

CHAPTER 4

DRAFT DETERMINATION VERSION (ERC0300)

Indicative markup of the National Electricity Rules showing changes made by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021.

Note: This is an indicative consolidated version of the National Electricity Rules as amended by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021. It includes a markup of amendments made to relevant extracts of Chapters 4, 5, 5A, 6, 6A and 10 of version 159 of the National Electricity Rules. Only extracts of the relevant Chapters are provided in order to reduce the size of the document. Complete and current versions of the official NER should be viewed on the AEMC's website.

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4. Power System Security

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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* 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 [system strength nodefault level node](#) to meet the applicable *system strength requirements*.

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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 [system strength nodefault level node](#) when the *three phase fault level* at the [system strength nodefault 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*, 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.)

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4.6 Protection of Power System Equipment

4.6.1 Power system fault levels

- (a) *AEMO*, in consultation with *Network Service Providers*, must:
- (1) determine the fault levels at all *busbars* of the *power system* as described in clause 4.6.1(b); and
 - (2) determine the *three phase fault level* at ~~*system strength nodes*~~*fault level nodes*.
- (b) *AEMO* must ensure that there are processes in place that will allow the determination of fault levels for normal operation of the *power system* and in anticipation of all *credible contingency events* and *protected events* that *AEMO* considers may affect the configuration of the *power system*, so that *AEMO* can identify:
- (1) any *busbar* which could potentially be exposed to a fault level which exceeds the fault *current ratings* of the circuit breakers associated with that *busbar*; and
 - (2) any ~~*system strength node*~~*fault level node* where the *three phase fault level* is likely to be below the minimum *three phase fault level*.

4.6.2 Power system protection co-ordination

AEMO must use its reasonable endeavours to co-ordinate in consultation with the *Network Service Providers*, the protection of *transmission system plant* and equipment that *AEMO* reasonably considers could affect *power system security*.

4.6.3 Audit and testing

AEMO must use its reasonable endeavours to co-ordinate such inspections and tests as *AEMO* thinks appropriate to ensure that the protection of the *power system* is adequate to protect against damage to *power system plant* and equipment.

4.6.4 Short-term thermal ratings of power system

- (a) *AEMO* may act so as to use, or require or recommend actions which use, the full extent of the thermal ratings of *transmission elements* to maintain *power system security*, including the short-term ratings (being time dependent ratings), as defined by the *Network Service Providers* from time to time.
- (b) *AEMO* must use its reasonable endeavours not to exceed the ratings defined by the *Network Service Providers* and not to require or recommend action which causes those ratings to be exceeded, to the extent that *AEMO* is or ought reasonably to be aware of such ratings.

4.6.5 Partial outage of power protection systems

- (a) Where there is an *outage* of one *protection system* of a *transmission line*, *AEMO* must determine, in consultation with the relevant *Network Service Provider*, the most appropriate action. Depending on the circumstances the determination may be:

- (1) to leave the *transmission element* in service for a limited duration;
 - (2) to take the *transmission element* out of service immediately;
 - (3) to install a temporary *protection system*;
 - (4) to accept a degraded performance from the *protection system*, with or without additional operational measures or temporary protection measures to minimise *power system* impact; or
 - (5) to operate the *transmission element* at a lower capacity.
- (b) If there is an *outage* of both *protection systems* on a *transmission line* and *AEMO* determines this to be an unacceptable risk to *power system security*, *AEMO* must take the *transmission element* out of service as soon as possible and advise the appropriate *Network Service Provider* immediately this action is undertaken.
- (c) The *Network Service Provider* must comply with a determination made by *AEMO* under this clause 4.6.5 unless, in the reasonable opinion of the *Network Service Provider*, it would threaten the safety of any person or cause material damage.

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.)

4.6.6 System strength impact assessment guidelines

- (a) *AEMO* must make, ~~publish~~ publish and may amend *system strength impact assessment guidelines* that ~~set out~~:
- (1) in accordance with paragraph (b), set out the methodology to be used by *Network Service Providers* when undertaking *system strength impact assessments* under clause 5.3.4B and calculating a system strength locational factor; ~~in relation to a proposed new connection of a generating system or market network service facility or an alteration to a generating system to which clause 5.3.9 applies.~~
 - (2) provide guidance on the calculation of available fault levels at system strength nodes including for the purposes of forecasts under clause 5.20C.3(f)(3) and for the calculation of the system strength locational factor for a connection point;
 - (3) prescribe, for clauses S5.2.5.15(b), S5.3.11(b) and S5.3a.7(b), the methodology for assessing the short circuit ratio;
 - (4) provide guidance on the information that must be provided by a connecting party to demonstrate compliance with the minimum access standard in clause S5.2.5.15(b), clause S5.3.11(b) or clause S5.3a.7(b) (as applicable), or if the procedures in clause 5.3.4A have been followed, the relevant negotiated access standard;
 - (5) prescribe, for the purposes of the definition of inverter based load in Chapter 10, the matters to be taken into account when determining whether a load is an inverter-based load;

- (6) prescribe, for the purposes of the definition of *large inverter based resource* in Chapter 10, the criteria for classification of an *inverter based resource* as a *large inverter based resource* which must take into account *plant type* and *size* and other matters *AEMO* considers relevant to identifying *inverter based resources* that may have a *general system strength impact* above the threshold referred to in subparagraph (b)(7); and
- (7) describe how *AEMO* assesses *adverse system strength impacts*.
- (b) For paragraph (a)(1), the~~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 calculate the applicable *system strength locational factor*; and
 - (ii) a full assessment to be used in the circumstances described in clause 5.3.4B(a2)(3);
 - (1A) require the preliminary assessment to be carried out using a simply isolated model such as a single machine infinite bus model;
 - (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 the *general system strength impact* ~~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 *general system strength impacts* ~~*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 a *general system strength impact* ~~*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*;

- (9) specify a methodology for calculation of the *system strength locational factor* for a *connection point*, which must be representative of the impedance between the *connection point* and the applicable *system strength node* and must use *available fault level* as the basis for the methodology; and
- (10) provide guidance about the circumstances in which a *system strength locational factor* is not reasonably able to be determined or would be manifestly excessive.

Example

Where the *system strength locational factor* tends to infinity, or where it would result in a *system strength charge* that could not reasonably be expected to be paid in preference to *system strength connection works* or a *system strength remediation scheme*.

- (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 person seeking connection referred to in clause 5.3.4B(a) ~~*Generator 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 person seeking connection referred to in clause 5.3.4B(a) ~~*Generator 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).

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CHAPTER 5**DRAFT DETERMINATION VERSION (ERC0300)****Indicative markup of the National Electricity Rules showing changes made by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021.**

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5. Network Connection Access, Planning and Expansion

Part A Introduction

5.1 Introduction to Chapter 5

5.1.1 Structure of this Chapter

- (a) This Chapter deals with matters relating to *networks*.
- (b) It is divided into the following Parts:
 - (1) this Part is introductory;
 - (2) Part B provides a framework for *connection* and access to a *transmission network* or a *distribution network* and to the *national grid*;
 - (3) Part C addresses the *network* related issues following the negotiation of a *connection agreement* under Part B, namely the design of *connected* equipment, inspection and testing, commissioning and *disconnection* and reconnection; and
 - (4) Part D deals with the planning and expansion of *networks* and the *national grid*.

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
A <i>Registered Participant</i> or a person intending to become a <i>Registered Participant</i> for a <i>generating plant connecting to a transmission network</i>	Rule 5.3 applies

Connection Applicant	Process
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 connecting to a transmission network</i>	Rule 5.3 applies
A <i>load connecting to a 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
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
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
An <i>embedded generating unit connecting to a 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> <u>or a person seeking connection for a large inverter based resource</u>	Rules 5.3 and 5.3A apply (see clause 5.3.1A for the interaction between the two rules)
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)
A <i>Generator</i> wishing to alter a <i>connected generating plant</i> in the circumstances set out in clause 5.3.9	Clause 5.3.9 applies
<u>A <i>Network User</i> wishing to alter connected plant in the circumstances</u>	<u>Clause 5.3.12 applies</u>

Connection Applicant	Process
<u>set out in clause 5.3.12</u>	
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 <i>connected generating plant</i> in the circumstances set out in clause 5.3.9 <u>or alteration of <i>connected plant in the circumstances set out in clause 5.3.12</i></u>	Rule 5.3 applies as modified by clause 5.2A.3(c)
An <i>Embedded Generator</i> 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
A <i>load</i> or <i>generating plant</i> 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
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>) <u>and is not <i>connecting a large inverter based resource</i></u> A non-registered embedded generator who does not make an election for Rule 5.3A to apply instead of Chapter 5A	Chapter 5A applies
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

5.1A Introduction to Part B

5.1A.1 Purpose and Application

- (a) This Part B:
- (1) **[Deleted]**
 - (2) has the following aims:
 - (i) to detail the principles and guidelines governing *connection* and access to a *network*;
 - (ii) to establish the process to be followed by a *Registered Participant* or a person intending to become a *Registered Participant* for establishing or modifying a *connection* to a *network* or for altering *generating plant connected to a network*;
 - (iii) to address a *Connection Applicant's* reasonable expectations of the level and standard of *power transfer capability* that the relevant *network* should provide; and

- (iv) to establish processes to ensure ongoing compliance with the technical requirements of this Part B to facilitate management of the *national grid*.
- (b) **[Deleted]**.
- (c) If a person who is not a *Registered Participant* or a person intending to become a *Registered Participant* requests *connection* of a *load* to a *transmission network* and agrees to comply with this Part B as if that person was a *Registered Participant*, the relevant *Transmission Network Service Provider* must comply with this Part B as if that person was a *Registered Participant*.
- (d) Subject to paragraphs (e) and (g), the following *Rules* apply in the application of this Part B to *transmission services* provided by means of, or in connection with, the *declared transmission system* of an *adoptive jurisdiction*:
 - (1) a reference to a *Network Service Provider* is, in relation to the provision of *connection services*, to be read as a reference to a *declared transmission system operator*; and
 - (2) a reference to a *Network Service Provider* is, in relation to the provision of *shared transmission services*, to be read as a reference to *AEMO*.
- (e) A reference in any of the following provisions to a *Network Service Provider* will, in relation to the *declared transmission system* of an *adoptive jurisdiction*, be construed as a reference to *AEMO*:
 - (1) clause 5.2.3(b);
 - (2) clause 5.2.6;
 - (3) clause 5.3A.12;
 - (4) clause 5.7.6;
 - (5) clause 5.7.7 (except clause 5.7.7(c));
 - (6) rule 5.11;
 - (7) clause 5.12.1;
 - (8) clause 5.12.2 (except clause 5.12.2(c)(2));
 - (9) clause 5.14.1;
 - (10) schedule 5.1, clause S5.1.2.3;
 - (11) schedule 5.3, clause S5.3.5.
- (f) Subject to clause (f1) a reference in:
 - (1) the definition of *RIT-T proponent* in clause 5.10.2;
 - (2) clause 5.14.3;
 - (3) clause 5.16.4;
 - (3A) clause 5.16A.4;
 - (4) rule 5.16B;

- (5) rule 5.18;
- (6) rule 5.19;
- (7) rule 5.20B; and
- (8) rule 5.20C,

to a *Transmission Network Service Provider* will, in relation to the *declared transmission system* of an *adoptive jurisdiction*, be construed as a reference to *AEMO*.

(f1) A reference in:

- (1) the definition of *RIT-T proponent* in clause 5.10.2;
- (2) clause 5.16.4; and
- (2A) clause 5.16A.4; and
- (3) rule 5.16B,

to a *Transmission Network Service Provider* will, in relation to the *declared transmission system* of an *adoptive jurisdiction*, be construed as a reference to the relevant *declared transmission system operator* where:

- (4) the relevant *RIT-T project* (as defined in clause 5.10.2) is to address an *identified need* that arises from the retirement or de-rating of *network assets*; and
- (5) a *credible option* (as defined in clause 5.10.2) for that *RIT-T project* (as defined in clause 5.10.2) is replacement of *network assets*.

(g) A reference in any of the following provisions to a *Network Service Provider* will, in relation to the *declared transmission system* of an *adoptive jurisdiction*, be construed as a reference to the relevant *declared transmission system operator*:

- (1) clause 5.2.3(d)(12), (e) and (e1)(except 5.2.3(e1)(2));
- (2) clause 5.3.4A(c) and (d);
- (3) clause 5.9.3;
- (4) clause 5.9.4;
- (5) clause 5.9.6;
- (6) Schedule 5.1, clause S5.1.10.3(a);
- (7) Schedule 5.2 clause S5.2.3(a)(8).

...

5.2.3A Obligations of Market Network Service Providers

- (a) If in *AEMO*'s reasonable opinion, there is a risk a *Market 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 *Market Network Service Provider* to provide information of the type described in clause S5.3a.1(a1), and following such a request, the *Market Network Service 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

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 in *AEMO's* reasonable opinion, information of the type described in clause S5.3a.1(a1) is required to enable a *Network Service Provider* to conduct the assessment required by clause 5.3.4B, *AEMO* may request a *Market Network Service Provider* to provide the information, and following such a request, the *Market Network Service Provider* must provide the information to *AEMO* and the 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.)

- (c) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraphs (a) and (b) must be treated as *confidential information* by those recipients.

- (d) A *Market Network Service Provider* must comply with any terms and conditions of a connection agreement for its connected plant that provide for the implementation, operation, maintenance or performance of a system strength remediation scheme.

Note

The *AEMC* proposes to recommend classifying this clause as a tier 1 civil penalty provision.

5.2.4 Obligations of customers

- (a) Each *Customer* must plan and design its *facilities* and ensure that its *facilities* are operated to comply with:
- (1) its *connection agreement* with a *Network Service Provider*;
 - (2) subject to clause 5.2.4(a)(1), all applicable *performance standards*; and
 - (3) subject to clause 5.2.4(a)(2), the *system 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.)

- (b) A *Customer* must:

- (1) submit an *application to connect* in respect of new or altered equipment owned, operated or controlled by the *Customer* 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 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 5.3;
 - (3) provide *load* 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 any intended voluntary permanent *disconnection* in accordance with rule 5.9.
- (c) If in *AEMO's* reasonable opinion, there is a risk that a *Customer's plant* 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 a *Customer* to which Schedule 5.3 applies to provide information of the type described in clause S5.3.1(a1), and following such a request, the *Customer* 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

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 in *AEMO's* reasonable opinion, information of the type described in clause S5.3.1(a1) is required to enable a *Network Service Provider* to conduct the assessment required by clause 5.3.4B, *AEMO* may request a *Customer* to which Schedule 5.3 applies, to provide the information, and following such a request, the *Customer* must provide the information to *AEMO* and the 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.)

- (e) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraphs (c) and (d) must be treated as *confidential information* by those recipients.

