk of *cascading outages* and *major supply disruptions* following significant multiple *contingency events*.
- (d) **[Deleted]**
- (e) Sufficient *SRASs* should be available in accordance with the *system restart standard* to allow the restoration of *power system security* and any necessary restarting of *generating units* or *integrated resource units* following a *major supply disruption*.
- (f) Sufficient *inertia* should be available in each *inertia sub-network* to meet the applicable *inertia requirements*.
- (g) Sufficient *three phase fault level* should be maintained at each *fault level node* to meet the applicable *system strength requirements*.

## 4.3 Power System Security Responsibilities and Obligations

### 4.3.1 Responsibility of AEMO for power system security

The *AEMO power system security responsibilities* are:

- (a) to maintain *power system security*;
- (b) to monitor the operating status of the *power system*;
- (c) to co-ordinate the *System Operators* in undertaking certain of its activities and operations and monitoring activities of the *power system*;
- (d) to ensure that *high voltage* switching procedures and arrangements are utilised by *Network Service Providers* to provide adequate protection of the *power system*;
- (e) to assess potential infringement of the *technical envelope* or *power system operating procedures* which could affect the security of the *power system*;
- (f) to ensure that the *power system* is operated within the limits of the *technical envelope*;
- (g) to ensure that all *plant* and equipment under its control or co-ordination is operated within the appropriate operational or emergency limits which are advised to *AEMO* by the respective *Network Service Providers* or *Registered Participants*;
- (h) to assess the impacts of technical and any operational *plant* on the operation of the *power system*;
- (i) to arrange the *dispatch* of ~~*scheduled generating units, semi-scheduled generating units, wholesale demand response units, scheduled loads, scheduled network services*~~*scheduled resources* and *ancillary services* (including *dispatch* by remote control actions or specific directions) in accordance with the *Rules*, allowing for the dynamic nature of the *technical envelope*;
- (j) to determine any potential *constraint* on the *dispatch* of *scheduled resources* ~~*generating units, wholesale demand response units, loads, market network services*~~ and *ancillary services* and to assess the effect of this *constraint* on the maintenance of *power system security*;

- (k) to assess the availability and adequacy, including the dynamic response, of *contingency capacity reserves* and *reactive power reserves* in accordance with the *power system security standards* and to ensure that appropriate levels of *contingency capacity reserves* and *reactive power reserves* are available:
  - (1) to ensure the *power system* is, and is maintained, in a *satisfactory operating state*; and
  - (2) to arrest the impacts of a range of significant multiple *contingency events* (affecting up to 60% of the total *power system load*) or *protected events* to allow a prompt restoration or recovery of *power system security*, taking into account under-frequency initiated *load shedding* capability provided under *connection agreements*, by *emergency frequency control schemes* or otherwise;
- (l) to monitor demand and *generation* capacity in accordance with the *reliability standard implementation guidelines* and, if necessary, initiate action in relation to a *relevant AEMO intervention event*;
- (m) to publish as appropriate, information about the potential for, or the occurrence of, a situation which could significantly impact, or is significantly impacting, on *power system security*, and advise of any *low reserve* condition for the relevant periods determined in accordance with the *reliability standard implementation guidelines*;
- (n) to refer to *Registered Participants*, as *AEMO* deems appropriate, information of which *AEMO* becomes aware in relation to significant risks to the *power system* where actions to achieve a resolution of those risks are outside the responsibility or control of *AEMO*;
- (o) to utilise resources and services provided or procured as *ancillary services*, *system strength services* or *inertia network services* or otherwise to maintain or restore the *satisfactory operating state* of the *power system*;
- (p) to manage activities reasonably required to effectively prepare for and coordinate a response to a *major supply disruption*, including (but not limited to):
  - (1) procuring adequate *SRASs* in accordance with clause 3.11.9 to enable *AEMO* to co-ordinate a response to a *major supply disruption*;
  - (2) developing the *system restart plan* and coordinating activities among *Registered Participants*, including the testing of *SRASs* or any other equipment, as reasonably necessary to prepare for the implementation of the *system restart plan*; and
  - (3) managing and coordinating the restoration of *supply* following a *major supply disruption*;
- (pa) to coordinate the provision of *emergency frequency control schemes* by *Network Service Providers* and to determine the settings and intended sequence of response by those schemes;
- (pb) to determine the boundaries of *inertia sub-networks* and the *inertia requirements* for each *inertia sub-network* and to enable *inertia network services*;

- (pc) to determine the *system strength requirements* for each *region* and to *enable system strength services*;
- (q) to interrupt, subject to clause 4.3.2(l), *Registered Participant connections* as necessary during emergency situations to facilitate the re-establishment of the *satisfactory operating state* of the *power system*;
- (r) to issue a *direction* or *clause 4.8.9 instruction* (as necessary) to any *Registered Participant*;
- (s) to co-ordinate and direct any rotation of widespread interruption of demand in the event of a major *supply* shortfall or disruption;
- (t) to liaise with *participating jurisdictions* should there be a need to manage an extensive disruption, including the use of emergency services powers in a *participating jurisdiction*;
- (u) to determine the extent to which the levels of *contingency capacity reserves* and *reactive power reserves* are or were appropriate through appropriate testing, auditing and simulation studies;
- (v) to investigate and review all major *power system* operational incidents and to initiate action plans to manage any abnormal situations or significant deficiencies which could reasonably threaten *power system security*. Such situations or deficiencies include without limitation:
  - (1) *power system frequencies* outside those specified in the definition of *satisfactory operating state*;
  - (2) *power system voltages* outside those specified in the definition of *satisfactory operating state*;
  - (3) actual or potential *power system* instability; and
  - (4) unplanned/unexpected operation of major *power system* equipment; and
- (w) to ensure that each *System Operator* satisfactorily interacts with *AEMO*, other *System Operators* and *Distribution System Operators* for both *transmission* and *distribution network* activities and operations, so that *power system security* is not jeopardised by operations on the *connected transmission networks* and *distribution networks*.

#### 4.3.2 System security

- (a) *AEMO* must use its reasonable endeavours, as permitted under the *Rules*, including through the provision of appropriate information to *Registered Participants* to the extent permitted by law and under the *Rules*, to achieve the *AEMO power system security responsibilities* in accordance with the *power system security* principles described in clause 4.2.6.
- (b) Where an obligation is imposed on *AEMO* under this Chapter to arrange or control any act, matter or thing or to ensure that any other person undertakes or refrains from any act, that obligation is limited to a requirement for *AEMO* to use reasonable endeavours as permitted under the *Rules*, including to give such directions as are within its powers, to comply with that obligation.

- (c) If *AEMO* fails to arrange or control any act, matter or thing or the acts of any other person notwithstanding the use of *AEMO's* reasonable endeavours, *AEMO* will not be taken to have breached such obligation.
- (d) *AEMO* must make accessible to *Registered Participants* such information as:
  - (1) *AEMO* considers appropriate;
  - (2) *AEMO* is permitted to disclose in order to assist *Registered Participants* to make appropriate *market* decisions; and
  - (3) *AEMO* is able to disclose to enable *Registered Participants* to consider initiating procedures to manage the potential risk of any necessary action by *AEMO* to restore or maintain *power system security*,provided that, in doing so, *AEMO* must use reasonable endeavours to ensure that such information is available to those *Registered Participants* who request the information on equivalent bases.
- (e) The *Jurisdictional System Security Coordinator* for a *participating jurisdiction* may nominate an individual to be the principal point of contact with *AEMO* for the *Jurisdictional System Security Coordinator*.
- (f) The *Jurisdictional System Security Coordinator* for each *participating jurisdiction* must provide *AEMO* with:
  - (1) a schedule of *sensitive loads* in that jurisdiction, specifying:
    - (i) the priority, in terms of security of *supply*, that each *load* specified in the schedule has over the other *loads* specified in the schedule; and
    - (ii) the *loads* (if any) for which the approval of the *Jurisdictional System Security Coordinator* must be obtained by *AEMO* under clause 4.3.2(1); and
  - (2) a schedule setting out the order in which *loads* in the *participating jurisdiction*, other than *sensitive loads*, may be shed by *AEMO* for the purposes of undertaking any *load shedding* under rule 4.8.
- (g) A *Jurisdictional System Security Coordinator* may from time to time amend the schedules provided to *AEMO* under clause 4.3.2(f) and must provide to *AEMO* a copy of the amended schedules.
- (h) *AEMO* must develop, update and maintain:
  - (1) a set of procedures for each *participating jurisdiction* under which *loads* will be shed (by means other than an *emergency frequency control scheme* included in an *EFCS settings schedule*) and restored in accordance with the priorities set out in the schedules for that *participating jurisdiction* (which procedures for a *participating jurisdiction* shall be known as the *load shedding procedures* for that jurisdiction); and
  - (2) schedules for each *participating jurisdiction* specifying, for each *emergency frequency control scheme* affecting each *region* in that *participating jurisdiction*, settings for operation of the scheme including the matters specified in paragraphs (m) to (p) (which



schedule for a *participating jurisdiction* shall be known as the *EFCS settings schedule* for that jurisdiction).

- (ha) In developing and updating *EFCS settings schedules*, *AEMO* must consult with:
  - (1) affected *Network Service Providers*;
  - (2) the relevant *Jurisdictional System Security Coordinators*, in the case of information in the schedule relating to an *under-frequency scheme*; and
  - (3) affected *Generators* and *Integrated Resource Providers* in the case of information in the schedule relating to an *over-frequency scheme*.
- (i) *AEMO* must provide the *Jurisdictional System Security Coordinator* for a *participating jurisdiction* with a copy of the *load shedding procedures* and the *EFCS settings schedule* for that *participating jurisdiction*, as amended from time to time.
- (j) The *load shedding procedures* and the *EFCS settings schedule* for a *participating jurisdiction* must be consistent with the schedules of the *participating jurisdiction* provided under clause 4.3.2(f) and must, without limitation, include a requirement that:
  - (1) automatic *disconnection* of a *sensitive load* under clause 4.3.5(a) is not to occur until the occurrence of a specified *power system frequency* referred to in the *load shedding procedures* or *EFCS settings schedule*;
  - (2) any such *sensitive load* (or part thereof) which would otherwise have been part of a block of *interruptible load* in an *under-frequency* band specified in clause 4.3.5(b), must be replaced in that band in relation to the *participating jurisdiction* with an equivalent amount of *interruptible load* nominated by other *Market Customers* in the relevant *participating jurisdiction*;
  - (3) after *supply* is interrupted to a *load*, *supply* to that *load* must be restored as soon as this can be achieved and in accordance with the schedules of *loads* referred to in clause 4.3.2(f); and
  - (4) in the case of the *load shedding procedures*, in the event of a major *supply* shortfall, the rotation of any *load shedding* requirements within *regions* (or parts of *regions*) in the *participating jurisdiction* must be in accordance with the *load shedding procedures*.
- (k) Notwithstanding any other provision of the *Rules*, *AEMO* must use its reasonable endeavours to ensure that the *power system* is operated in a manner that maintains security of *supply* to any *sensitive loads* prescribed by the *Jurisdictional System Security Coordinator* for each *participating jurisdiction* under clause 4.3.2(f).
- (l)
  - (1) Notwithstanding any other provision of the *Rules*, in the event that *AEMO*, in its reasonable opinion for reasons of public safety or for *power system security*, needs to interrupt *supply* to any *sensitive loads*, *AEMO* may only give a direction requiring that interruption:
    - (i) in accordance with the *load shedding procedures*; and

- (ii) if it is a *sensitive load* of a type described in clause 4.3.2(f)(1)(ii), once the *Jurisdictional System Security Coordinator* for the relevant *participating jurisdiction* has given *AEMO* its approval (which approval must not be unreasonably withheld).
- (2) Other than to ensure the maintenance of *power system security* or public safety, after *disconnection*, notwithstanding any other provision of the *Rules*, *AEMO* must not take any steps to prevent the reconnection of a *sensitive load* of the type described in clause 4.3.2(f)(1)(ii) without the approval of the *Jurisdictional System Security Coordinator* for the relevant *participating jurisdiction* (which approval must not be unreasonably withheld).
- (3) *AEMO* must seek the approval of the relevant *Jurisdictional System Security Coordinator* for the order in which a *sensitive load* is to be shed and restored under an *EFCS settings schedule* (which approval must not be unreasonably withheld).
- (m) For each *under-frequency scheme*, the applicable *EFCS settings schedule* must set out the manner in which *loads* are to be shed and restored.
- (n) For each *over-frequency scheme*, the applicable *EFCS setting schedule* must set out the manner in which *generating units* or integrated resource units will be interrupted or have output reduced.
- (o) *AEMO* must determine the matters referred to in paragraph (n) in a manner *AEMO* considers is best calculated to be consistent with the *power system security* principles in clause 4.2.6. To that end, *AEMO* may determine a sequence and settings that will:
  - (1) first, restore the *power system* to a *secure operating state*; and
  - (2) then, restore the *power system* to a *reliable operating state*.
- (p) Subject to paragraph (i), *EFCS settings schedules* are *confidential information*.

#### 4.3.6 System restart test obligations

##### Test program

- (a) The relevant *Transmission Network Service Provider* and the *Registered Participants* notified of a *system restart test* under paragraph (b), or identified under paragraph (c), are *Test Participants*.
- (b) *AEMO* may, by notice to the relevant *Transmission Network Service Provider*, *SRAS Providers* and any other *Generator* and Integrated Resource Provider that *AEMO* considers would be required to participate, request the conduct of a *system restart test* for an *electrical sub-network* to verify whether the *system restart plan* as it relates to that *electrical sub-network* is likely to be consistent with the achievement of the *system restart standard* or the *AEMO power system security responsibilities*.
- (c) If a *Transmission Network Service Provider* receives a notice under paragraph (b), it must, within 10 *business days* or such other period proposed by the *Transmission Network Service Provider* and accepted by *AEMO* (acting reasonably), notify *AEMO* of any other *Registered Participant* in

respect of *facilities* connected to its *network* that it considers would be required to participate in the *system restart test*.

- (d) *AEMO* must consult with the *Test Participants* on the timing and scope of the *system restart test* and, after considering any submissions, notify the *Test Participants* of the proposed *energisation* path and approximate timing of the *system restart test*.
- (e) Each *Test Participant* must:
  - (1) within 15 *business days* of receiving notice under paragraph (d), or such longer period agreed to by *AEMO* (acting reasonably), prepare and submit to *AEMO* detailed *system restart test* procedures for its *facilities* that will be included in the *system restart test*; and
  - (2) within 10 *business days* of receiving a request, or such longer period agreed to by *AEMO* or the *Transmission Network Service Provider* (acting reasonably), provide any other information reasonably requested by *AEMO* or the *Transmission Network Service Provider* about the operation of its *facilities*.
- (f) After consulting with the *Test Participants* and incorporating the *system restart test* procedures and any other information provided under paragraph (e), *AEMO* may prepare a *test program* and provide that *test program* to the *Test Participants*.
- (g) The *test program* must be designed to achieve the objective of the *system restart test* set out in paragraph (b) having regard to the following principles:
  - (1) *power system security* must be maintained in accordance with Chapter 4;
  - (2) the extent and duration of variation from the *central dispatch* outcomes that would otherwise occur in the absence of the *system restart test* should be minimised; and
  - (3) to the extent reasonably practicable, the timing, duration and technical specifications of the *system restart test* should consider and be coordinated with the operational requirements of the *Test Participants* so as to minimise the cost and impact of the *system restart test* on the operations of all parties.
- (h) The *test program* must include:
  - (1) at least 2 periods for testing (each a **test window**) of not more than 4 weeks, in which a *system restart test* may occur;
  - (2) unless otherwise agreed by *AEMO* and all *Test Participants*, a first test window that starts at least 30 *business days* after the date the *test program* is provided to the *Test Participants* under paragraph (f); and
  - (3) a proposed test date that occurs in the first test window.
- (i) If, at any time before or during a *system restart test*, *AEMO* considers that it is necessary to modify the *test program*, *AEMO* may modify the *test program* (including the proposed test date) by giving notice as soon as reasonably practicable to the *Test Participants*. If *AEMO* defers the *system restart test*, it must reschedule the *system restart test* to a date within a test window

specified in the *test program* having regard to the principles in paragraph (g), by giving notice to the *Test Participants* as soon as reasonably practicable.

- (j) *AEMO* and the *Test Participants* must conduct the *system restart test* in accordance with the *test program*, as may be modified under paragraph (i).
- (k) Each *Test Participant* must:
  - (1) prepare and provide the *system restart test* procedures and information required under paragraph (e) in accordance with *good electricity industry practice*;
  - (2) cooperate with, and comply with instructions given by *AEMO* and the *Transmission Network Service Provider* in conducting the *system restart test*; and
  - (3) act in good faith in respect of, and not unreasonably delay, the preparation for and conduct of the *system restart test*.

### **Costs**

- (l) Each *Test Participant* and *AEMO* must bear its own costs associated with *system restart tests* except to the extent provided for under this clause 4.3.6. Nothing in this clause 4.3.6 prevents recovery of testing costs under an *ancillary services agreement*.
- (m) A *Test Participant* (other than a *Transmission Network Service Provider*, *Distribution Network Service Provider* or *SRAS Provider*) that is required to participate in a *system restart test* may, within 10 *business days* after the date of the *system restart test* or the permanent deferral of a *system restart test*, submit a written claim to *AEMO* for compensation in respect of its direct costs incurred as a result of its participation in the *system restart test* or preparing for a deferred *system restart test*, where direct costs:
  - (1) include fuel costs and incremental operation and maintenance costs attributable to the specific circumstances related to the *facility's* operation during, or in preparation for, a *system restart test*; and
  - (2) exclude claims for loss of revenue (including from the *market*), losses by third parties and opportunity costs.
- (n) A *Test Participant* may only submit one claim under paragraph (m) in respect of each *system restart test* and each claim must contain sufficient detail and supporting information to substantiate each component of the direct costs claimed.
- (o) *AEMO* must:
  - (1) if the total amount of all claims by *Test Participants* in relation to the same *system restart test* is less than \$100,000 and *AEMO* determines, at its sole discretion, that all such claims are reasonable, pay the amount claimed as soon as reasonably practicable; or
  - (2) otherwise, refer the claim to an independent expert to determine the claim and pay the amount determined by the independent expert.

- (p) A referral of a claim by *AEMO* to an independent expert under subparagraph (o)(2), and the determination of the independent expert, must be consistent with the requirements of clause 3.12.3 except that, in applying that clause:
  - (1) each relevant *Test Participant* is taken to be a *Referred Directed Participant* and the *system restart test* is taken to be an *AEMO intervention event*;
  - (2) references to *intervention settlement timetable* are taken to be references to a timetable published by *AEMO* on its website for the independent expert's appointment and to be included in their terms of engagement, with the objective of publishing the final report within 20 weeks of the date of the referral;
  - (3) the independent expert must only apply the principles in paragraph (m) in determining compensation; and
  - (4) references to paragraphs in clause 3.12.3 are taken to be references to paragraphs in this clause 4.3.6 as appropriate.
- (q) *AEMO* must recover the amount of any compensation paid under paragraph (o) from relevant *Market Participants* in accordance with clause 3.15.6A(d).
- (r) The *AER* must exclude the impact of any *system restart test* from the operation of a *service target performance incentive scheme* for a *Transmission Network Service Provider*.

### Results and reporting

- (s) Each *Test Participant* must:
  - (1) within 1 month of completion of a *system restart test*, give *AEMO* any relevant data, measurements, results and analysis required by the *SRAS Guideline* or the *test program*; and
  - (2) promptly comply with any reasonable request by *AEMO* for other data, measurements, results and analysis of the performance of its *facilities* in the *system restart test*.
- (t) Within 3 months of completion of a *system restart test*, *AEMO* must:
  - (1) provide a detailed report to the *Transmission Network Service Provider* on the results of the *system restart test*; and
  - (2) report to each other *Test Participant* on the performance of its *facilities* in the *system restart test*.

## 4.4 Power System Frequency Control

### 4.4.2 Operational frequency control requirements

To assist in the effective control of *power system frequency* by *AEMO* the following provisions apply:

- (a) *AEMO* may give *dispatch instructions* in respect of ~~*scheduled generating units, semi-scheduled generating units, wholesale demand response units, scheduled loads, scheduled network services*~~ *scheduled resources* and *market ancillary services* pursuant to rule 4.9;

- (b) each *Generator* and *Integrated Resource Provider* must ensure that all of its *generating units* and *integrated resource units* meet the technical requirements for *frequency control* in clause S5.2.5.11;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) *AEMO* must use reasonable endeavours to arrange to be available and allocated to *regulating duty* such *generating plant* as *AEMO* considers appropriate for automatic control or direction by *AEMO* to ensure that all normal *load* variations do not result in *frequency* deviations outside the limitations specified in clause 4.2.2(a);
- (c1) subject to clause 4.4.2A(c), each *Scheduled Generator*, ~~and~~ *Semi-Scheduled Generator* and *Scheduled Integrated Resource Provider* that has received a *dispatch instruction* to generate a volume greater than zero MW must operate its *generating system* or *integrated resource system (as relevant)* in accordance with the *Primary Frequency Response Requirements* as applicable to that *generating system* or *integrated resource system*;
- (d) *AEMO* must use reasonable endeavours to ensure that adequate *facilities* are available and under the direction of *AEMO* to allow the managed recovery of the *satisfactory operating state* of the *power system*.

#### 4.4.2A Primary Frequency Response Requirements

- (a) *AEMO* must develop, publish on its website and maintain, the *Primary Frequency Response Requirements* in accordance with the *Rules consultation procedures*.
- (b) The *Primary Frequency Response Requirements* must include:
- (1) a requirement that *Scheduled Generators*, ~~and~~ *Semi-Scheduled Generators* and *Scheduled Integrated Resource Providers* set their *generating systems* and *integrated resource systems* to operate in *frequency response mode* within one or more performance parameters (which may be specific to different types of *plant*), which:
- (i) must include maximum allowable deadbands which must not be narrower than the *primary frequency control band* outside of which *Scheduled Generators*, ~~and~~ *Semi-Scheduled Generators* and *Scheduled Integrated Resource Providers* must provide *primary frequency response*; and
- (ii) may include (but are not limited to):
- (A) droop; and
- (B) response time,
- (the *primary frequency response parameters*);
- (2) subject to rule 4.4.2B, the conditions or criteria on which a *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* may request, and *AEMO* may approve, a variation to, or exemption from, any *primary frequency response parameters*



- applicable to its *scheduled generating system*, ~~or~~ *semi-scheduled generating system* or scheduled integrated resource system;
- (3) the process and timing for an application for a variation to, or exemption from, any *primary frequency response parameters* applicable to a *scheduled generating system*, ~~or~~ *semi-scheduled generating system* or scheduled integrated resource system, and the process for approval by AEMO of such variation or exemption; and
  - (4) details of the information to be provided by *Scheduled Generators*, ~~and~~ *Semi-Scheduled Generators* and Scheduled Integrated Resource Providers to verify compliance with the *Primary Frequency Response Requirements* and any compliance audits or tests to be conducted by AEMO.
- (c) The *Primary Frequency Response Requirements* must not require a *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or Scheduled Integrated Resource Provider to:
- (1) maintain stored energy in its *generating system* or integrated resource system for the purposes of satisfying clause 4.4.2(c1); or
  - (2) install or modify monitoring equipment to monitor and record the *primary frequency response* of its *generating system* or integrated resource system to changes in the frequency of the power system for the purpose of verifying the *Scheduled Generator's*, ~~or~~ *Semi-Scheduled Generator's* or Scheduled Integrated Resource Provider's compliance with clause 4.4.2(c1).
- (d) AEMO must publish on its website and maintain, a register of *Scheduled Generators*, ~~and~~ *Semi-Scheduled Generators* and Scheduled Integrated Resource Providers who have been granted a variation or exemption from any *primary frequency response parameters* in the *Primary Frequency Response Requirements*.
- (e) AEMO may make minor or administrative amendments to the *Primary Frequency Response Requirements* without complying with the *Rules consultation procedures*.

#### 4.4.2B Approval of variations or exemptions

- (a) In considering whether to approve an exemption from, or a variation to, any of the *primary frequency response parameters* applicable to a *Scheduled Generator's* or *Semi-Scheduled Generator's* *generating system* or a Scheduled Integrated Resource Provider's integrated resource system, AEMO must have regard to:
- (1) the capability of the *generating system* or integrated resource system to operate in *frequency response mode*;
  - (2) the stability of the *generating system* or integrated resource system when operating in *frequency response mode*, and the potential impact this may have on *power system security*;
  - (3) any other physical characteristics of the *generating system* or integrated resource system which may affect its ability to operate in

*frequency response mode*, including (but not limited to) *dispatch inflexibility profile*, operating requirements, or *energy constraints*; and

- (4) whether the *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* has been able to establish to AEMO's reasonable satisfaction that the implementation of the *primary frequency response parameters* applicable to that *Scheduled Generator's* or *Semi-Scheduled Generator's* generating system or that *Scheduled Integrated Resource Provider's integrated resource system* will be unreasonably onerous having regard to (among other things):

- (i) the likely costs of modifying the generating system or integrated resource system to be able to operate in *frequency response mode*; and
- (ii) the likely operation and maintenance costs of operating the generating system or integrated resource system in *frequency response mode*,

relative to the revenue earned from the provision of *energy* and *market ancillary services* by the relevant generating system or integrated resource system in relation to its operation in the NEM during the 12 months prior to the date of the application for exemption or variation, as applicable.

- (b) A dispute between AEMO and a *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* relating to a variation or exemption from any of the *primary frequency response parameters* applicable to a *Scheduled Generator's* or *Semi-Scheduled Generator's* generating system or a *Scheduled Integrated Resource Provider's integrated resource system* may be determined under rule 8.2.
- (c) Information provided to AEMO by a *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* as part of an application for variation or exemption under clause 4.4.2B(a)(4) is *confidential information*.

#### 4.4.3 Generator protection requirements

*Generators and Integrated Resource Providers* must, in accordance with schedule 5.2 and Chapter 5, provide any necessary automatically initiated protective device or systems to protect their *plant* and associated *facilities* against abnormal *voltage* and extreme *frequency* excursions of the *power system*.

##### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

#### 4.4.4 Instructions to enable inertia network services

- (a) Where a *contingency event* that would result in the *islanding* of an *inertia sub-network* has been classified as a *credible contingency event* or defined as a *protected event*:

- (1) *AEMO* may require a range and quantity of *inertia network services* to be *enabled* that will provide *inertia* to the *inertia sub-network* to the level required under subparagraph (2) while the *contingency event* remains classified or defined in that way; and
  - (2) the level of *inertia* referred to in subparagraph (1) is:
    - (i) the *minimum threshold level of inertia* for the *inertia sub-network*; or
    - (ii) if the *minimum threshold level of inertia* for the *inertia sub-network* has been adjusted for *inertia support activities* under clause 5.20B.5(a), that adjusted level of *inertia*.
- (b) Where an *inertia sub-network* is *islanded*:
- (1) *AEMO* may *enable* a range and quantity of *inertia network services* that will provide *inertia* to the *inertia sub-network* to the level required under subparagraph (2) while the *inertia sub-network* remains *islanded*; and
  - (2) the level of *inertia* referred to in subparagraph (1) is:
    - (i) the *secure operating level of inertia* for the *inertia sub-network*; or
    - (ii) if the *secure operating level of inertia* for the *inertia sub-network* has been adjusted for *inertia support activities* under clause 5.20B.5(a), that adjusted level of *inertia*.
- (c) In selecting the *inertia network services* to be *enabled* under paragraph (a) or (b), *AEMO* must use reasonable endeavours to select services in the order of priority specified by the *Inertia Service Provider* in its schedule of *inertia network services* given to *AEMO* under clause 5.20B.6(a).
- (d) For the purposes of paragraphs (a) and (b), *AEMO* may at any time give an instruction to an *Inertia Service Provider* who is providing *inertia network services* or a *Registered Participant* who has agreed with an *Inertia Service Provider* to provide *inertia network services* stating that *AEMO* requires *inertia network services* to be *enabled*. Where *inertia network services* are provided by an ~~*inertia-generating unit*~~*inertia unit*, the instruction must be given in accordance with the procedures for giving *dispatch instructions* under the *Rules*. Otherwise, the instruction must be given in accordance with the arrangements for giving instructions applicable to the *inertia network service* approved by *AEMO* under clause 5.20B.6(e).
- (e) *AEMO* may at any time give an instruction stating that *AEMO* requires the provision of an *inertia network service* to cease. The instruction must be given in the manner provided for in paragraph (d).
- (f) An instruction to *enable* or cease providing *inertia network services* must include:
- (1) specific reference to the *inertia network service* to which the instruction applies;
  - (2) the time the instruction is issued; and

- (3) the time at which the service is to be *enabled* or cease, if that is different from the time the instruction is issued.

- (g) An *Inertia Service Provider* or *Registered Participant* providing *inertia network services* must comply with an instruction given under paragraph (d) or (e).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) An *Inertia Service Provider* or *Registered Participant* providing *inertia network services* must ensure that appropriate personnel or electronic facilities are available at all times to receive and immediately act upon instructions issued by *AEMO* to *enable* the *inertia network service* or cease providing it.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

#### 4.4.5 Instructions to enable system strength services

- (a) *AEMO* may at any time *enable* a range and quantity of *system strength services* to maintain the minimum *three phase fault level* at a *fault level node* when the *three phase fault level* at the *fault level node* would otherwise be below the minimum *three phase fault level* or when reasonably considered necessary by *AEMO* to maintain the *power system* in a *secure operating state*.
- (b) In selecting the *system strength services* to be *enabled* under paragraph (a), *AEMO* must use reasonable endeavours to select services in the order of priority specified by the *System Strength Service Provider* in its schedule of *system strength services* given to *AEMO* under clause 5.20C.4(a).
- (c) For the purposes of paragraph (a), *AEMO* may at any time give an instruction to a *System Strength Service Provider* who is providing *system strength services* or a *Registered Participant* who has agreed with a *System Strength Service Provider* to provide *system strength services* stating that *AEMO* requires *system strength services* to be *enabled*. Where the *system strength services* are provided by a ~~*system strength generating unit*~~*system strength unit*, the instruction must be given in accordance with the procedures for giving *dispatch instructions* under the *Rules*. Otherwise, the instruction must be given in accordance with the arrangements for giving instructions applicable to the *system strength service* approved by *AEMO* under clause 5.20C.4(e).
- (d) *AEMO* may at any time give an instruction stating that *AEMO* requires the provision of a *system strength service* to cease. The instruction must be given in the manner provided for in paragraph (c).
- (e) An instruction to *enable* or cease providing *system strength services* must include:

- (1) specific reference to the *system strength service* to which the instruction applies;
  - (2) the time the instruction is issued; and
  - (3) the time at which the service is to be *enabled* or cease, if that is different from the time the instruction is issued.
- (f) A *System Strength Service Provider* or a *Registered Participant* providing *system strength services* must comply with an instruction given under paragraph (c) or (d).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) A *System Strength Service Provider* or a *Registered Participant* providing *system strength services* must ensure that appropriate personnel or electronic facilities are available at all times to receive and immediately act upon instructions issued by *AEMO* to enable the *system strength service* or cease providing it.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

## 4.6 Protection of Power System Equipment

### 4.6.6 System strength impact assessment guidelines

- (a) *AEMO* must make, *publish* and may amend *system strength impact assessment guidelines* that set out the methodology to be used by *Network Service Providers* when undertaking *system strength impact assessments* under clause 5.3.4B in relation to a proposed new *connection* of a *generating system*, *integrated resource system* or *market network service facility* or an alteration to a *generating system* or *integrated resource system* to which clause 5.3.9 applies.
- (b) The *system strength impact assessment guidelines* must:
- (1) provide for a two-stage assessment process comprising:
    - (i) a preliminary assessment to screen for the need for a full assessment; and
    - (ii) a full assessment;
  - (2) require the full assessment to be carried out using a *power system* model that is reasonably appropriate for conducting *system strength impact assessments* and applicable to the location the *transmission network* or *distribution network* at which the *facility* is or may be *connected* and specified by *AEMO* from time to time for this purpose;
  - (3) exclude from the assessment of an *adverse system strength impact* the impact on any *protection system* for a *transmission network* or *distribution network*;



- (4) provide guidance about the different *network* conditions and *dispatch* patterns and other relevant matters that should be examined when undertaking a full assessment;
  - (5) specify the nature of the impacts that *AEMO* considers to be *adverse system strength impacts* and that must be avoided or overcome by undertaking *system strength connection works* or implementing a *system strength remediation scheme* in accordance with clause 5.3.4B;
  - (6) provide guidance about the matters that must be considered when determining whether a *connection* or alteration will result in an *adverse system strength impact*;
  - (7) include if applicable any thresholds below which an impact may be disregarded when determining the need for a *system strength remediation scheme* or *system strength connection works* under clause 5.3.4B; and
  - (8) provide general guidance about options for *system strength remediation schemes* and *system strength connection works*.
- (c) Subject to paragraph (d), *AEMO* must comply with the *Rules consultation procedures* when making or amending the *system strength impact assessment guidelines*.
  - (d) *AEMO* may make minor or administrative amendments to the *system strength impact assessment guidelines* without complying with the *Rules consultation procedures*.
  - (e) *AEMO* must provide the model referred to in subparagraph (b)(2) to a *Local Network Service Provider* or, subject to paragraph (f), to a *Generator*, *Integrated Resource Provider* or *Connection Applicant* who requests the model in connection with a *system strength impact assessment*.
  - (f) If *AEMO* receives a request under paragraph (e) from a *Generator*, *Integrated Resource Provider* or a *Connection Applicant*:
    - (1) *AEMO* must treat the request as if it were information reasonably required by a *Registered Participant* under clause 3.13.3(k)(2) and *AEMO* is only required to provide the model referred to in subparagraph (b)(2) (or the source code for that model) in the form contemplated by clause 3.13.3(l)(2); and
    - (2) *AEMO* may require a *Connection Applicant* who is not a *Registered Participant* to give an undertaking in a form satisfactory to *AEMO* to comply with rule 8.6 as if the *Connection Applicant* were a *Registered Participant* as a condition of providing a model to the *Connection Applicant* under paragraph (e).

## 4.8 Power System Security Operations

### 4.8.3 AEMO's advice on power system emergency conditions

- (a) *AEMO* must *publish* all relevant details promptly after *AEMO* becomes aware of any circumstance with respect to the *power system* which, in the



reasonable opinion of *AEMO*, could be expected to materially adversely affect *supply* to or from *Registered Participants*.

- (b) Without limitation, such circumstances may include:
  - (1) electricity *supply* capacity shortfall, being a condition where there are insufficient *generation* or *supply* options available to securely *supply* the total load in a *region*;
  - (2) unexpected disruption of *power system security*, which may occur when:
    - (i) an unanticipated major *power system* or *generation plant* (including for an integrated resource unit) contingency event occurs; or
    - (ii) significant environmental or similar conditions, including weather, storms or fires, are likely to, or are affecting, the *power system*; or
  - (3) a major *supply disruption*.

#### 4.8.5 Managing declarations of conditions

- (a) *AEMO* must as soon as reasonably practicable *publish* any declaration under clause 4.8.4.
- (a1) The *publication* of any such declaration must, to the extent reasonably practicable, include the following:
  - (1) the nature and extent of the *low reserve* or *lack of reserve* condition; and
  - (2) the time period over which the *low reserve* or *lack of reserve* condition applies.
- (b) If *AEMO* makes a declaration under clause 4.8.4, *AEMO* must use its reasonable endeavours to follow the processes set out in clauses 4.8.5A and 4.8.5B.
- (c) Following a declaration under clause 4.8.4, *AEMO* must as soon as reasonably practicable *publish* notice of:
  - (1) any cancellation of that declaration; or
  - (2) any significant change in the *low reserve* or *lack of reserve* condition due to changed positions of ~~*Scheduled Network Service Providers*~~, ~~*Market Customers*~~, ~~*Demand Response Service Providers*~~, ~~*Semi-Scheduled Generators*~~ and ~~*Scheduled Generators*~~ *Market Participants in respect of scheduled resources* or due to other reasons.

#### 4.8.5A Determination of the latest time for *AEMO* intervention

- (a) *AEMO* must immediately *publish* a notice of any foreseeable circumstances that may require *AEMO* to implement a *AEMO intervention event*.
- (b) A notice referred to in paragraph (a) must include the forecast circumstances creating the need for the *AEMO intervention event*.

- (c) *AEMO* must, as soon as reasonably practicable after the *publication* of a notice in accordance with paragraph (a), estimate and *publish* the latest time at which it would need to intervene through a *AEMO intervention event* should the response from the *market* not be such as to obviate the need for the *AEMO intervention event*.
- (d) In order to estimate the time referred to in paragraph (c), *AEMO* may request information from a *Scheduled Network Service Provider*, *Scheduled Generator*, *Semi-Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Market Customer* and may specify the time within which that information is to be provided.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) The information that *AEMO* may request in accordance with paragraph (d) may include, but is not limited to:
  - (1) *plant* status;
  - (2) any expected or planned *plant outages* and the MW capacity affected by the *outage*, proposed start date and time and expected end date and time associated with the *outage* and an indication of the possibility of deferring the *outage*; and
  - (3) estimates of the relevant costs to be incurred by the *Scheduled Network Service Provider*, *Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Market Customer* should it be the subject of a *direction*, but only if *AEMO* considers it reasonably likely that such *Scheduled Network Service Provider*, *Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Market Customer* will be subject to a *direction*.
- (f) A *Scheduled Network Service Provider*, *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Market Customer* must use reasonable endeavours:
  - (1) to comply with a request for information under paragraph (d); and
  - (2) to provide *AEMO* with the information required in the time specified by *AEMO*.
- (g) *AEMO* must regularly review its estimate of the latest time at which it would need to intervene through an *AEMO intervention event*, and *publish* any revisions to the estimate.
- (h) *AEMO* must treat any information provided in response to a request under paragraph (d) as *confidential information* and use it for the sole purpose of assessing to which *Scheduled Network Service Provider*, *Market Customer*, ~~or~~ *Scheduled Generator* *or* *Scheduled Integrated Resource Provider* it should issue *directions*.

#### 4.8.7 Managing a power system contingency event

- (a) During the period when the *power system* is affected by a *contingency event* AEMO must carry out actions, in accordance with the guidelines set out in the *power system security standards* and its obligations concerning *sensitive loads*, to:
  - (1) identify the impact of the *contingency event* on *power system security* in terms of the capability of *generating units*, *integrated resource units*, ~~or~~ *transmission networks* or *distribution networks*; and
  - (2) identify and implement the actions required in each affected *region* to restore the *power system* to its *satisfactory operating state*.
- (b) When *contingency events* lead to potential or actual electricity *supply* shortfall events, AEMO must follow the procedures outlined in clause 4.8.9.

#### 4.8.9 Power to issue directions and clause 4.8.9 instructions

- (a) Notwithstanding any other provision of rule 4.8:
  - (1) AEMO may require a *Registered Participant* to do any act or thing if AEMO is satisfied that it is necessary to do so to maintain or re-establish the *power system* to a *secure operating state*, a *satisfactory operating state*, or a *reliable operating state*; and
  - (2) AEMO may authorise a person to do any of the things contemplated by section 116 of the *NEL* if AEMO is satisfied that it is necessary to do so for reasons of public safety or the security of the electricity system.
- (a1) If AEMO, or a person authorised by AEMO, requires a *Registered Participant* to:
  - (1) take action as contemplated by clause 4.8.9(a) or section 116 of the *NEL* in relation to ~~scheduled plants~~ *scheduled resource (other than a wholesale demand response unit), an ancillary service unit, or a market generating unit or a market integrated resource unit*, AEMO is taken to have issued a *direction*; or
  - (2) take some other action contemplated by clause 4.8.9(a) or section 116 of the *NEL*, AEMO is taken to have issued a *clause 4.8.9 instruction*.
- (a2) AEMO must use reasonable endeavours to ensure that persons authorised by AEMO under clause 4.8.9(a)(2) follow all relevant processes in clause 4.8 prior to issuing a *direction*, unless it is not reasonably practical to do so.
- (b) AEMO must develop, and may amend from time to time, in accordance with the *Rules consultation procedures*, procedures for the issuance of *directions*. Such procedures must reflect the following principles:
  - (1) AEMO must use its reasonable endeavours to minimise any cost related to *directions* and compensation to *Affected Participants* and *Market Customers* pursuant to clause 3.12.2 and compensation to *Directed Participants* pursuant to clauses 3.15.7 and 3.15.7A;
  - (2) a *direction* should be revoked as soon as AEMO determines that the *direction* is no longer required;

- (3) *AEMO* must take into account any applicable guidelines issued by the *Reliability Panel*;
  - (4) *AEMO* must observe its obligations under clause 4.3.2 concerning *sensitive loads*;
  - (5) *AEMO* must expressly notify a *Directed Participant* that *AEMO's* requirement or that of another person authorised by *AEMO* pursuant to clause 4.8.9(a) is a *direction*.
- (c) A *Registered Participant* must use its reasonable endeavours to comply with a *direction* or *clause 4.8.9 instruction* unless to do so would, in the *Registered Participant's* reasonable opinion, be a hazard to public safety, or materially risk damaging equipment, or contravene any other law.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c1) Subject to clause 4.8.9(c) a *Registered Participant* must use its best endeavours to comply with a *direction* or *clause 4.8.9 instruction* in accordance with the timeframe specified by *AEMO* in the *direction* or *clause 4.8.9 instruction*.
- (c2) A *Market Participant* must not by any act or omission, whether intentionally or recklessly, cause or significantly contribute to the circumstances causing a *direction* to be issued, without reasonable cause.
- (d) A *Registered Participant* must immediately notify *AEMO* of its inability to comply or its intention not to comply with a *direction* or *clause 4.8.9 instruction*.
- (e) If a *Registered Participant* does not comply with a *direction* or *clause 4.8.9 instruction*, it must within 2 *business days* of the *direction* or *clause 4.8.9 instruction* deliver to *AEMO* and the *AER* a report detailing the reasons for the non compliance together with all relevant facts.
- (f) *AEMO* must *publish* a report in accordance with clause 3.13.6A.
- (g) Any *Registered Participant* who is aware of a failure to comply with a *direction* or *clause 4.8.9 instruction* or who believes any such failure has taken place must notify *AEMO* and the *AER* in writing and as soon as practicable of that fact.
- (h) If *AEMO* issues a *direction* or *clause 4.8.9 instruction*, *AEMO* may, to give effect to the *direction* or *clause 4.8.9 instruction*:
  - (1) submit, update or vary *dispatch bids*, ~~*dispatch offers*~~ or *rebids* in relation to the *plant* of *Directed Participants* and *Affected Participants*; or
  - (2) change other inputs to the *dispatch process*.
- (i) When issuing *clause 4.8.9 instructions* to implement *load shedding* across *interconnected regions*, *AEMO* must use reasonable endeavours to implement *load shedding* in an equitable manner as specified in the *power*

*system security standards, taking into account the power transfer capability of the relevant networks.*

- (j) When issuing *clause 4.8.9 instructions* to implement *load shedding*, AEMO must comply with its obligations under clauses 4.3.2(e) to (l) and Part 8 of the *NEL*.

#### **4.8.10 Disconnection of generating units, integrated resource units and market network services**

- (a) Where, under the *Rules*, AEMO has the authority or responsibility to *disconnect a generating unit, an integrated resource unit* or a *market network service*, then it may do so (either directly or through any agent) as described in rule 5.9.
- (b) The relevant *Generator, Integrated Resource Provider* or *Market Network Service Provider* must provide all reasonable assistance to AEMO for the purpose of such *disconnection*.

#### **4.8.12 System restart plan and local black system procedures**

##### **System restart plan**

- (a) AEMO must prepare, and may amend, a *system restart plan* for the purpose of managing and coordinating system restoration activities during any *major supply disruption*.
  - (a1) The *system restart plan* must cover the entire *national grid* but may consist of one or more separable components.
  - (a2) For the purposes of section 54A(2) of the *NEL*, AEMO may disclose the whole or any component of the *system restart plan* to:
    - (1) a *Jurisdictional System Security Coordinator*;
    - (2) a *Network Service Provider*;
    - (3) a *Generator or Integrated Resource Provider* contracted to provide *SRAS*;
    - (4) any other *Registered Participant* whose assistance AEMO considers is necessary for the implementation of the *system restart plan*,for the purposes of preparing for, and participating in, system restoration activities during a *major supply disruption*.
  - (a3) A *Jurisdictional System Security Coordinator* to whom the whole or any component of the *system restart plan* is provided to under paragraph (a2)(1) is deemed to be a *Registered Participant* for the purposes of Part C of Chapter 8.
- (b) The *system restart plan* is *confidential information*.
- (c) The *system restart plan* must be consistent with the *system restart standard*.

##### **Local black system procedures**

- (d) Each *Generator, Integrated Resource Provider* and *Network Service Provider* must develop *local black system procedures* in accordance with the

guidelines referred to in clause 4.8.12(e). ~~A Generator's or Network Service Provider's~~ The Registered Participant's local black system procedures must be consistent with any ancillary services agreement to provide SRASs to which that ~~Registered Participant Generator or Network Service Provider~~ is a party. On request from AEMO, or as a result of a significant change of circumstances, a ~~Registered Participant Generator or Network Service Provider~~ must review, and amend if appropriate, its local black system procedures.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) Subject to clause 4.8.12(f), AEMO must develop and publish, and may amend, guidelines for the preparation of local black system procedures in consultation with Generators, Integrated Resource Providers and Network Service Providers.
- (f) Local black system procedures must:
  - (1) provide sufficient information to enable AEMO to understand the likely condition and capabilities of plant following any major supply disruption such that AEMO is able to effectively co-ordinate the safe implementation of the system restart plan;
  - (1A) include any action the Generator, Integrated Resource Provider or Network Service Provider must take following any major supply disruption prior to energisation or synchronisation; and
  - (2) appropriately incorporate any relevant energy support arrangements to which a Generator, Integrated Resource Provider or Network Service Provider may be party.
- (g) Each Generator, Integrated Resource Provider and Network Service Provider must submit its local black system procedures, including any amendments to those procedures, to AEMO for approval. In considering whether to grant approval, AEMO must take into account the consistency of the local black system procedures with:
  - (1) the guidelines referred to in clause 4.8.12(e); and
  - (2) relevant components of the system restart plan.
- (h) AEMO may request amendments to local black system procedures, including, without limitation, imposing conditions in respect of any energy support arrangement as AEMO reasonably considers necessary to ensure the integrity of the system restart plan. When requesting amendments to the local black system procedures, AEMO must provide reasons for those requested amendments.
- (i) Requests by AEMO for amendments under clause 4.8.12(h) must be by notice in writing to a Generator, Integrated Resource Provider or Network Service Provider. Reasonable requests by AEMO for amendments under clause 4.8.12(h) must be complied with by a Generator, Integrated Resource Provider or Network Service Provider.



### Communication protocols

- (j) *AEMO and Network Service Providers must jointly develop, and may jointly amend, written communication protocols to facilitate the exchange of all information relevant to the roles played by AEMO and other Registered Participants in the preparation and implementation of the system restart plan.*
- (k) The written communication protocols prepared under clause 4.8.12(j) must:
  - (1) specify the categories of information required to, and the timing and process by which information will, be exchanged between:
    - (i) *AEMO and Registered Participants as relevant, in order for AEMO to prepare and implement the system restart plan and for AEMO and the relevant parties to give effect to the system restart plan;*
    - (ii) *Transmission Network Service Providers and parties connected to the Transmission Network Service Provider's transmission network regarding the nature of connection point and load characteristics;*
    - (iii) *Network Service Providers, ~~and~~ Generators and Integrated Resource Providers regarding connection point characteristics and the steps that may need to be conducted before or during the process of restoring the power system; and*
    - (iv) *Distribution Network Service Providers and parties connected to the Distribution Network Service Provider's distribution network regarding the nature of connection point and load characteristics.*
  - (2) where the communication protocols prepared under clause 4.8.12(j) are constituted by a number of documents, be clearly identifiable as the communication protocols established under that clause; and
  - (3) where the communication protocols incorporate procedures or protocols in other documents, the document must be clearly identified and referenced and the circumstances under which those procedures or protocols are to be used in a *major supply disruption* must be clearly identified.
- (l) *AEMO and relevant Registered Participants must take all reasonable steps to comply with the written communication protocols developed pursuant to clause 4.8.12(j).*
- (m) *AEMO and relevant Registered Participants must comply with a reasonable request for information made by AEMO or a Network Service Provider pursuant to the written communication protocols prepared pursuant to clause 4.8.12(j).*

### 4.8.14 Power system restoration

- (a) *AEMO must notify a Registered Participant if, in AEMO's reasonable opinion, there is a major supply disruption which is affecting, or which may affect, that Registered Participant.*
- (b) *If AEMO advises a Generator, Integrated Resource Provider or Network Service Provider of a major supply disruption, or if the terms of the relevant*

*local black system procedures* require the *Generator*, *Integrated Resource Provider* or *Network Service Provider* to take action, then the *Generator*, *Integrated Resource Provider* or *Network Service Provider* must comply with the requirements of the *local black system procedures* as quickly as is practicable.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) Where in *AEMO's* reasonable opinion the *system restart plan* cannot be implemented to effectively ameliorate the actual *power system* conditions created by a *major supply disruption*, *AEMO* may adapt or vary the *system restart plan* as it considers reasonably necessary to suit those actual *power system* conditions.
- (d) If there is a *major supply disruption*, a *Generator*, *Integrated Resource Provider* or *Network Service Provider* must comply with *AEMO's directions* or *clause 4.8.9 instructions* regarding the restoration of the *power system*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) If there is a *major supply disruption*, a *Market Customer* must comply with *AEMO's directions* with respect to the timing and magnitude of *load* restoration.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

## 4.9 Power System Security Related Market Operations

### 4.9.1 Load forecasting

#### Definitions

- (a0) In this clause 4.9.1:

**forecast load (as generated)** has the meaning given to it in clause 4.9.1(b).

**forecast load (sent out)** has the meaning given to it in clause 4.9.1(b).

- (a) *AEMO* must produce (at the intervals indicated and in accordance with the *timetable*) an indicative *load* forecast for each *region* for the periods indicated below:
  - (1) each *day*, a forecast for the *day* ahead, such forecast divided into half-hourly *load* forecasts for each *30-minute period*;
  - (2) each *day*, a forecast for 2 to 7 *days* (inclusive) ahead, the forecasts for each *day* divided into half-hourly *load* forecasts for each *30-minute period*;

- (3) every week, a forecast for the 24 *months* ahead of the *day* on which the forecast is produced, with a daily profile based on an estimated weekly *peak load* condition with allowances for weekends and holidays.
- (b) These forecasts must provide an indicative estimate of the total *generation* or *wholesale demand response* capacity required to meet the forecast *load* (called "**forecast load (as generated)**"), and an equivalent estimation of the *supply* required to be delivered to the relevant *transmission network* (called "**forecast load (sent out)**").
- (c) The following factors must be taken into account in the development of the *load* forecasts, to the extent that such are relevant to the particular forecast:
  - (1) the annual *load* forecasts and *load* profiles collected by the *Network Service Providers* from all *Registered Participants* as required by schedule 5.7, including *load* management expectations and expected *sent out generation* from *embedded generating units* and embedded integrated resource units;
  - (2) historic *load* data, including *transmission* losses and *power station* in-house use of the *generated* output;
  - (3) weather forecasts and the current and historic weather conditions and pattern;
  - (4) the incidence of major events or activities which are known to *AEMO*;
  - (5) anticipated pumped storage *loads*;
  - (6) official economic activity forecasts from *participating jurisdictions*;
  - (6a) *DER register information*;
  - (6b) *demand side participation information*; and
  - (7) other information provided by *Registered Participants*.
- (d) *AEMO* must develop a methodology to create the indicative *load* forecasts.
- (e) **[Deleted]**
- (f) **[Deleted]**
- (g) The *load* forecasts produced by *AEMO* are indicative only as *AEMO* has no direct influence over *Market Participants* in their decisions about their level of demand and, accordingly, no person may claim any loss or damage from *AEMO* as a result of any difference between *load* forecasts and actual *load*.

#### 4.9.2 Instructions to Scheduled Generators, ~~and~~ Semi-Scheduled Generators and Scheduled Integrated Resource Providers

- (a) To implement *central dispatch* or, where *AEMO* has the power to direct or to instruct a *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or Scheduled Integrated Resource Provider either under Chapter 3 or this Chapter, then for the purpose of giving effect to that direction or instruction, *AEMO* may at any time give an instruction to the *Generator* or Integrated Resource Provider in relation to any of its *generating units* or integrated resource units (a *dispatch instruction*), in accordance with clause 4.9.5(b), nominating:

- (1) whether the facilities for *generation* remote control by *AEMO*, if available, must be in service; and
- (2) in the case of a:
  - (i) *scheduled generating unit* or *scheduled integrated resource unit*, the level or schedule of power; and
  - (ii) *semi-scheduled generating unit*, the *dispatch level*,  
to be supplied by the *generating unit* or *integrated resource unit* over the specified period.
- (b) Subject to paragraph (c), *AEMO* may at any time give an instruction to a *Generator* or *Integrated Resource Provider* in relation to any of its *generating units* with a nameplate rating of 30MW or more, or its *generating systems* ~~*systems*~~ of combined nameplate rating of 30 MW or more, nominating that:
  - (1) the *generating unit* or *generating system* transformer is to be set to a nominated tap position (if it has on-load tap changing capability);
  - (2) the *generating unit's* or *generating system's* voltage control system set-point is to be set to give a nominated voltage; or
  - (3) the *generating unit* or *generating system* is to be operated to supply or absorb a nominated level of *reactive power* at its *connection point*.
- (b1) Subject to paragraph (c), *AEMO* may at any time give an instruction to an *Integrated Resource Provider* in relation to any of its *integrated resource units* with a nameplate rating of 5 MW or more, or its *integrated resource systems* of combined nameplate rating of 5 MW or more, nominating that:
  - (1) the *integrated resource unit* or *integrated resource system* transformer is to be set to a nominated tap position (if it has on-load tap changing capability);
  - (2) the *integrated resource unit's* or *integrated resource system's* voltage control system set-point is to be set to give a nominated voltage; or
  - (3) the *integrated resource unit* or *integrated resource system* is to be operated to supply or absorb a nominated level of *reactive power* at its *connection point*.
- (c) Unless otherwise provided under an *ancillary services agreement*, a *network support agreement* or a *connection agreement*, *AEMO* must not give an instruction under paragraph (b) or (b1) that requires a *generating unit* or *generating system* or *integrated resource unit* or *integrated resource system* (as applicable) to supply or absorb *reactive power* at a level outside the *plant's* relevant performance standard.
- (d) A *Scheduled Generator* ~~*or Semi-Scheduled Generator*~~ or *Scheduled Integrated Resource Provider* must, with respect to its *generating units* or *integrated resource units* that have an availability offer of greater than 0 MW (whether *synchronised* or not), ensure that appropriate personnel are available at all times to receive and immediately act upon *dispatch instructions* issued by *AEMO* to the relevant *Generator* or *Integrated Resource Provider*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

**4.9.2A Instructions to each scheduled resource in a hybrid integrated resource system**

- (a) This clause applies in relation to *integrated resource systems* that comprise more than one *scheduled resource* and where *AEMO* gives separate *dispatch instructions* for each *scheduled resource*.
- (b) An *Integrated Resource Provider* for an *integrated resource system* to which this clause applies may comply in aggregate with the *dispatch instructions* for a *trading interval* for two or more of the *scheduled resources* comprised in the *integrated resource system*, excluding any *scheduled resource* for which unit level compliance has been nominated in accordance with paragraph (c).
- (c) *AEMO* may specify in a *dispatch instruction* for a *scheduled resource* in an *integrated resource system* that the *scheduled resource* the subject of the *dispatch instruction* is required to operate at the level specified in, and otherwise in accordance with, the *dispatch instruction* (unit level compliance).
- (d) *AEMO* must make, as a *power system operating procedure*, a procedure setting out:
  - (1) for the purposes of paragraph (b), permitted forms of aggregate compliance by one or more *scheduled resources* comprised in an *integrated resource system* (through measurement at the *connection point* for the *integrated resource system* or otherwise); and
  - (2) arrangements for *AEMO* to specify when unit level compliance is required for the purposes of paragraph (c).

**4.9.3 Instructions to Registered Participants**

- (a) *AEMO* may, at any time, give instructions to *Registered Participants* to reduce the electricity consumption of their *scheduled load* ~~for electricity~~ consistent with *dispatch bids* made in accordance with Chapter 3 (*dispatch instructions*).
- (b) A *Market Customer* must, with respect to *scheduled loads* in relation to which a *dispatch bid* has been submitted for a particular *trading interval*, ensure that appropriate personnel or electronic facilities are available at all times to receive and immediately act upon *dispatch instructions* issued by *AEMO* to the *Market Customer*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

### 4.9.3A Ancillary services instructions

- (a) AEMO may at any time give an instruction (a *dispatch instruction*) to an Ancillary Service Provider ~~Market Participant which has classified one or more of its generating units or loads as an ancillary service generating unit or an ancillary service load:~~
- (1) stating that an ancillary service unit of the Ancillary Service Provider ~~the relevant generating unit or load~~ has been selected for the provision of a *market ancillary service*;
  - (2) stating the *market ancillary service* concerned; and
  - (3) nominating the range to be *enabled*.
- (b) AEMO may at any time give an instruction (a *dispatch instruction*) to:
- (1) an *NMAS provider* with whom AEMO has an *ancillary services agreement* in relation to the provision of *non-market ancillary services* under that *ancillary services agreement* or which AEMO is otherwise entitled to give under that *ancillary service agreement*; or
  - (2) a *Network Service Provider* in relation to the provision of any *non-market ancillary services* or similar services provided under any *connection agreement* or *network support agreement*.
- ~~(e) A Market Participant which has:~~
- ~~(1) classified one or more of its generating units or loads as an ancillary service generating unit or an ancillary service load; and~~
  - ~~(2) submitted a market ancillary service offer in respect of that generating unit or load;~~
- (c) An Ancillary Service Provider who has submitted a market ancillary service bid in respect of its ancillary service unit must ensure that appropriate personnel or electronic facilities are available at all times to receive and immediately act upon *dispatch instructions* issued to the Ancillary Service Provider ~~Market Participant~~ by AEMO.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) An *NMAS provider* with whom AEMO has an *ancillary services agreement* must ensure that appropriate personnel or electronic facilities are available in accordance with that agreement at all times to receive and immediately act upon *dispatch instructions* issued to that *NMAS provider* by AEMO.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)



#### 4.9.4 Dispatch related limitations on Scheduled Generators, ~~and~~ Semi-Scheduled Generators and Scheduled Integrated Resource Providers

A *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or Scheduled Integrated Resource Provider (as the case may be) must not, unless in the *Generator's* or Integrated Resource Provider's reasonable opinion, public safety would otherwise be threatened or there would be a material risk of damaging equipment or the environment:

- (a) send out any *energy* from a *generating unit* or integrated resource unit, except:
  - (1) in accordance with a *dispatch instruction*;
  - (2) in response to remote control signals given by *AEMO* or its agent;
  - (3) in connection with a test conducted in accordance with the requirements of this Chapter or Chapter 5; or
  - (3A) as a consequence of its operation in *frequency response mode* in order to adjust *power system frequency* in response to *power system conditions*; or
  - (4) in the case of a *scheduled generating unit*, in accordance with the *self-commitment* process specified in clause 4.9.6 up to the *self-dispatch level*;

##### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) adjust the *transformer tap position* or *excitation control system voltage set-point* of a *scheduled generating unit*, *scheduled integrated resource unit* or *semi-scheduled generating unit* except:
  - (1) in accordance with a *dispatch instruction*;
  - (2) in response to remote control signals given by *AEMO* or its agent;
  - (3) if, in the *Generator's* *or Integrated Resource Provider's* reasonable opinion, the adjustment is urgently required to prevent material damage to the *Generator's* *or Integrated Resource Provider's* *plant* or associated equipment, or in the interests of safety; or
  - (4) in connection with a test conducted in accordance with the requirements of rule 5.7;

##### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) *energise* a *connection point* in relation to a *generating unit* *or integrated resource unit* without obtaining approval from *AEMO* immediately prior to *energisation*;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) *synchronise or de-synchronise a scheduled generating unit with a nameplate rating of 30MW or more, without prior approval from AEMO or other than in response to a dispatch instruction except:*
- (1) *de-synchronisation as a consequence of the operation of automatic protection equipment; or*
  - (2) *where such action is urgently required to prevent material damage to plant or equipment or in the interests of safety;*

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) *change the frequency response mode of a scheduled generating unit or scheduled integrated resource unit without the prior approval of AEMO; or*

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) *remove from service or interfere with the operation of any power system stabilising equipment installed on that generating unit or integrated resource unit.*

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

#### 4.9.5 Form of dispatch instructions

- (a0) In this clause 4.9.5:

**Non semi-dispatch interval** means for a semi-scheduled generating unit, a dispatch interval other than a semi-dispatch interval.

- (a) A *dispatch instruction* for a ~~*scheduled generating unit, semi-scheduled generating unit, scheduled network service or scheduled load*~~*scheduled resource (other than a wholesale demand response unit)* must include the following:
- (1) specific reference to the ~~*generating unit (including any aggregated generating unit), scheduled network service or scheduled load or other facility*~~*scheduled resource (including any aggregated scheduled resources)* to which the *dispatch instruction* applies;
  - (2) the desired outcome of the *dispatch instruction* (if applicable) such as *active power, reactive power, transformer tap* or other outcome;
  - (3) in the case of a *dispatch instruction* under clause 4.9.2, the *ramp rate* (if applicable) which is to be followed by the *generating unit* or

- integrated resource unit* or a specific target time to reach the outcome specified in the *dispatch instruction*;
- (4) the time the *dispatch instruction* is issued;
  - (5) if the time at which the *dispatch instruction* is to take effect is different from the time the *dispatch instruction* is issued, the start time; and
  - (6) in the case of a *dispatch instruction* for a *semi-scheduled generating unit*:
    - (i) a notification as to whether the *trading interval* to which the *dispatch instruction* relates is a *semi-dispatch interval* or a non semi-dispatch interval; and
    - (ii) the *dispatch level*.
- (a1) A *dispatch instruction* for an *ancillary service* must include:
- (1) specific reference to the *ancillary service unit* ~~*generating unit or load*~~ to which the *dispatch instruction* applies;
  - (2) the desired outcome of the *dispatch instruction*;
  - (3) the time the *dispatch instruction* is issued; and
  - (4) if the time at which the *dispatch instruction* is to take effect is different from the time the *dispatch instruction* is issued, the start time.
- (a2) A *dispatch instruction* for a *wholesale demand response unit* must include the following:
- (1) specific reference to the *wholesale demand response unit* to which the *dispatch instruction* applies;
  - (2) the desired *baseline deviation* of the *wholesale demand response unit* at the end of the *trading interval* to which it relates;
  - (3) the *ramp rate* (if applicable) which is to be followed in the provision of the *baseline deviation* by the *wholesale demand response unit* or a specific target time to reach the *baseline deviation* specified in the *dispatch instruction*;
  - (4) the time the *dispatch instruction* is issued; and
  - (5) if the time at which the *dispatch instruction* is to take effect is different from the time the *dispatch instruction* is issued, the start time.
- (b) The *dispatch instruction* must be provided as provided in clause 3.8.21.

#### 4.9.8 General responsibilities of Registered Participants

- (a) A *Registered Participant* must comply with a *dispatch instruction* given to it by AEMO unless to do so would, in the *Registered Participant's* reasonable opinion, be a hazard to public safety or materially risk damaging equipment.

##### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (a1) A *Scheduled Generator*, ~~or~~ *Semi-Scheduled Generator* or *Scheduled Integrated Resource Provider* is not taken to have failed to comply with a *dispatch instruction* as a consequence of its *generating unit* or *integrated resource unit* operating in *frequency response mode* in order to adjust power system frequency in response to power system conditions.
- (a2) A *Semi-Scheduled Generator* is taken to have complied with a *dispatch level* in a *dispatch instruction* if the *active power* of the relevant *semi-scheduled generating unit* at the end of the relevant *trading interval*:
- (1) only varies from the *dispatch level* as a result of energy source availability; and
  - (2) in the case of a *semi-dispatch interval*, does not exceed the *dispatch level*, regardless of energy source availability.
- (b) A *Scheduled Generator* must ensure that each of its *scheduled generating units* is at all times able to comply with the latest *generation dispatch offer* under Chapter 3 in respect of that *generating unit*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b1) A *Scheduled Network Service Provider* must ensure that each of its *scheduled network services* is at all times able to comply with the latest *dispatch bid* ~~*network dispatch offer*~~ under Chapter 3 in respect of that *market network service*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b2) A *Scheduled Integrated Resource Provider* must ensure that each of its *scheduled integrated resource units* is at all times able to comply with the latest *dispatch bid* under Chapter 3 in respect of that *integrated resource unit*.

**Note**

The AEMC proposes to recommend that clause 4.9.8(b2) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) A *Registered Participant* must ensure that each of its *facilities* is at all times able to comply with any relevant *dispatch bid* under Chapter 3 in respect of the *facility* (as adjusted by any subsequent restatement of that bid under Chapter 3).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) An *Ancillary Service Provider* must ensure that each of its *ancillary service units* is at all times able to comply with the latest *market ancillary service bid* for the relevant *trading interval*. A *Market Participant* which has classified a *generating unit* or *load* as an *ancillary service generating unit* or an *ancillary*

~~service load, as the case may be, must ensure that the ancillary service generating unit or ancillary service load is at all times able to comply with the latest market ancillary service offer for the relevant trading interval.~~

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) A *Semi-Scheduled Generator* must ensure that each of its *semi-scheduled generating units* is at all times able to comply with its latest ~~dispatch bid~~*generation dispatch offer*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) A *Demand Response Service Provider* must ensure that each of its *wholesale demand response units* is at all times able to comply with its latest *dispatch bid*.

#### 4.9.9 **Scheduled Generator or Scheduled Integrated Resource Provider plant changes**

A *Scheduled Generator* or *Scheduled Integrated Resource Provider* must, without delay, notify AEMO of any event which has changed or is likely to change the operational availability of any of its *scheduled generating units* or *scheduled integrated resource units*, whether the relevant *generating unit* or *integrated resource unit* is *synchronised* or not, as soon as the *Scheduled Generator* or *Scheduled Integrated Resource Provider* becomes aware of the event.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

#### 4.9.9B **Ancillary service plant changes**

An *Ancillary Service Provider* must, without delay, notify AEMO of any event which has changed or is likely to change the availability of a *market ancillary service*, or the capability of the *ancillary service unit* to respond in the manner contemplated by the *market ancillary service specification*, as soon as the *Market Participant* becomes aware of the event.  
~~A *Market Participant* which has classified a *generating unit* or *load* as an *ancillary service generating unit* or an *ancillary service load* must, without delay, notify AEMO of any event which has changed or is likely to change the availability of a *market ancillary service*, or the capability of the *generating unit* or *load* to respond in the manner contemplated by the *market ancillary service specification*, as soon as the *Market Participant* becomes aware of the event.~~

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

## 4.11 Power System Security Support

### 4.11.1 Remote control and monitoring devices

- (a) All remote control, operational metering and monitoring devices and local circuits as described in schedules 5.2, 5.3 and 5.3a, must be installed and maintained in accordance with the standards and protocols determined and advised by *AEMO* (for use in the *control centres*) for each:
- (1) *scheduled generating unit*, *scheduled integrated resource unit* and *semi-scheduled generating unit connected to the transmission network or distribution network*; and
  - (2) *substation connected to the network*.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) The provider of any *ancillary services*, *system strength services* or *inertia network services* must arrange the installation and maintenance of all *remote control equipment* and *remote monitoring equipment* in accordance with the standards and protocols determined and advised by *AEMO* for use in the relevant *control centre*.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) The control and monitoring devices must include provision for indication of *active power* and *reactive power* output, provision for signalling the status and any associated alarm condition relevant to achieving adequate control of the *transmission network*, and provision for indication of *generating plant* active and reactive output.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c1) A *Demand Response Service Provider* must in respect of its *wholesale demand response units* arrange the installation and maintenance of all *remote control equipment* and *remote monitoring equipment* in accordance with the standards and protocols determined and advised by *AEMO* for use in the relevant *control centre*.
- (d) Where reasonably necessary to allow *AEMO* to discharge its *market and power system security* functions *AEMO* may, by notice in writing, require a *Network Service Provider*, a *Generator*, *an Integrated Resource Provider* or a *Market Network Service Provider* to:
- (1) install *remote monitoring equipment* which, in *AEMO's* reasonable opinion, is adequate to enable *AEMO* to remotely monitor the performance of a *transmission system* or *distribution system*,



*generating unit or integrated resource unit* (including its *dynamic performance*) or a *market network service facility* as appropriate; and

- (2) upgrade, modify or replace any *remote monitoring equipment* already installed in a *facility* provided that the existing *remote monitoring equipment* is, in the reasonable opinion of *AEMO*, no longer fit for the intended purpose.