(f) A Customer must comply with any terms and conditions of a connection agreement for its connected plant that provide for the implementation, operation, maintenance or performance of a system strength remediation scheme.

Note

The AEMC proposes to recommend classifying this clause as a tier 1 civil penalty provision.

5.2.5 Obligations of Generators

- (a) A *Generator* 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

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 *Generator* must:
- (1) submit an *application to connect* in respect of new *generating plant* owned, operated or controlled by the *Generator*, or to be owned, operated or controlled by the *Generator*, 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) A *Generator* must comply with any terms and conditions of a *connection agreement* for its *generating system* 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.)

- (d) If in *AEMO's* reasonable opinion, there is a risk that a *Generator's plant* 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 a *Generator* to provide information of the type described in clause S5.2.4, and following such a request, the *Generator* 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

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 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 a *Generator* to provide the information, and following such a request, the *Generator* must provide the information to *AEMO* and the 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.)

- (f) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraphs (c) and (d) must be treated as *confidential information* by those recipients.

5.2.6 Obligations of AEMO

AEMO must provide to *Network Service Providers* on request, a copy of any report provided to *AEMO* by a *Network Service Provider* under clause 5.2.3(d)(12). If a *Registered Participant* reasonably considers that it is or may be adversely affected by a development or change in another *region*, the *Registered Participant* may request the preparation of a report by the relevant *Network Service Provider* as to the technical impacts of the development or change. If so requested, the *Network Service Provider* must prepare such a report and provide a copy of it to *AEMO*, the *Registered Participant* requesting the report and, on request, any other *Registered Participant*.

5.2.6A AEMO review of technical requirements for connection

- (a) *AEMO* must conduct a review of some or all of the technical requirements set out in Schedule 5.2, Schedule 5.3 and Schedule 5.3a at least once in every five year period (and may conduct a review more frequently if *AEMO* considers necessary) to assess whether those requirements should be amended, having regard to:
 - (1) the *national electricity objective*;
 - (2) the need to achieve and maintain *power system security*;
 - (3) changes in *power system* conditions; and
 - (4) changes in technology and capabilities of *facilities* and *plant*.
- (b) When conducting a review under this clause 5.2.6A, *AEMO* must consult with, among other affected parties, the *Reliability Panel*.
- (c) *AEMO* must commence a review under this clause 5.2.6A with the publication of an approach paper on its website, which must:
 - (1) set out the scope of the review, including the nature and extent of the issues to be reviewed;
 - (2) describe the technical requirements to be consulted on; and
 - (3) state the date by which a draft report will be published.
- (d) *AEMO* must publish a draft report on its website that:
 - (1) sets out *AEMO's* recommendations for any amendments to the technical requirements set out in Schedule 5.2, Schedule 5.3 and Schedule 5.3a and the reasons for those recommendations; and
 - (2) includes an invitation for written submissions to be made to *AEMO* within a period specified in the invitation (which must be at least 30 *business days*) on the technical requirements and recommendations in the draft report and must publish any submissions on its website, subject to obligations in respect of *confidential information*.
- (e) *AEMO* must publish a final report on its website within 12 months of the approach paper's publication under paragraph (c), setting out *AEMO's* recommendations for any amendments to the technical requirements set out in Schedule 5.2, Schedule 5.3 and Schedule 5.3a, having regard to the matters set out in subparagraphs (a)(1) to (4) and any submissions made in response to its invitation under subparagraph (d)(2).
- (f) As soon as practicable following publication of a final report under paragraph (e), *AEMO* must provide written notification to the *AEMC* as to whether *AEMO* will be submitting a *Rule* change proposal that results from the review.

5.2.7 Obligations of Dedicated Connection Asset Service Providers

- (a) A *Dedicated Connection Asset Service Provider* must classify its *dedicated connection asset* as a *small dedicated connection asset* or a *large dedicated connection asset* in accordance with Chapter 2.

- (b) A *Dedicated Connection Asset Service Provider* must plan and design its *dedicated connection assets* and ensure that they are operated to comply with:
 - (1) the *performance standards* applicable to those *facilities connected* to those *dedicated connection assets*;
 - (2) subject to subparagraph (1), its *connection agreement* applicable to those *dedicated connection assets*; and
 - (3) subject to subparagraph (2), the *system 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.)

- (c) A *Dedicated Connection Asset Service Provider* for a *large dedicated connection asset* must prepare, maintain and publish an *access policy* in accordance with clause 5.2A.8.
- (d) A *Dedicated Connection Asset Service Provider* must:
 - (1) permit and participate in inspection and testing of *facilities* and equipment in accordance with rule 5.7;
 - (2) 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;
 - (3) give notice of intended voluntary permanent *disconnection* in accordance with rule 5.9; and
 - (4) in relation to a *connection* to an *identified user shared asset*, ensure that there is a *connection agreement* between itself and the *Primary Transmission Network Service Provider*.

5.2A Transmission network connection and access

5.2A.1 Application

- (a) This rule 5.2A does not apply in relation to *connection* and access to the *declared transmission system* of an *adoptive jurisdiction*.
- (b) In this rule 5.2A, a reference to ownership in relation to an asset includes a leasehold interest.

5.2A.2 Relevant assets

- (a) The assets relevant to *connection* and access to the *transmission network* and the person who is registered for those assets are set out in the following table:

Asset	Registered Person
primary <i>transmission network</i> in the <i>participating jurisdictions</i> .	<i>Primary Transmission Network Service Provider</i>

Asset	Registered Person
<i>identified user shared asset owned by the Primary Transmission Network Service Provider</i>	<i>Primary Transmission Network Service Provider</i> (forms part of that provider's broader <i>transmission network</i>)
<i>third party IUSA</i>	<i>Primary Transmission Network Service Provider</i> (as controller and operator of the <i>third party IUSA</i> under a <i>network operating agreement</i>) (forms part of that provider's broader <i>transmission network</i>)
<i>dedicated connection asset</i>	<i>Dedicated Connection Asset Service Provider</i>
<i>network connection asset</i>	<i>Transmission Network Service Provider</i>
<i>facility of a Transmission Network User</i>	<i>Transmission Network User</i> (if registration required or obtained)

- (b) The intention of this rule 5.2A and Chapter 2 is that there is a *Registered Participant* for each asset connecting the *transmission network* to the *facilities* of the *Transmission Network User*, subject to exemptions obtained under Chapter 2.

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</i> and <i>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>

Service classification	TNSP obligations	Assets involved
<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.
- (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 plant* in the circumstances set out in clause 5.3.9 or alter other plant in the circumstances set out in clause 5.3.12, 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.

...

5.3 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 or alterations to *connected plant* in the circumstances set out in clause 5.3.12.
- (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* wishing to alter *connected generating plant* must comply with clause 5.3.9 and a *Network User* or *Market Network Service Provider* to whom clause 5.3.12 applies must comply with clause 5.3.12.
- (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

- (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*, 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*;
 - (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

(3) non-registered embedded generator who has made an election under clause 5A.A.2(c); or

(4) a person (including a non-registered embedded generator) who is seeking connection for a large inverter based resource,

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 any *network elements* used in the provision of a *network service*, as the case may be.

5.3.2 Connection enquiry

- (a) A person referred to in clause 5.3.1(b) who wishes to make an *application to connect* must first make a *connection* enquiry by advising the *Local Network Service Provider* of the type, magnitude and timing of the proposed *connection* to that provider's *network*.
- (b) If the information submitted with a *connection* enquiry is inadequate to enable the *Local Network Service Provider* to process the enquiry the provider must within 5 *business days*, advise the *Connection Applicant* what other relevant preliminary information of the kind listed in schedule 5.4 is required before the *connection* enquiry can be further processed.

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 *Local Network Service Provider* must advise the *Connection Applicant* within 10 *business days* of receipt of the *connection* enquiry and the further information required in accordance with paragraph (b) if the enquiry would be more appropriately directed to another *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.)

- (d) The *Connection Applicant*, notwithstanding the advice received under paragraph (c), may if it is reasonable in all the circumstances, request the *Local Network Service Provider* to process the *connection* enquiry and the provider must meet this 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.)

- (e) Where the *Local Network Service Provider* considers that the *connection* enquiry should be jointly examined by more than one *Network Service Provider*, with the agreement of the *Connection Applicant*, one of those *Network Service Providers* may be allocated the task of liaising with the *Connection Applicant* and the other *Network Service Providers* to process and respond to the enquiry.

- (f) A *Network Service Provider* must to the extent that it holds technical information necessary to facilitate the processing of a *connection* enquiry made in accordance with paragraph (a) or an *application to connect* in accordance with clause 5.3.4(a), provide that information to the *Connection Applicant* in accordance with the relevant requirements of schedule 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.)

- (g) If applicable, a *Primary Network Service Provider* may charge a *Connection Applicant* an enquiry fee, the amount of which must not be more than necessary to cover the reasonable costs of work required to provide the information in clauses 5.3.3(b)(5A) and (7) to (10).

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* to which clause 5.3.4B applies of a generating 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; ~~and~~
- (3) except where, under clause 5.3.4B(a3), the *Network Service Provider* is not required to calculate the *system strength locational factor*:
- (i) the indicative *system strength quantity* for the *connection point*;

- (ii) the system strength locational factor for the connection point;
and
- (iii) the relevant system strength node and the indicative system strength charge using the then applicable system strength unit price.

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.)

5.3.4 Application for connection

- (a) A person who has made a *connection* enquiry under clause 5.3.2 may, following receipt of the responses under clause 5.3.3, make an *application to connect* in accordance with this clause 5.3.4, clause 5.3.4A and clause 5.3.4B.
- (b) To be eligible for *connection* the *Connection Applicant* must submit an *application to connect* containing:
 - (1) the information specified in clause 5.3.3(c);
 - (2) the relevant application fee to the relevant *Network Service Provider*;
 - (3) for services related to *contestable IUSA components* that the *Connection Applicant* has not obtained from the *Primary Transmission Network Service Provider* (as applicable):
 - (i) the *Connection Applicant's* process for how the *Primary Transmission Network Service Provider* will undertake a review of the detailed design and inspect the construction of those components and how risks of defects will be addressed;
 - (ii) the detailed design of those components; and
 - (iii) if the *Primary Transmission Network Service Provider* will not own the *contestable IUSA components*, the *Connection Applicant's* proposed changes (if any) to the form of *network operating agreement* published pursuant to schedule 5.10; and
 - (4) if the *Connection Applicant* has obtained services related to *contestable IUSA components* other than from the *Primary Transmission Network Service Provider*, all information reasonably required for the *Primary Transmission Network Service Provider* to properly provide operation and maintenance services for the life of those components, including details of the *contestable IUSA components'* construction, instructions for operation and maintenance and health safety and asset management manuals; and
 - (5) except where, under clause 5.3.4B(a3), the *Network Service Provider* is not required to calculate the *system strength locational factor*, the *Connection Applicant's* election under clause 5.3.4B(b1).
- (b1) The *Connection Applicant's* detailed design under paragraph (b)(3)(ii):
 - (1) must be consistent with the minimum functional specification provided by the *Primary Transmission Network Service Provider* under clause 5.3.3(b)(9)(i);

- (2) must not unreasonably inhibit the capacity for future expansion of the *identified user shared asset* or preclude the possibility of future *connections* to that asset; and
 - (3) subject to the *Connection Applicant* considering the *Primary Transmission Network Service Provider's* additional requirements under clause 5.3.3(b)(9)(ii) in good faith, may be (but is not required to be) consistent with those additional requirements.
- (c) In relation to *Distribution Network Service Providers* and *Network Service Providers* for *declared transmission systems*, the *Connection Applicant* may submit *applications to connect* to more than one *Network Service Provider* in order to receive additional offers to *connect* in respect of *facilities* to be provided that are *contestable*.
- (d) To the extent that an application fee includes amounts to meet the reasonable costs anticipated to be incurred by any other *Network Service Providers* or *AEMO* in the assessment of the *application to connect*, a *Network Service Provider* who receives the *application to connect* and associated fee must pay such amounts to the other *Network Service Providers* or *AEMO*, as appropriate.
- (e) For each technical requirement where the proposed arrangement will not meet the *automatic access standards* nominated by the *Network Service Provider* pursuant to clause 5.3.3(b1), the *Connection Applicant* must submit with the *application to connect* a proposal for a *negotiated access standard* for each such requirement to be determined in accordance with clause 5.3.4A.
- (f) The *Connection Applicant* may:
- (1) lodge separate *applications to connect* and separately liaise with the other *Network Service Providers* identified in clause 5.3.3(b) who may require a form of agreement;
 - (2) lodge one *application to connect* with the *Network Service Provider* who processed the *connection* enquiry and require it to liaise with those other *Network Service Providers* and obtain and present all necessary draft agreements to the *Connection Applicant*; or
 - (3) lodge a combined *application to connect* with the *Primary Network Service Provider* where the *connection* involves more than one *Connection Applicant* due to different persons developing and owning *contestable IUSA components, dedicated connection assets* and *Transmission Network User facilities* in relation to that *connection*.
- (g) A *Connection Applicant* who proposes a *system strength remediation scheme* under clause 5.3.4B must submit its proposal with the *application to connect*.

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* under clause 5.3.9(b)(3), or a *Network User* or *Market Network Service Provider* under clause 5.3.12(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 *plant* (as applicable);
 - (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), 5.3.12(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), 5.3.12(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), [5.3.12\(b\)\(3\)](#) 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), [5.3.12\(b\)\(3\)](#) 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 mitigation requirement 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 or market network service facility and any proposed alteration to a generating 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 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 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.)~~

- (a) This clause applies in relation to:
- (1) a proposed new connection of a generating system or market network service facility to which rule 5.3 or 5.3A applies;
 - (2) a proposed new connection for a Network User to whom Schedule 5.3 applies where the facility to be connected includes an inverter based resource; and
 - (3) a proposed alteration to a generating system where clause 5.3.9 applies or to connected plant where clause 5.3.12 applies.
- (a1) In this clause, a reference to a Connection Applicant includes a reference to a Generator to whom clause 5.3.9 applies and a Network User or Market Network Service Provider to whom clause 5.3.12 applies.
- (a2) For each proposed new connection or proposed alteration to a connection to which this clause applies, a Network Service Provider must:
- (1) undertake a preliminary system strength impact assessment in accordance with the system strength impact assessment guidelines;
 - (2) subject to paragraph (a3), calculate the system strength locational factor for the new connection or proposed alteration in accordance with the system strength impact assessment guidelines; and
 - (3) undertake a full system strength impact assessment following the preliminary assessment, unless:
 - (i) the preliminary assessment indicates there will be no general system strength impact or the impact is below any threshold specified in the system strength impact assessment guidelines for the purposes of paragraph (f)(3); or
 - (ii) where applicable, the Connection Applicant has elected in accordance with paragraph (b1) to pay the system strength

charge in relation to the connection.