- (e) A *Network Service Provider*, *Generator*, *Integrated Resource Provider* or *Market Network Service Provider* who receives a notice in accordance with clause 4.11.1(d), must comply with the notice within 120 *business days* or such further period that *AEMO* requires.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) [Deleted]

- (g) A *Generator*, *Integrated Resource Provider* or *Market Network Service Provider* wishing to receive *dispatch instructions* electronically from *AEMO's AGC* under clause 3.8.21(d) must comply with *AEMO's* reasonable requirements in respect of how the remote control signals are issued by the *AGC* and transmitted to the *facility*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)Retailer Reliability Obligation

## **CHAPTER 4A**

## 4A. Retailer Reliability Obligation

### Part A Introduction

#### 4A.A Definitions

##### 4A.A.1 Definitions

In this Chapter:

**actual demand** means the demand determined in accordance with clause 4A.A.4(b).

**adjustment day** has the meaning given in clause 4A.E.7(f).

**AEMO Opt-In Procedures** means the procedures developed by *AEMO* under clause 4A.D.12.

**AER Opt-In Guidelines** means the guidelines made by the *AER* under clause 4A.D.13.

**AER PoLR report** has the meaning given in clause 4A.F.8(a).

**aggregate MLO Group transactions** has the meaning given in clause 4A.G.19(c).

**application for adjustment** has the meaning given in clause 4A.E.7(a).

**Auditors Panel** means the panel of persons (who may be individuals or firms) from whom an Independent Auditor may be appointed in accordance with clause 4A.E.5.

**bespoke firmness methodology** means a firmness methodology which is not a default firmness methodology.

**bid-offer spread** has the meaning given in clause 4A.G.18(h).

**book build contract** means a contract which satisfies the relevant criteria set out under the Book Build Procedures and which may be offered to other *book build participants* as part of a *voluntary book build*.

**book build fees** means fees imposed on *book build participants* to reimburse *AEMO* for its costs incurred in developing, establishing and conducting a *voluntary book build*.

**book build participation agreement** has the meaning given in clause 4A.H.4(b)(1).

**Book Build Procedures** means the procedures developed by *AEMO* under clause 4A.H.2.

**change event** has the meaning given in clause 4A.G.13(a)(3).

**compliance TIs** has the meaning given in clause 4A.F.2.

**contract position day** has the meaning given in the *NEL*.

**Contracts and Firmness Guidelines** means the guidelines made by the *AER* in accordance with clause 4A.E.8.

**controlling entity** has the meaning given in clause 4A.G.6(a).

**default firmness methodology** has the meaning given in clause 4A.E.4.

**dispatch control** has the meaning given in clause 4A.G.4(b).

**firmness methodology** has the meaning given in clause 4A.E.3.

**firmness principles** has the meaning given in clause 4A.E.3.

**Forecasting Best Practice Guidelines** means the guideline made by the *AER* under clause 4A.B.5.

**forecast reliability gap period** has the meaning given in the *NEL*.

**gap trading intervals** means the *trading intervals* stated in a T-1 reliability instrument.

~~**generator capacity** has the meaning given in clause 4A.G.3(b).~~

**Independent Auditor** means a member of the Auditors Panel.

**large opt-in customer** means a person registered as a large opt-in customer with the *AER* under clause 4A.D.4.

**liable entity** has the meaning given in the *NEL* and as determined in accordance with clause 4A.D.2.

**liable load** means the load determined under clause 4A.F.3(b).

**liable share** has the meaning given in clause 4A.F.3(a).

**liquidity obligation** means the obligation to be performed by a MLO generator in a *region* under rule 4A.G.17.

**liquidity period** means the period during which a liquidity obligation is in effect with respect to a *forecast reliability gap*, as determined under clause 4A.G.16.

**matched book build participant** means a *book build participant*:

- (a) who offers to buy or sell a book build contract through the *voluntary book build*; and
- (b) for which *AEMO* has identified another *book build participant* who has made an offer to buy or sell (as applicable) the book build contract referred to in paragraph (a),

in accordance with the Book Build Procedures.

**minimum opt-in threshold** has the meaning given in clause 4A.D.6(a)(2).

**MLO exchange** has the meaning given in clause 4A.G.23(a).

**MLO exit notice** has the meaning given in clause 4A.G.12(e).

**MLO generator** has the meaning given in clause 4A.G.11.

**MLO group** has the meaning given in clause 4A.G.10.

**MLO Guidelines** means the guidelines made by the *AER* under clause 4A.G.25.

**MLO nominee** has the meaning given in clause 4A.G.20(a).

**MLO products** means any product which satisfies the criteria set out under clause 4A.G.22(a) or which the *AER* approves to be a MLO product under clause 4A.G.22(b).

**MLO register** means the register established, maintained and *published* by the *AER* under clause 4A.G.12.

**NCP report** has the meaning given in clause 4A.E.6(a).

**net contract position** has the meaning given in the *NEL* and as determined in accordance with clause 4A.E.2.

**new entrant** has the meaning given in clause 4A.D.3.

**new entrant contract position day** means the first day of a *reliability gap period*, unless an alternative date is stated in a T-1 reliability instrument.

**non-standard qualifying contract** means a qualifying contract which is not a standard qualifying contract.

**one-in-two year peak demand forecast** has the meaning given in the *NEL* and as determined in accordance with clause 4A.A.3.

**opt-in customer** means a large opt-in customer or a prescribed opt-in customer.

**opt-in customer threshold** has the meaning given in clause 4A.D.6(a)(1).

**opt-in cut-off day** means the day determined in accordance with clause 4A.D.7.

**opt-in register** means a register established and maintained by the *AER* in accordance with clause 4A.D.9.

**peak demand** has the meaning given in the *NEL* and as determined in accordance with clause 4A.A.4.

**PoLR liable entity** has the meaning given in clause 4A.F.8(a)(1).

**PoLR TI** has the meaning given in clause 4A.F.8(a)(2).

**position day** means a contract position day or, for a new entrant, a new entrant contract position day.

**prescribed opt-in customer** means a person registered as a prescribed opt-in customer with the *AER* under clause 4A.D.5.

**production capacity** has the meaning given in clause 4A.G.3(b).

**qualifying contract** has the meaning given in the *NEL* and as determined in accordance with clause 4A.E.1.

**registered capacity** means in respect of a *generating unit* or integrated resource unit, the amount, in MW, shown as 'registered capacity' attributable to that *generating unit* or integrated resource unit in the 'NEM registration and exemption list' published by *AEMO* (in the case of an integrated resource unit, insofar as referable to its capacity to produce electricity).

**Reliability Compliance Procedures and Guidelines** has the meaning given in the *NEL*.

**reliability instrument** has the meaning given in the *NEL*.

**Reliability Instrument Guidelines** means the guidelines made by the *AER* under clause 4A.C.12.

**reporting day**

- (a) has the meaning given in the *NEL*; and
- (b) for a new entrant, means the day stated in the relevant T-1 reliability instrument.

**standard qualifying contract** means a qualifying contract which is specified to be a standard qualifying contract under the Contracts and Firmness Guidelines.

**target trading periods** has the meaning given in clause 4A.G.18(c).

**traced capacity** has the meaning given in clause 4A.G.7(a).

**trading group** has the meaning given in clause 4A.G.5.

**trading group capacity** has the meaning given in clause 4A.G.9(a).

**trading period** has the meaning given in clause 4A.G.18(a).

**trading right** has the meaning given in clause 4A.G.4.

**trading right holder** has the meaning given in clause 4A.G.4(a).

**T-1 cut-off day** has the meaning given in the *NEL*.

**T-1 reliability instrument** has the meaning given in the *NEL*.

**T-3 cut-off day** has the meaning given in the *NEL*.

**T-3 reliability instrument** has the meaning given in the *NEL*.

**ultimate controlling entity** has the meaning given in clause 4A.G.6(b).

**uncontracted MW position** has the meaning given in clause 4A.F.8(b).

**unscheduled generation** has the meaning given in clause 3.7D(a).

## Part D Liable Entities

### 4A.D.2 Liable entities

(a) A person is a liable entity for a *region* if:

- (1) the person is ~~registered as a Market Customer~~ *or Integrated Resource Provider and is financially responsible* for a *connection point* in that *region* at the end of the contract position day but only to the extent there is no opt-in customer for that *connection point* at the end of the contract position day;

#### Note

Section 14D(1)(a) of the *NEL* provides that a person who is a *Registered Participant* mentioned in section 11(4)(a) of the *NEL* is a liable entity.

- (2) the person is registered as a large opt-in customer for a *connection point* in that *region* at the end of the contract position day;
- (3) the person is registered as a prescribed opt-in customer for a *connection point* in that *region* at the end of the contract position day; or
- (4) the person is a new entrant in that *region* under clause 4A.D.3.

(b) A person who is a *Market Customer* *or Integrated Resource Provider* is not a liable entity for a *region* if:

- (1) it is not ~~financially responsible~~ *registered* for a *connection point* in that *region* at the end of the contract position day; or
- (2) the aggregate *consumption of electricity* of all ~~loads at the connection points~~ in that *region* for which it is ~~a Market Customer financially~~



*responsible* at the end of the contract position day (excluding any market connection point for a market generating unit or small generating unit) is equal to or less than 10 GWh per annum as determined in accordance with the Contracts and Firmness Guidelines.

#### 4A.D.3 New entrants

A person is a new entrant for a *region* if the person:

- (a) is a *Market Customer* or Integrated Resource Provider that is financially responsible for a *connection point* in that *region* at the end of the new entrant contract position day;
- (b) was not a liable entity for that *region* at the end of the contract position day; and
- (c) the aggregate consumption of electricity of all ~~loads at the~~ *connection points* in that *region* for which it is ~~financially responsible Market Customer~~ at the end of the new entrant contract position day (excluding any market connection point for a market generating unit or small generating unit) exceeds, or is expected to exceed, 10 GWh per annum as determined in accordance with the Contracts and Firmness Guidelines.

##### Note

Section 14N(1)(c)(ii) of the *NEL* provides that Part 2A, Division 3 of the *NEL* applies to a person who is a liable entity on the contract position day or, in circumstances for which a later day is prescribed by the *Rules*, the later day. The new entrant contract position day is the later day for new entrants.

#### 4A.D.4 Application to register as large opt-in customer

- (a) A person may, no later than the opt-in cut-off day, apply to the *AER* for approval to register as a large opt-in customer for a *connection point* for a forecast reliability gap period if:
  - (1) a T-3 reliability instrument has been made for the *region* in which the *connection point* is located and the *AER* has established an opt-in register in relation to that instrument under clause 4A.D.9;
  - (2) the person purchases electricity supplied to that *connection point* from the *Market Customer* or Integrated Resource Provider for that *connection point*;
  - (3) the person's aggregate consumption of electricity at all *connection points* in the *region* exceeds, or is expected to exceed, 50 GWh per annum as determined in accordance with the AER Opt-In Guidelines;
  - (4) to the extent required by the AEMO Opt-In Procedures (if any), the person does not satisfy the creditworthiness requirements set out in those procedures and *AEMO* requires credit support (at its discretion), the person provides that credit support to *AEMO* in accordance with the requirements of the AEMO Opt-In Procedures;
  - (5) there are one or more *connection points* at a site as determined in accordance with the AER Opt In Guidelines, the person opts-in for all *connection points* at that site; and

- (6) the person satisfies any other requirements set out in the AEMO Opt-In Procedures (if any) and the AER Opt-In Guidelines.
- (b) An application under paragraph (a) must comply with the AER Opt-In Guidelines.
- (c) An applicant must provide evidence to the *AER* as part of the application that it has given notice of the application to the *Market Customer* or *Integrated Resource Provider that is financially responsible* for the *connection point*. The *financially responsible Market Participant's Market Customer's* consent is not required to make an application.
- (d) The *AER* may only register a person as a large opt-in customer for the entire *load* at a *connection point* and for the entire forecast reliability gap period.

#### 4A.D.5 Application to register as prescribed opt-in customer

- (a) A person may, no later than the opt-in cut-off day, apply to the *AER* for approval to register as a prescribed opt-in customer for a *connection point* for a forecast reliability gap period if:
  - (1) a T-3 reliability instrument has been made for the *region* in which the *connection point* is located and the *AER* has established an opt-in register in relation to that instrument;
  - (2) the person is not eligible to register as a large opt-in customer for that *connection point*;
  - (3) the person is, in accordance with the AER Opt-In Guidelines, financially exposed to the cost of some or all of the ~~*load*~~ *electricity supplied* at the *connection point*;
  - (4) the person satisfies the prescribed opt-in customer thresholds in clause 4A.D.6 for that *connection point*;
  - (5) to the extent required by the AEMO Opt-In Procedures (if any), the person does not satisfy the creditworthiness requirements set out in those procedures and *AEMO* requires credit support (at its discretion), the person provides that credit support to *AEMO* in accordance with the requirements of the AEMO Opt-In Procedures; and
  - (6) the person satisfies any other requirements set out in the AEMO Opt-In Procedures (if any) and the AER Opt-In Guidelines.
- (b) An application under paragraph (a) must comply with the AER Opt-In Guidelines.
- (c) An applicant must provide evidence to the *AER* as part of the application that it has given notice of the application to the *financially responsible Market Participant* ~~*Market Customer*~~ and any existing prescribed opt-in customer for the *connection point*. The ~~*Market Customer's*~~ consent of the *financially responsible Market Participant* is not required to make an application. An existing prescribed opt-in customer's consent is not required unless approval of the application would require a change to the percentage of the *load* for which that prescribed opt-in customer is registered.
- (d) The *AER* may only register a person as a prescribed opt-in customer for the entire forecast reliability gap period.

- (e) The *AER* may register a person as a prescribed opt-in customer for the entire *load* or a percentage of the *load* at a *connection point*. A person may not be registered for a percentage of the *load* at a *connection point* where that percentage of the *load* is less than the minimum opt-in threshold.

#### 4A.D.8 AER approval of applications

- (a) The *AER* must approve or reject an application submitted under clauses 4A.D.4 or 4A.D.5 in accordance with the AER Opt-In Guidelines.
- (b) If the *AER* rejects an application for registration, it must give the applicant written reasons for its decision. The *AER* may inform the financially responsible Market Participant ~~Market Customer~~ for the relevant *connection point* of the rejection in accordance with the AER Opt-In Guidelines, or must inform the financially responsible Market Participant ~~Market Customer~~ on request.
- (c) If a person is registered as a large opt-in customer for a *connection point* at the end of the contract position day, then the financially responsible Market Participant ~~Market Customer~~ for that *connection point* is not a liable entity for that *connection point*.
- (d) If a person is registered as a prescribed opt-in customer for the entire *load* at a *connection point* at the end of the contract position day, then the financially responsible Market Participant ~~Market Customer~~ for that *connection point* is not a liable entity for that *connection point*.
- (e) If a person is registered as a prescribed opt-in customer for a percentage of the *load* at a *connection point* at the end of the contract position day, then:
  - (1) the prescribed opt-in customer is the liable entity for that percentage of the *load* at that *connection point*; and
  - (2) the financially responsible Market Participant ~~Market Customer~~ for that *connection point* will be the liable entity for any remaining percentage of the *load* at that *connection point* for which a prescribed opt-in customer is not the liable entity.

#### 4A.D.10 Changes to register

- (a) An opt-in customer may, before the opt-in cut-off day, apply to the *AER* for approval to be deregistered as an opt-in customer for a *connection point*.
- (b) A prescribed opt-in customer may, before the opt-in cut-off day, apply to the *AER* for approval to change the percentage of the *load* at a *connection point* for which it is registered.
- (c) An application under paragraph (a) or (b) must comply with the AER Opt-In Guidelines.
- (d) The *AER* must not approve an application under paragraph (a) unless the financially responsible Market Participant ~~Market Customer~~ for that *connection point* consents to the application and/or the *AER* has approved an application for another person to be an opt-in customer for that *connection point*.

- (e) The *AER* must not approve an application under paragraph (b) unless the financially responsible Market Participant ~~Market Customer~~ and/or any prescribed opt-in customer (where the change would affect the percentage of the *load* for which that prescribed opt-in customer is registered) at that *connection point* consents to the application.

#### 4A.D.13 AER Opt-In Guidelines

- (a) The *AER* must make, *publish* and may amend the AER Opt-In Guidelines in accordance with the *Rules consultation procedures*.
- (b) The AER Opt-In Guidelines must include:
  - (1) the process for establishing and maintaining the opt-in register;
  - (2) the information to be included in the opt-in register;
  - (3) the extent to which some or all of the information on the opt-in register is to be accessible to *Market Customers*, Integrated Resource Providers and the public;
  - (4) the process, manner and form of application for approval to register or deregister as, or change the registration of, an opt-in customer;
  - (5) the criteria to be applied by the *AER* in determining whether to approve an application to register or deregister as, or change the registration of, an opt-in customer;
  - (6) the information required by the *AER* to determine whether to approve an opt-in customer application and, if required, how that information will be verified (including with *AEMO* or the relevant financially responsible Market Participant ~~Market Customer~~);
  - (7) when a site is considered to have more than one *connection point*;
  - (8) the circumstances in which, in an opt-in customer application, an applicant must apply to opt-in for all *connection points* at a site;
  - (9) how annual peak demand for the purposes of the opt-in customer threshold and minimum opt-in threshold are determined;
  - (10) any requirements for a prescribed opt-in customer to register in respect of a percentage of a *load*; and
  - (11) the requirements for notification to, and consent of, relevant persons at the *connection point* for registrations and changes to registrations.
- (c) The *AER* may make minor or administrative amendments to the AER Opt-In Guidelines without complying with the *Rules consultation procedures*.

## Part F Compliance with the Retailer Reliability Obligation

### Division 2 Key concepts

#### 4A.F.3 Share of one-in-two year peak demand forecast

- (a) For the purposes of section 14R(2) of the *NEL*, a liable entity's share of the one-in-two year peak demand forecast for a compliance TI ("**liable share**") is calculated as follows:

$$LS = \left( \frac{LL}{HAPD} \right) \times OITPDF$$

where:

- LS* = the liable entity's liable share (in MW);
- LL* = the liable entity's liable load as determined under paragraph (b) (in MW);
- HAPD* = the highest adjusted peak demand occurring in a compliance TI in the relevant *reliability gap period* where adjusted peak demand is determined under paragraph (d) (in MW);
- OITPDF* = the one-in-two year peak demand forecast (in MW),

except that if  $OITPDF/HAPD > one$ , then it is taken to be equal to one.

**Note**

Section 14R(2) of the *NEL* states –

The liable entity must comply with the obligation that the liable entity's net contract position for the *trading interval* is not less than the liable entity's share of the one-in-two year peak demand forecast for the *trading interval* determined in accordance with the *Rules*.

Section 14R(2) is a reliability obligation civil penalty.

(b) A liable entity's liable load for a compliance TI is calculated as follows:

- (1) if the liable entity is a ~~Market Participant~~*Market Customer*, the aggregate of the *adjusted gross energy* for each *connection point* for which it is *financially responsible* for the compliance TI (less any *adjusted gross energy* allocated to a prescribed opt-in customer at one of those *connection points* and excluding any market connection point for a market generating unit or small generating unit) based on the relevant *routine revised statements* for the *billing periods* relating to the *reliability gap period* given approximately 30 weeks after the relevant *billing period*;
- (2) if the liable entity is not a ~~Market Participant~~*Market Customer*, the aggregate of the *adjusted gross energy* for each *connection point* for which it is registered as an opt-in customer (or part thereof if it is a prescribed opt-in customer registered for a portion of the *load* at that *connection point*) based on the relevant *routine revised statements* provided to the relevant ~~Market Participant~~*Market Customer* for the *connection points* for the *billing periods* relating to the *reliability gap period* given approximately 30 weeks after the relevant *billing period*;
- (3) the quantity in subparagraph (1) or (2) (as applicable) is to be adjusted by adding:
  - (i) the liable entity's measured actual demand response (other than *wholesale demand response*) under a qualifying contract at each *connection point* for which it is *financially responsible* for the

- compliance TI, or registered if an opt-in customer, multiplied by the *distribution loss factor* for that *connection point*; and
- (ii) the *wholesale demand response settlement quantity* for each *connection point* for which the liable entity is *financially responsible* for the compliance TI;
- (4) the quantities in subparagraphs (1), (2) and (3) (as applicable) are to be adjusted for *intra-regional loss factors* at the *transmission network connection point* to which the *connection point* is assigned; and
- (5) the final quantity is to be multiplied by the number of *trading intervals* in an hour,

in each case, as determined in accordance with the *PoLR cost procedures*. To avoid doubt, a liable entity's demand is not to be adjusted for what its demand would have been but for *unserved energy* during a compliance TI.

- (c) For a liable entity that is a ~~Market Participant~~Market Customer, a liable entity's liable load relates to the *connection points* for which that liable entity is *financially responsible* for a compliance TI and those *connection points* do not need to be the same *connection points* referred to in clause 4A.D.2.
- (d) The adjusted peak demand for a compliance TI is the actual demand for the *region* in that compliance TI as determined under clause 4A.A.4(b) adjusted for:
- (1) the measured actual demand response of all liable entities during that compliance TI (other than *wholesale demand response*) as determined in accordance with the *PoLR cost procedures*; and
- (2) the *wholesale demand response settlement quantities* for that compliance TI for all *connection points* for which a liable entity is *financially responsible*.

## Part G Market Liquidity Obligation

### Division 1 Preliminary

#### 4A.G.1 Overview of Part G

- (a) The purpose of this Part G is to facilitate transparency and liquidity in the trading of electricity futures contracts relating to a forecast reliability gap period.
- (b) For the duration of a liquidity period in a *region*, each MLO generator must offer to buy and sell MLO products on a MLO exchange as required under this Part G.
- (c) Division 2 specifies how this Part applies to *Market Generators* and Integrated Resource Providers and how a *Market Generator's* and Integrated Resource Provider's trading right holder is identified.
- (d) Division 3 provides for how a trading right holder is taken to be a member of one or more trading groups.
- (e) Division 4 sets out how a *Market Generator's* and Integrated Resource Provider's production capacity ~~generator capacity~~ is allocated to a trading



group, for the purposes of assessing each trading group's market share of generation in a region.

- (f) Division 5 determines which *Market Generators* or Integrated Resource Providers are taken to be MLO generators and are required to comply with a liquidity obligation.
- (g) Division 6 provides for the *AER* to maintain a MLO register of each MLO generator, each MLO group and the trading group capacity of each trading group.
- (h) Division 7 specifies when a liquidity period starts and ends, and the notices the *AER* must give prior to, at the start, and at the end of a liquidity period.
- (i) Division 8 imposes a liquidity obligation on a MLO generator, and sets out the manner in which it must be performed and the process for appointing MLO nominees to perform the liquidity obligation.
- (j) Division 9 specifies the type of electricity futures contracts which constitute MLO products and the MLO exchange on which they must be offered.
- (k) Division 10 deals with compliance and the making of the MLO Guidelines.

## **Division 2 Market Generators, Integrated Resource Providers and trading right holders**

### **4A.G.3 Market Generators, Integrated Resource Providers and production capacity generator capacity**

- (a) This Part applies to a *Market Generator* and Integrated Resource Provider in each region, in so far as its activities relate to any one or more *scheduled generating units* or scheduled integrated resource units that are:
  - (1) classified as a *market generating unit* or market integrated resource unit under Chapter 2; and
  - (2) located in that region.

(b) Subject to clause 4A.G.21(b), production capacity means:

- (1) in respect of a *Market Generator* for a region, the registered capacity of each *scheduled generating unit* of that *Market Generator* that is classified as a *market generating unit* under Chapter 2 and located in that region; and
- (2) in respect of an *Integrated Resource Provider* for a region, the registered capacity of each *scheduled integrated resource unit* of that *Integrated Resource Provider* that is classified as a *market integrated resource unit* under Chapter 2 and located in that region.

- ~~(b) Subject to clause 4A.G.21(b), generator capacity means, in respect of a *Market Generator* for a region, the registered capacity of each *scheduled generating unit* of that *Market Generator* that is:~~
  - ~~(1) classified as a *market generating unit* under Chapter 2; and~~
  - ~~(2) located in that region.~~

**Note:**

See Chapter 11, Part ZZZR, clause 11.116.11.

#### **4A.G.4 Trading rights and trading right holders**

- (a) A person ("**trading right holder**") holds a trading right, in respect of a *Market Generator's or Integrated Resource Provider's production capacity*~~generator capacity~~, if it has dispatch control over all or a portion of that ~~generator capacity~~production capacity.
- (b) For the purposes of paragraph (a), dispatch control means the ability to control the making of ~~dispatch offers~~dispatch bids under Chapter 3 in relation to all or a portion of a *Market Generator's or Integrated Resource Provider's production capacity*~~generator capacity~~, as determined in the MLO Guidelines.
- (c) If two or more trading right holders hold trading rights in relation to the same *Market Generator's or Integrated Resource Provider's production capacity*~~generator capacity~~, then the quantity of each trading right is determined:
  - (1) in proportion to the degree of dispatch control held by the relevant trading right holder;
  - (2) such that the aggregate trading rights held by each trading right holder must be equal to the ~~generator capacity~~production capacity of the relevant *Market Generator or Integrated Resource Provider*; and
  - (2) in accordance with the MLO Guidelines.
- (d) If the *AER* is not satisfied that the information provided by a *Market Generator or Integrated Resource Provider* under clause 4A.G.13 relating to the identity of its trading right holders, or the trading rights held by each of its trading right holders, is consistent with the dispatch control arrangements applicable to that *Market Generator's or Integrated Resource Provider's production capacity*~~generator capacity~~, then the *AER* may, in accordance with the MLO Guidelines, make its own determination of:
  - (1) the identity of each *Market Generator's or Integrated Resource Provider's* trading right holder; and
  - (2) the trading rights held by that trading right holder.

**Note:**

See Chapter 11, Part ZZZR, clause 11.116.11.

### **Division 3 Trading groups**

#### **4A.G.5 Trading group**

- (a) Trading group means a group of one or more trading right holders:
  - (1) that hold trading rights in respect of *scheduled generating units or scheduled integrated resource units* located in the same *region*; and
  - (2) that are taken to belong to a common corporate group in accordance with paragraph (b).

- (b) Two or more trading right holders belong to a common corporate group where:
  - (1) each trading right holder has an ultimate controlling entity in common; or
  - (2) a trading right holder is an ultimate controlling entity of another trading right holder.
- (c) For the purposes of this Division, a trading right holder may belong to more than one trading group.

**Note:**

See Chapter 11, Part ZZZR, clause 11.116.11.

## **Division 4 Traced capacity and trading group capacity**

### **4A.G.7 Traced capacity**

- (a) Traced capacity means each parcel of a *Market Generator's* or Integrated Resource Provider's production capacity~~generator capacity~~ that is allocated to a trading group under clause 4A.G.8.
- (b) Each reference in this Part G to an allocation of a *Market Generator's* or Integrated Resource Provider's traced capacity, is taken to be a reference to the allocation of that traced capacity under this Division 4.
- (c) Each allocation of production capacity~~generation capacity~~ under clause 4A.G.8 comprises a separate parcel of traced capacity.

**Note:**

See Chapter 11, Part ZZZR, clause 11.116.11.

### **4A.G.8 Tracing capacity to trading groups**

- (a) If a trading right holder belongs to only one trading group, then each trading right held by that trading right holder, is taken to be allocated to that trading group.
- (b) If a trading right holder belongs to more than one trading group, then each trading right held by that trading right holder is taken to be allocated amongst those trading groups, taking into account:
  - (1) the extent to which each relevant controlling entity is able to influence or control (within the meaning given in Division 3) that trading right holder; and
  - (2) any other criteria specified in the MLO Guidelines.
- (c) If the *AER* is not satisfied that the allocation of a *Market Generator's* or Integrated Resource Provider's production capacity~~generator capacity~~, as notified under clause 4A.G.13, is consistent with the ownership and commercial arrangements applicable to the relevant trading right holder, then the *AER* may, in accordance with the MLO Guidelines, make its own determination of the allocation of that *Market Generator's* or Integrated Resource Provider's production capacity~~generator capacity~~.

- (d) If paragraph (b) applies and a *Market Generator* or *Integrated Resource Provider* fails to notify the *AER* of the allocation of its ~~generator capacity~~production capacity as required under clause 4A.G.13, then the relevant parcel of that *Market Generator's* or *Integrated Resource Provider's* ~~production capacity~~generator capacity, is allocated to each relevant trading group simultaneously.

**Note:**

See Chapter 11, Part ZZZR, clause 11.116.11.

## **Division 5 MLO generators and MLO groups**

### **4A.G.11 MLO generator**

MLO generator means, for a *region* in a quarter, a *Market Generator* or *Integrated Resource Provider* where a parcel of its traced capacity is allocated to a MLO group.

**Note:**

See Chapter 11, Part ZZZR, clause 11.116.11.

## **Division 6 Market Generator and Integrated Resource Provider information**

### **4A.G.12 MLO register**

- (a) The *AER* must establish, maintain and *publish* a MLO register in accordance with the MLO Guidelines.
- (b) In respect of each *region*, the MLO register must identify:
- (1) each *Market Generator* and *Integrated Resource Provider*;
  - (2) the ~~generator capacity~~production capacity of each *Market Generator* and *Integrated Resource Provider*;
  - (3) each trading right holder of each *Market Generator* and *Integrated Resource Provider*;
  - (4) the trading rights held by each trading right holder;
  - (5) each trading group;
  - (6) the allocation of each parcel of a *Market Generator's* or *Integrated Resource Provider's* traced capacity to a trading group;
  - (7) the trading group capacity of each trading group;
  - (8) the proportion that the average trading group capacity of each trading group at the end of the two preceding quarters, bears to the aggregate of the average trading group capacity of all trading groups in that *region* at the end of the two preceding quarters;
  - (9) each MLO generator;
  - (10) each MLO group;
  - (11) each MLO nominee and its appointing MLO generator; and

- (12) any other information that the *AER* is required to publish on the MLO register in accordance with the MLO Guidelines.
- (c) The *AER* must update the MLO register within 5 *business days* of becoming aware that the MLO register is no longer correct.
- (d) If, as a result of updating the MLO register under paragraph (c), a trading group is no longer a MLO group for a *region*, then the *AER* must notify each MLO generator which has a parcel of traced capacity allocated to that trading group on the same day that it *publishes* the relevant update to the MLO register.
- (e) If the *AER* issues a notice to a MLO generator under paragraph (d) ("**MLO exit notice**") during a liquidity period:
  - (1) the liquidity obligation ends for that *Market Generator* or *Integrated Resource Provider* in respect of the parcel of its traced capacity allocated to the relevant MLO group, at midnight on the date specified in that notice;
  - (2) the date specified in the MLO exit notice must be the later of:
    - (i) if immediately prior to the time the MLO exit notice is issued there are three or more MLO Groups in the relevant *region*, the day that is one *business day* after the date the exit notice is issued;
    - (ii) if immediately prior to the time the MLO exit notice is issued there are two MLO Groups in the relevant *region* and the *AER* is not issuing a notice under paragraph (f) in relation to that *region*, the day that is one *business day* after the date the notice is issued; or
    - (iii) if immediately prior to the time the MLO exit notice is issued there are two MLO Groups in the relevant *region* and the *AER* is issuing a notice under paragraph (f) in relation to that *region*, the day immediately before the day specified in the MLO entry notice under paragraph (g).
- (f) If, as a result of updating the MLO register under paragraph (c), a trading group is taken to become a MLO group for a *region*, then the *AER* must notify each MLO generator which has a parcel of traced capacity allocated to that group on the same day that it *publishes* the relevant update to the MLO register.
- (g) If the *AER* issues a notice to a MLO generator under paragraph (f) ("**MLO entry notice**") during a liquidity period, then that MLO generator must comply with the liquidity obligation in respect of the parcel of its traced capacity allocated to the relevant MLO group, on and from the date that is 10 *business days* after the date the notice is issued.
- (h) The trading group referred to in paragraph (f) will be taken to be a MLO group for the relevant *region* from the date the *AER* issues the MLO entry notice, despite the liquidity obligation of each relevant *Market Generator* or *Integrated Resource Provider* commencing on the date specified in paragraph (g).

**Note:**

See Chapter 11, Part ZZZR, clause 11.116.11.

**4A.G.13 Market Generator and Integrated Resource Provider information**

- (a) Each *Market Generator* and Integrated Resource Provider must:
- (1) provide the *AER* with the following information in accordance with the MLO Guidelines:
    - (i) the *scheduled generating units* in relation to which it is a *Market Generator*;
    - ~~(ii) its generator capacity;~~
    - (i1) the scheduled integrated resource units in relation to which it is an Integrated Resource Provider;
    - (ii) its production capacity;
    - (iii) the identity of each of its trading right holders;
    - (iv) the trading rights held by each of its trading right holders, as determined under clause 4A.G.4;
    - (v) the trading group to which each of its trading right holders belongs;
    - (vi) the identity of the ultimate controlling entity of each of its trading right holders;
    - (vii) the allocation of its traced capacity to one or more trading groups, as determined under clause 4A.G.8;
    - (viii) the trading group capacity of each trading group to which each of its trading right holders belong; and
    - (ix) any traced capacity for which it has appointed a MLO nominee to discharge, and the identity of that MLO nominee,in accordance with the MLO Guidelines;
  - (2) provide the *AER* with all supporting information requested by the *AER* for the purposes of determining that the information provided by that *Market Generator* or Integrated Resource Provider under this clause is correct;
  - (3) if an event or series of related events occurs ("**change event**"), and as a result of that change event, any information previously provided under this clause is no longer correct, notify and update the *AER* with the correct information, within 10 *business days* of the change event; and
  - (4) provide any other information required to be provided in accordance with the MLO Guidelines.
- (b) A *Market Generator* or Integrated Resource Provider may provide information to the *AER* under this clause on behalf of other *Market Generators* or Integrated Resource Providers whose trading right holder belongs to the same trading group, in which case, those other *Market*



*Generators or Integrated Resource Providers* will be taken to have complied with this clause.

**Note:**

See Chapter 11, Part ZZZR, clause 11.116.11.

#### **4A.G.14 Applications to the AER**

- (a) A *Market Generator or Integrated Resource Provider* may apply to the *AER* for a determination:
  - (1) that it is, or is not, a MLO generator;
  - (2) that its trading right holder is, or is not, a member of a trading group; and
  - (3) of how one or more parcels of its traced capacity should be allocated, in accordance with the MLO Guidelines.
- (b) The *AER* must promptly on receipt of an application under paragraph (a) *publish* a notice that it has received the application.
- (c) If, as a result of an application under paragraph (a), the *AER* is satisfied that:
  - (1) a *Market Generator or Integrated Resource Provider* is no longer a MLO generator for a *region*;
  - (2) a trading group is no longer a MLO group for a *region*;
  - (3) a new trading group is taken to be a MLO group for a *region*; or
  - (4) the trading group capacity of a trading group has changed,then the *AER* must update the MLO register in accordance with clause 4A.G.12(c).
- (d) The *AER* must:
  - (1) notify the *Market Generator or Integrated Resource Provider* of its decision whether to approve or reject an application under paragraph (a); and
  - (2) *publish* a notice of that decision,within the timeframes specified in the MLO Guidelines.

**Note:**

Any application or determination under this clause only applies in respect of the period after 1 July 2021. See Chapter 11, Part ZZZR, clause 11.116.11.

## **Division 8 Liquidity obligation**

### **4A.G.21 Exemptions**

- (a) A MLO generator is not required to perform its liquidity obligation in the following circumstances:
  - (1) if doing so would constitute a breach of sections 588G or 588V of the *Corporations Act 2001* (Cth) by:
    - (i) that MLO generator;

- (ii) an officer of that MLO generator;
    - (iii) a member of the MLO group to which a parcel of that MLO generator's traced capacity has been allocated; or
    - (iv) an officer of a company referred to in subparagraph (iii);
  - (2) while it or its MLO nominee is suspended or prohibited from making bids and offers for MLO products on any MLO exchange in the relevant *region*, in accordance with the relevant rules of that MLO exchange or the *Corporations Act 2001* (Cth);
  - (3) while the trading of all MLO products is temporarily suspended on each MLO exchange in that *region*; or
  - (4) any other circumstances set out in the MLO Guidelines where a MLO generator is not required to perform its liquidity obligation.
- (b) If a *scheduled generating unit* or *scheduled integrated resource unit* is the subject of a notice to *AEMO* under clause 2.10.1(a)(2) and the *closure date* specified in the notice is earlier than the start of a forecast reliability gap period, then in this Division, for the purposes of determining MLO generators and assessing compliance with the liquidity obligation in relation to that forecast reliability gap period, ~~generator capacity~~ production capacity is taken not to include the registered capacity of the *scheduled generating unit* or *scheduled integrated resource unit* that is the subject of the notice, as determined (where relevant) in accordance with the MLO Guidelines.
- (c) To avoid doubt, clause 4A.G.13(a)(3) still applies in respect of a notice referred to in paragraph (b).

## Division 10 Miscellaneous

### 4A.G.25 MLO Guidelines

- (a) The *AER* must make, *publish* and may amend the MLO Guidelines in accordance with the *Rules consultation procedures*.
- (b) The MLO Guidelines must address the following matters:
  - (1) the methodology and process for determining what parcel of a *Market Generator's* or *Integrated Resource Provider's* ~~production capacity~~ generator capacity is held by a trading right holder;
  - (2) the methodology and process for allocating a *Market Generator's* or *Integrated Resource Provider's* ~~production capacity~~ generator capacity to one or more trading groups under clause 4A.G.8, and any supporting material a *Market Generator* or *Integrated Resource Provider's* must provide when notifying the *AER* of an allocation;
  - (3) the process by which the *AER* must establish, maintain and update the MLO register, and the information the *AER* must *publish* on the MLO register;
  - (4) the information that each *Market Generator* or *Integrated Resource Provider* is required to provide the *AER* under clause 4A.G.13;

- (5) the form and content of, and process for, submitting an application under clause 4A.G.14, including any supporting material which must be submitted with the application;
- (6) the information to be included in, and the form of, a notice of a potential liquidity period, or the commencement or conclusion of a liquidity period issued under clauses 4A.G.15 or 4A.G.16;
- (7) the process for registering and appointing MLO nominees under clause 4A.G.20;
- (8) any circumstances in which a MLO generator is not required to perform its liquidity obligation, as contemplated under clause 4A.G.21;
- (9) the circumstances in which the *AER* may approve other products as MLO products under clause 4A.G.22 which do not otherwise satisfy the criteria set out at clause 4A.G.22(a); and
- (10) the process and criteria for approving a MLO exchange.

## CHAPTER 5

## 5. Network Connection Access, Planning and Expansion

### Part A Introduction

#### 5.1 Introduction to Chapter 5

##### 5.1.2 Overview of Part B and connection and access under the Rules

- (a) Rule 5.1A sets out the purpose, application and principles for Part B.
- (b) Rule 5.2 sets out the obligations of *Registered Participants* under Part B and other relevant Parts of this Chapter 5.
- (c) Rule 5.2A sets out obligations and principles relevant to *connection* and access to *transmission networks* and *large dedicated connection assets*. This includes the classification of certain services relating to assets relevant to *connection* as *prescribed transmission services*, *negotiated transmission services* and *non-regulated transmission services*. Rule 5.2A does not apply to the *declared transmission system* of an *adoptive jurisdiction*.
- (d) Rules 5.3, 5.3A and 5.3AA and Chapter 5A set out processes by which *Connection Applicants* can negotiate for connection and access to the *national grid* from a *Network Service Provider*. The process applicable will depend on the nature of the application. The table below sets out an overview of the relevant processes:

	Connection Applicant	Process
1	A <i>Registered Participant</i> or a person intending to become a <i>Registered Participant</i> for a <i>generating plant</i> connecting to a <i>transmission network</i>	Rule 5.3 applies
2	A <i>Registered Participant</i> or a person intending to become a <i>Registered Participant</i> (or a person pursuant to clause 5.1A.1(c)) for a <i>load</i> connecting to a <i>transmission network</i>	Rule 5.3 applies
3	A <i>load</i> connecting to a <i>distribution network</i> where the <i>Connection Applicant</i> is a <i>Registered Participant</i> or a person intending to become a <i>Registered Participant</i> (and is not acting as the agent of a <i>retail customer</i> )	Rule 5.3 applies
4	A <i>distribution network</i> (including an <i>embedded network</i> ) connecting to another <i>distribution network</i> or to a <i>transmission network</i> where the <i>Connection Applicant</i> is a <i>Registered Participant</i> , intending to become a <i>Registered Participant</i> or will obtain an exemption from registration	Rule 5.3 applies

	Connection Applicant	Process
5	A <i>Market Network Service Provider</i> or person intending to register as one seeking <i>connection to a distribution network</i> or a <i>transmission network</i>	Rule 5.3 applies
6	An <i>embedded generating unit</i> <u>or embedded integrated resource unit</u> connecting to a <i>distribution network</i> where the <i>Connection Applicant</i> is a <i>Registered Participant</i> or a person intending to become a <i>Registered Participant</i>	Rules 5.3 and 5.3A apply (see clause 5.3.1A for the interaction between the two rules)
7	A non-registered embedded generator who makes an election for rule 5.3A to apply instead of Chapter 5A	Rules 5.3 and 5.3A apply (see clause 5.3.1A for the interaction between the two rules)
8	A <i>Generator</i> <u>or Integrated Resource Provider</u> wishing to alter a <u>connected generating system or an integrated resource system generating plant</u> in the circumstances set out in clause 5.3.9	Clause 5.3.9 applies
9	A <i>Connection Applicant</i> for <i>prescribed transmission services</i> or <i>negotiated transmission services</i> that do not require the establishment or modification of a <i>connection</i> or alteration of a <u>connected generating system or integrated resource system generating plant</u> in the circumstances set out in clause 5.3.9	Rule 5.3 applies as modified by clause 5.2A.3(c)
10	An <i>Embedded Generator</i> , <u>Embedded Integrated Resource Provider</u> or <i>Market Network Service Provider</i> applying for <i>distribution network user access</i>	Rule 5.3 or 5.3A (as applicable) and rule 5.3AA apply
11	A <i>load</i> , <u>generating system or integrated resource system</u> <del>or generating plant</del> connecting to a <i>declared shared network</i>	Rule 5.3 as modified by clause 5.1A.1(d) to (g) and rule 5.3B apply
12	A <i>load</i> connecting to a <i>distribution network</i> where the <i>Connection Applicant</i> is not a <i>Registered Participant</i> and is not intending to become a <i>Registered Participant</i> (unless it is acting as the agent of a <i>retail customer</i> )  A non-registered embedded generator who does not make an election for Rule 5.3A to apply instead of Chapter 5A	Chapter 5A applies



	Connection Applicant	Process
13	A <i>retail customer</i> (or a <i>retailer</i> on behalf of that customer) <i>connecting</i> a micro embedded generator to a <i>distribution network</i>	Chapter 5A applies

- (e) In addition to the rules referred to in paragraph (d), in relation to *connection* and access to a *distribution network*:
- (1) a *Distribution Network Service Provider* must comply with its *negotiating framework* and *Negotiated Distribution Service Criteria* when *negotiating the terms and conditions of access to negotiated distribution services*;
  - (2) disputes relating to the *terms and conditions of access to a direct control service* or to a *negotiated distribution service*, *access charges* or matters referred to in clause 5.3AA(f) ~~(negotiated use of system charges)~~ or 5.3AA(h) ~~(avoided charges for the locational component of prescribed TUOS services)~~ may be referred to the *AER* in accordance with Part L of Chapter 6;
  - (3) Part G of Chapter 5A provides for dispute resolution by the *AER* for certain disputes under Chapter 5A; and
  - (4) other disputes relating to *connection* and access may be subject to dispute resolution under rule 8.2.
- (f) In addition to the rules referred to in paragraph (d), in relation to *connection* and access to a *transmission network*:
- (1) schedule 5.11 sets out the negotiating principles which apply to negotiations between a *Transmission Network Service Provider* and a *Connection Applicant* for *negotiated transmission services*;
  - (2) rule 5.4 provides a framework for *Connection Applicants* and *Transmission Network Service Providers* to appoint an *Independent Engineer* to provide advice on certain technical matters; and
  - (3) rule 5.5 provides for commercial arbitration of disputes between a *Transmission Network Service Provider* and a *Connection Applicant* as to *terms and conditions of access* for the provision of *prescribed transmission services* or for the provision of *negotiated transmission services*.
- (g) Part B also provides for a *Dedicated Connection Asset Service Provider* to have an *access policy* for a *large dedicated connection asset* and for *commercial arbitration* under rule 5.5 to apply to a *large DCA services access dispute*.

## Part B Network Connection and Access

### 5.2 Obligations

#### 5.2.3 Obligations of network service providers

- (a) To be registered by *AEMO* as a *Network Service Provider*, a person must satisfy the relevant requirements specified in Chapter 2 and submit an application to *AEMO* in such form as *AEMO* may require.
- (b) A *Network Service Provider* must comply with the *power system* performance and quality of *supply* standards:
  - (1) described in schedule 5.1;
  - (2) in accordance with any *connection agreement* with a *Registered Participant*,  
and if there is an inconsistency between schedule 5.1 and such a *connection agreement*:
  - (3) if compliance with the relevant provision of the *connection agreement* would adversely affect the quality or security of *network service* to other *Network Users*, schedule 5.1 is to prevail;
  - (4) otherwise the *connection agreement* is to prevail.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) Where the provisions of the *connection agreement* vary the technical requirements set out in the schedules to this Chapter, the relevant *Network Service Provider* must report on such variations to *AEMO* on an annual basis. *AEMO* must allow access to such information to all other *Network Service Providers* and the *Network Service Providers* must keep such information confidential.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) A *Network Service Provider* must:
  - (1) review and process *applications to connect* or modify a *connection* which are submitted to it and must enter into a *connection agreement* with each *Registered Participant* and any other person to which it has provided a *connection* in accordance with rules 5.3 or 5.3A (as is relevant) to the extent that the *connection point* relates to its part of the *national grid*;
  - (1A) co-operate with any other *Network Service Provider* who is processing a *connection enquiry* or *application to connect* to allow that *connection enquiry* or *application to connect* to be processed expeditiously and in accordance with rules 5.3 or 5.3A (as is relevant);

- (2) ensure that, to the extent that a *connection point* relates to its part of the *national grid*, every arrangement for *connection* with a *Registered Participant* or any other arrangement involving a *connection agreement* with that *Network Service Provider* complies with all relevant provisions of the *Rules*;
- (3) co-ordinate the design aspects of equipment proposed to be *connected* to its *networks* with those of other *Network Service Providers* in accordance with rule 5.6 in order to seek to achieve *power system* performance requirements in accordance with schedule 5.1;
- (4) together with other *Network Service Providers*, arrange for and participate in planning and development of their *networks* and *connection points* on or with those *networks* in accordance with Part D of Chapter 5;
- (5) permit and participate in inspection and testing of *facilities* and equipment in accordance with rule 5.7;
- (6) permit and participate in commissioning of *facilities* and equipment which are to be *connected* to its *network* in accordance with rule 5.8;
- (7) advise a *Registered Participant* or other person with whom there is a *connection agreement* upon request of any expected interruption characteristics at a *connection point* on or with its *network* so that the *Registered Participant* or other person may make alternative arrangements for *supply* during such interruptions, including negotiating for an alternative or backup *connection*;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (8) use its reasonable endeavours to ensure that modelling data used for planning, design and operational purposes is complete and accurate and order tests in accordance with rule 5.7 where there are reasonable grounds to question the validity of data;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (9) provide to *AEMO* and other *Network Service Providers* all data available to it and reasonably required for modelling the static and *dynamic performance* of the *power system*;
- (10) forward to *AEMO* and other *Network Service Providers* subsequent updates of the data referred to in subparagraph (9) and, to the best of its ability and knowledge, ensure that all data used for the purposes referred to in rules 5.3 or 5.3A (as is relevant) is consistent with data used for such purposes by other *Network Service Providers*;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (11) provide to *AEMO* the information required from *Generators* or *Integrated Resource Providers* under schedule 5.2 and from *Customers* under schedule 5.3 and from *Market Network Service Providers* under schedule 5.3a in relation to a *connection agreement* and details of any *connection points* with other *Network Service Providers*; and

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (12) where *network augmentations*, setting changes or other technical issues arise which could impact across *regional* boundaries, provide *AEMO* with a written report on the impact and its effects.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) A *Network Service Provider* (including a *Dedicated Connection Asset Service Provider*) must arrange for operation of that part of the *national grid* over which it has control in accordance with instructions given by *AEMO*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e1) A *Network Service Provider* must, except in so far as its *market network services* and parts of its *network* which are used solely for the provision of *market network services* are concerned, arrange for:
- (1) management, maintenance and operation of its part of the *national grid* such that, in the *satisfactory operating state*, electricity may be transferred continuously at a *connection point* on or with its *network* up to the *agreed capability*;
  - (2) operation of its *network* such that the fault level at any *connection point* on or with that *network* does not breach the limits that have been specified in a *connection agreement*;
  - (3) management, maintenance and operation of its *network* to minimise the number of interruptions to *agreed capability* at a *connection point* on or with that *network* by using *good electricity industry practice*; and
  - (4) restoration of the *agreed capability* at a *connection point* on or with that *network* as soon as reasonably practicable following any interruption at that *connection point*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) A *Network Service Provider* must comply with *applicable regulatory instruments*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) Each *Network Service Provider* must in respect of new or altered equipment owned, operated or controlled by it for the purpose of providing a *market network service*:
- (1) submit an *application to connect* and enter into a *connection agreement* with a *Network Service Provider* in accordance with rule 5.3 prior to that equipment being connected to the *network* of that *Network Service Provider* or altered (as the case may be);
  - (2) comply with the reasonable requirements of *AEMO* and the relevant *Network Service Provider* in respect of design requirements of equipment proposed to be *connected* to the *network* of that *Network Service Provider* in accordance with rule 5.6 and schedule 5.3a;
  - (3) provide forecast information to the relevant *Network Service Provider* in accordance with Part D of Chapter 5;
  - (4) permit and participate in inspection and testing of *facilities* and equipment in accordance with rule 5.7;
  - (5) permit and participate in commissioning of *facilities* and equipment which are to be *connected* to a *network* for the first time in accordance with rule 5.8; and
  - (6) **[Deleted]**
  - (7) give notice of intended voluntary permanent *disconnection* in accordance with rule 5.9.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g1) A *Network Service Provider* must comply with any terms and conditions of a *connection agreement* for its *market network service facilities* that provide for the implementation, operation, maintenance or performance of a *system strength remediation scheme*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) **[Deleted]**  
(h1) **[Deleted]**

- (h2) **[Deleted]**
- (h3) **[Deleted]**
- (i) This Chapter is neither intended to require, nor is it to be read or construed as having the effect of requiring, a *Network Service Provider* to permit *connection* to or to *augment* any part of its *network* which is solely used for the provision of *market network services*.
- (j) If in *AEMO's* reasonable opinion, there is a risk a *Network Service Provider's plant* or equipment will:
  - (1) adversely affect *network capability, power system security, quality or reliability of supply, inter-regional power transfer capability*;
  - (2) adversely affect the use of a *network* by a *Network User*; or
  - (3) have an *adverse system strength impact*,

*AEMO* may request the *Network Service Provider* to provide information of the type described in clause 4.3.4(o), and following such a request, the *Network Service Provider* must provide the information to *AEMO* and any other relevant *Network Service Provider(s)* in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (k) If in *AEMO's* reasonable opinion, information of the type described in clause 4.3.4(o) is required to enable a *Network Service Provider* to conduct the assessment required by clause 5.3.4B, *AEMO* may request any other relevant *Network Service Provider* to provide the information, and following such a request, that *Network Service Provider* must provide the information to *AEMO* and the other relevant *Network Service Provider*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (l) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraphs (j) and (k) must be treated as *confidential information* by those recipients.

### **5.2.5A Obligations of Integrated Resource Providers**

- (a) An *Integrated Resource Provider* must plan and design its facilities and ensure that they are operated to comply with:
  - (1) the performance standards applicable to those facilities;
  - (2) subject to subparagraph (1), its connection agreement applicable to those facilities; and
  - (3) subject to subparagraph (2), the system standards.



**Note**

The AEMC proposes to recommend that clause 5.2.5A(a) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

(b) An Integrated Resource Provider must:

- (1) submit an application to connect in respect of new generating plant (including an integrated resource system) owned, operated or controlled by the Integrated Resource Provider, or to be owned, operated or controlled by the Integrated Resource Provider, and enter into a connection agreement with a Network Service Provider in accordance with rule 5.3 prior to that generating plant being connected to the network of that provider;
- (2) comply with the reasonable requirements of the relevant Network Service Provider in respect of design requirements of generating plant proposed to be connected to the network of that provider in accordance with rule 5.6 and schedule 5.2;
- (3) provide generation forecast information to the relevant Network Service Provider in accordance with Part D of Chapter 5;
- (4) permit and participate in inspection and testing of facilities and equipment in accordance with rule 5.7;
- (5) permit and participate in commissioning of facilities and equipment which are to be connected to a network for the first time in accordance with rule 5.8; and
- (6) give notice of intended voluntary permanent disconnection in accordance with rule 5.9.

(c) An Integrated Resource Provider must comply with any terms and conditions of a connection agreement for its generating system or integrated resource system that provide for the implementation, operation, maintenance or performance of a system strength remediation scheme.

**Note**

The AEMC proposes to recommend that clause 5.2.5A(c) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

(d) If in AEMO's reasonable opinion, there is a risk that an Integrated Resource Provider's plant will:

- (1) adversely affect network capability, power system security, quality or reliability of supply or inter-regional power transfer capability;
- (2) adversely affect the use of a network by a Network User; or
- (3) have an adverse system strength impact,

AEMO may request an Integrated Resource Provider to provide information of the type described in clause S5.2.4, and following such a request, the Integrated Resource Provider must provide the information to AEMO and the relevant Network Service Provider(s) in accordance with the requirements and circumstances specified in the Power System Model Guidelines, the Power System Design Data Sheet and the Power System Setting Data Sheet.

**Note**

The AEMC proposes to recommend that clause 5.2.5A(d) be classified as a Tier 2 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) If in AEMO's reasonable opinion, information of the type described in clause S5.2.4 is required to enable a Network Service Provider to conduct the assessment required by clause 5.3.4B, AEMO may request an Integrated Resource Provider to provide the information, and following such a request, the Integrated Resource Provider must provide the information to AEMO and the relevant Network Service Provider.

**Note**

The AEMC proposes to recommend that clause 5.2.5A(e) be classified as a Tier 2 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) All information provided to AEMO and the relevant Network Service Provider(s) under paragraphs (d) and (e) must be treated as confidential information by those recipients.

## 5.2A Transmission network connection and access

### 5.2A.3 Connection and access to transmission services

- (a) The following *transmission services* are relevant to *connection* and access to the *transmission network*:

Service classification	TNSP obligations	Assets involved
<i>prescribed transmission services</i>	Subject to access under Chapter 5 and economic regulation under Chapter 6A	<i>transmission network and network connection assets</i>
<i>negotiated transmission services</i>	Subject to access under Chapter 5	<i>transmission network</i>
<i>large DCA services</i>	Subject to access under the <i>access policy</i> established under clause 5.2A.8	<i>large dedicated connection assets</i>
<i>non-regulated transmission services</i>	Not subject to access under Chapter 5 or economic regulation under Chapter 6A	<i>transmission system</i>

- (b) A *Connection Applicant* may apply to a *Transmission Network Service Provider* for provision of a *prescribed transmission service* or a *negotiated transmission service* in accordance with rule 5.3 and the relevant *Transmission Network Service Provider* must comply with this Chapter 5 in negotiating a *connection agreement* for the requested service.

(b1) Where the classification of a *shared transmission service* as a *prescribed transmission service* or a *negotiated transmission service* may be determined by reference to the *network performance requirements* in the *connection agreement*, the *Connection Applicant* may specify whether the application is for provision of the service as a *prescribed transmission service* or as a *negotiated transmission service* and the relevant *Transmission Network Service Provider* must comply with the request in negotiating a *connection agreement* for the requested service.

- (c) If the *prescribed transmission service* or *negotiated transmission service* sought under paragraph (b) does not require the *Connection Applicant* to establish or modify a *connection* or alter a *generating system or integrated resource system* ~~*generating plant*~~ in the circumstances set out in clause 5.3.9, the processes in rules 5.3, 5.4 and 5.5 will apply with such modifications as is appropriate to the nature of the service requested.
- (d) A *Transmission Network Service Provider* must provide *prescribed transmission services* or *negotiated transmission services* on *terms and conditions of access* that are consistent with the requirements of Chapters 4, 5 and 6A of the *Rules* (as applicable).
- (e) A *Transmission Network Service Provider* or a person who is provided *prescribed transmission services* or *negotiated transmission services* must not engage in conduct for the purpose of preventing or hindering access to those services.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) The *Connection Applicant* may terminate negotiations with the *Transmission Network Service Provider* at any time during the *connection* process provided under rules 5.3 and 5.3A with at least three *business days'* prior written notice.
- (g) A *Transmission Network Service Provider* may terminate negotiations with the *Connection Applicant* with at least three *business days'* prior written notice if:
  - (1) the *Connection Applicant* becomes insolvent or an equivalent event occurs;
  - (2) the *Connection Applicant* has, in the *Transmission Network Service Provider's* reasonable opinion, provided false or misleading information;
  - (3) the *Transmission Network Service Provider* has reasonable grounds to believe that the *Connection Applicant* is not negotiating in good faith; or
  - (4) the *Transmission Network Service Provider* has formed the reasonable opinion that the *Connection Applicant* does not intend to obtain the service.

## 5.2A.7 Third party IUSAs

### Definitions

(a0) In this clause 5.2A.7:

**control** has the meaning given in the *Corporations Act 2001* (Cth).

**entity** has the meaning given in the *Corporations Act 2001* (Cth) subject to section 64A of the *Corporations Act 2001* (Cth) not applying to such meaning.

**related entity** means, in relation to an entity, an entity that controls, or is controlled by, that first mentioned entity.

- (a) A person must not commission, or permit the commissioning of, a *third party IUSA* unless there is a *network operating agreement* between the owner of that *third party IUSA* and the *Primary Transmission Network Service Provider*.

### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) The person who owns or is intending to own a *third party IUSA* and the *Primary Transmission Network Service Provider* must:
- (1) include terms and conditions in the *network operating agreement* which give effect to the requirements of paragraphs (c) and (d);
  - (2) include terms and conditions in the *network operating agreement* of the kind set out in Part B of schedule 5.6; and
  - (3) negotiate the *network operating agreement* in accordance with the *negotiating principles* (where applicable).
- (c) The term of the *network operating agreement* must be for a period which is at least equal to the term of the longest *connection agreement* of a member of the initial *identified user group* for the *third party IUSA*.
- (d) The *network operating agreement* must provide for the *Primary Transmission Network Service Provider* to:
- (1) have operation and control of the *third party IUSA* (including the rights and obligations to maintain that asset) for an agreed charge or based on an agreed charging methodology;
  - (2) have an option to purchase the *third party IUSA* at fair market value at the expiry or early termination of the *network operating agreement*;
  - (3) alter, replace or augment the *third party IUSA*;
  - (4) have the right to connect other persons to the *third party IUSA* in accordance with the *Rules*;
  - (5) have unrestricted use of, and access to, the *third party IUSA*; and
  - (6) treat the *third party IUSA* as forming part of the *Primary Transmission Network Service Provider's transmission network* in all material

respects and provide *transmission services* to any *Transmission Network User* in accordance with the *Rules*.

- (e) A person who owns a *third party IUSA* must not:
- (1) own, operate or control a *generating system* or *integrated resource system*;
  - (2) own, operate or control a *facility* utilising electrical energy; or
  - (3) be a related entity of a person owning, operating or controlling a *generating system*, *integrated resource system* or *facility* utilising electrical energy,

that is *connected* to that *third party IUSA*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) In paragraph (e):
- related entity** means, in relation to an entity, an entity that controls, or is controlled by, that first mentioned entity;
- entity** has the meaning given in the *Corporations Act 2001* (Cth) subject to section 64A of the *Corporations Act 2001* (Cth) not applying to such meaning; and
- control** has the meaning given in the *Corporations Act 2001* (Cth).

## 5.3 Establishing or Modifying Connection

### 5.3.1 Process and procedures

- (a) For the purposes of this rule 5.3:
- establish a connection** includes modify an existing *connection* or alter *plant* but does not include alterations to *generating plant* in the circumstances set out in clause 5.3.9.
- (b) A *Registered Participant* or person intending to become a *Registered Participant* who wishes to *establish a connection* to a *network* must follow the procedures in this rule 5.3.
- (c) A *Generator* or *Integrated Resource Provider* wishing to alter any *connected generating plant* must comply with clause 5.3.9.
- (d) *AEMO* must comply with clause 5.3.11 in relation to requests to change *normal voltage*.
- (e) For *connection* to a *transmission network*, there may be more than one *Connection Applicant* in relation to a *connection* where there are different persons developing and owning *contestable IUSA components*, *dedicated connection assets* and *Transmission Network User facilities* in relation to that *connection*.

### 5.3.1A **Application of rule to connection of embedded generating units and embedded integrated resource units**

- (a) For the purposes of this clause 5.3.1A;  
**non-registered embedded generator** has the same meaning as in clause 5A.A.1.
- (b) If a *Connection Applicant* wishes to *connect* an *embedded generating unit* or an embedded integrated resource unit, then:
  - (1) unless otherwise provided, rule 5.3A applies to the proposed connection and clauses 5.3.2, 5.3.3, 5.3.4 and 5.3.5 do not apply to the proposed *connection*; and
  - (2) for the avoidance of doubt, the application of the balance of Chapter 5, Part B to the *Connection Applicant* is otherwise unaffected by this clause 5.3.1A.
- (c) A reference to a *Connection Applicant* in paragraph (b) is to a:
  - (1) person who intends to be an *Embedded Generator* or an Embedded Integrated Resource Provider;
  - (2) person who is required to apply to *AEMO* for an exemption from the requirement to register as a *Generator* in respect of an *embedded generating unit* or as an Embedded Integrated Resource Provider in respect of an embedded integrated resource unit; or
  - (3) non-registered embedded generator who has made an election under clause 5A.A.2(c),  
and who makes a *connection* enquiry under clause 5.3A.5 or an *application to connect* under clause 5.3A.9 in relation to any *generating systems* or integrated resource systems, or any *network elements* used in the provision of a *network service*, as the case may be.

### 5.3.3 **Response to connection enquiry**

- (a) In preparing a response to a *connection* enquiry, the *Network Service Provider* must liaise with other *Network Service Providers* with whom it has *connection agreements*, if the *Network Service Provider* believes, in its reasonable opinion, that compliance with the terms and conditions of those *connection agreements* will be affected. The *Network Service Provider* responding to the *connection* enquiry may include in that response the reasonable requirements of any such other *Network Service Providers* for information to be provided by the *Connection Applicant*.
- (b) The *Network Service Provider* must:
  - (1) within 30 *business days* after receipt of the *connection* enquiry and all such additional information (if any) advised under clause 5.3.2(b); or
  - (2) within 30 *business days* after receipt of a request from the *Connection Applicant* to the *Local Network Service Provider* to process the *connection* enquiry under clause 5.3.2(d),  
provide the following information in writing to the *Connection Applicant*:



- (3) the identity of other parties that the *Network Service Provider* considers:
  - (i) will need to be involved in planning to make the *connection*; and
  - (ii) must be paid for *transmission services* or *distribution services* in the appropriate jurisdiction;
- (4) whether it will be necessary for any of the parties identified in subparagraph (3) to enter into an agreement with the *Connection Applicant* in respect of the provision of *connection* or other *transmission services* or *distribution services* or both, to the *Connection Applicant*;
- (5) in relation to *Distribution Network Service Providers* and *Network Service Providers* for *declared transmission systems*, whether any service the *Network Service Provider* proposes to provide is *contestable* in the relevant *participating jurisdiction*;
- (5A) whether any service a *Transmission Network Service Provider* proposes to provide in relation to the *connection* enquiry is a *prescribed transmission service*, a *negotiated transmission service* or a *non-regulated transmission service* including, if applicable:
  - (i) whether the capital cost of any *identified user shared asset* is reasonably expected to exceed \$10 million; and
  - (ii) if so, the *contestable IUSA components* and *non-contestable IUSA components*;
- (6) a *preliminary program* showing proposed milestones for *connection* and access activities which may be modified from time to time by agreement of the parties, where such agreement must not be unreasonably withheld;
- (7) the specification of the interface required to provide the *connection*, including plant and equipment requirements for the *connection* of a *dedicated connection asset* to the *transmission network* and of the interface between the *transmission network* and any *contestable IUSA components*;
- (8) if applicable, the scope of work for any *non-contestable IUSA components*;
- (9) if the response to the *connection enquiry* specifies the need for an *identified user shared asset* the capital cost of which is reasonably expected to exceed \$10 million, a functional specification:
  - (i) setting out the technical parameters for that asset as described in the table in clause 5.2A.4 with sufficient detail to enable the *Connection Applicant* to obtain binding tenders for the provision of detailed design, construction and ownership services for the *contestable IUSA components*;
  - (ii) at the *Primary Transmission Network Service Provider's* option, that is above those minimum requirements in subparagraph (i) subject to the *Primary Transmission Network Service Provider*

separately identifying the additional requirements and agreeing to fund the additional works related to those requirements;

- (10) an indicative costing for operation and maintenance services for any *identified user shared asset*, based on the functional specification provided pursuant to subparagraph (9); and
- (11) the amount of any enquiry fee under clause 5.3.2(g).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b1) The *Network Service Provider* must:

- (1) within 30 *business days* after receipt of the *connection* enquiry and all such additional information (if any) advised under clause 5.3.2(b); or
- (2) within 30 *business days* after receipt of a request from the *Connection Applicant* to the *Local Network Service Provider* to process the *connection* enquiry under clause 5.3.2(d),

provide the *Connection Applicant* with the following written details of each technical requirement relevant to the proposed *plant*:

- (3) the *automatic access standards*;
- (4) the *minimum access standards*;
- (5) the applicable *plant standards*;
- (6) the *negotiated access standards* that will require *AEMO's* involvement in accordance with clause 5.3.4A(c); and
- (7) the *normal voltage* level, if that is to change from the *nominal voltage* level.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b2) A *Registered Participant*, *AEMO* or *interested party* may request the *Reliability Panel* to determine whether, in respect of one or more technical requirements for access, an existing Australian or international standard, or a part thereof, may be adopted as a *plant standard* for a particular class of *plant*.
- (b3) Where, in respect of a technical requirement for access, the *Reliability Panel* determines a *plant standard* for a particular class of *plant* in accordance with clause 8.8.1(a)(8) as an acceptable alternative to a particular *minimum access standard* or *automatic access standard*, a *plant* which meets that *plant standard* is deemed to meet the applicable *automatic access standard* or *minimum access standard* for that technical requirement.
- (b4) In making a determination in accordance with clause 5.3.3(b2) the *Reliability Panel* must consult *Registered Participants* and *AEMO* using the *Rules consultation procedures*.

- (b5) For a *connection point* for a proposed new *connection* of a *generating system*, *integrated resource system* or *market network service facility*, within the time applicable under paragraph (b1), the *Network Service Provider* must provide the *Connection Applicant* with the following written details:

- (1) the minimum *three phase fault level* at the *connection point*; and
- (2) the results of the *Network Service Provider's* preliminary assessment of the impact of the new *connection* undertaken in accordance with the *system strength impact assessment guidelines* and clause 5.3.4B.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) Within 30 *business days* after receipt of the *connection* enquiry and all such additional information (if any) advised under clause 5.3.2(b) or, if the *Connection Applicant* has requested the *Local Network Service Provider* to process the *connection* enquiry under clause 5.3.2(d), within 20 *business days* after receipt of that request, the *Network Service Provider* must provide to the *Connection Applicant* written advice of all further information which the *Connection Applicant* must prepare and obtain in conjunction with the *Network Service Provider* to enable the *Network Service Provider* to assess an *application to connect* including:
- (1) details of the *Connection Applicant's* *connection* requirements, and the *Connection Applicant's* specifications of the *facility* to be connected, consistent with the requirements advised in accordance with clause 5.3.3(b1);
  - (2) details of the *Connection Applicant's* reasonable expectations of the level and standard of service of *power transfer capability* that the *network* should provide;
  - (3) a list of the technical data to be included with the *application to connect*, which may vary depending on the *connection* requirements and the type, rating and location of the *facility* to be *connected* and will generally be in the nature of the information set out in schedule 5.5 but may be varied by the *Network Service Provider* as appropriate to suit the size and complexity of the proposed *facility* to be *connected*;
  - (4) commercial information to be supplied by the *Connection Applicant* to allow the *Network Service Provider* to make an assessment of the ability of the *Connection Applicant* to satisfy the prudential requirements set out in rules 6.21 and 6A.28;
  - (4a) the *DER generation information* that the *Network Service Provider* requires;
  - (5) the amount of the application fee which is payable on lodgement of an *application to connect*, such amount:
    - (i) not being more than necessary to cover the reasonable costs of all work anticipated to arise from investigating the *application to connect* and preparing the associated offer to *connect* and to meet the reasonable costs anticipated to be incurred by AEMO and

- other *Network Service Providers* whose participation in the assessment of the *application to connect* will be required; and
- (ii) must not include any amount for, or in anticipation of, the costs of the person using an *Independent Engineer*; and
- (6) any other information relevant to the submission of an *application to connect*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

**5.3.4A Negotiated access standards**

- (a) *AEMO* must advise on *AEMO advisory matters*.
- (b) A *negotiated access standard* must:
- (1) subject to subparagraph (1A), be no less onerous than the corresponding *minimum access standard* provided by the *Network Service Provider* under clauses 5.3.3(b1)(4) or S5.4B(b)(2);
- (1A) with respect to a submission by a *Generator* or *Integrated Resource Provider* under clause 5.3.9(b)(3), be no less onerous than the *performance standard* that corresponds to the technical requirement that is affected by the alteration to the *generating system* or *integrated resource system*;
- (2) be set at a level that will not adversely affect *power system security*;
- (3) be set at a level that will not adversely affect the quality of *supply* for other *Network Users*; and
- (4) in respect of *generating plant*, meet the requirements applicable to a *negotiated access standard* in Schedule 5.2.
- (b1) When submitting a proposal for a *negotiated access standard* under clauses 5.3.4(e), 5.3A.9(f), 5.3.9(b)(3) or subparagraph (h)(3), and where there is a corresponding *automatic access standard* for the relevant technical requirement, a *Connection Applicant* must propose a standard that is as close as practicable to the corresponding *automatic access standard*, having regard to:
- (1) the need to protect the *plant* from damage;
- (2) *power system* conditions at the location of the proposed *connection*; and
- (3) the commercial and technical feasibility of complying with the *automatic access standard* with respect to the relevant technical requirement.
- (b2) When proposing a *negotiated access standard* under paragraph (b1), the *Connection Applicant* must provide reasons and evidence to the *Network Service Provider* and *AEMO* as to why, in the reasonable opinion of the *Connection Applicant*, the proposed *negotiated access standard* is appropriate, including:

- (1) how the *Connection Applicant* has taken into account the matters outlined in subparagraphs (b1)(1) to (3); and
- (2) how the proposed *negotiated access standard* meets the requirements of paragraph (b).
- (c) Following the receipt of a proposed *negotiated access standard* under clauses 5.3.4(e), 5.3A.9(f), 5.3.9(b)(3) or subparagraph (h)(3), the *Network Service Provider* must consult with *AEMO* as soon as practicable in relation to *AEMO advisory matters* for that proposed standard.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) Within 20 *business days* following the later of:
  - (1) receipt of a proposed *negotiated access standard* under clauses 5.3.4(e), 5.3A.9(f), 5.3.9(b)(3) or subparagraph (h)(3); and
  - (2) receipt of all information required to be provided by the *Connection Applicant* under clauses S5.2.4, S5.5.6, S5.3.1(a1) or S5.3a.1(a1),

*AEMO* must advise the *Network Service Provider* in writing, in respect of *AEMO advisory matters*, whether the proposed *negotiated access standard* should be accepted or rejected.
- (d1) When advising the *Network Service Provider* under paragraph (d) to reject a proposed *negotiated access standard*, and subject to obligations in respect of *confidential information*, *AEMO* must:
  - (1) provide detailed reasons in writing for the rejection to the *Network Service Provider*, including:
    - (i) where the basis of *AEMO's* advice is lack of evidence from the *Connection Applicant*, details of the additional evidence of the type referred to in paragraph (b2) *AEMO* requires to continue assessing the proposed *negotiated access standard*; and
    - (ii) the extent to which each of the matters identified at subparagraphs (b)(1), (b)(1A), (b)(2) and (b)(4) contributed to *AEMO's* decision to reject the proposed *negotiated access standard*; and
  - (2) recommend a *negotiated access standard* that *AEMO* considers meets the requirements of subparagraphs (b)(1), (b)(1A), (b)(2) and (b)(4).
- (e) Within 30 *business days* following the later of:
  - (1) receipt of a proposed *negotiated access standard* in accordance with clauses 5.3.4(e), 5.3A.9(f), 5.3.9(b)(3) or subparagraph (h)(3); and
  - (2) receipt of all information required to be provided by the *Connection Applicant* under clauses S5.2.4, S5.5.6, S5.3.1(a1) or S5.3a.1(a1),

the *Network Service Provider* must accept or reject a proposed *negotiated access standard*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) The *Network Service Provider* must reject the proposed *negotiated access standard* where:
- (1) in the *Network Service Provider's* reasonable opinion, one or more of the requirements at subparagraphs (b)(1), (b)(1A), (b)(3) and (b)(4) are not met; or
  - (2) *AEMO* has advised the *Network Service Provider* under paragraph (d) to reject the proposed *negotiated access standard*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) If a *Network Service Provider* rejects a proposed *negotiated access standard*, the *Network Service Provider* must, at the same time:
- (1) subject to obligations in respect of *confidential information*, provide to the *Connection Applicant*:
    - (i) where the basis for the *Network Service Provider's* rejection is lack of evidence from the *Connection Applicant*, details of the additional evidence of the type referred to in paragraph (b2) the *Network Service Provider* requires to continue assessing the proposed *negotiated access standard*;
    - (ii) detailed reasons in writing for the rejection, including the extent to which each of the matters identified at subparagraphs (b)(1), (b)(1A), (b)(3) and (b)(4) contributed to the *Network Service Provider's* decision to reject the proposed *negotiated access standard*; and
    - (iii) the detailed reasons and recommendation (if any) provided by *AEMO* to the *Network Service Provider* in respect of an *AEMO advisory matter* under subparagraphs (d1)(1) and (2); and
  - (2) advise the *Connection Applicant* of a *negotiated access standard* that the *Network Service Provider* considers meets the requirements of subparagraphs (b)(1), (b)(1A), (b)(3) and (b)(4).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) The *Connection Applicant* may in relation to a proposed *negotiated access standard* advised by a *Network Service Provider* in accordance with subparagraph (g)(2):
- (1) accept the proposed *negotiated access standard*;
  - (2) reject the proposed *negotiated access standard*;



- (3) propose an alternative *negotiated access standard* to be further evaluated in accordance with the criteria in paragraph (b); or
  - (4) elect to adopt the relevant *automatic access standard* or a corresponding *plant standard*.
- (i) An *automatic access standard* or if the procedures in this clause 5.3.4A have been followed a *negotiated access standard*, that forms part of the terms and conditions of a *connection agreement*, is taken to be the *performance standard* applicable to the *connected plant* for the relevant technical requirement.

### 5.3.4B System strength remediation for new connections

- (a) A *Network Service Provider* must, in accordance with the *system strength impact assessment guidelines*, undertake a *system strength impact assessment* for each proposed new *connection* of a *generating system*, *integrated resource system* or *market network service facility* and any proposed alteration to a *generating system* *or integrated resource system* to which clause 5.3.9 applies. A *Network Service Provider* must make:
- (1) a preliminary assessment if it is in receipt of a *connection* enquiry or a request by a *Generator* *or Integrated Resource Provider* under clause 5.3.9(c1); and
  - (2) a full assessment if it is in receipt of an *application to connect* or submission from a *Generator* *or Integrated Resource Provider* under clause 5.3.9, unless the preliminary assessment indicates that the full assessment is not needed.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) The *Network Service Provider* must give the results of the preliminary assessment and the full assessment to the *Connection Applicant*, ~~or~~ *Generator* *or Integrated Resource Provider* concerned following consultation with *AEMO*.
- (c) A dispute referred to in paragraph (d) between any of:
- (1) *AEMO*;
  - (2) A *Network Service Provider* required to conduct an assessment under paragraph (a);
  - (3) a *Connection Applicant* who has submitted an *application to connect* for which a full assessment is required under paragraph (a); and
  - (4) a *Generator* *or Integrated Resource Provider* who proposes an alteration to a *generating system* *or integrated resource system* to which clause 5.3.9 applies and for which a full assessment is required under paragraph (a),
- may be determined under rule 8.2.

- (d) Paragraph (c) applies to any dispute relating to the assessment of an *adverse system strength impact* as a result of conducting a *system strength impact assessment* including a dispute in relation to:
  - (1) whether the model specified by *AEMO* for the purposes of clause 4.6.6(b)(2) was reasonably appropriate for conducting the *system strength impact assessment*; and
  - (2) the application of the *system strength impact assessment guidelines* when undertaking a *system strength impact assessment*.
- (e) Subject to paragraph (f), a *Network Service Provider* must undertake *system strength connection works* at the cost of the *Connection Applicant*, ~~or~~ *Generator* or *Integrated Resource Provider* (as applicable) if the full assessment undertaken in accordance with the *system strength impact assessment guidelines* indicates that the *Connection Applicant's* proposed new connection of a generating ~~facility~~ system, integrated resource system or market network service facility or the *Generator's* or *Integrated Resource Provider's* proposed alteration to a generating system or integrated resource system to which clause 5.3.9 applies will have an *adverse system strength impact*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) Paragraph (e) does not require a *Network Service Provider* to undertake, nor permit a *Network Service Provider* to require, *system strength connection works* in the following circumstances:
  - (1) the proposed new *connection* or alteration does not proceed;
  - (2) to the extent that the *adverse system strength impact* referred to in paragraph (e) is or will be avoided or remedied by a *system strength remediation scheme* agreed or determined under this clause and implemented by the *Registered Participant* in accordance with its *connection agreement*; or
  - (3) to the extent that the impact is below any threshold specified in the *system strength impact assessment guidelines* for this purpose.
- (g) A *Connection Applicant* must include any proposal for a *system strength remediation scheme* in its *application to connect* or its proposal under clause 5.3.9(b)(4).
- (h) A *Connection Applicant* proposing to install *plant* as part of a *system strength remediation scheme* must include a description of the *plant*, the ratings of the proposed *plant* (in MVA) and other information (including models) reasonably required by the *Network Service Provider* and *AEMO* to assess the *system strength remediation scheme*.
- (i) A *Network Service Provider* must, following the receipt of a proposal for a *system strength remediation scheme*, consult with *AEMO* as soon as practical in relation to the proposal.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (j) Following the submission of a proposal for a *system strength remediation scheme*, *AEMO* must use reasonable endeavours to respond to the *Network Service Provider* in writing in respect of the proposal within 20 *business days*.
- (k) A *Network Service Provider* must within 10 *business days* following the receipt of a response from *AEMO* under paragraph (h) to a proposal for a *system strength remediation scheme*, accept or reject the proposal.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (l) The *Network Service Provider* must reject a proposal for a *system strength remediation scheme* if the scheme is not reasonably likely to achieve its required outcome or would:
  - (1) in the reasonable opinion of the *Network Service Provider* adversely affect quality of *supply* for other *Network Users*; or
  - (2) on *AEMO's* reasonable advice, adversely affect *power system security*.
- (m) If a *Network Service Provider* rejects a proposal for a *system strength remediation scheme*, the *Network Service Provider* must give its reasons but has no obligation to propose a *system strength remediation scheme* that it will accept.
- (n) The *Connection Applicant* submitting a proposal for a *system strength remediation scheme* rejected by a *Network Service Provider* may:
  - (1) propose an alternative *system strength remediation scheme* to be further evaluated following the process initiated under paragraph (i); or
  - (2) request negotiations under paragraph (o).
- (o) If a *Connection Applicant* requests negotiations under this paragraph, the *Connection Applicant*, the *Network Service Provider* and *AEMO* must negotiate in good faith to reach agreement in respect of the proposal for a *system strength remediation scheme*.
- (p) If the matter is not resolved by negotiation under paragraph (o):
  - (1) in the case of a *connection* to a *transmission system* other than the *declared transmission system* of an *adoptive jurisdiction*, the matter may be dealt with as a dispute under rule 5.5 (but not rule 8.2); or
  - (2) otherwise, may be dealt with under rule 8.2 or as a *distribution service access dispute* as applicable.
- (q) The parties to a *connection agreement* containing a *system strength remediation scheme* must not modify the scheme unless the modified scheme has been agreed or determined under this clause. A *Registered Participant* proposing to modify a *system strength remediation scheme* must submit its proposal for modification to the *Network Service Provider* for evaluation by

the *Network Service Provider* and *AEMO* under this clause. Once agreed or determined, the modified scheme must be incorporated as an amendment to the *connection agreement* and notified to *AEMO* under clause 5.3.7(g).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

### 5.3.6 Offer to connect

- (a) A *Network Service Provider* processing an *application to connect* must make an offer to *connect* the *Connection Applicant's facilities* to the *network* within the following timeframes:
  - (1) where the *application to connect* was made under clause 5.3.4(a), the timeframe specified in the *preliminary program*, subject to clause 5.3.3(b)(6); and
  - (2) where the *application to connect* was made under clause 5.3A.9(b), a period of time no longer than 4 months from the date of receipt of the *application to connect* and any additional information requested under clause 5.3A.9(d), unless agreed otherwise.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (a1) The *Network Service Provider* may amend the time period referred to in paragraph (a)(1) to allow for any additional time taken in excess of the period allowed in the *preliminary program* for the negotiation of *negotiated access standards* in accordance with clause 5.3.4A or a *system strength remediation scheme* in accordance with clause 5.3.4B or any time taken by *AEMO* to respond under clause 5.3.4B(j) in excess of 20 *business days*.
- (a2) In relation to the timeframes fixed in paragraph (a)(2), for the purposes of calculating elapsed time, the following periods shall be disregarded:
  - (1) the period that commences on the day when a dispute is initiated under clause 8.2.4(a) and ends of the day on which the dispute is withdrawn or is resolved in accordance with clauses 8.2.6D or 8.2.9(a);
  - (2) any time taken to resolve a *distribution services access dispute*; and
  - (3) any time taken by *AEMO* to respond under clause 5.3.4B(j) in excess of 20 *business days*.
- (b) In relation to an *application to connect* made under clause 5.3.4(a), the offer to *connect* must contain the proposed terms and conditions for *connection* to the *network* including:
  - (1) for each technical requirement identified by the *Network Service Provider* under clause 5.3.3(b1), the *automatic access standard* or the *negotiated access standard* as determined in accordance with clauses 5.3.4 and 5.3.4A; and

- (2) the terms and conditions of the kind set out in Part A and (where applicable) Part B of schedule 5.6,

and must be capable of acceptance by the *Connection Applicant* so as to constitute a *connection agreement* and (where applicable) a *network operating agreement*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b1) The proposed terms and conditions detailed in the offer to *connect* must be no lower than the applicable *minimum access standards*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b2) An offer to *connect* made under paragraph (a)(2), must be accompanied by:

- (1) so far as is relevant, and in relation to services the *Distribution Network Service Provider* intends to provide, an itemised statement of *connection costs* including:
  - (i) *connection service charges*;
  - (ii) costs associated with metering requirements contained in the offer to *connect*;
  - (iii) costs of *network extension*;
  - (iv) details of *augmentation* required to provide the *connection* and associated costs;
  - (v) details of the interface equipment required to provide the *connection* and associated costs;
  - (vi) details of any ongoing operation and maintenance costs and charges by the *Distribution Network Service Provider*; and
  - (vii) other incidental costs and their basis of calculation;
- (2) if any item in the statement of costs in subparagraph (1) differs substantially from the estimate provided under clause S5.4B(h), an explanation of the differences;
- (3) a *connection agreement* capable of execution by the *Connection Applicant*, which must contain the proposed terms and conditions for *connection* to the *distribution network* (of the kind set out in Part A of schedule 5.6) including, for each technical requirement identified by the *Distribution Network Service Provider* in the *detailed response* provided under clause 5.3A.8(c), the *automatic access standard* or the negotiated access standard as determined in accordance with clause 5.3.4A; and
- (4) an explanation:
  - (i) of how the offer to *connect* can be accepted; and

- (ii) that the offer to *connect* remains open for 20 *business days*, unless otherwise agreed.
- (b3) An offer to *connect* made under paragraph (a)(2) must remain open for acceptance for 20 *business days* from the date it is made and, if not accepted within that period, lapses unless the *Connection Applicant* has sought an extension of the period of time from the *Distribution Network Service Provider*. The *Distribution Network Service Provider* may not unreasonably withhold consent to the extension.
- (b4) An offer to *connect* by a *Primary Transmission Network Service Provider* made under paragraph (a)(1) must include:
  - (1) the *Primary Transmission Network Service Provider's* requirements in relation to the matters proposed in clause 5.3.4(b)(3) and (b)(4); and
  - (2) the costs of the services proposed to be provided by the *Primary Transmission Network Service Provider* separated between *negotiated transmission services* and *non-regulated transmission services* (if applicable).
- (b5) A *Connection Applicant* may seek amendments to the offer to *connect* provided that the *Connection Applicant* agrees to changes to the *preliminary program* to reflect the additional time required to agree the amendments.
- (c) The offer to *connect* must be fair and reasonable and must be consistent with the safe and *reliable* operation of the *power system* in accordance with the *Rules*. Without limitation, unless the parties otherwise agree, to be fair and reasonable an offer to *connect* must offer *connection* and *network services* consistent with schedule 5.1 and (as applicable) schedules 5.2, 5.3 and 5.3a and must not impose conditions on the *Connection Applicant* which are more onerous than those contemplated in schedules 5.1, 5.2, 5.3 or 5.3a.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c1) **[Deleted]**
- (d) The *Network Service Provider* must use its reasonable endeavours to provide the *Connection Applicant* with an offer to *connect* in accordance with the reasonable requirements of the *Connection Applicant*, including without limitation, the location of the proposed *connection point* and the level and standard of *power transfer capability* that the *network* will provide.
- (e) An offer to *connect* may contain options for *connection* to a *network* at more than one point in a *network* and/or at different levels of service and with different terms and conditions applicable to each *connection point* according to the different characteristics of *supply* at each *connection point*.
- (f) Both the *Network Service Provider* and the *Connection Applicant* are entitled to negotiate with each other in respect of the provision of *connection* and any other matters relevant to the provision of *connection* and, if negotiations occur, the *Network Service Provider* and the *Connection Applicant* must conduct such negotiations in good faith.



- (g) An offer to *connect* must define the basis for determining *transmission service* charges in accordance with Chapter 6A, including the prudential requirements set out in that Chapter.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) An offer to *connect* must define the basis for determining *distribution service* charges in accordance with Chapter 6, including the prudential requirements set out in Part K of Chapter 6.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (i) **[Deleted]**

- (j) An offer to *connect* in respect of a *distribution network* made to an *Embedded Generator*, *Embedded Integrated Resource Provider* or a *Market Network Service Provider*, must conform with the relevant access arrangements set out in rule 5.3AA.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (k) **[Deleted]**

### 5.3.7 Finalisation of connection agreements and network operating agreements

- (a) If a *Connection Applicant* wishes to accept an offer to *connect*, the *Connection Applicant* must negotiate and enter into:
- (1) a *connection agreement* with each relevant *Network Service Provider* identified in accordance with clauses 5.3.3(b)(3) and (4) or clauses S5.4.A(d) and (e); and
  - (2) if applicable, a *network operating agreement* with the *Primary Transmission Network Service Provider*,
- and in doing so must use its reasonable endeavours to negotiate in good faith with all parties with which the *Connection Applicant* must negotiate such a *connection agreement* and (if applicable) *network operating agreement*.
- (b) The *connection agreement* must include proposed *performance standards* with respect to each of the technical requirements identified in schedules 5.2, 5.3 and 5.3a and each proposed *performance standard* must have been established in accordance with the relevant technical requirement.
- (c) The proposed *performance standards* must be based on the *automatic access standard* or, if the procedures in clause 5.3.4A have been followed, the *negotiated access standard*.

- (d) The provision of *connection* by any *Network Service Provider* may be made subject to gaining environmental and planning approvals for any necessary *augmentation* or *extension* works to a *network* or any *system strength connection works*.
- (e) Where permitted by the applicable law in the relevant *participating jurisdiction*, the *connection agreement* may assign responsibility to the *Connection Applicant* for obtaining the approvals referred to in paragraph (d) as part of the project proposal and the *Network Service Provider* must provide all reasonable information and may provide reasonable assistance for a reasonable fee to enable preparation of applications for such approvals.
- (f) Subject to paragraph (e), each *connection agreement* must be based on the offer to *connect* as varied by agreement between the parties.
- (f1) The parties may agree to have one *connection agreement* between a *Primary Transmission Network Service Provider*, *Dedicated Connection Asset Service Provider* and a *Transmission Network User* for a *connection*.
- (f2) A *network operating agreement* must be based on the offer to *connect* as varied by agreement between the parties.
- (g) Within 20 *business days* of execution of the *connection agreement*, the *Network Service Provider* responsible for the *connection point* and the *Registered Participant* must jointly notify *AEMO* that a *connection agreement* has been entered into between them and forward to *AEMO* relevant technical details of the proposed *plant* and *connection*, including as applicable:
  - (1) details of all *performance standards* that form part of the terms and conditions of the *connection agreement*;
  - (2) if the Registered Participant is a Generator or Integrated Resource Provider, the arrangements for:
    - (i) updating the *releasable user guide* and other information required under clause S5.2.4(b); and
    - (ii) informing *AEMO* when the *connection agreement* expires or is terminated;
  - (3) the proposed *metering installation*;
  - (4) arrangements to obtain physical access to the *metering installation* for the *Metering Provider* and the *Metering Data Provider* for *metering installations* type 4A, 5 and 6;
  - (5) the terms upon which a *Registered Participant* is to supply any *ancillary services* under the *connection agreement*; and
  - (6) the details of any *system strength remediation scheme* agreed, determined or modified under clause 5.3.4B.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) *AEMO* must, within 20 *business days* of receipt of the notice under paragraph (g), advise the relevant *Network Service Provider* and the *Registered Participant* of whether the proposed *metering installation* is acceptable for those *metering installations* associated with those *connection points* which are classified as *metering installation* types 1, 2, 3 and 4 as specified in schedule 7.4.

### 5.3.9 Procedure to be followed by a Generator or Integrated Resource Provider proposing to alter a generating system or integrated resource system

- (a) Subject to paragraph (a1), this clause 5.3.9 applies where:

(1) a Generator or Integrated Resource Provider proposes to alter a *connected generating system* or a *generating system* for which *performance standards* have been previously accepted by the *Network Service Provider* and *AEMO* (in relation to *AEMO advisory matters*) and that alteration:

(i)(1) will affect the performance of the *generating system* relative to any of the technical requirements set out in clauses S5.2.5, S5.2.6, S5.2.7 and S5.2.8; or

(ii)(2) will, in *AEMO's* reasonable opinion, have an *adverse system strength impact*; or

(iii)(3) will, in *AEMO's* reasonable opinion, adversely affect *network capability, power system security, quality or reliability of supply, inter-regional power transfer capability* or the use of a *network* by another *Network User*.

(2) an Integrated Resource Provider proposes to alter a *connected integrated resource system* or an *integrated resource system* for which *performance standards* have been previously accepted by the *Network Service Provider* and *AEMO* (in relation to *AEMO advisory matters*) and that alteration:

(i) will affect the performance of the integrated resource system relative to any of the technical requirements set out in clauses S5.2.5, S5.2.6, S5.2.7 and S5.2.8; or

(ii) will, in AEMO's reasonable opinion, have an adverse system strength impact; or

(iii) will, in AEMO's reasonable opinion, adversely affect network capability, power system security, quality or reliability of supply, inter-regional power transfer capability or the use of a network by another Network User.

- (a1) This clause 5.3.9 does not apply in relation to any modifications made to a *generating system or integrated resource system* by a *Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Semi-Scheduled Generator* in order to comply with the *Primary Frequency Response Requirements* as applicable to that *generating system or integrated resource system*.

- (b) A *Generator or Integrated Resource Provider* to which this clause applies, must submit to the *Network Service Provider* with a copy to *AEMO*:

- (1) a description of the nature of the alteration and the timetable for implementation;
- (2) in respect of the proposed alteration to the *generating system*, details of the *generating unit* design data and *generating unit* setting data in accordance with the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

(2A) in respect of the proposed alteration to the *integrated resource system*, details of the *integrated resource unit* design data and *integrated resource unit* setting data in accordance with the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*;

**Note**

The AEMC proposes to recommend that clause 5.3.9(b)(2A) be classified as a Tier 2 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (3) in relation to each relevant technical requirement for which the proposed alteration to the equipment will affect the performance of the *generating system* or *integrated resource system*, the proposed amendments to the *plant's* existing corresponding *performance standard* for that technical requirement; and
  - (4) where relevant, the *Generator's* or *Integrated Resource Provider's* proposed *system strength remediation scheme*.
- (c) Clause 5.3.4A applies to a submission by a *Generator* or *Integrated Resource Provider* under subparagraph (b)(3).
- (c1) Clause 5.3.4B applies to a submission by a *Generator* or *Integrated Resource Provider* under subparagraph (b)(4). A *Generator* or *Integrated Resource Provider* may request the *Network Service Provider* to undertake a preliminary assessment in accordance with the *system strength impact assessment guidelines* before making a submission under paragraph (b).
- (d) Without limiting paragraph (a), a proposed alteration to the equipment specified in column 1 of the table set out below is deemed to affect the performance of the *generating system* or *integrated resource system* relative to technical requirements specified in column 2, thereby necessitating a submission under subparagraph (b)(3), unless *AEMO* and the *Network Service Provider* otherwise agree.

Column 1 (altered equipment)	Column 2 (clause)
machine windings	S5.2.5.1, S5.2.5.2, S5.2.8
power converter	S5.2.5.1, S5.2.5.2, S5.2.5.5, S5.2.5.12, S5.2.5.13, S5.2.8

Column 1 (altered equipment)	Column 2 (clause)
reactive compensation plant	S5.2.5.1, S5.2.5.2, S5.2.5.5, S5.2.5.12, S5.2.5.13
<i>excitation control system</i>	S5.2.5.5, S5.2.5.7, S5.2.5.12, S5.2.5.13
<i>voltage control system</i>	S5.2.5.5, S5.2.5.7, S5.2.5.12, S5.2.5.13
<i>governor control system</i>	S5.2.5.7, S5.2.5.11, S5.2.5.14
<i>power control system</i>	S5.2.5.11, S5.2.5.14
<i>protection system</i>	S5.2.5.3, S5.2.5.4, S5.2.5.5, S5.2.5.7, S5.2.5.8, S5.2.5.9, S5.2.5.10
auxiliary supplies	S5.2.5.1, S5.2.5.2, S5.2.7
remote control and monitoring system	S5.2.5.14, S5.2.6.1, S5.2.6.2

- (e) The *Network Service Provider* may as a condition of considering a submission made under paragraph (b), require payment of a fee to meet the reasonable costs anticipated to be incurred by the *Network Service Provider*, other *Network Service Providers* and *AEMO*, in the assessment of the submission.
- (f) The *Network Service Provider* must require payment of a fee under paragraph (e) if so requested by *AEMO*.
- (g) On payment of the required fee referred to in paragraph (e), the *Network Service Provider* must pay such amounts as are on account of the costs anticipated to be incurred by the other *Network Service Providers* and *AEMO*, as appropriate.
- (h) If the application of this clause 5.3.9 leads to a variation to an existing *connection agreement* the *Network Service Provider* and the *Generator* or *Integrated Resource Provider* must immediately jointly advise *AEMO*, including the details of any *performance standards* amended pursuant to this clause 5.3.9.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

### 5.3.10 Acceptance of performance standards for generating plant that is altered

- (a) A *Generator* must not commission altered *generating plant* until the *Network Service Provider* has advised the *Generator* that the provider and *AEMO* are satisfied in accordance with paragraph (b).

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (a1) An *Integrated Resource Provider* must not commission altered *plant* comprised in an *integrated resource system* (including *generating plant*) until the *Network Service Provider* has advised the *Integrated Resource Provider* that the provider and *AEMO* are satisfied in accordance with paragraph (b).

#### Note

The AEMC proposes to recommend that clause 5.3.10(a1) be classified as a Tier 1 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) In relation to altered *generating plant*, the *Network Service Provider* and *AEMO*, to the extent of *AEMO*'s advisory role under clause 5.3.4A and clause 5.3.4B, must be satisfied that:
- (1) the *Generator* or *Integrated Resource Provider* has complied with clause 5.3.9; and
  - (2) each amended *performance standard* submitted by the *Generator* or *Integrated Resource Provider* either meets:
    - (i) the *automatic access standard* applicable to the relevant technical requirement; or
    - (ii) the *negotiated access standard* under clause 5.3.4A as applied in accordance with clause 5.3.9(c); and
  - (3) any *system strength remediation scheme* satisfies clause 5.3.4B.
- (c) For the purposes of paragraph (a), *AEMO* must advise the *Network Service Provider* as to whether it is satisfied with the matters referred to paragraph (b).

## 5.3A Establishing or modifying connection - embedded generation

### 5.3A.1 Application of rule 5.3A

- (a) [Deleted]
- (b) Where a *Connection Applicant* wishes to connect an *embedded generating unit* or *embedded integrated resource unit*, this rule 5.3A applies.
- (c) For the purposes of this rule 5.3A and Schedules 5.4A and 5.4B:
- (1) a reference to a *Connection Applicant* is to a:



- (i) person who intends to be an *Embedded Generator* or an Embedded Integrated Resource Provider;
  - (ii) person who is required to apply to AEMO for an exemption from the requirement to register as a *Generator* or Integrated Resource Provider in respect of an *embedded generating unit* or embedded integrated resource unit; or
  - (iii) non-registered embedded generator who has made an election under clause 5A.A.2(c),  
and who makes a *connection* enquiry under clause 5.3A.5 or an *application to connect* under clause 5.3A.9 in relation to any *generating systems* or integrated resource systems, or any *network elements* used in the provision of a *network service*, as the case may be.
- (2) the *Distribution Network Service Provider* is the *Distribution Network Service Provider* required under clause 5.3A.5 to process and respond to a *connection* enquiry or required under clause 5.3A.10 to prepare an offer to *connect* for the establishment or modification of a *connection* to the *distribution network* owned, controlled or operated by that *Distribution Network Service Provider* or for the provision of a *network service*.

### 5.3A.3 Publication of Information

- (a) A *Distribution Network Service Provider* must *publish* the following in the same location on its website:
- (1) an enquiry form for *connection* of an *embedded generating unit* or embedded integrated resource unit;
  - (2) a register of completed embedded generation projects under rule 5.18B; and
  - (3) an *information pack*.
- (b) An *information pack* must include:
- (1) a description of the process for lodging an *application to connect* for an *embedded generating unit* or embedded integrated resource unit, including:
    - (i) the purpose of each stage of the *connection* enquiry and application processes;
    - (ii) the steps a *Connection Applicant* will need to follow at each stage of the *connection* enquiry and application processes;
    - (iii) the information that is to be included by the *Connection Applicant* with a *connection* enquiry and the information that will be made available to the *Connection Applicant* by the *Distribution Network Service Provider* at each stage of the *connection* enquiry;
    - (iv) the information that is to be included with an *application to connect* and the type of information that will be made available to the *Connection Applicant* by the *Distribution Network Service Provider* after lodgement of the application;

- (v) the factors taken into account by the *Distribution Network Service Provider*, at each stage of the *connection* enquiry and application, when assessing an *application to connect* for an *embedded generating unit* or embedded integrated resource unit;
  - (vi) the process for negotiating *negotiated access standards* under clause 5.3.4A and any *system strength remediation scheme* under clause 5.3.4B and a summary of the factors the *Distribution Network Service Provider* takes into account when considering proposed *negotiated access standards* and *system strength remediation schemes*; and
  - (vii) a list of services, if any, relevant to the *connection* that are *contestable* in the relevant *participating jurisdiction*;
- (2) single line diagrams of the *Distribution Network Service Provider's* preferred *connection* arrangements, and a range of other possible *connection* arrangements for integration of an *embedded generating unit* or embedded integrated resource unit, showing the *connection point*, the point of common coupling, the *embedded generating unit(s)*, *embedded integrated resource unit(s)*, *load(s)*, *meter(s)*, circuit breaker(s) and isolator(s);
- (3) a sample schematic diagram of the *protection system* and *control system* relevant to the *connection* of an *embedded generating unit* or embedded integrated resource unit to the *distribution network*, showing the *protection system* and *control system*, including all relevant current circuits, relay potential circuits, alarm and monitoring circuits, back-up systems and parameters of *protection* and *control system* elements;
- (4) worked examples of *connection service* charges, enquiry and application fees for the *connection* of *embedded generating units* or embedded integrated resource units, based on the preferred and possible *connection* arrangements set out in paragraph (b)(2);
- (5) details of any *minimum access standards* or *plant standards* the *Distribution Network Service Provider* considers are applicable to *embedded generating units*, *embedded integrated resource units* and *generating plant*;
- (6) technical requirements relevant to the processing of a *connection* enquiry or an *application to connect*, including information of the type, but not limited to:
  - (i) *protection systems* and *protection schemes*;
  - (ii) *fault level management principles*;
  - (iii) *reactive power capability* and *power factor* correction;
  - (iv) *power quality* and how limits are allocated;
  - (v) responses to *frequency* and *voltage* disturbances;
  - (vi) *voltage* control and regulation;
  - (vii) *remote monitoring equipment*, control and communication requirements;

- (viii) earthing requirements and other relevant safety requirements;
  - (ix) circumstances in which *augmentation* may be required to facilitate integration of an *embedded generating unit* or embedded integrated resource unit into the *network*;
  - (x) commissioning and testing requirements; and
  - (xi) circumstances in which a *system strength remediation scheme* or *system strength connection works* will be required as a condition of *connection*; and
- (7) *model connection agreements* used by that *Distribution Network Service Provider*.

### 5.3A.10 Preparation of offer to connect

- (a) The *Distribution Network Service Provider* to whom the *application to connect* is submitted under clause 5.3A.9(a):
- (1) at the *automatic access standard*; or
  - (2) at a *negotiated access standard* that the provider has accepted under clause 5.3.4A(e),
- must proceed to prepare an offer to *connect* in response.
- (b) So as to maintain levels of service and quality of *supply* to existing *Registered Participants* in accordance with the *Rules*, the *Distribution Network Service Provider* in preparing the offer to *connect* must consult with *AEMO* and other *Registered Participants* with whom it has *connection agreements*, if the *Distribution Network Service Provider* believes in its reasonable opinion, that compliance with the terms and conditions of those *connection agreements* will be affected, in order to assess the *application to connect* and determine:
- (1) the technical requirements for the equipment to be *connected*;
  - (2) the extent and cost of *augmentations* and changes to all affected *networks*;
  - (3) any consequent change in *network service charges*; and
  - (4) any possible material effect of this new *connection* on the *network power transfer capability* including that of other *networks*.
- (c) If the *application to connect* involves the connection of *embedded generating units* or embedded integrated resource units having a nameplate rating of 10 MW or greater, the *Distribution Network Service Provider* must consult the relevant *Transmission Network Service Provider* regarding the impact of the *connection* contemplated by the *application to connect* on fault levels, line reclosure protocols, and stability aspects.
- (d) The *Transmission Network Service Provider* consulted under paragraph (c) must determine the reasonable costs of addressing those matters for inclusion in the offer to *connect* and the *Distribution Network Service Provider* must make it a condition of the offer to *connect* that the *Connection Applicant* pay these costs.

- (e) The *Distribution Network Service Provider* preparing the offer to *connect* must include provision for payment of the reasonable costs associated with *remote control equipment* and *remote monitoring equipment* as required by AEMO and it may be a condition of the offer to *connect* that the *Connection Applicant* pay these costs.
- (f) The *Distribution Network Service Provider* preparing the offer to *connect* must specify in reasonable detail any *system strength connection works* to be undertaken by the *Distribution Network Service Provider*.

### 5.3A.12 Network support payments and functions

- (a) When negotiating the amount of a *network support payment* with an *Embedded Generator* or *Embedded Integrated Resource Provider*, the *Transmission Network Service Provider* must take into account the:
  - (1) nature of the *network support services* being provided by the *Embedded Generator* or *Embedded Integrated Resource Provider*; and
  - (2) extent to which the *Embedded Generator* or *Embedded Integrated Resource Provider* is being, or will be, compensated for providing those *network support services* by receiving *avoided Customer TUOS charges*.
- (b) Where the relevant *Transmission Network Service Provider* or *Distribution Network Service Provider* decides to implement a *generation option* as an alternative to *network augmentation*, the *Network Service Provider* must:
  - (1) register the *generating unit* or *integrated resource unit* with AEMO and specify that the *generating unit* or *integrated resource unit* may be periodically used to provide a *network support function* and will not be eligible to set *spot prices* when *constrained on* in accordance with clause 3.9.7; and
  - (2) include the cost of this *network support service* in the calculation of *transmission service* and *distribution service* prices determined in accordance with Chapter 6 or Chapter 6A, as the case may be.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

### 5.3AA Access arrangements relating to Distribution Networks

- (a) In this rule 5.3AA:
  - (1) the *Distribution Network Service Provider* is the *Distribution Network Service Provider* required under clauses 5.3.3 or 5.3A.5 to process and respond to a *connection enquiry* or required under clauses 5.3.5 or 5.3A.10 to prepare an offer to *connect* for the establishment or modification of a *connection* to the *distribution network* owned, controlled or operated by that *Distribution Network Service Provider* or for the provision of *network service*; **and**
  - (2) the references to a *Connection Applicant* are to an *Embedded Generator*, *Embedded Integrated Resource Provider* or *Market*

*Network Service Provider* who makes a *connection* enquiry under clauses 5.3.2 or 5.3A.5 or an application to *connect* under clauses 5.3.4 or 5.3A.10 in relation to any *generating units* or *integrated resource units* or group of *generating units* or *integrated resource units*, or any *network elements* used in the provision of *network service*, as the case may be; ~~and~~

(3) a reference to an *Embedded Generator* includes a reference to an *Embedded Integrated Resource Provider*, a reference to a *generating unit* includes a reference to an *integrated resource unit* and a reference to a group of *generating units* includes a reference to a group of *integrated resource units*.

- (b) If requested by a *Connection Applicant*, whether as part of a *connection* enquiry, application to *connect* or the subsequent negotiation of a *connection agreement*, the *Distribution Network Service Provider* must negotiate in good faith with the *Connection Applicant* to reach agreement in respect of the *distribution network user access* arrangements sought by the *Connection Applicant*.
- (c) As a basis for negotiations under paragraph (b):
  - (1) the *Connection Applicant* must provide to the *Distribution Network Service Provider* such information as is reasonably requested relating to the expected operation of:
    - (i) its *generating units* (in the case of an *Embedded Generator*); ~~or~~
    - (ii) its *network elements* used in the provision of *network service* (in the case of a *Market Network Service Provider*); and
  - (2) the *Distribution Network Service Provider* must provide to the *Connection Applicant* such information as is reasonably requested to allow the *Connection Applicant* to fully assess the commercial significance of the *distribution network user access* arrangements sought by the *Connection Applicant* and offered by the *Distribution Network Service Provider*.
- (d) A *Connection Applicant* may seek *distribution network user access* arrangements at any level of *power transfer capability* between zero and:
  - (1) in the case of an *Embedded Generator*, the maximum output of the relevant *generating units* or group of *generating units*; and
  - (2) in the case of a *Market Network Service Provider*, the *power transfer capability* of the relevant *network elements*.
- (e) The *Distribution Network Service Provider* must use reasonable endeavours to provide the *distribution network user access* arrangements being sought by the *Connection Applicant* subject to those arrangements being consistent with *good electricity industry practice* considering:
  - (1) the *distribution connection assets* to be provided by the *Distribution Network Service Provider* or otherwise at the *connection point*; and
  - (2) the potential *augmentations* or *extensions* required to be undertaken on all affected *transmission networks* or *distribution networks* to provide that level of *power transfer capability* over the period of the *connection*



*agreement taking into account the amount of power transfer capability provided to other Registered Participants under distribution network user access arrangements in respect of all affected distribution networks.*

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) The *Distribution Network Service Provider* and the *Connection Applicant* must negotiate in good faith to reach agreement as appropriate on:
- (1) the *connection service charge* to be paid by the *Connection Applicant* in relation to *distribution connection assets* to be provided by the *Distribution Network Service Provider*;
  - (2) in the case of a *Market Network Service Provider*, the service level standards to which the *Market Network Service Provider* requires the *Distribution Network Service Provider* to adhere in providing its services;
  - (3) the ~~*use of system services*~~ charge to be paid:
    - (i) by the *Connection Applicant* in relation to any *augmentations* or *extensions* required to be undertaken on all affected *transmission networks* and *distribution networks*; and
    - (ii) where the *Connection Applicant* is a *Market Network Service Provider*, to the *Market Network Service Provider* in respect of any reduction in the long run marginal cost of *augmenting* the *distribution network* as a result of it being *connected* to the *distribution network*,  
~~(*negotiated augmentation and extension charges* negotiated use of *system charges*)~~; and
  - (4) the following amounts:
    - (i) the amount to be paid by the *Connection Applicant* to the *Distribution Network Service Provider* in relation to the costs reasonably incurred by the *Distribution Network Service Provider* in providing *distribution network user access*;
    - (ii) where the *Connection Applicant* is an *Embedded Generator*:
      - (A) the compensation to be provided by the *Distribution Network Service Provider* to the *Embedded Generator* in the event that the *generating units* or group of *generating units* of the *Embedded Generator* are *constrained off* or *constrained on* during a *trading interval*; and
      - (B) the compensation to be provided by the *Embedded Generator* to the *Distribution Network Service Provider* in the event that dispatch of the *Embedded Generator's generating units* or group of *generating units* causes another *Generator's generating units* or group of



*generating units to be constrained off or constrained on during a trading interval; and*

- (iii) where the *Connection Applicant* is a *Market Network Service Provider*:
  - (A) the compensation to be provided by the *Distribution Network Service Provider* to the *Market Network Service Provider* in the event that the *distribution network user access* is not provided; and
  - (B) the compensation to be provided by the *Market Network Service Provider* to the *Distribution Network Service Provider* in the event that dispatch of the relevant *market network service* causes a *Generator's generating units* or group of *generating units* to be *constrained off or constrained on* during a *trading interval* or causes the *dispatch* of another *market network service* to be *constrained*.
- (g) The maximum ~~*negotiated augmentation and extension charges negotiated use of system charges*~~ applied by a *Distribution Network Service Provider* must be in accordance with the applicable requirements of Chapter 6 and the *Negotiated Distribution Service Criteria* applicable to the *Distribution Network Service Provider*.
- (h) A *Distribution Network Service Provider* must pass through to a *Connection Applicant* the amount calculated in accordance with paragraph (i) for the locational component of *prescribed TUOS services* that would have been payable by the *Distribution Network Service Provider* to a *Transmission Network Service Provider* had the *Connection Applicant* not been connected to its *distribution network*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (i) To calculate the amount to be passed through to a *Connection Applicant* in accordance with paragraph (h), a *Distribution Network Service Provider* must, if prices for the locational component of *prescribed TUOS services* were in force at the relevant *transmission network connection point* throughout the relevant *financial year*:
  - (1) determine the charges for the locational component of *prescribed TUOS services* that would have been payable by the *Distribution Network Service Provider* for the relevant *financial year*:
    - (i) where the *Connection Applicant* is an *Embedded Generator*, if that *Embedded Generator* had not injected any energy at its *connection point* during that *financial year*;
    - (ii) where the *Connection Applicant* is a *Market Network Service Provider*, if the *Market Network Service Provider* had not been connected to the *Distribution Network Service Provider's distribution network* during that *financial year*; and

- (2) determine the amount by which the charges calculated in subparagraph (1) exceed the amount for the locational component of *prescribed TUOS services* actually payable by the *Distribution Network Service Provider*, which amount will be the relevant amount for the purposes of paragraph (h).
- (j) Where prices for the locational component of *prescribed TUOS services* were not in force at the relevant *distribution network connection point* throughout the relevant *financial year*, as referred to in paragraph (i), the *Distribution Network Service Provider* must apply an equivalent procedure to that referred to in paragraph (i) in relation to that component of its *TUOS service* charges which is deemed by the relevant *Transmission Network Service Provider* to represent the marginal cost of *transmission*, less an allowance for locational signals present in the *spot market*, to determine the relevant amount for the purposes of paragraph (h).

## Part C Post-Connection Agreement matters

### 5.6 Design of Connected Equipment

#### 5.6.2 Advice of inconsistencies

- (a) At any stage prior to commissioning the *facility* in respect of a *connection* if there is an inconsistency between the proposed equipment and the *connection agreement* including the *performance standards*, the *Registered Participant* or the person intending to be registered as a *Generator* or *Integrated Resource Provider* must:
  - (1) advise the relevant *Network Service Provider* and, if the inconsistency relates to *performance standards*, *AEMO*, in writing of the inconsistency; and
  - (2) if necessary, negotiate in good faith with the *Network Service Provider* any necessary changes to the *connection agreement*.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) If an inconsistency in a *connection agreement* including a *performance standard* is identified under paragraph (a), the *Registered Participant* or the person intending to be registered as a *Generator* or *Integrated Resource Provider* and the *Network Service Provider* must not commission the *facility* in respect of a *connection* unless the *facility* or the *connection agreement* or *performance standard* has been varied to remove the inconsistency.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) **[Deleted]**

## 5.7 Inspection and Testing

### 5.7.3 Tests to demonstrate compliance with connection requirements for ~~generators~~ Generators and Integrated Resource Providers

- (a) Each *Generator* must, in accordance with the time frames specified in rule 4.15, provide evidence to any relevant *Network Service Provider* with which that *Generator* has a *connection agreement* and to *AEMO*, that its *generating system* complies with:
- (1) the applicable technical requirements of clause S5.2.5; and
  - (2) the relevant *connection agreement* including the *performance standards*.

#### **Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (a1) Each *Integrated Resource Provider* must, in accordance with the time frames specified in rule 4.15, provide evidence to any relevant *Network Service Provider* with which that *Integrated Resource Provider* has a *connection agreement* and to *AEMO*, that its *generating system* or *integrated resource system* (as applicable) complies with:

- (1) the applicable technical requirements of clause S5.2.5; and
- (2) the relevant *connection agreement* including the *performance standards*.

#### **Note**

The AEMC proposes to recommend that clause 5.7.3(a1) be classified as a Tier 3 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) **[Deleted]**
- (c) If a test required by paragraph (a) or (a1) ~~clause 5.7.3(a)~~ demonstrates that a *generating system* or integrated resource system is not complying with one or more technical requirements of clause S5.2.5 or the relevant *connection agreement* or one or more of the *performance standards* then the *Generator* or Integrated Resource Provider must:
- (1) promptly notify the relevant *Network Service Provider* and *AEMO* of that fact; and
  - (2) promptly notify the *Network Service Provider* and *AEMO* of the remedial steps it proposes to take and the timetable for such remedial work; and
  - (3) diligently undertake such remedial work and report at monthly intervals to the *Network Service Provider* on progress in implementing the remedial action; and
  - (4) conduct further tests or monitoring on completion of the remedial work to confirm compliance with the relevant technical requirements or *performance standards* (as the case may be).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) If AEMO reasonably believes that a *generating system* or integrated resource system is not complying with one or more applicable *performance standards* or one or more applicable technical requirements of clause S5.2.5 or the relevant *connection agreement*, AEMO may instruct the *Generator* or Integrated Resource Provider to conduct tests within 25 *business days* to demonstrate that the relevant *generating system* or integrated resource system complies with those *performance standards* or technical requirements.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) If the tests undertaken in accordance with paragraph (d) provide evidence that the *generating system* or integrated resource system continues to comply with those requirements AEMO must reimburse the *Generator* or Integrated Resource Provider for the reasonable expenses incurred as a direct result of conducting the tests.
- (f) If AEMO:
- (1) is satisfied that:
- (i) a *generating system* or integrated resource system is not complying with the relevant *performance standards* for that system in respect of one or more of the technical requirements contained in S5.2.5, S5.2.6, S5.2.7 or S5.2.8 and the relevant *connection agreement*; or
- (ii) a *generating system's* or integrated resource system's performance is not adequately represented by the applicable analytical model provided under clause 5.7.6(h) or clause S5.2.4; and
- (2) holds the reasonable opinion that the performance of the *generating system* or integrated resource system, or inadequacy of the applicable analytical model of the *generating system* or integrated resource system is or will impede AEMO's ability to carry out its role in relation to *power system security*,

AEMO may:

- (3) (in the case of a generating system) direct the relevant *Generator* or Integrated Resource Provider to operate the *generating system* at a particular *generated output* or in a particular mode; or
- (4) (in the case of an integrated resource system) direct the relevant *Integrated Resource Provider* to operate the *integrated resource system* at a particular level of *generation and load*, or a particular pattern or profile of *generation and load*, or in a particular mode,

until the relevant *Generator or Integrated Resource Provider* submits evidence reasonably satisfactory to AEMO that the *generating system or integrated resource system* is complying with the relevant *performance standard* and performing substantially in accordance with the applicable analytical model.

- (g) Each *Generator and Integrated Resource Provider* must maintain records for 7 years for each of its *generating systems, integrated resource systems* and *power stations* setting out details of the results of all technical performance and monitoring conducted under this clause 5.7.3 and make these records available to AEMO on request.

### 5.7.6 Tests of generating units *or integrated resource units* requiring changes to normal operation

- (a) A *Network Service Provider* may, at intervals of not less than 12 months per *generating system or integrated resource system*, require the testing by a *Generator or Integrated Resource Provider* of any *generating unit or integrated resource unit* connected to the *network* of that provider in order to determine analytic parameters for modelling purposes or to assess the performance of the relevant *generating unit, generating system, integrated resource unit or integrated resource system* ~~*generating unit or generating system*~~ for the purposes of a *connection agreement*, and that provider is entitled to witness such tests.
- (b) If AEMO reasonably considers that:
  - (1) the analytic parameters for modelling of a *generating unit, generating system, integrated resource unit or integrated resource system* ~~*generating unit or generating system*~~ are inadequate; or
  - (2) available information, including results from a previous test of a *generating unit, generating system, integrated resource unit or integrated resource system* ~~*generating unit or generating system*~~, are inadequate to determine parameters for an applicable model developed in accordance with the *Power System Model Guidelines*, or otherwise agreed with AEMO under clause S5.2.4(c)(2),

*AEMO* may direct a *Network Service Provider* to require a *Generator or Integrated Resource Provider* to conduct a test under paragraph (a), and *AEMO* may witness such a test.
- (c) Adequate notice of not less than 15 *business days* must be given by the *Network Service Provider* to the *Generator or Integrated Resource Provider* before the proposed date of a test under paragraph (a).
- (d) The *Network Service Provider* must use its best endeavours to ensure that tests permitted under this clause 5.7.6 are conducted at a time which will minimise the departure from the *commitment* and *dispatch* that are due to take place at that time.
- (e) If not possible beforehand, a *Generator or Integrated Resource Provider* must conduct a test under this clause 5.7.6 at the next scheduled *outage* of the relevant *generating unit or integrated resource unit* and in any event within 9 months of the request.



**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) A *Generator* or *Integrated Resource Provider* must provide any reasonable assistance requested by the *Network Service Provider* in relation to the conduct of tests.
- (f1) If requested by a *Network Service Provider* who required the test under clause 5.7.6(a), a *Generator* or *Integrated Resource Provider* must provide to the *Network Service Provider* any relevant information relating to the *plant* which is the subject of a test carried out under this clause 5.7.6, including model source code provided to *AEMO* under clause S5.2.4(b)(6).
- (g) Tests conducted under this clause 5.7.6 must be conducted in accordance with test procedures agreed between the *Network Service Provider* and the relevant *Generator* or *Integrated Resource Provider* and a *Generator* or *Integrated Resource Provider* must not unreasonably withhold its agreement to test procedures proposed for this purpose by the *Network Service Provider*.
- (h) A *Generator* or *Integrated Resource Provider* must provide the test records obtained from a test under paragraph (a) to the *Network Service Provider*, who must derive the analytical parameters for the applicable model developed in accordance with the *Power System Model Guidelines*, or otherwise agreed with *AEMO* under clause S5.2.4(c)(2) and provide them and any new or revised model source code to the relevant *Generator* or *Integrated Resource Provider*.
- (i) The *Generator* or *Integrated Resource Provider*, the *Network Service Provider* and *AEMO* must each bear its own costs associated with tests conducted under this clause 5.7.6 and no compensation is to be payable for financial losses incurred as a result of these tests or associated activities.

**5.7.7 Inter-network power system tests**

- (a) For each kind of development or activity described in the first column of chart 1 below, the *Proponent* is as set out in the second column and the *Relevant Transmission Network Service Provider (Relevant TNSP)* is as set out in the third column, respectively, opposite the description of the development or activity.

**Chart 1**

No.	Kind of development or activity	<i>Proponent</i>	<i>Relevant TNSP</i>
	column 1	column 2	column 3
1.	A new <i>transmission line</i> between two <i>networks</i> , or within a <i>transmission network</i> , that is anticipated to have a <i>material inter-</i>	<i>Network Service Provider</i> in respect of the new <i>transmission line</i> .	<i>Proponent</i> and the <i>Transmission Network Service Provider</i> in respect of any <i>network</i> to which the <i>transmission line</i> is connected.



No.	Kind of development or activity	Proponent	Relevant TNSP
	column 1	column 2	column 3
	<i>network impact</i> is commissioned.		
2.	An existing <i>transmission line</i> between two <i>networks</i> , or within a <i>transmission network</i> , that is anticipated to have a <i>material inter-network impact</i> is <i>augmented</i> or substantially modified.	<i>Network Service Provider</i> in respect of the <i>augmentation</i> or modification of the <i>transmission line</i> .	<i>Proponent</i> and the <i>Transmission Network Service Provider</i> in respect of any <i>network</i> to which the <i>transmission line</i> is connected.
3.	A new <i>generating unit</i> <u>or <i>integrated resource unit</i></u> or <i>facility</i> of a <i>Customer</i> or a <i>network</i> development is commissioned that is anticipated to have a <i>material inter-network impact</i> .	<i>Generator</i> <u>or <i>Integrated Resource Provider</i></u> in respect of the <i>generating unit</i> <u>or <i>integrated resource unit</i></u> and associated <i>connection assets</i> .  <i>Customer</i> in respect of the <i>facility</i> and associated <i>connection assets</i> .  <i>Network Service Provider</i> in respect of the relevant <i>network</i> .	<i>Transmission Network Service Provider</i> in respect of any <i>network</i> to which the <i>generating unit</i> , <u><i>integrated resource unit</i></u> , <i>facility</i> or <i>network</i> development is connected and, if a <i>network</i> development, then also the <i>Proponent</i> .
4.	Setting changes are made to any <i>power system</i> stabilisers as a result of a <i>generating unit</i> , <u><i>integrated resource unit</i></u> , <i>facility</i> of a <i>Customer</i> or <i>network</i> development being commissioned, modified or replaced.	<i>Generator</i> <u>or <i>Integrated Resource Provider</i></u> in respect of the <i>generating unit</i> .  <u><i>Integrated Resource Provider</i> in respect of the <i>integrated resource unit</i></u>  <i>Customer</i> in respect of the <i>facility</i> .  <i>Network Service Provider</i> in respect of the relevant <i>network</i> .	<i>Transmission Network Service Provider</i> in respect of any <i>transmission network</i> to which the <i>generating unit</i> , <u><i>integrated resource unit</i></u> , <i>facility</i> or <i>network</i> development is connected.
5.	Setting changes are made to any <i>power system</i> stabilisers as a result of a decision by <i>AEMO</i> , which are not covered by item 4 in this chart.	<i>AEMO</i> .	None.

No.	Kind of development or activity	<i>Proponent</i>	<i>Relevant TNSP</i>
	column 1	column 2	column 3
6.	AEMO determines that a test is required to verify the performance of the <i>power system</i> in light of the results of planning studies or simulations or one or more system incidents.	AEMO.	None.

- (b) A *Registered Participant*, not being a *Transmission Network Service Provider*, determined in accordance with clause 5.7.7(a) to be a *Proponent* for a development or activity detailed in chart 1, may require the *Relevant TNSP* corresponding to that development or activity to undertake on their behalf their obligations as the *Proponent* and, where the *Relevant TNSP* receives a written request to undertake those obligations, the *Relevant TNSP* must do so.
- (c) Where, in this clause 5.7.7, there is a reference to a *Proponent* that reference includes a *Relevant TNSP* required in accordance with clause 5.7.7(b) to undertake the obligations of another *Registered Participant*.
- (d) If a *Relevant TNSP* is required by a *Registered Participant* in respect of a ~~*scheduled generating unit, a semi-scheduled generating unit, a scheduled load or a market network services*~~ *scheduled resource (other than a wholesale demand response unit)*, any of which have a nameplate rating in excess of 30 MW, to act as a *Proponent* in accordance with clause 5.7.7(b), that *Relevant TNSP* is entitled to recover all reasonable costs incurred from the *Registered Participant* that required the *Relevant TNSP* to act as the *Proponent*.
- (e) A *Registered Participant* wishing to undertake a development or conduct an activity listed in item 1, 2, 3 or 4 of chart 1 must notify AEMO not less than 80 *business days* before the *transmission line, generating unit, integrated resource unit, facility or network* development is planned to be commissioned, modified or replaced, giving details of the development or activity.
- (f) If AEMO receives a notice under clause 5.7.7(e), then it must provide a copy of the notice to each *jurisdictional planning representative* and consult with each *jurisdictional planning representative* about the potential impact of the development or activity.
- (g) AEMO or the *Relevant TNSP* for a development or activity may notify the *Proponent* of the development or activity that AEMO or the *Relevant TNSP* believes an *inter-network test* is required for that development or activity.
- (h) AEMO or the *Relevant TNSP* may only give a notice under clause 5.7.7(g) if:
- (1) AEMO or the *Relevant TNSP* considers that the development or activity may have a material impact on the magnitude of the *power transfer*

*capability* of more than one *transmission network* and, in the circumstances, an *inter-network test* is required; or

- (2) an *inter-network test* is required having regard to guidelines *published* under clause 5.7.7(k) and the surrounding circumstances.
- (i) If the *Relevant TNSP* gives a notice under clause 5.7.7(g), then it must also promptly give a copy of the notice to *AEMO*.
- (j) A *Registered Participant* undertaking a development or activity listed in chart 1 must provide information reasonably requested by *AEMO* or the *Relevant TNSP* for making an assessment under this clause.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (k) *AEMO* may develop, *publish* and amend from time to time, in accordance with the *Rules consultation procedures*, a set of guidelines to assist *Registered Participants* to determine when an *inter-network test* may be required.
- (l) *AEMO* and the *Relevant TNSP* must consider any relevant guidelines in determining whether an *inter-network test* is required.
- (m) If *AEMO* or the *Relevant TNSP* gives notice under clause 5.7.7(g), then the *Proponent* must, in consultation with *AEMO*, prepare a draft *test program* for the *inter-network test* and provide it to *AEMO*, each *jurisdictional planning representative* and the *Relevant TNSP* (if the *Relevant TNSP* gave the notice).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (n) However, if *AEMO* determines that an *inter-network test* is required for a reason contemplated in item 5 or 6 of chart 1, then it must prepare a draft *test program* for the *inter-network test* in consultation with the *jurisdictional planning representatives* and provide that draft *test program* to each *jurisdictional planning representative*.
- (o) If a *jurisdictional planning representative* considers that any changes should be made to a draft *test program*, the *jurisdictional planning representative* must, within 10 *business days* after being provided with the draft *test program*, make a recommendation to *AEMO* that identifies the changes it proposes should be made to the draft *test program*.
- (p) *AEMO* must:
  - (1) *publish* a copy of the draft *test program* and any relevant changes recommended by any *jurisdictional planning representative* and invite interested *Registered Participants* to make written submissions; and
  - (2) only accept as valid submissions received not later than the closing date for submissions specified in the notice *publishing* the copy of the draft *test program* (not to be less than 14 days after the date of *publication*); and

- (3) provide the *jurisdictional planning representatives* with copies of all valid submissions and seek any further recommendations they may have.
- (q) AEMO must determine and *publish* in accordance with clause 3.13.13 the *test program* for an *inter-network test* after taking into account the recommendations of the *jurisdictional planning representatives* and any valid submissions received from *Registered Participants*.
- (r) In determining the *test program*, AEMO must so far as practicable have regard to the following principles:
  - (1) *power system security* must be maintained in accordance with Chapter 4; and
  - (2) the variation from the *central dispatch* outcomes that would otherwise occur if there were no *inter-network test* should be minimised; and
  - (3) the duration of the tests should be as short as possible consistently with test requirements and *power system security*; and
  - (4) the test facilitation costs to be borne by the *Proponent* under paragraph (aa) should be kept to the minimum consistent with this paragraph.
- (s) **[Deleted]**
- (t) An *inter-regional test* must not be conducted within 20 *business days* after AEMO publishes the *test program* for the *inter-network test* determined by AEMO under clause 5.7.7(r).
- (u) The *Proponent* in respect of an *inter-network test* must seek to enter into agreements with other *Registered Participants* to provide the test facilitation services identified in the *test program* in order to ensure that the *power system* conditions required by the *test program* are achieved.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (v) If the *Proponent* approaches another *Registered Participant* seeking to enter into an agreement under clause 5.7.7(u) then the *Proponent* and the *Registered Participant* must negotiate in good faith concerning the provision of the relevant test facilitation service.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (w) If:
  - (1) a *Proponent* approaches another *Registered Participant* as described in clause 5.7.7(v); and
  - (2) the *Proponent* and the other *Registered Participant* have not agreed the terms and conditions to be included in the agreement under which the *Registered Participant* will provide the test facilitation service requested within 15 *business days* of the approach,

then those terms and conditions must be determined in accordance with rule 8.2 and a dispute of this type is deemed to fall within clause 8.2.5(c)(2).

- (x) If the dispute concerns the price which the *Proponent* is to pay for a test facilitation service, then it must be resolved applying the following principles:
  - (1) the other *Registered Participant* is entitled to recover the costs it incurs, and a reasonable rate of return on the capital it employs, in providing the test facilitation service, determined taking into account the additional costs associated with:
    - (i) maintaining the equipment necessary to provide the test facilitation service;
    - (ii) any labour required to operate and maintain the equipment used to provide the test facilitation service; and
    - (iii) any materials consumed when the test facilitation service is utilised; and
  - (2) the other *Registered Participant* is entitled to be compensated for any commercial opportunities foregone by providing the test facilitation service.
- (y) When the terms and conditions are determined in accordance with rule 8.2 under this clause 5.7.7, then the *Proponent* and the other *Registered Participant* must enter into an agreement setting out those terms and conditions.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (z) If *AEMO* is not the *Proponent* in respect of an *inter-network test*, the *Proponent* must:
  - (1) prior to the scheduled date of the *inter-network test*, confirm to *AEMO* that the test facilitation services identified in the *test program* will be available to be utilised, who will be providing them and the operational arrangements for utilising them;
  - (2) provide sufficient information to enable *AEMO* to utilise the test facilitation services in conducting the *inter-network test*; and
  - (3) respond promptly to any queries *AEMO* raises with the *Proponent* concerning the availability of the test facilitation services and *AEMO's* ability to utilise those services in conducting the *inter-network tests*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (aa) The *Proponent* in respect of an *inter-network test* must bear all of the following costs associated with that *inter-network test*:
  - (1) any amounts payable under an agreement under which test facilitation services are provided;

- (2) the *Proponent's* own costs associated with the *inter-network test* and in negotiating and administering the agreements referred to in clause 5.7.7(u); and
- (3) if the *Proponent* is not *AEMO* and the amount of *settlements residue* on any *directional interconnector* for a *trading interval* during which there is an impact on *central dispatch* outcomes as a result of the *inter-network test* is negative, then the *Proponent* must enter into an agreement with *AEMO* to pay that amount to *AEMO*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (ab) If the *Proponent* is *AEMO* and the amount of *settlements residue* on any *directional interconnector* for a *trading interval* during which there is an impact on *central dispatch* outcomes as a result of the *inter-network test* is negative, then *AEMO* must adjust that residue to be zero and must recover the amount as provided for in clause 2.11.3(b)(2A).
- (ac) *AEMO* must establish operational conditions to achieve the particular *power transfer* levels for each stage of the *inter-network test* as contemplated by the *test program*:
  - (1) utilizing where practicable and economic to do so the test facilitation services identified in the *test program*; and
  - (2) otherwise, by applying to the minimum extent necessary to fulfil the test requirements, *inter-network testing constraints*.
- (ad) An *inter-network test* must be coordinated by an officer nominated by *AEMO* who has authority to stop the test or any part of it or vary the procedure within pre-approved guidelines determined by *AEMO* if that officer considers any of these actions to be reasonably necessary.
- (ae) Each *Registered Participant* must:
  - (1) cooperate with *AEMO* in planning, preparing for and conducting *inter-regional* tests;
  - (2) act in good faith in respect of, and not unreasonably delay, an *inter-network test*; and
  - (3) comply with any instructions given to it by *AEMO* under clause 5.7.7(af).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (af) *AEMO* may utilise test facilitation services under agreements entered into by the *Proponent* under this clause 5.7.7 during an *inter-network test* in order to achieve operational conditions on the *power system* which are reasonably required to achieve valid test results.



## 5.9 Disconnection and Reconnection

### 5.9.3 Involuntary disconnection

- (a) *AEMO* may direct a *Network Service Provider* to, or a *Network Service Provider* may (either on its own initiative or in accordance with a direction from *AEMO*), disconnect a *Registered Participant's* facilities from a network, or a *Registered Participant's* ~~market loads~~loads at its market connection points, in the following circumstances:
- (1) pursuant to a direction for a disconnection made by a court under:
    - (a) section 62 or 63 of the *NEL*;
    - (b) section 44AAG of the *Competition and Consumer Act 2010* (Cth); or
    - (c) section 44AAGA of the *Competition and Consumer Act 2010* (Cth).
  - (2) during an emergency in accordance with clause 5.9.5;
  - (3) in accordance with the *NEL*; or
  - (4) in accordance with the provisions of the *Registered Participant's* connection agreement.
- (b) In all cases of *disconnection* by a *Network Service Provider* at *AEMO's* direction during an emergency in accordance with clause 5.9.5, *AEMO* must undertake a review under clause 4.8.15 and *AEMO* must then provide a report to the *Registered Participant*, the *AEMC* and the *AER* advising of the circumstances requiring such action.
- (c) A *Network Service Provider* that has received a direction from *AEMO* under this clause 5.9.3 must comply with that direction promptly.

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (d) A *Registered Participant's* facilities or ~~market loads~~loads at its market connection points may be disconnected from a network by automatic operation of an emergency frequency control scheme.

### 5.9.4A Notification of disconnection

If the *AER* applies to a court for a direction, under section 62 or 63 of the *NEL* or pursuant to regulations made under section 44AAG of the *Competition and Consumer Act 2010* (Cth), that a *Registered Participant's* ~~loads at its market connection points~~market loads be disconnected, the *AER* must promptly notify *AEMO* and the participating jurisdictions which the *AER* considers may be affected.

## Part D Network Planning and Expansion

### 5.10 Network development generally

#### 5.10.1 Content of Part D

- (a) Clause 5.10.2 sets out local definitions used in Part D.
- (b) Clause 5.11.1 sets out obligations regarding forecasts for connection points to the *transmission network*.
- (c) Clause 5.11.2 sets out the obligations of *Network Service Providers* relating to the identification of network limitations.
- (d) Rule 5.12 sets out planning and reporting obligations for *Transmission Network Service Providers*.
- (e) Rule 5.13 sets out planning and reporting obligations for *Distribution Network Service Providers*.
- (e1) Rule 5.13A sets out the obligations to provide distribution zone substation information.
- (f) Rule 5.14 sets out joint planning obligations of *Network Service Providers*.
- (f1) Rule 5.14B relates to guidelines for *Transmission Annual Planning Reports*.
- (g) Rule 5.15 relates to regulatory investment tests generally.
- (g1) Rule 5.15A relates to the *regulatory investment test for transmission*.
- (h) Rule 5.16 relates to the application of the *regulatory investment test for transmission* to *RIT-T projects* that are not *actionable ISP projects*.
- (h1) Rule 5.16A relates to the application of the *regulatory investment test for transmission* to *actionable ISP projects*.
- (h2) Rule 5.16B relates to disputes about the application of the *regulatory investment test for transmission*.
- (i) Rule 5.17 relates the *regulatory investment test for distribution*.
- (j) Rule 5.18 relates to the construction of *funded augmentations*.
- (j1) Rule 5.18A sets out the obligations of *Transmission Network Service Providers* in relation to a register of large generator and integrated resource connections.
- (j2) Rule 5.18B sets out obligations of *Distribution Network Service Providers* in relation to completed embedded generation projects.