Note

The AEMC proposes to recommend classifying this clause as a tier 2 civil penalty provision.

- (a3) A Network Service Provider is not required to calculate the system strength locational factor where it determines in accordance with the system strength impact assessment guidelines that a system strength locational factor cannot reasonably be calculated or would be manifestly excessive.
- (a4) A Connection Applicant in receipt of the Network Service Provider's calculation of the system strength locational factor may request the Network Service Provider to undertake a further preliminary system strength impact assessment in accordance with the system strength impact assessment guidelines and provide a revised system strength locational factor for a new connection or proposed alteration to a connection. The Network Service Provider may require payment of a fee to meet the reasonable costs anticipated to be incurred by the Network Service Provider in undertaking any further preliminary assessment.
- (b) The Network Service Provider must give the results of the preliminary assessment and where applicable the full assessment to the *Connection Applicant* ~~or Generator~~ concerned following consultation with AEMO.
- (b1) A Connection Applicant must elect in its application to connect, its submission under clause 5.3.9(b) or its submission under clause 5.3.12(b) (as applicable) whether the system strength charge will be payable in relation to the new connection or alteration of the generating system or connected plant (as applicable). The election, once made, cannot be revoked.
- (c) A dispute referred to in paragraph (d) between any of:
- (1) AEMO;
 - (2) ~~a~~ 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 (a2)(3)paragraph (a); and
 - (4) a *Generator* who proposes an alteration to a *generating system* to which clause 5.3.9 applies and for which a full assessment is required under paragraph (a2)(3)paragraph (a); and
 - (5) a Network User or Market Network Service Provider who proposes an alteration to connected plant to which clause 5.3.12 applies and for which a full assessment is required under paragraph (a2)(3),
- may be determined under rule 8.2.
- (d) Paragraph (c) applies to any dispute relating to the assessment of the general system strength impact ~~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 (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* or proposed alteration will have a general system strength impact ~~of a generating facility or market network service facility or the Generator's proposed alteration to a generating 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 general system strength impact ~~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 *Connection Applicant 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; or
 - (4) the Connection Applicant has elected for the system strength charge to be payable in relation to the new connection or connection alteration.
- (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) or under clause 5.3.12(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.)

5.3.4C Information about system strength connection points

(a) A *Network Service Provider* for a *system strength connection point* who is not also the *System Strength Service Provider* for the *system strength connection point* must notify the information in paragraph (b) to the relevant *System Strength Service Provider* within 10 business days of:

- (1) an election being made under clause 4.3.4B(b1) for the *system strength charge* to be payable in relation to a new *connection* or *connection* alteration; or
- (2) agreement being reached under clause 5.3.9 or clause 5.3.12 to vary the performance of *plant* at a *system strength connection point*, relative to the technical requirements in clause S5.2.5.15, clause S5.3.11 or clause S5.3a.7 (as applicable).

Note

The AEMC proposes to recommend classifying this clause as a tier 2 civil penalty provision.

(b) The *Network Service Provider* must notify the:

- (1) *system strength locational factor*;
- (2) *short circuit ratio* and *rated active power*, *rated power transfer capability* or *maximum demand* for the *system strength connection point* agreed in accordance with clause S5.2.5.15, clause S5.3.11 or clause S5.3a.7 (as applicable);
- (3) the expected date from which the *system strength charge* for the *connection* will commence or the amendment take effect; and
- (4) information reasonably required by the *System Strength Service Provider* to identify the relevant *connection*.

(c) A *Network Service Provider* for a *system strength connection point* who is not also the *System Strength Service Provider* for the *system strength connection point* must, with 20 business days of a request of the relevant *System Strength Service Provider*:

- (1) calculate in accordance with the *system strength impact assessment guidelines* and notify to the *System Strength Service Provider*, the *system strength locational factor* applicable to the *system strength connection point* for each year of the *system strength charging period* specified by the *System Strength Service Provider*; and

(2) provide any other information reasonably required by the System Strength Service Provider for the purposes of calculating and billing system strength charges for the system strength connection point.

Note

The AEMC proposes to recommend classifying this clause as a tier 2 civil penalty provision.

(d) A System Strength Service Provider must establish and maintain arrangements to enable other Network Service Providers to provide information to the System Strength Service Provider in accordance with this clause 5.3.4C.

(e) A System Strength Service Provider must establish and maintain a record of all connections subject to the system strength charge and for which it is the System Strength Service Provider and must include in the record all information reasonably required by the System Strength Service Provider to identify the relevant connection for the purposes of calculating and billing system strength charges.

Note

The AEMC proposes to recommend classifying this clause as a tier 2 civil penalty provision.

5.3.5 Preparation of offer to connect

- (a) The *Network Service Provider* to whom the *application to connect* is submitted:
- (1) at the *automatic access standard* under clause 5.3.4; 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) The *Network Service Provider* must use its reasonable endeavours to advise the *Connection Applicant* of all risks and obligations in respect of the proposed *connection* associated with planning and environmental laws not contained in the *Rules*.
- (c) The *Connection Applicant* must provide such other additional information in relation to the *application to connect* as the *Network Service Provider* reasonably requires to assess the technical performance and costs of the required *connection* (including the details of any person undertaking the construction, detailed design and/or ownership of *contestable IUSA components*) to enable the *Network Service Provider* to prepare an offer to *connect*.
- (d) So as to maintain levels of service and quality of *supply* to existing *Registered Participants* in accordance with the *Rules*, the *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 *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*.
- (e) The *Network Service Provider* preparing the offer to *connect* must specify in reasonable detail any *system strength connection works* to be undertaken by the *Network Service Provider*.
- (f) **[Deleted]**
- (g) The *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 such costs.

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* 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 a *Generator*, 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.

5.3.8 Provision and use of information

- (a) The data and information provided under rules 5.2A, 5.3 and 5.3A is *confidential information* and must:
 - (1) be prepared, given and used in good faith; and
 - (2) not be disclosed or made available by the recipient to a third party except as set out in rule 3.7F, clause 3.13.3, this clause 5.3.8 or in accordance with rule 8.6.
- (a1) The data and information provided to a *Primary Transmission Network Service Provider* in relation to its provision of non-contestable services as specified under clause 5.2A.4(a) must not be used by the *Primary Transmission Network Service Provider* for the purpose of tendering for, or negotiating, *contestable* services specified under clause 5.2A.4(a) in the *connection* process in which the data or information was given, or in future *connection* processes, without the consent of the *Connection Applicant*.
- (b) The data and information to be provided under this rule 5.3 may be shared between a *Network Service Provider* and *AEMO* for the purpose of enabling:
 - (1) the *Network Service Provider* to advise *AEMO* of *ancillary services*;-; and
 - (2) either party to:
 - (i) assess the effect of a proposed *facility* or proposed alteration to *generating plant* (as the case may be) on:
 - (A) the performance of the *power system*; or
 - (B) another proposed *facility* or another proposed alteration;
 - (ii) assess proposed *negotiated access standards*;

- (iii) determine the extent of any required *augmentation* or *extension* or *system strength connection works*; or
 - (iv) assess *system strength remediation scheme* proposals.
- (c) A *Network Service Provider* may disclose the data and information to be provided under rules 5.2A, 5.3 and 5.3A to another *Network Service Provider* if the *Network Service Provider* considers the information or data is materially relevant to that provider for *connection*.
- (d) A person intending to disclose information under paragraphs (b) or (c) must first advise the relevant *Connection Applicant* of the extent of the disclosure, unless the information may be disclosed in accordance with rule 8.6.
- (d1) If a *Connection Applicant* becomes aware of any material change to information contained in or relevant to a *connection* enquiry under rule 5.3 following receipt of the response from the *Network Service Provider* under clause 5.3.3, that *Connection Applicant* must promptly notify the *Network Service Provider* of that change.
- (e) If a *Connection Applicant* or *Network Service Provider* becomes aware of any material change to any information contained in or relevant to an *application to connect*, it must promptly notify the other party in writing of that change.

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 *Registered Participant* must, within 5 *business days* of becoming aware that any information provided to *AEMO* in relation to a *performance standard* or other information of a kind required to be provided to *AEMO* under clause 5.3.7 is incorrect, advise *AEMO* of the correct information.

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.)

5.3.9 Procedure to be followed by a Generator proposing to alter a generating system

- (a) Subject to paragraph (a1), this clause 5.3.9 applies where a *Generator* 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:
- (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
 - (2) will, in *AEMO's* reasonable opinion, have a general system strength impact~~an adverse system strength impact~~; or

- (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*.
- (a1) This clause 5.3.9 does not apply in relation to any modifications made to a *generating system* by a *Scheduled Generator* or *Semi-Scheduled Generator* in order to comply with the *Primary Frequency Response Requirements* as applicable to that *generating system*.
- (b) A *Generator* 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.)

- (3) in relation to each relevant technical requirement for which the proposed alteration to the equipment will affect the performance of the *generating system*, the proposed amendments to the *plant's* existing corresponding *performance standard* for that technical requirement; and
- (4) where relevant, the *Generator's* proposed *system strength remediation scheme* or its election for the system strength charge to be payable in relation to the connection alteration.
- (c) Clause 5.3.4A applies to a submission by a *Generator* under subparagraph (b)(3).
- (c1) Clause 5.3.4B applies to a submission by a *Generator* under subparagraph (b)(4). A *Generator* 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* 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,

Column 1 (altered equipment)	Column 2 (clause)
	S5.2.5.12, S5.2.5.13, S5.2.8, S5.2.5.15
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, S5.2.5.16
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* 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.)

- (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* has complied with clause 5.3.9; and
 - (2) each amended *performance standard* submitted by the *Generator* 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).

5.3.11 Notification of request to change normal voltage

- (a) On receipt of a request from a *Network Service Provider* to change *normal voltage*, *AEMO* must *publish* a notice to *Registered Participants* advising:
- (1) the change in *normal voltage* requested; and
 - (2) the *connection point* to which the request relates.
- (b) Within a reasonable period after publication of the notice in paragraph (a), *AEMO* must *publish* a further notice to *Registered Participants* advising:
- (1) whether the *normal voltage* at the relevant *connection point* will change; and
 - (2) the nature of, and reasons for, any such change.

5.3.12 Procedure to be followed for other connection alterations

- (a) This clause 5.3.12 applies to a *Network User* specified in clause S5.3.11(a) and a *Market Network Service Provider* specified in clause S5.3a.1a who proposes to alter *connected plant* and that alteration will affect the performance of the *plant* relative to the technical requirements in clause S5.3.11 or clause S5.3a.7 (as applicable).
- (b) A *Network User* or *Market Network Service Provider* to whom 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 *plant*, details of the design 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 classifying this clause as a tier 2 civil penalty provision.

- (3) in relation to the technical requirements in clause S5.3.11 or clause S5.3a.7 (as applicable), the proposed amendments to the *plant's* existing corresponding *performance standard* for that technical requirement; and
 - (4) the *Network User's* or *Market Network Service Provider's* proposed *system strength remediation scheme* or its election for the *system strength charge* to be payable in relation to the *connection alteration*.
- (c) Clause 5.3.4A applies to a submission under subparagraph (b)(3).
 - (d) Clause 5.3.4B applies to a submission under subparagraph (b)(4). A *Network User* or *Market Network Service Provider* (as applicable) 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).
 - (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 (d), 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 5.3.12 leads to a variation to the agreed technical requirements in clause S5.3.11 or clause S5.3a.7 (as applicable) in an existing *connection agreement*, the *Network Service Provider* and the *Network User* or *Market Network Service Provider* (as applicable) must immediately jointly advise *AEMO*, including the details of any *performance standards* amended pursuant to this clause 5.3.12.

Note

The AEMC proposes to recommend classifying this clause as a tier 2 civil penalty provision.

5.3A Establishing or modifying connection - embedded generation

5.3A.A1 Definitions

- (a) In this clause 5.3A.A1:
- non-registered embedded generator** has the same meaning as in clause 5A.A.1.
- (b) For the purposes of this rule 5.3A.A1 and Schedules 5.4A and 5.4B:
- detailed response** means the response to a *connection* enquiry prepared under clause 5.3A.8.
- establish a connection** has the same meaning as in clause 5.3.1.
- information pack** means information relevant to the making of an *application to connect* specified in clause 5.3A.3(b).
- preliminary response** means the response to a *connection* enquiry prepared under clause 5.3A.7.
- sub-transmission line** has the same meaning as in clause 5.10.2.
- zone substation** has the same meaning as in clause 5.10.2.

5.3A.1 Application of rule 5.3A

- (a) ~~[Deleted]~~
~~{Deleted}~~
- (b) Where a *Connection Applicant* wishes to connect an *embedded generating 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*;
- (ii) 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~~
- (iii) non-registered embedded generator who has made an election under clause 5A.A.2(c); or
- (iv) a person (including a non-registered embedded generator) who is seeking connection for a large inverter based resource,
- 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 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.2 Miscellaneous

- (a) ~~[Deleted]~~
~~[Deleted]~~
- (b) To the extent a *Distribution Network Service Provider* has provided information required to be provided under this clause 5.3A by the inclusion of that information in:
- (1) its *demand side engagement document* under clause 5.13.1(g); or
 - (2) a *Distribution Annual Planning Report*,
- it will comply with the relevant information provision requirements of rule 5.3A by including hyperlinks to the relevant information in information provided to a *Connection Applicant*.
- (c) Where this rule 5.3A fixes a time limit for the provision of information or a response then, for the purposes of calculating elapsed time, the period that:
- (1) commences on the day when a dispute is initiated under clause 8.2.4(a); and
 - (2) ends on the day on which the dispute is withdrawn or is resolved in accordance with clauses 8.2.6D or 8.2.9(a),
- is to be disregarded.

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*;
 - (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*, 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*;
 - (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 where applicable, in determining the *system strength locational factor*; 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*, showing the *connection point*, the point of common coupling, the *embedded generating 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* 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*, 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* 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* 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.4 Fees

- (a) A *Distribution Network Service Provider* may charge a *Connection Applicant* an enquiry fee, the amount of which must not be more than necessary to cover the reasonable costs of work required to prepare a *detailed response* to the enquiry.
- (b) The *Distribution Network Service Provider* may specify that an enquiry fee is payable in components.
- (c) The enquiry fee, or such component of it identified by the *Distribution Network Service Provider*, is payable either:
 - (1) on lodgement of the further information identified in S5.4A(o); or
 - (2) on receipt of advice from the *Distribution Network Service Provider* provided pursuant to clause 5.3A.7(b).
- (d) A *Distribution Network Service Provider* must not charge a fee for the provision of a preliminary response.
- (e) A *Distribution Network Service Provider* may charge an application fee, payable on lodgement of an *application to connect*, provided that the fee must not:
 - (1) include an amount for work that was completed in preparing the *detailed response* to the enquiry; and
 - (2) be more than necessary to:
 - (i) cover the costs of work and expenses reasonably incurred by the *Distribution Network Service Provider* in assessing the *application to connect* and making an offer to *connect*; and
 - (ii) 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.