**Note:**

Rule 5.18B commences operation on 1 July 2018 when clause 5.4.5 is renumbered as rule 5.18B under the National Electricity Amendment (Transmission Connection and Planning Arrangements) Rule 2017 No. 4

- (k) Rule 5.19 relates to Scale Efficient Network Extensions.
- (l) Rule 5.20 relates to the *NSCAS Report*, *Inertia Report* and *System Strength Report* and associated methodologies.
- (m) Rule 5.20A relates to general *power system* risk management planning.

- (m1) Rule 5.20B sets out the process for identifying and providing the *inertia requirements* for *inertia sub-networks*.
- (m2) Rule 5.20C sets out the process for identifying and providing the *system strength requirements* for each *region*.
- (n) Rule 5.21 sets out *AEMO's* obligations to *publish* information and guidelines and provide advice regarding network development.
- (o) Rule 5.22 relates to the *Integrated System Plan*.
- (p) Rule 5.23 sets out dispute resolution procedures relating to the *Integrated System Plan*.

## **5.11 Forecasts of connection to transmission network and identification of system limitations**

### **5.11.1 Forecasts for connection to transmission network**

- (a) The relevant *Network Service Provider* must give at least 40 *business days* written notice to each relevant *Registered Participant* of the annual date by which the *Registered Participant* must provide the relevant *Network Service Provider* with the short and long term electricity *generation, market network service* and *load* forecast information listed in schedule 5.7 in relation to each *connection point* which *connects* the *Registered Participant* to a *transmission network* of that *Network Service Provider* and any other relevant information as reasonably required by the *Network Service Provider*.
- (b) Details of planned future *sources of generation or load-generating units, market network services and loads*, being details regarding the proposed commencing date, *active power capability* and *reactive power capability*, *power transfer capability*, operating times/seasons and special operating requirements, must be given by each relevant *Registered Participant* to the relevant *Network Service Provider* on reasonable request.
- (c) Each relevant *Registered Participant* must use reasonable endeavours to provide accurate information under paragraph (a) which must include details of any factors which may impact on *load* forecasts or proposed *facilities* for *generation or market network services*.
- (d) If the *Network Service Provider* reasonably believes any forecast information to be inaccurate, the *Network Service Provider* may modify that forecast information and must advise the relevant *Registered Participant* and *AEMO* in writing of this action and the reason for the modification. The *Network Service Provider* is not responsible for any adverse consequences of this action or for failing to modify forecast information under this paragraph (d).

## **5.13 Distribution annual planning process**

### **5.13.1 Distribution annual planning review**

#### **Scope**

- (a) A *Distribution Network Service Provider* must:
  - (1) subject to paragraph (b), determine an appropriate *forward planning period* for its *distribution assets*; and

- (2) analyse the expected future operation of its *network* over the *forward planning period* in accordance with this clause 5.13.1.
- (b) The minimum *forward planning period* for the purposes of the *distribution* annual planning review is 5 years.
- (c) The *distribution* annual planning review must include all assets that would be expected to have a material impact on the *Distribution Network Service Provider's network* over the *forward planning period*.

### Requirements

- (d) Each *Distribution Network Service Provider* must, in respect of its *network*:
  - (1) prepare forecasts covering the *forward planning period* of *maximum demands* for:
    - (i) *sub-transmission lines*;
    - (ii) *zone substations*; and
    - (iii) to the extent practicable, *primary distribution feeders*,  
having regard to:
      - (iv) the number of customer *connections*;
      - (v) *energy* consumption; and
      - (vi) estimated total output of known *embedded generating units* or *embedded integrated resource units*;
  - (2) identify, based on the outcomes of the forecasts in subparagraph (1), limitations on its *network*, including limitations caused by one or more of the following factors:
    - (i) forecast *load* exceeding total capacity;
    - (ii) the requirement for asset refurbishment or replacement;
    - (iii) the requirement for *power system security* or *reliability* improvement;
    - (iv) design fault levels being exceeded;
    - (v) the requirement for *voltage* regulation and other aspects of quality of supply to other *Network Users*; and
    - (vi) the requirement to meet any *regulatory obligation or requirement*;
  - (3) identify whether corrective action is required to address any system limitations identified in subparagraph (2) and, if so, identify whether the *Distribution Network Service Provider* is required to:
    - (i) carry out the requirements of the *regulatory investment test for distribution*; (ii) carry out demand side engagement obligations as required under paragraph (f); and
  - (4) take into account any *jurisdictional electricity legislation*;
  - (5) take into account the most recent *general power system risk review*; and

- (6) consider the operation of, and any known or potential interactions between:
  - (i) any *emergency frequency control schemes*, or emergency controls in place under clause S5.1.8, on its *network*; and
  - (ii) protection systems or control systems of *plant connected to its network* (including consideration of whether the settings of those systems are fit for purpose for the future operation of its network).where the *Distribution Network Service Provider* expects that such operation or interactions would be likely to lead to cascading outages or major supply disruptions.

### **Demand side engagement obligations**

- (e) Each *Distribution Network Service Provider* must develop a strategy for:
  - (1) engaging with *non-network providers*; and
  - (2) considering *non-network options*.
- (f) A *Distribution Network Service Provider* must engage with *non-network providers* and consider *non-network options* for addressing system limitations in accordance with its *demand side engagement strategy*.
- (g) A *Distribution Network Service Provider* must document its *demand side engagement strategy* in a *demand side engagement document* which must be published by no later than 31 August 2013.
- (h) A *Distribution Network Service Provider* must include the information specified in schedule 5.9 in its *demand side engagement document*.
- (i) A *Distribution Network Service Provider* must review and *publish* a revised *demand side engagement document* at least once every three years.
- (j) A *Distribution Network Service Provider* must establish and maintain a facility by which parties can register their interest in being notified of developments relating to *distribution network* planning and expansion. A *Distribution Network Service Provider* must have in place a facility under this paragraph (j) no later than the date of publication of the *Distribution Network Service Provider's demand side engagement document* under paragraph (g).

## **5.15A Regulatory investment test for transmission**

### **5.15A.2 Principles for RIT-T projects which are not actionable ISP projects**

- (a) This clause 5.15A.2 only applies in respect of the application of the *regulatory investment test for transmission* to *RIT-T projects* that are not *actionable ISP projects*.
- (b) The *regulatory investment test for transmission* must:
  - (1) be based on a cost-benefit analysis that is to include an assessment of reasonable scenarios of future supply and demand if each *credible option* were implemented compared to the situation where no option is implemented;

- (2) not require a level of analysis that is disproportionate to the scale and likely impact of each of the *credible options* being considered;
- (3) be capable of being applied in a predictable, transparent and consistent manner;
- (4) require the *RIT-T proponent* to consider the following classes of market benefits that could be delivered by the *credible option*:
  - (i) changes in fuel consumption arising through different patterns of *generation dispatch*;
  - (ii) changes in voluntary *load* curtailment;
  - (iii) changes in involuntary *load shedding*, with the market benefit to be considered using a reasonable forecast of the value of electricity to consumers;
  - (iv) changes in costs for parties, other than the *RIT-T proponent*, due to:
    - (A) differences in the timing of new *plant*;
    - (B) differences in capital costs; and
    - (C) differences in the operating and maintenance costs;
  - (v) differences in the timing of expenditure;
  - (vi) changes in *network* losses;
  - (vii) changes in *ancillary services* costs;
  - (viii) competition benefits;
  - (ix) any additional option value (where this value has not already been included in the other classes of market benefits) gained or foregone from implementing that *credible option* with respect to the likely future investment needs of the *market*; and
  - (x) other classes of market benefits that are:
    - (A) determined to be relevant by the *RIT-T proponent* and agreed to by the *AER* in writing before the date the relevant *project specification consultation report* is made available to other parties under clause 5.16.4; or
    - (B) specified as a class of market benefit in the *regulatory investment test for transmission*;
- (5) require a *RIT-T proponent* to include a quantification of all classes of market benefits which are determined to be material in the *RIT-T proponent's* reasonable opinion;
- (6) require a *RIT-T proponent* to consider all classes of market benefits as material unless it can, in the *project assessment draft report*, or in respect of a proposed *preferred option* which is subject to the exemption contained in clause 5.16.4(z1), in the *project specification consultation report*, provide reasons why:



- (i) a particular class of market benefit is likely not to affect materially the outcome of the assessment of the *credible options* under the *regulatory investment test for transmission*; or
  - (ii) the estimated cost of undertaking the analysis to quantify the market benefit is likely to be disproportionate to the scale, size and potential benefits of each *credible option* being considered in the report;
- (7) with respect to the classes of market benefits set out in subparagraphs (4)(ii) and (iii), ensure that, if the *credible option* is for *reliability corrective action*, the quantification assessment required by paragraph (5) will only apply insofar as the market benefit delivered by the *credible option* exceeds the minimum standard required for *reliability corrective action*;
- (8) require the RIT-T proponent to quantify the following classes of costs:
  - (i) costs incurred in constructing or providing the *credible option*;
  - (ii) operating and maintenance costs in respect of the *credible option*;
  - (iii) the cost of complying with laws, regulations and applicable administrative requirements in relation to the construction and operation of the *credible option*; and
  - (iv) any other class of costs that are:
    - (A) determined to be relevant by the *RIT-T proponent* and agreed to by the *AER* in writing before the date the relevant *project specification consultation report* is made available to other parties under clause 5.16.4; or
    - (B) specified as a class of cost in the *regulatory investment test for transmission*;
- (9) provide that any cost or market benefit which cannot be measured as a cost or market benefit to *Generators*, *Integrated Resource Providers*, *Distribution Network Service Providers*, *Transmission Network Service Providers* or consumers of electricity may not be included in any analysis under the *regulatory investment test for transmission*;
- (10) specify:
  - (i) the method or methods permitted for estimating the magnitude of the different classes of market benefits;
  - (ii) the method or methods permitted for estimating the magnitude of the different classes of costs;
  - (iii) the method or methods permitted for estimating market benefits which may occur outside the region in which the *networks* affected by the *RIT-T project* are located; and
  - (iv) the appropriate method and value for specific inputs, where relevant, for determining the discount rate or rates to be applied;
- (11) specify that a sensitivity analysis is required of any modelling relating to the cost-benefit analysis; and

- (12) reflect that the *credible option* that maximises the present value of net economic benefit to all those who produce, consume or transport electricity in the market may, in some circumstances, have a negative net economic benefit (that is, a net economic cost) where the *identified need* is for *reliability corrective action*.

## 5.17 Regulatory investment test for distribution

### 5.17.1 Principles

- (a) The *AER* must develop and *publish* the *regulatory investment test for distribution* in accordance with the *distribution consultation procedures* and this clause 5.17.1.
- (b) The purpose of the *regulatory investment test for distribution* is to identify the *credible option* that maximises the present value of the net economic benefit to all those who produce, consume and transport electricity in the *NEM* (the *preferred option*). For the avoidance of doubt, a *preferred option* may, in the relevant circumstances, have a negative net economic benefit (that is, a net economic cost) where the *identified need* is for *reliability corrective action*.
- (c) The *regulatory investment test for distribution* must:
- (1) be based on a cost-benefit analysis that must include an assessment of reasonable scenarios of future supply and demand;
  - (2) not require a level of analysis that is disproportionate to the scale and likely impact of each of the *credible options* being considered;
  - (3) be capable of being applied in a predictable, transparent and consistent manner;
  - (4) require the *RIT-D proponent* to consider whether each *credible option* could deliver the following classes of market benefits:
    - (i) changes in voluntary *load* curtailment;
    - (ii) changes in involuntary *load shedding* and *customer* interruptions caused by *network* outages, using a reasonable forecast of the value of electricity to *customers*;
    - (iii) changes in costs for parties, other than the *RIT-D proponent*, due to differences in:
      - (A) the timing of new *plant*;
      - (B) capital costs; and
      - (C) the operating and maintenance costs;
    - (iv) differences in the timing of expenditure;
    - (v) changes in *load transfer capacity* and the capacity of *Embedded Generators* or *Embedded Integrated Resource Providers* to take up *load*;
    - (vi) any additional option value (where this value has not already been included in the other classes of market benefits) gained or

foregone from implementing the *credible option* with respect to the likely future investment needs of the *NEM*;

- (vii) changes in *electrical energy losses*; and
  - (viii) any other class of market benefit determined to be relevant by the *AER*.
- (5) with respect to the classes of market benefits set out in subparagraphs (4)(i) and (ii), ensure that, if a *credible option* is for *reliability corrective action*, the consideration and any quantification assessment of these classes of market benefits will only apply insofar as the market benefit delivered by that *credible option* exceeds the minimum standard required for *reliability corrective action*;
- (6) require the *RIT-D proponent* to consider whether the following classes of costs would be associated with each *credible option* and, if so, quantify the:
- (i) financial costs incurred in constructing or providing the *credible option*;
  - (ii) operating and maintenance costs over the operating life of the *credible option*;
  - (iii) cost of complying with laws, regulations and applicable administrative requirements in relation to the construction and operation of the *credible option*; and
  - (iv) any other financial costs determined to be relevant by the *AER*.
- (7) require a *RIT-D proponent*, in exercising judgement as to whether a particular class of market benefit or cost applies to each *credible option*, to have regard to any submissions received on the *non-network options report* and/or *draft project assessment report* where relevant;
- (8) provide that any market benefit or cost which cannot be measured as a market benefit or cost to persons in their capacity as *Generators*, *Integrated Resource Providers*, *Distribution Network Service Providers*, *Transmission Network Service Providers* or consumers of electricity must not be included in any analysis under the *regulatory investment test for distribution*; and
- (9) specify:
- (i) the method or methods permitted for estimating the magnitude of the different classes of market benefits;
  - (ii) the method or methods permitted for estimating the magnitude of the different classes of costs;
  - (iii) the appropriate method and value for specific inputs, where relevant, for determining the discount rate or rates to be applied;
  - (iv) that a sensitivity analysis is required for modelling the cost-benefit analysis; and
  - (v) that the *credible option* that maximises the present value of net economic benefit to all those who produce, consume or transport

electricity in the *NEM* may, in some circumstances, be a negative net economic benefit (that is, a net economic cost) where the *identified need* is for *reliability corrective action*.

- (d) A *RIT-D proponent* may, under the *regulatory investment test for distribution*, quantify each class of market benefits under paragraph (c)(4) where the *RIT-D proponent* considers that:
  - (1) any applicable market benefits may be material; or
  - (2) the quantification of market benefits may alter the selection of the *preferred option*.
- (e) The *regulatory investment test for distribution* permits a single assessment of an integrated set of related and similar investments.

## 5.18A Large generator and integrated resource connections

### 5.18A.1 Definitions

- (a) In this rule 5.18A:

**assessment date** means, in respect of a new large connections~~large generator connection~~, the first TAPR date that falls no earlier than 18 months after the commissioning date for that ~~large generator connection~~large connection.

**commissioning date** means, in respect of a new ~~large generator connection~~large connection, the date of commencement of commissioning of the *connection* and *connected facilities* of that ~~large generator connection~~large connection.

**connections register** has the meaning given in clause 5.18A.2.

**impact assessment** has the meaning given in clause 5.18A.3.

large connection means a large generator connection or a large integrated resource connection.

**large generator connection** means *generating units* that:

- (1) have a *nameplate rating* of 30MW or greater; or
- (2) are part of a group of *generating units* connected at a common *connection point* with a combined *nameplate rating* of 30 MW or greater,

which are owned, operated or controlled by a *Generator* or Integrated Resource Provider and are *connected* to the *Transmission Network Service Provider's network*.

large integrated resource connection means integrated resource units that:

- (1) have a nameplate rating of 5MW or greater; or
- (2) are part of a group of integrated resource units connected at a common connection point with a combined nameplate rating of 5 MW or greater,

which are owned, operated or controlled by an Integrated Resource Provider and are connected to the Transmission Network Service Provider's network.

**TAPR date** means the date under clause 5.12.2 by which a *Transmission Network Service Provider* must publish its *Transmission Annual Planning Report*.

#### 5.18A.2 Register of large generator and integrated resource connections

- (a) A *Transmission Network Service Provider* must establish, maintain and publish, on its website, a register of information regarding large connections ~~large generator connections~~ (**connections register**), including but not limited to the following information in respect of each large connection~~large generator connection~~:
- (1) location of the *connection point* for the large connection~~large generator connection~~;
  - (2) person who is registered by *AEMO* as a *Generator* or Integrated Resource Provider in respect of the large connection ~~large generator connection~~ at that *connection point*;
  - (3) technology of the *generating units* or integrated resource units (e.g. hydro, open cycle gas turbine, steam sub-critical etc);
  - (4) aggregate *nameplate rating* capacity of all *generating units* or integrated resource units comprised in the large connection~~large generator connection~~;
  - (5) date of cessation of a person's registration with *AEMO* as *Generator* or Integrated Resource Provider in respect of the large connection~~large generator connection~~, where relevant; and
  - (6) impact assessment of that large connection~~large generator connection~~, prepared in accordance with clause 5.18A.3 (if any).
- (b) Subject to satisfying any relevant exemptions contained in clause 8.6.2, the *Transmission Network Service Provider* must not publish *confidential information* as part of, or in connection with, the connections register.
- (c) The *Transmission Network Service Provider* must:
- (1) include in the first connections register the details contained in subparagraphs (a)(1)-(5), for all large connections ~~large generator connections~~ on its *network* with a commissioning date after 13 December 1998; and
  - (2) by the TAPR date each year, update the connections register to include:
    - (i) the details contained in subparagraphs (a)(1)-(6) for all new large connections ~~large generator connections~~ on its *network*; and
    - (ii) updated information for all large connections ~~large generator connections~~ contained in the connections register where the information listed in subparagraphs (a)(1)-(5) has changed.

#### 5.18A.3 Impact assessment of large connections~~large generator connections~~

- (a) Following the commissioning date of a new large generator connection~~large connection~~ on a *Transmission Network Service Provider's network*, the *Transmission Network Service Provider* must prepare an assessment of the

impact of that ~~large generator connection~~large connection on its *network* by the assessment date (**impact assessment**).

- (b) An impact assessment prepared in accordance with this clause 5.18A.3 is not required to be updated by the *Transmission Network Service Provider* at any future point in time.
- (c) The purpose of the impact assessment is to identify any material effects of the ~~large generator connection~~large connection on the *Transmission Network Service Provider's network*, as compared with the absence of that ~~large generator connection~~large connection on its *network*.
- (d) Subject to paragraph (e), when preparing an impact assessment, a *Transmission Network Service Provider* must consider whether the new ~~large generator connection~~large connection has resulted in changes to:
  - (1) *ancillary service* requirements to the extent such changes relate specifically to the *Transmission Network Service Provider's network*;
  - (2) the level, and pattern, of *network* congestion on its *network*;
  - (3) the timing of expenditure for the *Transmission Network Service Provider* on its *network*; and
  - (4) the level of *interconnector power transfer capability* on its *network*,and if such changes have occurred, include details of the changes in the impact assessment to the extent they have had a material impact on the *Transmission Network Services Provider's network*.
- (e) If the *Transmission Network Service Provider* considers any of the changes referred to in paragraph (d) to have an immaterial impact on its *network*, outline the reasons why it has determined such impacts to be immaterial.
- (f) The impact assessment must:
  - (1) be based on historical data;
  - (2) consider the impacts referred to in paragraph (d) for the 12 months immediately preceding the commissioning date as compared to the 12 months following the commissioning date; and
  - (3) include a detailed description of the methodologies or data used in quantifying each impact referred to in paragraph (d).

## 5.18B Completed embedded generation projects

### 5.18B.1 Definitions

- (a) For the purposes of this rule 5.18B:

completed embedded generation projects means completed embedded generating unit projects and completed embedded integrated resource unit projects.

completed embedded generating unit projects ~~completed embedded generation projects~~ means all *embedded generating units* owned, operated or controlled by:

- (1) a *Generator* or Integrated Resource Provider; or



- (2) a person who was required to apply to *AEMO* for an exemption from the requirement to register as a *Generator* or *Integrated Resource Provider* in respect of an *embedded generating unit*,

and are connected to the *Distributor Network Service Provider's network*.

**completed embedded integrated resource unit projects means all embedded integrated resource units owned, operated or controlled by:**

- (1) an *Integrated Resource Provider*; or
  - (2) a person who was required to apply to *AEMO* for an exemption from the requirement to register as an *Integrated Resource Provider* in respect of an *embedded integrated resource unit*,
- and are connected to the *Distributor Network Service Provider's network*.

**DAPR date** has the same meaning as in clause 5.13.2.

## **5.18B.2 Register of completed embedded generation projects**

- (a) In relation to completed embedded generation projects, a *Distribution Network Service Provider* must establish and *publish*, on its website, a register of the *plant*, including but not limited to:
  - (1) technology of *generating unit* or *integrated resource unit* (e.g. *synchronous generating unit*, induction generator, photovoltaic array, etc) and its make and model;
  - (2) maximum power generation capacity of all *embedded generating units* or *embedded integrated resource units* comprised in the relevant *generating system* or *integrated resource system*;
  - (3) contribution to fault levels;
  - (4) the size and rating of the relevant *transformer*;
  - (5) a single line diagram of the *connection* arrangement;
  - (6) *protection systems* and communication systems;
  - (7) *voltage control and reactive power capability*; and
  - (8) details specific to the location of a *facility connected to the network* that are relevant to any of the details in subparagraphs (1)-(7).
- (b) Subject to satisfying any relevant exemptions contained in clause 8.6.2, the *Distribution Network Service Provider* must not *publish confidential information* as part of, or in connection with, the register.
- (c) The *Distribution Network Service Provider* must:
  - (1) include in the register the details contained in paragraph (b) for all completed embedded generation projects within the 5 year period preceding the establishment of the register; and
  - (2) update the register by the *DAPR date* each year thereafter with details of all completed embedded generation projects in the 5 year period preceding the *DAPR date*.

## 5.19 SENE Design and Costing Study

### 5.19.1 Definitions

In this rule 5.19:

**forecast generation scenarios** means different assumptions made by the *Transmission Network Service Provider* conducting a SENE Design and Costing Study about the likely timing and capacity of future *connections of generating systems and integrated resource systems* in the geographic area relevant to the study and the probability of that capacity materialising.

**Scale Efficient Network Extension** means an *augmentation* to a *transmission network* which is capable of facilitating the future *connection* to the *transmission network* of two or more *generating systems or integrated resource systems* in the same geographic area that have different owners, operators or controllers.

**SENE Design and Costing Study** means a study undertaken by a *Transmission Network Service Provider* in accordance with this rule 5.19 which compares the cost of forecast *connections of generating systems and integrated resource systems* to a *transmission network augmented* by a Scale Efficient Network Extension and the cost of those forecast *connections connecting* to the *national grid* in the same geographic area in the absence of the Scale Efficient Network Extension.

**SENE Study Proponent** means a person that makes a request under clause 5.19.2(a).

**SENE study information** means:

- (a) any data or information provided to a *Transmission Network Service Provider* by a *Network Service Provider* under clause 5.19.5 for the purposes of a SENE Design and Costing Study;
- (b) any data or information provided to a *Transmission Network Service Provider* by a person for the purposes of a SENE Design and Costing Study, provided that the person has registered its interest in response to an invitation under clause 5.19.3(e)(3); and
- (c) any data or information contained in a SENE Design and Costing Study published under clause 5.19.6.

### 5.19.4 Content of SENE Design and Costing Study

In negotiating the scope of the SENE Design and Costing Study with the SENE Study Proponent under clause 5.19.3(c), the *Transmission Network Service Provider* must consider the following matters:

- (a) the construction of future *generating systems and integrated resource systems* and the capacity of those *generating systems and integrated resource systems* in the relevant geographic area that are considered likely to require *connection* to the *national grid*, based on forecast generation scenarios;
- (b) having regard to each forecast generation scenario:
  - (1) the most appropriate location of the point of *connection* of the Scale Efficient Network Extension to the present *transmission network*;

- (2) the configuration of the Scale Efficient Network Extension including the point at which *generating systems* or *integrated resource systems* may connect to the Scale Efficient Network Extension;
- (3) the capacity and technical specifications of the Scale Efficient Network Extension;
- (4) indicative development, operating and other costs for the Scale Efficient Network Extension, based on an indicative timetable for development of the Scale Efficient Network Extension;
- (5) opportunities for developing the Scale Efficient Network Extension incrementally;
- (6) the likely impact of the Scale Efficient Network Extension on its *transmission network*, including the type and estimated cost of any other *augmentation* that would be required to ensure that the Scale Efficient Network Extension did not increase congestion on its *transmission network*;
- (7) a comparison between:
  - (i) the estimated total project expenditure (excluding any revenue impact) of forecast *connections* of *generating systems* and *integrated resource systems* to the *Transmission Network Service Provider's network* as *augmented* by a Scale Efficient Network Extension; and
  - (ii) the estimated total project expenditure (excluding any revenue impact) of forecast *connections* of *generating systems* and *integrated resource systems* to the *Transmission Network Service Provider's network*, or, if different, the *Local Network Service Provider's network*, in the same geographic area in the absence of the Scale Efficient Network Extension; and
- (c) the most recent *Integrated System Plan* and the *Transmission Network Service Provider's* most recent *Transmission Annual Planning Report* (to the extent relevant).

## 5.20 System security reports

### 5.20.6 Publication of system strength requirements methodologies

- (a) AEMO must develop and publish the *system strength requirements methodology* in accordance with the *Rules consultation procedures*.
- (b) AEMO may amend the *system strength requirements methodology*.
- (c) AEMO must comply with the *Rules consultation procedures* when making or amending the *system strength requirements methodology*.
- (d) AEMO may make minor and administrative amendments to the *system strength requirements methodology* without complying with the *Rules consultation procedures*.
- (e) The *system strength requirements methodology* determined by AEMO must provide for AEMO to take the following matters into account in determining the *fault level nodes* and the minimum *three phase fault level*:

- (1) the combination of *three phase fault levels* at each *fault level node* in the *region* that could reasonably be considered to be sufficient for the *power system* to be in a *secure operating state*;
- (2) the maximum *load shedding* or *generation shedding* expected to occur on the occurrence of any *credible contingency event* or *protected event* affecting the *region*;
- (3) the stability of the *region* following any *credible contingency event* or *protected event*;
- (4) the risk of *cascading outages* as a result of any *load shedding* or *generating system*, *integrated resource system* or *market network service facility* tripping as a result of a *credible contingency event* or *protected event* in the *region*;
- (5) additional contribution to the *three phase fault level* needed to account for the possibility of a reduction in the *three phase fault level* at a *fault level node* if the *contingency event* that occurs is the loss or unavailability of a *synchronous generating unit*, *synchronous integrated resource unit* or any other *facility* or *service* that is material in determining the *three phase fault level* at the *fault level node*;
- (6) the stability of any equipment that is materially contributing to the *three phase fault level* or *inertia* within the *region*; and
- (7) any other matters as *AEMO* considers appropriate.

## **5.20B Inertia sub-networks and requirements**

### **5.20B.4 Inertia Service Provider to make available inertia services**

- (a) The *Inertia Service Provider* for an *inertia sub-network* is:
  - (1) the *Transmission Network Service Provider* for the *inertia sub-network*; or
  - (2) if there is more than one *Transmission Network Service Provider* for the *inertia sub-network*, the *jurisdictional planning body* for the *participating jurisdiction* in which the *inertia sub-network* is located.
- (b) If *AEMO* gives a notice under clause 5.20B.3(c) that *AEMO* has assessed that there is or is likely to be an *inertia shortfall* in an *inertia sub-network*, the *Inertia Service Provider* for the *inertia sub-network* must make *inertia network services* available in accordance with paragraph (c) that when *enabled* will provide *inertia* to:
  - (1) the *secure operating level of inertia*; or
  - (2) the *secure operating level of inertia* as adjusted for *inertia support activities*, but not less than the *minimum threshold level of inertia* as adjusted for *inertia support activities*.

#### **Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) For the purposes of paragraph (b), an *Inertia Service Provider* for an *inertia sub-network* must:
  - (1) use reasonable endeavours to make the *inertia network services* available by the date specified by *AEMO* in the notice under clause 5.20B.3(c);
  - (2) make a range and level of *inertia network services* available such that it is reasonably likely that *inertia network services* that provide the required level of *inertia* when *enabled* are continuously available, taking into account planned *outages* and the risk of unplanned *outages*;
  - (3) ensure that the *inertia network services* that when *enabled* provide *inertia* up to the *minimum threshold level of inertia* (as adjusted for *inertia support activities* if applicable) are qualifying *inertia network services* as specified in paragraph (d);
  - (4) ensure that the *inertia network services* that when *enabled* provide *inertia* beyond the *minimum threshold level of inertia* up to the *secure operating level of inertia* (as adjusted for *inertia support activities* if applicable), are qualifying *inertia network services* as specified in paragraph (e); and
  - (5) maintain the availability of those *inertia network services* until the date the *Inertia Service Provider's* obligation ceases, as specified by *AEMO* under clause 5.20B.3(d).
- (d) The *inertia network services* that qualify to provide *inertia* up to the *minimum threshold level of inertia* are:
  - (1) *inertia network services* made available by the *Inertia Service Provider* investing in its *network* through the installation, commissioning and operation of a *synchronous condenser*; and
  - (2) *inertia network services* made available to the *Inertia Service Provider* by a *Registered Participant* and provided by means of a *synchronous generating unit*, *synchronous integrated resource unit* or a *synchronous condenser* under an *inertia services agreement*.
- (e) The *inertia network services* that qualify to provide *inertia* beyond the *minimum threshold level of inertia* up to the *secure operating level of inertia* are:
  - (1) the *inertia network services* referred to in paragraph (d);
  - (2) *inertia network services* made available by the *Inertia Service Provider* investing in its *network* other than those referred to in paragraph (d); and
  - (3) *inertia network services* made available to the *Inertia Service Provider* by a *Registered Participant* under an *inertia services agreement* other than those referred to in paragraph (d).
- (f) An *Inertia Service Provider* required to make *inertia network services* available under paragraph (b) must make available the least cost option or combination of options that will satisfy its obligation within the time referred to in subparagraph (c)(1) and for so long as the obligation to make the *inertia network services* available continues.

- (g) An *Inertia Service Provider* required to make *inertia network services* available under paragraph (b) must prepare and *publish* information to enable potential providers of *inertia network services* to develop *non-network options* for consideration by the *Inertia Service Provider* including:
  - (1) a description of the requirement for *inertia network services* including timing;
  - (2) the technical characteristics that a *non-network option* would be required to deliver, such as the level of *inertia*, location, availability, response time and operating profile;
  - (3) a summary of potential options to make the *inertia network services* available identified by the *Inertia Service Provider*, including *network options* and *non-network options*; and
  - (4) information to assist providers of *non-network options* wishing to present proposals to the *Inertia Service Provider* including details of how to submit a proposal for consideration.
- (h) An *Inertia Service Provider* must provide information in its *Transmission Annual Planning Report* about:
  - (1) the activities undertaken to satisfy its obligation to make *inertia network services* available under paragraph (b); and
  - (2) *inertia support activities* undertaken to reduce the *minimum threshold level of inertia* or the *secure operating level of inertia*.
- (i) If the *Inertia Service Provider* proposes *network* investment for either of the purposes specified in paragraph (h), the *Inertia Service Provider* must provide the following information in its next *Transmission Annual Planning Report*:
  - (1) the date when the proposed relevant *network* investment became or will become operational;
  - (2) the purpose of the proposed relevant *network* investment;
  - (3) the total cost of the proposed relevant *network* investment; and
  - (4) the indicative total cost of any *non-network options* considered.
- (j) An *Inertia Service Provider* may include the cost of *inertia service payments* in the calculation of *network support payments* in accordance with Chapter 6A.

#### 5.20B.5 Inertia support activities

- (a) AEMO may at the request of an *Inertia Service Provider* approve activities (*inertia support activities*) under this clause and agree corresponding adjustments to the *minimum threshold level of inertia* or the *secure operating level of inertia* for the purposes of clause 5.20B.4(b) where the activities:
  - (1) are to be undertaken by the *Inertia Service Provider* or provided as a service to the *Inertia Service Provider*;
  - (2) are not *inertia network services*; and
  - (3) AEMO is satisfied the activities will contribute to the operation of the *inertia sub-network* in a *satisfactory operating state* or *secure operating*



*state* in the circumstances described in clause 4.4.4(a) or (b) as applicable.

**Note**

If approved by *AEMO* under paragraph (a), inertia support activities may include installing or contracting for the provision of *frequency* control services, installing emergency protection schemes or contracting with *Generators* or *Integrated Resource Providers* in relation to the operation of their *generating units* or *integrated resource units* in specified conditions.

- (b) An adjustment to the *minimum threshold level of inertia* or the *secure operating level of inertia* for *inertia support activities* will apply to the level determined by *AEMO* and only where and to the extent that the approved activity is *enabled* and performing in accordance with the conditions of any approval determined by *AEMO*.
- (c) An *Inertia Service Provider* making a request under paragraph (a) must give *AEMO*:
  - (1) details of the proposed *inertia support activity* and the other information about the *inertia support activity* consistent with the requirements of clause 5.20B.6(c);
  - (2) the proposed technical specification and performance standards and the information about arrangements to *enable* the *inertia support activity* consistent with the requirements of clause 5.20B.6(d);
  - (3) information about how the *inertia support activity* will contribute to operation of the *inertia sub-network* in a *satisfactory operating state* or *secure operating state* in the circumstances described in clause 4.4.4(a) or (b) as applicable;
  - (4) the *Inertia Service Provider's* proposal for calculating adjustments to be made and the times they will apply; and
  - (5) any other information requested by *AEMO* in connection with the request.
- (d) *AEMO* may give or withhold its approval under this clause in its discretion and subject to any conditions determined by *AEMO*.
- (e) The technical specification, performance standards and information referred to in paragraph (c)(2) and any change to them must be approved by *AEMO*.
- (f) An *Inertia Service Provider* must obtain *AEMO's* approval under paragraph (e) before any change to the technical specification, performance standards or arrangements to give instructions that apply to an *inertia support activity* comes into effect.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

## 5.20B.6 Inertia network services information and approvals

- (a) An *Inertia Service Provider* required to make *inertia network services* available under clause 5.20B.4(b) must prepare and give to *AEMO* and keep up to date, a schedule setting out:

- (1) the *inertia network services* made available by the *Inertia Service Provider* for the *inertia sub-network*; and
  - (2) the *Inertia Service Provider's* proposed order of priority for the *inertia network services* to be enabled.
- (b) Where the *Inertia Service Provider* procures *inertia network services* from a *Generator* or *Integrated Resource Provider* provided by means of a *synchronous generating unit* under an *inertia services agreement*, the *Inertia Service Provider* must register the *generating unit* with AEMO as an ~~*inertia generating unit*~~ *inertia unit* and specify that the *generating unit* may be periodically used to provide *inertia network services* and will not be eligible to set *spot prices* when *constrained on* to provide *inertia* in accordance with clause 3.9.7(c).

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b1) Where the *Inertia Service Provider* procures *inertia network services* from an *Integrated Resource Provider* provided by means of an *integrated resource unit* under an *inertia services agreement*, the *Inertia Service Provider* must register the *integrated resource unit* with AEMO as an *inertia unit* and specify that the *integrated resource unit* may be periodically used to provide *inertia network services* and will not be eligible to set *spot prices* when *constrained on* to provide *inertia* in accordance with clause 3.9.7(c).

**Note**

The AEMC proposes to recommend that clause 5.20B.6(b1) be classified as a Tier 2 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) An *Inertia Service Provider* required to make *inertia network services* available under clause 5.20B.4(b) must give to AEMO and keep up to date the following details for each *inertia network service*:
- (1) a description of the *inertia network service*, including:
    - (i) the nature of the *inertia network service*;
    - (ii) the ~~*inertia unit generating unit*~~ or other *facilities* used to provide the *inertia network service*;
    - (iii) the purpose for which the *inertia network service* is being provided;
    - (iv) the location in the *transmission network* or *distribution network* of the *facilities* used to provide the *inertia network service*;
    - (v) the quantity of *inertia* to be provided when the *inertia network service* is enabled and;
    - (vi) any other information requested by AEMO in connection with the *inertia network service*;
  - (2) information about the availability of the *inertia network service*, including:

- (i) the times when, and the period over which, the *inertia network service* will be available to provide *inertia*; and
  - (ii) any possible restrictions on the availability of the *inertia network service*
- (d) An *Inertia Service Provider* required to make *inertia network services* available under clause 5.20B.4(b) must prepare and submit to *AEMO* for approval under paragraph (e) the following details for each *inertia network service*:
  - (1) the technical specification and performance standards for the *inertia network service*; and
  - (2) the arrangements necessary for *AEMO* to give instructions to *enable* or cease the provision of the *inertia network service* including:
    - (i) the period of any notice that has to be given to the provider of the *inertia network service* for it to be *enabled*;
    - (ii) the response time to any instruction for the *inertia network service* to be *enabled* or to cease being provided; and
    - (iii) communication protocols between it, *AEMO* and the *Registered Participants* that provide *inertia network services*.
- (e) The technical specification, performance standards and arrangements necessary for *AEMO* to give the instructions referred to in paragraph (d) and any change to them must be consistent with the *Rules* and approved by *AEMO*.
- (f) An *Inertia Service Provider* must ensure that *AEMO's* approval is obtained under paragraph (e) before the *inertia network service* is first made available and in the case of a change, before the change comes into effect.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) *AEMO* must use reasonable endeavours to respond to the *Inertia Service Provider* within 20 *business days* following the receipt of a request for approval under paragraph (e) stating whether it gives its approval.
- (h) If *AEMO* does not approve the matters in a request for approval under paragraph (e):
  - (1) *AEMO* must tell the *Inertia Service Provider* its reasons for withholding approval and may advise the *Inertia Service Provider* of the changes *AEMO* requires to be made; and
  - (2) the *Inertia Service Provider* must amend its request to address the matters identified by *AEMO* and submit to *AEMO* a new request for approval.

## 5.20C System strength requirements

### 5.20C.4 System strength services information and approvals

- (a) A *System Strength Service Provider* required to make *system strength services* available under clause 5.20C.3(b) must prepare and give to AEMO and keep up to date, a schedule setting out:
- (1) the *system strength services* available to contribute to the *three phase fault level* at each *fault level node* in the *region* for which there is a *fault level shortfall*; and
  - (2) the *System Strength Service Provider's* proposed order of priority for the *system strength services* to be *enabled*.
- (b) Where the *System Strength Service Provider* procures *system strength services* from a *Generator* or *Integrated Resource Provider* provided by means of a *generating unit* under a *system strength services agreement*, the *System Strength Service Provider* must register the *generating unit* with AEMO as a ~~*system strength generating unit*~~*system strength unit* and specify that the *generating unit* may be periodically used to provide *system strength services* and will not be eligible to set *spot prices* when *constrained on* to provide *system strength services* in accordance with clause 3.9.7(c).

#### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b1) Where the *System Strength Service Provider* procures *system strength services* from an *Integrated Resource Provider* provided by means of an *integrated resource unit* under a *system strength services agreement*, the *System Strength Service Provider* must register the *integrated resource unit* with AEMO as a *system strength unit* and specify that the *integrated resource unit* may be periodically used to provide *system strength services* and will not be eligible to set *spot prices* when *constrained on* to provide *system strength services* in accordance with clause 3.9.7(c).

#### Note

The AEMC proposes to recommend that clause 5.20C.4(b1) be classified as a Tier 2 civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6 and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) A *System Strength Service Provider* required to make *system strength services* available under clause 5.20C.3(b) must give to AEMO and keep up to date the following details for each *system strength service*:
- (1) a description of the *system strength service*, including:
    - (i) the nature of the *system strength service*;
    - (ii) the ~~*generating unit*~~*system strength unit* or other *facilities* used to provide the *system strength service*;
    - (iii) the purpose for which the *system strength service* is being provided;

- (iv) the location in the *transmission network* or *distribution network* of the *facilities* used to provide the *system strength service*;
  - (v) the contribution to the *three phase fault level* at each relevant *fault level node* and the *facility's connection point* when the *system strength service* is enabled; and
  - (vi) any other information (including models) requested by *AEMO* to assess the contribution of the *system strength service* referred to in subparagraph (v).
- (2) information about the availability of the *system strength service*, including:
  - (i) the times when, and the period over which, the *system strength service* will be available to contribute to the *three phase fault level* at each relevant *fault level node*; and
  - (ii) any possible restrictions on the availability of the *system strength service*.
- (d) A *System Strength Service Provider* required to make *system strength services* available under clause 5.20C.3(b) must prepare and submit to *AEMO* for approval under paragraph (e) the following details for each *system strength service*:
  - (1) the technical specification and performance standards for the *system strength service*; and
  - (2) the arrangements necessary for *AEMO* to give instructions to *enable* or cease the provision of the *system strength service* including:
    - (i) the period of any notice that has to be given to the provider of the *system strength service* for it to be *enabled*;
    - (ii) the response time to any instruction for the *system strength service* to be *enabled* or to cease being provided; and
    - (iii) communication protocols between it, *AEMO* and the *Registered Participants* that provide *system strength services*.
- (e) The technical specification, performance standards and arrangements necessary for *AEMO* to give the instructions referred to in paragraph (d) and any change to them must be consistent with the *Rules* and approved by *AEMO*.
- (f) A *System Strength Service Provider* must ensure that *AEMO's* approval is obtained under paragraph (e) before the *system strength service* is first made available and in the case of a change, before the change comes into effect.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) *AEMO* must use reasonable endeavours to respond to the *System Strength Service Provider* within 20 *business days* following the receipt of a request for approval under paragraph (e) stating whether it gives its approval.

- (h) If *AEMO* does not approve the matters in a request for approval under paragraph (e):
  - (1) *AEMO* must tell the *System Strength Service Provider* its reasons for withholding approval and may advise the *System Strength Service Provider* of the changes *AEMO* requires to be made; and
  - (2) the *System Strength Service Provider* must amend its request to address the matters identified by *AEMO* and submit to *AEMO* a new request for approval.

## **Schedule 5.1      Network Performance Requirements to be Provided or Co-ordinated by Network Service Providers**

### **S5.1.2      Network reliability**

#### **S5.1.2.1      Credible contingency events**

*Network Service Providers* must plan, design, maintain and operate their *transmission networks* and *distribution networks* to allow the transfer of power from *generating units* and integrated resource units to *Customers* with all *facilities* or equipment associated with the *power system* in service and may be required by a *Registered Participant* under a *connection agreement* to continue to allow the transfer of power with certain *facilities* or *plant* associated with the *power system* out of service, whether or not accompanied by the occurrence of certain faults (called *credible contingency events*).

The following *credible contingency events* and practices must be used by *Network Service Providers* for planning and operation of *transmission networks* and *distribution networks* unless otherwise agreed by each *Registered Participant* who would be affected by the selection of *credible contingency events*:

- (a) The *credible contingency events* must include the *disconnection* of any single *generating unit*, integrated resource unit or *transmission line*, with or without the application of a single circuit two-phase-to-ground solid fault on lines operating at or above 220 kV, and a single circuit three-phase solid fault on lines operating below 220 kV. The *Network Service Provider* must assume that the fault will be cleared in primary protection time by the faster of the duplicate protections with installed intertrips available. For existing *transmission lines* operating below 220 kV but above 66 kV a two-phase to earth fault criterion may be used if the modes of operation are such as to minimise the probability of three-phase faults occurring and operational experience shows this to be adequate, and provided that the *Network Service Provider* upgrades performance when the opportunity arises.
- (b) For lines at any *voltage* above 66 kV which are not protected by an overhead earth wire and/or lines with tower footing resistances in excess of 10 ohms, the *Network Service Provider* may extend the criterion to include a single circuit three-phase solid fault to cover the increased risk of such a fault occurring. Such lines must be examined individually on their merits by the relevant *Network Service Provider*.



- (c) For lines at any *voltage* above 66 kV a *Network Service Provider* must adopt operational practices to minimise the risk of slow fault clearance in case of inadvertent closing on to earths applied to equipment for maintenance purposes. These practices must include but not be limited to:
  - (1) Not leaving lines equipped with intertrips alive from one end during maintenance; and
  - (2) *Off-loading* a three terminal (tee connected) line prior to restoration, to ensure switch on to fault *facilities* are operative.
- (d) The *Network Service Provider* must ensure that all *protection systems* for lines at a *voltage* above 66 kV, including associated intertripping, are well maintained so as to be available at all times other than for short periods (not greater than eight hours) while the maintenance of a *protection system* is being carried out.

### S5.1.2.2 Network service within a region

The following paragraphs of this section set out minimum standards for certain *network services* to be provided to *Registered Participants* by *Network Service Providers* within a *region*. The amount of *network* redundancy provided must be determined by the process set out in rules 5.12 and 5.13 of the *Rules* and is expected to reflect the grouping of *generating units* or integrated resource units, their expected capacity factors and availability and the size and importance of *Customer* groups.

The standard of service to be provided at each *connection point* must be included in the relevant *connection agreement*, and must include a *power transfer capability* such as that which follows:

- (a) In the *satisfactory operating state*, the *power system* must be capable of providing the highest reasonably expected requirement for *power transfer* (with appropriate recognition of diversity between individual peak requirements and the necessity to withstand *credible contingency events*) at any time.
- (b) During the most critical single element *outage* the *power transfer* available through the *power system* may be:
  - (1) zero (single element *supply*);
  - (2) the defined capacity of a backup *supply*, which, in some cases, may be provided by another *Network Service Provider*;
  - (3) a nominated proportion of the normal *power transfer capability* (eg 70 percent); or
  - (4) the normal *power transfer capability* of the *power system* (when required by a *Registered Participant*).

In the case of clauses S5.1.2.2(b)(2) and (3) the available capacity would be exceeded sufficiently infrequently to allow maintenance to be carried out on each *network element* by the *Network Service Provider*. A *connection agreement* may state the expected proportion of time that the normal capability will not be available, and the capability at those times, taking account of specific design, locational and

seasonal influences which may affect performance, and the random nature of element *outages*.

A *connection agreement* may also state a conditional *power transfer capability* that allows for both circuits of a double circuit line or two closely parallel circuits to be out of service.

### S5.1.7 Voltage unbalance

- (a) A *Transmission Network Service Provider* must balance the effective impedance of the phases of its *network*, and a *Distribution Network Service Provider* must balance the current drawn in each phase at each of its *connection points*, so as to achieve average levels of negative sequence *voltage* at all *connection points* that are equal to or less than the values set out in Table S5.1a.1 as determined in accordance with the accompanying provisions of clause S5.1a.7 of the *system standards*.
- (b) A *Network Service Provider* must include conditions in *connection agreements* to ensure that a *Connection Applicant* will balance the current drawn in each phase at each of its *connection points* so as to achieve:
  - (1) for those *Network Users* listed in clause S5.3(a): the levels permitted in accordance with clause S5.3.6 of schedule 5.3;
  - (2) for *Market Network Service Providers*: the levels permitted in accordance with clause S5.3a.9 of schedule 5.3a;
  - (3) otherwise: the average levels of negative sequence *voltage* at each of its *connection points* that are equal to or less than the values set out in Table S5.1a.1 and the accompanying provisions of clause S5.1a.7 of the *system standards*.

The responsibility of the *Network Service Provider* for *voltage* unbalance outside the ranges defined above is limited to *voltage* unbalance caused by the *network* and the pursuit of all measures available under the *Rules* and its *connection agreements*.

- (c) A *Network Service Provider* must include conditions in *connection agreements* to ensure that each *Generator* and Integrated Resource Provider will balance:
  - (1) the *voltage generated* in each phase of its *generating system* or integrated resource system; and
  - (2) when not generating, the current drawn in each phase,in order to achieve average levels of negative sequence *voltage* at each of the *generating system* or integrated resource system *connection points* due to phase imbalances within the *generating plant* that are not more than the values determined by the *Network Service Provider* to achieve average levels of negative sequence *voltage* at the *connection points* of other *Network Users* in accordance with clause S5.1a.7.
- (d) When including conditions under paragraph (c), the *Network Service Provider* must have regard to the capabilities of the relevant *generating plant* technology.

## S5.1.10 Load, generation and network control facilities

### S5.1.10.1a Emergency frequency control schemes

- (a) A *Network Service Provider* must:
  - (1) **[Deleted]**
  - (2) provide to *AEMO* all information and assistance reasonably requested by *AEMO* for the development and review of *EFCS settings schedules*.
- (b) Where a *protected event EFCS standard* has been determined for an *emergency frequency control scheme* applicable in respect of a *Network Service Provider's transmission system or distribution system*, the *Network Service Provider* must:
  - (1) design, procure, commission, maintain, monitor, test, modify and report to *AEMO* in respect of, the *emergency frequency control scheme*;
  - (2) perform its obligations under subparagraph (1) so as to achieve the availability and operation of the scheme in accordance with the *protected event EFCS standard*; and
  - (3) coordinate with *AEMO* in relation to the monitoring and testing of the scheme once it is in operation.
- (c) A *Network Service Provider* must use reasonable endeavours to achieve commissioning of a new or upgraded *emergency frequency control scheme* within the time contemplated by the relevant *general power system risk review* or, where applicable, *AEMO's* request to the *Reliability Panel* for declaration of a *non-credible contingency event* as a *protected event* and the decision of the *Reliability Panel* with respect to that request.
- (d) For an *over-frequency scheme*:
  - (1) ~~A~~ *Network Service Provider* must identify which elements of the scheme (if any) can be implemented by facilities provided by a *Generator or Integrated Resource Provider* for the person's *Generator's* generating unit or integrated resource unit or by modification to the facilities of the *Generator or Integrated Resource Provider* or by changes to the settings of *protection systems or control systems* for the person's *Generator's* generating units or integrated resource units.
  - (2) Where those opportunities are identified, the *Network Service Provider* must notify the *Generator or Integrated Resource Provider* concerned of the opportunity and must request the person *Generator* to negotiate with the *Network Service Provider* to reach agreement on the modifications to be made and the other arrangements required by the *Network Service Provider* to comply with its obligations with respect to the scheme (including commissioning, testing, monitoring and future modification).
  - (3) If the *Generator or Integrated Resource Provider* declines the request, or if the *Generator or Integrated Resource Provider* agrees to the request but good faith negotiations do not result in agreement being reached in a reasonable time (having regard to the implementation

- timetable for the scheme), the *Network Service Provider* may make other arrangements to implement the relevant elements of the scheme.
- (4) If the *Generator* or *Integrated Resource Provider* accepts the request, the *Generator* or *Integrated Resource Provider* and the *Network Service Provider* must each negotiate in good faith with respect to the matters referred to above.
  - (e) Nothing in paragraph (d) is intended to prevent the exercise of rights under a *connection agreement*.
  - (f) Nothing in paragraph (d) is intended to constitute or require an *application to connect* for the purposes of rule 5.3 or rule 5.3A. If clause 5.3.9 applies in respect of alterations for an *over-frequency scheme* the subject of negotiations under paragraph (d), the *Network Service Provider* cannot charge a fee under clause 5.3.9(e) for assessment of a submission in respect of those alterations.

## Schedule 5.2 **Conditions for Connection of Generators and Integrated Resource Providers**

### S5.2.1 Outline of requirements

- (a) This schedule sets out details of additional requirements and conditions that *Generators* and *Integrated Resource Providers* must satisfy as a condition of connection of a *generating system* or *integrated resource system* to the *power system*.
- (b) This schedule does not apply to any *generating system* or *integrated resource system* that is:
  - (1) subject to an exemption from registration under clause 2.1A.2~~clause 2.2.1(e)~~; or
  - (2) eligible for exemption under any guidelines issued under clause 2.1A.2~~clause 2.2.1(e)~~,and which is *connected* or intended for use in a manner the *Network Service Provider* considers is unlikely to cause a material degradation in the quality of *supply* to other *Network Users*.
- (c) This schedule also sets out the requirements and conditions which subject to clause 5.2.5 of the *Rules*, are obligations on *Generators* and *Integrated Resource Providers*:
  - (1) to co-operate with the relevant *Network Service Provider* on technical matters when making a new *connection*; and
  - (2) to provide information to the *Network Service Provider* or *AEMO*.
- (d) The equipment associated with each *generating system* or *integrated resource system* must be designed to withstand without damage the range of operating conditions which may arise consistent with the *system standards*.
- (e) *Generators* and *Integrated Resource Providers* must comply with the *performance standards* and any attached terms or conditions of agreement agreed with the *Network Service Provider* or *AEMO* in accordance with a relevant provision of schedules 5.1a or 5.1.

- (f) This schedule does not set out arrangements by which a *Generator or Integrated Resource Provider* may enter into an agreement or contract with AEMO to:
  - (1) provide additional services that are necessary to maintain *power system security*; or
  - (2) provide additional services to facilitate management of the *market*.
- (g) This schedule provides for *automatic access standards* and the determination of *negotiated access standards* which once determined, must be recorded together with the *automatic access standards* in a *connection agreement* and registered with AEMO as *performance standards*.

## S5.2.2 Application of Settings

A *Generator or Integrated Resource Provider* must only apply settings to a *control system* or a *protection system* that are necessary to comply with performance requirements of this schedule 5.2 if the settings have been approved in writing by the relevant *Network Service Provider* and, if the requirement is one that would involve AEMO under clause 5.3.4A(c) of the *Rules*, also by AEMO. A *Generator or Integrated Resource Provider* must not allow its *generating unit or integrated resource unit* to supply electricity to the *power system* without such prior approval.

If a *Generator or Integrated Resource Provider* seeks approval from the *Network Service Provider* to apply or change a setting, then (except in the case of settings to be applied or changed by the *Generator or Integrated Resource Provider* in connection with an *emergency frequency control scheme*) approval must not be withheld unless the *Network Service Provider* or, if the requirement is one that would involve AEMO under clause 5.3.4A(c) of the *Rules*, AEMO, reasonably determines that the changed setting would cause the *generating unit or integrated resource unit* to not comply with the relevant *performance standard* or cause an *inter-regional or intra-regional power transfer capability* to be reduced.

If the *Network Service Provider* or, if the requirement is one that would involve AEMO under clause 5.3.4A(c) of the *Rules*, AEMO, reasonably determines that a setting of a *generating unit's or integrated resource unit's control system or protection system* needs to change to comply with the relevant *performance standard* or to maintain or restore an *inter-regional or intra-regional power transfer capability*, the *Network Service Provider* or AEMO (as applicable) must consult with the relevant *Generator or Integrated Resource Provider*, and the *Network Service Provider* may request in writing that a setting be applied in accordance with the determination.

The *Network Service Provider* may also request a test to verify the performance of the relevant *plant* with the new setting. The *Network Service Provider* must provide AEMO with a copy of its request to a *Generator or Integrated Resource Provider* to apply a setting or to conduct a test.

A *Generator or Integrated Resource Provider* who receives such a request must arrange for the notified setting to be applied as requested and for a test to be conducted as requested. After the test, the *Generator or Integrated Resource Provider* must, on request, provide both AEMO and the *Network Service Provider* with a report of a requested test, including evidence of its success or failure. Such a report of a test is *confidential information*.



A *Generator or Integrated Resource Provider* must not change a setting requested by the *Network Service Provider* without its prior written agreement. If the *Network Service Provider* requires a *Generator or Integrated Resource Provider* to change a setting within 18 months of a previous request, the *Network Service Provider* must pay the *Generator or Integrated Resource Provider* its reasonable costs of changing the setting and conducting the tests as requested.

### S5.2.3 Technical matters to be coordinated

- (a) A *Generator or Integrated Resource Provider* and the relevant *Network Service Provider* must use all reasonable endeavours to agree upon relevant technical matters in respect of each new or altered *connection* of a *generating system or integrated resource system* to a *network* including:
  - (1) design at the *connection point*;
  - (2) physical layout adjacent to the *connection point*;
  - (3) primary protection and backup protection (clause S5.2.5);
  - (4) control characteristics (clause S5.2.5);
  - (5) communications *facilities* (clause S5.2.6);
  - (6) insulation co-ordination and lightning protection (paragraph (b));
  - (7) fault levels and fault clearance (clause S5.2.8);
  - (8) switching and *isolation* facilities (clause S5.2.8);
  - (9) interlocking and *synchronising* arrangements; and
  - (10) *metering installations*.
- (b) A *Generator or Integrated Resource Provider* must ensure that in designing a *generating system's or integrated resource system's* electrical *plant*, including any *substation* for the *connection* of the *generating system or integrated resource system* to the *network*, to operate at the same *nominal voltage* as at the *connection point*:
  - (1) the *plant* complies with the relevant *Australian Standards* unless a provision of the *Rules* allows or requires otherwise;
  - (2) the earthing of the *plant* complies with the ENA EG1-2006: Substation Earthing Guide to reduce step and touch potentials to safe levels;
  - (3) the *plant* is capable of withstanding, without damage the *voltage impulse* levels specified in the *connection agreement*;
  - (4) the insulation levels of the *plant* are co-ordinated with the insulation levels of the *network* to which the *generating system or integrated resource system* is connected as specified in the *connection agreement*; and
  - (5) safety provisions in respect of the *plant* comply with requirements applicable to the *participating jurisdiction* in which the *generating system or integrated resource system* is located, as notified by the *Network Service Provider*.
- (c) If no relevant *Australian Standard* exists for the purposes of paragraph (b)(1), the *Generator or Integrated Resource Provider* must agree with the *Network*



*Service Provider* for the *Generator* or *Integrated Resource Provider* to comply with another relevant standard.

#### **S5.2.4 Provision of information**

- (a) A *Generator*, *Integrated Resource Provider* or person who is negotiating a *connection agreement* with a *Network Service Provider* must promptly on request by *AEMO* or the *Network Service Provider* provide all data in relation to that *generating system* or *integrated resource system* specified in schedule 5.5.
- (b) A *Generator*, *Integrated Resource Provider* or person required under the *Rules* to register as the *Generator* or *Integrated Resource Provider* in respect of a *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more, or an *integrated resource system* comprised of *plant* with a combined *nameplate rating* of 5 MW or more for *either consumption or output*, by the earlier of:
  - (1) the day on which an *application to connect* is made under clause 5.3.4(a);
  - (2) the day on which amendments to *performance standards* are submitted under rule 4.14(p) or clause 5.3.9(b);
  - (3) three months before commissioning of a *generating system* or *integrated resource system* or planned alteration to a *generating system* or *integrated resource system*; or
  - (4) 5 *business days* before commissioning of a *generating system* or *integrated resource system* alteration that is repairing *plant* after a *plant* failure, if *plant* performance after the alteration will differ from performance prior to the *plant* failure,must provide:
  - (5) to *AEMO* and the relevant *Network Service Provider(s)* (including the relevant *Transmission Network Service Provider* in respect of an *embedded generating unit* or *embedded integrated resource unit*):
    - (i) information about the *protections systems* of the *generating system* or *integrated resource system*;
    - (ii) information about the *control systems* of the *generating system* or *integrated resource system* including:
      - (A) a set of functional block diagrams, including all functions between feedback signals and *generating system output* or *integrated resource system output* or *consumption* ~~*generating system output*~~;
      - (B) the parameters of each functional block, including all settings, gains, time constants, delays, deadbands and limits;
      - (C) the characteristics of non-linear elements;

- (D) encrypted models in a form suitable for the software simulation products nominated by AEMO in the *Power System Model Guidelines*;
- (6) to AEMO, the model source code (in the circumstances required by the *Power System Model Guidelines*) associated with the *power system* simulation model in subparagraph (ii)(D) in an unencrypted form suitable for at least one of the software simulation products nominated by AEMO in the *Power System Model Guidelines*, and in a form that would allow conversion for use with other software products nominated by AEMO in the *Power System Model Guidelines*;
- (7) **[Deleted]**
- (7A) to AEMO and the relevant *Network Service Provider(s)*, any other information specified in the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*; and
- (8) to AEMO and the relevant *Network Service Providers* (including the relevant *Transmission Network Service Provider* in respect of an *embedded generating unit* or embedded integrated resource unit) a *releasable user guide*.
- (b1) The information provided under paragraph (b) must contain sufficient detail for AEMO and the relevant *Network Service Provider(s)* to perform *power system* simulation studies in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*.
- (c) The information provided under paragraph (b) must:
  - (1) encompass all *control systems* that respond to *voltage* or *frequency* disturbances on the *power system*, and which are either integral to the *generating units* or integrated resource units or otherwise part of the *generating system* or integrated resource system, including those applying to *reactive power* equipment that forms part of the *generating system* or integrated resource system; and
  - (2) conform with the applicable models developed in accordance with the *Power System Model Guidelines*, or an alternative model agreed with AEMO to be necessary to adequately represent the relevant plant generating plant to carry out load flow and dynamic simulations and (where applicable) specialised *power system* studies.
- (d) The *Generator* or Integrated Resource Provider must provide to AEMO information that updates the information provided under paragraph (b) clause S5.2.4(b) and must provide to the relevant *Network Service Providers* information that updates the information provided under subparagraph (b)(5) clause S5.2.4(b)(5):
  - (1) within 3 months after commissioning tests or other tests undertaken in accordance with clause 5.7.3 are completed;
  - (2) when the *Generator* or Integrated Resource Provider becomes aware that the information is incomplete, inaccurate or out of date; or

- (3) on request by *AEMO* or the relevant *Network Service Provider*, where *AEMO* or the relevant *Network Service Provider* considers that the information is incomplete, inaccurate or out of date.
- (d1) A *Generator* or *Integrated Resource Provider* is only required to provide new information under clause S5.2.4(d) to the extent that it is different to the information previously provided under clause S5.2.4(b).
- (e) For the purposes of clause S5.2.4(e1), a *Connection Applicant* must be registered as an *Intending Participant* in accordance with rule 2.7.
- (e1) For the purposes of clause 5.3.2(f), the technical information that a *Network Service Provider* must, if requested, provide to a *Connection Applicant* in respect of a proposed *connection* for a *generating system* or *integrated resource system* includes:
  - (1) the highest expected single phase and three phase fault levels at the *connection point* with the *generating system* or *integrated resource system* not connected;
  - (2) the clearing times of the existing *protection systems* that would clear a fault at the location at which the new *connection* would be connected into the existing *transmission system* or *distribution system*;
  - (3) the expected limits of *voltage* fluctuation, harmonic *voltage* distortion and *voltage* unbalance at the *connection point* with the *generating system* or *integrated resource system* not connected;
  - (4) technical information relevant to the *connection point* with the *generating system* or *integrated resource system* not synchronised including equivalent source impedance information, sufficient to estimate fault levels, *voltage* fluctuations, harmonic *voltage* distortion (for harmonics relevant to the *generating system* or *integrated resource system*) and *voltage* unbalance;
  - (5) information relating to the performance of the *national grid* that is reasonably necessary for the *Connection Applicant* to prepare an *application to connect*, including:
    - (i) a model of the *power system*, including relevant *considered projects* and the range of expected operating conditions, sufficient to carry out load flow and dynamic simulations; and
    - (ii) information on *inter-regional* and *intra-regional* power transfer capabilities and relevant *plant* ratings; and
  - (6) the *Network Service Provider's* expected *three phase* fault level at the *connection point* for the *generating system* or *integrated resource system* following the *connection* of the *generating system* or *integrated resource system*.
- (f) All information provided under this clause S5.2.4 must be treated as *confidential information*.

## S5.2.5 Technical requirements

### S5.2.5.1 Reactive power capability

#### Automatic access standard

- (a) The *automatic access standard* is a *generating system* or integrated resource system operating at:
- (1) any level of *active power* ~~output~~; and
  - (2) any *voltage* at the *connection point* within the limits established under clause S5.1a.4 without a *contingency event*,
- must be capable of supplying and absorbing continuously at its *connection point* an amount of *reactive power* of at least the amount equal to the product of the *rated active power* of the *generating system* or integrated resource system and 0.395.

#### Minimum access standard

- (b) The *minimum access standard* is no capability is required to supply or absorb *reactive power* at the *connection point*.

#### Negotiated access standard

- (c) When negotiating a *negotiated access standard*, the *Generator* or Integrated Resource Provider, the *Network Service Provider* and AEMO:
- (1) must, subject to any agreement under subparagraph (d)(4), ensure that the *reactive power capability* of the *generating system* or integrated resource system is consistent with maintaining *power system security* and sufficient to ensure that all relevant *system standards* are met before and after *credible contingency events* under normal and planned *outage* operating conditions of the *power system*, taking into account existing *power system* conditions, *considered projects* and any other project for the *connection* of a *Network User* for which:
    - (i) there is an existing *connection agreement*; or
    - (ii) the *Network Service Provider* and AEMO reasonably consider the *Network User* will *connect* to the *power system*;
  - (2) may negotiate either a range of *reactive power* absorption and supply, or a range of *power factor*, at the *connection point*, within which the *plant* must be operated; and
  - (3) may negotiate a limit that describes how the *reactive power capability* varies as a function of *active power* ~~level~~~~output~~—due to a design characteristic of the *plant*.
- (d) If the *generating system* or integrated resource system is not capable of the level of performance established under paragraph (c)(1) the *Generator* or Integrated Resource Provider, depending on what is reasonable in the circumstances, must:
- (1) pay compensation to the *Network Service Provider* for the provision of the deficit of *reactive power* (supply and absorption) from within the *network*;

- (2) install additional equipment *connecting* at the *generating system's* or integrated resource system's *connection point* or another location, to provide the deficit of *reactive power* (supply and absorption), and such equipment is deemed to be part of the *generating system* or integrated resource system;
  - (3) reach a commercial arrangement with a *Registered Participant* to provide the deficit of *reactive power* (supply and absorption); or
  - (4) if the inability to meet the performance level only occurs for particular operating conditions, agree to and document as part of the proposed *negotiated access standard*, operational arrangements by which the *plant* can achieve an agreed level of performance for those operating conditions.
- (e) The *Generator* or Integrated Resource Provider may select one or more options referred to in paragraph (d).

#### **General requirements**

- (f) A *performance standard* must record the agreed value for *rated active power* and (for an integrated resource system) rated maximum demand and where relevant the method of determining the value.
- (g) A *performance standard* for consumption of *energy* by a *generating system* or integrated resource system in respect of auxiliary load when not supplying or absorbing *reactive power* under an *ancillary services agreement* is to be established under clause S5.3.5 as if the *Generator* or Integrated Resource Provider were a *Market Customer*.

#### **S5.2.5.2 Quality of electricity generated**

- (a) For the purpose of this clause S5.2.5.2 in respect of a *synchronous generating unit* or synchronous integrated resource unit, AS 1359.101 and IEC 60034-1 are *plant standards* for harmonic *voltage* distortion.

#### **Automatic access standard**

- (b) The *automatic access standard* is a *generating system* or integrated resource system at all times when connected ~~when generating and when not generating~~ must not produce at any of its *connection points* ~~for generation~~:
  - (1) *voltage* fluctuation greater than the limits allocated by the *Network Service Provider* under clause S5.1.5(a);
  - (2) harmonic *voltage* distortion greater than the emission limits specified by a *plant standard* under paragraph (a) or allocated by the *Network Service Provider* under clause S5.1.6(a); and
  - (3) *voltage* unbalance greater than the limits allocated by the *Network Service Provider* in accordance with clause S5.1.7(c).

#### **Minimum access standard**

- (c) The *minimum access standard* is a *generating system* or integrated resource system at all times when connected ~~when generating and when not generating~~ must not produce at any of its *connection points* ~~for generation~~:



- (1) *voltage* fluctuations greater than limits determined under clause S5.1.5(b);
- (2) harmonic *voltage* distortion more than the lesser of the emission limits determined by the relevant *Network Service Provider* under clause S5.1.6(b) and specified by a *plant standard* under paragraph (a); and
- (3) *voltage* unbalance more than limits determined under clause S5.1.7(c).

#### **Negotiated access standard**

- (d) A *negotiated access standard* negotiated under this clause S5.2.5.2 must not prevent the *Network Service Provider* meeting the *system standards* or contractual obligations to existing *Network Users*.

#### **S5.2.5.3 Generating system or integrated resource system response to frequency disturbances**

- (a) For the purposes of this clause S5.2.5.3:

**normal operating frequency band, operational frequency tolerance band, or extreme frequency excursion tolerance limits** are references to the widest range specified for those terms for any condition (including an "island" condition) in the *frequency operating standards* that apply to the *region* in which the *generating unit or integrated resource unit* is located.