5.3A.5 Enquiry

- (a) A *Connection Applicant* who wishes to make an *application to connect* must first make a *connection enquiry* with the *Local Network Service Provider*.
- (b) Subject to paragraph (c), an enquiry must be in the form determined by the *Local Network Service Provider*.
- (c) An enquiry form under paragraph (b) must require the *Connection Applicant* to provide:
 - (1) a qualitative description of the objectives of the project proposal the subject of the *application to connect*;
 - (1a) the *DER generation information* that the *Distribution Network Service Provider* requires;
 - (2) the information specified in Schedule 5.4; and
 - (3) a list of the information required from the *Local Network Service Provider* in relation to its *application to connect* and supporting reasons for its requests.
- (d) A *Local Network Service Provider* must, within 5 *business days* after receiving an enquiry, provide written acknowledgment of receipt of the *connection enquiry*.
- (e) If the *Local Network Service Provider* considers that the *connection enquiry* should be jointly examined by more than one *Distribution Network Service Provider*, then, with the agreement of the *Connection Applicant*, one of those *Distribution Network Service Providers* may be allocated the task of liaising with the *Connection Applicant* and the other *Distribution Network Service Providers* to process and respond to the enquiry.
- (f) If the enquiry is incomplete in a material respect, or the *Connection Applicant* has lodged an enquiry other than in accordance with the form determined by a *Local Network Service Provider*, that *Local Network Service Provider* must, within 5 *business days* after receipt of the enquiry, advise the *Connection Applicant* of the deficiency, and may require the *Connection Applicant* to provide the necessary information.
- (g) A *Connection Applicant* may request in a *connection enquiry* made under paragraph (a), that the *Local Network Service Provider* provide only a detailed response under clause 5.3A.8(c) to its enquiry. The *Local Network Service Provider* must, within 5 *business days* after receipt of the enquiry and all such additional information (if any) requested under paragraph (f), advise the *Connection Applicant* if it agrees to the request.

5.3A.6 Response to Enquiry

- (a) In response to a *connection enquiry*, the *Distribution Network Service Provider* must provide:
 - (1) subject to clause 5.3A.5(g) or receiving any further information requested under clause 5.3A.5(f), a preliminary response; and
 - (2) subject to receiving the enquiry fee and the further information requested under clause 5.3A.8(b), if relevant, a *detailed response*.

- (b) In preparing either the *detailed response* or preliminary response, the *Distribution Network Service Provider* must liaise with other *Network Service Providers* 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. The *Distribution Network Service Provider* responding to the *connection* enquiry may include in its preliminary response or *detailed response*, the reasonable requirements of any such other *Network Service Providers* for information to be provided by the *Connection Applicant*.

5.3A.7 Preliminary Response to Enquiry

- (a) Unless agreed otherwise, a preliminary response must:
 - (1) be provided within 15 *business days* of receipt of a *connection* enquiry and all such additional information (if any) requested under clause 5.3A.5(f); and
 - (2) include the information specified in Schedule 5.4A.
- (b) If the *Distribution Network Service Provider* has agreed under clause 5.3A.5(g) to not provide a preliminary response, it must advise the *Connection Applicant* of the:
 - (1) estimate of the enquiry fee payable by the *Connection Applicant* for the *detailed response*, including details of how components of the fee were calculated; and
 - (2) the component of the estimate of the enquiry fee payable by the *Connection Applicant* to request the *detailed response*,within 15 *business days* of receipt of a *connection* enquiry and all such additional information (if any) requested under clause 5.3A.5(f), unless agreed otherwise.
- (c) A *Distribution Network Service Provider* may seek an extension of a time period specified in paragraphs (a) or (b) by giving notice, in writing to the *Connection Applicant*, specifying the reasons required for the extension. The *Connection Applicant* may not unreasonably withhold consent to that extension.
- (d) Nothing in paragraph (a) or Schedule 5.4A is to be read or construed as requiring the *Distribution Network Service Provider* to undertake detailed design or to perform detailed technical studies or analysis to prepare a preliminary response.

5.3A.8 Detailed Response to Enquiry

- (a) Subject to clause 5.3A.5(g), a *Distribution Network Service Provider* must within 5 *business days* after receiving the further information identified in clause 5.3A.5(o) provide written acknowledgment of receipt of it.
- (b) If the further information provided under paragraph (a) is incomplete in a material respect the *Distribution Network Service Provider* must within 10 *business days* after receipt of it, advise the *Connection Applicant* of the deficiency and what is required to address it.

- (c) Unless:
- (1) agreed otherwise; or
 - (2) the proposed *connection* requires the application of the *regulatory investment test for distribution*,
the *Distribution Network Service Provider* must provide a *detailed response* within 30 *business days* of the date specified under paragraph (d).
- (d) For the purposes of paragraph (c), the relevant date is the date on which the *Distribution Network Service Provider* has received all of the following:
- (1) the enquiry fee, or any component of the enquiry fee requested by the *Distribution Network Service Provider*;
 - (2) if the *Connection Applicant* was required to remedy a deficiency in further information provided under paragraph (b), that further information; and
 - (3) if the *Connection Applicant* was required under clause S5.4A(o) to provide further information, that information.
- (e) A *Distribution Network Service Provider* may seek an extension of the time period specified in paragraph (c) by giving notice, in writing to the *Connection Applicant*, specifying the reasons required for the extension. The *Connection Applicant* may not unreasonably withhold consent to that extension.
- (f) Where the proposed *connection* requires the application of the *regulatory investment test for distribution*, the *Distribution Network Service Provider* and the *Connection Applicant* are to agree a timeframe for the provision of a *detailed response*, taking into account the status of the relevant *RIT-D project* (as defined in clause 5.10.2).
- (g) A detailed response must include the information specified in:
- (1) paragraphs (f), (g) and (m) of Schedule 5.4B;
 - (2) paragraphs (a) - (e1), (h) - (l) and (n)-(o) of Schedule 5.4B.
- Note**
- Clause 5.3A.8(g) requires that a *detailed response* include all information specified in Schedule 5.4B. The above division may be of relevance for enforcement purposes only.
- (h) A *Connection Applicant* that is a *Registered Participant*, *AEMO* or an *interested party* may make a request in relation to technical requirements for access to the *Reliability Panel* in accordance with clause 5.3.3(b2)-(b4).

5.3A.9 Application for connection

- (a) Following receipt of a *detailed response* under clause 5.3A.8, a *Connection Applicant* may make an *application to connect* in accordance with this clause 5.3A.9, clause 5.3.4A and clause 5.3.4B.
- (b) To be eligible for *connection*, the *Connection Applicant* must submit an *application to connect* containing the information specified in the *detailed response* provided under clause 5.3A.8(c) and the application fee specified under clause S5.4B(m) to the *Distribution Network Service Provider* and

(except where, under clause 5.3.4B(a3), the *Network Service Provider* is not required to calculate the *system strength locational factor*) the *Connection Applicant's* election under clause 5.3.4B(b1).

- (c) The *Connection Applicant* may submit an *application to connect* to more than one *Distribution Network Service Provider* in order to receive additional offers to *connect* in respect of *facilities* to be provided that are *contestable*.
- (d) If the *application to connect* is incomplete in a material respect the *Distribution Network Service Provider* must, within 10 *business days* after receipt of it, advise the *Connection Applicant* of the deficiency, and the steps required to address it.
- (e) To the extent that an application fee includes amounts to meet the reasonable costs anticipated to be incurred by any other *Network Service Providers* or *AEMO* in the assessment of the *application to connect*, a *Distribution Network Service Provider* who receives the *application to connect* and associated fee must pay such amounts to the other *Network Service Providers* or *AEMO*, as appropriate.
- (f) For each technical requirement where the proposed arrangement will not meet the *automatic access standards* nominated by the *Distribution Network Service Provider* pursuant to clause 5.4B(b), the *Connection Applicant* must submit with the *application to connect* a proposal for a *negotiated access standard* for each such requirement to be determined in accordance with clause 5.3.4A.
- (g) The *Connection Applicant* may:
 - (1) lodge separate *applications to connect* and separately liaise with the other *Network Service Providers* identified in clause 5.3A.5(e) who may require a form of agreement; or
 - (2) lodge one *application to connect* with the *Distribution Network Service Provider* who processed the *connection* enquiry and require it to liaise with those other *Network Service Providers* and obtain and present all necessary draft agreements to the *Connection Applicant*.
- (h) A *Connection Applicant* who proposes a *system strength remediation scheme* under clause 5.3.4B must submit its proposal with the *application to connect*.

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* 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.11 Technical Dispute

- (a) Rule 8.2 applies to any dispute between a *Distribution Network Service Provider* and a *Connection Applicant* as to the technical requirements to establish or modify a *connection* sought by a *Connection Applicant* in a *connection* enquiry made under clause 5.3A.5 or an *application to connect* under clause 5.3A.9.

5.3A.12 Network support payments and functions

- (a) When negotiating the amount of a *network support payment* with an *Embedded Generator*, the *Transmission Network Service Provider* must take into account the:
- (1) nature of the *network* support services being provided by the *Embedded Generator*; and

- (2) extent to which the *Embedded Generator* 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* with AEMO and specify that the *generating 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.)

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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 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 *power system frequency* 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*.

5.10.2 Definitions

In this Part D and schedules 5.8, 5.9 and 5.4A:

asset management means the development and implementation of plans and processes, encompassing management, financial, consumer, engineering, information technology and other business inputs to ensure assets achieve the expected level of performance and minimise costs to consumers over the expected life cycle of the assets.

consumer panel report has the meaning given in clause 5.22.7(a).

Cost Benefit Analysis Guidelines means the guidelines made by the *AER* under clause 5.22.5.

cost threshold means a cost threshold specified in clause 5.15.3(b) or 5.15.3(d) (as relevant).

cost threshold determination means a final determination under clause 5.15.3(i).

cost threshold review means a review conducted under clause 5.15.3(e).

credible option has the meaning given to it in clause 5.15.2(a).

demand side engagement document means the document *published* by the *Distribution Network Service Provider* under clause 5.13.1(g).

demand side engagement register means a facility by which a person can register with a *Distribution Network Service Provider* their interest in being notified of developments relating to *distribution network* planning and expansion.

demand side engagement strategy means the strategy developed by a *Distribution Network Service Provider* under clause 5.13.1(e) and described in its demand side engagement document.

de-rate means, in respect of a *Network Service Provider*, a reduction in the *network capability* of a *network element* in the *network* of that *Network Service Provider*.

design fault level means the maximum level of fault current that a *facility* can sustain while maintaining operation at an acceptable *performance standard*.

development path means a set of projects in an *Integrated System Plan* that together address *power system needs*.

dispute notice has the meaning given in clause 5.16B.5(c)(1) and 5.17.5(c)(1).

disputing party has the meaning given in clause 5.16B.5(c) and 5.17.5(c).

distribution asset means the apparatus, equipment and plant, including *distribution lines*, *substations* and *sub-transmission lines*, of a *distribution system*.

draft project assessment report means the report prepared under clause 5.17.4(i).

final project assessment report means the report prepared under clauses 5.17.4(o) or (p).

firm delivery capacity means the maximum allowable output or load of a *network* or *facility* under *single contingency* conditions, including any short term overload capacity having regard to external factors, such as ambient temperature, that may affect the capacity of the *network* or *facility*.

Forecasting Best Practice Guidelines means the guidelines made by the *AER* under clause 4A.B.5.

forward planning period means the period determined by the *Distribution Network Service Provider* under clause 5.13.1(a)(1).

future ISP project means a project:

- (a) that relates to a *transmission asset* or *non-network option* the purpose of which is to address an *identified need* specified in an *Integrated System Plan* and which forms part of an *optimal development path*; and
- (b) that is forecast in the *Integrated System Plan* that identifies the project, to be an *actionable ISP project* in the future.

IASR review report has the meaning given in clause 5.22.9(a).

Inputs, Assumptions and Scenario Report means the report published by *AEMO* under clause 5.22.8(a).

ISP candidate option means a credible option specified in an *Integrated System Plan* that the *RIT-T proponent* must consider as part of a *regulatory investment test for transmission* for an *actionable ISP project*.

ISP consumer panel has the meaning given in clause 5.22.7(a).

ISP development opportunity means a development identified in an *Integrated System Plan* that does not relate to a *transmission asset* or *non-network option* and may include *distribution assets*, *generation*, storage projects or demand side developments that are consistent with the efficient development of the *power system*.

ISP methodology means the methodology published by *AEMO* under clause 5.22.8(d).

ISP parameters means, for an *ISP project*:

- (a) the inputs, assumptions and scenarios set out in the most recent *Inputs, Assumptions and Scenarios Report*;
- (b) the other *ISP projects* associated with the *optimal development path*; and
- (c) any weightings specified as relevant to that project.

ISP project means an *actionable ISP project*, a *future ISP project* or an *ISP development opportunity*.

ISP review report has the meaning given in clause 5.22.13(a).

ISP timetable means the timetable published by *AEMO* under clause 5.22.4(a).

joint planning project means a project the purpose of which is to address a need identified under clause 5.14.1(d)(3) or clause 5.14.2(a) or clause 5.14.3(a).

load transfer capacity means meeting the *load* requirements for a *connection point* by the reduction of *load* or group of *loads* at the *connection point* and increasing the *load* or group of *loads* at a different *connection point*.

non-network options report means the report prepared under clause 5.17.4(b).

non-network provider means a person who provides *non-network options*.

normal cyclic rating means the normal level of allowable *load* on a *primary distribution feeder* having regard to external factors, such as ambient temperature and wind speed, that may affect the capacity of the *primary distribution feeder*.

potential credible option means an option which a *RIT-D proponent* or *RIT-T proponent* (as the case may be) reasonably considers has the potential to be a credible option based on its initial assessment of the *identified need*.

potential transmission project means investment in a *transmission asset* of a *Transmission Network Service Provider* which:

- (a) is an *augmentation*; and
- (b) has an estimated capital cost in excess of \$5 million (as varied in accordance with a cost threshold determination); and
- (c) the person who identifies the project considers is likely, if constructed, to relieve forecast constraints between *regional reference nodes*.

power system needs has the meaning given in clause 5.22.3(a).

preferred option has the meaning given in clause 5.15A.1(c) and 5.17.1(b).

preparatory activities means activities required to design and to investigate the costs and benefits of *actionable ISP projects* and if applicable, *future ISP projects* including:

- (a) detailed engineering design;
- (b) route selection and easement assessment work;
- (c) cost estimation based on engineering design and route selection;
- (d) preliminary assessment of environmental and planning approvals; and
- (e) council and stakeholder engagement.

primary distribution feeder means a *distribution line* connecting a sub-transmission asset to either other *distribution lines* that are not *sub-transmission lines*, or to *distribution assets* that are not *sub-transmission assets*.

project assessment conclusions report means the report prepared under clause 5.16.4(t), 5.16.4(u) or 5.16A.4(i) (as applicable).

project assessment draft report means the report prepared under clause 5.16.4(j) or 5.16A.4(c) (as applicable).

project specification consultation report means the report prepared under clause 5.16.4(b).

protected event EFCS investment means investment by a *Transmission Network Service Provider* or a *Distribution Network Service Provider* for the purposes of installing or modifying an *emergency frequency control scheme* applicable in respect of the *Network Service Provider's transmission system and distribution system* in accordance with a *protected event EFCS standard*.

reconfiguration investment has the meaning given to it in clause 5.16.3(a)(5).

regulatory investment test for distribution application guidelines means the guidelines developed and *published* by the *AER* in accordance with clause 5.17.2 as in force from time to time, and include amendments made in accordance with clause 5.17.2(e).

regulatory investment test for transmission application guidelines means the guidelines developed and *published* by the *AER* in accordance with clause 5.16.2 as in force from time to time, and include amendments made in accordance with clause 5.16.2(e).

reliability corrective action means investment by a *Transmission Network Service Provider* or a *Distribution Network Service Provider* in respect of its *transmission network* or *distribution network* for the purpose of meeting the service standards linked to the technical requirements of schedule 5.1 or in *applicable regulatory instruments* and which may consist of *network options* or *non-network options*.

RIT-D project means:

- (a) a project the purpose of which is to address an *identified need* identified by a *Distribution Network Service Provider*; or
- (b) a *joint planning project* that is not a *RIT-T project*.

RIT-D proponent means the *Network Service Provider* applying the *regulatory investment test for distribution* to a *RIT-D project* to address an *identified need*. The RIT-D proponent may be:

- (a) if the *identified need* is identified during joint planning under clause 5.14.1(d)(3), a *Distribution Network Service Provider* or a *Transmission Network Service Provider*; or
- (b) in any other case, a *Distribution Network Service Provider*.

RIT-T project means:

- (a) a project the purpose of which is to address an *identified need* identified by a *Transmission Network Service Provider*; or
- (b) a *joint planning project* if:
 - (1) at least one *potential credible option* to address the *identified need* includes investment in a *network* or *non-network option* on a *transmission network* (other than *dual function assets*) with an estimated capital cost greater than the *cost threshold* that applies under clause 5.16.3(a)(2); or
 - (2) the *Network Service Providers* affected by the *joint planning project* have agreed that the *regulatory investment test for transmission* should be applied to the project; or
- (c) an *actionable ISP project*.

RIT-T proponent means the *Network Service Provider* applying the *regulatory investment test for transmission* to a *RIT-T project* to address an *identified need*. The RIT-T proponent may be:

- (a) if the *identified need* is identified during joint planning under clause 5.14.1(d)(3), a *Distribution Network Service Provider* or a *Transmission Network Service Provider*; or
- (b) in any other case (including under clause 5.14.3(a)), a *Transmission Network Service Provider*.

sub-transmission means any part of the *power system* which operates to deliver electricity from the *transmission system* to the *distribution network* and which may form part of the *distribution network*, including zone substations.

sub-transmission line means a power line connecting a *sub-transmission asset* to either the *transmission system* or another *sub-transmission asset*.

system limitation means a limitation identified by a *Distribution Network Service Provider* under clause 5.13.1(d)(2).

system limitation template means a template developed and *published* by the *AER* under clause 5.13.3(a).

TAPR Guidelines means the guidelines *published* by the *AER* under clause 5.14B.1.

total capacity means the theoretical maximum allowable output or *load* of a *network* or *facility* with all network components and equipment intact.

transmission asset means the apparatus, equipment and plant, including *transmission lines* and *substations* of a *transmission system*.

transmission-distribution connection point means:

- (a) subject to paragraph (b), the agreed point of supply established between a *transmission network* and a *distribution network*;
- (b) in relation to the *declared transmission system* of an *adoptive jurisdiction*, the agreed point of supply between the *transmission assets* of the *declared transmission system operator* and a *distribution network*.

zone substation means a *substation* for the purpose of connecting a *distribution network* to a *sub-transmission network*.

5.10.3 Interpretation

The terms *Network Service Provider*, *Transmission Network Service Provider* and *Distribution Network Service Provider* when used in rules 5.11 to 5.17 and schedules 5.8 and 5.9 are not intended to refer to, and are not to be read or construed as referring to, any *Network Service Provider* in its capacity as a *Market Network Service Provider*.

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 *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).

5.11.2 Identification of network limitations

Each *Network Service Provider* must:

- (a) extrapolate the forecasts provided to it by *Registered Participants* for the purpose of planning;
- (b) if the analysis required by paragraph (a) indicates that any relevant technical limits of the *transmission systems* or *distribution systems* will be exceeded, either in normal conditions or following the contingencies specified in schedule 5.1, notify any affected *Registered Participants* and *AEMO* of these limitations; and
- (c) notify any affected *Registered Participants* and *AEMO* of the expected time for undertaking proposed corrective action which may consist of:
 - (1) *dual function assets* or an investment in a *transmission network* designed to address limitations in respect of a *distribution network* notified under paragraph (b); and
 - (2) *network options* or *non-network options* or modifications to *connection facilities*, designed to address the limitations notified under paragraph (b).

5.12 Transmission annual planning process

5.12.1 Transmission annual planning review

- (a) Each *Transmission Network Service Provider* must analyse the expected future operation of its *transmission networks* over an appropriate planning period, taking into account the relevant forecast *loads*, any future *generation*, *market network service*, demand side and *transmission* developments and any other relevant data.
- (b) Each *Transmission Network Service Provider* must conduct an annual planning review which must:
 - (1) incorporate the forecast *loads* as submitted or modified in accordance with clause 5.11.1; and
 - (2) include a review of the adequacy of existing *connection points* and relevant parts of the *transmission system* and planning proposals for future *connection points*; and
 - (3) take into account the most recent *Integrated System Plan*, *NSCAS Report*, *Inertia Report*, *System Strength Report*, information from joint planning under rule 5.14 and *power system frequency risk review*; and
 - (4) consider the potential for *augmentations*, or non-*network* alternatives to *augmentations*, that are likely to provide a net economic benefit to all those who produce, consume and transport electricity in the *market*;
 - (5) consider the condition of *network* assets; and

- (6) consider the potential for replacements of *network* assets, or *non-network options* to replacements of *network* assets, that are likely to provide a net economic benefit to all those who produce, consume and transport electricity in the *market*.
- (c) The minimum planning period for the purposes of the annual planning review is 10 years for *transmission networks*.

5.12.2 Transmission Annual Planning Report

- (a) Subject to paragraph (b), by 31 October each year all *Transmission Network Service Providers* must *publish* a *Transmission Annual Planning Report* setting out the results of the annual planning review conducted in accordance with clause 5.12.1.
- (b) If a *Network Service Provider* is a *Transmission Network Service Provider* only because it owns, operates or controls *dual function assets* then it may *publish* its *Transmission Annual Planning Report* in the same document and at the same time as its *Distribution Annual Planning Report*.
- (c) The *Transmission Annual Planning Report* must be consistent with the *TAPR Guidelines* and set out:
 - (1) the forecast *loads* submitted by a *Distribution Network Service Provider* in accordance with clause 5.11.1 or as modified in accordance with clause 5.11.1(d), including at least:
 - (i) a description of the forecasting methodology, sources of input information, and the assumptions applied in respect of the forecast *loads*;
 - (ii) a description of high, most likely and low growth scenarios in respect of the forecast *loads*;
 - (iii) an analysis and explanation of any aspects of forecast *loads* provided in the *Transmission Annual Planning Report* that have changed significantly from forecasts provided in the *Transmission Annual Planning Report* from the previous year; and
 - (iv) an analysis and explanation of any aspects of forecast *loads* provided in the *Transmission Annual Planning Report* from the previous year which are significantly different from the actual outcome;
 - (1A) for all *network* asset retirements, and for all *network* asset de-ratings that would result in a *network constraint*, that are planned over the minimum planning period specified in clause 5.12.1(c), the following information in sufficient detail relative to the size or significance of the asset:
 - (i) a description of the *network* asset, including location;
 - (ii) the reasons, including methodologies and assumptions used by the *Transmission 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;
- (iii) the date from which the *Transmission Network Service Provider* proposes that the *network* asset will be retired or *de-rated*; and
 - (iv) if the date to retire or *de-rate* the *network* asset has changed since the previous *Transmission Annual Planning Report*, an explanation of why this has occurred;
- (1B) for the purposes of subparagraph (1A), where two or more *network* assets are:
- (i) of the same type;
 - (ii) to be retired or *de-rated* across more than one location;
 - (iii) to be retired or *de-rated* in the same calendar year; and
 - (iv) 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 *Transmission Annual Planning Report*:
- (v) a description of the *network* assets, including a summarised description of their locations;
 - (vi) the reasons, including methodologies and assumptions used by the *Transmission 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;
 - (vii) the date from which the *Transmission Network Service Provider* proposes that the *network* assets will be retired or *de-rated*; and
 - (viii) if the calendar year to retire or *de-rate* the *network* assets has changed since the previous *Transmission Annual Planning Report*, an explanation of why this has occurred;
- (2) planning proposals for future *connection points*;
- (3) a forecast of *constraints* and inability to meet the *network* performance requirements set out in schedule 5.1 or relevant legislation or regulations of a *participating jurisdiction* over 1, 3 and 5 years, including at least:
- (i) a description of the *constraints* and their causes;
 - (ii) the timing and likelihood of the *constraints*;
 - (iii) a brief discussion of the types of planned future projects that may address the *constraints* over the next 5 years, if such projects are required; and
 - (iv) sufficient information to enable an understanding of the *constraints* and how such forecasts were developed;

- (4) in respect of information required by subparagraph (3), where an estimated reduction in forecast *load* would defer a forecast *constraint* for a period of 12 months, include:
 - (i) the year and months in which a *constraint* is forecast to occur;
 - (ii) the relevant *connection points* at which the estimated reduction in forecast *load* may occur;
 - (iii) the estimated reduction in forecast *load* in MW needed; and
 - (iv) a statement of whether the *Transmission Network Service Provider* plans to issue a request for proposals for *augmentation*, replacement of *network* assets, or a *non-network option* identified by the annual planning review conducted under clause 5.12.1(b) and if so, the expected date the request will be issued;
- (5) for all proposed *augmentations* to the *network* and proposed replacements of *network* assets the following information, in sufficient detail relative to the size or significance of the project and the proposed operational date of the project:
 - (i) project/asset name and the month and year in which it is proposed that the asset will become operational;
 - (ii) the reason for the actual or potential *constraint*, if any, or inability, if any, to meet the *network* performance requirements set out in schedule 5.1 or relevant legislation or regulations of a *participating jurisdiction*, including *load* forecasts and all assumptions used;
 - (iii) the proposed solution to the *constraint* or inability to meet the *network* performance requirements identified in subparagraph (ii), if any;
 - (iv) total cost of the proposed solution;
 - (v) whether the proposed solution will have a *material inter-network impact*. In assessing whether an *augmentation* to the *network* will have a *material inter-network impact* a *Transmission Network Service Provider* must have regard to the objective set of criteria *published* by AEMO in accordance with clause 5.21 (if any such criteria have been *published* by AEMO); and
 - (vi) other reasonable *network options* and *non-network options* considered to address the actual or potential *constraint* or inability to meet the *network* performance requirements identified in subparagraph (ii), if any. Other reasonable *network* and *non-network options* include, but are not limited to, *interconnectors*, *generation options*, *demand side options*, *market network service options* and options involving other *transmission* and *distribution networks*;
- (6) the manner in which the proposed *augmentations* and proposed replacements of *network* assets relate to the most recent *Integrated System Plan*;

- (6A) for proposed new or modified *emergency frequency control schemes*, the manner in which the project relates to the most recent *power system frequency risk review*;
 - (7) information on the *Transmission Network Service Provider's asset management* approach, including:
 - (i) a summary of any *asset management* strategy employed by the *Transmission Network Service Provider*;
 - (ii) a summary of any issues that may impact on the system *constraints* identified in the *Transmission Annual Planning Report* that has been identified through carrying out *asset management*; and
 - (iii) information about where further information on the *asset management* strategy and methodology adopted by the *Transmission Network Service Provider* may be obtained.
 - (8) any information required to be included in a *Transmission Annual Planning Report* under:
 - (i) clauses 5.16.3(c) and 5.16A.3 in relation to a *network* investment which is determined to be required to address an urgent and unforeseen *network* issue; or
 - (ii) clauses 5.20B.4(h) and (i) and clauses 5.20C.3(f) and (g) in relation to *network* investment and other activities to provide *inertia network services* ~~or~~ *inertia support activities* or to meet the standard in clause S5.1.14 in relation to a system strength nodesystem strength services.
 - (9) emergency controls in place under clause S5.1.8, including the *Network Service Provider's* assessment of the need for new or altered emergency controls under that clause;
 - (10) *facilities* in place under clause S5.1.10;
 - (11) an analysis and explanation of any other aspects of the *Transmission Annual Planning Report* that have changed significantly from the preceding year's *Transmission Annual Planning Report*, including the reasons why the changes have occurred; ~~and~~
 - (12) the results of joint planning (if any) undertaken with a *Transmission Network Service Provider* under clause 5.14.3 in the preceding year, including a summary of the process and methodology used by the *Transmission Network Service Providers* to undertake joint planning and the outcomes of that joint planning; and
 - (13) the system strength locational factor for each system strength connection point for which it is the Network Service Provider and the corresponding system strength node.
- (d) A declared transmission system operator for all or part of the declared shared network must provide to AEMO within a reasonable period of receiving a request, such information as reasonably requested by AEMO to enable it to comply with:

- (1) clause 5.12.1(b)(5);
- (2) clause 5.12.1(b)(6);
- (3) clause 5.12.2(c)(1A);
- (4) clauses 5.12.2(c)(4), (5) and (6) as they relate to the proposed replacement of *network* assets; and
- (5) clause 5.12.2(c)(7).

5.13 Distribution annual planning process

...