**stabilisation time and recovery time** mean the longest times allowable for the *frequency* of the *power system* to remain outside the operational frequency tolerance band and the normal operating frequency band, respectively, for any condition (including an "island" condition) in the *frequency operating standards* that apply to the *region* in which the *generating unit or integrated resource unit* is located.

**transient frequency limit and transient frequency time** mean the values of 47.5 Hz and 9 seconds respectively, or such other values determined by the *Reliability Panel*.

#### **Automatic access standard**

- (b) The *automatic access standard* is a *generating system or integrated resource system* and each of its *generating units and integrated resource 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 lower bound of the operational frequency tolerance band for at least the stabilisation time;
  - (2) 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 range under subparagraph (1);
  - (3) the normal operating frequency band for an indefinite period;
  - (4) the upper bound of the normal operating frequency band to the upper bound of the operational frequency tolerance band, for at least the



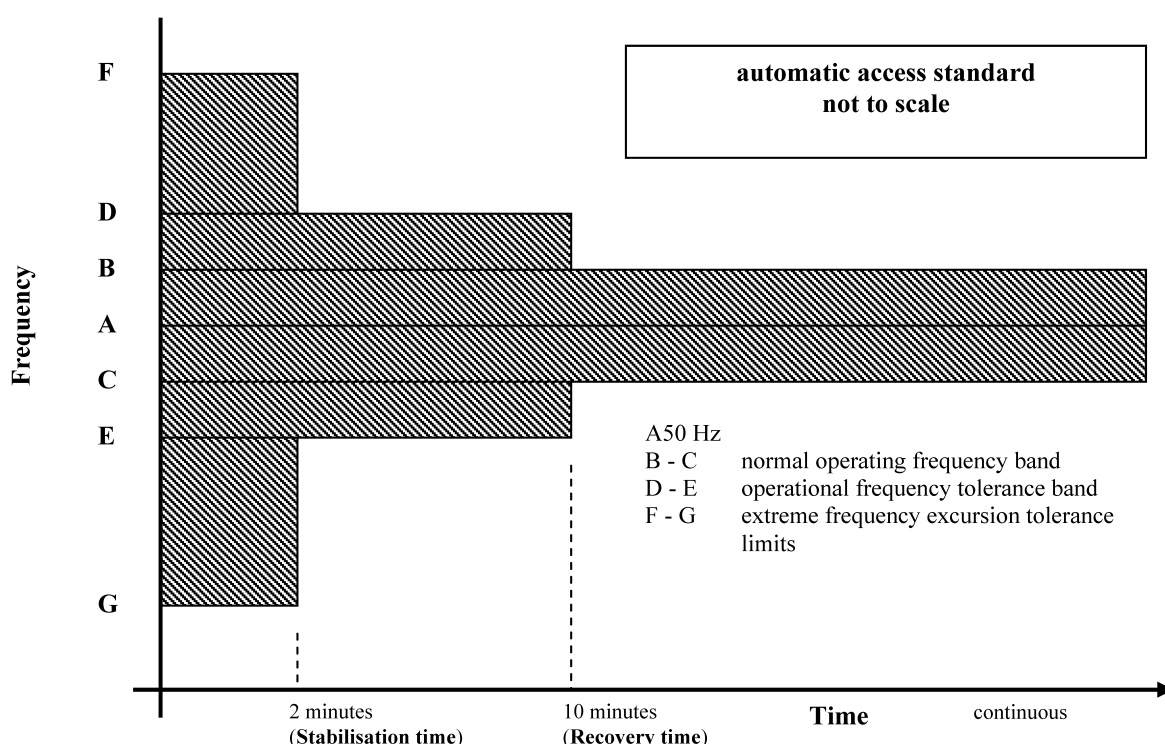
recovery time including any time spent in the range under subparagraph (5); and

- (5) the upper bound of the operational frequency tolerance band to the upper bound of the extreme frequency excursion tolerance limits for at least the stabilisation time,

unless the rate of change of *frequency* is outside the range of  $-4$  Hz to  $4$  Hz per second for more than  $0.25$  seconds,  $-3$  Hz to  $3$  Hz per second for more than one second, or such other range as determined by the *Reliability Panel* from time to time.

**Note:**

The *automatic access standard* is illustrated in the following diagram. To the extent of any inconsistency between the diagram and paragraph (b), paragraph (b) prevails.



**Minimum access standard**

- (c) The *minimum access standard* is a *generating system* or integrated resource system and each of its *generating units* or integrated resource 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) unless (for an integrated resource system) it

has a protection system to trip consumption by an integrated resource unit if the frequency falls below a level agreed with AEMO;

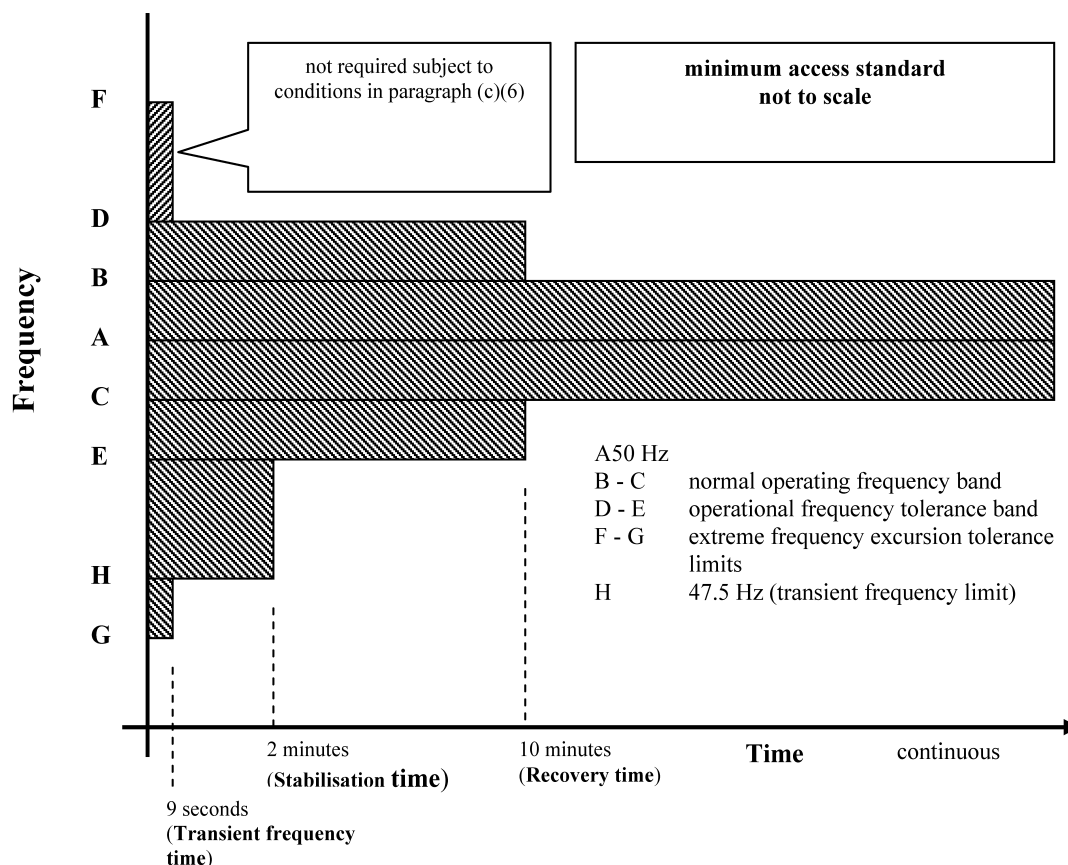
- (4) the normal operating frequency band for an indefinite period;
- (5) the upper bound of the normal operating frequency band to the upper bound of the operational frequency tolerance band for at least the recovery time including any time spent in the ranges under subparagraph (6) unless (for a the generating system) it has a protection system to trip a generating unit if the frequency exceeds a level agreed with AEMO or (for an integrated resource system) it has a protection system to trip generation from an integrated resource unit if the frequency exceeds a level agreed with AEMO; and
- (6) in respect of a generating system or integrated resource system:
  - (i) of 30 MW or more (in the case of a generating system) or 5 MW or more (in the case of an integrated resource system); and
  - (ii) that does not have a protection system to trip the generating unit or integrated resource unit ~~the generating unit~~ if the frequency exceeds a level agreed with AEMO under subparagraph (5),

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 -2 Hz to 2 Hz per second for more than 0.25 seconds, -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.



### Negotiated access standard

- (d) A negotiated access standard can be accepted by the Network Service Provider provided that AEMO and the Network Service Provider agree that the frequency would be unlikely to fall below the lower bound of the operational ~~frequency~~ frequency tolerance band as a result of over-frequency tripping of generating units or integrated resource units or rise above the upper bound of the operational frequency tolerance band as a result of under-frequency tripping of integrated resource units.

### S5.2.5.4 Generating system or integrated resource system response to voltage disturbances

#### Automatic access standard

- (a) The automatic access standard is a generating system or integrated resource system and each of its generating units and integrated resource units must be capable of continuous uninterrupted operation where a power system disturbance causes the voltage at the connection point to vary within the following ranges:
- (1) over 130% of normal voltage for a period of at least 0.02 seconds after T(ov);
  - (2) 125% to 130% of normal voltage for a period of at least 0.2 seconds after T(ov);

- (3) 120% to 125% of *normal voltage* for a period of at least 2.0 seconds after T(ov);
- (4) 115% to 120% of *normal voltage* for a period of at least 20.0 seconds after T(ov);
- (5) 110% to 115% of *normal voltage* for a period of at least 20 minutes after T(ov);
- (6) 90% to 110% of *normal voltage* continuously;
- (7) 80% to 90% of *normal voltage* for a period of at least 10 seconds after T(uv); and
- (8) 70% to 80% of *normal voltage* for a period of at least 2 seconds after T(uv),

where T(ov) means a point in time when the *voltage* at the *connection point* first varied above 110% of *normal voltage* before returning to between 90% and 110% of *normal voltage*, and T(uv) means a point in time when the *voltage* at the *connection point* first varied below 90% of *normal voltage* before returning to between 90% and 110% of *normal voltage*.

#### Minimum access standard

- (b) The *minimum access standard* is a *generating system* or integrated resource system including all operating *generating units* and operating integrated resource units must be capable of *continuous uninterrupted operation* where a *power system* disturbance causes the *voltage* at the *connection point* to vary within the following ranges:
  - (1) 115% to 120% of *normal voltage* for a period of at least 0.1 seconds after T(ov);
  - (2) 110% to 115% of *normal voltage* for a period of at least 0.9 seconds after T(ov);
  - (3) 90% to 110% of *normal voltage* continuously, provided that the ratio of *voltage* to *frequency* (as measured at the *connection point* and expressed as a percentage of *normal voltage* and a percentage of 50 Hz) does not exceed:
    - (i) a value of 1.15 for more than 2 minutes; or
    - (ii) a value of 1.10 for more than 10 minutes;
  - (4) 80% to 90% of *normal voltage* for a period of at least 5 seconds after T(uv); and
  - (5) 70% to 80% of *normal voltage* for a period of at least 2 seconds after T(uv),

where T(ov) means a point in time when the *voltage* at the *connection point* first varied above 110% of *normal voltage* before returning to between 90% and 110% of *normal voltage*, and T(uv) means a point in time when the *voltage* at the *connection point* first varied below 90% of *normal voltage* before returning to between 90% and 110% of *normal voltage*.

### Negotiated access standard

- (c) In negotiating a *negotiated access standard*, a generating system or integrated resource system and each of its operating generating units and operating integrated resource units must be capable of *continuous uninterrupted operation* for the range of voltages specified in the *automatic access standard*, except where AEMO and the Network Service Provider agree that the total change in the level of active power ~~reduction of generation~~ in the power system as a result of any voltage excursion within levels specified by the *automatic access standard* would not exceed 100 MW, or a greater limit based on what AEMO and the Network Service Provider both consider to be reasonable in the circumstances.
- (d) In carrying out assessments of proposed *negotiated access standards* under this clause S5.2.5.4, AEMO and the Network Service Provider must at a minimum, in addition to the requirements of clauses 5.3.4A(d1) and 5.3.4A(g) respectively, take into account:
  - (1) the expected performance of existing *networks* and *considered projects*; and
  - (2) the expected performance of existing *generating plant* and other relevant projects.
- (e) [Deleted]

### General requirement

- (f) The *access standard* must include any operational arrangements necessary to ensure the generating system or integrated resource system and each of its generating units and integrated resource units will meet its agreed performance levels under abnormal *network*<sub>2</sub> ~~or~~ generating system or integrated resource system conditions.

### S5.2.5.5 Generating system or integrated resource system response to disturbances following contingency events

- (a) In this clause S5.2.5.5 a fault includes a fault of the relevant type having a metallic conducting path.

### Automatic access standard

- (b) The *automatic access standard* is:
  - (1) for a generating system or integrated resource system and each of its generating units or integrated resource units, the requirements of paragraphs (c) and (d);
  - (2) for a generating system comprised solely of *synchronous generating units*, or an integrated resource system comprised solely of synchronous integrated resource units and (where applicable) synchronous generating units, the requirements of paragraph (e);
  - (3) for a generating system comprised solely of *asynchronous generating units*, or an integrated resource system comprised solely of asynchronous integrated resource units and (where applicable)

asynchronous generating units, the requirements of paragraphs (f) to (i); and

- (4) for a generating system or integrated resource system comprised of synchronous generating units or synchronous integrated resource units and asynchronous generating units or asynchronous integrated resource units:
  - (i) for that part of the generating system or integrated resource system comprised of synchronous generating units or synchronous integrated resource units, the requirements of paragraph (e); and
  - (ii) for that part of the generating system or integrated resource system comprised of asynchronous generating units or asynchronous integrated resource units, the requirements of paragraphs (f) to (i).

**All generating systems and integrated resource systems**

- (c) A generating system or integrated resource system and each of its generating units and integrated resource units ~~A generating system and each of its generating units~~ must remain in continuous uninterrupted operation for any disturbance caused by:
    - (1) a credible contingency event;
    - (2) a three phase fault in a *transmission system* cleared by all relevant primary *protection systems*;
    - (3) a two phase to ground, phase to phase or phase to ground fault in a *transmission system* cleared in:
      - (i) the longest time expected to be taken for a relevant *breaker fail protection system* to clear the fault; or
      - (ii) if a *protection system* referred to in subparagraph (i) is not installed, the greater of the time specified in column 4 of Table S5.1a.2 (or if none is specified, 430 milliseconds) and the longest time expected to be taken for all relevant primary *protection systems* to clear the fault; or
    - (4) a three phase, two phase to ground, phase to phase or phase to ground fault in a *distribution network* cleared in:
      - (i) the longest time expected to be taken for the *breaker fail protection system* to clear the fault; or
      - (ii) if a *protection system* referred to in subparagraph (i) is not installed, the greater of 430 milliseconds and the longest time expected to be taken for all relevant primary *protection systems* to clear the fault,
- provided that the event is not one that would *disconnect* the *generating unit or integrated resource unit* from the *power system* by removing *network elements* from service.



- (d) A *generating system* or integrated resource system and each of its *generating units* or integrated resource units must remain in *continuous uninterrupted operation* for a series of up to 15 disturbances within any five minute period caused by any combination of the events described in paragraph (c) where:
- (1) up to six of the disturbances cause the *voltage* at the *connection point* to drop below 50% of *normal voltage*;
  - (2) in parts of the *network* where three-phase automatic reclosure is permitted, up to two of the disturbances are three phase faults, and otherwise, up to one three phase fault where *voltage* at the *connection point* drops below 50% of *normal voltage*;
  - (3) up to one disturbance is cleared by a *breaker fail protection system* or similar back-up *protection system*;
  - (4) up to one disturbance causes the *voltage* at the *connection point* to vary within the ranges under clause S5.2.5.4(a)(7) and (a)(8);
  - (5) the minimum clearance from the end of one disturbance and commencement of the next disturbance may be zero milliseconds; and
  - (6) all remaining disturbances are caused by faults other than three phase faults,
- provided that none of the events would result in:
- (7) the islanding of the *generating system* or integrated resource system or cause a material reduction in *power transfer capability* by removing *network elements* from service;
  - (8) the cumulative time that *voltage* at the *connection point* is lower than 90% of *normal voltage* exceeding 1,800 milliseconds within any five minute period; or
  - (9) the time integral, within any five minute period, of the difference between 90% of *normal voltage* and the *voltage* at the *connection point* when the *voltage* at the *connection point* is lower than 90% of *normal voltage* exceeding 1 pu second.

**Synchronous generating systems and synchronous integrated resource systems**~~Synchronous generating systems~~

- (e) Subject to any changed *power system* conditions or energy source availability beyond the *Generator's* or Integrated Resource Provider's reasonable control, a *generating system* comprised of *synchronous generating units* or an integrated resource system comprised of synchronous integrated resource units and (where applicable) synchronous generating units, in respect of the types of fault described in subparagraphs (c)(2) to (4), must supply to or absorb from the *network*:
- (1) to assist the maintenance of *power system voltages* during the fault, capacitive reactive current of at least the greater of its pre-disturbance reactive current and 4% of the maximum continuous current of the *generating system* or integrated resource system including all operating *synchronous generating units* and synchronous integrated resource units (in the absence of a disturbance) for each 1% reduction (from the

level existing just prior to the fault) of *connection point voltage* during the fault;

- (2) after clearance of the fault, *reactive power* sufficient to ensure that the *connection point voltage* is within the range for *continuous uninterrupted operation* under clause S5.2.5.4; and
- (3) from 100 milliseconds after clearance of the fault, *active power* of at least 95% of the level existing just prior to the fault.

**Asynchronous generating systems and synchronous integrated resource systems**  
**Asynchronous generating systems**

- (f) Subject to any changed *power system* conditions or energy source availability beyond the *Generator's* or *Integrated Resource Provider's* reasonable control, a *generating system* comprised of *asynchronous generating units* or *an integrated resource system comprised of synchronous integrated resource units and (where applicable) synchronous generating units*, in respect of the types of fault described in subparagraphs (c)(2) to (4), must have *facilities* capable of supplying to or absorbing from the *network*:

- (1) to assist the maintenance of *power system voltages* during the fault:
  - (i) capacitive reactive current in addition to its pre-disturbance level of at least 4% of the maximum continuous current of the *generating system* or *integrated resource system* including all operating *asynchronous generating units* and all operating *asynchronous integrated resource units* (in the absence of a disturbance) for each 1% reduction of *voltage* at the *connection point* below the relevant range in which a reactive current response must commence, as identified in subparagraph (g)(1), with the *performance standards* to record the required response agreed with *AEMO* and the *Network Service Provider*; and
  - (ii) inductive reactive current in addition to its pre-disturbance level of at least 6% of the maximum continuous current of the *generating system* or *integrated resource system* including all operating *asynchronous generating units* and all operating *asynchronous integrated resource units* (in the absence of a disturbance) for each 1% increase of *voltage* at the *connection point* above the relevant range in which a reactive current response must commence, as identified in subparagraph (g)(1), with the *performance standards* to record the required response agreed with *AEMO* and the *Network Service Provider*,

during the disturbance and maintained until *connection point voltage* recovers to between 90% and 110% of *normal voltage*, or such other range agreed with the *Network Service Provider* and *AEMO*, except for *voltages* below the relevant threshold identified in paragraph (h); and

- (2) from 100 milliseconds after clearance of the fault, *active power* of at least 95% of the level existing just prior to the fault.
- (g) For the purpose of paragraph (f):

- (1) the *generating system* or integrated resource system must commence a response when the *voltage* is in an under-voltage range of 85% to 90% or an over-voltage range of 110% to 115% of *normal voltage*. These ranges may be varied with the agreement of the *Network Service Provider* and *AEMO* (provided the magnitude of the range between the upper and lower bounds remains at  $\Delta 5\%$ ); and
  - (2) the reactive current response must have a *rise time* of no greater than 40 milliseconds and a *settling time* of no greater than 70 milliseconds and must be *adequately damped*.
- (h) Despite paragraph (f), a *generating system* or integrated resource system is not required to provide a capacitive reactive current response in accordance with subparagraph (f)(1)(i) where:
- (1) the *generating system* or integrated resource system is directly connected to the *power system* with no step-up or connection transformer; and
  - (2) *voltage* at the connection point is 5% or lower of *normal voltage*.
- (i) Subject to paragraph (h), despite the amount of reactive current injected or absorbed during *voltage* disturbances, and subject to thermal limitations and energy source availability, a *generating system* and integrated resource system must make available at all times:
- (1) sufficient current to maintain rated apparent power of the *generating system* or integrated resource system including all operating *generating units* and all operating integrated resource units (in the absence of a disturbance), for all *connection point voltages* above 115% (or otherwise, above the over-voltage range agreed in accordance with subparagraph (g)(1)); and
  - (2) the maximum continuous current of the *generating system* or integrated resource system including all operating *generating units* and all operating integrated resource units (in the absence of a disturbance) for all *connection point voltages* below 85% (or otherwise, below the under-voltage range agreed in accordance with subparagraph (g)(1)),
- except that *AEMO* and the *Network Service Provider* may agree limits on active current injection where required to maintain *power system security* and/or the quality of *supply* to other *Network Users*.

#### Minimum access standard

- (j) The *minimum access standard* is:
- (1) for a *generating system* or integrated resource system and each of its *generating units* and integrated resource units, the requirements of paragraphs (k) and (l);
  - (2) for a *generating system* comprised solely of *synchronous generating units*, or an integrated resource system comprised solely of synchronous integrated resource units and (where applicable) synchronous generating units, the requirements of paragraph (m);

- (3) for a *generating system* comprised solely of *asynchronous generating units*, or an integrated resource system comprised solely of asynchronous integrated resource units and (where applicable) asynchronous generating units, the requirements of paragraphs (n) to (p); and
- (4) for a *generating system* or integrated resource system comprised of *synchronous generating units* or synchronous integrated resource units and *asynchronous generating units* or asynchronous generating units:
  - (i) for that part of the *generating system* or integrated resource system comprised of *synchronous generating units* or synchronous integrated resource units, the requirements of paragraph (m); and
  - (ii) for that part of the *generating system* or integrated resource system comprised of *asynchronous generating units* or asynchronous integrated resource units, the requirements of paragraphs (n) to (p).

**All generating systems and integrated resource systems**

- (k) A generating system or integrated resource system and each of its generating units and integrated resource units ~~A generating system and each of its generating units~~ must remain in continuous uninterrupted operation for any disturbance caused by:

- (1) a credible contingency event; or
- (2) a single phase to ground, phase to phase or two phase to ground fault in a *transmission system* or *distribution network* cleared in the longest time expected to be taken for all relevant primary *protection systems* to clear the fault, unless *AEMO* and the *Network Service Provider* agree that the total impact on reduction of generation in the *power system* due to that fault would not exceed 100 MW, or a greater limit based on what *AEMO* and the *Network Service Provider* both consider to be reasonable in the circumstances,

provided that the event is not one that would *disconnect* the *generating unit* or integrated resource unit from the *power system* by removing *network elements* from service.

- (l) A generating system or integrated resource system and each of its generating units and integrated resource units ~~A generating system and each of its generating units~~ must remain in continuous uninterrupted operation for a series of up to six disturbances within any five minute period caused by any combination of the events described in paragraph (k) where:
  - (1) up to three of the disturbances cause the *voltage* at the *connection point* to drop below 50% of *normal voltage*;
  - (2) up to one disturbance causes the *voltage* at the *connection point* to vary within the ranges agreed by *AEMO* and the *Network Service Provider* under clause S5.2.5.4(a)(7), (a)(8), (b)(4) or (b)(5) (as appropriate);
  - (3) the time difference between the clearance of one disturbance and commencement of the next disturbance exceeds 200 milliseconds;

- (4) no more than three of the disturbances occur within 30 seconds; and
- (5) all disturbances are caused by faults other than three phase faults, provided that none of the events would result in:
  - (6) the islanding of the *generating system* or integrated resource system or cause a material reduction in *power transfer capability* by removing *network elements* from service;
  - (7) the cumulative time that *voltage* at the *connection point* is lower than 90% of *normal voltage* exceeding 1,000 milliseconds within any five minute period; or
  - (8) the time integral, within any five minute period, of the difference between 90% of *normal voltage* and the *voltage* at the *connection point* when the *voltage* at the *connection point* is lower than 90% of *normal voltage* exceeding 0.5 pu second,

and there is a minimum of 30 minutes where no disturbances occur following a five minute period of multiple disturbances.

**Synchronous generating systems and synchronous integrated resource systems**

- (m) Subject to any changed *power system* conditions or energy source availability beyond the *Generator's* or Integrated Resource Provider's reasonable control after clearance of the fault, a *generating system* comprised of *synchronous generating units* or an integrated resource system comprised of synchronous integrated resource units and (where applicable) *synchronous generating units*, in respect of the types of fault described in subparagraph (k)(2) must:
  - (1) deliver *active power* to the *network*, and supply or absorb leading or lagging *reactive power*, sufficient to ensure that the *connection point voltage* is within the range for *continuous uninterrupted operation* agreed under clause S5.2.5.4; and
  - (2) return to at least 95% of the pre-fault *active power* level~~output~~, after clearance of the fault, within a period of time agreed by the *Connection Applicant*, *AEMO* and the *Network Service Provider*.

**Asynchronous generating systems and asynchronous integrated resource systems**

- (n) Subject to any changed *power system* conditions or energy source availability beyond the *Generator's* reasonable control, a *generating system* comprised of *asynchronous generating units* or an integrated resource system comprised of asynchronous integrated resource units and (where applicable) *asynchronous generating units* must:
  - (1) for the types of fault described in subparagraph (k)(2), and to assist the maintenance of *power system voltages* during the fault, have *facilities* capable of supplying to or absorbing from the *network*:
    - (i) capacitive reactive current in addition to its pre-disturbance level of at least 2% of the maximum continuous current of the *generating system* or integrated resource system including all operating *asynchronous generating units* or asynchronous



*integrated resource units* (in the absence of a disturbance) for each 1% reduction of *voltage* at the *connection point* below the relevant range in which a reactive current response must commence, as identified in paragraph (o)(1), with the *performance standards* to record the required response agreed with AEMO and the Network Service Provider; and

- (ii) inductive reactive current in addition to its pre-disturbance level of at least 2% of the maximum continuous current of the *generating system or integrated resource system* including all operating *asynchronous generating units and all operating asynchronous integrated resource units* (in the absence of a disturbance) for each 1% increase of *voltage* at the *connection point* above the relevant range in which a reactive current response must commence, as identified in paragraph (o)(1), with the *performance standards* to record the required response agreed with AEMO and the Network Service Provider,

during the disturbance and maintained until *connection point voltage* recovers to between 90% and 110% of *normal voltage*, or such other range agreed with the Network Service Provider and AEMO, except for *voltages* below the relevant threshold identified in paragraph (p); and

- (2) return to at least 95% of the pre-fault *active power level*~~output~~, after clearance of the fault, within a period of time agreed by the *Connection Applicant*, AEMO and the Network Service Provider.

- (o) For the purpose of paragraph (n):

- (1) the *generating system or integrated resource system* must commence a response when the *voltage* is in an under-voltage range of 80% to 90% or an over-voltage range of 110% to 120% of *normal voltage*. These ranges may be varied with the agreement of the Network Service Provider and AEMO (provided the magnitude of the range between the upper and lower bounds remains at  $\Delta 10\%$ );
- (2) where AEMO and the Network Service Provider require the *generating system or integrated resource system* to sustain a response duration of 2 seconds or less, the reactive current response must have a *rise time* of no greater than 40 milliseconds and a *settling time* of no greater than 70 milliseconds and must be *adequately damped*; and
- (3) where AEMO and the Network Service Provider require the *generating system or integrated resource system* ~~generating system~~ to sustain a response duration of greater than 2 seconds, the reactive current *rise time* and *settling time* must be as soon as practicable and must be *adequately damped*.

- (p) Despite paragraph (n), a *generating system or integrated resource system* is not required to provide a capacitive reactive current response in accordance with subparagraph (n)(1)(i) where:

- (1) *voltage* at the *connection point* is 15% or lower of *normal voltage*; or
- (2) where the *generating system or integrated resource system* is directly connected to the power system with no step-up or connection



*transformer, voltage at the connection point is 20% or lower of normal voltage.*

#### **Negotiated access standard**

- (q) In carrying out assessments of proposed *negotiated access standards* under this clause S5.2.5.5, the *Network Service Provider* and *AEMO* must take into account, without limitation:
- (1) the expected performance of:
    - (i) existing *networks* and *considered projects*;
    - (ii) existing *generating plant* and other relevant projects; and
    - (iii) *control systems* and *protection systems*, including auxiliary systems and *automatic reclose equipment*; and
  - (2) the expected range of *power system* operating conditions.
- (r) A proposed *negotiated access standard* may be accepted if the *connection* of the *plant* at the proposed access level would not cause other *plant generating plant or loads* to trip as a result of an event, when they would otherwise not have tripped for the same event.

#### **General requirement**

##### **All generating systems and integrated resource systems**

- (s) The *performance standard* must include any operational arrangements to ensure the *generating system or integrated resource system* including all operating *generating units and all operating integrated resource units* will meet its agreed performance levels under abnormal *network, or generating system or integrated resource system* conditions.
- (t) When assessing multiple disturbances, a fault that is re-established following operation of *automatic reclose equipment* shall be counted as a separate disturbance.

##### **Asynchronous generating systems or integrated resource systems**

- (u) For the purpose of paragraphs (f) and (n):
- (1) the reactive current contribution may be limited to the maximum continuous current of a *generating system or integrated resource system*, including its operating *asynchronous generating units and operating asynchronous integrated resource units*;
  - (2) the reactive current contribution and *voltage* deviation described may be measured at a location other than the *connection point* (including within the relevant *generating system or integrated resource system*) where agreed with *AEMO* and the *Network Service Provider*, in which case the level of injection and absorption will be assessed at that agreed location;
  - (3) the reactive current contribution required may be calculated using phase to phase, phase to ground or sequence components of *voltages*. The ratio of the negative sequence to positive sequence components of the reactive current contribution must be agreed with *AEMO* and the

*Network Service Provider* for the types of disturbances listed in this clause S5.2.5.5; and

- (4) the *performance standards* must record all conditions (which may include temperature) considered relevant by *AEMO* and the *Network Service Provider* under which the reactive current response is required.

#### **Synchronous generating systems ~~and units~~ and synchronous integrated resource systems**

- (v) For a *generating system* or integrated resource system comprised solely of *synchronous generating units* or synchronous integrated resource units and (where applicable) synchronous generating units, the reactive current contribution may be limited to 250% of the maximum continuous current of the *generating system* or integrated resource system.
- (w) For a *synchronous generating unit* within a *generating system* or integrated resource system or a *synchronous integrated resource unit* within an integrated resource system (other than a *generating system* or integrated resource system described in paragraph (v)), the reactive current contribution may be limited to 250% of the maximum continuous current of that *synchronous generating unit* or synchronous integrated resource unit.

### **S5.2.5.6 Quality of electricity generated and continuous uninterrupted operation**

#### **Minimum access standard**

The *minimum access standard* is a *generating system* and an integrated resource system including each of its operating *generating units* and operating integrated resource units and *reactive plant*, must not *disconnect* from the *power system* as a result of *voltage* fluctuation, *harmonic voltage* distortion and *voltage* unbalance conditions at the *connection point* within the levels specified in clauses S5.1a.5, S5.1a.6 and S5.1a.7.

### **S5.2.5.7 Partial load rejection**

- (a) For the purposes of this clause S5.2.5.7 **minimum generation** means *minimum sent out generation* for continuous stable operation.
- (b) [Deleted]

#### **Automatic access standard**

- (c) The *automatic access standard* is a *generating system* or an integrated resource system must be capable of *continuous uninterrupted operation* during and following a *power system load* reduction of 30% from its pre-disturbance level or equivalent impact from separation of part of the *power system* in less than 10 seconds, provided that the *loading level* remains above minimum generation.

#### **Minimum access standard**

- (d) The *minimum access standard* is a *generating system* or an integrated resource system must be capable of *continuous uninterrupted operation* during and following a *power system load* reduction of 5% or equivalent

impact from separation of part of the *power system* in less than 10 seconds provided that the *loading level* remains above minimum generation.

**[Deleted]**

- (e) **[Deleted]**
- (f) **[Deleted]**

**General requirements**

- (g) The agreed partial load rejection performance must be recorded in the *performance standards*.

**S5.2.5.8 Protection of generating systems and integrated resource systems from power system disturbances**

**Minimum access standard**

- (a) The *minimum access standard* is:
  - (1) subject to subparagraph (2) and paragraph (e), for a *generating system or integrated resource system* or any of its *generating units or integrated resource units* that is required by a *Generator, Integrated Resource Provider* or *Network Service Provider* to be automatically disconnected from the *power system* in response to abnormal conditions arising from the *power system*, the relevant *protection system* or *control system* must not disconnect the *generating system or integrated resource system* for:
    - (i) conditions for which it must remain in *continuous uninterrupted operation*; or
    - (ii) conditions it must withstand under the *Rules*; and
  - (2) a *generating system* with a *nameplate rating* of 30MW or more, or *generating system* comprised of *generating units* with a combined *nameplate rating* of 30 MW or more, an integrated resource system with a nameplate rating of 5MW or more, or an integrated resource system comprised of plant with a combined nameplate rating of 5 MW or more, connected to a *transmission system* must have facilities to automatically and rapidly reduce its *generation*:
    - (i) by at least half, if the *frequency* at the *connection point* exceeds a level nominated by *AEMO* (not less than the upper limit of the *operational frequency tolerance band*) and the duration above this *frequency* exceeds a value nominated by *AEMO* where the reduction may be achieved:
      - (A) by reducing the output of the *generating system or integrated resource system* within 3 seconds, and holding the output at the reduced level until the *frequency* returns to within the *normal operating frequency band*; or
      - (B) by disconnecting the *generating system or integrated resource system* from the *power system* within 1 second; or

- (ii) in proportion to the difference between the *frequency* at the *connection point* and a level nominated by AEMO (not less than the upper limit of the *operational frequency tolerance band*), such that the *generation* is reduced by at least half, within 3 seconds of the *frequency* reaching the upper limit of the *extreme frequency excursion tolerance limits*.

**[Deleted]**

- (b) **[Deleted]**

**General requirements**

- (c) AEMO or the *Network Service Provider* may require that an *access standard* include a requirement for the *generating system* or *integrated resource system* to be automatically *disconnected* by a local or remote control scheme whenever the part of the *network* to which it is *connected* has been *disconnected* from the *national grid*, forming an island for supply to load~~that supplies a Customer~~.
- (d) The *access standard* must include specification of conditions for which the *generating unit*~~, or~~ *generating system*, *integrated resource unit* or *integrated resource system* must trip and must not trip.
- (e) Notwithstanding clauses S5.2.5.3, S5.2.5.4, S5.2.5.5, S5.2.5.6 and S5.2.5.7, a *generating system* or *integrated resource system* may be automatically *disconnected* from the *power system* under any of the following conditions:
  - (1) in accordance with an *ancillary services agreement* between the *Generator* or *Integrated Resource Provider* and AEMO;
  - (2) where a *load* that is not part of the *generating system* or *integrated resource system* has the same *connection point* as the *generating system* or *integrated resource system* and AEMO and the *Network Service Provider* agree that the *disconnection* would in effect be under-frequency *load shedding*;
  - (3) where the *generating system* or *integrated resource system* is automatically *disconnected* under paragraph (a), clause S5.2.5.9 or by an *emergency frequency control scheme*;
  - (4) where the *generating system* or *integrated resource system* is automatically *disconnected* under clause S5.2.5.10; or
  - (5) in accordance with an agreement between the *Generator* or *Integrated Resource Provider* and a *Network Service Provider* (including an agreement in relation to an emergency control scheme under clause S5.1.8) to provide a service that AEMO agrees is necessary to maintain or restore *power system security* in the event of a specified *contingency event*.
- (f) The *Network Service Provider* is not liable for any loss or damage incurred by the *Generator* or *Integrated Resource Provider* or any other person as a consequence of a fault on either the *power system*, or within the *Generator's* or *Integrated Resource Provider's* *facility*.

### S5.2.5.9 Protection systems that impact on power system security

#### Automatic access standard

- (a) The *automatic access standard* is:
- (1) subject to clauses S5.1.9(k) and S5.1.9(l), primary *protection systems* must be provided to *disconnect* from the *power system* any faulted element in a *generating system* or integrated resource system and in protection zones that include the *connection point* within the applicable *fault clearance time* determined under clause S5.1.9(a)(1);
  - (2) each primary *protection system* must have sufficient redundancy to ensure that a faulted element within its protection zone is *disconnected* from the *power system* within the applicable *fault clearance time* with any single protection element (including any communications *facility* upon which that *protection system* depends) out of service; and
  - (3) *breaker fail protection systems* must be provided to clear faults that are not cleared by the circuit breakers controlled by the primary *protection system* within the applicable *fault clearance time* determined under clause S5.1.9(a)(1).
- (b) In relation to an *automatic access standard* under this clause S5.2.5.9, the *Generator* or Integrated Resource Provider must provide redundancy in the primary *protection systems* under paragraph (a)(2) and provide *breaker fail protection systems* under paragraph (a)(3) if AEMO or the *Network Service Provider* consider that a lack of these *facilities* could result in:
- (1) a material adverse impact on *power system security* or quality of supply to other *Network Users*; or
  - (2) a reduction in *inter-regional* or *intra-regional* power transfer capability,
- through any mechanism including:
- (3) consequential tripping of, or damage to, other *network equipment* or *facilities* of other *Network Users*, that would have a *power system security* impact; or
  - (4) instability that would not be detected by other *protection systems* in the *network*.

#### Minimum access standard

- (c) The *minimum access standard* is:
- (1) subject to clauses S5.1.9(k) and S5.1.9(l), *protection systems* must be provided to *disconnect* from the *power system* any faulted element within a *generating system* or integrated resource system and in protection zones that include the *connection point* within the applicable *fault clearance time* determined under clause S5.1.9(a)(2); and
  - (2) if a *fault clearance time* determined under clause S5.1.9(a)(2) for a protection zone is less than 10 seconds, a *breaker fail protection system* must be provided to clear from the *power system* any fault within that protection zone that is not cleared by the circuit breakers controlled by



the primary *protection system* within the applicable *fault clearance time* determined under clause S5.1.9(a)(3).

**[Deleted]**

(d) **[Deleted]**

#### **General requirements**

(e) The *Network Service Provider* and the *Generator* or *Integrated Resource Provider* must cooperate in the design and implementation of *protection systems* to comply with this clause S5.2.5.9, including cooperation on:

- (1) the use of *current transformer* and *voltage transformer* secondary circuits (or equivalent) of one party by the *protection system* of the other;
- (2) tripping of one party's circuit breakers by a *protection system* of the other party; and
- (3) co-ordination of *protection system* settings to ensure inter-operation.

(f) The *protection system* design referred to in paragraphs (a) and (c) must:

- (1) be coordinated with other *protection systems*;
- (2) avoid consequential *disconnection* of other *Network Users' facilities*; and
- (3) take into account existing obligations of the *Network Service Provider* under *connection agreements* with other *Network Users*.

### **S5.2.5.10 Protection to trip plant for unstable operation**

#### **Automatic access standard**

(a) The *automatic access standard* is a *generating system* and an *integrated resource system* must have:

- (1) for its *synchronous generating units* or *synchronous integrated resource units*, a *protection system* to *disconnect* it promptly when a condition that would lead to pole slipping is detected, to prevent pole slipping or other conditions where a *generating unit* or *integrated resource unit* causes *active power*, *reactive power* or *voltage* at the *connection point* to become unstable as assessed in accordance with the *power system stability* guidelines established under clause 4.3.4(h); and
- (2) for its *asynchronous generating units* or *asynchronous integrated resource units*, a *protection system* to *disconnect* it promptly for conditions where the *active power*, *reactive power* or *voltage* at the *connection point* becomes unstable as assessed in accordance with the guidelines for *power system stability* established under clause 4.3.4(h).

#### **Minimum access standard**

(b) The *minimum access standard* is a *generating system* and an *integrated resource system* must not cause a *voltage* disturbance at the *connection point* due to sustained unstable behaviour of more than the maximum level specified in Table 7 of *Australian Standard AS/NZS 61000.3.7:2001*.



### Negotiated access standard

- (c) If the *Network Service Provider* and the *Generator* agree, a *protection system* may also trip any other part of the *generating system* or integrated resource system to cease the instability.
- (d) Notwithstanding paragraph (c), a *protection system* must be provided in the *access standard* to trip the affected *generating unit* or integrated resource unit where:
  - (1) the *Network Service Provider* considers it necessary to prevent consequential tripping of, or damage to, other *generating units*, integrated resource units, *network* equipment or other *Network Users' facilities*, or
  - (2) *AEMO* considers it necessary to prevent unstable operation having an adverse impact on *power system security*.

### S5.2.5.11 Frequency control

- (a) For the purpose of this clause S5.2.5.11:

**droop** means, in relation to *frequency response mode*, the percentage change in *power system frequency* as measured at the *connection point*, divided by the percentage change in *power transfer* of the *generating system* or integrated resource system expressed as a percentage of the maximum operating level of the *generating system* or integrated resource system. Droop must be measured at *frequencies* that are outside the deadband and within the limits of *power transfer*.

**maximum operating level** means in relation to:

- (1) a *non-scheduled generating unit* or non-scheduled integrated resource unit, the maximum *sent out generation* consistent with its *nameplate rating*;
- (2) a *scheduled generating unit*, scheduled integrated resource unit or *semi-scheduled generating unit*, the maximum *generation* to which it may be *dispatched* and as provided to *AEMO* in the most recent bid validation data ~~bid and offer validation data~~;
- (3) a *non-scheduled generating system* or non-scheduled integrated resource system, the combined maximum *sent out generation* consistent with the *nameplate ratings* of its *in-service generating units* and integrated resource units (if any); ~~and~~
- (4) a *scheduled generating system* or *semi-scheduled generating system*, the combined maximum *generation* to which its *in-service generating units* may be *dispatched* and as provided to *AEMO* in the most recent bid validation data; ~~and bid and offer validation data~~;
- (5) a scheduled integrated resource system, the combined maximum sent out generation to which its in-service integrated resource units and in-service generating units may be dispatched and as provided to AEMO in the most recent bid validation data.

**minimum operating level** means in relation to:

- (1) a *non-scheduled generating unit*, its minimum *sent out generation* for continuous stable operation;
- (2) a *scheduled generating unit* or *semi-scheduled generating unit*, its minimum *sent out generation* for continuous stable operation;
- (2A) a *scheduled integrated resource unit* or *non-scheduled integrated resource unit*, its minimum *active power level* for continuous stable operation;
- (3) a *non-scheduled generating system*, the combined *minimum operating level* of its in-service *generating units*; ~~and~~
- (4) a *scheduled generating system* or *semi-scheduled generating system*, the combined minimum *sent out generation* of its in-service *generating units*; ~~and~~
- (5) a *scheduled integrated resource system* or a *non-scheduled integrated resource system* the combined minimum operating level of its in-service *integrated resource units* and in-service *generating units*.

#### Automatic access standard

(b) The *automatic access standard* is:

- (1) a *generating system's* *or integrated resource system's* power transfer to the *power system* must not:
  - (i) increase in response to a rise in the *frequency* of the *power system* as measured at the *connection point*; or
  - (ii) decrease in response to a fall in the *frequency* of the *power system* as measured at the *connection point*; ~~and~~
- (2) a *generating system* must be capable of operating in *frequency response mode* such that it automatically provides a proportional:
  - (i) decrease in *power transfer* to the *power system* in response to a rise in the *frequency* of the *power system* as measured at the *connection point*; and
  - (ii) increase in *power transfer* to the *power system* in response to a fall in the *frequency* of the *power system* as measured at the *connection point*,

sufficiently rapidly and sustained for a sufficient period for the *Generator* *or Integrated Resource Provider (as relevant)* to be in a position to offer measurable amounts of all *market ancillary services* for the provision of *power system frequency control*; ~~and~~

- (3) an *integrated resource system* must be capable of operating in *frequency response mode* such that it automatically provides a proportional:
  - (i) decrease in *power transfer* to the *power system*, with a continuous shift from one to the other mode, in response to a rise in the *frequency* of the *power system* as measured at the *connection point* accompanied by a smooth change in *integrated resource unit operating mode* between *generation* and *load*; and

(ii) increase in power transfer to the power system in response to a fall in the frequency of the power system as measured at the connection point accompanied by a smooth change in integrated resource unit operating mode between generation and load,

sufficiently rapidly and sustained for a sufficient period for the Integrated Resource Provider (as relevant) to be in a position to offer measurable amounts of all market ancillary services for the provision of power system frequency control.

**Note**

Clause 4.4.2(b) of the Rules sets out the obligations on *Generators* and Integrated Resource Providers in relation to compliance with the technical requirements in clause S5.2.5.11, including being capable of operating in *frequency response mode*. Clause 4.4.2(c1) of the Rules sets out the obligations on *Scheduled* and *Semi-Scheduled Generators* and Scheduled Integrated Resource Providers in relation to the operation of their generating systems in accordance with the *Primary Frequency Response Requirements*.

**Minimum access standard**

(c) The *minimum access standard* is:

- (1) for a *generating system* or integrated resource system under relatively stable input energy, *power transfer to the power system* must not:
  - (i) increase in response to a rise in the *frequency* of the *power system* as measured at the *connection point*; and
  - (ii) decrease more than 2% per Hz in response to a fall in the *frequency* of the *power system* as measured at the *connection point*; ~~and~~
- (2) a *generating system* must be capable of operating in *frequency response mode* such that, subject to energy source availability, it automatically provides:
  - (i) a decrease in *power transfer to the power system* in response to a rise in the *frequency* of the *power system* as measured at the *connection point*; or
  - (ii) an increase in *power transfer to the power system* in response to a fall in the *frequency* of the *power system* as measured at the *connection point*,

where the change in *active power* is either proportional or otherwise as agreed with AEMO and the *Network Service Provider*; ~~and~~

- (3) an integrated resource system must be capable of operating in frequency response mode such that, subject to energy source availability, it automatically provides:
  - (i) a decrease in power transfer to the power system, in response to a rise in the frequency of the power system as measured at the connection point; and
  - (ii) increase in power transfer to the power system in response to a fall in the frequency of the power system as measured at the connection point,

where the change in active power is either proportional or otherwise as agreed with AEMO and the Network Service Provider.

**Note**

Clause 4.4.2(b) of the *Rules* sets out the obligations on *Generators and Integrated Resource Providers* in relation to compliance with the technical requirements in clause S5.2.5.11, including being capable of operating in *frequency response mode*. Clause 4.4.2(c1) of the *Rules* sets out the obligations on *Scheduled and Semi-Scheduled Generators and Scheduled Integrated Resource Providers* in relation to the operation of their *generating systems and integrated resource systems* in accordance with the *Primary Frequency Response Requirements*.

**[Deleted]**

(d) **[Deleted]**

(e) **[Deleted]**

(f) **[Deleted]**

**General requirements**

- (g) Each *control system* used to satisfy this clause S5.2.5.11 must be *adequately damped*.
- (h) The amount of a relevant *market ancillary service* for which the *plant* may be registered must not exceed the amount that would be consistent with the *performance standard* registered in respect of this requirement.
- (i) For the purposes of subparagraphs (b)(2) and (b)(3)~~subparagraph (b)(2)~~, and with respect to a *negotiated access standard* proposed for the technical requirements relevant to this clause S5.2.5.11:
  - (1) the change in *power transfer* to the *power system* must occur with no delay beyond that required for stable operation, or inherent in the *plant* controls, once the *frequency* of the *power system* as measured at the *connection point* leaves a deadband around 50 Hz;
  - (2) a *generating system* or integrated resource system must be capable of setting the deadband and droop within the following ranges:
    - (i) the deadband referred to in subparagraph (1) must be set within the range of 0 to  $\pm 1.0$  Hz. Different deadband settings may be applied for a rise or fall in the *frequency* of the *power system* as measured at the *connection point*; and
    - (ii) the droop must be set within the range of 2% to 10%, or such other settings as agreed with the *Network Service Provider* and *AEMO*;
  - (3) nothing in subparagraph (b)(2) or (b)(3) is taken to require a *generating system* or integrated resource system to operate below its minimum operating level in response to a rise in the *frequency* of the *power system* as measured at the *connection point*, or above its maximum operating level in response to a fall in the *frequency* of the *power system* as measured at the *connection point*;
  - (4) **[Deleted]**
  - (5) the *performance standards* must record:

- (i) agreed values for maximum operating level and minimum operating level, and where relevant the method of determining the values, and the values for:
  - (A) a generating system must take into account its in-service generating units; and
  - (B) an integrated resource system must take into account its in-service integrated resource units and in-service generating units; and
- (ii) for the purpose of subparagraphs (b)(2) and (b)(3), or a *negotiated access standard* offering measureable amounts of *market ancillary services* under this clause S5.2.5.11, the *market ancillary services*, including the performance parameters and requirements that apply to each such *market ancillary service*.

### S5.2.5.12 Impact on network capability

#### Automatic access standard

- (a) The *automatic access standard* is a *generating system* or integrated resource system must have *plant capabilities* and *control systems* that are sufficient so that when *connected* it does not reduce any *inter-regional* or *intra-regional power transfer capability* below the level that would apply if the *generating system* or integrated resource system were not *connected*.

#### Minimum access standard

- (b) The *minimum access standard* is a *generating system* or integrated resource system must have *plant capabilities*, *control systems* and operational arrangements sufficient to ensure there is no reduction in:
  - (1) the ability to supply to load ~~supply Customer load~~ as a result of a reduction in *power transfer capability*; and
  - (2) *power transfer capabilities* into a ~~region~~ region by more than:
    - (i) the combined sent out generation of its generating units and integrated resource units; or
    - (ii) the combined load at the connection point of its integrated resource units.

#### Negotiated access standard

- (c) In carrying out assessments of proposed *negotiated access standards* under this clause S5.2.5.12, the *Network Service Provider* and *AEMO* must take into account:
  - (1) the expected performance of:
    - (i) existing *networks* and *considered projects*;
    - (ii) existing *generating plant* and other relevant projects; and
    - (iii) *control systems* and *protection systems*, including *automatic reclose equipment*; and
  - (2) the expected range of *power system* operating conditions.

- (d) The *negotiated access standard* must include:
- (1) *control systems* to minimise any reduction in *power transfer capabilities*; and
  - (2) operational arrangements, including curtailment of the generating system's or integrated resource system's generation or load ~~the generating system's output~~ if necessary to ensure that the plant generating plant is operated in a way that meets at least the *minimum access standard* under abnormal *network*, ~~and~~ generating system and integrated resource system conditions, so that *power system security* can be maintained.
- (e) A *negotiated access standard* under this clause S5.2.5.12 must detail the *plant capabilities*, *control systems* and operational arrangements that will be maintained by the *Generator* or Integrated Resource Provider, notwithstanding that change to the *power system*, but not changes to the *generating system* or integrated resource system, may reduce the efficacy of the *plant capabilities*, *control systems* and operational arrangements over time.
- (f) **[Deleted]**

#### **General requirement**

- (g) If a *Network Service Provider* considers that *power transfer capabilities* of its *network* would be increased through provision of additional *control system facilities* to a *generating system* or integrated resource system (such as a *power system stabiliser*), the *Network Service Provider* and the *Generator* or Integrated Resource Provider (as the case may be) may negotiate for the provision of such additional *control system facilities* as a commercial arrangement.

#### **S5.2.5.13 Voltage and reactive power control**

- (a) **[Deleted]**  
**[Deleted]**

#### **Automatic access standard**

- (b) The *automatic access standard* is:
- (1) a *generating system* or integrated resource system must have *plant capabilities* and *control systems* sufficient to ensure that:
    - (i) *power system* oscillations, for the frequencies of oscillation of the generating unit or integrated resource unit against any other *generating unit* or integrated resource unit, are adequately damped;
    - (ii) operation of the *generating system* or integrated resource system does not degrade the damping of any critical mode of oscillation of the *power system*; and
    - (iii) operation of the *generating system* or integrated resource system does not cause instability (including hunting of *tap-changing*



*transformer control systems*) that would adversely impact other *Registered Participants*;

- (2) a *control system* must have:
  - (i) for the purposes of disturbance monitoring and testing, permanently installed and operational, monitoring and recording *facilities* for key variables including each input and output; and
  - (ii) *facilities* for testing the *control system* sufficient to establish its dynamic operational characteristics;
- (2A) a *generating system* or *integrated resource system* must have *facilities* with a *control system* to regulate *voltage*, *reactive power* and *power factor*, with the ability to:
  - (i) operate in any control mode; and
  - (ii) switch between control modes,as shown in the manufacturer's and/or design specifications of the relevant equipment and demonstrated to the reasonable satisfaction of the *Network Service Provider* and *AEMO*;
- (2B) a *generating system* or *integrated resource system* must have a *voltage control system* that:
  - (i) regulates *voltage* at the *connection point* or another agreed location in the *power system* (including within the *generating system* or *integrated resource system*) to within 0.5% of the setpoint, where that setpoint may be adjusted to incorporate any *voltage* droop or reactive current compensation agreed with *AEMO* and the *Network Service Provider*;
  - (ii) regulates *voltage* in a manner that helps to support *network voltages* during faults and does not prevent the *Network Service Provider* from achieving the requirements of clauses S5.1a.3 and S5.1a.4;
  - (iii) allows the *voltage* setpoint to be continuously controllable in the range of at least 95% to 105% of the target *voltage* (as determined by the *Network Service Provider* in accordance with clause S5.1.4(c) and recorded in the *connection agreement* in accordance with clause S5.1.4) at the *connection point* or agreed location on the *power system*, without reliance on a *tap-changing transformer* and subject to the *reactive power* capability agreed with *AEMO* and the *Network Service Provider* under clause S5.2.5.1; and
  - (iv) has limiting devices to ensure that a *voltage* disturbance does not cause a *generating unit* to trip at the limits of its operating capability;
- (3) a synchronous *generating system* or *synchronous integrated resource system* must have an *excitation control system* that:
  - (i) [Deleted]

- (ii) can operate the stator continuously at 105% of *nominal voltage* with *rated active power* output or *rated maximum demand*;
  - (iii) [Deleted]
  - (iv) [Deleted]
  - (v) [Deleted]
  - (vi) has an excitation ceiling *voltage* of at least:
    - (A) for a *static excitation system*, 2.3 times; or
    - (B) for other *excitation control systems*, 1.5 times,the excitation required to achieve transfer of power ~~generation~~ at the *nameplate rating* for *rated power factor*, *rated speed* and *nominal voltage*;
  - (vii) has settling *times* for a step change of *voltage* setpoint or *voltage* at the location agreed under subparagraph (2B)(i) of:
    - (A) generated *voltage* less than 2.5 seconds for a 5% *voltage* disturbance with the *generating unit* not synchronised;
    - (B) *active power*, *reactive power* and *voltage* less than 5.0 seconds for a 5% *voltage* disturbance with the *generating unit* synchronised, from an operating point where the *voltage* disturbance would not cause any limiting device to operate; and
    - (C) in respect of each limiting device, *active power*, *reactive power* and *voltage* less than 7.5 seconds for a 5% *voltage* disturbance with the *generating unit* or *integrated resource unit* synchronised, when operating into a limiting device from an operating point where a *voltage* disturbance of 2.5% would just cause the limiting device to operate;
  - (viii) can increase field *voltage* from *rated field voltage* to the excitation ceiling *voltage* in less than:
    - (A) 0.05 second for a *static excitation system*; or
    - (B) 0.5 second for other *excitation control systems*; and
  - (ix) has a *power system* stabiliser with sufficient flexibility to enable damping performance to be maximised, with characteristics as described in paragraph (c);
- (4) a *generating system* or *integrated resource system*, other than one comprised of *synchronous generating units* or *synchronous integrated resource units*, must have a *voltage control system* that:
- (i) [Deleted]
  - (ii) [Deleted]
  - (iii) [Deleted]
  - (iv) [Deleted]

- (v) with the *generating system or integrated resource system* connected to the *power system*, has settling times for *active power, reactive power* and *voltage* due to a step change of *voltage* setpoint or *voltage* at the location agreed under clause subparagraph (2B)(i), of less than:
  - (A) 5.0 seconds for a 5% *voltage* disturbance with the *generating system or integrated resource system* connected to the *power system*, from an operating point where the *voltage* disturbance would not cause any limiting device to operate; and
  - (B) 7.5 seconds for a 5% *voltage* disturbance with the *generating system or integrated resource system* connected to the *power system*, when operating into any limiting device from an operating point where a *voltage* disturbance of 2.5% would just cause the limiting device to operate;
- (vi) has *reactive power* rise time, for a 5% step change in the *voltage* setpoint, of less than 2 seconds; and
- (vii) has a power oscillation damping capability with sufficient flexibility to enable damping performance to be maximised:
  - (A) with characteristics as described in paragraph (c); or
  - (B) where AEMO has published characteristics for a *generating system or integrated resource system* other than ~~one a~~ *system* comprised of *synchronous generating units or synchronous integrated resource units*, following consultation in accordance with the *Rules consultation procedures*, with characteristics as published by AEMO.
- (c) A *power system* stabiliser provided under paragraph (b) must have:
  - (1) for a *synchronous generating unit or a synchronous integrated resource unit*, measurements of rotor speed and *active power level output* of the *generating unit or integrated resource unit* as inputs, and otherwise, measurements of *power system frequency* and *active power level output* of the *generating unit or integrated resource unit* as inputs;
  - (2) two washout filters for each input, with ability to bypass one of them if necessary;
  - (3) sufficient (and not less than two) lead-lag transfer function blocks (or equivalent number of complex poles and zeros) with adjustable gain and time-constants, to compensate fully for the phase lags due to the *generating plant*;
  - (4) an output limiter, which for a *synchronous generating unit or synchronous integrated resource unit* is continually adjustable over the range of -10% to +10% of *stator voltage*;
  - (5) monitoring and recording *facilities* for key variables including inputs, output and the inputs to the lead-lag transfer function blocks; and

- (6) *facilities* to permit testing of the *power system* stabiliser in isolation from the *power system* by injection of test signals, sufficient to establish the transfer function of the *power system* stabiliser.
- (c1) A *reactive power* or *power factor control system* provided under paragraph (b)(2A) must:
  - (1) regulate *reactive power* or *power factor* (as applicable) at the *connection point* or another agreed location in the *power system* (including within the *generating system* or integrated resource system), to within:
    - (i) for a *generating system* or integrated resource system operating in *reactive power* mode, 2% of the rating (in MVA) of the *generating system* or integrated resource system (expressed in MVar); or
    - (ii) for a *generating system* or integrated resource system operating in *power factor* mode, a *power factor* equivalent to 2% of the rating (in MVA) of the *generating system* or integrated resource system (expressed in MVar);
  - (2) allow the *reactive power* or *power factor* setpoint to be continuously controllable across the *reactive power* capability range established under clause S5.2.5.1; and
  - (3) with the *generating system* or integrated resource system connected to the *power system*, and for a step change in setpoint of at least 50% of the *reactive power* capability agreed with AEMO and the *Network Service Provider* under clause S5.2.5.1, or a 5% *voltage* disturbance at the location agreed under subparagraph (1):
    - (i) have *settling times* for *active power*, *reactive power* and *voltage* of less than 5.0 seconds from an operating point where the *voltage* disturbance would not cause any limiting device to operate; and
    - (ii) have *settling times* for *active power*, *reactive power* and *voltage* of less than 7.5 seconds when operating into any limiting device from an operating point where a *voltage* disturbance of 2.5% would just cause the limiting device to operate.

The *Network Service Provider* may determine whether to use a setpoint step test or a 5% *voltage* disturbance test for the purposes of this subparagraph (c1)(3).

#### Minimum access standard

- (d) The *minimum access standard* is:
  - (1) a *generating system* or integrated resource system must have *plant capabilities* and *control systems*, including, if appropriate, a *power system* stabiliser, sufficient to ensure that:
    - (i) *power system* oscillations, for the frequencies of oscillation of the *generating unit* or integrated resource unit against any other *generating unit* or integrated resource unit, are adequately damped;

- (ii) operation of the *generating unit* or integrated resource unit does not degrade:
    - (A) any mode of oscillation that is within 0.3 nepers per second of being unstable, by more than 0.01 nepers per second; and
    - (B) any other mode of oscillation to within 0.29 nepers per second of being unstable; and
  - (iii) operation of the *generating unit* or integrated resource unit does not cause instability (including hunting of *tap-changing transformer control systems*) that would adversely impact other *Registered Participants*;
- (1A) an integrated resource system comprised of integrated resource units or generating units with a combined nameplate rating of 5 MW or more must have facilities for testing its control systems sufficient to establish their dynamic operational characteristics;
- (2) a *generating system* comprised of *generating units* with a combined nameplate rating of 30 MW or more must have facilities for testing its control systems sufficient to establish their dynamic operational characteristics;
  - (2A) a *generating system* or integrated resource system must have facilities with a control system to regulate:
    - (i) voltage; or
    - (ii) either of reactive power or power factor with the agreement of AEMO and the Network Service Provider;
  - (2B) a voltage control system for a *generating system* or integrated resource system must:
    - (i) regulate voltage at the connection point or another agreed location in the power system (including within the *generating system* or integrated resource system), to within 2% of the setpoint, where that setpoint may be adjusted to incorporate any voltage droop or reactive current compensation agreed with AEMO and the Network Service Provider; and
    - (ii) allow the voltage setpoint to be controllable in the range of at least 98% to 102% of the target voltage (as determined by the Network Service Provider in accordance with clause S5.1.4(c) and recorded in the connection agreement in accordance with clause S5.1.4) at the connection point or the agreed location, subject to the reactive power capability agreed with AEMO and the Network Service Provider under clause S5.2.5.1;
  - (3) a *generating system's* or integrated resource system's reactive power or power factor control system must:
    - (i) regulate reactive power or power factor (as applicable) at the connection point or another agreed location in the power system (including within the *generating system* or integrated resource system), to within:

- (A) for a *generating system* or *integrated resource system* operating in *reactive power* mode, 5% of the rating (in MVA) of the *generating system* or *integrated resource system* (expressed in MVA<sub>r</sub>); or
  - (B) for a *generating system* or *integrated resource system* operating in *power factor* mode, a *power factor* equivalent to 5% of the rating (in MVA) of the *generating system* or *integrated resource system* (expressed in MVA<sub>r</sub>); and
- (ii) allow the *reactive power* or *power factor* setpoint to be continuously controllable across the *reactive power* capability range established under clause S5.2.5.1;
- (4) a *synchronous* ~~*synchronous*~~-*generating system* with a *nameplate* rating of 30 MW or more, or a *synchronous integrated resource system* with a *nameplate* rating of 5 MW or more, in either case with an *excitation control system* required to regulate *voltage* under subparagraph (d)(2A)(i) must:
  - (i) **[Deleted]**
  - (ii) have *excitation ceiling voltage* of at least 1.5 times the *excitation* required to achieve *transfer of power*~~*generation*~~ at the *nameplate rating* for rated *power factor*, rated speed and *nominal voltage*;
  - (iii) subject to co-ordination under paragraph (i), have a *settling time* of less than 7.5 seconds for a 5% *voltage* disturbance with the *generating unit* or *integrated resource unit* synchronised, from an operating point where such a *voltage* disturbance would not cause any limiting device to operate; and
  - (iv) have over and under *excitation* limiting devices sufficient to ensure that a *voltage* disturbance does not cause the *generating unit* or *integrated resource unit* to trip at the limits of its operating capability; ~~and~~
- (5) a *generating system* comprised of *asynchronous generating units* with a *nameplate* rating of 30 MW or more, with a *voltage control system* required to regulate *voltage* under subparagraph (d)(2A)(i) must:
  - (i) **[Deleted]**
  - (ii) subject to co-ordination under paragraph (i), have a *settling time* less than 7.5 seconds for a 5% *voltage* disturbance with the *generating unit* electrically connected to the *power system* from an operating point where such a *voltage* disturbance would not cause any limiting device to operate; and
  - (iii) have limiting devices to ensure that a *voltage* disturbance would not cause the *generating unit* to trip at the limits of its operating capability; ~~and~~
- (6) *an integrated resource system* comprised of *asynchronous integrated resource units* or *asynchronous generating units* with a *nameplate* rating of 5 MW or more, with a *voltage control system* required to regulate *voltage* under subparagraph (d)(2A)(i) must:



- (i) subject to co-ordination under paragraph (i), have a settling time less than 7.5 seconds for a 5% voltage disturbance with the integrated resource unit or generating unit electrically connected to the power system from an operating point where such a voltage disturbance would not cause any limiting device to operate; and
- (ii) have limiting devices to ensure that a voltage disturbance would not cause the integrated resource unit or generating unit to trip at the limits of its operating capability.

### **Negotiated access standard**

- (e) **[Deleted]**
- (f) The *negotiated access standard* proposed by the Generator or Integrated Resource Provider under clause 5.3.4A(b1) must be the highest level that the *generating system or integrated resource system* can reasonably achieve, including by installation of additional dynamic reactive power equipment, and through optimising its *control systems*.
- (g) **[Deleted]**

### **General requirements**

- (g1) For the purposes of subparagraph (b)(2A), the *Network Service Provider* and *AEMO* will nominate one or more control modes to be implemented when the *generating system or integrated resource system* is commissioned, and may require additional control modes to be commissioned after *connection* if the *Network Service Provider* or *AEMO* reasonably considers such additional modes to be necessary to ensure *power system security* or *quality of supply*. Where a *generating system or integrated resource system* has been commissioned for more than one control mode, the Generator or Integrated Resource Provider (as relevant), *Network Service Provider* and *AEMO* must agree on a procedure for switching between control modes. The initial operating mode, other available modes and the procedure for switching between modes must be recorded as part of the *performance standard*.
- (h) A limiting device provided under paragraphs (b) and (d) must:
  - (1) not detract from the performance of any power system stabiliser or power oscillation damping capability; and
  - (2) be co-ordinated with all *protection systems*.
- (i) The *Network Service Provider* may require that the design and operation of the *control systems* of a *generating unit or generating system or integrated resource unit or integrated resource system* be coordinated with the existing *voltage control systems* of the *Network Service Provider* and of other *Network Users*, in order to avoid or manage interactions that would adversely impact on the *Network Service Provider* and other *Network Users*.
- (j) Any requirements imposed by the *Network Service Provider* under paragraph (i) must be recorded in the *performance standard*.
- (k) The assessment of impact of the *generating units or integrated resource units* on *power system* stability and damping of *power system* oscillations shall be

in accordance with the guidelines for *power system* stability established under clause 4.3.4(h).

#### S5.2.5.14 Active power control

- (a) The *automatic access standard* is a *generating system* or integrated resource system must have an *active power control system* capable of:
  - (1) for a *scheduled generating unit*, ~~or a scheduled generating system,~~ scheduled integrated resource unit or scheduled integrated resource system:
    - (i) maintaining and changing its *active power* level ~~output~~ in accordance with its *dispatch instructions*;
    - (ii) ramping its *active power* level ~~output~~ linearly from one level of *dispatch* to another; and
    - (iii) receiving and automatically responding to signals delivered from the *AGC*, as updated at a rate of once every 4 seconds (or such other period specified by *AEMO* as required);
  - (2) subject to energy source availability, for a *non-scheduled generating unit*, ~~or non-scheduled generating system,~~ non-scheduled integrated resource unit or non-scheduled integrated resource system:
    - (i) automatically reducing or increasing its *active power* level ~~output~~ within 5 minutes, at a constant rate, to or below the level specified in an instruction electronically issued by a *control centre*, subject to subparagraph (iii);
    - (ii) automatically limiting its *active power* level ~~output~~, to below the level specified in subparagraph (i); and
    - (iii) not changing its *active power* level ~~output~~ within 5 minutes by more than the raise and lower amounts specified in an instruction electronically issued by a *control centre*; and
  - (3) subject to energy source availability, for a *semi-scheduled generating unit* or a *semi-scheduled generating system*:
    - (i) automatically reducing or increasing its *active power* level ~~output~~ within 5 minutes at a constant rate, to or below the level specified in an instruction electronically issued by a *control centre*;
    - (ii) automatically limiting its *active power* level ~~output~~, to or below the level specified in subparagraph (i);
    - (iii) not changing its *active power* level ~~output~~ within 5 minutes by more than the raise and lower amounts specified in an instruction electronically issued by a *control centre*;
    - (iv) ramping its *active power* level ~~output~~ linearly from one level of *dispatch* to another; and
    - (v) receiving and automatically responding to signals delivered from the *AGC*, as updated at a rate of once every 4 seconds (or such other period specified by *AEMO* as required).

### Minimum access standard

- (b) The *minimum access standard* is a generating system or scheduled integrated resource system must have an *active power control system* capable of:
- (1) for a *scheduled generating unit*, ~~or a scheduled generating system,~~ scheduled integrated resource unit or scheduled integrated resource system:
    - (i) maintaining and changing its *active power level* ~~output~~ in accordance with its *dispatch instructions*; and
    - (ii) receiving and automatically responding to signals delivered from the *AGC*, as updated at a rate of once every four seconds (or such other period specified by *AEMO* as required);
  - (2) for a *non-scheduled generating system* or non-scheduled integrated resource system:
    - (i) reducing its *active power level* ~~output~~, within 5 minutes, to or below the level required to manage *network* flows that is specified in a verbal instruction issued by the *control centre*;
    - (ii) limiting its *active power level* ~~output~~, to or below the level specified in subparagraph (i); and
    - (iii) subject to energy source availability, ensuring that the change of *active power level* ~~output~~ in a 5 minute period does not exceed a value agreed with *AEMO* and the *Network Service Provider*; and
  - (3) subject to energy source availability, for a *semi-scheduled generating unit* or a *semi-scheduled generating system*:
    - (i) maintaining and changing its *active power level* ~~output~~ in accordance with its *dispatch instructions*;
    - (ii) not changing its *active power level* ~~output~~ within five minutes by more than the rise and lower amounts specified in an instruction electronically issued by a *control centre*; and
    - (iii) receiving and automatically responding to signals delivered from the *AGC*, as updated at a rate of once every 4 seconds (or such other period specified by *AEMO* as required).

### Negotiated access standard

- (c) A *negotiated access standard* may provide that if the number or frequency of verbal instructions becomes difficult for a *control centre* to manage, *AEMO* may require the *Generator* or Integrated Resource Provider to upgrade its *facilities* to receive electronic instructions and fully implement them within 5 minutes.
- (d) The *negotiated access standard* must document to *AEMO's* satisfaction any operational arrangements necessary to manage *network* flows that may include a requirement for the *generating system* or integrated resource system to be operated in a manner that prevents its active power level ~~output~~ changing within 5 minutes by more than an amount specified by a *control centre*.
- (e) [Deleted]

### General requirements

- (f) Each *control system* used to satisfy the requirements of paragraphs (a) and (b) must be *adequately damped*.

## S5.2.6 Monitoring and control requirements

### S5.2.6.1 Remote Monitoring

#### Automatic access standard

- (a) The *automatic access standard* is a:

- (1) *scheduled generating unit*;
- (2) *scheduled generating system*;
- (3) *non-scheduled generating unit*;
- (4) *non-scheduled generating system*;
- (5) *semi-scheduled generating unit*; ~~or~~
- (6) *semi-scheduled generating system*; ~~;~~
- (7) *scheduled integrated resource unit*;
- (8) *scheduled integrated resource system*;
- (9) *non-scheduled integrated resource unit*; or
- (10) *non-scheduled integrated resource system*.

must have *remote monitoring equipment* and *remote control equipment* to transmit to, and receive from, *AEMO's control centres* in real time in accordance with rule 4.11 the quantities that *AEMO* reasonably requires to discharge its *market* and *power system security* functions set out in Chapters 3 and 4.

- (b) The remote monitoring quantities referred to under paragraph (a) that *AEMO* may request include:

- (1) in respect of a *generating system* or *integrated resource system* of a type referred to in subparagraphs (a)(1) to (6):
  - (i) the status of all switching devices that carry the *generation* or *load*;
  - (ii) *tap-changing transformer* tap position(s) and *voltages*;
  - (iii) *active power* and *reactive power* aggregated for groups of identical *generating units* or *integrated resource units*;
  - (iv) either the number of identical *generating units* or *integrated resource units* operating or the operating status of each non-identical *generating unit* or *integrated resource unit*;
  - (v) *active power* and *reactive power* for the *generating system* or *integrated resource system*; and
  - (vi) *voltage control system* setpoint and mode (as applicable);
- (2) in respect of:

- (i) ~~a generating unit with a nameplate rating of 30 MW or more;~~ or
    - (ii) an integrated resource unit with a nameplate rating of 5MW or more,

current, voltage, active power and reactive power in respect of ~~generating unit~~ or integrated resource unit stators or power conversion systems (as applicable);
  - (3) in respect of an auxiliary supply system with a capacity of 30 MW or more associated with a ~~generating unit;~~ generating system, integrated resource unit or integrated resource system, active power and reactive power;
  - (4) in respect of reactive power equipment that is part of a generating system or integrated resource system but not part of a particular ~~generating unit~~ or particular integrated resource unit, its reactive power;
  - (5) in respect of a semi-scheduled generating system, all data specified as mandatory in the relevant energy conversion model applicable to that type of semi-scheduled generating system;
  - (6) in respect of a ~~scheduled generating system;~~ semi-scheduled generating system, scheduled integrated resource system or scheduled integrated resource unit:
    - (i) maximum active power limit;
    - (ii) minimum active power limit;
    - (iii) maximum active power raise ramp rate; and
    - (iv) maximum active power lower ramp rate;
  - (7) in respect of a run-back scheme agreed with the Network Service Provider:
    - (i) run-back scheme status; and
    - (ii) active power, reactive power or other control limit, as applicable;
  - (8) the mode of operation of the ~~generating unit,~~ integrated resource unit, turbine control limits, or other information required to reasonably predict the active power response of the ~~generating system~~ or integrated resource system to a change in power system frequency at the connection point; and
  - (9) any other quantity that AEMO reasonably requires to discharge its market and power system security functions as set out in Chapters 3 and 4.
- (b1) The remote control quantities referred to under paragraph (a) that AEMO may request include:
- (1) in respect of a ~~generating system~~ or integrated resource system:
    - (i) voltage control setpoint; and
    - (ii) voltage control mode (where applicable);

- (2) in respect of a *scheduled generating system*, ~~or semi-scheduled generating system~~, scheduled integrated resource system or scheduled integrated resource unit, the AGC signal; and
- (3) in respect of a *non-scheduled generating system*, ~~or non-scheduled integrated resource system~~, to the extent required to manage network flows:
  - (i) active power limit; and
  - (ii) active power ramp limit.

#### Minimum access standard

- (c) The *minimum access standard* is a:

- (1) *scheduled generating unit*;
- (2) *scheduled generating system*;
- (3) *non-scheduled generating system*;
- (4) *semi-scheduled generating unit*; ~~or~~
- (5) *semi-scheduled generating system*; ~~;~~
- (7) *scheduled integrated resource unit*;
- (8) *scheduled integrated resource system*;
- (9) *non-scheduled integrated resource unit*; or
- (10) *non-scheduled integrated resource system*.

must have *remote monitoring equipment* to transmit to AEMO's control centres in real time in accordance with rule 4.11 the quantities that AEMO reasonably requires to discharge its *market and power system security* functions set out in Chapters 3 and 4.

- (d) The quantities referred to under paragraph (c) that AEMO may request include:
- (1) the active power level ~~output~~ of the generating unit or generating system (as applicable);
  - (2) if connected to a transmission system, the reactive power level ~~output~~ of the generating unit or generating system (as applicable); ~~and~~
  - (3) if a *semi-scheduled generating system*, all data specified as mandatory in the relevant *energy conversion model* applicable to that type of *semi-scheduled generating system*; ~~;~~
  - (4) the active power level of the integrated resource unit or integrated resource system (as applicable); and
  - (5) if connected to a transmission system, the reactive power level of the integrated resource unit or integrated resource system (as applicable).



## S5.2.6.2 Communications equipment

### Automatic access standard

- (a) The *automatic access standard* is a Generator or Integrated Resource Provider must:
- (1) provide and maintain two separate telephone *facilities* using independent telecommunications service providers, for the purposes of *operational communications* between the Generator's or Integrated Resource Provider's responsible operator under clause 4.11.3(a) and AEMO's control centre; and
  - (2) provide electricity supplies for *remote monitoring equipment* and *remote control equipment* installed in relation to its *generating system* or integrated resource system capable of keeping such equipment available for at least 3 hours following total loss of *supply* at the *connection point* for the relevant *generating unit* or integrated resource unit.

### Minimum access standard

- (b) The *minimum access standard* is a Generator or Integrated Resource Provider must:
- (1) provide and maintain a telephone facility for the purposes of *operational communications* between the Generator's or Integrated Resource Provider's responsible operator under clause 4.11.3(a) and AEMO's control centre; and
  - (2) provide electricity supplies for *remote monitoring equipment* and *remote control equipment* installed in relation to its *generating system* or integrated resource system capable of keeping such equipment available for at least 1 hour following total loss of *supply* at the *connection point* for the relevant *generating unit* or integrated resource unit.

### Negotiated access standard

- (c) A *negotiated access standard* must include, where the *Network Service Provider* or AEMO reasonably require, a back-up telephone facility be independent of commercial telephone service providers, and the *Network Service Provider* must provide and maintain the separate facility on a cost-recovery basis only through the charge for *connection*.
- (d) A *negotiated access standard* must include that a Generator or Integrated Resource Provider must provide communications paths (with appropriate redundancy) from the *remote monitoring equipment* or *remote control equipment* installed for each of its *generating systems* or integrated resource systems as appropriate, to an interface for communication purposes in a location reasonably acceptable to the *Network Service Provider* at the relevant *generation facility*.
- (e) Communications systems between the interface for communication purposes under paragraph (d) and the *control centre* must be the responsibility of the *Network Service Provider* unless otherwise agreed by the Generator or

*Integrated Resource Provider (as the case may be) and the Network Service Provider.*

- (f) A *negotiated access standard* must include that the Generator *or Integrated Resource Provider* provide accommodation and secure power supplies for communications facilities provided by the Network Service Provider under this clause S5.2.6.2.

## **S5.2.7 Power station auxiliary supplies**

In cases where a *generating system or integrated resource system* takes its *auxiliary load ~~auxiliary supplies~~* via a *connection point* through which its generation is not transferred to the network, the access standards must be established under clause S5.3.5 as if the Generator *or Integrated Resource Provider (as the case may be)* were a Market Customer.

## **S5.2.8 Fault current**

### **Automatic access standard**

- (a) The *automatic access standard* is:

- (1) the contribution of the *generating system or integrated resource system* to the fault current on the *connecting network* through its *connection point* must not exceed the contribution level that will ensure that the total fault current can be safely interrupted by the circuit breakers of the *connecting network* and safely carried by the *connecting network* for the duration of the applicable *breaker fail protection system fault clearance times*, as specified for the relevant *connection point* by the Network Service Provider;
- (2) a *generating system's or integrated resource system's* connected plant must be capable of withstanding fault current through the *connection point* up to the higher of:
  - (i) the level specified in clause S5.2.4(e1)(1) ; and
  - (ii) the highest level of current at the *connection point* that can be safely interrupted by the circuit breakers of the *connecting network* and safely carried by the *connecting network* for the duration of the applicable *breaker fail protection system fault clearance times*, as specified by the Network Service Provider; and
- (3) a circuit breaker provided to isolate a *generating unit, ~~or~~ generating system, integrated resource unit or integrated resource system* from the network must be capable of breaking, without damage or restrike, the maximum fault currents that could reasonably be expected to flow through the circuit breaker for any fault in the network or in the *generating unit, ~~or~~ generating system, integrated resource unit or integrated resource system*, as specified in the *connection agreement*.

### **Minimum access standard**

- (b) The *minimum access standard* is:

- (1) the *generating system* or integrated resource system does not need to limit fault current contribution;
- (2) a *generating system's* or integrated resource system's *connected plant* must be capable of withstanding fault current through the *connection point* up to the level specified in clause S5.2.4(e1)(1) ; and
- (3) a circuit breaker provided to isolate a *generating unit*, ~~or~~ *generating system*, integrated resource unit or integrated resource system from the *network* must be capable of breaking, without damage or restrike, the maximum fault currents that could reasonably be expected to flow through the circuit breaker for any fault in the *network* or in the *generating unit*, ~~or~~ *generating system*, integrated resource unit or integrated resource system, as specified in the *connection agreement*.

#### Negotiated access standard

- (c) In negotiating a *negotiated access standard*, the *Network Service Provider* must consider alternative *network* configurations in the determination of the applicable fault current level and must prefer those options that maintain an equivalent level of service to other *Network Users* and which, in the opinion of the *Generator* or Integrated Resource Provider (as the case may be), impose the least obligation on the *Generator* or Integrated Resource Provider.
- (d) In carrying out assessments of proposed *negotiated access standards* under this clause S5.2.8, the *Network Service Provider* must take into account, without limitation:
  - (1) the expected performance of existing *networks* and *considered projects*;
  - (2) the expected performance of existing *generating plant* and other relevant projects; and
  - (3) the expected range of *power system* operating conditions.

## Schedule 5.3 Conditions for Connection of Customers

### S5.3.1a Introduction to the schedule

- (a) This schedule applies to the following classes of *Network User*:
  - (1) ~~a First Tier Customer in respect of its first tier load;~~ **[Deleted]**
  - (2) ~~a Second Tier Customer in respect of its second tier load;~~ **[Deleted]**
  - (3) a *Market Customer* in respect of its ~~market load~~ market connection points;
  - (4) a *Non-Registered Customer* in respect of *supply* it takes from a *network*; and
  - (5) a *Distribution Network Service Provider* in respect of its *distribution network*.
- (b) For the purposes of this schedule 5.3 the term **Network Service Provider** must be interpreted to mean the *Network Service Provider* with whom the *Connection Applicant* has sought, or is seeking, a *connection* in accordance with clause 5.3.2 of the *Rules*.

- (c) All *Network Users* must comply with the requirements for the establishment of *performance standards* in accordance with provisions contained in schedule 5.1a for *system standards* or schedule 5.1 for *Network Service Providers* and this schedule 5.3 for *Customers*.
- (d) If the *Connection Applicant* is a *Registered Participant* in relation to the proposed *connection*, the *Network Service Provider* may include as terms and conditions of the *connection agreement* any provision of this schedule that is expressed as an obligation on a *Network User*.
- (d1) If the *Connection Applicant* is not a *Registered Participant* in relation to the proposed *connection*, the *Network Service Provider* must include as terms and conditions of the *connection agreement*:
  - (1) each provision of this schedule that is expressed as an obligation on a *Network User*; and
  - (2) each agreed *performance standard* and an obligation to comply with it.
- (e) The purpose of this schedule is to:
  - (1) describe the information that must be exchanged for the *connection* enquiry and *application to connect* processes described in rule 5.3 of the *Rules*;
  - (2) establish the *automatic access standards* and *minimum access standards* that will apply to the process of negotiating access standards under clause 5.3.4A of the *Rules*; and
  - (3) establish obligations to apply prudent design standards for the *plant* to be *connected*.

## Schedule 5.4 Information to be Provided with Preliminary Enquiry

The following items of information are required to be submitted with a preliminary enquiry for *connection* or modification of an existing *connection*:

- (a) Type of *plant* – (eg. gas turbine *generating unit*; rolling mill, etc.).
- (b) Preferred site location – (listing any alternatives in order of preference as well).
- (c) Maximum power *generation* ~~or~~ and demand of whole *plant* – (maximum MW and/or MVA, or average over 15 minutes or similar).
- (d) Expected *energy* production ~~and~~ or consumption (MWh per month).
- (e) *Plant* type and configuration – (eg. number and type of *generating units* or integrated resource units or number of separate production lines).
- (f) Nature of any disturbing *load* (size of disturbing component MW/MVAr, duty cycle, nature of power electronic *plant* which may produce harmonic distortion).
- (g) Technology of proposed *generating unit* or integrated resource units (e.g. *synchronous generating unit*, induction generator, photovoltaic array, etc).
- (h) When *plant* is to be in service – (eg. estimated date for each *generating unit* or integrated resource unit).

- (i) Name, ABN, ACN and address of enquirer, and, if relevant, of the party for whom the enquirer is acting.
- (j) Other information may be requested by the *Network Service Provider*, such as amount and timing of power required during construction or any auxiliary power requirements.

## Schedule 5.4A Preliminary Response

For the purposes of clause 5.3A.7(a), the following information must be included in the preliminary response:

- (a) relevant technical information about the *Distribution Network Service Provider's distribution network*, including guidance on how the *Connection Applicant* may meet the following requirements if it were to proceed to prepare an *application to connect*:
  - (1) primary protection and backup protection;
  - (2) other protection and control requirements applicable to *embedded generating units* or embedded integrated resource units and associated plant;
  - (3) *remote monitoring equipment* and control communications facilities;
  - (4) insulation co-ordination and lightning protection;
  - (5) existing maximum and minimum fault levels and *fault clearance times* of relevant local *zone substations*;
  - (6) switching and *isolation* facilities;
  - (7) interlocking and *synchronising* arrangements;
  - (8) *metering installations*; and
  - (9) remedy or avoid an *adverse system strength impact* caused by the connection;
- (b) if not otherwise provided in accordance with paragraph (a), to the extent the *Distribution Network Service Provider* holds technical information necessary to prepare an *application to connect*, that information;
- (c) information relevant to each technical requirement of the proposed *plant* as relevant to:
  - (1) the *automatic access standards*;
  - (2) any relevant *minimum access standards*;
  - (3) any applicable *plant standards*; and
  - (4) the *normal voltage* level, if it is expected to change from the *nominal voltage* level;
- (d) the identity of other parties that the *Distribution Network Service Provider* considers:
  - (1) will need to be involved in planning to make the *connection* or must be involved under clause 5.3A.10(c); and
  - (2) must be paid for *transmission services* or *distribution services*;

- (e) whether it will be necessary for any of the parties identified in subparagraph (d) to enter into an agreement with the *Connection Applicant* in respect of the provision of *connection services* or other *transmission services* or *distribution services* or both, to the *Connection Applicant*;
- (f) where relevant the *Distribution Network Service Provider* is to identify whether any service required to *establish a connection* is *contestable* in the relevant *participating jurisdiction*;
- (g) worked examples of *connection service* charges relevant to the enquiry and an explanation of the factors on which the charges depend;
- (h) information regarding the *Distribution Network Service Provider* and its *network*, system limitations for *sub-transmission lines* and *zone substations* and other information relevant to constraints on the *network* as such information is relevant to the *application to connect*;
- (i) an indication of whether *network augmentation* may be required and if required, what work the *network augmentation* may involve;
- (il) an indication of whether the new *connection* is expected in the reasonable opinion of a *Network Service Provider* to have an *adverse system strength impact*;
- (j) a hyperlink to the *Distribution Network Service Provider's information pack*;
- (k) the contact details for the relevant point of contact within the *Distribution Network Service Provider* managing the *connection* enquiry;
- (l) the *Distribution Network Service Provider's* response to the objectives of the *connection* sought as included by the *Connection Applicant* in its enquiry under clause 5.3A.5(c)(1);
- (m) a description of the process for the provision of the *detailed response*, including the further information to be provided by the *Connection Applicant* and analysis to be undertaken by the *Distribution Network Service Provider* as part of the preparation of the *detailed response*;
- (n) an overview of any available options for *connection* to the *Distribution Network Service Provider's network*, as relevant to an enquiry lodged, at more than one *connection point* in a *network*, including:
  - (1) example single line diagram and relevant *protection systems* and *control systems* used by existing *connection* arrangements;
  - (2) a description of the characteristics of supply; and
  - (3) an indication of the likely impact on terms and conditions of *connection*,as relevant to each optional differing *connection point*;
- (o) a statement of further information required from the *Connection Applicant* for the preparation of the *detailed response*, including:
  - (1) details of the *Connection Applicant's connection* requirements, and the *Connection Applicant's* specifications of the *facility* to be *connected*, consistent with the requirements advised in accordance with paragraphs (a) to (c); and



- (2) details of the *Connection Applicant's* reasonable expectations of the level and standard of service of *power transfer capability* that the *network* should provide;
- (3) the *Connection Applicant's* proposal for any *system strength remediation scheme*;
- (p) an estimate of the enquiry fee payable by the *Connection Applicant* for the *detailed response*, including details of how components of the fee were calculated;
- (q) the component of the estimate of the enquiry fee payable by the *Connection Applicant* to request the *detailed response*;
- (r) an estimate of the application fee which is payable on submitting an *application to connect*; and
- (s) any additional information relevant to the enquiry.

## Schedule 5.5 Technical Details to Support Application for Connection and Connection Agreement

### S5.5.5 Asynchronous generating unit and integrated resource unit data

A Generator or an Integrated Resource Provider that connects a generating system, that is an asynchronous generating unit, or an Integrated Resource Provider that connects an integrated resource system, that is an asynchronous integrated resource unit, must be given exemption from complying with those parts of the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Design Data Sheet* that are determined by the *Network Service Provider* to be not relevant to such generating systems or integrated resource systems, but must comply with those parts of schedules 5.5.3, 5.5.4, and 5.5.5 that are relevant to such generating systems or integrated resource systems, as determined by the *Network Service Provider*.

### S5.5.6 Generating units smaller than 30MW data

A Generator or an Integrated Resource Provider that connects a generating unit smaller than 30 MW or generating units totalling less than 30 MW to a connection point to a distribution network must submit registered system planning data and registered data to AEMO and the relevant *Network Service Provider* in accordance with the requirements specified in the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*.

Codes:

S = Standard Planning Data

D = Detailed Planning Data

R = Registered Data (R1 pre-connection, R2 post-connection)

#### S5.5.6A Integrated resource units smaller than 5MW data

An Integrated Resource Provider that connects an integrated resource unit smaller than 5 MW or integrated resource units totaling less than 5 MW to a connection point to a distribution network must submit registered system planning data and

registered data to AEMO and the relevant Network Service Provider in accordance with the requirements specified in the Power System Model Guidelines, Power System Design Data Sheet and Power System Setting Data Sheet.

Codes:

S = Standard Planning Data

D = Detailed Planning Data

R = Registered Data (R1 pre-connection, R2 post-connection)

### **S5.5.7 Power System Design Data Sheet, Power System Setting Data Sheet and Power System Model Guidelines**

- (a) AEMO must, subject to paragraphs (b) and (c), develop, *publish* and maintain, in accordance with the *Rules consultation procedures*:
  - (1) a *Power System Design Data Sheet* describing, for relevant *plant technologies*, *plant* design parameters including *plant* configurations, impedances, time constants, non-linearities, ratings and capabilities to be provided under clauses 3.11.5(b)(5), 3.11.9(g), 4.3.4(o), 5.2.3(j), 5.2.3(k), 5.2.3A(a), 5.2.4(c), 5.2.4(d), 5.2.5(d), 5.2.5(e), 5.2.5A(d), 5.2.5A(e), 5.3.9(b)(2), S5.2.4, S5.3.1, S5.3a.1 and this schedule 5.5;
  - (2) a *Power System Setting Data Sheet* describing, for relevant *power systems* and *control system* technologies, the *protection system* and *control system* functions and their settings, including configurations, gains, time constants, delays, deadbands, non-linearities and limits to be provided under clauses 3.11.5(b)(5), 3.11.9(g), 4.3.4(o), 5.2.3(j), 5.2.3(k), 5.2.3A(a), 5.2.3A(b), 5.2.4(c), 5.2.4(d), 5.2.5(d), 5.2.5(e), 5.2.5A(d), 5.2.5A(e), 5.3.9(b)(2), S5.2.4, S5.3.1, S5.3a.1 and this schedule 5.5; and
  - (3) *Power System Model Guidelines* describing, for relevant *power system* technologies at the *transmission system* and *distribution system* level, AEMO's requirements when developing mathematical models for *plant*, including the impact of their *control systems* and *protection systems* on *power system security* to be provided under clauses 3.11.5(b)(5), 3.11.9(g), 4.3.4(o), 5.2.3(j), 5.2.3(k), 5.2.3A(a), 5.2.3A(b), 5.2.4(c), 5.2.4(d), 5.2.5(d), 5.2.5(e), 5.2.5A(d), 5.2.5A(e), 5.3.9(b)(2), S5.2.4, S5.3.1, S5.3a.1 and this schedule 5.5.
- (b) When developing, *publishing* and maintaining the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet* under paragraph (a), AEMO must have regard to the purpose of the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*, which is to:
  - (1) allow *plant* and equipment to be mathematically modelled by AEMO with sufficient accuracy to permit:
    - (i) the *power system* operating limits for ensuring *power system security* to be quantified with the lowest practical safety margins;
    - (ii) the assessment of proposed *negotiated access standards*;

- (iii) settings of *control systems* and *protection systems* of *plant* and *networks* to be assessed and quantified for maximum practical performance of the *power system*; and
    - (iv) the efficient procurement of *SRASs* and *NSCASs*; and
  - (2) identify for each type of data its category in terms of clause S5.5.2.
- (b1) The *Power System Model Guidelines* must specify:
  - (1) the information, including the types of models, that:
    - (i) *Generators* and *Integrated Resource Providers* must provide under clause 5.2.5(d), clause 5.2.5(e), clause 5.2.5A(d), clause 5.2.5A(e), clause 5.3.9(b)(2), clause S5.2.4 and clause S5.5.6;
    - (ii) *Network Service Providers* must provide under clause 4.3.4(o), clause 5.2.3(j) and clause 5.2.3(k);
    - (iii) *Network Users* must provide under clause 5.2.4(c), clause 5.2.4(d) and clause S5.3.1(a1);
    - (iv) *Market Network Service Providers* must provide under clause 5.2.3A(a), clause 5.2.3A(b) and clause S5.3a.1(a1);
    - (v) prospective *NSCAS* tenderers must provide under clause 3.11.5(b)(5); and
    - (vi) prospective *SRAS Providers* must provide under clause 3.11.9(g);
  - (2) the model accuracy requirements that are applicable to each type of model provided, as well as the types of *generating systems*, *integrated resource systems* and *plant* and equipment that the model accuracy requirements apply to;
  - (3) when information to which the *Power System Model Guidelines* relates must be provided;
  - (4) a process to be followed in circumstances where a person is unable to provide information required to be provided under clauses 3.11.5(b)(5), 3.11.9(g), 4.3.4(o), 5.2.3(j), 5.2.3(k), 5.2.3A(a), 5.2.3A(b), 5.2.4(c), 5.2.4(d), 5.2.5(d), 5.2.4(e), 5.2.5A(d), 5.2.5A(e), 5.3.9(b)(2), S5.2.4, S5.3.1, S5.3a.1, S5.5.6, schedule 5.5 or as otherwise required by the *Power System Model Guidelines*, *Power System Design Data Sheet* or *Power System Setting Data Sheet*;
  - (5) guidance on the factors that *AEMO* will take into account when determining the circumstances under which *AEMO* will request information to be provided, including the *power system* conditions that necessitate the usage of a certain type of model in order to achieve the desired level of accuracy;
  - (6) the format in which information must be provided and any material *AEMO* requires to assess the accuracy of information provided to it; and
  - (7) the circumstances in which model source code is required to be provided.

- (c) In developing and amending the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*, AEMO must:
- (1) have regard to the reasonable costs of efficient compliance by *Registered Participants* with those guidelines and data sheets compared to the likely benefits from the use of the information provided under the guidelines and data sheets;
  - (2) have regard to any requirements to protect the intellectual property and confidential information of third parties, including where those third parties are not *Registered Participants*; and
  - (3) have regard to *Distribution Network Service Providers'* and *Transmission Network Service Providers'* requirements for data and modelling information that is reasonably necessary for the relevant provider to fulfil its obligations under the *Rules* or *jurisdictional electricity legislation*.
- (d) AEMO may amend the *Power System Model Guidelines*, the *Power System Design Data Sheet* or the *Power System Setting Data Sheet* from time to time.
- (e) Any person may submit a written request (with reasons) for AEMO to amend the *Power System Model Guidelines*, the *Power System Design Data Sheet* or the *Power System Setting Data Sheet* from time to time.
- (f) In developing and amending the *Power System Model Guidelines*, the *Power System Design Data Sheet* or the *Power System Setting Data Sheet*, AEMO must, subject to paragraph (g), consult with *Registered Participants* and such other persons who, in AEMO's reasonable opinion have, or have identified themselves as having, an interest in the *Power System Model Guidelines*, in accordance with the *Rules consultation procedures*.
- (g) AEMO is not required to comply with the *Rules consultation procedures* when making minor or administrative amendments to the *Power System Model Guidelines*, the *Power System Design Data Sheet* or the *Power System Setting Data Sheet*.
- (h) AEMO may at the conclusion of the *Rules consultation procedures* under paragraph (f) or otherwise under paragraph (g), amend the relevant data sheet or guidelines (if necessary).

### Schedule 5.5.3 Network and plant technical data of equipment at or near connection point

Data Description	Units	Data Category
<b>Voltage Rating</b>		
<i>Nominal voltage</i>	kV	S, D
<i>Highest voltage</i>	kV	D

Data Description	Units	Data Category
<b>Insulation Co-ordination</b>		
Rated lightning impulse withstand <i>voltage</i>	kVp	D
Rated short duration power <i>frequency</i> withstand <i>voltage</i>	kV	D
<b>Rated Currents</b>		
Circuit maximum current	kA	S, D
Rated Short Time Withstand Current	kA for seconds	D
Ambient conditions under which above current applies	Text	S,D
<b>Earthing</b>		
System Earthing Method	Text	S, D
Earth grid rated current	kA for seconds	D
<b>Insulation Pollution Performance</b>		
Minimum total creepage	mm	D
Pollution level	Level of IEC 815	D
<b>Controls</b>		
Remote control and data transmission arrangements	Text	D
<b>Metering Provided by Customer</b>		
Measurement <i>transformer</i> ratios:		D
<i>Current transformers</i>	A/A	D
<i>Voltage transformers</i>	V/kV	D

Data Description	Units	Data Category
Measurement <i>Transformer</i> Test Certification details	Text	R1

### Network Configuration

Operation Diagrams showing the electrical circuits of the existing and proposed main <i>facilities</i> within the <i>Registered Participant's</i> ownership including <i>busbar</i> arrangements, phasing arrangements, earthing arrangements, switching <i>facilities</i> and operating <i>voltages</i> .	Single line Diagrams	S, D, R1
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### Network Impedance

For each item of <i>plant</i> : details of the positive, negative and zero sequence series and shunt impedance, including mutual coupling between physically adjacent elements.	% on 100 MVA base	S, D, R1
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### Short Circuit Infeed to the Network

Maximum generator 3-phase short circuit infeed including infeeds from <i>generating units</i> <u>or</u> <u>integrated resource units</u> connected to the <i>Registered Participant's</i> system, calculated by method of AS 3851 (1991).	kA symmetrical	S, D, R1
The total infeed at the instant of fault (including contribution of induction motors).	kA	D, R1
Minimum zero sequence impedance of <i>Registered Participant's</i> network at <i>connection point</i> .	% on 100 MVA base	D, R1
Minimum negative sequence impedance of <i>Registered Participant's</i> network at <i>connection point</i> .	% on 100 MVA base	D, R1

### Load Transfer Capability:

Where a *load*, or group of *loads*, may be fed from alternative *connection points*:



Data Description	Units	Data Category
<i>Load normally taken from connection point X</i>	MW	D, R1
<i>Load normally taken from connection point Y</i>	MW	D, R1
<i>Arrangements for transfer under planned or fault outage conditions</i>	Text	D

**Circuits Connecting Embedded Generating Units or Embedded Integrated Resource Units to the Network:**

For all *generating units*, all connecting lines/cables, *transformers* etc.

Series Resistance	% on 100 MVA base	D, R
Series Reactance	% on 100 MVA base	D, R
Shunt Susceptance	% on 100 MVA base	D, R
Normal and short-time emergency ratings	MVA	D,R

Technical Details of *generating units*, ~~and~~ *generating systems*, *integrated resource units and integrated resource systems* as per the *Power System Design Data Sheet*, *Power System Setting Data Sheet* and the *Power System Model Guidelines* where such details are not *confidential information*

***Transformers at connection points:***

Saturation curve	Diagram	R
Equipment associated with DC Links		
Number of poles	MVA	D,R
Converters per station	Quantity	D,R
Reactive Power consumption of converters	MCAr	D,R
Location and Rating of A.C. Filters	MVAr	D,R

Data Description	Units	Data Category
Location and Rating of Shunt Capacitors	MVAr	D,R
Location and Rating of Smoothing <i>Reactor</i>	MVAr	D,R
Location and Rating of DC Filter	MVAr	D,R

#### Schedule 5.5.4 Network Plant and Apparatus Setting Data

Data Description	Units	Data Category
<b>Protection Data for Protection relevant to Connection Point:</b>		
Reach of all protections on <i>transmission lines</i> , or cables	ohms or % on 100 MVA base	S, D
Number of protections on each item	Text	S, D
Total fault clearing times for near and remote faults	ms	S, D, R1
Line reclosure sequence details	Text	S, D, R1
<b>Tap Change Control Data:</b>		
Time delay settings of all <i>transformer</i> tap changers.	Seconds	D, R1
<b>Reactive Compensation:</b>		
Location and Rating of individual <i>shunt reactors</i>	MVAr	D, R1
Location and Rating of individual <i>shunt capacitor banks</i>	MVAr	D, R1
<i>Capacitor bank</i> capacitance	microfarads	D
Inductance of switching <i>reactor</i> (if fitted)	millihenries	D
Resistance of capacitor plus <i>reactor</i>	Ohms	D
Details of special controls (e.g. Point-on-wave switching)	Text	D

Data Description	Units	Data Category
<b>For each shunt reactor or capacitor bank:</b>		
Method of switching	Text	S
Details of automatic control logic such that operating characteristics can be determined	Text	D, R1
<b>FACTS Installation:</b>		
Data sufficient to enable static and dynamic performance of the installation to be modelled	Text, diagrams control settings	S, D, R1
Transmission line flow control device	Text,	D
Details of the operation of the control device under normal operation conditions (including startup and shutdown of the line) and during a fault (close up and remote)	diagrams	
Models for the control device and transmission line appropriate for load flow, small signal stability and transient stability analysis	Text, diagrams	D
Capability of the line flow control device	KA, MVA, MW	D
Details of the rate of change of flow capability of the control device	Text	D
Details of the capability of the control device to provide frequency and voltage control	Text	D
Description of possible failure modes of control device	Text	D
Details of performance of the control device under disturbance conditions including changes in AC frequency, variations in AC system voltages and Ac system waveform distortion.	Text	D
For DC control devices, contribution to the AC system short circuit level	KA, MVA	D
<b>Short circuit ratio</b>		
The lowest short circuit ratio at the <i>connection point</i> for which the <i>generating system</i> <u>or</u>	Numeric ratio	S, D, R1

Data Description	Units	Data Category
<p><i>integrated resource system</i>, including its <i>control systems</i>: (i) will be commissioned to maintain stable operation; and (ii) has the design capability to maintain stable operation.</p> <p>For the purposes of the above, "short circuit ratio" is the synchronous <i>three phase fault level</i> (expressed in MVA) at the <i>connection point</i> divided by the rated output of the <i>generating system or integrated resource system</i> (expressed in MW or MVA).</p>		

## Part A Connection agreements

The *connection agreements* must contain the specific conditions that have been agreed to for *connection* and access to the *transmission network* or *distribution network*, including but not limited to:

- (a) details of the *connection point* including the *distribution network* coupling points where appropriate;
- (b) metering arrangements and adjustments for losses where the point of metering is significantly different to the *connection point*;
- (c) authorised demand which may be taken or supplied at the *connection point* (under specified conditions);
- (c1) details of each *access standard* agreed between the *Network Service Provider* and the *Registered Participant* and all related conditions of agreement resulting from the application of any access provisions contained in schedule 5.1 for *Network Service Providers*, or schedule 5.2 for *Generators and Integrated Resource Providers*, or schedule 5.3 for *Customers*, or schedule 5.3a for *Market Network Service Providers*;
- (c2) details of any *system strength remediation scheme* agreed, determined or modified in accordance with clause 5.3.4B and associated terms and conditions;
- (c3) details of any *system strength connection works*;
- (d) *connection service charges*;
- (e) payment conditions;
- (f) duration and termination conditions of the *connection agreement*;
- (g) terms, conditions and *constraints* that have been agreed to for *connection* to the *network* to protect the legitimate interest of the *Network Service Providers* including rights to *disconnect* the *Registered Participant* for breach of commercial undertakings;
- (h) details of any agreed standards of *reliability* of *transmission service* or *distribution service* at the *connection points* or within the *network*;
- (i) testing intervals for *protection systems* associated with the *connection point*;

- (j) agreed protocols for maintenance co-ordination;
- (k) where an expected *load* or integrated resource unit, to be connected to a *network*, has a *peak load* requirement in excess 10 MW, the provision, installation, operation and maintenance of automatic *load* shedding facilities for 60 percent of the *load* at anytime;
- (l) terms and conditions of access to the *metering installation* for the *Metering Provider* and access to *metering installations* type 4A, 5 and 6 for the *Metering Data Provider*;
- (m) the arrangements for the provision of services relating to *non-contestable IUSA components* (if applicable);
- (n) the functional specifications for the *contestable IUSA components*; and
- (o) if the *Connection Applicant* has obtained services related to a *contestable IUSA components* other than from the *Primary Transmission Network Service Provider* and intends to transfer ownership of some or all of those components to the *Primary Transmission Network Service Provider*, arrangements for the transfer of ownership of those components upon energisation of the *identified user shared asset* to the *Primary Transmission Network Service Provider* (if applicable) and how any defects liabilities will be managed.

The *connection agreements* may include other technical, commercial and legal conditions governing works required for the *connection* or *extension* to the *network* which the parties have negotiated and agreed to. The circumstances under which the terms of the *connection agreement* would require renegotiation may also be included.

## Schedule 5.8 Distribution Annual Planning Report

For the purposes of clause 5.13.2(c), the following information must be included in a *Distribution Annual Planning Report*:

- (a) information regarding the *Distribution Network Service Provider* and its *network*, including:
  - (1) a description of its *network*;
  - (2) a description of its operating environment;
  - (3) the number and types of its *distribution assets*;
  - (4) methodologies used in preparing the *Distribution Annual Planning Report*, including methodologies used to identify system limitations and any assumptions applied; and
  - (5) analysis and explanation of any aspects of forecasts and information provided in the *Distribution Annual Planning Report* that have changed significantly from previous forecasts and information provided in the preceding year;
- (b) forecasts for the *forward planning period*, including at least:
  - (1) a description of the forecasting methodology used, sources of input information, and the assumptions applied;
  - (2) *load* forecasts:

- (i) at the *transmission-distribution connection points*;
  - (ii) for *sub-transmission lines*; and
  - (iii) for *zone substations*,

including, where applicable, for each item specified above:

  - (iv) *total capacity*;
  - (v) *firm delivery capacity* for summer periods and winter periods;
  - (vi) *peak load* (summer or winter and an estimate of the number of hours per year that 95% of *peak load* is expected to be reached);
  - (vii) *power factor* at time of *peak load*;
  - (viii) load transfer capacities; and
  - (ix) ~~generation~~*generation* capacity of known *embedded generating units* and embedded integrated resource units;
- (3) forecasts of future *transmission-distribution connection points* (and any associated *connection assets*), *sub-transmission lines* and *zone substations*, including for each future *transmission-distribution connection point* and *zone substation*:
  - (i) location;
  - (ii) future *loading level*; and
  - (iii) proposed commissioning time (estimate of month and year);
- (4) forecasts of the *Distribution Network Service Provider's* performance against any reliability targets in a *service target performance incentive scheme*; and
- (5) a description of any factors that may have a material impact on its *network*, including factors affecting:
  - (i) fault levels;
  - (ii) *voltage* levels;
  - (iii) other *power system security* requirements;
  - (iv) the quality of *supply* to other *Network Users* (where relevant); and
  - (v) ageing and potentially unreliable assets;
- (b1) for all *network* asset retirements, and for all *network* asset de-ratings that would result in a system limitation, that are planned over the *forward planning period*, the following information in sufficient detail relative to the size or significance of the asset:
  - (1) a description of the *network* asset, including location;
  - (2) the reasons, including methodologies and assumptions used by the *Distribution Network Service Provider*, for deciding that it is necessary or prudent for the *network* asset to be retired or *de-rated*, taking into account factors such as the condition of the *network* asset;
  - (3) the date from which the *Distribution Network Service Provider* proposes that the *network* asset will be retired or *de-rated*; and



- (4) if the date to retire or *de-rate* the *network* asset has changed since the previous *Distribution Annual Planning Report*, an explanation of why this has occurred;
- (b2) for the purposes of subparagraph (b1), where two or more *network* assets are:
  - (1) of the same type;
  - (2) to be retired or *de-rated* across more than one location;
  - (3) to be retired or *de-rated* in the same calendar year; and
  - (4) each expected to have a replacement cost less than \$200,000 (as varied by a *cost threshold determination*),those assets can be reported together by setting out in the *Distribution Annual Planning Report*:
  - (5) a description of the *network* assets, including a summarised description of their locations;
  - (6) the reasons, including methodologies and assumptions used by the *Distribution Network Service Provider*, for deciding that it is necessary or prudent for the *network* assets to be retired or *de-rated*, taking into account factors such as the condition of the *network* assets;
  - (7) the date from which the *Distribution Network Service Provider* proposes that the *network* assets will be retired or *de-rated*; and
  - (8) if the calendar year to retire or *de-rate* the *network* assets has changed since the previous *Distribution Annual Planning Report*, an explanation of why this has occurred;
- (c) information on *system limitations* for *sub-transmission lines* and *zone substations*, including at least:
  - (1) estimates of the location and timing (month(s) and year) of the system limitation;
  - (2) analysis of any potential for *load transfer capacity* between *supply* points that may decrease the impact of the *system limitation* or defer the requirement for investment;
  - (3) impact of the *system limitation*, if any, on the capacity at *transmission-distribution connection points*;
  - (4) a brief discussion of the types of potential solutions that may address the *system limitation* in the *forward planning period*, if a solution is required; and
  - (5) where an estimated reduction in forecast *load* would defer a forecast *system limitation* for a period of at least 12 months, include:
    - (i) an estimate of the month and year in which a *system limitation* is forecast to occur as required under subparagraph (1);
    - (ii) the relevant *connection points* at which the estimated reduction in forecast *load* may occur; and
    - (iii) the estimated reduction in forecast *load* in MW or improvements in *power factor* needed to defer the forecast system limitation;

- (d) for any *primary distribution feeders* for which a *Distribution Network Service Provider* has prepared forecasts of *maximum demands* under clause 5.13.1(d)(1)(iii) and which are currently experiencing an overload, or are forecast to experience an overload in the next two years the *Distribution Network Service Provider* must set out:
  - (1) the location of the *primary distribution feeder*;
  - (2) the extent to which load exceeds, or is forecast to exceed, 100% (or lower utilisation factor, as appropriate) of the *normal cyclic rating* under normal conditions (in summer periods or winter periods);
  - (3) the types of potential solutions that may address the overload or forecast overload; and
  - (4) where an estimated reduction in forecast *load* would defer a forecast overload for a period of 12 months, include:
    - (i) estimate of the month and year in which the overload is forecast to occur;
    - (ii) a summary of the location of relevant *connection points* at which the estimated reduction in forecast *load* would defer the overload;
    - (iii) the estimated reduction in forecast *load* in MW needed to defer the forecast system limitation;
- (e) a high-level summary of each *RIT-D project* for which the *regulatory investment test for distribution* has been completed in the preceding year or is in progress, including:
  - (1) if the *regulatory investment test for distribution* is in progress, the current stage in the process;
  - (2) a brief description of the *identified need*;
  - (3) a list of the *credible options* assessed or being assessed (to the extent reasonably practicable);
  - (4) if the *regulatory investment test for distribution* has been completed a brief description of the conclusion, including:
    - (i) the net economic benefit of each *credible option*;
    - (ii) the estimated capital cost of the *preferred option*; and
    - (iii) the estimated construction timetable and commissioning date (where relevant) of the *preferred option*; and
  - (5) any impacts on *Network Users*, including any potential material impacts on *connection charges* and *distribution use of system charges* that have been estimated;
- (f) for each identified *system limitation* which a *Distribution Network Service Provider* has determined will require a *regulatory investment test for distribution*, provide an estimate of the month and year when the test is expected to commence;
- (g) a summary of all committed investments to be carried out within the *forward planning period* with an estimated capital cost of \$2 million or more (as varied

by a *cost threshold determination*) that are to address an urgent and unforeseen *network* issue as described in clause 5.17.3(a)(1), including:

- (1) a brief description of the investment, including its purpose, its location, the estimated capital cost of the investment and an estimate of the date (month and year) the investment is expected to become operational;
  - (2) a brief description of the alternative options considered by the *Distribution Network Service Provider* in deciding on the preferred investment, including an explanation of the ranking of these options to the committed project. Alternative options could include, but are not limited to, *generation* options, demand side options, and options involving other *distribution* or *transmission networks*;
- (h) the results of any joint planning undertaken with a *Transmission Network Service Provider* in the preceding year, including:
- (1) a summary of the process and methodology used by the *Distribution Network Service Provider* and relevant *Transmission Network Service Providers* to undertake joint planning;
  - (2) a brief description of any investments that have been planned through this process, including the estimated capital costs of the investment and an estimate of the timing (month and year) of the investment; and
  - (3) where additional information on the investments may be obtained;
- (i) the results of any joint planning undertaken with other *Distribution Network Service Providers* in the preceding year, including:
- (1) a summary of the process and methodology used by the *Distribution Network Service Providers* to undertake joint planning;
  - (2) a brief description of any investments that have been planned through this process, including the estimated capital cost of the investment and an estimate of the timing (month and year) of the investment; and
  - (3) where additional information on the investments may be obtained;
- (j) information on the performance of the *Distribution Network Service Provider's network*, including:
- (1) a summary description of reliability measures and standards in *applicable regulatory instruments*;
  - (2) a summary description of the quality of *supply* standards that apply, including the relevant codes, standards and guidelines;
  - (3) a summary description of the performance of the *distribution network* against the measures and standards described under subparagraphs (1) and (2) for the preceding year;
  - (4) where the measures and standards described under subparagraphs (1) and (2) were not met in the preceding year, information on the corrective action taken or planned;
  - (5) a summary description of the *Distribution Network Service Provider's* processes to ensure compliance with the measures and standards described under subparagraphs (1) and (2); and

- (6) an outline of the information contained in the *Distribution Network Service Provider's* most recent submission to the *AER* under the *service target performance incentive scheme*;
- (k) information on the *Distribution Network Service Provider's* *asset management* approach, including:
  - (1) a summary of any *asset management* strategy employed by the *Distribution Network Service Provider*;
  - (1A) an explanation of how the *Distribution Network Service Provider* takes into account the cost of *distribution losses* when developing and implementing its *asset management* and investment strategy;
  - (2) a summary of any issues that may impact on the *system limitations* identified in the *Distribution Annual Planning Report* that has been identified through carrying out *asset management*; and
  - (3) information about where further information on the *asset management* strategy and methodology adopted by the *Distribution Network Service Provider* may be obtained;
- (l) information on the *Distribution Network Service Provider's* demand management activities, including:
  - (1) a qualitative summary of:
    - (i) *non-network options* that have been considered in the past year, including *generation* from *embedded generating units* and embedded integrated resource units;
    - (ii) key issues arising from *applications to connect embedded generating units* and embedded integrated resource units received in the past year;
    - (iii) actions taken to promote non-network proposals in the preceding year, including *generation* from *embedded generating units* and embedded integrated resource units; and
    - (iv) the *Distribution Network Service Provider's* plans for demand management and *generation* from *embedded generating units* and embedded integrated resource units over the *forward planning period*;
  - (2) a quantitative summary of:
    - (i) *connection* enquiries received under clause 5.3A.5;
    - (ii) *applications to connect* received under clause 5.3A.9; and
    - (iii) the average time taken to complete *applications to connect*;
- (m) information on the *Distribution Network Service Provider's* investments in information technology and communication systems which occurred in the preceding year, and planned investments in information technology and communication systems related to management of *network* assets in the *forward planning period*; and
- (n) a regional development plan consisting of a map of the *Distribution Network Service Provider's* *network* as a whole, or maps by regions, in accordance

with the *Distribution Network Service Provider's* planning methodology or as required under any *regulatory obligation or requirement*, identifying:

- (1) *sub-transmission lines, zone substations and transmission-distribution connection points*; and
  - (2) any system limitations that have been forecast to occur in the *forward planning period*, including, where they have been identified, overloaded *primary distribution feeders*; and
- (o) the analysis of the known and potential interactions between:
- (1) any *emergency frequency control schemes*, or emergency controls in place under clause S5.1.8, on its *network*; and
  - (2) protection systems or control systems of plant connected to its network (including consideration of whether the settings of those systems are fit for purpose for the future operation of its network),
- undertaken under clause 5.13.1(d)(6), including a description of proposed actions to be undertaken to address any adverse interactions.

## **Schedule 5.9      Demand side engagement document (clause 5.13.1(h))**

For the purposes of clause 5.13.1(h), the following information must be included in a *Distribution Network Service Provider's demand side engagement document*:

- (a) a description of how the *Distribution Network Service Provider* will investigate, develop, assess and report on potential *non-network options*;
- (b) a description of the *Distribution Network Service Provider's* process to engage and consult with potential *non-network providers* to determine their level of interest and ability to participate in the development process for potential *non-network options*;
- (c) an outline of the process followed by the *Distribution Network Service Provider* when negotiating with *non-network providers* to further develop a potential *non-network option*;
- (d) an outline of the information a *non-network provider* is to include in a *non-network* proposal, including, where possible, an example of a best practice *non-network* proposal;
- (e) an outline of the criteria that will be applied by the *Distribution Network Service Provider* in evaluating *non-network* proposals;
- (f) an outline of the principles that the *Distribution Network Service Provider* considers in developing the payment levels for *non-network options*;
- (g) a reference to any applicable incentive payment schemes for the implementation of *non-network options* and whether any specific criteria is applied by the *Distribution Network Service Provider* in its application and assessment of the scheme;
- (h) the methodology to be used for determining *avoided Customer TUOS charges*, in accordance with clauses 5.4AA and 5.5; and;

- (i) a summary of the factors the *Distribution Network Service Provider* takes into account when negotiating *connection agreements* with *Embedded Generators or Embedded Integrated Resource Providers*;
- (j) the process used, and a summary of any specific regulatory requirements, for setting charges and the terms and conditions of *connection agreements* for *embedded generating units* and embedded integrated resource units;
- (k) the process for lodging an *application to connect* for an *embedded generating unit* or embedded integrated resource unit and the factors taken into account by the *Distribution Network Service Provider* when assessing such applications;
- (l) worked examples to support the description of how the *Distribution Network Service Provider* will assess potential *non-network options* in accordance with paragraph (a);
- (m) a hyperlink to any relevant, publicly available information produced by the *Distribution Network Service Provider*;
- (n) a description of how parties may be listed on the *demand side engagement register* ; and
- (o) the *Distribution Network Service Provider's* contact details.





## **CHAPTER 5A**

## 5A. Electricity connection for retail customers

### Part A Preliminary

#### 5A.A.1 Definitions

In this Chapter:

##### **basic connection service**

means a *connection service* related to a *connection* (or a proposed *connection*) between a *distribution system* and a *retail customer's* premises (excluding a non-registered *embedded generator's* premises) in the following circumstances:

- (a) either:
  - (1) the *retail customer* is typical of a significant class of *retail customers* who have sought, or are likely to seek, the service; or
  - (2) the *retail customer* is, or proposes to become, a *micro embedded generator*; and
- (b) the provision of the service involves minimal or no *augmentation* of the *distribution network*; and
- (c) a *model standing offer* has been approved by the *AER* for providing that service as a *basic connection service*.

##### **basic micro EG connection service**

means a *basic connection service* for a *retail customer* who is a *micro embedded generator*.

##### **confidential information**

means, in relation to a *Registered Participant*, *AEMO* or a *connection applicant*, information which is or has been provided to that *Registered Participant*, *AEMO* or *connection applicant* under or in connection with the *Rules* and which is stated under the *Rules*, or by *AEMO*, the *AER* or the *AEMC*, to be *confidential information* or is otherwise confidential or commercially sensitive. It also includes any information which is derived from such information.

##### **connection**

means a physical link between a *distribution system* and a *retail customer's* premises to allow the flow of electricity.

##### **connection alteration**

means an alteration to an existing *connection* including an addition, upgrade, *extension*, expansion, *augmentation* or any other kind of alteration.

##### **connection applicant**

means an applicant for a *connection service* of 1 of the following categories:

- (a) *retail customer*;
- (b) *retailer* or other person acting on behalf of a *retail customer*;
- (c) *real estate developer*.

**connection application**

means an application under clause 5A.D.3.

**connection charge**

means a charge imposed by a *Distribution Network Service Provider* for a *connection service*.

**connection charge guidelines**

– see clause 5A.E.3.

**connection charge principles**

– see clause 5A.E.1.

**connection contract**

means a contract formed by the making and acceptance of a *connection offer*.

**connection offer**

means an offer by a *Distribution Network Service Provider* to enter into a *connection contract* with:

- (a) a *retail customer*; or
- (b) a *real estate developer*.

**connection policy**

means a document, approved as a *connection policy* by the *AER* under Chapter 6, Part E, setting out the circumstances in which *connection charges* are payable and the basis for determining the amount of such charges.

**connection service**

means either or both of the following:

- (a) a service relating to a *new connection* for premises;
- (b) a service relating to a *connection alteration* for premises,

but, to avoid doubt, does not include a service of providing, installing or maintaining a *metering installation* for premises.

**contestable**

– a service is *contestable* if the laws of the *participating jurisdiction* in which the service is to be provided permit the service to be provided by more than one supplier as a *contestable* service or on a competitive basis.

**customer connection contract**

– see section 67 of the *NERL*.

**embedded generator**

means a person that owns, controls or operates an *embedded generating unit* or an embedded integrated resource unit.

**enquiry**

means a preliminary *enquiry* under clause 5A.D.2.

**micro EG connection**

means a *connection* between an *embedded generating unit* or an *embedded integrated resource unit* and a *distribution network* of the kind contemplated by *Australian Standard AS 4777* (Grid connection of energy systems via inverters).

**micro embedded generator**

means a *retail customer* who operates, or proposes to operate, an *embedded generating unit* or *embedded integrated resource unit* for which a *micro EG connection* is appropriate.

**model standing offer**

means a document approved by the *AER* as a *model standing offer* to provide *basic connection services* (see clause 5A.B.3) or as a *model standing offer* to provide *standard connection services* (see clause 5A.B.5).

**negotiated connection contract**

– see clause 5A.C.1.

**new connection**

means a *connection* established or to be established, in accordance with this Chapter and applicable *energy laws*, where there is no existing *connection*.

**non-registered embedded generator**

means an *embedded generator* that is neither a *micro embedded generator* nor a *Registered Participant*.

**premises connection assets**

means the components of a *distribution system* used to provide *connection services*.

**real estate developer**

means a person who carries out a *real estate development*.

**real estate development**

means the commercial development of land including its development in 1 or more of the following ways:

- (a) subdivision;
- (b) the construction of commercial or industrial premises (or both);
- (c) the construction of multiple new residential premises.

**retail customer**

includes a non-registered *embedded generator* and a *micro embedded generator*.

**standard connection service**

means a *connection service* (other than a *basic connection service*) for a particular class (or sub-class) of *connection applicant* and for which a *model standing offer* has been approved by the *AER*.

**supply service**

means a service (other than a *connection service*) relating to the *supply* of electricity.

### 5A.A.2 Application of this Chapter

- (a) This Chapter does not apply to, or in relation to, a *connection applicant* that is a *Registered Participant* or an *Intending Participant* unless the *Registered Participant* or *Intending Participant* is acting as the agent of a *retail customer*.
- (b) Where a *non-registered embedded generator* wishing to connect an *embedded generating unit* or *embedded integrated resource unit* to a *Distribution Network Service Provider's network*:
  - (1) falls within a particular class (or subclass) of *connection applicant* for which that *Distribution Network Service Provider* provides a *standard connection service*, this Chapter will apply;
  - (2) does not fall within a particular class (or subclass) of *connection applicant* for which that *Distribution Network Service Provider* provides a *standard connection service*, paragraph (c) will apply.
- (c) A *non-registered embedded generator* that meets the requirements in paragraph (b)(2) may elect to seek *connection* of the relevant *embedded generating unit* or *embedded integrated resource unit* under rule 5.3A instead of this Chapter.
- (d) Any election made by a *non-registered embedded generator* under paragraph (c) must be:
  - (1) made before an *enquiry* is made or if no *enquiry* is made, before a *connection application* is lodged with the relevant *Distribution Network Service Provider*;
  - (2) in writing; and
  - (3) delivered to the relevant *Distribution Network Service Provider* at the same time as lodging an *enquiry* under clause 5.3A.5.
- (e) For the avoidance of doubt, clause 5A.C.1(a)(2) is still applicable when a *non-registered embedded generator* meets the requirements in paragraph (b)(1).

### 5A.A.3 Small Resource Aggregator~~Small Generation Aggregator~~ deemed to be agent of a retail customer

- (a) A *Small Resource Aggregator*~~*Market Small Generation Aggregator*~~ is deemed to be the agent of a *retail customer*, where there is an agreement between the *Small Resource Aggregator*~~*Market Small Generation Aggregator*~~ and the *retail customer* relating to the *retail customer's small generating unit* under which the *Small Resource Aggregator*~~*Market Small Generation Aggregator*~~ is financially responsible for the *market connection point* at which the *small generating unit* is connected to the *national grid*.
- (b) A *Small Resource Aggregator* is deemed to be the agent of a *retail customer*, where there is an agreement between the *Small Resource Aggregator* and the *retail customer* relating to the *retail customer's small integrated resource unit* under which the *Small Resource Aggregator* is financially responsible for the *market connection point* at which the *small integrated resource unit* is connected to the *national grid*.



## Part B Standardised offers to provide basic and standard connection services

### Division 1 Basic connection services

#### 5A.B.2 Proposed model standing offer for basic connection services

- (a) A *Distribution Network Service Provider* must submit for the *AER's* approval a proposed *model standing offer* to provide *basic connection services* for each class (or subclass) of *basic connection services* on specified terms and conditions.
- (b) The terms and conditions of the proposed *model standing offer* must cover:
  - (1) a description of the *connection* (and the *premises connection assets* of which it is to be comprised) including a statement of its maximum capacity; and
  - (2) timeframes for commencing and completing the work; and
  - (3) the qualifications required for carrying out the work involved in providing a *contestable* service (including reference to the jurisdictional or other legislation and statutory instruments under which the qualifications are required); and
  - (4) the safety and technical requirements (including reference to the jurisdictional or other legislation and statutory instruments under which the requirements are imposed) to be complied with by the provider of a *contestable* service or the *retail customer* (or both); and
  - (5) details of the *connection charges* (or the basis on which they will be calculated) including details of the following (so far as applicable):
    - (i) the cost of any necessary *extension* to the *distribution system* for which provision has not already been made through existing *distribution use of system* charges or a tariff applicable to the *connection*;
    - (ii) **[Deleted]**
    - (iii) the cost of any other relevant *premises connection assets*;
    - (iv) the costs of common components of minor variations from the standard specifications;
    - (v) any other incidental costs; and
  - (6) the manner in which *connection charges* are to be paid by the *retail customer*; and
  - (7) if the service is a *basic micro EG connection service*, the particular requirements with regard to the export of electricity into the *distribution system* including:
    - (i) the special requirements for metering and other equipment for the export of electricity; and
    - (ii) the required qualification for installers of relevant equipment (including reference to the jurisdictional or other legislation and

- statutory instruments under which the qualifications are required); and
- (iii) the special safety and technical requirements (including reference to the jurisdictional or other legislation and statutory instruments under which they are imposed) to be complied with by the provider of a *contestable* service or the *retail customer* (or both); and
- (iv) the *DER generation information* that the *Distribution Network Service Provider* requires; and
- (v) the requirement that the new or replacement *embedded generating unit* or embedded integrated resource unit the subject of the *basic micro EG connection service* must be compliant with the *DER Technical Standards*.

## Part C Negotiated connection

### 5A.C.3 Negotiation framework

- (a) The following rules (collectively described as the **negotiation framework**) govern negotiations between a *Distribution Network Service Provider* and a *connection applicant*:
  - (1) each party must negotiate in good faith.
  - (1a) the *connection applicant* must, at the request of the *Distribution Network Service Provider*, provide the *Distribution Network Service Provider* with *DER generation information*.
  - (2) the *connection applicant* must, at the request of the *Distribution Network Service Provider*, provide the *Distribution Network Service Provider* with information it reasonably requires in order to negotiate on an informed basis.

#### Note

The information might (for example) include estimates of average and *maximum demand* for electricity to be *supplied* through the *connection*.

- (3) the *Distribution Network Service Provider* must provide the *connection applicant* with information the *connection applicant* reasonably requires in order to negotiate on an informed basis including:
  - (i) an estimate of the amount to be charged by the *Distribution Network Service Provider* for assessment of the application and the making of a connection offer for a negotiated *connection contract*; and
  - (ii) an estimate of *connection charges*; and
  - (iii) a statement of the basis on which *connection charges* are calculated; and
  - (iv) if the *connection applicant* has elected to extend the negotiations to *supply services*— an estimate of any applicable charges for *supply services* and a statement of the basis of their calculation; and

- (v) if the *connection applicant* is proposing to connect a new or replacement *embedded generating unit* or *embedded integrated resource unit* by way of a *basic micro EG connection service*, that the *embedded generating unit* or *embedded integrated resource unit* must be compliant with the *DER Technical Standards*.

**Note**

The *Distribution Network Service Provider* might, according to the circumstances of a particular case, need to provide further information to ensure the *connection applicant* is properly informed – for example, information about:

- technical and safety requirements;
  - the types of *connection* that are technically feasible;
  - *network* capacity at the proposed *connection point*;
  - possible strategies to reduce the cost of the *connection*.
- (4) the *Distribution Network Service Provider* may consult with other users of the *distribution network* who may be adversely affected by the proposed *new connection* or *connection alteration*.
- (5) in assessing the application, the *Distribution Network Service Provider* must determine:
- (i) the technical requirements for the proposed *new connection* or *connection alteration*; and
  - (ii) the extent and costs of any necessary *augmentation* of the *distribution system*; and
  - (iii) any consequent change in charges for *distribution use of system* services; and
  - (iv) any possible material effect of the proposed *new connection* or *connection alteration* on the *network power transfer capability* of the *distribution network* to which the *new connection* or *connection alteration* is proposed to be made and any other *distribution network* that might be affected by the proposed *new connection* or *connection alteration*.
- (6) the *Distribution Network Service Provider* must make reasonable endeavours to make a *connection offer* that complies with the *connection applicant's* reasonable requirements.

**Example**

Reasonable requirements as to the location of the proposed *connection point* or the level and standard of the *distribution network's power transfer capability*.

- (7) the *Distribution Network Service Provider* must comply with its *connection policy*.
- (b) The following supplementary rules apply:
- (1) if a *Distribution Network Service Provider* requires information from a *connection applicant* in addition to the information provided in the application, a request for the additional information under paragraphs (a)(1a) or (a)(2) must (if practicable) be made within 20 *business days*

- after the *Distribution Network Service Provider* receives the relevant application;
- (2) the *Distribution Network Service Provider* must provide the information required under paragraph (a)(3) as soon as practicable after the *Distribution Network Service Provider* receives the *connection applicant's* application or, if the *Distribution Network Service Provider* requests additional information under paragraph (a)(2), as soon as practicable after the *Distribution Network Service Provider* receives the relevant information.
- (c) Each party to the negotiations must maintain the confidentiality of *confidential information* disclosed by the other party in the course of the negotiations unless disclosure of the information is authorised:
- (1) by the party to whom the duty of confidentiality is owed; or
- (2) under:
- (i) NEL or the *Rules*; or
- (ii) any other law.

## **Part D Application for connection service**

### **Division 1 Information**

#### **5A.D.1 Publication of information**

- (a) A *Distribution Network Service Provider* must publish on its website the following:
- (1) an application form for a *new connection* or a *connection alteration*; and
- (2) a description of how an application for a *new connection* or a *connection alteration* is to be made (including a statement of the information required for the application); and
- (3) a description of the *Distribution Network Service Provider's basic connection services* and *standard connection services* and the classes (or subclasses) of *retail customer* to which they apply. If the *Distribution Network Service Provider* does not provide *standard connection services* for all or some non-registered embedded generators, a clear statement to this effect must also be included in the description; and
- (4) an explanation of the *connection applicant's* right to negotiate with the *Distribution Network Service Provider* for a negotiated *connection contract* and a description of the negotiation process; and
- (5) the requirements for an expedited *connection*; and
- (6) the basis for calculation of *connection charges*; and
- (7) information set out in clauses 5.3A.3(b)(1)(vii) and 5.3A.3(b)(2)-(7) as such information relates to the *connection* of *embedded generating*

*units or embedded integrated resource units* by a *non-registered embedded generator*.

- (b) To the extent a *Distribution Network Service Provider* has provided the information required under paragraph (a)(7) by including that information in its *information pack published* under clause 5.3A.3(a)(3), it will be taken to have complied with paragraph (a)(7).

#### 5A.D.1A Register of completed embedded generation projects

- (a) For the purposes of this clause 5A.D.1A:

**completed non-registered embedded generation projects** means all *embedded generating units or embedded integrated resource units*, operated or controlled by a non-registered embedded generator that are *connected* to the *Distribution Network Service Provider's network*.

**DAPR date** has the same meaning as in clause 5.13.2.

- (b) In relation to completed non-registered embedded generation projects, a *Distribution Network Service Provider* must establish and *publish*, on its website, a register of the *plant*, including but not limited to:
- (1) technology of *generating unit* (e.g. *synchronous generating unit*, induction generator, photovoltaic array, etc) and its make and model;
  - (2) maximum power generation capacity of all *embedded generating units or embedded integrated resource units* comprised in the relevant *generating system*;
  - (3) contribution to fault levels;
  - (4) the size and rating of the relevant *transformer*;
  - (5) a single line diagram of the *connection* arrangement;
  - (6) *protection systems* and communication systems;
  - (7) *voltage* control, *power factor* control and/or *reactive power capability* (where relevant); and
  - (8) details specific to the location of a *facility connected* to the *network* that are relevant to any of the details in subparagraphs (1)-(7).
- (c) The *Distribution Network Service Provider* must not *publish confidential information* as part of, or in connection with, the register, unless disclosure of the information is authorised:
- (1) by the party to whom the duty of confidentiality is owed; or
  - (2) under:
    - (i) the *NEL* or the *Rules*; or
    - (ii) any other law.
- (d) The *Distribution Network Service Provider* must:
- (1) by the *DAPR date* each year, include in the register the details contained in paragraph (b) for all completed non-registered embedded generation projects since the date the register referred to in paragraph (b) is established; and

- (2) in the fifth year after the establishment of the register, and in each year thereafter, update the register by the *DAPR date* with details of all completed non-registered embedded generation projects in the 5 year period preceding the *DAPR date*.
- (e) To the extent a *Distribution Network Service Provider* includes the information required under paragraphs (b) and (d) in its register established under rule 5.18B, it will be taken to have complied with paragraphs (b) and (d).

## Schedule 5A.1 – Minimum content requirements for connection contract

### Part B Connection offer involving embedded generation

- (a) A *connection offer* to a person who operates, or proposes to operate, an *embedded generating unit* or embedded integrated resource unit (the **embedded generator**) must contain:
  - (1) a provision stating that a *connection contract* will be formed, and will come into operation, on acceptance of the *connection offer*; and
  - (2) details of the *connection point*, the maximum capacity of the *connection* to import and export electricity, and the *embedded generator's* installation required at the *connection point*; and
  - (2a) details of the *DER generation information* required to be provided to the *Distribution Network Service Provider* by the *embedded generator*; and
  - (3) details of the *premises connection assets* and additional equipment to be installed on the premises and responsibility for undertaking the work; and
  - (4) details of any *distribution network extension* or other *augmentation* required for the purposes of the *connection*; and
  - (5) an undertaking to complete the work required to establish the *connection* within a specified time frame; and
  - (6) a requirement that the *embedded generator* have appropriate metering installed; and
  - (7) the relevant technical and safety obligations to be met by the *embedded generator* relating to the installation; and
  - (7a) if the *connection applicant* is proposing to connect a new or replacement *embedded generating unit* or embedded integrated resource unit by way of a *basic micro EG connection service*, a requirement that the *embedded generating unit* or embedded integrated resource unit must be compliant with the *DER Technical Standards*.
  - (8) the *embedded generator's* obligation to allow access to the premises by the *Distribution Network Service Provider's* agents, contractors and employees; and



- (9) the *embedded generator's* obligation to accommodate on its premises, and protect from harm, any equipment necessary for the *connection*; and
  - (10) details of the *embedded generator's* monetary obligations including billing arrangements and any security to be provided by the *embedded generator*; and
  - (11) details of the *Distribution Network Service Provider's* monetary obligations (if any) to the *embedded generator*; and
  - (12) a provision requiring the *Distribution Network Service Provider* to provide information about the *connection* to the *embedded generator*; and
  - (13) provision for amendment of the *connection contract* by agreement between the *Distribution Network Service Provider* and the *embedded generator*.
- (b) A *connection contract* that relates to *supply services* must also deal with:
- (1) the *Distribution Network Service Provider's* power to interrupt or reduce the *supply* of electricity to the *connection point*; and
  - (2) warranties and limitations on the *Distribution Network Service Provider's* liability; and
  - (3) *disconnection* and reconnection; and
  - (4) reporting and correction of faults; and
  - (5) dispute resolution; and
  - (6) ongoing obligations of the *Distribution Network Service Provider* and the *embedded generator*; and
  - (7) termination of the *connection contract*.