5.14 Joint planning

5.14.1 Joint planning obligations of Transmission Network Service Providers and Distribution Network Service Providers

- (a) Subject to paragraphs (b) and (c):
 - (1) each *Distribution Network Service Provider* must conduct joint planning with each *Transmission Network Service Provider* of the *transmission networks* to which the *Distribution Network Service Provider's networks* are connected; and
 - (2) each *Transmission Network Service Provider* must conduct joint planning with each *Distribution Network Service Provider* of the *distribution networks* to which the *Transmission Network Service Provider's networks* are connected.
- (b) In the case of the *declared shared network* of an *adoptive jurisdiction*, the relevant *declared transmission system operator*, the relevant *Distribution Network Service Provider*, *AEMO* and any *interested party* that has informed *AEMO* of its interest in the relevant plans, shall conduct joint planning.
- (c) For the purposes of this clause 5.14.1, a *Transmission Network Service Provider* does not include a *Network Service Provider* that is a *Transmission Network Service Provider* only because it owns, controls or operates *dual function assets*.
- (d) The relevant *Distribution Network Service Provider* and *Transmission Network Service Provider* must:
 - (1) assess the adequacy of existing *transmission* and *distribution networks* and the assets associated with *transmission-distribution connection points* over the next five years and to undertake joint planning of projects which relate to both *networks* (including, where relevant, *dual function assets*);
 - (2) use best endeavours to work together to ensure efficient planning outcomes and to identify the most efficient options to address the needs identified in accordance with subparagraph (4);
 - (3) identify any limitations or constraints:

- (i) that will affect both the *Transmission Network Service Provider's* and *Distribution Network Service Provider's* network;
or
 - (ii) which can only be addressed by corrective action that will require coordination by the *Transmission Network Service Provider* and the *Distribution Network Service Provider*; and
- (4) where the need for a *joint planning project* is identified under subparagraph (3):
- (i) jointly determine plans that can be considered by relevant *Registered Participants, AEMO, interested parties*, and parties registered on the *demand side engagement register* of each *Distribution Network Service Provider* involved in joint planning;
 - (ii) determine whether the *joint planning project* is a *RIT-T project* or a *RIT-D project*; and
 - (iii) may agree on a lead party to be responsible for carrying out the *regulatory investment test for transmission* or the *regulatory investment test for distribution* (as the case may be) in respect of the *joint planning project*.
- (e) If a *Network Service Provider*, as the lead party for one or more *Network Service Providers*, undertakes the *regulatory investment test for transmission* or the *regulatory investment test for distribution* (as the case may be) in respect of a *joint planning project*, the other *Network Service Providers* will be taken to have discharged their obligation to undertake the relevant test in respect of that project.

5.14.2 Joint planning obligations of Distribution Network Service Providers and Distribution Network Service Providers

- (a) *Distribution Network Service Providers* must undertake joint planning with other *Distribution Network Service Providers* where there is a requirement to consider the need for any *augmentation* or *non-network options* that affect more than one *Distribution Network Service Provider's* network.
- (b) *Distribution Network Service Providers* involved in joint planning may agree on a lead party to be responsible for carrying out the *regulatory investment test for distribution* in respect of the *joint planning project*.
- (c) If a *Distribution Network Service Provider*, as the lead party for one or more *Distribution Network Service Providers*, undertakes the *regulatory investment test for distribution* in respect of a *joint planning project*, the other *Distribution Network Service Providers* will be taken to have discharged their obligation to undertake the *regulatory investment test for distribution* in respect of that project.

5.14.3 Joint planning obligations of Transmission Network Service Providers

Transmission Network Service Providers must undertake joint planning if:

- (a) a possible credible option to address a *constraint* in a *transmission network* is an *augmentation* to the *transmission network* of another *Transmission Network Service Provider*; ~~and that *constraint* is not already being considered under other processes under the *Rules*; or~~
- (b) a possible credible option for a *System Strength Service Provider* to provide the *system strength requirements* for a *system strength node* involves an *augmentation* to the *transmission network* of another *Transmission Network Service Provider*.
- ~~(b) that *constraint* is not already being considered under other processes under the *Rules*.~~

5.14.4 Joint planning by Transmission Network Service Providers and AEMO

- (a) *Transmission Network Service Providers* and *AEMO* (the joint planning parties) must take reasonable steps to cooperate and consult with each other to enable preparation of a draft or final *Integrated System Plan* or an *ISP update*, including each joint planning party (as applicable):
 - (1) providing, and consulting on, a *Transmission Annual Planning Report* prior to its publication;
 - (2) providing, in accordance with the *ISP timetable*, the latest available information in relation to the development of a *Transmission Annual Planning Report* required for the purpose of preparing a draft or final *Integrated System Plan* or *ISP update*;
 - (3) providing information in relation to *non-network options* for the purpose of preparing a draft or final *Integrated System Plan* or *ISP update*;
 - (4) conducting a preliminary review of *non-network options* submitted to *AEMO* following a draft *Integrated System Plan*;
 - (5) sharing a draft *optimal development path* to be included in the draft and final *Integrated System Plan* or an *ISP update* before its publication;
 - (6) considering whether a credible option in a draft *optimal development path* is *reliability corrective action*; and
 - (7) sharing information reasonably necessary to prepare a draft or final *Integrated System Plan* or an *ISP update*.
- (b) As soon as practicable after a *Transmission Network Service Provider* becomes aware of a material change to information provided under paragraph (a), that information must be updated.
- (c) *AEMO* must provide *Transmission Network Service Providers* with draft regional demand forecasts for the next summer period informed by the previous summer period as soon as practicable, and by no later than 30 June each year.
- (d) *System Strength Service Providers* and *AEMO* must take reasonable steps to cooperate and consult with each other where a possible credible option for a *System Strength Service Provider* to provide the *system strength*

requirements for a system strength node involves non-network options that affect dispatch.

5.14A Joint planning in relation to retirement or de-ratings of network assets forming part of the Declared Shared Network

- (a) In the case of a proposed retirement or de-rating of a *network* asset that forms part of the *declared shared network* of an *adoptive jurisdiction*, *AEMO* and the relevant *declared transmission system operator* must conduct joint planning in respect of that proposed retirement or de-rating if an *identified need* arises from that proposed retirement or de-rating.
- (b) In conducting joint planning under paragraph (a), *AEMO* and the *declared transmission system operator* must use best endeavours to work together to identify the most efficient options to address the relevant *identified need*.

5.14B TAPR Guidelines

5.14B.1 Development of TAPR Guidelines

- (a) The *AER* must, in accordance with the *transmission consultation procedures*, make and *publish TAPR Guidelines* that set out the required format of *Transmission Annual Planning Reports*.
- (b) The *AER* must develop and *publish* the first *TAPR Guidelines* under the *Rules* by the date specified in the *Rules* and there must be *TAPR Guidelines* in force at all times after that date.
- (c) Subject to paragraph (d), the *AER* may, from time to time and in accordance with the *transmission consultation procedures*, amend or replace the *TAPR Guidelines*.
- (d) The *AER* may make administrative or minor amendments to the *TAPR Guidelines* without complying with the *transmission consultation procedures*.

...

5.15 Regulatory investment tests generally

5.15.1 Interested parties

In clauses 5.16.4, 5.16A.4, rule 5.16B and clauses 5.17.4 and 5.17.5, *interested party* means a person including an end user or its *representative* who, in the *AER's* opinion, has the potential to suffer a material and adverse *NEM* impact from the investment identified as the *preferred option* in the *project assessment conclusions report* or the *final project assessment report* (as the case may be).

5.15.2 Identification of a credible option

- (a) A *credible option* is an option (or group of options) that:
 - (1) addresses the *identified need*;
 - (2) is (or are) commercially and technically feasible; and
 - (3) can be implemented in sufficient time to meet the *identified need*,

and is (or are) identified as a *credible option* in accordance with paragraphs (b) or (d) (as relevant).

- (b) Subject to paragraph (b1), in applying the *regulatory investment test for transmission*, the *RIT-T proponent* must consider, in relation to a *RIT-T project* other than those described in clauses 5.16.3(a)(1)-(8) or 5.16A.3(a), all options that could reasonably be classified as *credible options* taking into account:
- (1) energy source;
 - (2) technology;
 - (3) ownership;
 - (4) the extent to which the *credible option* enables *intra-regional* or *inter-regional* trading of electricity;
 - (5) whether it is a *network option* or a *non-network option*;
 - (6) whether the *credible option* is intended to be regulated;
 - (7) whether the *credible option* has a proponent; and
 - (8) any other factor which the *RIT-T proponent* reasonably considers should be taken into account.

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) Paragraph (b) only applies to the application of the *regulatory investment test for transmission* to a *RIT-T project* that is an *actionable ISP project* where a *RIT-T proponent* is considering new *credible options* under clause 5.15A.3(b)(7)(iii)(C).
- (c) In applying the *regulatory investment test for distribution*, the *RIT-D proponent* must consider, in relation to a *RIT-D project* other than those described in clauses 5.17.3(a)(1)-(7), all options that could reasonably be classified as *credible options*, without bias as to:
- (1) energy source;
 - (2) technology;
 - (3) ownership; and
 - (4) whether it is a *network option* or a *non-network option*.

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 absence of a proponent does not exclude an option from being considered a *credible option*.

5.15.3 Review of costs thresholds

Regulatory investment test for transmission thresholds

- (a) Every 3 years the *AER* must undertake a review of the changes in the input costs used to calculate the estimated capital costs in relation to *transmission* investment as referred to in paragraph (b), for the purposes of determining whether the *cost thresholds* specified in paragraph (b) need to be changed to maintain the appropriateness of the *cost thresholds* over time by adjusting those *cost thresholds* to reflect any increase or decrease in the input costs since:
- (1) July 2009 in respect of the first *cost threshold review*; and
 - (2) the date of the previous review in respect of every subsequent *cost threshold review*.

Note

The cost thresholds are regularly reviewed by the *AER* under paragraph (b). The current thresholds are specified in the latest cost threshold determination available on the *AER*'s website www.aer.gov.au.

- (b) For the purposes of paragraph (a), the *cost thresholds* for review are the following amounts:
- (1) **[Deleted]**
 - (1A) of less than \$200,000 referred to in clause 5.12.2(c)(1B)(iv);
 - (2) of less than \$5 million referred to in clause 5.16.3(a)(2);
 - (3) **[Deleted]**
 - (4) of less than \$5 million referred to in clause 5.16.3(a)(5);
 - (5) of less than \$35 million referred to in clause 5.16.4(z1)(1) and clause 5.16A.4(m)(1); and
 - (6) in excess of \$5 million in relation to investment in *transmission assets* of the type referred to in the definition of *potential transmission project* in clause 5.10.2.

Regulatory investment test for distribution costs thresholds

- (c) Subject to paragraph (f)(2), every 3 years, and at the same time as it undertakes its review of the *cost thresholds* for *regulatory investment test for transmission* under paragraph (a), the *AER* must undertake a review of the changes in the input costs used to calculate the estimated capital costs in relation to:
- (1) projects subject to the *regulatory investment test for distribution*; and
 - (2) the *cost threshold* for committed investments that are to address an urgent and unforeseen *network* need subject to the *Distribution Annual Planning Report*,
- for the purposes of determining whether the *cost thresholds* specified in paragraph (d) need to be changed to maintain the appropriateness of the *cost thresholds* over time by adjusting those *cost thresholds* to reflect any increase or decrease in the input costs since:
- (3) 1 January 2013 in respect of the first *cost threshold review*; and
 - (4) the date of the previous review in respect of every subsequent *cost threshold review*.

- (d) For the purposes of paragraph (c), the *cost thresholds* for review are the following amounts:
 - (1) \$5 million referred to in clause 5.17.3(a)(2);
 - (2) **[Deleted]**;
 - (3) \$10 million referred to in clause 5.17.4(n)(2);
 - (4) \$20 million referred to in clause 5.17.4(s);
 - (4A) of less than \$200,000 referred to in S5.8(b2)(4);
 - (5) \$2 million referred to in S5.8(g).

Note

The *cost thresholds* are regularly reviewed by the AER under paragraph (b). The current thresholds are specified in the latest *cost threshold determination* available on the AER's website www.aer.gov.au.

Cost threshold reviews

- (e) Each *cost threshold review* is to be commenced by the AER by 31 July of the relevant year.
- (f) The first review of the *cost thresholds* for: :
 - (1) the *regulatory investment test for transmission* under paragraph (a) must be initiated in 2012; and
 - (2) the *regulatory investment test for distribution* under paragraph (c) must be initiated in 2015.
- (g) Within six weeks following the commencement of a *cost threshold review*, the AER must *publish* a draft determination outlining:
 - (1) whether the AER has formed the view that any of the *cost thresholds* need to be amended to reflect increases or decreases in the input costs to ensure that the appropriateness of the *cost thresholds* is maintained over time;
 - (2) its reasons for determining whether the *cost thresholds* need to be varied to reflect increases or decreases in the input costs;
 - (3) if there is to be a variation in a *cost threshold*, the amount of the new *cost threshold* and the date the new *cost threshold* will take effect; and
 - (4) its reasons for determining the amount of the new *cost threshold*.
- (h) At the same time as it *publishes* the draft determination under paragraph (f), the AER must *publish* a notice seeking submissions on the draft determination. The notice must specify the period within which written submissions can be made (the *cost threshold* consultation period) which must be no less than 5 weeks from the date of the notice.
- (i) The AER must consider any written submissions received during the *cost threshold* consultation period in making its final determination in respect of the matters outlined in paragraph (g).

- (j) The final determination on cost thresholds must be made and *published* by the *AER* within 5 weeks following the end of the *cost threshold* consultation period.
- (k) The *AER* may *publish* a draft determination under paragraph (g), a notice under paragraph (h), or a final determination under paragraph (j) for any *cost threshold reviews* under paragraphs (a) and (c) as a single document.

5.15.4 Costs determinations

- (a) Where the *AER* engages a consultant to assist in making a determination under rule 5.16B or clause 5.17.5, the *AER* may make a costs determination.
- (b) Where a costs determination is made, the *AER* may:
 - (1) render the *RIT-T proponent* or the *RIT-D proponent* (as the case may be) an invoice for the costs; or
 - (2) determine that the costs should:
 - (i) be shared by all the parties to the dispute, whether in the same proportion or differing proportions; or
 - (ii) be borne by a party or parties to the dispute other than the *RIT-T proponent* or the *RIT-D proponent* (as the case may be) whether in the same proportion or differing proportions; and
 - (iii) the *AER* may render invoices accordingly.
- (c) If an invoice is rendered under subparagraph (b)(2)(iii), the *AER* must specify a time period for the payment of the invoice that is no later than 30 *business days* from the date the *AER* makes a determination under paragraph (a).