## **CHAPTER 6**

## 6. Economic Regulation of Distribution Services

### Part D Negotiated distribution services

#### 6.7 Negotiated distribution services

##### 6.7.2 Determination of terms and conditions of access for negotiated distribution services

- (a) A *Distribution Network Service Provider* must comply with:
  - (1) the provider's *negotiating framework*; and
  - (2) the provider's *Negotiated Distribution Service Criteria*,  
when the provider is negotiating the *terms and conditions of access* to *negotiated distribution services*.
- (b) The *Distribution Network Service Provider* must also comply with any other applicable requirements of the *Rules*, including the requirements of:
  - (1) rules 5.3, 5.3A and 5.3AA, when negotiating for the provision of *connection services* and the associated *connection service* charges in respect of the provision of *negotiated distribution services* which would have been *negotiated distribution services* regardless of the operation of clause 6.24.2(c);
  - (2) rules 5.3 and 5.3A, when negotiating for the provision of *connection services* and the associated *connection service* charges in respect of the provision of *negotiated distribution services* which would have been treated as *negotiated transmission services* were it not for the operation of clause 6.24.2(c);
  - (3) rule 5.3AA, when negotiating the ~~charges use of system services charges and access charges~~ to be paid to or by a *Distribution Network User* in respect of the provision of *negotiated distribution services* which would have been *negotiated distribution services* regardless of the operation of clause 6.24.2(c); and
  - (4) for the *declared transmission system* of an *adoptive jurisdiction*, rule 5.4A (as preserved under clause 11.98.8(a)(2)), when negotiating the *use of system services charges* and *access charges* to be paid to or by a *Distribution Network User* in respect of the provision of *negotiated distribution services* which would have been treated as *negotiated transmission services* were it not for the operation of clause 6.24.2(c).

## Part I Distribution Pricing Rules

### 6.19. Data Required for Distribution Service Pricing

#### 6.19.1 Forecast use of networks by Distribution Customers, ~~and~~ Embedded Generators and Embedded Integrated Resource Providers

Any information required by *Distribution Network Service Providers* must be provided by *Service Applicants* as part of the *connection* and access requirements set out in Chapter 5.

## Part J Billing and Settlements

### 6.20 Billing and Settlements Process

This clause describes the manner in which *Distribution Customers*, ~~and~~ *Embedded Generators* and Embedded Integrated Resource Providers are billed by *Distribution Network Service Providers* for *distribution services* and how payments for *distribution services* are settled.

#### 6.20.1 Billing for distribution services

(a) A *Distribution Network Service Provider* must bill *Distribution Network Users* for *distribution services* as follows:

- (1) *Embedded Generators* and Embedded Integrated Resource Providers:
  - (i) by applying the charge for *entry service* as a fixed annual charge to each *Embedded Generator* and Embedded Integrated Resource Provider; and
  - (ii) by applying any other charge the *Distribution Network Service Provider* makes consistently with the *Rules* and the applicable distribution determination.

(2) *Distribution Customers*:

The charges to *Distribution Customers* must be determined according to use of the *distribution network* as determined in accordance with a *metrology procedure* or, in the absence of a *metrology procedure* allowing such a determination to be made, by *meter* or by agreement between the *Distribution Customer* and the *Distribution Network Service Provider* by applying one or more of the following measures:

- (i) demand-based prices to the *Distribution Customer's* metered or agreed demand;
- (ii) energy-based prices to the *Distribution Customer's* metered or agreed energy;
- (iii) the *Distribution Customer* charge determined under this clause as a fixed periodic charge to each *Distribution Customer*;
- (iv) a fixed periodic charge, a prepayment or other charge determined by agreement with the *Distribution Customer*;
- (v) any other measure the *Distribution Network Service Provider* is authorised to apply by the applicable distribution determination.

- (b) Subject to paragraph (c), where a *Distribution Customer* (other than a *Market Customer*) incurs *distribution service* charges, the *Distribution Network Service Provider* must bill the *Market Customer* from whom the *Distribution Customer* purchases electricity directly or indirectly for such *distribution services* in accordance with paragraph (a)(2).
- (c) If a *Distribution Customer* and the *Market Customer* from whom it purchases electricity agree, the *Distribution Network Service Provider* may bill the *Distribution Customer* directly for *distribution services* used by that *Distribution Customer* in accordance with paragraph (a)(2).
- (d) *Distribution Network Service Providers* must:
  - (1) calculate *transmission service* charges and *distribution service* charges for all *connection points* in their *distribution network*; and
  - (2) pay to *Transmission Network Service Providers* the *transmission service* charges incurred in respect of use of a *transmission network* at each *connection point* on the relevant *transmission network*.
- (e) Charges for *distribution services* based on metered kW, kWh, kVA, or kVAh for:
  - (1) *Embedded Generators* that are *Market Generators*; ~~and~~  
(1A) *Embedded Integrated Resource Providers*;
  - (2) *Market Customers*; ~~and~~
  - (3) ~~*First-Tier Customers* and *Second-Tier Customers*; and~~ **[deleted]**
  - (3A) *Non-Registered Customers*;must be calculated by the *Distribution Network Service Provider* from:
  - (4) *settlements ready data* obtained from AEMO's metering database, for those *Embedded Generators*, *Embedded Integrated Resource Providers*, *Market Customers* ~~and~~ *Non-Registered Customers*, ~~*First-Tier Customers* and *Second-Tier Customers*~~ with *connection points* that have a type 1, 2 or 3 metering installation; and
  - (5) *metering data*, in accordance with a *metrology procedure* that allows the *Distribution Network Service Provider* to use *energy data* for this purpose, or otherwise *settlements ready data* obtained from AEMO's metering database, for those *Embedded Generators*, *Embedded Integrated Resource Providers*, *Market Customers* ~~and~~ *Non-Registered Customers*, ~~*First-Tier Customers* and *Second-Tier Customers*~~ with *connection points* that have a type 4, 4A, 5, 6 or 7 metering installation.
- (f) Charges for *distribution services* based on metered kW, kWh, kVA or kVAh for:
  - (1) *Embedded Generators* that are not *Market Generators*; and
  - (2) **[Deleted]**
  - (3) *franchise customers*,

must be calculated by the *Distribution Network Service Provider* using data that is consistent with the *metering data* used by the relevant *Local Retailer* in determining *energy settlements*.

- (g) The *Distribution Network Service Provider* may bill the relevant *Local Retailer* for *distribution services* used by *franchise customers*.
- (h) Where the billing for a *Distribution Customer* for a particular *financial year* is based on quantities which are undefined until after the commencement of the *financial year*, charges must be estimated from the previous year's billing quantities with a reconciliation to be made when the actual billing quantities are known.
- (i) Where the previous year's billing quantities are unavailable or no longer suitable, nominated quantities may be used as agreed between the parties.

## Part K Prudential requirements, capital contributions and prepayments

### 6.21 Distribution Network Service Provider Prudential Requirements

This clause sets out the arrangements by which *Distribution Network Service Providers* may minimise financial risks associated with investment in *network assets* and provides for adoption of cost-reflective payment options in conjunction with the use of average distribution prices. The clause also prevents *Distribution Network Service Providers* from receiving income twice for the same assets through prudential requirements and *distribution service prices*.

#### 6.21.1 Prudential requirements for distribution network service

- (a) A *Distribution Network Service Provider* may require an *Embedded Generator*, *Embedded Integrated Resource Provider* or *Distribution Customer* that requires a new *connection* or a modification in service for an existing *connection* to establish prudential requirements for *connection service* and/or *distribution use of system service*.
- (b) Prudential requirements for *connection service* and/or *distribution use of system service* are a matter for negotiation between the *Distribution Network Service Provider* and the *Embedded Generator*, *Embedded Integrated Resource Provider* or *Distribution Customer* and the terms agreed must be set out in the *connection agreement* between the *Distribution Network Service Provider* and the *Embedded Generator*, *Embedded Integrated Resource Provider* or *Distribution Customer*.
- (c) The *connection agreement* may include one or more of the following provisions:
  - (1) the conditions under which and the time frame within which other *Distribution Network Users* who use that part of the *distribution network* contribute to refunding all or part of the payments;
  - (2) the conditions under which financial arrangements may be terminated; and



- (3) the conditions applying in the event of default by the *Distribution Customer*, ~~or~~ *Embedded Generator* or *Embedded Integrated Resource Provider*.
- (d) The prudential requirements may incorporate, but are not limited to, one or more of the following arrangements:
  - (1) financial capital contributions;
  - (2) non-cash contributions;
  - (3) *distribution service* charge prepayments;
  - (4) guaranteed minimum *distribution service* charges for an agreed period;
  - (5) guaranteed minimum *distribution service* quantities for an agreed period;
  - (6) provision for financial guarantees for *distribution service* charges.

## Part L Dispute resolution

### 6.22 Dispute Resolution

#### 6.22.2 Determination of dispute

- (a) In determining an access dispute about *terms and conditions of access* to a *direct control service*, the *AER* must apply:
  - (1) in relation to price, the *Distribution Network Service Provider's approved pricing proposal* and the *Distribution Network Service Provider's tariff structure statement* or, in respect of the *Distribution Network Service Provider's transmission standard control services* in respect of which the *AER* has made a determination under clause 6.25(b) that pricing in respect of those services should be regulated under Part J of Chapter 6A through the application of rule 6.26, the *Distribution Network Service Provider's approved pricing methodology*;
  - (2) in relation to other terms and conditions, Chapters 4, 5, this Chapter 6 and Chapter 7 and any other *applicable regulatory instrument*; and
  - (3) in relation to all *terms and conditions of access* (including price) the decisions of *AEMO* or the *AER* where those decisions relate to those terms and conditions and are made under Chapters 4, 5, this Chapter 6 and Chapter 7.
- (b) In determining an access dispute about the *terms and conditions of access* to a *direct control service*, the *AER* may:
  - (1) have regard to other matters the *AER* considers relevant; and
  - (2) hear evidence or receive submissions from *AEMO* about *power system security* and from *Distribution Network Users* who may be adversely affected.

**Note:**

Section 130 of the *NEL* requires the *AER*, in making an access determination, to give effect to a network revenue or pricing determination applicable to the services that are the subject

of the dispute even though the determination may not have been in force when the dispute arose.

(b1) Subject to paragraphs (a) and (b), in determining an access dispute about the terms and conditions of access to a direct control service for a Distribution Network User other than a retail customer, the AER must apply the principles in clause 6.7.1 as if the direct control service were a negotiated distribution service for the purposes of that clause.

(c) In determining an access dispute about *terms and conditions of access* to a *negotiated distribution service*, the AER must apply:

- (1) in relation to price (including *access charges*), the *Negotiated Distribution Service Criteria* that are applicable to the dispute in accordance with the relevant distribution determination; and
- (2) in relation to other terms and conditions, the *Negotiated Distribution Service Criteria* that are applicable to the dispute and Chapters 4, 5, this Chapter 6 and Chapter 7 of the *Rules*; and
- (3) in relation to all *terms and conditions of access* (including price) the decisions of AEMO or the AER where those decisions relate to those terms and conditions and are made under Chapters 4, 5, this Chapter 6 and Chapter 7 of the *Rules*;

and must have regard:

- (4) to the relevant *negotiating framework* prepared by the *Distribution Network Service Provider* and approved by the AER.
- (d) In determining an access dispute about the *terms and conditions of access* to a *negotiated distribution service*, the AER may:
- (1) have regard to other matters the AER considers relevant; and
  - (2) hear evidence or receive submissions from AEMO and *Distribution Network Users* notified and consulted under the *Distribution Network Service Provider's negotiating framework*.
- (e) In determining an access dispute about *access charges*, or involving *access charges*, the AER must give effect to the following principle:

*Access charges* should be based on the costs reasonably incurred by the *Distribution Network Service Provider* in providing *distribution network user access* and, where they consist of compensation referred to in clause 5.3AA(f)(4)(ii) and (iii)~~5.5(f)(4)(ii) and (iii)~~, on the revenue that is likely to be foregone and the costs that are likely to be incurred by a person referred to in those provisions where an event referred to in those provisions occurs.

## Part M Separate disclosure of transmission and distribution charges

### 6.23 Separate disclosure of transmission and distribution charges

(a) A *Distribution Customer*:

- (1) with a *load* greater than 10MW or electricity consumption greater than 40GWh per annum; or

- (2) with metering equipment capable of capturing relevant *transmission* and *distribution system* usage data,

may make a request (a **TUOS/DUOS disclosure request**) to a *Distribution Network Service Provider* to provide the *Distribution Customer* with a statement (a **TUOS/DUOS disclosure statement**) identifying the separate components of the *designated pricing proposal charges* and *distribution use of system* charges comprised in the charges for electricity supplied to the *Distribution Customer's connection points*.

- (b) Within 10 *business days* of receipt of a TUOS/DUOS disclosure request, a *Distribution Network Service Provider* must notify the *Distribution Customer* of the estimated charge (including details of how the charge is calculated) for providing the TUOS/DUOS disclosure statement. The charge must be no greater than the reasonable costs directly incurred by the *Distribution Network Service Provider* in preparing the statement for the *Distribution Customer*.
- (c) If the *Distribution Customer* advises the *Distribution Network Service Provider* within 20 *business days* of receipt of the notice referred to in paragraph (b) that it still requires the requested TUOS/DUOS disclosure statement, the *Distribution Network Service Provider* must prepare the statement and provide it to the *Distribution Customer* within 20 *business days* of being so advised. The TUOS/DUOS disclosure statement must include detailed information on the method used to determine the *distribution use of system* charges and the allocation of the *designated pricing proposal charges* to the *Distribution Customer* for electricity supplied to its *connection points*. The information must be sufficient to allow the *Distribution Customer* to assess the impact on its *network* charges of a change in its *network* use.
- (d) The TUOS/DUOS disclosure statement must also separately identify the amounts that have been allocated to the *Distribution Customer's connection points* under Part J of Chapter 6A in respect of each of the *categories of prescribed transmission services*, where the *Distribution Customer* requests this information.
- (e) Where the *Distribution Customer* requests the information referred to in paragraph (d), the *Distribution Network Service Provider* must separately identify the component of the charge notified under paragraph (b) that relates to the provision of the additional information.
- (f) Each *Distribution Network Service Provider* must publish information annually disclosing the *designated pricing proposal charges* and *distribution use of system* charges for each of the classes of *Distribution Customers* identified for this purpose by the *Distribution Network Service Provider*, or as required by the *AER*.

## **CHAPTER 7**

## 7. Metering

### Part B Roles and Responsibilities

#### 7.4 Qualification and Registration of Metering Providers, Metering Data Providers and Embedded Network Managers

##### 7.4.1 Qualifications and registration of Metering Providers

- (a) [Not used]
- (a1) A *Metering Provider* is a person who:
  - (1) meets the requirements set out in Schedule 7.2; and
  - (2) is accredited by and registered by *AEMO* in that capacity in accordance with the qualification process established under clause S7.2.1(b).
- (b) Any person may apply to *AEMO* for accreditation and registration as a *Metering Provider*.
- (c) *AEMO* must include requirements for accreditation of *Metering Providers* in the *service level procedures*. The adoption of the requirements by *Metering Providers* is to be included in the qualification process in accordance with clause S7.2.1(b). The requirements must include a dispute resolution process.
- (d) A *Metering Provider* must comply with the provisions of the *Rules* and procedures authorised under the *Rules* that are expressed to apply to *Metering Providers* relevant to their category of registration.
- (e) A *Market Generator*, *Integrated Resource Provider* or *Small Resource Aggregator* which is involved in the trading of *energy* must not be registered as a *Metering Provider* for *connection points* in respect of which the *metering data* relates to its own use of *energy*.
- (f) Except as otherwise specified in paragraph (g), a *Market Customer* must not be registered as a *Metering Provider* at any *connection point*.
- (g) If a *Market Participant* is a *Market Customer* and also a *Network Service Provider* then the *Market Participant* may be registered as a *Metering Provider* for that *connection point* notwithstanding paragraph (f), providing that at the *connection points* on the *transmission network*, the *Market Participant* must regard the *Transmission Network Service Provider* with which it has entered into a *connection agreement* as the *Local Network Service Provider*.

##### 7.4.2 Qualifications and registration of Metering Data Providers

- (a) A *Metering Data Provider* is a person who:
  - (1) meets the requirements set out in Schedule 7.3; and
  - (2) is accredited by and registered by *AEMO* in that capacity in accordance with the qualification process established under clause S7.3.1(c).
- (b) Any person may apply to *AEMO* for accreditation and registration as a *Metering Data Provider*.

- (c) [Not used]
- (c1) *AEMO* must include requirements for accreditation of *Metering Data Providers* in the *service level procedures*. The adoption of the requirements by *Metering Data Providers* is to be included in the qualification process in accordance with clause S7.3.1(c). The requirements must include a dispute resolution process.
- (d) A *Metering Data Provider* must comply with the provisions of the *Rules* and procedures authorised under the *Rules* that are expressed to apply to *Metering Data Providers* relevant to their category of registration.
- (e) A *Market Generator* or *Integrated Resource Provider* or *Small Resource Aggregator* which is involved in the trading of *energy* must not be registered as a *Metering Data Provider* for *connection points* in respect of which the *metering data* relates to its own use of *energy*.
- (f) Except as otherwise specified in paragraph (g), a *Market Customer* must not be registered as a *Metering Data Provider* at any *connection point*.
- (g) If a *Market Participant* is a *Market Customer* and also a *Network Service Provider* then the *Market Participant* may be registered as a *Metering Data Provider* for that *connection point* notwithstanding paragraph (f).

## Part C Appointment of Metering Coordinator

### 7.6 Appointment of Metering Coordinator

#### 7.6.2 Persons who may appoint Metering Coordinators

- (a) A *Metering Coordinator* may only be appointed:
  - (1) with respect to a *connection point* or proposed *connection point* on a *transmission network*, by the *Market Participant* which is *financially responsible* at the *connection point*;
  - (2) with respect to a *connection point* (other than the *connection point* of a *retail customer*) that connects, or is proposed to *connect*, a *generating system* or *integrated resource system* to a *distribution network*, by:
    - (i) the *Market Participant* which is *financially responsible* at the *connection point*; or
    - (ii) a *Non-Market Generator* or *Non-Market Integrated Resource Provider* who owns, controls or operates the *generating system* or *integrated resource system* that is connected to the *distribution network* at the *connection point*; or
    - (iii) a person who owns, controls or operates the *generating system* or *integrated resource system* that is connected to the *distribution network* at the *connection point* and is exempt from the requirement to register as a *Generator* or *Integrated Resource Provider* under clause 2.1A.2(a)~~clause 2.2.1(e)~~; and
  - (2A) with respect to a *connection point* or proposed *connection point* that is on a *distribution network* and which connects that *distribution network* to an adjacent *distribution network* (other than an *embedded network*)



- by the *Distribution Network Service Provider* responsible for appointing the *Metering Coordinator* at that *connection point* as determined by agreement between the two *Distribution Network Service Providers* related to that *connection point*.
- (3) with respect to any other *connection point*, by:
- (i) the *Market Participant* which is *financially responsible* at the *connection point*; or
  - (ii) the *large customer* whose premises are supplied at the *connection point*.
- (b) A person making an appointment under paragraph (a) must do so in accordance with the *Rules* and procedures authorised under the *Rules*.
- (c) The *Market Settlement and Transfer Solution Procedures* must specify that a *Metering Coordinator* at a *connection point* is responsible for the *metering installation*:
- (1) where the change in the *Metering Coordinator* at a *connection point* is effected due to a change in the *financially responsible Market Participant* at that *connection point*, on the day that the ~~market load at the~~ *connection point* transfers to the new *financially responsible Market Participant*; and
  - (2) otherwise, on any other day.

## Part D Metering installation

### 7.8 Metering installation arrangements

#### 7.8.2 Metering installation components

- (a) A *Metering Provider* must, in accordance with the *Rules* and procedures authorised under the *Rules*, ensure that a *metering installation* (other than a type 7 *metering installation*):
- (1) contains a device that has either a visible or an equivalently accessible display of the cumulative total *energy* measured by that *metering installation* (at a minimum);
- Note**
- This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)
- (2) is accurate in accordance with clause 7.8.8;
- Note**
- This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)
- (3) in the case of *metering installations* types 1, 2, 3, or 4, has *electronic data transfer* facilities from the *metering installation* to the *metering data services database*;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (4) includes a *communications interface* to meet the requirements of clause 7.3.2(e)(4);

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (5) is secure in accordance with rule 7.15;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (6) records *energy data* in a manner that enables *metering data* to be collated in accordance with clause 7.10.5;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (7) is capable of separately recording *energy data* for *energy* flows in each direction where bi-directional *active energy* flows occur or could occur;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (8) has a *measurement element* for *active energy* and if required in accordance with Schedule 7.4 a *measurement element* for *reactive energy*, with both measurements to be recorded;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (9) includes facilities for storing *interval energy data* for a period of at least 35 days if the *metering installation* is registered as a type 1, 2, 3 or 4 *metering installation*;

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (10) includes facilities for storing *interval energy data* for a period of at least 200 days or such other period as specified in the *metrology procedure* if the *metering installation* is registered as a type 4A or type 5 *metering installation*; and

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (11) in the case of a type 6 *metering installation*, includes facilities capable of continuously recording, the total accumulated *energy* supplied through it by a visible display in accordance with subparagraph (1), over a period of at least 12 months.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (a1) *AEMO* may exempt a *Metering Provider* at a *connection point* from complying with the data storage requirements under subparagraph (a)(9) for:
- (1) types 1, 2, and 3 *metering installations*; and
  - (2) Type 4 *metering installations* referred to in clause 7.8.2(b1) installed prior to 1 July 2021. *AEMO* may only grant an exemption under this clause where it is reasonably satisfied that the *Metering Provider* will be able to otherwise satisfy the requirements of Chapter 7.
- (a2) *AEMO* must establish, maintain and *publish* a procedure setting out the requirements for applying for an exemption under paragraph (a1).
- (b) A *metering installation* may consist of combinations of:
- (1) a *current transformer*;
  - (2) a *voltage transformer*;
  - (3) secure and protected wiring from the *current transformer* and the *voltage transformer* to the *meter*;
  - (4) *communications interface* equipment such as a modem, isolation requirements, telephone service, radio transmitter and data link equipment;
  - (5) auxiliary electricity supply to the *meter*;
  - (6) an alarm circuit and monitoring facility;
  - (7) a facility to keep the *metering installation* secure from interference;
  - (8) test links and fusing;
  - (9) summation equipment; and
  - (10) several *metering points* to derive the *metering data* for a *connection point*.
- (b1) Any type 4 *metering installation* at a:
- (1) *transmission network connection point*; or
  - (2) *distribution network connection point* where the relevant *financially responsible Market Participant* is a *Market Generator*, *Integrated Resource Provider* or ~~*Small-Generation Aggregator*~~*Small Resource Aggregator*,

must be capable of recording and providing, and configured to record and provide, *trading interval energy data*.

- (c) Subject to paragraph (ea), the *financially responsible Market Participant* at a *connection point* must:
  - (1) apply to the *Local Network Service Provider* for a *NMI*; and
  - (2) provide the *Metering Coordinator* with the *NMI* for the *metering installation* within 5 *business days* of receiving the *NMI* from the *Local Network Service Provider*.
- (d) The *Local Network Service Provider* must:
  - (1) issue a unique *NMI* for each *metering installation* on its *network* to the *financially responsible Market Participant*; and

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (2) register the *NMI* with *AEMO* in accordance with procedures from time to time specified by *AEMO*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) The *Metering Coordinator* must ensure that *AEMO* is provided with the relevant details of the *metering installation* as specified in Schedule 7.1 within 10 *business days* of receiving the *NMI* under subparagraph (c)(2).
- (ea) An *Embedded Network Manager* at a *child connection point* on an *embedded network* for which it is the *Embedded Network Manager* must:
  - (1) apply to *AEMO* for a *NMI* for a *metering installation* at a *child connection point*;
  - (2) provide the *Metering Coordinator*, *financially responsible Market Participant* and the *Exempt Embedded Network Service Provider* with the *NMI* for the *metering installation* within 5 *business days* of receiving the *NMI* from *AEMO*; and
  - (3) register the *NMI* with *AEMO* in accordance with procedures from time to time specified by *AEMO*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (eb) The obligation in paragraph (ea) does not apply to the extent a *metering installation* at a *child connection point* already has a *NMI*.
- (ec) *AEMO* must issue for each *metering installation* at a *child connection point* a unique *NMI* to the *Embedded Network Manager*.

**Requirements for metering installations for non-market generating units and non-market integrated resource units**

- (f) In addition to the requirements in paragraphs (a) to (e), the *Metering Coordinator* at a *connection point* for a *non-market generating unit* or non-market integrated resource unit must ensure that the *metering installation*:
- (1) where payments for the purchase of electricity *generated* by that unit are based on different rates according to the time of the day, is capable of recording *interval energy data*;
  - (2) where a *current transformer*, a *voltage transformer* or a *measurement element* for *reactive energy* is installed, meets the requirements in Schedule 7.4 for the type of *metering installation* appropriate to that *connection point*;
  - (3) for units with a *nameplate rating* greater than 1 MW, meets:
    - (i) the accuracy requirements specified in Schedule 7.4; and
    - (ii) the measurement requirements in subparagraph (a)(8);
  - (4) in relation to new accumulation *metering* equipment for units with a *nameplate rating* equal to or less than 1 MW, meets the minimum standards for *active energy* class 1.0 watt hour or 2.0 watt hour *meters* in accordance with clause S7.4.6.1(f);
  - (5) for units with a *nameplate rating* of equal to or less than 1 MW that are capable of recording *interval energy data*, meets the minimum standards of accuracy for the *active energy meter* in accordance with Schedule 7.4 for a type 3 or 4 *metering installation* which is based on projected annual sent out generationsent out annual energy volumes; and
  - (6) if reasonably required by the *Distribution Network Service Provider* (where such a request must be in writing and with reasons), after taking into account the size of the *generating unit* or integrated resource unit, its proposed role and its location in the *network*, has the *active energy* and *reactive energy* measured where the unit has a *nameplate rating* of less than 1 MW.

**Requirements for metering installations for a small generating units and small integrated resource units classified as a market generating unit**

- (g) In addition to the requirements for *metering installations* for *non-market generating units* in paragraph (f), the *Metering Coordinator* for a market connection point that connects a small generating unit or a small integrated resource unit small generating unit classified as a market generating unit must ensure that a *metering installation*:
- (1) is classified as a type 1, 2, 3 or 4 *metering installation*; and
  - (2) is capable of recording *interval energy data* relevant to *settlements*.

**7.8.9 Meter churn**

- (a) Any alteration or replacement of a *metering installation* under this Chapter 7 must be managed in accordance with the *meter churn procedures*.

- (b) A *Metering Coordinator* may arrange to alter a type 5 or 6 *metering installation* in accordance with paragraph (a) to make it capable of *remote acquisition* where:
  - (1) the alteration of the *metering installation* is reasonably required to address operational difficulties as defined in paragraph (d); or
  - (2) the *Metering Coordinator* is the *Local Network Service Provider* and the alteration of the *metering installation* is reasonably required to enable the *Local Network Service Provider* to meet its obligations to provide a safe, reliable and secure *network*.
- (c) An alteration of a *metering installation* by a *Metering Coordinator* in accordance with paragraph (b) does not alter the classification of that installation to a type 4 or 4A *metering installation*.
- (d) For the purposes of subparagraph (b)(1), operational difficulties arise where the *metering installation* is difficult or unsafe to access because:
  - (1) the *metering installation* is on a remote property;
  - (2) the *metering installation* is within a secure facility;
  - (3) the *metering installation* is in close proximity to hazardous materials; or
  - (4) accessing or arranging access to the *metering installation* otherwise poses a risk to the safety and security of persons or property.
- (e) [deleted]
- (f) AEMO must establish, maintain and *publish* procedures for the *Metering Coordinator*, *Metering Provider*, *Metering Data Provider* and *financially responsible Market Participant* to consider in managing the *meter churn* resulting from an alteration or replacement of a *metering installation* under paragraph (a) (the '*meter churn procedures*').
- (g) The *meter churn procedures* must include provisions that enable the installation of a new or replacement *metering installation* at a *connection point* as soon as practicable after the transfer of ~~a a-market load at that connection point~~ to a different financially responsible Market Participant has been effected by AEMO.

## Part E Metering Data

### 7.10 Metering Data Services

#### 7.10.2 Data management and storage

- (a) *Metering Data Providers* must:
  - (1) retain *metering data* for all relevant *metering installations* in the *metering data services database*:
    - (i) online in an accessible format for at least 13 months;
    - (ii) following the retention under subparagraph (1)(i), in an accessible format for an overall period of not less than 7 years; and

- (2) archive in an accessible format for a period of 7 years:
  - (i) *metering data* in its original form collected from the *metering installation*;
  - (ii) records of each substitution to *metering data* in respect of a *metering installation*; and
- (3) if required in procedures authorised by *AEMO* under this Chapter 7, provide the persons referred to in clauses 7.15.5(c)(1) to 7.15.5(c)(5a) with access to the *metering data* and *NMI Standing Data* in the *metering data services database*; and

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (4) except for the persons referred to in clauses 7.15.5(c)(1) to 7.15.5(c)(5a), ensure that no other person has access to the *metering data services database*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) *Metering Data Providers* accredited for type 7 *metering installations* must maintain techniques for determining *calculated metering data* for type 7 *metering installations* that have been classified as market connection points ~~are market loads~~ under Schedule 7.4 in accordance with the *metrology procedure*.
- (c) *Metering Data Providers* must maintain *electronic data transfer* facilities in order to deliver *metering data* from the *metering data services database* to the *metering database* in accordance with the relevant *service level procedures*.
- (d) *Check metering data*, where available, and appropriately adjusted for differences in *metering installation* accuracy, where applicable, must be used by the *Metering Data Provider* to validate *metering data*.
- (e) If the *Metering Data Provider* becomes aware that the *metering data* that has been delivered into the *metering database* from a *metering data services database* is incorrect, then the *Metering Data Provider* must provide corrected *metering data* to the persons referred to in clauses 7.15.5(c)(1) to 7.15.5(c)(5a).
- (f) *Metering data* may only be altered by a *Metering Data Provider* except in the preparation of *settlements ready data*, in which case *AEMO* may alter the *metering data* in accordance with clause 7.11.2(c).
- (g) A *Metering Data Provider* may only alter *metering data* in the *metering data services database* in accordance with the *metrology procedure*.
- (h) *Metering Data Providers* must maintain *electronic data transfer* facilities in order to deliver *metering data* from the *metering data services database* in accordance with clause 7.10.3.



- (i) The *Metering Data Provider's* rules and protocols for supplying the *metering data services* must be approved by *AEMO* and *AEMO* must not unreasonably withhold such approval.
- (j) The *Metering Data Provider* must arrange with the *Metering Coordinator* to obtain the relevant *metering data* if *remote acquisition* becomes unavailable.

#### 7.10.5 Periodic energy metering

- (a) The *Metering Data Provider* must, for:
  - (1) types 1, 2 and 3 *metering installations*; and
  - (2) types 4, 4A and 5 *metering installations* that are capable of providing *trading interval energy data*,  
collate *metering data* relating to:
    - (3) the amount of *active energy* and;
    - (4) *reactive energy* (where relevant) passing through a *connection point*,  
in *trading intervals* within a *metering data services database* unless it has been agreed between *AEMO*, the *Local Network Service Provider*, *Embedded Network Manager* in relation to *child connection points* and the *financially responsible Market Participant* that *metering data* may be recorded in sub-multiples of a *trading interval*.

##### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) For type 6 *metering installations* and types 4, 4A and 5 *metering installations* that are not capable of providing *trading interval energy data*, *metering data* relating to the amount of *active energy* passing through a *connection point* must be converted into *trading intervals* in the *profiling* process undertaken by *AEMO* in accordance with the *metrology procedure* and the *metrology procedure* must specify:
  - (1) the parameters to be used in preparing the *trading interval metering data* ~~for each first-tier load and market load~~, including the algorithms;
  - (2) [Deleted]
  - (3) [Deleted]
  - (4) [Deleted]
  - (5) if required, the method of cost recovery in accordance with clause 7.5.2.

##### Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (c) The *Metering Data Provider* must, for type 7 *metering installations*, prepare *metering data* relating to the amount of *active energy* passing through a *connection point* in accordance with clause 7.10.1(a)(4) in *trading intervals* within a *metering data services database*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

## 7.10.6 Time settings

- (a) The *Metering Provider* must set the times of clocks of all *metering installations* with reference to *Eastern Standard Time* to the applicable a standard of accuracy in accordance with Schedule 7.4 ~~relevant to the load through the connection point~~ when installing, testing and maintaining *metering installations*.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (b) *AEMO* must ensure that the *metering database* clock is maintained within –1 second and +1 second of *Eastern Standard Time*.
- (c) The *Metering Data Provider* must maintain the *metering data services database* clock within –1 second and + 1 second of *Eastern Standard Time*.
- (d) The *Metering Data Provider* must:
  - (1) check the accuracy of the clock of the *metering installation* with reference to *Eastern Standard Time* to a standard of accuracy in accordance with Schedule 7.4 relevant to the *load* through the *connection point* on each occasion that the *metering installation* is accessed;
  - (2) reset the clock of the *metering installation* so that it is maintained to the required standard of accuracy in accordance with Schedule 7.4 ~~relevant to the load through the connection point~~ where the clock error of a *metering installation* does not conform to the required standard of accuracy on any occasion that the *metering installation* is accessed; and
  - (3) notify the *Metering Provider* where the *Metering Data Provider* is unable to reset the clock of the *metering installation* in accordance with subparagraph (2).

## 7.11 Metering data and database

### 7.11.3 Changes to energy data or to metering data

- (a) The *Metering Coordinator* must ensure that *energy data* held in a *metering installation* is not altered except when the *meter* is reset to zero as part of a repair or reprogramming.
- (b) If an on-site test of a *metering installation* requires the injection of current, the *Metering Coordinator* must ensure that:
  - (1) the *energy data* stored in the *metering installation* is inspected; and
  - (2) if necessary following the inspection under subparagraph (1), alterations are made to the *metering data*, to ensure that the *metering data* in the *metering data services database* and the *metering database*

is not materially different from the *energy* consumed at that *connection point* during the period of the test.

- (c) If a *Metering Coordinator* considers alterations are necessary under paragraph (b)(2), the *Metering Coordinator* must:
- (1) notify *AEMO* that alteration to the *metering data* is necessary; and
  - (2) advise the *financially responsible Market Participant* or in respect of a *connection point* where clause 7.6.3A or 7.6.3B applies, the *Network Service Provider* that has appointed the *Metering Coordinator* for that *connection point* of the need to change the *metering data* and the *Metering Coordinator* must arrange for the *Metering Data Provider* to:
    - (i) alter the *metering data* for the *connection point* held in the *metering data services database* in accordance with the validation, substitution and estimation procedures in the *metrology procedure*; and
    - (ii) provide the altered *metering data* to the persons who receive that *metering data* under clause 7.10.3(a).
- (d) If a test referred to in paragraph (b) is based on actual energy consumed at that connection point~~connection point loads~~, no alteration is required.

**Note**

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

## Part G Procedures

### 7.16 Procedures

#### 7.16.3 Requirements of the metrology procedure

- (a) *AEMO* must establish, maintain and *publish* the *metrology procedure* that will apply to *metering installations* in accordance with this clause 7.16.3 and this Chapter 7.
- (b) The *metrology procedure* must include a minimum period of 3 months between the date when the *metrology procedure* is *published* and the date the *metrology procedure* commences unless the change is made under clause 7.16.7(e) in which case the effective date may be the same date as the date of *publication*.
- (c) The *metrology procedure* must include:
  - (1) information on the devices and processes that are to be used to:
    - (i) measure, or determine by means other than a device, the flow of electricity in a power conductor;
    - (ii) convey the measured or determined data under subparagraph (i) to other devices;
    - (iii) prepare the data using devices or algorithms to form *metering data*; and

- (iv) provide access to the *metering data* from a *telecommunications network*;
- (2) the requirements for the provision, installation and maintenance of *metering installations*;
- (3) the obligations of *Metering Coordinators, financially responsible Market Participants, Local Network Service Providers, Metering Providers, Metering Data Providers and Embedded Network Managers*;
- (4) details on:
  - (i) the parameters that determine the circumstances when *metering data* must be delivered to *AEMO* for the purposes of Chapter 3 and such parameters must include, but are not limited to, the volume limit per annum below which *AEMO* will not require *metering data* for those purposes;
  - (ii) the timeframe obligations for the delivery of *metering data* relating to a *metering installation* for the purpose of *settlements*; and
  - (iii) the performance standards for *metering data* required for the purpose of *settlements*;
- (5) subject to clause 7.16.4(d)(2), zero MWh as the specification for the *type 5 accumulation boundary*;
- (6) procedures for:
  - (i) the validation and substitution of *metering data*;
  - (ii) the estimation of *metering data*;
  - (iii) the method by which *accumulated metering data* is to be converted by *AEMO* into *trading interval metering data*;
- (6A) procedures for the inclusion of *non-contestable unmetered load*, which has been classified ~~by a Market Participant as a market load~~, in *settlements* including:
  - (i) the creation of a *NMI* for the *non-contestable unmetered load*;
  - (ii) the assignment of each *connection point* relating to *non-contestable unmetered load* to a *transmission network connection point* or *virtual transmission node*;
  - (iii) the methodology for calculating a *load* and *load profile* for *non-contestable unmetered load*; and
  - (iv) the provision of the estimated volumes of *non-contestable unmetered load* to *AEMO* for inclusion in *settlements*; and
- (7) requirements relating to the identification and recording of shared fuse arrangements for multiple *connection points* (**shared fuse arrangements**), including requirements:
  - (i) for *financially responsible Market Participants* and *Metering Coordinators* to notify the *Local Network Service Provider* of

- connection points* with shared fuse arrangements as soon as practicable after becoming aware of the shared fuse arrangements;
- (ii) for *Local Network Service Providers* to record all *connection points* with shared fuse arrangements as soon as practicable after becoming aware of the shared fuse arrangements;
  - (iii) relating to the information to be recorded for all *connection points* with shared fuse arrangements (**shared fuse information**);
  - (iv) relating to the management of shared fuse information; and
  - (v) relating to access to shared fuse information; and
- (8) other matters in the *Rules* required to be included in the *metrology procedure*.

#### 7.16.5 Additional metrology procedure matters

- (a) The *metrology procedure* may:
- (1) clarify the operation of the *Rules* in relation to:
    - (i) *load* profiling;
    - (ii) the provision and maintenance of *meters*;
    - (iii) the provision of *metering data services*;
    - (iv) metrology for a market connection point on a ~~market load connected to a~~ network where the owner or operator of that *network* is not a *Registered Participant*;
    - (v) the accreditation of *Metering Providers*, *Metering Data Providers* and *Embedded Network Managers*; and
    - (vi) with respect to the provision, installation and maintenance of *metering installations* and the provision of *metering data services*, the obligations of *Metering Coordinators*, *financially responsible Market Participants*, *Local Network Service Providers*, *AEMO*, *Metering Providers* and *Metering Data Providers*;
  - (2) specify in detail:
    - (i) the accuracy of *metering installations*;
    - (ii) inspection and testing standards;
    - (iii) *Metering Provider*, *Metering Data Provider* and *Embedded Network Manager* capabilities in accordance with Schedules 7.2, 7.3 and 7.7 respectively, and accreditation standards;
    - (iv) the standards and/or technical requirements for the *metering data services database*; and
    - (v) the technical standards for *metering* of a market connection point on ~~market load that is connected to~~ a network where the operator or owner of that *network* is not a *Registered Participant*;

- (3) provide information on the application of the *Rules*, subject to a statement in the procedure that where any inconsistency arises between the *Rules* and the *metrology procedure*, the *Rules* prevail to the extent of that inconsistency;
  - (4) in relation to type 4A, 5, 6 and 7 *metering installations* specify in what circumstances *metering data* held in the *metering data services database* within the relevant *participating jurisdiction*, can be used by *Distribution Network Service Providers* to calculate charges for *distribution services* for the purposes of clause 6.20.1(e); and
  - (5) contain information to ensure consistency in practice between the *metrology procedure* and other instruments developed and *published* by *AEMO*, including the practices adopted in the *Market Settlement and Transfer Solution Procedures*.
- (b) The *metrology procedure* may not include information relating to consumer protection.

## Schedule 7.1 Metering register

### S7.1.2 Metering register information

*Metering* information to be contained in the *metering register* should include, but is not limited to the following:

- (a) *Connection* and *metering point* reference details, including:
  - (1) agreed locations and reference details (eg drawing numbers);
  - (2) loss compensation calculation details;
  - (3) site identification names;
  - (4) details of *Market Participants* and *Local Network Service Providers* associated with the *connection point* and the *Embedded Network Manager* in relation to a *child connection point*;
  - (5) details of the *Metering Coordinator*; and
  - (6) transfer date for *metering data* (i.e. to another *Market Customer*).
- (b) The identity and characteristics of *metering* equipment (ie *instrument transformers*, *metering installation* and *check metering installation*), including:
  - (1) serial numbers;
  - (2) *metering installation* identification name;
  - (3) *metering installation* types and models;
  - (4) *instrument transformer* ratios (available and connected);
  - (5) current test and calibration programme details, test results and references to test certificates;
  - (6) asset management plan and testing schedule;
  - (7) calibration tables, where applied to achieve *metering installation* accuracy;

- (8) *Metering Provider(s)* and *Metering Data Provider(s)* details;
- (9) summation scheme values and multipliers; and
- (10) data register coding details.
- (c) Data communication details, including:
  - (1) telephone number(s) for access to *energy data*;
  - (2) communication equipment type and serial numbers;
  - (3) communication protocol details or references;
  - (4) data conversion details;
  - (5) user identifications and access rights; and
  - (6) 'write' password (to be contained in a hidden or protected field).
- (d) Data validation, substitution and estimation processes agreed between affected parties, including:
  - (1) algorithms;
  - (2) data comparison techniques;
  - (3) processing and alarms (eg *voltage* source limits; phase angle limits);
  - (4) *check metering* compensation details; and
  - (5) alternate data sources.
- (e) Data processing prior to the *settlement* process, including algorithms for:
  - (1) ~~*trading interval calculation of sent out generation; and generation trading interval 'sent out' calculation; and*~~
  - (2) ~~*trading interval calculation of electricity consumption customer trading interval load calculation.*~~
  - (3) [Deleted]

## Schedule 7.4 Types and Accuracy of Metering installations

### S7.4.3 Accuracy requirements for metering installations

Table S7.4.3.1 Overall Accuracy Requirements of Metering Installation Components

Type	Volume limit per annum per connection point	Maximum allowable overall error (±%) at full load (Item 6) active reactive		Minimum acceptable class or standard of components	Metering installation clock error (seconds) in reference to EST
1	greater than 1000GWh	0.5	1.0	0.2CT/VT/meter Wh 0.5 meter varh	±5
2	100 to 1000GWh	1.0	2.0	0.5CT/VT/meter Wh	±7



Type	Volume limit per annum per connection point	Maximum allowable overall error ( $\pm\%$ ) at full load (Item 6) active reactive		Minimum acceptable class or standard of components	Metering installation clock error (seconds) in reference to EST
				1.0 <i>meter</i> varh	
3	0.75 to less than 100 GWh	1.5	3.0	0.5CT/VT 1.0 <i>meter</i> Wh 2.0 <i>meter</i> varh (Item 1)	$\pm 10$
4	less than 750 MWh (Item 2)	1.5	n/a	<p>Either 0.5 CT and 1.0 <i>meter</i> Wh; or whole current general purpose <i>meter</i> Wh:</p> <ul style="list-style-type: none"> <li>meets the requirements of clause 7.8.2(a)(9); and</li> <li>meets the requirements of clause 7.10.6(d).</li> </ul> <p>(Item 1)</p> <p>For type 4 <i>metering installations</i> that do not provide <i>trading interval energy data</i>, processes used to convert the <i>interval metering data</i> into <i>trading interval metering data</i> and <i>estimated metering data</i> where necessary are included in the <i>metrology procedure</i>.</p>	$\pm 20$ (Item 2a)
4A	less than x MWh	1.5	3.0	Either 0.5 CT and 1.0 <i>meter</i> Wh; or whole	$\pm 20$

Type	Volume limit per annum per connection point	Maximum allowable overall error ( $\pm\%$ ) at full load (Item 6) active reactive		Minimum acceptable class or standard of components	Metering installation clock error (seconds) in reference to EST
	Item 3			<p>current general purpose <i>meter Wh</i>:</p> <ul style="list-style-type: none"> <li>meets the requirements of clause 7.8.2(a)(10); and</li> <li>has the capability, if remote access is activated, of providing the services in table S7.5.1.1; and</li> <li>meets the requirements of clause 7.10.7(d).</li> </ul> <p>Processes used to convert the <i>interval metering data</i> for type 4A <i>metering installations</i> into <i>trading interval metering data</i> and <i>estimated metering data</i> where necessary are included in the <i>metrology procedure</i>.</p>	(Item 2a)
5	less than x MWh (Item 3)	1.5 (Item 3b)	n/a	<p>Either 0.5 CT and 1.0 <i>meter Wh</i>; or whole current general purpose <i>meter Wh</i>:</p> <ul style="list-style-type: none"> <li>meets the requirements of clause 7.8.2(a)(10); and</li> <li>meets the requirements of clause 7.10.7(d).</li> </ul> <p>Processes used to convert the <i>interval metering data</i> for type 5 <i>metering installation</i></p>	$\pm 20$ (Item 3a)

Type	Volume limit per annum per connection point	Maximum allowable overall error ( $\pm\%$ ) at full load (Item 6) active reactive		Minimum acceptable class or standard of components	Metering installation clock error (seconds) in reference to EST
				into <i>trading interval metering data</i> and <i>estimated metering data</i> where necessary are included in the <i>metrology procedure</i> .	
6	less than y MWh (Item 4)	2.0 (Item 4b)	n/a	CT or whole current general purpose <i>meter</i> Wh recording <i>accumulated energy data</i> only. Processes used to convert the <i>accumulated metering data</i> into <i>trading interval metering data</i> and <i>estimated metering data</i> where necessary are included in the <i>metrology procedure</i> . (Item 1)	(Item 4a)
7	volume limit not specified (Item 5)	(Item 6)	n/a	No <i>meter</i> . The <i>metering data</i> is <i>calculated metering data</i> determined in accordance with the <i>metrology procedure</i> .	n/a

- Item 1:
- (a) For a type 3, 4, 4A and 5 and 6 *metering installation*, whole current *meters* may be used if the *meters* meet the requirements of the relevant *Australian Standards* and International Standards which must be identified in the *metrology procedure*.
  - (b) The *metering installation* types referred to in paragraph (a) must comply with any applicable specifications or guidelines (including any transitional arrangements) specified by the National Measurement Institute under the *National Measurement Act*.

- Item 2: *High voltage* customers that require a VT and whose annual consumption is below 750 MWh, must meet the relevant accuracy requirements of Type 3 metering for *active energy* only.
- Item 2a: For the purpose of clarification, the clock error for a type 4 and 4A *metering installation* may be relaxed in the *metrology procedure* to accommodate evolving whole current technologies.
- Item 3: The following requirements apply in relation to a type 4A and type 5 *metering installation*:
- (1) the value of "x" must be determined by each *Minister* and:
    - (i) the "x" value must be provided to *AEMO*; and
    - (ii) *AEMO* must record the "x" value in the *metrology procedure*;
  - (2) the maximum acceptable value of "x" determined under subparagraph (1) must be 750 MWh per annum; and
- Item 3a: For the purpose of clarification, the clock error for a type 5 *metering installation* may be relaxed in the *metrology procedure* to accommodate evolving whole current technologies.
- Item 3b: The maximum allowable error of a type 5 *metering installation* may be relaxed in the *metrology procedure* to accommodate evolving technologies providing that such relaxation is consistent with any regulations published under the *National Measurement Act*.
- Item 4: The following requirements apply in relation to a type 6 *metering installation*:
- (1) a *metrology procedure* must include a procedure relating to converting *active energy* into *metering data*;
  - (2) the value of "y" must be determined by each *Minister* and:
    - (i) the "y" value must be provided to *AEMO*; and
    - (ii) *AEMO* must record the "y" value in the *metrology procedure*;
  - (3) the maximum acceptable value of "y" determined under subparagraph (2) must be 750 MWh per annum;
  - (4) devices within the *metering installation* may record *accumulated energy data* in pre determined daily time periods where such time periods are contained in the *metrology procedure*.
- Item 4a: Any relevant clock errors for a type 6 *metering installation* are to be established in the *metrology procedure*.
- Item 4b: The maximum allowable error of a type 6 *metering installation* may be relaxed in the *metrology procedure* providing that such relaxation is consistent with any regulations published under the *National Measurement Act*.
- Item 5: (a) A type 7 *metering installation* classification applies where a *metering installation* does not require a *meter* to measure the flow of electricity in a power conductor and accordingly there is a requirement to determine by

other means the *metering data* that is deemed to correspond to the flow of electricity in the power conductor.

- (b) The condition referred to in paragraph (a) will only be allowed for *connection points* where *AEMO* in consultation with the *Metering Coordinator* determines:
  - (1) the *load* pattern is predictable;
  - (2) for the purposes of *settlements*, the *load* pattern can be reasonably calculated by a relevant method set out in the *metrology procedure*; and
  - (3) it would not be cost effective to meter the *connection point* taking into account:
    - (i) the small magnitude of the *load*;
    - (ii) the *connection* arrangements; and
    - (iii) the geographical and physical location.
- (c) The *metrology procedure* must include arrangements for type 7 *metering installations* that have been classified as *market connection points* ~~market loads~~.
- (d) A *connection point* that meets the condition for classification as a type 7 *metering installation* does not prevent that *connection point* from being subject to metering in the future.

Item 6: The maximum allowable overall error ( $\pm\%$ ) at different *loads* and *power factors* is set out in Table S7.4.3.2 to Table S7.4.3.6.

**Table S7.4.3.2 Type 1 Installation – Annual Energy Throughput greater than 1,000 GWh**

% Rated Load	Power Factor					
	Unity	0.866 lagging		0.5 lagging		Zero
	active	active	reactive	active	reactive	reactive
10	1.0%	1.0%	2.0%	n/a	n/a	1.4%
50	0.5%	0.5%	1.0%	0.7%	1.4%	1.0%
100	0.5%	0.5%	1.0%	n/a	n/a	1.0%

**Table S7.4.3.3 Type 2 Installation – Annual Energy Throughput between 100 and 1,000 GWh**

% Rated Load	Power Factor					
	Unity	0.866 lagging		0.5 lagging		Zero
	active	active	reactive	active	reactive	reactive
10	2.0%	2.0%	4.0%	n/a	n/a	2.8%
50	1.0%	1.0%	2.0%	1.5%	3.0%	2.0%
100	1.0%	1.0%	2.0%	n/a	n/a	2.0%

**Table S7.4.3.4 Type 3 Installation – Annual Energy Throughput from 0.75 GWh to less than 100 GWh and Type 4A Installation - Annual Energy Throughput less than 0.75 GWh**

% Rated Load	Power Factor					
	Unity	0.866 lagging		0.5 lagging		Zero
	active	active	reactive	active	reactive	reactive
10	2.5%	2.5%	5.0%	n/a	n/a	4.0%
50	1.5%	1.5%	3.0%	2.5%	5.0%	3.0%
100	1.5%	1.5%	3.0%	n/a	n/a	3.0%

**Table S7.4.3.5 Type 4 or 5 Installation – Annual Energy Throughput less than 0.75 GWh**

% Rated Load	Power Factor		
	Unity	0.866 lagging	0.5 lagging
	active	active	active
10	2.5%	2.5%	n/a
50	1.5%	1.5%	2.5%
100	1.5%	1.5%	n/a

**Table S7.4.3.6 Type 6 Installation – Annual Energy Throughput less than 0.75 GWh**

% Rated Load	Power Factor		
	Unity	0.866 lagging	0.5 lagging
	active	active	active
10	3.0%	n/a	n/a
50	2.0%	n/a	3.0%
100	2.0%	n/a	n/a

**Note:**

All measurements in Tables S7.4.3.2 – S7.4.3.6 are to be referred to 25 degrees Celsius.

- (a) The method for calculating the overall error is the vector sum of the errors of each component part (that is,  $a + b + c$ ) where:
  - $a$  = the error of the *voltage transformer* and wiring;
  - $b$  = the error of the *current transformer* and wiring; and
  - $c$  = the error of the *meter*.
- (b) If compensation is carried out then the resultant *metering data* error shall be as close as practicable to zero.



## **CHAPTER 8**

## 8. Administrative Functions

### Part B Disputes

#### 8.2 Dispute Resolution

##### 8.2.1 Application and guiding principles

(a) This rule 8.2 applies to any dispute which may arise between two or more *Registered Participants* about:

- (1) the application or interpretation of the *Rules*;
- (2) the failure of any *Registered Participants* to reach agreement on a matter where the *Rules* require agreement or require the *Registered Participants* to negotiate in good faith with a view to reaching agreement;
- (3) **[Deleted]**
- (4) the proposed access arrangements or *connection agreements* of an *Intending Participant* or a *Connection Applicant*, for *connection* and access to a *distribution network* or *declared transmission system*;
- (5) the payment of moneys under or concerning any obligation under the *Rules*;
- (6) any other matter relating to or arising out of the *Rules* to which a contract between two or more *Registered Participants* provides that the dispute resolution procedures under the *Rules* are to apply;
- (7) any other matter relating to or arising out of the *Rules* in respect of which two or more *Registered Participants* have agreed in writing that this rule 8.2 should apply; or
- (8) any other matter that the *Rules* provide may or must be dealt with under this rule 8.2,

but does not apply to those disputes described in clause 8.2.1(h).

(a1) For the purposes of this rule 8.2 only, "**Registered Participant**" is deemed to include not just *Registered Participants* but also *AEMO*, *Connection Applicants*, *Metering Providers*, *Metering Data Providers*, *Embedded Network Managers* and *NMAS providers* (including *NSCAS preferred tenderers*) who are not otherwise *Registered Participants*, except that this will not be the case where the term "*Registered Participant*":

- (1) is used in clauses 8.2.2(b)(4), 8.2.2(d), 8.2.3(a), 8.2.3(b)(5) and 8.2.5(e); or
- (2) first occurs in clauses 8.2.3(b), 8.2.3(b)(3), 8.2.3(b)(4) or 8.2.3(c); or
- (3) last occurs in clauses 8.2.4(a) or 8.2.9(c).

(b) **[Deleted]**

(c) **[Deleted]**

- (d) The dispute resolution regime in this rule 8.2 provides procedures to resolve disputes between parties, not sanctions for breach of the *Rules*. The dispute resolution processes may indicate that a breach of the *Rules* has occurred and the resolution or determination of the dispute may take account of the damage thereby caused to a party. Any action for breach of the *Rules* may only be taken by the *AER* acting in accordance with the *NEL*.
- (e) It is intended that the dispute resolution regime set out in or implemented in compliance with the *Rules* and described in detail in this rule 8.2 should to the extent possible:
  - (1) be guided by the *national electricity objective*;
  - (2) be simple, quick and inexpensive;
  - (3) preserve or enhance the relationship between the parties to the dispute;
  - (4) take account of the skills and knowledge that are required for the relevant procedure;
  - (5) observe the rules of natural justice;
  - (6) place emphasis on conflict avoidance; and
  - (7) encourage resolution of disputes without formal legal representation or reliance on legal procedures.
- (f) Except as provided in the *NEL* and clause 8.2.1(g), where any dispute of a kind set out in clause 8.2.1(a) arises, the parties concerned must comply with the procedures set out in clauses 8.2.4 to 8.2.10 and 8.2.12 and, where the dispute is referred to a *DRP*, a determination of the *DRP* is final and binding on the parties.
- (g) Notwithstanding clause 8.2.1(f), a party may seek an urgent interlocutory injunction from a court of competent jurisdiction.
- (h) Rule 8.2 does not apply to:
  - (1) a decision by *AEMO* regarding an exemption under clause 2.2.1(e)2.1A.2;
  - (1A) a decision by *AEMO* under clause 2.2.2 not to approve the classification of an *integrated resource unit* as a *scheduled integrated resource unit*;
  - (1B) a decision by *AEMO* under clause 2.2.3 not to approve the classification of an *integrated resource unit* as a *non-scheduled integrated resource unit*;
  - (2) a decision by *AEMO* under clause 2.2.2 not to approve the classification of a *generating unit* as a *scheduled generating unit*;
  - (3) a decision by *AEMO* under clause 2.2.3 not to approve the classification of a *generating unit* as a *non-scheduled generating unit*;
  - (3A) a decision by *AEMO* under clause 2.5.1A(d) not to approve the classification of a *dedicated connection asset* as a *small dedicated connection asset* or *large dedicated connection asset*;
  - (4) a decision by *AEMO* under clause 2.9.2(c);

- (5) a decision by *AEMO* to reject a notice from a *Market Customer* under clause 2.10.1(d);
- (5A) a decision by *AEMO* with regard to the preparation or publication of a budget;
- (5B) the formulation by *AEMO* of its revenue methodology or an amendment to its revenue methodology;
- (5C) a decision by *AEMO* to reject a notice from a ~~*Market Small Generation Aggregator*~~ *Small Resource Aggregator* under clause 2.10.1(d1);
- (6) a determination by *AEMO* under clause 3.3.8 of the minimum amount of *credit support* a *Market Participant* must provide to *AEMO* for the relevant time period, as determined by *AEMO* in accordance with clause 3.3.8 ;
- (7) a decision by *AEMO* under clause 3.8.3 to refuse an application for aggregation;
- (8) a decision by *AEMO* under clause 3.15.11 to reject a *reallocation request*;
- (9) a decision by *AEMO* to issue a notice under clause 4.11.1(d);
- (10) a decision by *AEMO* under clause 7.2.1(b) to refuse to permit a *Market Participant* to participate in the *market* in respect of a *connection point*;
- (11) a decision by *AEMO* whether or not to deregister a *Metering Provider*, *Metering Data Provider* or *Embedded Network Manager* under clause 7.4.4(d) or to suspend a *Metering Provider*, *Metering Data Provider* or *Embedded Network Manager* from a category of registration under clause 7.4.4(d) or to impose agreed constraints on the continued operation of a *Metering Provider*, *Metering Data Provider* or *Embedded Network Manager*;
- (12) a dispute concerning the price of a *SRAS* agreement or a tender conducted by *AEMO* for the acquisition of *SRASs* under clause 3.11.9;
- (13) a dispute of a kind referred to in rule 5.16B or 5.17.5;
- (14) a *transmission services access dispute* and *large DCA services access dispute* to which rule 5.5 applies;
- (14A) a decision by a *Co-ordinating Network Service Provider* with regard to the provision of an estimate of the *modified load export charge* payable to each *Transmission Network Service Provider* as referred to in clause 6A.29A.2.
- (15) a *distribution services access dispute* to which Part L of Chapter 6 applies;
- (16) a decision by *AEMO* under clause 2.2.7 not to approve the classification of a *semi-scheduled generating unit*; or
- (17) a decision by *AEMO* regarding an exemption under clause 2.4A.1(b); or
- (18) a decision by *AEMO* regarding an exemption under clause 7.8.4(a).

## Part C Registered Participants' confidentiality obligations

### 8.6 Confidentiality

#### 8.6.2 Exceptions

This rule 8.6 does not prevent:

- (a) **(public domain)**: the disclosure, use or reproduction of information if the relevant information is at the time generally and publicly available other than as a result of breach of confidence by the *Registered Participant* who wishes to disclose, use or reproduce the information or any person to whom the *Registered Participant* has disclosed the information;
- (b) **(employees and advisers)**: the disclosure of information by a *Registered Participant* or the *Registered Participant's Disclosees* to:
  - (1) an employee or officer of the *Registered Participant* or a *related body corporate* of the *Registered Participant*; or
  - (2) a legal or other professional adviser, auditor or other consultant (in this clause 8.6.2(b) called **Consultants**) of the *Registered Participant*,  
which require the information for the purposes of the *Rules*, or for the purpose of advising the *Registered Participant* or the *Registered Participant's Disclosee* in relation thereto;
- (b1) **(service providers)**: the disclosure of *NMI Standing Data* or the provision of means to gain electronic access to that data by a *Customer*, *Integrated Resource Provider* or *Small Resource Aggregator* or the *Customer's*, *Integrated Resource Provider's* or *Small Resource Aggregator's Disclosees* to a person who requires the *NMI Standing Data* for the purposes of providing services in connection with the *Customer's*, *Integrated Resource Provider's* or *Small Resource Aggregator's* sale of electricity to end users.
- (c) **(consent)**: the disclosure, use or reproduction of information with the consent of the person or persons who provided the relevant information under the *Rules*;
- (d) **(law)**: the disclosure, use or reproduction of information to the extent required by law or by a lawful requirement of:
  - (1) any government or governmental body, authority or agency having jurisdiction over a *Registered Participant* or its *related bodies corporate*; or
  - (2) any stock exchange having jurisdiction over a *Registered Participant* or its *related bodies corporate*;
- (d1) **[Deleted]**
- (e) **(disputes)**: the disclosure, use or reproduction of information if required in connection with legal proceedings, arbitration, expert determination or other dispute resolution mechanism relating to the *Rules*, or for the purpose of advising a person in relation thereto;
- (f) **(trivial)**: the disclosure, use or reproduction of information which is trivial in nature;

- (g) **(safety)**: the disclosure of information if required to protect the safety of personnel or equipment;
- (h) **(potential investment)**: the disclosure, use or reproduction of information by or on behalf of a *Registered Participant* to the extent reasonably required in connection with the *Registered Participant's* financing arrangements, investment in that *Registered Participant* or a disposal of that *Registered Participant's* assets;
- (i) **(regulator)**: the disclosure of information to the *AER*, the *AEMC* or the *ACCC* or any other regulatory authority having jurisdiction over a *Registered Participant*, pursuant to the *Rules* or otherwise;
- (j) **(reports)**: the disclosure, use or reproduction of information of an historical nature in connection with the preparation and giving of reports under the *Rules*;
- (k) **(aggregate sum)**: the disclosure, use or reproduction of information as an unidentifiable component of an aggregate sum; and
- (l) **(profile)**: the publication of a profile.
- (m) **[Deleted]**
- (n) **[Deleted]**
- (o) **[Deleted]**

## Part G Consumer advocacy funding

### 8.10 Consumer advocacy funding obligation

- (a0) In this rule:

**consumer advocacy funding obligation** means ECA's total projected expenses for a financial year, in so far as those expenses are allocated to electricity in its final Annual Budget for that financial year, and including but not limited to:

- (1) all operational and administrative costs relating to the performance of ECA's activities relevant to consumers of electricity; and
- (2) grant funding for any current or proposed grants relevant to consumers of electricity.

**final Annual Budget** means ECA's final Annual Budget for a financial year, as issued by ECA in accordance with its constitution to *AEMO*.

- (a) *AEMO* must pay to ECA the amount of its consumer advocacy funding obligation for each financial year.
- (b) *AEMO* may recover the costs of meeting its consumer advocacy funding obligation from *Participant fees* and may allocate the costs to ~~*Market Customers*~~ *Market Participants that are financially responsible for market connection points at which electricity is consumed*;
- (c) The amount to be paid by *AEMO* to ECA under paragraph (a) is to be made available under a scheme agreed between *AEMO* and ECA or, in default of an agreement, on a quarterly basis;





## **CHAPTER 9**



## 9. Jurisdictional Derogations and Transitional Arrangements

### Part A Jurisdictional Derogations for Victoria

#### 9.4 Transitional Arrangements for Chapter 2 - Registered Participants, Registration and Cross Border Networks

##### 9.4.2 Smelter Trader

- (a) For the purposes of the *Rules*:
- (1) Smelter Trader is deemed to be entitled to register as a *Customer* in respect of the *connection points* used to supply electricity under a Smelter Agreement for so long as those *connection points* are used to supply electricity under that Smelter Agreement;
  - (2) Smelter Trader is deemed to be registered as a *Customer* and as a *Market Customer* in relation to electricity supplied under a Smelter Agreement;
  - ~~(3) the connection points used to supply the electricity supplied under the Smelter Agreements are deemed to have been classified as Smelter Trader's market connection points;~~
  - ~~(3) the electricity supplied under the Smelter Agreements is deemed to have been classified as a market load and the connection points used to supply that electricity are deemed to have been classified as Smelter Trader's market connection points;~~
  - (4) **[Deleted]**
  - (5) Alcoa of Australia Limited (ACN 004 879 298) is deemed to be entitled to register as a *Generator* and a *Market Generator* in relation to the *generating systems* forming part of the Anglesea Power Station; and
  - (6) **[Deleted]**
  - (7) no Counterparty is or is to be taken to be entitled to become a *Market Participant*, an *Intending Participant* or a *Customer* in respect of electricity supplied under that Smelter Agreement.
  - (8) **[Deleted]**
  - (9) **[Deleted]**
- (b) This clause 9.4.2 ceases to have effect upon the termination of the last of the Smelter Agreements.

## CHAPTER 10

## 10. Glossary

### *activate*

The operation of a *generating unit* (other than a *scheduled generating unit*) or an integrated resource unit (other than a scheduled integrated resource unit) at an increased *loading level* or reduction in demand (other than a *scheduled load*) undertaken in response to a request by *AEMO* in accordance with an *unscheduled reserve contract*.

### *active power capability*

The maximum rate at which *active energy* may be transferred from a *generating unit* or an integrated resource unit to a *connection point* as specified or proposed to be specified in a *connection agreement* (as the case may be).

### *adjusted consumed energy*

The adjusted consumed energy determined in accordance with clause 3.15.4.

### *adjusted gross energy*

The adjusted gross energy determined in accordance with clause 3.15.4.

### ~~*adjusted gross energy*~~

~~The energy adjusted in accordance with clause 3.15.4.~~

### *adjusted sent out energy*

The adjusted sent out energy determined in accordance with clause 3.15.4.

### *adverse system strength impact*

An adverse impact, assessed in accordance with the *system strength impact assessment guidelines*, on the ability under different operating conditions of:

- (a) the *power system* to maintain system stability in accordance with clause S5.1a.3; or
- (b) a *generating system*, *integrated resource system* or *market network service facility* forming part of the *power system* to maintain stable operation including following any *credible contingency event* or *protected event*,

so as to maintain the power system in a *secure operating state*.

### *AEMO intervention event*

An event where *AEMO* intervenes in the *market* under the *Rules* by:

- (a) issuing a *direction* in accordance with clause 4.8.9; or
- (b) exercising the *reliability and emergency reserve trader* in accordance with rule 3.20 by:
  - (1) *dispatching scheduled generating units*, *scheduled integrated resource units*, *wholesale demand response units*, *scheduled network services* or *scheduled loads* in accordance with a *scheduled reserve contract*; or
  - (2) activating *unscheduled reserves available loads or generating units* under an *unscheduled reserve contract*.

### ***Affected Participant***

- (a) In respect of a particular *direction* in an *intervention pricing 30-minute interval*:
  - (1) a *Scheduled Generator*, *Integrated Resource Provider* or *Scheduled Network Service Provider*:
    - (i) which was not the subject of the *direction*, that had its ~~*dispatched*~~ *dispatched generation or dispatched network service* quantity affected by that *direction*; or
    - (ii) which was the subject of the *direction*, that had its ~~*dispatched*~~ *dispatched generation or dispatched network service* quantity for other *generating units or integrated resource units* or other services which were not the subject of that *direction* affected by that *direction*, however, the *Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Scheduled Network Service Provider* is only an *Affected Participant* in respect of those *generating units or integrated resource units* and services which were not the subject of that *direction*; or
  - (2) an *eligible person* entitled to receive an amount from AEMO pursuant to clause 3.18.1(b)(1) where there has been a change in flow of a *directional interconnector*, for which the *eligible person* holds units for the *intervention pricing 30-minute period*, as a result of the *direction*; and
- (b) in relation to the exercise of the *RERT* under rule 3.20:
  - (1) a *Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Scheduled Network Service Provider*:
    - (i) whose *plant or scheduled network service* was not *dispatched* under a *scheduled reserve contract*, that had its ~~*dispatched*~~ *dispatched generation or dispatched network service* quantity affected by the *dispatch* of *plant or scheduled network service* under that *scheduled reserve contract*; and
    - (ii) who was not the subject of *activation* under an *unscheduled reserve contract*, that had its ~~*dispatched*~~ *dispatched generation or dispatched network service* quantity affected by the *activation* of ~~*unscheduled reserves available generating units or loads*~~ under that *unscheduled reserve contract*;
  - (2) a *Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Scheduled Network Service Provider* whose *plant or scheduled network service* was *dispatched* under a *scheduled reserve contract*, that had its ~~*dispatched*~~ *dispatched generation or dispatched network service* quantity for other *generating units, integrated resource units* or other services which were not *dispatched* under the *scheduled reserve contract* affected by that *dispatch* of *plant or scheduled network service* under that *scheduled reserve contract*, however, the *Scheduled Generator*, *Scheduled Integrated Resource Provider* or *Scheduled Network Service Provider* is only an *Affected Participant* in respect of

those *generating units*, *integrated resource units* and services which were not *dispatched* under that *scheduled reserve contract*; or

- (3) an *eligible person* entitled to receive an amount from AEMO pursuant to clause 3.18.1(b)(1) where there has been a change in flow of a *directional interconnector*, for which the *eligible person* holds units for the *intervention pricing 30-minute period*, as a result of the *dispatch* of *plant* or *scheduled network service* under a *scheduled reserve contract* or the activation of ~~*unscheduled reserves available generating units or loads*~~ under an *unscheduled reserve contract*.

### **AGC (automatic generation control system)**

The system into which the *loading levels* from economic *dispatch* will be entered for *generating units* and *scheduled integrated resource units* operating on automatic generation control ~~in accordance with clause 3.8.21(d)~~.

### **~~*ancillary service generating unit*~~**

~~A *generating unit* which has been classified in accordance with Chapter 2 as an *ancillary service generating unit*.~~

### **~~*ancillary service load*~~**

~~A *market load* or *load* which has been classified in accordance with Chapter 2 as an *ancillary service load*.~~

### ***Ancillary Service Provider***

A person who has, in accordance with Chapter 2, classified a *generating unit*, *integrated resource unit* or other *connected plant* as an *ancillary service unit*.

### **~~*Ancillary Service Provider*~~**

~~A person (including a *Demand Response Service Provider*) who engages in the activity of owning, controlling or operating a *generating unit*, *load* or *market load* classified in accordance with Chapter 2 as an *ancillary service generating unit* or *ancillary service load*, as the case may be.~~

### ***ancillary service unit***

A *generating unit*, *integrated resource unit* or other *connected plant* that has been classified in accordance with Chapter 2 as an *ancillary service unit*.

### ***asynchronous integrated resource unit***

An *integrated resource unit* that is not a *synchronous integrated resource unit*.

### ***auxiliary load***

Electricity consumption used for the operation of *auxiliary plant* at a *power station*. *Auxiliary load* does not include electricity consumption used to charge a *production unit* or to pump water for a *pumped hydro production unit*.

### ***available capacity***

- (a) The total MW capacity available for *dispatch* by a *scheduled generating unit*, *semi-scheduled generating unit*, *scheduled integrated resource unit* or *scheduled load* (i.e. maximum plant availability) or, in relation to a specified *price band*, the MW capacity within that *price band* available for *dispatch* (i.e. availability at each *price band*).



- (b) For a *wholesale demand response unit*, subject to clauses 3.8.2A(b), (c), (d) and (e):
  - (1) the total MW capacity available for *dispatch* by the *wholesale demand response unit* (i.e. maximum plant availability); and
  - (2) in relation to a specified *price band*, the MW capacity within that *price band* available for *dispatch* (i.e. availability at each *price band*).

***bid and offer validation data***

~~Data submitted by Scheduled Generators, Semi-Scheduled Generators and Market Participants to AEMO in relation to their scheduled loads, scheduled generating units, semi-scheduled generating units, wholesale demand response units and scheduled market network services in accordance with schedule 3.1.~~

**bid validation data**

Data submitted by Market Participants to AEMO in relation to their scheduled resources and ancillary service units in accordance with schedule 3.1.

***black start capability***

A capability that allows a *generating unit*, *integrated resource unit*, *facility* or a combination of *facilities* following *disconnection* from the *power system*, to be able to deliver electricity to either:

- (a) a *connection point*; or
- (b) a suitable point in the *network* from which *supply* can be made available to other *generating units* or *integrated resource units*,

without taking *supply* from any part of the *power system* following *disconnection*.

***capacity reserve***

At any time, the amount of surplus or unused generating capacity indicated by the relevant *Generators* and *Integrated Resource Providers* as being available in the relevant timeframe minus the capacity requirement to meet the current forecast *load* demand, taking into account the known or historical levels of demand management.

**central dispatch**

The process managed by AEMO for the *dispatch* of *scheduled resources* and *market ancillary services* in accordance with rule 3.8.

**~~*central dispatch*~~**

~~The process managed by AEMO for the *dispatch* of *scheduled generating units*, *semi-scheduled generating units*, *wholesale demand response units*, *scheduled loads*, *scheduled network services* and *market ancillary services* in accordance with rule 3.8.~~

***child connection point***

The agreed point of *supply* between an *embedded network* and an electrical installation, *generating unit*, *integrated resource unit* or other *network* connected to that *embedded network*, for which a *Market Participant* is, or proposes to be, *financially responsible*.

### **connection service**

An *entry service* (being a service provided to serve a Generator or Integrated Resource Provider or a group of Generators or Integrated Resource Providers, or a Network Service Provider or a group of Network Service Providers, at a single connection point) or an *exit service* (being a service provided to serve a Transmission Customer or Distribution Customer or a group of Transmission Customers or Distribution Customers, or a Network Service Provider or a group of Network Service Providers, at a single connection point).

#### **Note:**

In the context of Chapter 5A and Part DA of Chapter 6, the above definition has been displaced by a definition specifically applicable to that Chapter. See clause 5A.A.1.

### **constrained off**

- (a) In respect of a *generating unit*, the state where, due to a *constraint* on a *network*, the loading level ~~output~~ of that *generating unit* is limited below the level to which it would otherwise have been *dispatched* by AEMO on the basis of its ~~dispatch offer~~ dispatch bid.
- (b) In respect of an integrated resource unit, the state where, due to a constraint on a network, the loading level of that integrated resource unit is limited below the level to which it would otherwise have been dispatched by AEMO on the basis of its dispatch bid.

### **constrained on**

- (a) In respect of a *generating unit*, the state where, due to a *constraint* on a *network* or in order to provide *inertia network services* under an *inertia services agreement* or *system strength services* under a *system strength services agreement*, the loading level ~~output~~ of that *generating unit* is limited above the level to which it would otherwise have been *dispatched* by AEMO on the basis of its ~~dispatch bid~~ dispatch offer.
- (b) In respect of an integrated resource unit, the state where, due to a constraint on a network or in order to provide inertia network services under an inertia services agreement or system strength services under a system strength services agreement, the loading level of that integrated resource unit is limited above the level to which it would otherwise have been dispatched by AEMO on the basis of its dispatch bid.
- (c) In respect of a *wholesale demand response unit*, the state where, due to a *constraint* on a *network*, the *loading level* of that *wholesale demand response unit* is limited above the level to which it would otherwise have been *dispatched* by AEMO on the basis of its *dispatch bid*.

### **constraint, constrained**

A limitation on the capability of a *network*, *load*, a *generating unit*, an integrated resource unit or a *wholesale demand response unit* such that it is unacceptable to either transfer, consume or generate the level of electrical power, or provide the level of *wholesale demand response*, that would occur if the limitation was removed.

### ***continuous uninterrupted operation***

In respect of a *generating system*, ~~or generating unit~~, *integrated resource system or integrated resource unit* operating immediately prior to a *power system* disturbance:

- (a) not *disconnecting* from the *power system* except under its *performance standards* established under clauses S5.2.5.8 and S5.2.5.9;
- (b) during the disturbance contributing active and reactive current as required by its *performance standards* established under clause S5.2.5.5;
- (c) after clearance of any electrical fault that caused the disturbance, only substantially varying its *active power* and *reactive power* as required or permitted by its *performance standards* established under clauses S5.2.5.5, S5.2.5.11, S5.2.5.13 and S5.2.5.14; and
- (d) not exacerbating or prolonging the disturbance or causing a subsequent disturbance for other *connected plant*, except as required or permitted by its *performance standards*,

with all essential auxiliary and *reactive plant* remaining in service.

### ***control system***

Means of monitoring and controlling the operation of the *power system* or equipment including *generating units* and *integrated resource units* connected to a *transmission network* or *distribution network*.

### ***Cost Recovery Market Participant***

A person who is registered by AEMO under Chapter 2 as a *Generator*, *Integrated Resource Provider*, *Customer* or *Demand Response Service Provider*.

### ***coupled production unit***

A *production unit* with separate *plant* for the production of electricity, each of a different *plant type* (for example, *intermittent* and *non-intermittent*) and capable of separate operation but that share equipment (such as an inverter) essential to the functioning of each.

### ***Customer***

A person who classifies one or more *connection points* as *market connection points* under Chapter 2 and is registered by AEMO as a *Customer* under Chapter 2.

### ***Customer***

~~A person who:~~

- ~~1. engages in the activity of purchasing electricity supplied through a *transmission system* or *distribution system* to a *connection point*; and~~
- ~~2. is registered by AEMO as a *Customer* under Chapter 2.~~

### ***dedicated connection asset***

The apparatus, equipment, plant and buildings that:

- (a) are used for the purpose of *connecting* an *identified user group* to an existing *transmission network*;
- (b) are used exclusively by the *identified user group*;

- (c) can be electrically isolated from the *transmission network* without affecting the provision of *shared transmission services* to persons who are not members of the *identified user group*; and
- (d) are not:
  - (1) *network connection assets*;
  - (2) part of a *generating system* or integrated resource system;
  - (3) part of a *distribution system*;
  - (4) part of a *transmission system* for which a *Market Network Service Provider* is registered under Chapter 2;
  - (5) part of a *Transmission Customer's facility* that utilises electrical energy; or
  - (6) part of the *declared transmission system* of an *adoptive jurisdiction*.

**Note**

Where a *Primary Transmission Network Service Provider* is registered in respect of a *dedicated connection asset* operating at *distribution voltage*, it will not be a *distribution system* and will constitute part of its *transmission system* for which it is registered. See definitions of *distribution system* and *transmission system*.

**default bid**

A dispatch bid in respect of a scheduled resource, or a market ancillary service bid in respect of an ancillary service unit, to apply from a specified future trading day.

**~~default dispatch bid~~**

~~A dispatch bid made pursuant to clause 3.8.9.~~

**~~default dispatch offer~~**

~~A dispatch offer made pursuant to clause 3.8.9.~~

**Demand Response Service Provider**

A person who has classified ~~offers and provides load as~~ either or both:

- (a) a connection point ~~wholesale demand response in respect of as~~ a wholesale demand response unit; and
- (b) a connected plant as an ancillary service unit ~~market ancillary service in respect of ancillary service load~~,

and who is registered by AEMO as a *Demand Response Service Provider* under Chapter 2. The relevant person does not need to be the *Market Customer* for the relevant ~~load~~ connection point.

**DER generation information**

Standing data in relation to a *small generating unit* or small integrated resource unit.

**DER Technical Standards**

means the requirements for *embedded generating units* and embedded integrated resource units under *Australian Standard AS4777.2:2020* as in force from time to time.

### ***de-synchronising / de-synchronisation***

The act of *disconnection* of a *generating unit* or *integrated resource unit* from the *connection point* with the power system, normally under controlled circumstances.

### ***Directed Participant***

A *Market Participant* the subject of a *direction*.

### ***~~Directed Participant~~***

~~A *Scheduled Generator*, *Semi-Scheduled Generator*, *Market Generator*, *Demand Response Service Provider* in respect of its *ancillary service load*, *Scheduled Network Service Provider* or *Market Customer* the subject of a *direction*.~~

### ***directed resource***

A *scheduled resource* (other than a *wholesale demand response unit*), *ancillary service unit*, *market generating unit* or *market integrated resource unit* in relation to which a *Directed Participant* is given a *direction*.

### ***dispatch***

The act of initiating or enabling all or part of the response specified in a *dispatch bid*, ~~*dispatch offer*~~ or *market ancillary service bid*~~*market ancillary service offer*~~ in accordance with rule 3.8, or a *direction* or operation of capacity the subject of a *reserve contract* or an instruction under an *ancillary services agreement* or to enable an *inertia network service* or *system strength service* as appropriate.

### ***dispatch bid***

A notice submitted by a *Market Participant* to AEMO relating to the *dispatch* of a *scheduled resource*~~a *scheduled load*~~ in accordance with clause 3.8.6, 3.8.6A or 3.8.7 or a *wholesale demand response dispatch bid*.

### ***dispatch bid price***

The price submitted by a *Market Participant* for a *price band* and a *trading interval* in a *dispatch bid*.

### ***dispatch inflexibility profile***

Data which may be provided to AEMO by *Market Participants*, in accordance with clause 3.8.19, to specify *dispatch inflexibilities* in respect of *scheduled resources* (other than *semi-scheduled generating units*)~~*scheduled loads*, *wholesale demand response units* or *scheduled generating units* which are not slow start generating units~~.

### ***~~dispatch offer~~***

~~A *generation dispatch offer* or a *network dispatch offer*.~~

### ***~~dispatch offer price~~***

~~The price submitted by a *Scheduled Generator*, *Semi-Scheduled Generator* or a *Scheduled Network Service Provider* for a *price band* and a *trading interval* in a *dispatch offer*.~~

***~~dispatchable unit identifier~~***

~~A unique reference label allocated by AEMO for each scheduled generating unit, semi-scheduled generating unit, wholesale demand response unit, scheduled load, and scheduled network service.~~

***dispatchable unit identifier***

A unique reference label allocated by AEMO for each scheduled resource and ancillary service unit.

***dispatched load***

The load which has been dispatched as part of central dispatch, but not including dispatched wholesale demand response or in relation to an integrated resource unit, dispatched generation.

***dispatched network service***

The scheduled network service which has been dispatched as part of central dispatch.

***Distribution Network User***

A Distribution Customer, an Embedded Integrated Resource Provider or an Embedded Generator.

***distribution network user access***

The power transfer capability of the distribution network in respect of:

- (a) generating units or a group of generating units; ~~and~~
- (b) network elements; and,
- (c) integrated resource units or a group of integrated resource units,

at a connection point which has been negotiated in accordance with rule 5.5.

***Embedded Generator***

A Generator or Integrated Resource Provider who owns, operates or controls an embedded generating unit.

**Note:**

In the context of Chapter 5A, the above definition has been displaced by the definition "embedded generator" specifically applicable to that Chapter. See clause 5A.A.1.

***Embedded Integrated Resource Provider***

An Integrated Resource Provider who owns, operates or controls an embedded integrated resource unit.

***embedded integrated resource unit***

An integrated resource unit connected within a distribution network and not having direct access to the transmission network.

***enable***

A market ancillary service is enabled when AEMO has selected the relevant generating unit or load ancillary service unit for the provision of the market ancillary service and has notified the relevant Market Participant accordingly.



An *inertia network service* is enabled when *AEMO* has selected the relevant *inertia network service* and the service is providing *inertia* to an *inertia sub-network*.

An activity approved by *AEMO* under clause 5.20B.5(a) is enabled when *AEMO* has selected the relevant activity and the activity is performing and available in accordance with any conditions of that approval.

A *system strength service* is enabled when *AEMO* has selected the relevant *system strength service* and the service is contributing to the *three phase fault level* at the relevant *fault level node*.

#### ***enablement limit***

In relation to any ~~market ancillary service offer~~*market ancillary service bid*, the level of associated *generation* or *load* (in MW) above or below which no response is specified as being available.

#### ***energise***

The act of operation of switching equipment or the start-up of a *generating unit* or integrated resource unit, which results in there being a non-zero *voltage* beyond a *connection point* or part of the *transmission network* or *distribution network*.

#### ***energy constrained scheduled generating unit***

A *scheduled generating unit* in respect of which the amount of electricity it is capable of ~~producing~~ supplying on a *trading day* is less than the amount of electricity it would ~~produce~~ supply on that *trading day* if it were *dispatched* to its full nominated availability for the whole *trading day*.

#### ***energy constrained scheduled integrated resource unit***

A *scheduled integrated resource unit* in respect of which the amount of electricity it is capable of producing or consuming for a period is less than the amount of electricity it would produce or consume in that period if it were *dispatched* to its full nominated availability for that period.

#### ***energy constrained scheduled load***

A *scheduled load* in respect of which the amount of electricity it is capable of consuming~~can take~~ in a *trading day*, if *normally off*, or it can *off-load*, if *normally on*, is *constrained*.

#### ***energy constraint***

A limitation on the ability of a *generating unit* or integrated resource unit or group of *generating units* or integrated resource units to generate *active power* due to the restrictions in the availability of fuel, stored energy or other necessary expendable resources such as, but not limited to, gas, coal, or water for operating turbines or for cooling.

#### ***energy support arrangement***

A contractual arrangement between a *Generator*, *Integrated Resource Provider* or *Network Service Provider* on the one hand, and a customer or *participating jurisdiction* on the other, under which *facilities* not subject to an *ancillary services agreement* for the provision of *SRASs* are used to assist *supply* to a customer during a *major supply disruption* affecting that customer, or customers generally in the *participating jurisdictions*, as the case may be.



**entry service**

A service provided to serve a *Generator* or *Integrated Resource Provider* or a group of *Generators* or *Integrated Resource Providers*, or a *Network Service Provider* or a group of *Network Service Providers*, at a single *connection point*.

**excitation control system**

In relation to a *generating unit* or *integrated resource unit*, the automatic control system that provides the field excitation for the generator of the *generating unit* or *integrated resource unit* (including excitation limiting devices and any power system stabiliser).

**expected closure year**

Has the meaning given in clause 2.1B.3(a)~~clause 2.2.1(e)(2A)~~.

**facilities**

A generic term associated with the apparatus, equipment, buildings and necessary associated supporting resources provided at, typically:

- (a) a power station, generating system or integrated resource system;
- ~~(a) a power station or generating unit;~~
- (b) a substation or power station switchyard;
- (c) a control centre (being a AEMO control centre, or a distribution or transmission network control centre);
- (d) facilities providing an exit service.

**financially responsible**

In relation to a market connection point, a term which is used to describe the Market Participant which has done one of the following:

- (a) classified the market connection point as one of its market connection points;
- (b) classified the generating unit connected at the market connection point as a market generating unit;
- (c) classified the integrated resource unit connected at the market connection point as a market integrated resource unit; or
- (d) classified the network services at the market connection point as a market network service.

**financially responsible**

~~In relation to any market connection point, a term which is used to describe the Market Participant which has either:~~

- ~~1. classified the connection point as one of its market loads;~~
- ~~2. classified the generating unit connected at that connection point as a market generating unit; or~~
- ~~3. classified the network services at that connection point as a market network service.~~

### ~~*First-Tier Customer*~~

~~A Customer which has classified any load as a first-tier load in accordance with Chapter 2.~~

### ~~*first-tier load*~~

~~Electricity purchased at a connection point directly and in its entirety by a franchise customer from the Local Retailer and which is classified as a first-tier load in accordance with Chapter 2.~~

### *frequency response mode*

The mode of operation of a generating unit or integrated resource unit which allows automatic changes to the generated power when the frequency of the power system changes.

### *GELF parameters*

Variable parameters specific to a Generator Energy Limitation Framework (GELF) which are defined in the EAAP guidelines and supplement the GELF, and are submitted by a Scheduled Generator or Scheduled Integrated Resource Provider and updated in accordance with rule 3.7C for the purpose of the EAAP.

### *generated*

In relation to a generating unit or integrated resource unit, the amount of electricity produced by the generating unit or integrated resource unit as measured at its terminals.

### *generating system*

- (a) Subject to paragraph (b), for the purposes of the Rules, a system comprising one or more generating units, other than an integrated resource system.
- (b) For the purposes of clause 2.1B.1(a)(3)~~clause 2.2.1(e)(3)~~, clause 2.1B.2(b)(4), clause 4.9.2, Chapter 5 and a jurisdictional derogation from Chapter 5, a system comprising one or more generating units and includes auxiliary or reactive plant that is located on the Generator's side of the connection point and is necessary for the generating system to meet its performance standards.

### *generating unit*

- ~~(a) The plant used in the production of electricity and all related equipment essential to its functioning as a single entity~~Subject to paragraph (b), a production unit that is not an integrated resource unit.
- ~~(b) For the purposes of the Rules, excluding clauses 2.2.2(a) to (b4), an integrated resource unit that has been classified as scheduled generating unit under clause 2.2.2(b2) is taken to be a generating unit.~~

### ~~*generating unit minimum ramp rate requirement*~~

- ~~(a) in relation to a generating unit that has not been aggregated in accordance with clause 3.8.3, the lower of 3MW/minute or 3% of the maximum generation provided in accordance with clause 3.13.3(b); or~~

- ~~(b) in relation to a generating unit that has been aggregated in accordance with clause 3.8.3, the lower of 3 MW/minute or 3% of the maximum generation provided in accordance with clause 3.13.3(b1),~~  
~~expressed as MW/minute rounded down to the nearest whole number except where this would result in the nearest whole number being zero, in which case the generating unit minimum ramp rate requirement is 1 MW/minute.~~

### **generation**

According to context:

- (a) The production of electrical power by converting another form of energy in a generating unit or integrated resource unit.
- (b) The amount of electrical power (measured in MW) produced by a generating unit or integrated resource unit and measured at its terminals.
- (c) The amount of electrical power (measured in MW) at a defined instant at a connection point, or aggregated over a defined set of connection points.

### **generation centre**

A geographically concentrated area containing facilities ~~a generating unit or generating units~~ with significant combined generating capability.

### **~~generation dispatch offer~~**

~~A notice submitted by a Scheduled Generator or Semi-Scheduled Generator to AEMO relating to the dispatch of a scheduled generating unit or a semi-scheduled generating unit in accordance with clause 3.8.6.~~

### **generation shedding**

Disconnecting, or reducing the transfer of active power to the power system from, one or more ~~generating systems or generating units~~ sources of generation.

### **Generator**

A person who engages in the activity of owning, controlling or operating a generating system that is connected to, or who otherwise supplies electricity to, a transmission system or distribution system and who is registered by AEMO ~~as a Generator~~ under Chapter 2 as a Generator or as an Integrated Resource Provider.

For the purposes of Chapter 5, the term includes a person who is required or intends to register in that capacity or a person that owns, controls or operates an embedded generating unit ~~is a non-registered embedded generator (as defined in clause 5A.A.1)~~ who has made an election under clause 5A.A.2(c).

### **Generator Energy Limitation Framework (GELF)**

A description of the energy constraints that affect the ability of a scheduled generating unit or scheduled integrated resource unit to generate electricity prepared in accordance with the EAAP guidelines.

### **Generator transmission use of system, Generator transmission use of system service**

A service provided to a Generator or (in relation to its production of electricity) an Integrated Resource Provider for:

- (a) **[Deleted]**

- (b) use of a *transmission investment* for the conveyance of electricity that can be reasonably allocated to a *Generator* or (in relation to its production of electricity) an *Integrated Resource Provider* on a locational basis.

### *inertia*

Contribution to the capability of the *power system* to resist changes in *frequency* by means of an inertial response from a *generating unit*, *integrated resource unit*, *network element* or other equipment that is electro-magnetically coupled with the *power system* and *synchronised* to the *frequency* of the *power system*.

### *inertia generating unit*

~~A generating unit registered with AEMO under clause 5.20B.6(b).~~

### *inertia unit*

A generating unit or integrated resource unit registered with AEMO under clause 5.20B.6(b).

### *inflexible, inflexibility*

~~In respect of a *scheduled resource* for a *trading interval* means that the *scheduled resource* is only able to be *dispatched* in the *trading interval* at a fixed *loading level* specified in accordance with clause 3.8.19(a). In respect of a *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled load* or *scheduled network service* for a *trading interval* means that the *scheduled generating unit*, *semi-scheduled generating unit*, *wholesale demand response unit*, *scheduled load* or *scheduled network service* is only able to be *dispatched* in the *trading interval* at a fixed *loading level* specified in accordance with clause 3.8.19(a).~~

### *Integrated Resource Provider*

A person who is registered by AEMO as an *Integrated Resource Provider* under Chapter 2.

For the purposes of Chapter 5, the term includes a person who is required or intends to register in that capacity or a person that owns, controls or operates an *embedded integrated resource unit* who has made an election under clause 5A.A.2(c).

### *integrated resource system*

(a) Subject to paragraph (b), for the purposes of the *Rules*:

- (1) a system comprising one or more *integrated resource units* (and which may also comprise one or more *generating units* or other *connected plant* that is not part of an *integrated resource unit*); or
- (2) a system comprising one or more *generating units* where the *connection point* for the system is used to *supply* electricity for consumption that is not, or is in addition to, *auxiliary load* (but not solely *auxiliary load*).

(b) For the purposes of clause 2.1B.2(b)(4), clause 4.9.2 and Chapter 5, an *integrated resource system* includes *auxiliary* or *reactive plant* that is located on the *Integrated Resource Provider's* side of the *connection point* and is necessary for the *integrated resource system* to meet its *performance standards*.

**integrated resource unit**

A production unit that also consumes electricity that is not, or is in addition to, auxiliary load of the production unit.

**intending load**

~~A proposed purchase of electricity at a connection point (the location of which may be undefined) which is classified as an intending load in accordance with Chapter 2.~~

**intermediary**

A person who is registered by AEMO as a Generator, Integrated Resource Provider or a Network Service Provider instead of another person who, in the absence of an exemption under clause 2.9.3, would be required to be registered as such under the Rules.

**intermittent**

A description of a generating unit whose output is not readily predictable, including, without limitation, solar generators, wave turbine generators, wind turbine generators and hydro-generators without any material storage capability relative to the size of the hydro-generator.

**key connection information**

The following information in respect of a proposed connection, or modification of an existing connection, of generating plant to the national grid:

- (a) name, ABN and ACN of the proponent of the connection;
- (b) type of plant in respect of each relevant generating unit (e.g. gas turbine generating unit) or integrated resource unit;
- (c) site location or preferred site location;
- (d) maximum power generation of whole plant;
- (e) forecast completion date of the proposed connection; and
- (f) technology of each relevant generating unit or integrated resource unit (e.g. synchronous generating unit, induction generator, photovoltaic array, etc).

**load**

According to context:

- (a) the amount of electrical power (in MW) delivered at a defined instant at a connection point, or aggregated over a defined set of connection points; or
- (b) a connection point or defined set of connection points at which electrical power is delivered to a person or to another network.

**load**

~~A connection point or defined set of connection points at which electrical power is delivered to a person or to another network or the amount of electrical power delivered at a defined instant at a connection point, or aggregated over a defined set of connection points.~~

### ***loading level***

The level of output, consumption or power flow (in MW) of a *generating unit*, *integrated resource unit*, *load* or *scheduled network service*.

For a *wholesale demand response unit*, the level of *baseline deviation* (in MW) of the *wholesale demand response unit*.

### ***loading price***

The price specified for a *price band* and a *trading interval* in a *dispatch bid*~~*dispatch offer*~~, in accordance with clause 3.8.6, for the *dispatch* of a *scheduled generating unit* at a level above its *self-dispatch level*.

### ***market ancillary service offer***

~~A notice submitted by an *Ancillary Service Provider* to *AEMO* in respect of a *market ancillary service* in accordance with clause 3.8.7A.~~

### **market ancillary service bid**

A notice submitted by an *Ancillary Service Provider* to *AEMO* in respect of a *market ancillary service* in accordance with clause 3.8.7A.

### **market connection point**

A *connection point*:

- (a) classified in accordance with Chapter 2 as a *market connection point*;
- (b) which connects any *market generating unit* to the *national grid*;
- (c) which connects any *market integrated resource unit* to the *national grid*; or
- (d) where the *network service* connected at that *connection point* is a *market network service*.

### ***market connection point***

~~A *connection point* where any load is classified in accordance with Chapter 2 as a *market load* or which connects any *market generating unit* to the *national grid*, or where the *network service* connected at that *connection point* is a *market network service*.~~

### **Market Customer**

A *Customer* in relation to the *connection points* it has classified as *market connection points* under Chapter 2.

An *Integrated Resource Provider* in relation to the *connection points* it has classified as *market connection points* under clause 2.3.4(b) or (d).

### **~~Market Customer~~**

~~A *Customer* who has classified any of its *loads* as a *market load* and who is also registered by *AEMO* as a *Market Customer* under Chapter 2.~~

### **market generating unit**

A *generating unit* that has been classified as such in accordance with Chapter 2.



***market generating unit***

~~A generating unit whose sent out generation is not purchased in its entirety by the Local Retailer or by a Customer located at the same connection point and which has been classified as such in accordance with Chapter 2.~~

***Market Generator***

~~A Generator or Integrated Resource Provider in relation to generating units (other than small generating units) it has classified as market generating units in accordance with Chapter 2.~~

***Market Generator***

~~A Generator who has classified at least one generating unit as a market generating unit in accordance with Chapter 2 and who is also registered by AEMO as a Market Generator under Chapter 2.~~

***market integrated resource unit***

~~An integrated resource unit that has been classified as such in accordance with Chapter 2.~~

***market load***

~~A load at a connection point classified by the person connected at that connection point or, with the consent of that person, by some other person, as a market load in accordance with Chapter 2. There can be more than one market load at any one connection point.~~

***market load***

~~A market connection point other than a connection point taken to be a market connection point of a Market Participant under clause 2.3.4(a).~~

***Note***

~~This term is used in the National Electricity (South Australia) Regulations.~~

***Market Participant***

~~A Market Generator, Integrated Resource Provider (other than a Non-Market Integrated Resource Provider), Market Customer, Demand Response Service Provider or Market Network Service Provider.~~

***Market Participant***

~~A person who is registered by AEMO as a Market Generator, Market Customer, Market Small Generation Aggregator, Demand Response Service Provider or Market Network Service Provider under Chapter 2.~~

***Market Small Generation Aggregator***

~~A person who:~~

- ~~(a) has classified one or more small generating units as a market generating unit; and~~
- ~~(b) is registered by AEMO as a Market Small Generation Aggregator under Chapter 2.~~



### ***Market Suspension Compensation Claimant***

- (a) A *Scheduled Generator*, *Scheduled Integrated Resource Provider* or a *Demand Response Service Provider* who supplied energy or wholesale demand response during a market suspension pricing schedule period:
  - (1) in a *suspended region*; or
  - (2) in a *region* where *spot prices* were affected in accordance with clause 3.14.5(f); or
- (b) an *Ancillary Service Provider* in a *suspended region*, in respect of an *ancillary service unit* ~~*ancillary service generating unit*~~ which is also a *scheduled resource* ~~*scheduled generating unit*~~, who provided market ancillary services during a market suspension pricing schedule period.

### ***market suspension pricing schedule period***

- (a) For a *Market Suspension Compensation Claimant* of a type referred to in subparagraph (a)(1) or paragraph (b) of the definition of *Market Suspension Compensation Claimant*, the period starting at the beginning of the first *dispatch interval* and ending at the end of the final *trading interval* in which:
  - (1) for *Scheduled Generators* and *Integrated Resource Providers*, the *spot price* for a *trading interval* is set by AEMO in accordance with the market suspension pricing schedule; or
  - (2) for *Ancillary Service Providers*, in respect of an *ancillary service unit* ~~*ancillary service generating unit*~~, the *ancillary service price* for a *trading interval* is set by AEMO in accordance with the market suspension pricing schedule.
- (b) For a *Market Suspension Compensation Claimant* of a type referred to in subparagraph (a)(2) of the definition of *Market Suspension Compensation Claimant*, includes only those *trading intervals*:
  - (1) that occur during the period described in paragraph (a) above; and
  - (2) during which *spot prices* were affected in accordance with clause 3.14.5(f).

### ***minimum ramp rate requirement***

The amount specified in clause 3.8.3A(b)(1).

### ***negotiated augmentation and extension charges***

The charges described in clause 5.3AA(f)(3).

### ***negotiated use of system charges***

~~The charges described in clause 5.3AA(f)(3).~~

### ***network dispatch offer***

~~An notice submitted by a *Scheduled Network Service Provider* to AEMO relating to the dispatch of a *scheduled network service* in accordance with clause 3.8.6A.~~

### ***network dispatch bid***

A notice submitted by a *Scheduled Network Service Provider* to AEMO relating to the dispatch of a *scheduled network service* in accordance with clause 3.8.6A.

### ***network support payment***

Any of the following payments:

- (a) a payment made by a *Transmission Network Service Provider* to:
  - (1) any *Generator* or *Integrated Resource Provider* providing *network support services* in accordance with rule 5.3A.12; or
  - (2) any other person providing a *network support service* that is an alternative to *network augmentation*;
- (b) an *inertia service payment*; and
- (c) a *system strength service payment*.

### ***Network User***

A *Generator*, an *Integrated Resource Provider*, a *Transmission Customer*, a *Distribution Customer* or a *Market Network Service Provider*.

### ***non-market generating unit***

A *generating unit* ~~whose entire output is consumed by a market load located at the same connection point and~~ which has been classified as such in accordance with Chapter 2.

### ***Non-Market Generator***

A *Generator* or *Integrated Resource Provider* who has classified a *generating unit* as a *non-market generating unit* in accordance with Chapter 2.

### ***Non-Market Integrated Resource Provider***

An *Integrated Resource Provider* who has classified an *integrated resource unit* as a *non-market integrated resource unit* in accordance with Chapter 2.

### ***non-market integrated resource unit***

An *integrated resource unit* which has been classified as such in accordance with Chapter 2.

### ***Non-Registered Customer***

Any person who purchases electricity through a *connection point* with the *national grid* other than from the *spot market*.

### **~~*Non-Registered Customer*~~**

~~A person who:~~

- ~~1. purchases electricity through a *connection point* with the *national grid* other than from the *spot market*; and~~
- ~~2. is eligible to be registered by AEMO as a *Customer* and to classify the load described in (1) as a *first tier load* or a *second tier load*, but is not so registered.~~

### ***Non-Scheduled Generator***

A *Generator* or *Integrated Resource Provider* ~~in relation to any~~ in respect of which ~~any *generating unit* it has~~ is classified as a *non-scheduled generating unit* in accordance with Chapter 2.

**Non-Scheduled Integrated Resource Provider**

An Integrated Resource Provider in relation to any integrated resource unit it has classified as a non-scheduled integrated resource unit in accordance with Chapter 2.

**non-scheduled integrated resource system**

An integrated resource system comprising non-scheduled integrated resource units, or non-scheduled integrated resource units and non-scheduled generating units.

**non-scheduled integrated resource unit**

An integrated resource unit classified as such in accordance with Chapter 2.

**non-scheduled load**

Any load not classified as scheduled load.

**non-scheduled load**

A market load which is not a scheduled load.

**off-loading price**

The price specified for a price band and a trading interval in a ~~dispatch bid~~dispatch offer, in accordance with clause 3.8.6, for the off-loading of a scheduled generating unit below its self-dispatch level.

**PASA availability**

The physical plant capability (taking ambient weather conditions into account in the manner described in the procedure prepared under clause 3.7.2(g)) of a scheduled generating unit, scheduled integrated resource unit, scheduled load or scheduled network service available in a particular period, including any physical plant capability that can be made available during that period, on 24 hours' notice.

For a wholesale demand response unit, the maximum MW wholesale demand response available in a particular period, including any wholesale demand response that can be made available during that period, on 24 hours' notice.

**performance standards commencement date**

For:

- (a) Generators, Integrated Resource Providers, Customers and Network Service Providers who plan, own, operate or control a facility located in a participating jurisdiction (other than Tasmania), the performance standards commencement date is, in relation to that facility, 16 November 2003; and
- (b) Generators, Integrated Resource Providers, Customers and Network Service Providers who plan, own, operate or control a facility located in Tasmania, the performance standards commencement date is, in relation to that facility, the date that Tasmania becomes a participating jurisdiction.

**planned network event**

An event which has been planned by a Transmission Network Service Provider, AEMO or a Market Participant that is likely to materially affect network constraints in relation to a transmission system, including but not limited to:

- (a) a *network outage*;
- (b) the *connection* or *disconnection* of *generating units*, *integrated resource units* or *load*;
- (c) the commissioning or decommissioning of a *network* asset or the provision of new or modified *NSCAs*; and
- (d) the provision of *NSCAs* under a *network support agreement*.

***plant***

- (a) In relation to a *connection point*, includes all equipment involved in generating, *supplying*, utilising or transmitting electrical *energy*.
- (b) In relation to *dispatch bids*, *scheduled resources*.
- ~~(b) In relation to *dispatch bids* and *offers*, *controllable generating equipment*, *controllable loads* and *wholesale demand response units*.~~
- (c) In relation to the *statement of opportunities* prepared by *AEMO*, individually controllable generating and *integrated resource* facilities registered or capable of being registered with *AEMO*.
- (d) In relation to the *regulatory investment test for transmission*, any of the definitions of *plant* in paragraphs (a) to (c) relevant to the application of the *regulatory investment test for transmission* to a RIT-T project.
- (e) In relation to the *regulatory investment test for distribution*, any of any of the definitions of *plant* in paragraphs (a) to (c) relevant to the application of the *regulatory investment test for distribution* to a RIT-D project.
- (f) In relation to a *system strength remediation scheme*, includes all equipment involved in the implementation of the scheme.
- (g) In relation to a *market ancillary service*, includes all equipment involved in providing the *market ancillary service*.

***plant availability***

The *active power capability* of a *generating unit* or *integrated resource unit* (in MW), based on the availability of its electrical power conversion process and assuming no fuel supply limitations on the *energy* available for input to that electrical power conversion process.

***power station***

- (a) In relation to a *Generator*, a *facility* in which any of that *Generator's* *generating units* are located.
- (b) In relation to an *Integrated Resource Provider*, a *facility* in which any of that *Integrated Resource Provider's* *generating units* or *integrated resource units* are located.

***power station***

~~In relation to a *Generator*, a *facility* in which any of that *Generator's* *generating units* are located.~~

**price band**

A MW quantity specified in a *dispatch bid* or *market ancillary service bid* as being available for *dispatch* at a specified price.

**price band**

~~A MW quantity specified in a *dispatch bid*, *dispatch offer* or *market ancillary service offer* as being available for *dispatch* at a specified price.~~

**primary frequency response**

An automatic change in a generating system's or integrated resource system's active power ~~level~~output, to oppose or arrest frequency changes, measured at or behind the generating system's or integrated resource system's connection point.

**production unit**

The *plant* used in the production of electricity and all related equipment essential to its functioning as a single entity.

**rated active power**

(a)(1) In relation to a generating unit or integrated resource unit, the maximum amount of active power that the generating unit or integrated resource unit can continuously deliver at the connection point when operating at its nameplate rating.

(b)(2) In relation to a generating system or integrated resource system, the combined maximum amount of active power that its in-service generating units or integrated resource units can deliver at the connection point, when its in-service generating units or in-service integrated resource units are operating at their nameplate ratings.

**rated maximum demand**

(a) In relation to an integrated resource unit, the maximum amount of active power that the plant can continuously consume at the connection point when operating at its nameplate rating.

(b) In relation to an integrated resource system, the combined maximum amount of active power that its in-service integrated resource units can consume at the connection point, when its in-service integrated resource units are operating at their nameplate ratings.

**reactive power capability**

The maximum rate at which reactive energy may be transferred from a generating unit or integrated resource unit to a connection point as specified or proposed to be specified in a connection agreement (as the case may be).

**rebid**

A variation to a bid ~~or offer~~ made in accordance with clause 3.8.22(b).

**regulating duty**

In relation to a generating unit or integrated resource unit, the duty to have its generated output adjusted frequently so that any power system frequency variations can be corrected.

### *releasable user guide*

A document associated with a functional block diagram and model source code provided under clause S5.2.4(b) (combined, forming the **model**), that contains sufficient information to enable a *Registered Participant* to use model source code provided under clause 3.13.3(l) to carry out *power system* studies for planning and operational purposes. The information in a releasable user guide must include, but is not limited to:

- (1) the **model** parameters and their values;
- (2) information about how the **model** parameter values vary with the operating state or output level of the *plant* or with the operating state or output level of any associated *plant*;
- (3) instructions relevant to the use and operation of the model source code provided under clause 3.13.3(l);
- (4) settings of *protection systems* that are relevant to load flow or dynamic simulation studies;
- (5) information provided in accordance with Schedule 5.5 only to the extent that the information is not a part of the **model** or the **model** parameters and that is reasonably necessary to allow modelling of the *generating unit*, *generating system*, *integrated resource unit*, *integrated resource system* or related *plant* in *power system* load flow or dynamic simulation studies;
- (6) *connection point* details including its parameters and values, location, network augmentations or modifications and other relevant connection information;
- (7) in regards to any relevant *generating unit*, *integrated resource unit*, ~~or~~ *generating system* *or integrated resource system*, the date on which any of the following has occurred or is expected to occur:
  - (i) an *application to connect* is made under clause 5.3.4(a);
  - (ii) a *connection agreement* is entered into under clause 5.3.7;
  - (iii) the *Generator or Integrated Resource Provider* submits a proposal to alter a *connected generating system* or a *generating system*, *or a connected integrated resource system or integrated resource system*, for which *performance standards* have previously been accepted by *AEMO*, under clause 5.3.9;
  - (iv) the *Generator or Integrated Resource Provider* is notified that the *Network Service Provider* and *AEMO* are satisfied with the proposed alterations to the *generating plant or other plant* under clause 5.3.10;
  - (v) *connection*;
  - (vi) commencement of commissioning; and
  - (vii) conclusion of commissioning; and
- (8) the date this document was prepared or updated.

### *resource minimum ramp rate requirement*

In relation to:



(a) a generating unit, scheduled integrated resource unit or scheduled load, means the lower of 3MW/minute or 3% of the maximum generation provided in accordance with clause 3.13.3(b); or

(b) a scheduled network service, means 3MW/minute, expressed as MW/minute rounded down to the nearest whole number except where this would result in the nearest whole number being zero, in which case the resource minimum ramp rate requirement is 1 MW/minute.

### **response breakpoint**

- (a) In relation to a ~~market ancillary service offer~~market ancillary service bid to raise the frequency of the power system, the level of associated generation or load (in MW) above which the amount of response specified in the ~~offer~~bid reduces with increased generation or load level; and
- (b) In relation to a ~~market ancillary service offer~~market ancillary service bid to lower the frequency of the power system, the level of associated generation or load (in MW) below which the amount of response specified in the ~~offer~~bid reduces with decreased generation or load level.

### **response capability**

- (a) In relation to a ~~market ancillary service offer~~market ancillary service bid to raise the frequency of the power system, the amount of the response in (MW) which is specified in the ~~offer~~bid for every level of associated generation or load below the associated response breakpoint; and
- (b) In relation to a ~~market ancillary service offer~~market ancillary service bid to lower the frequency of the power system, the amount of the response in (MW) which is specified in the ~~offer~~bid for every level of associated generation or load above the associated response breakpoint.

### **Scheduled Generator**

A Generator or Integrated Resource Provider in relation to any generating unit it has classified as a scheduled generating unit in accordance with Chapter 2.

### **~~Scheduled Generator~~**

~~A Generator in respect of which any generating unit is classified as a scheduled generating unit in accordance with Chapter 2.~~

### **scheduled integrated resource system**

An integrated resource system comprising scheduled integrated resource units or a combination of scheduled integrated resource units and other plant.

### **scheduled integrated resource unit**

- (a) An integrated resource unit that has been classified as such in accordance with Chapter 2.
- (b) For the purposes of Chapter 3 (except clause 3.8.3A(b)(1)(iv)) and rule 4.9, two or more integrated resource units referred to in paragraph (a) that have been aggregated in accordance with clause 3.8.3.



### **Scheduled Integrated Resource Provider**

An Integrated Resource Provider in relation to any integrated resource unit it has classified as a scheduled integrated resource unit in accordance with Chapter 2.

#### ***scheduled load***

- (a) ~~A market load Plant~~ which has been classified by AEMO in accordance with Chapter 2 as a *scheduled load*, ~~at the Market Customer's request. Under Chapter 3, a Market Customer may submit dispatch bids in relation to scheduled loads.~~
- (b) For the purposes of Chapter 3 (except clause 3.8.3A(b)(1)(ii)) and rule 4.9, two or more *scheduled loads* referred to in paragraph (a) that have been aggregated in accordance with clause 3.8.3.

#### **~~scheduled plant~~**

~~In respect of a Registered Participant, a scheduled generating unit, a semi-scheduled generating unit, an ancillary service load, a scheduled network service or a scheduled load classified by or in respect to that Registered Participant in accordance with Chapter 2.~~

#### ***scheduled reserve***

The amount of surplus or unused capacity:

- (a) of *scheduled generating units*;
- (a1) of scheduled integrated resource units;
- (b) of *scheduled network services*;
- (c) of *wholesale demand response units*; or
- (d) arising out of the ability to reduce *scheduled loads*.

#### **scheduled resource**

According to context:

- (a) a scheduled generating unit, a semi-scheduled generating unit, a scheduled integrated resource unit, a wholesale demand response unit, a scheduled network service or a scheduled load; or
- (b) in respect of a Registered Participant, a scheduled generating unit, a semi-scheduled generating unit, a scheduled integrated resource unit, a wholesale demand response unit, a scheduled network service or a scheduled load classified by or in respect to that Registered Participant in accordance with Chapter 2.

#### **~~Second-Tier Customer~~**

~~A Customer which has classified any load as a second tier load in accordance with Chapter 2.~~

#### **~~second-tier load~~**

~~Electricity purchased at a connection point in its entirety other than directly from the Local Retailer by a franchise customer or from the spot market and which is classified as a second tier load in accordance with Chapter 2.~~

### ***self-dispatch level***

The level of generation in MW, as specified in a ~~dispatch bid~~*dispatch offer* for a generating unit and a trading interval, which is the level at which that generating unit must be dispatched by AEMO in that trading interval unless otherwise dispatched in accordance with clause 3.8 or unless required to operate under a direction issued by AEMO in accordance with clause 4.8.9.

### ***Semi-Scheduled Generator***

A Generator *or Integrated Resource Provider* in respect of which any generating unit is classified as a semi-scheduled generating unit in accordance with Chapter 2.

### ***sent out generation***

In relation to a generating unit *or integrated resource unit*, the amount of electricity supplied to the transmission network or distribution network at its connection point.

### ***small generating unit***

A generating unit:

- (a) with a nameplate rating that is less than 30MW; and
- (b) which is owned, controlled or operated by a person that AEMO has exempted from the requirement to register as a Generator *or Integrated Resource Provider* in respect of that generating unit in accordance with ~~clause 2.1A.2~~*clause 2.2.1(e)*.

### ***small integrated resource unit***

*An integrated resource unit:*

- (a) *with a nameplate rating for both production and consumption that is less than 5 MW; and*
- (b) *which is owned, controlled or operated by a person that AEMO has exempted from the requirement to register as an Integrated Resource Provider in respect of that integrated resource unit in accordance with clause 2.1A.2.*

### ***Small Generation Aggregator***

*A person who:*

- ~~(a) intends to supply, or supplies, electricity from one or more small generating units that are connected to a transmission system or distribution system; and~~
- ~~(b) is registered by AEMO as a Small Generation Aggregator under Chapter 2.~~

### ***Small Resource Aggregator***

*An Integrated Resource Provider who has classified one or more connection points for small generating units or small integrated resource units as its market connection points in accordance with clause 2.2.8.*

### ***SRAS (system restart ancillary service)***

A service provided by plant or facilities with:

- (a) black start capability; or
- (b) the capabilities described in the SRAS Guideline to supply one or more services to sustain the stable energisation of generation and transmission,

sufficient to facilitate the restoration and maintenance of *power system security* and the restart of *generating units* or integrated resource units following a *major supply disruption*.

***supplementary carbon dioxide equivalent intensity indicator***

Any indicators relating to a subset of *scheduled generating units*, ~~and~~ *market generating units*, scheduled integrated resource units and market integrated resource units published by AEMO in accordance with clause 3.13.14(h).

***supply scarcity mechanism***

~~means~~ eEach of the following:

- (a) exercising the *RERT* in accordance with rule 3.20 by:
  - (1) *dispatching scheduled generating units*, scheduled integrated resource units, *wholesale demand response units*, *scheduled network services* or *scheduled loads* in accordance with any *scheduled reserve contract*; or
  - (2) *activating* ~~loads or generating units~~ unscheduled reserves under any *unscheduled reserve contract*;
- (b) issuing a *direction* in accordance with clause 4.8.9;
- (c) issuing a *clause 4.8.9 instruction* in accordance with clause 4.8.9.

***switchyard***

The *connection point* of a *generating unit* or integrated resource unit into the *network*, generally involving the ability to *connect* the *generating unit* or integrated resource unit to one or more outgoing *network* circuits.

***synchronise***

The act of *synchronising* a *generating unit*, integrated resource unit or a *scheduled network service* to the *power system*.

***synchronising***

To electrically *connect* a *generating unit*, integrated resource unit or a *scheduled network service* to the *power system*.

***synchronous generator voltage control***

The automatic *voltage control* system of a *generating unit* ~~of the synchronous generator category or integrated resource unit~~ which changes the output voltage of the *generating unit* or integrated resource unit through the adjustment of the generator rotor current and effectively changes the *reactive power* ~~level~~ output from that *generating unit* or integrated resource unit.

***system strength connection works***

Investment in a *transmission system* or *distribution system* in order to remedy or avoid an *adverse system strength impact* arising from establishing a *connection* for a *generating system*, integrated resource system or *market network service facility* or from any alteration to a *generating system* or integrated resource system to which clause 5.3.9 applies.

**~~system strength generating unit~~**

~~A generating unit registered with AEMO under clause 5.20C.4(b).~~

### ***system strength impact assessment***

Power system studies to assess the impact of the connection of a new generating system, integrated resource system or market network service facility or of any proposed alteration to a generating system or integrated resource system to which clause 5.3.9 applies on the ability under different operating conditions of:

- (a) the power system to maintain system stability in accordance with clause S5.1a.3; and
- (b) generating systems, integrated resource systems and market network service facilities forming part of the power system to maintain stable operation including following any credible contingency event or protected event,

so as to maintain the power system in a secure operating state.

### **system strength unit**

A generating unit or integrated resource unit registered with AEMO under clause 5.20C.4(b).

### ***tap-changing transformer***

A transformer with the capability to allow internal adjustment of output voltages which can be automatically or manually initiated and which is used as a major component in the control of the voltage of transmission and distribution networks in conjunction with the operation of reactive plant. The connection point of a generating unit or integrated resource unit may have an associated tap-changing transformer, usually provided by the Generator or Integrated Resource Provider.

### ***Transmission Customer***

A Customer, Non-Registered Customer, Integrated Resource Provider in relation to supply to an integrated resource unit or Distribution Network Service Provider having a connection point with a transmission network.

### ***Transmission Network User***

In relation to a transmission network, a Transmission Customer and:

- (a) a Generator whose generating unit;
- (a1) an Integrated Resource Provider whose generating unit or integrated resource unit;
- (b) a Network Service Provider whose network;
- (c) to the extent that a Dedicated Connection Asset Service Provider is not also one of the persons listed above, a Dedicated Connection Asset Service Provider whose dedicated connection asset,

is connected to the transmission network.

### ***unscheduled reserve***

The amount of surplus or unused capacity:

- (a) of generating units (other than scheduled generating units); ~~or~~
- (a1) of integrated resource units (other than scheduled integrated resource units);  
or

- (b) arising out of the ability to reduce demand (other than a *scheduled load* or *wholesale demand response unit*).

***wholesale demand response***

Means a *baseline deviation* achieved by (as applicable to a *wholesale demand response unit*):

- (a) reducing the consumption of electricity; or
- (b) increasing the export of electricity; or
- (c) reducing the consumption of electricity and starting to export electricity,  
at the ~~connection point of the~~ *wholesale demand response unit* in response to a *dispatch instruction* but only to the extent:
- (d) resulting from *wholesale demand response activity*; and
- (e) there is no *baseline deviation offset*.

***wholesale demand response unit***

- (a) A ~~load~~ *connection point* which has been classified in accordance with Chapter 2 as a *wholesale demand response unit*.
- (b) For the purposes of Chapter 3 (except clause 3.8.2A and rule 3.15) and rule 4.9, two or more *wholesale demand response units* referred to in paragraph (a) that have been aggregated in accordance with clause 3.8.3.

## **CHAPTER 11**

## 11. Savings and Transitional Rules

### Part [XXX]

#### 11.[xxx] Rules consequential on the making of the Draft National Electricity Amendment (Integrating energy storage systems into the NEM) Rule 2021

##### 11.[xxx].1 Definitions

- (a) In this rule 11.[xxx]:

**Amending Rule** means the *Draft National Electricity Amendment (Integrating energy storage systems into the NEM) Rule 2021*.

**Contracts and Firmness Guideline** has the meaning in Chapter 4A.

**effective date** means the date of commencement of Schedules 1 to 3 of the Amending Rule.

**existing application to connect** has the meaning given in clause 11.[xxx].12(a)(1).

**existing connection agreement** means a *connection agreement* entered into before the effective date.

**existing connection enquiry** has the meaning given in clause 11.[xxx].11(a)(1).

**new Chapter 2** means Chapter 2 as in force on and from the effective date.

**new Chapter 5** means Chapter 5 as in force on and from the effective date.

**new Chapter 10** means Chapter 10 as in force on and from the effective date.

**new exemption guidelines** means the guidelines made under clause 2.1A.2 of the new rules.

**new rule 2.9B** means rule 2.9B as in force on and from the effective date.

**new rules** means the *Rules* as in force on and from the effective date.

**old Chapter 2** means Chapter 2 as in force immediately prior to the effective date.

**old Chapter 5** means Chapter 5 as in force immediately prior to the effective date.

**old Chapter 10** means Chapter 10 as in force immediately prior to the effective date.

**old exemption guidelines** means the guidelines made under clause 2.2.1(b) of the old rules.

**old rules** means the *Rules* as in force immediately prior to the effective date.

**Opt-in Guidelines** has the meaning in Chapter 4A.

**registration transfer date** means the date 6 months after the effective date.



- (b) Subject to paragraph (c), italicised terms used in this rule 11.[xxx] have the same meaning as in new Chapter 10.
- (c) The following terms used in this rule 11.[xxx] have the meaning given in old Chapter 10: *ancillary service generating unit*, *ancillary service load*, *Small Generation Aggregator*, *market load*.

### **11.[xxx].2 Transferring registrations and reclassifications**

- (a) This clause applies to a *Registered Participant* who immediately before the effective date is registered as a *Generator* in relation to an *integrated resource system* and a *Customer* in relation to the same *integrated resource system*.
- (b) By the registration transfer date, a *Registered Participant* to whom this clause applies must apply to *AEMO* under new rule 2.9B to change its registration category to *Integrated Resource Provider* and to classify each *integrated resource unit* comprised in its *integrated resource system* in accordance with new Chapter 2.

#### **Note**

It is proposed to recommend classification of this provision as a civil penalty provision, tier 2.

- (c) *AEMO* must not charge a fee for an application made in accordance with paragraph (b).
- (d) *AEMO* and a *Registered Participant* to whom this clause applies must use reasonable endeavours to complete the change in registration category and classification within 3 months after the registration transfer date.

### **11.[xxx].3 Small Generation Aggregators to become Small Resource Aggregators**

- (a) On and from the effective date, a person who immediately before the effective date is registered with *AEMO* as a *Small Generation Aggregator* in respect of a *small generating unit* is taken:
  - (1) to be registered with *AEMO* as an *Integrated Resource Provider*; and
  - (2) to be a *Small Resource Aggregator* in respect of each of the *small generating units* classified by the *Small Generation Aggregator* immediately prior to the effective date.
- (b) A *generating unit* classified as a *small generating unit* immediately before the effective date continues to be classified as a *small generating unit* on and from the effective date.
- (c) On and from the effective date, registrations and classifications referred to in paragraphs (a) and (b) are subject to new Chapter 2 as if they had been made under new Chapter 2.
- (d) *AEMO* must, promptly after the effective date, amend its register of *Registered Participants* to take into account this clause and notify the relevant *Registered Participant* of the change in its registration under this rule 11.[xxx].3.

## 11.[xxx].4 Continuing registrations and classifications

- (a) A person who immediately before the effective date is registered with *AEMO* as a *Generator* under old Chapter 2 continues to be registered as a *Generator* under new Chapter 2 on and from the effective date.
- (b) A *generating unit* that immediately before the effective date is classified under old Chapter 2 continues to have the same classification under new Chapter 2 on and from the effective date.
- (c) Despite new clause 2.2.5(a), a *generating unit* that immediately before the effective date is classified as a *non-market generating unit* under old Chapter 2 continues to be classified as a *non-market generating unit* under new Chapter 2..
- (d) A person who immediately before the effective date is registered with *AEMO* as a *Customer* under old Chapter 2 continues to be registered as a *Customer* under new Chapter 2.
- (e) The *connection point* for a *load* that immediately before the effective date is a *market load* of a *Market Participant* under the old rules is taken to be classified on and from the effective date as a *market connection point* of the *Market Participant* under clause 2.3.4 of the new rules.
- (f) A *load*, *connection point* or *connected plant* that immediately before the effective date is a *scheduled load* of a *Market Participant* under the old rules is taken to be classified on and from the effective date as a *scheduled load* of the *Market Participant* under clause 2.3.4A of the new rules with respect to the relevant *connected plant*.
- (g) In relation to a *generating unit* that immediately before the effective date is classified as an *ancillary service generating unit* under clause 2.2.6 of the old rules:
  - (1) the *generating unit* is taken on and from the effective date to be classified as an *ancillary service unit* under clause 2.3D.1 of the new rules; and
  - (2) any conditions imposed by *AEMO* under clause 2.2.6(f) of the old rules in relation to the classification under clause 2.2.6 of the old rules are taken on and from the effective date to be conditions imposed by *AEMO* under clause 2.3D.1(f) of the new rules in relation to the *ancillary service unit*.
- (h) In relation to a *load* that immediately before the effective date is classified as an *ancillary service load* under clause 2.3.5 of the old rules:
  - (1) the *connected plant* at the *connection point* for the *load* the subject of the classification is taken on and from the effective date to be classified as an *ancillary service unit* under clause 2.3D.1 of the new rules; and
  - (2) any conditions imposed by *AEMO* under clause 2.3.5(f) of the old rules in relation to the classification under clause 2.3.5 of the old rules are taken on and from the effective date to be conditions imposed by *AEMO* under clause 2.3D.1(f) of the new rules.

- (i) A *Market Participant* who immediately before the effective date is an *Ancillary Service Provider* under the old rules continues on and from the effective date to be an *Ancillary Service Provider* under the new rules.
- (j) A person who immediately before the effective date is registered with *AEMO* as a *Demand Response Service Provider* under old Chapter 2 continues on and from the effective date to be registered as a *Demand Response Service Provider* under new Chapter 2.
- (k) A *qualifying load* that immediately before the effective date is classified as a *wholesale demand response unit* under old rule 2.3.6 continues on and from the effective date to be classified as a *wholesale demand response unit* under new rule 2.3.6.
- (l) Registrations and classifications referred to in this clause are subject to:
  - (1) new Chapter 2 on and from the effective date as if the registration or classification had been made under new Chapter 2; and
  - (2) changes in registration and classification following an application made in accordance with clause 11.[xxx].2.

#### **11.[xxx].5 Applications under Chapter 2 lodged before the effective date**

- (a) This clause applies in relation to any application (including an application for registration or classification) submitted to *AEMO* under old Chapter 2 before the effective date that has not been finally determined by *AEMO* before the effective date.
- (b) On and from the effective date an application to which this clause applies is subject to new Chapter 2.

#### **11.[xxx].6 Generating units registered with AEMO for services**

- (a) A *generating unit* that immediately before the effective date a *system strength generating unit* under the old rules is taken, on and from the effective date, to be a *system strength unit* under the new rules.
- (b) A *generating unit* that immediately before the effective date is an *inertia generating unit* under the old rules is taken, on and from the effective date, to be an *inertia unit* under the new rules.

#### **11.[xxx].7 Exemptions from registration**

- (a) By the effective date *AEMO* must:
  - (a) review the old exemption guidelines to take into account the Amending Rule; and
  - (b) remake and *publish* the old exemption guidelines as the initial new exemption guidelines.
- (b) A person exempt under the old exemption guidelines immediately before the effective date is taken, on and from the effective date, to be exempt under the new exemption guidelines to the same extent, and on the same conditions as the exemption under the old exemption guidelines.

- (c) An exemption referred to in paragraph (b) may be amended or revoked in accordance with the new rules.

#### **11.[xxx].8 Amendments to AEMO documents**

- (a) By the effective date *AEMO* must review and where *AEMO* considers it necessary or desirable amend and *publish* procedures, guidelines and other documents published by *AEMO* under the *Rules* to take into account the Amending Rule.
- (b) Without limiting paragraph (a), *AEMO* must by the effective date review and update the following documents to take into account the Amending Rule:
  - (1) the *ISP database* including by updating the inputs for *Integrated Resource Providers*;
  - (2) the *market suspension compensation methodology*;
  - (3) the *DER register information guidelines*, including to specify the minimum size of *small generating units* and *small integrated resource units* for which a *Network Service Provider* is required to provide *DER generation information*; and
  - (4) the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*.
- (c) In amending the documents referred to in paragraphs (a) and (b), *AEMO* must follow the process for amending those documents (if any) specified in the *Rules*.
- (d) Amendments made in accordance with paragraph (a) and (b) must take effect on and from the applicable date specified in paragraph (a) or (b) or any earlier time specified by *AEMO*.

#### **11.[xxx].9 Amendments to AER documents**

- (a) By the effective date the *AER* must review and where *AER* considers it necessary or desirable amend and *publish* procedures, guidelines or documents published by *AER* under the *Rules* to take into account the Amending Rule.
- (b) Without limiting paragraph (a), *AEMO* must by the effective date review and update the following documents to take into account the Amending Rule:
  - (1) the *Contracts and Firmness Guideline*; and
  - (2) the *Opt-in Guidelines*.
- (c) In amending the procedures and guidelines referred to in paragraphs (a) and (b) the *AER* must follow the process for amending those procedures and guidelines (if any) specified in the *Rules*.
- (d) Amendments made in accordance with paragraph (a) must take effect on and from the applicable date specified in paragraph (a) or any earlier time specified by the *AER*.

## **11.[xxx].10 Amendments to template for generator compliance programs**

- (a) By the effective date the *Reliability Panel* must review and amend and *publish* the *template for generator compliance programs* to take into account the Amending Rule.
- (b) In amending the *template for generator compliance programs* under paragraph (a), the *Reliability Panel* must follow the process for amending the template as specified in the *Rules*.
- (c) Amendments made in accordance with paragraph (a) must take effect on and from the applicable date specified in paragraph (a) or any earlier time specified by the *Reliability Panel*.

## **11.[xxx].11 Application of the Amending Rule to existing connection enquiries**

- (a) This clause applies where, before the effective date, a *Connection Applicant* has, in respect of *plant* that the *Connection Applicant* proposes to *connect*:
  - (1) made a *connection* enquiry in accordance with clauses 5.3.2 or 5.3A.5 (**existing connection enquiry**); and
  - (2) not made an *application to connect* to a *Network Service Provider*.
- (b) On and from the effective date:
  - (1) new Chapter 5 applies for the purposes of determining the *access standards* that apply to the *plant* that the *Connection Applicant* proposes to *connect*;
  - (2) the existing connection enquiry will be taken to be a valid *connection* enquiry under the new Chapter 5 with respect to the proposed *plant*; and
  - (3) the *Network Service Provider* must:
    - (i) within 10 *business days* after the effective date, use its reasonable endeavours to provide written notification to a *Connection Applicant* to which this clause applies that the existing connection enquiry will be treated as a *connection* enquiry under new Chapter 5; and
    - (ii) within 20 *business days* after providing the written notification in subparagraph (3)(i), in consultation with *AEMO* and where necessary, provide each *Connection Applicant* notified under subparagraph (3)(i) with:
      - (A) any further information required under clause 5.3.3 of new Chapter 5 relevant to the proposed *plant*; and
      - (B) written notice of any further information or data to be provided by the *Connection Applicant* to the *Network Service Provider*,to enable the *Connection Applicant* to submit an *application to connect* in accordance with new Chapter 5 with respect to the proposed *plant*.

- (c) Where the *Network Service Provider* has charged the *Connection Applicant* any fees or charges with respect to the existing connection enquiry, the *Network Service Provider* must not charge the *Connection Applicant* any additional fees or charges on or from the effective date with respect to such existing connection enquiry, except to the extent necessary to cover the reasonable costs of work required to notify the *Connection Applicant* and provide any relevant information under subparagraph (b)(3)(ii). For the avoidance of doubt, this clause does not preclude a *Network Service Provider* recovering an application fee from the *Connection Applicant* under clauses 5.3.4(b) or 5.3A.9.

## **11.[xxx].12 Application of the Amending Rule to existing applications to connect**

- (a) This clause applies where, before the effective date, a *Connection Applicant* has, in respect of *plant* that the *Connection Applicant* proposes to *connect*:
  - (1) made an *application to connect* to a *Network Service Provider* (**existing application to connect**); and
  - (2) not received an offer to *connect* from the relevant *Network Service Provider* in respect of the existing application to connect.
- (b) On and from the effective date:
  - (1) new Chapter 5 applies for the purposes of determining the *access standards* that apply to the *plant* that the *Connection Applicant* proposes to *connect*;
  - (2) the existing application to connect will be taken to be a valid *application to connect* under new Chapter 5 with respect to the proposed *plant*; and
  - (3) the *Network Service Provider* must:
    - (i) within 10 *business days* after the effective date, use its reasonable endeavours to provide written notification to a *Connection Applicant* to which this clause applies that the existing application to connect will be treated as an *application to connect* under new Chapter 5; and
    - (ii) within 20 *business days* after providing the written notification in subparagraph (3)(i), in consultation with *AEMO* and where necessary, provide each *Connection Applicant* notified under subparagraph (3)(i) (with a copy to be provided to *AEMO*) with:
      - (A) any further information required under clause 5.3.3 or clause 5.3A.5 of new Chapter 5 relevant to the proposed *plant*, including for each technical requirement, written details of the *automatic access standards*, *minimum access standards* and *negotiated access standards* that are *AEMO advisory matters*; and
      - (B) written notice of any further information to be provided by the *Connection Applicant* (which may include information

required to be provided under clauses 5.2.5(d) and (e), clauses 5.2.5A(d) and (e) and Schedule 5.5),

necessary for the *Network Service Provider* to prepare an offer to *connect* in accordance with new Chapter 5 with respect to the proposed *plant*.

- (c) Where the *Network Service Provider* has charged the *Connection Applicant* any fees or charges with respect to the existing application to connect, the *Network Service Provider* must not charge the *Connection Applicant* any additional fees or charges on or from the effective date with respect to such existing application to connect, except to the extent necessary to cover the reasonable costs of work required for the *Network Service Provider* to prepare an offer to *connect* in accordance with new Chapter 5, including the requirements to notify the *Connection Applicant* and provide any relevant information under subparagraph (b)(3).
- (d) A *Network Service Provider* to which this clause applies may extend the time period referred to in clause 5.3.6(a) to reasonably allow for any additional time taken in excess of the period allowed in the *preliminary program* that is necessary to take account of the differences in *access standards* between old Chapter 5 and new Chapter 5.

#### **11.[xxx].13 Application of the Amending Rule to existing offers to connect**

- (a) This clause applies where, before the effective date, a *Connection Applicant*:
  - (1) has received a valid offer to *connect* from the relevant *Network Service Provider* in respect of an *application to connect*; and
  - (2) has not entered into a *connection agreement* with the relevant *Network Service Provider* in respect of that *application to connect*.
- (b) On and from the effective date, old Chapter 5 applies for the purposes of determining the *access standards* that apply to the *plant* that the *Connection Applicant* proposes to *connect* under that offer to *connect*.

#### **11.[xxx].14 Application of the Amending Rule to existing connection agreements**

- (a) The Amending Rule is neither intended to, nor to be read or construed as having, the effect of:
  - (1) altering the terms of an existing connection agreement;
  - (2) altering the contractual rights or obligations of any of the parties under an existing connection agreement; or
  - (3) relieving the parties under any such existing connection agreement of their contractual obligations under such an agreement.
- (b) If, after the effective date, a *Generator* who has entered into an existing connection agreement is required, in accordance with the *Rules*, to amend any of the *performance standards* set out in that existing connection agreement, new Chapter 5 applies for the purposes of amending such *performance standards*.