5.15A Regulatory investment test for transmission

5.15A.1 General principles and application

- (a) The *AER* must develop and *publish* the *regulatory investment test for transmission* in accordance with the *transmission consultation procedures* and this rule 5.15A.
- (b) The *regulatory investment test for transmission* will apply to *RIT-T projects* which are not *actionable ISP* projects (in accordance with rule 5.16) and to *RIT-T projects* which are *actionable ISP projects* (in accordance with rule 5.16A) but will differ in its application to each of those types of projects.
- (c) The purpose of the *regulatory investment test for transmission* in respect of its application to both types of projects is to identify the *credible option* that maximises the present value of net economic benefit to all those who produce, consume and transport electricity in the *market* (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) to the extent the *identified need* is for *reliability corrective action* or the provision of *inertia network services* required under clause 5.20B.4 ~~or the provision of system strength services required under clause 5.20C.3.~~

- (d) The *regulatory investment test for transmission application guidelines* under clause 5.16.2 apply to *RIT-T projects* which are not *actionable ISP projects*.
- (e) The *Cost Benefit Analysis Guidelines* under clause 5.22.5 apply to *RIT-T projects* which are *actionable ISP projects*.

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, 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*.

5.15A.3 Principles for actionable ISP projects

- (a) This clause 5.15A.3 only applies in respect of the application of the *regulatory investment test for transmission* to *RIT-T projects* that are *actionable ISP projects*.
- (b) The *regulatory investment test for transmission* must:
- (1) assess the costs and benefits of future supply and demand if each *credible option* were implemented compared to the case where that option is not 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 a *RIT-T proponent* to include a quantification of all classes of market benefits identified in the relevant *Integrated System Plan*, and may include consideration of other classes of market benefits, in accordance with the *Cost Benefit Analysis Guidelines*;
 - (5) with respect to the classes of market benefits set out in subparagraph (4), ensure that, if the *credible option* is for *reliability corrective action*, the quantification assessment required by subparagraph (4) will only apply insofar as the market benefit delivered by the *credible option* exceeds the minimum standard required for *reliability corrective action*;
 - (6) require the *RIT-T proponent* to quantify the following classes of costs:

- (i) costs incurred in constructing or providing each *credible option*;
 - (ii) operating and maintenance costs in respect of each *credible option*;
 - (iii) the cost of complying with laws, regulations and applicable administrative requirements in relation to the construction and operation of each *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 assessment draft report* is made available to other parties under clause 5.16A.4; or
 - (B) specified as a class of cost in the *regulatory investment test for transmission*;
- (7) specify that the *RIT-T proponent* must:
- (i) comply with the Cost Benefit Assessment Guidelines;
 - (ii) adopt the *identified need* set out in the *Integrated System Plan* relevant to the *actionable ISP project*;
 - (iii) consider the following *credible options*:
 - (A) the *ISP candidate option* or *ISP candidate options*, which may include refinements of an *ISP candidate option*;
 - (B) *non-network options* identified in the *Integrated System Plan* as being reasonably likely to meet the relevant *identified need*, in accordance with clause 5.22.12(e)(1); and
 - (C) any new *credible options* that were not previously considered in the *Integrated System Plan* that meet the *identified need* (including any *non-network options* submitted to *AEMO* in accordance with clause 5.22.14(c)(1));
 - (iv) adopt the most recent *ISP parameters*, or if the *RIT-T proponent* decides to vary or omit an *ISP parameter*, or add a new *parameter*, then the *RIT-T proponent* must specify the *ISP parameter* which is new, omitted or has been varied and provide demonstrable reasons why the addition or variation is necessary;
 - (v) assess the market benefits with and without each *credible option*; and
 - (vi) in so far as practicable, adopt the market modelling from the *Integrated System Plan*;
- (8) specify that the *RIT-T proponent* is not required to:
- (i) consider any *credible option* that was previously considered in the *Integrated System Plan*, but does not form part of the *optimal development path*;

- (ii) consider any *non-network options* identified in the *Integrated System Plan* as not meeting the relevant *identified need*, in accordance with clause 5.22.12(e)(2); or
 - (iii) request submissions for *non-network options*, or otherwise seek to identify *non-network options* in addition to those assessed in the *Integrated System Plan* under clause 5.22.12(d) or submitted to *AEMO* in accordance with clause 5.22.14(c)(1); and
- (9) specify the *RIT-T proponent* may, but is not required to, consider *credible options* already considered and not included in the *optimal development path* in the *Integrated System Plan*.

5.16 Application of RIT-T to RIT-T projects which are not actionable ISP projects

5.16.1 Application

This rule 5.16 applies to the application of the *regulatory investment test for transmission* to RIT-T-projects that are not *actionable ISP projects*.

5.16.2 Regulatory investment test for transmission application guidelines

Definitions

(a0) In this clause 5.16.2:

current application has the meaning given to it by clause 5.16.2(g).

- (a) At the same time as the *AER* develops and *publishes* a proposed *regulatory investment test for transmission* under the *transmission consultation procedure*, the *AER* must also develop and *publish* guidelines for the operation and application of the *regulatory investment test for transmission* (the *regulatory investment test for transmission application guidelines*) in accordance with the *transmission consultation procedures* and this rule 5.16.
- (b) The *regulatory investment test for transmission application guidelines* must:
 - (1) give effect to and be consistent with this clause 5.16.2 and clauses 5.15.2, 5.16.3, 5.16.4 and rule 5.16B; and
 - (2) provide guidance on:
 - (i) the operation and application of the *regulatory investment test for transmission*;
 - (ii) the process to be followed in applying the *regulatory investment test for transmission*; and
 - (iii) how disputes raised in relation to the *regulatory investment test for transmission* and its application will be addressed and resolved.
- (c) The *regulatory investment test for transmission application guidelines* must provide guidance and worked examples as to:
 - (1) what constitutes a *credible option*;

- (2) acceptable methodologies for valuing the costs of a *credible option*;
 - (3) what may constitute an externality under the *regulatory investment test for transmission*;
 - (4) the classes of market benefits to be considered for the purposes of clause 5.15A.2(b)(4);
 - (5) the suitable modelling periods and approaches to scenario development;
 - (6) the acceptable methodologies for valuing the market benefits of a *credible option* referred to clause 5.15A.2(b)(4), including the option value, competition benefits and market benefits that accrue across regions;
 - (7) the appropriate approach to undertaking a sensitivity analysis for the purposes of clause 5.15A.2(b)(11);
 - (8) the appropriate approaches to assessing uncertainty and risks; and
 - (9) when a person is sufficiently committed to a *credible option* for *reliability corrective action* to be characterised as a proponent for the purposes of clause 5.15.2(b)(7).
- (d) The *AER* must ensure that there is a *regulatory investment test for transmission* and regulatory investment test for transmission application guidelines in force at all times.
- (e) The *AER* may, from time to time, amend or replace the *regulatory investment test for transmission* and regulatory investment test for transmission application guidelines in accordance with the *transmission consultation procedures*, provided the *AER publishes* any amendments to, or replacements of, the *regulatory investment test for transmission* or regulatory investment test for transmission application guidelines at the same time.
- (f) An amendment referred to in paragraph (e) does not apply to a current application of the *regulatory investment test for transmission* and the regulatory investment test for transmission application guidelines under the *Rules* by RIT-T proponent.
- (g) For the purposes of paragraph (f), a "current application" means any action or process initiated under the *Rules* which relies on or is referenced to the *regulatory investment test for transmission* and/or the regulatory investment test for transmission application guidelines and is not completed at the date of the relevant amendment to the *regulatory investment test for transmission* and/or the regulatory investment test for transmission application guidelines.

5.16.3 Investments subject to the regulatory investment test for transmission

- (a) A *RIT-T proponent* must apply the *regulatory investment test for transmission* to a *RIT-T project* except in circumstances where:
- (1) the *RIT-T project* is required to address an urgent and unforeseen *network* issue that would otherwise put at risk the *reliability* of the *transmission network* as described in paragraph (b);

- (2) the estimated capital cost of the most expensive option to address the *identified need* which is technically and economically feasible is less than \$5 million (as varied in accordance with a *cost threshold determination*);
- (3) the proposed expenditure relates to maintenance and is not intended to *augment the transmission network* or replace *network* assets;
- (4) **[Deleted]**;
- (5) the proposed relevant *network* investment is an investment undertaken by a *Transmission Network Service Provider* which:
 - (i) re-routes one or more paths of a *network* for the long term; and
 - (ii) has a substantial primary purpose other than the need to *augment a network*,

(a *reconfiguration investment*) and which the *RIT-T proponent* reasonably estimates to have an estimated capital cost of less than \$5 million (as varied in accordance with a *cost threshold determination*) or which has, or is likely to have, no material impact on *network* users;
- (6) the *identified need* can only be addressed by expenditure on a *connection asset* which provides services other than *prescribed transmission services* or *standard control services*;
- (7) the cost of addressing the *identified need* is to be fully recovered through charges other than charges in respect of *prescribed transmission services* or *standard control services*;
- (8) the proposed expenditure relates to *protected event EFCS investment* and is not intended to *augment the transmission network*; or
- (9) the proposed expenditure is an *inertia service payment* ~~or a system strength service payment~~; or
- (10) the proposed expenditure is for *network* investment undertaken by the *Transmission Network Service Provider* to satisfy its obligation as an *Inertia Service Provider* under clause 5.20B.4 to make available *inertia network services* in relation to an *inertia shortfall* for an *inertia sub-network* and:
 - (i) immediately prior to the notice of the *inertia shortfall* being given by *AEMO* under clause 5.20B.3(c), the *Inertia Service Provider* is not under an obligation to provide *inertia network services* for that *inertia sub-network* (including under rule 11.100); and
 - (ii) the time by which the *Inertia Service Provider* must make the *inertia network services* available is less than 18 months after the notice is given by *AEMO* under clause 5.20B.3(c); ~~or~~
- ~~(11) the proposed expenditure is for *network* investment undertaken by the *Transmission Network Service Provider* to satisfy its obligation as a *System Strength Service Provider* under clause 5.20C.3 to make~~

~~available system strength services in relation to a fault level shortfall for a fault level node and:~~

- ~~(i) immediately prior to the notice of the fault level shortfall being given by AEMO under clause 5.20C.2(e), the System Strength Service Provider is not under an obligation to provide system strength services for that fault level node (including under rule 11.101); and~~
- ~~(ii) the time by which the System Strength Service Provider must make the system strength services available is less than 18 months after the notice is given by AEMO under clause 5.20C.2(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.)

- (b) For the purposes of paragraph (a)(1), a *RIT-T project* will be required to address an urgent and unforeseen *network* issue that would otherwise put at risk the *reliability* of the *transmission network* if:
 - (1) it is necessary that the assets or services to address the issue be operational within 6 months of the issue being identified;
 - (2) the event or circumstances causing the *identified need* was not reasonably foreseeable by, and was beyond the reasonable control of, the *Network Service Provider(s)* that identified the *identified need*;
 - (3) a failure to address the *identified need* is likely to materially adversely affect the *reliability* and *secure operating state* of the *transmission network*; and
 - (4) it is not a *contingent project*.
- (c) If a proposed relevant *network* investment is determined to be required to address an urgent and unforeseen *network* issue as described in paragraph (b), and the *Network Service Provider* making the investment is a *Transmission Network Service Provider*, then the *Transmission Network Service Provider* must provide the following information in its next *Transmission Annual Planning Report* following the identification of the need for the relevant *network* investment:
 - (1) the date when the proposed relevant *network* investment became or will become operational;
 - (2) the purpose of the proposed relevant *network* investment; and
 - (3) the total cost of the proposed relevant *network* investment.
- (d) With the exception of *funded augmentations*, for each *RIT-T project* to which the *regulatory investment test for transmission* does not apply in accordance with paragraphs (a), the *Network Service Providers* affected by the *RIT-T project* must ensure, acting reasonably, that the investment required to address the *identified need* is planned and developed at least cost over the life of the investment.

- (e) A *RIT-T proponent* must not treat different parts of an integrated solution to an *identified need* as distinct and separate options for the purposes of determining whether the *regulatory investment test for transmission* applies to each of those parts.

5.16.4 Regulatory investment test for transmission procedures

- (a) If a *RIT-T project* is subject to the *regulatory investment test for transmission* under clause 5.16.3, then the *RIT-T proponent* must consult all *Registered Participants*, *AEMO* and *interested parties* on the *RIT-T project* in accordance with this clause 5.16.4.

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.)

Project specification consultation report

- (b) A *RIT-T proponent* must prepare a report (the *project specification consultation report*), which must include:
 - (1) a description of the *identified need*;
 - (2) the assumptions used in identifying the *identified need* (including, in the case of proposed *reliability corrective action*, why the *RIT-T proponent* considers reliability corrective action is necessary);
 - (3) the technical characteristics of the *identified need* that a non-network option would be required to deliver, such as:
 - (i) the size of *load* reduction or additional supply;
 - (ii) location; and
 - (iii) operating profile;
 - (4) if applicable, reference to any discussion on the description of the *identified need* or the credible options in respect of that *identified need* in the most recent *Integrated System Plan*;
 - (5) a description of all credible options of which the *RIT-T proponent* is aware that address the *identified need*, which may include, without limitation, alternative *transmission* options, *interconnectors*, *generation*, *system strength services*, demand side management, *market network services* or other *network options*;
 - (6) for each credible option identified in accordance with subparagraph (5), information about:
 - (i) the technical characteristics of the credible option;
 - (ii) whether the credible option is reasonably likely to have a *material inter-network impact*;
 - (iii) the classes of market benefits that the *RIT-T proponent* considers are likely not to be material in accordance with clause 5.15A.2(b)(6), together with reasons of why the *RIT-T proponent* considers that these classes of market benefits are not likely to be material;

- (iv) the estimated construction timetable and commissioning date; and
 - (v) to the extent practicable, the total indicative capital and operating and maintenance costs.
- (c) The *RIT-T proponent* must make the *project specification consultation report* available to all *Registered Participants*, *AEMO* and other *interested parties*.
- (d) The *RIT-T proponent* must:
- (1) provide a summary of the *project specification consultation report* to *AEMO* within 5 *business days* of making the *project specification consultation report*; and
 - (2) upon request by an *interested party*, provide a copy of the *project specification consultation report* to that person within 3 *business days* of the request.
- (e) Within 3 *business days* of receipt of the summary, *AEMO* must *publish* the summary of the *project specification consultation report* on its website.
- (f) The *RIT-T proponent* must seek submissions from *Registered Participants*, *AEMO* and *interested parties* on the credible options presented, and the issues addressed, in the *project specification consultation report*.
- (g) The period for consultation referred to in paragraph (f) must be not less than 12 weeks from the date that *AEMO publishes* the summary of the *project specification consultation report* on its website.
- (h) A *RIT-T proponent* that is a *Transmission Network Service Provider* may discharge its obligation under paragraph (c) to make the *project specification consultation report* available by including the *project specification consultation report* as part of its *Transmission Annual Planning Report*.
- (i) A *RIT-T proponent* that is a *Distribution Network Service Provider* may discharge its obligation under paragraph (c) to make the *project specification consultation report* available by including the *project specification consultation report* as part of its *Distribution Annual Planning Report*.

Project assessment draft report

- (j) If one or more *Network Service Providers* wishes to proceed with a *RIT-T project*, within 12 months of the end date of the consultation period referred to in paragraph (g), or such longer time period as is agreed in writing by the *AER*, the *RIT-T proponent* for the relevant *RIT-T project* must prepare a report (the *project assessment draft report*), having regard to the submissions received, if any, under paragraph (f) and make that report available to all *Registered Participants*, *AEMO* and *interested parties*.
- (k) The *project assessment draft report* must include:
- (1) a description of each credible option assessed;
 - (2) a summary of, and commentary on, the submissions to the *project specification consultation report*;

- (3) a quantification of the costs, including a breakdown of operating and capital expenditure, and classes of material market benefit for each credible option;
- (4) a detailed description of the methodologies used in quantifying each class of material market benefit and cost;
- (5) reasons why the *RIT-T proponent* has determined that a class or classes of market benefit are not material;
- (6) the identification of any class of market benefit estimated to arise outside the *region* of the *Transmission Network Service Provider* affected by the *RIT-T project*, and quantification of the value of such market benefits (in aggregate across all regions);
- (7) the results of a net present value analysis of each credible option and accompanying explanatory statements regarding the results;
- (8) the identification of the proposed *preferred option*;
- (9) for the proposed preferred option identified under subparagraph (8), the *RIT-T proponent* must provide:
 - (i) details of the technical characteristics;
 - (ii) the estimated construction timetable and commissioning date;
 - (iii) if the proposed *preferred option* is likely to have a *material inter-network impact* and if the *Transmission Network Service Provider* affected by the *RIT-T project* has received an *augmentation technical report*, that report; and
 - (iv) a statement and the accompanying detailed analysis that the *preferred option* satisfies the *regulatory investment test for transmission*.
- (l) If a *Network Service Provider* affected by a *RIT-T project* elects to proceed with a project which is for *reliability corrective action*, it can only do so where the proposed *preferred option* has a proponent. The *RIT-T proponent* must identify that proponent in the *project assessment draft report*.
- (m) A *RIT-T proponent* that is a *Transmission Network Service Provider* may discharge its obligation under paragraph (j) to make the *project assessment draft report* available by including the *project assessment draft report* as part of its *Transmission Annual Planning Report* provided that report is *published* within 12 months of the end date of the consultation period required under paragraph (g) or within 12 months of the end of such longer time period as is agreed by the *AER* in writing under paragraph (j).
- (n) A *RIT-T proponent* that is a *Distribution Network Service Provider* may discharge its obligation under paragraph (j) to make the *project assessment draft report* available by including the *project assessment draft report* as part of its *Distribution Annual Planning Report* provided that report is *published* within 12 months of the end date of the consultation period required under paragraph (g) or within 12 months of the end of such longer time period as is agreed by the *AER* in writing under paragraph (j).
- (o) The *RIT-T proponent* must:

- (1) provide a summary of the *project assessment draft report* to AEMO within 5 *business days* of making the *project assessment draft report*; and
 - (2) upon request by an *interested party*, provide a copy of the *project assessment draft report* to that person within 3 *business days* of the request.
- (p) Within 3 *business days* of receipt of the summary, AEMO must *publish* the summary of the *project assessment draft report* on its website.
- (q) The *RIT-T proponent* must seek submissions from *Registered Participants*, AEMO and *interested parties* on the *preferred option* presented, and the issues addressed, in the *project assessment draft report*.
- (r) The period for consultation referred to in paragraph (q) must be not less than 6 weeks from the date that AEMO *publishes* the summary of the report on its website.
- (s) Within 4 weeks after the end of the consultation period required under paragraph (r), at the request of an *interested party*, a *Registered Participant* or AEMO (each being a relevant party for the purposes of this paragraph), the relevant *Network Service Provider* must meet with the relevant party if a meeting is requested by two or more relevant parties and may meet with a relevant party if after having considered all submissions, the relevant *Network Service Provider*, acting reasonably, considers that the meeting is necessary.

Project assessment conclusions report

- (t) As soon as practicable after the end of the consultation period on the *project assessment draft report* referred to in paragraph (r), the *RIT-T proponent* must, having regard to the submissions received, if any, under paragraph (q) and the matters discussed at any meetings held, if any, under paragraph (s), prepare and make available to all *Registered Participants*, AEMO and *interested parties* and *publish* a report (the *project assessment conclusions report*).
- (u) If:
- (1) the *RIT-T proponent* is exempt from making a *project assessment draft report* under paragraph (z1); and
 - (2) a *Network Service Provider* affected by a *RIT-T project*, within 12 months of the end date of the period for consultation referred to in paragraph (g), or within 12 months of the end date of such longer time period as is agreed in writing by the AER elects to proceed with the proposed *transmission investment*,
- the relevant *Network Service Provider* must, having regard to the submissions received, if any, under paragraph (g) as soon as practicable prepare and make available to all *Registered Participants*, AEMO and *interested parties* and *publish* a report (the *project assessment conclusions report*).
- (v) The *project assessment conclusions report* must set out:

- (1) the matters detailed in the *project assessment draft report* as required under paragraph (k); and
 - (2) a summary of, and the *RIT-T proponent's* response to, submissions received, if any, from *interested parties* sought under paragraph (q).
- (w) The *RIT-T proponent* must:
- (1) provide a summary of the *project assessment conclusions report* to *AEMO* within 5 *business days* of making the *project assessment conclusions report*; and
 - (2) upon request by an *interested party*, provide a copy of the *project assessment conclusions report* to that person within 3 *business days* of the request.
- (x) Within 3 *business days* of receipt of the summary, *AEMO* must *publish* the summary of the *project assessment conclusions report* on its website.
- (y) A *RIT-T proponent* that is a *Transmission Network Service Provider* may discharge its obligation under paragraph (t) and (u) to make the *project assessment conclusions report* available by including the *project assessment conclusions report* as part of its *Transmission Annual Planning Report* provided that the report is *published* within 4 weeks from the date of making available the *project assessment conclusions report* under paragraph (t) or (u), as the case may be.
- (z) A *RIT-T proponent* that is a *Distribution Network Service Provider* may discharge its obligation under paragraph (t) and (u) to make the *project assessment conclusions report* available by including the *project assessment conclusions report* as part of its *Distribution Annual Planning Report* provided that the report is *published* within 4 weeks from the date of making available the *project assessment conclusions report* under paragraph (t) or (u), as the case may be.

Exemption from drafting a project assessment draft report for RIT-T projects without material market benefits

- (z1) A *RIT-T proponent* is exempt from paragraphs (j) to (s) if:
- (1) the estimated capital cost of the proposed *preferred option* is less than \$35 million (as varied in accordance with a *cost threshold determination*);
 - (2) the relevant *Network Service Provider* has identified in its *project specification consultation report*:
 - (i) its proposed *preferred option*;
 - (ii) its reasons for the proposed *preferred option*; and
 - (iii) that its *RIT-T project* has the benefit of this exemption;
 - (3) the *RIT-T proponent* considers, in accordance with clause 5.15A.2(b)(6), that the proposed *preferred option* and any other credible option in respect of the *identified need* will not have a material market benefit for the classes of market benefit specified in clause 5.15A.2(b)(4) except those classes specified in clauses

- 5.15A.2(b)(4)(ii) and (iii), and has stated this in its *project specification consultation report*; and
- (4) the *RIT-T proponent* forms the view that no submissions were received on the *project specification consultation report* which identified additional credible options that could deliver a material market benefit.
- (z2) The *RIT-T proponent* must address in the *project assessment conclusions report* any issues that were raised in relation to a proposed *preferred option* to which paragraph (z1) applies during the consultation on the *project specification consultation report*.

Reapplication of regulatory investment test for transmission

- (z3) If:
- (1) a *RIT-T proponent* has published a *project assessment conclusions report* in respect of a *RIT-T project*;
 - (2) a *Network Service Provider* still wishes to undertake the *RIT-T project* to address the *identified need*; and
 - (3) there has been a material change in circumstances which, in the reasonable opinion of the *RIT-T proponent* means that the *preferred option* identified in the *project assessment conclusions report* is no longer the *preferred option*,
- then the *RIT-T proponent* must reapply the *regulatory investment test for transmission* to the *RIT-T project*, unless otherwise determined by the *AER*.
- (z4) For the purposes of paragraph (z3), a material change in circumstances may include, but is not limited to, a change to the key assumptions used in identifying:
- (1) the *identified need* described in the *project assessment conclusions report*; or
 - (2) the credible options assessed in the *project assessment conclusions report*.
- (z5) When making a determination under paragraph (z3) the *AER* must have regard to:
- (1) the credible options (other than the *preferred option*) identified in the *project assessment conclusions report*;
 - (2) the change in circumstances identified by the *RIT-T proponent*; and
 - (3) whether a failure to promptly undertake the *RIT-T project* is likely to materially affect the *reliability* and *secure operating state* of the *transmission network* or a significant part of that *network*.

Declared transmission system operator may request assistance from AEMO to conduct market benefits assessments for replacement RIT-T projects

- (z6) Where a *RIT-T proponent* is a *declared transmission system operator* within a *declared shared network*, it may in relation to *RIT-T projects* to address an *identified need* that arises from the retirement or de-rating of *network assets*,

request assistance and information from *AEMO* as reasonably required for it to consider and conduct market benefits assessments as required by:

- (1) clause 5.16.4(b)(6)(iii);
 - (2) clause 5.16.4(k)(3) to (k)(6); and
 - (3) clause 5.16.4(v).
- (z7) *AEMO* must provide assistance and information requested under paragraph (z6) to the *declared transmission system operator* within a reasonable period of time.

...

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 levels*~~ *system strength requirements*:
 - (1) the combination of *three phase fault levels* at each ~~*system strength node*~~ *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* 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 nodes*~~ *system strength node* if the *contingency event* that occurs is the loss or unavailability of a *synchronous generating unit* or any other *facility* or *service* that is material in determining the *three phase fault level* at the ~~*fault level nodes*~~ *system strength 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.
- (f) The *system strength requirements methodology* determined by *AEMO* must:
- (1) provide an overview of *system strength nodes* and the process to declare them;
 - (2) describe:
 - (i) how *AEMO* forecasts new *connections* and the information it takes into account;
 - (ii) how *AEMO* will determine the assumptions it will use about the size, type and operational profile of *facilities* or classes of *facilities* to be *connected* and their contribution to the matters taken into account in determining the *system strength requirements*; and
 - (iii) the modelling and analysis methodologies *AEMO* will use to determine *system strength nodes* and minimum *three phase fault levels* at the *system strength nodes* and the matters it will take into account;
 - (3) provide for *AEMO* to take the following matters into account in determining the *system strength requirements*:
 - (i) the *Integrated System Plan* and the *Electricity Statement of Opportunities*;
 - (ii) the matters in paragraphs (e)(1) to (7) for each year of the forecast period; and
 - (ii) any other matters *AEMO* considers appropriate; and
 - (4) provide a description of what is meant by stable *voltage* waveforms and matters that may be taken into account by *System Strength Service Providers* to assess, for the level and type of *inverter based resources* projected by *AEMO* at *system strength nodes*, what may be required to achieve stable operation in accordance with clause S5.1.14(b)(2).

5.20.7 Publication of System Strength Report

AEMO must publish annually the *System Strength Report* on its website for the following year which must include:

- (a) a description of the *system strength requirements* determined by *AEMO* under rule 5.20C since the last *System Strength Report* ~~and details of *AEMO's* assessment of any *fault level shortfall* and *AEMO's* forecast of any *fault level shortfall* arising at any time within a planning of at least 5 years;~~
- (b) the *system strength requirements* determined for each ~~*region*~~ *system strength node* together with the results of its assessment under clause 5.20C.2; and
- ~~(c) information on any other matter that *AEMO* considers relevant.~~
- (c) the *system strength standard specification* (as defined in S5.1.14(a)) applicable at each *system strength node* during the 12 months following publication of the *System Strength Report*;

- (d) the assumptions used by AEMO to determine the system strength requirements including assumptions about the size, type and operational profile of facilities or classes of facilities to be connected and their contribution to the matters taken into account in determining the system strength requirements;
- (e) information about new system strength nodes declared since the last System Strength Report and an indication of possible future system strength nodes and when AEMO considers the nodes may be declared; and
- (f) information on any other matter that AEMO considers relevant.

5.20A Frequency management planning

...

5.20B Inertia sub-networks and requirements

...

5.20C System strength requirements

5.20C.1 System strength requirements

- (a) AEMO may from time to time declare system strength nodes, being locations on the transmission network at which:
 - (1) in relation to AEMO, clauses 4.2.6(g), 4.4.5(a) and 4.6.1(b) apply; and
 - (2) in relation to a System Strength Service Provider for a system strength node, clause S5.1.14 applies.
- (b) AEMO must, by 31 August each year, determine the system strength requirements for each system strength node. In determining system strength requirements, AEMO must apply the system strength requirements methodology.
- (c) The system strength requirements to be determined for a system strength node are:
 - (1) the minimum three phase fault level for the system strength node applicable for the purposes of clauses 4.2.6(g), 4.4.5(a) and 4.6.1(b) for the following year (commencing 1 September); and
 - (2) AEMO's forecast of the following matters for each of the following ten years (commencing 1 September):
 - (i) the minimum three phase fault level applicable at the system strength node for the purposes of clause S5.1.14(b)(1); and
 - (ii) the level and type of inverter based resources and market network service facilities projected by AEMO for the system strength node for the purposes of clause S5.1.14(b)(2).
- (d) AEMO must publish its declaration of system strength nodes under paragraph (a) and the system strength requirements determined for each system strength node in the System Strength Report.

- ~~(e) If AEMO becomes aware of a material change to the power system likely to affect the system strength requirements for a system strength node, where the timing, occurrence or impact of the change was unforeseen, AEMO must as soon as reasonably practicable revise and publish its determination of the minimum three phase fault level under paragraph (c)(1) and the forecast under paragraph (c)(2) for the system strength node.~~

5.20C.1 System strength requirements

- ~~(a) AEMO must from time to time determine the system strength requirements for each region applying the system strength requirements methodology. AEMO must make a determination under this paragraph:~~
- ~~(1) subject to subparagraph (2) and any other requirements under the Rules, for any region, no more than once in every 12 month period; and~~
 - ~~(2) for each affected region, as soon as reasonably practical after becoming aware of a material change to the power system likely to affect the system strength requirements for the region where the timing, occurrence or impact of the change was unforeseen.~~
- ~~(b) The system strength requirements to be determined for each region are:~~
- ~~(1) the fault level nodes in the region, being the location on the transmission network for which the three phase fault level must be maintained at or above a minimum three phase fault level determined by AEMO; and~~
 - ~~(2) for each fault level node, the minimum three phase fault level.~~
- ~~(c) AEMO must publish the system strength requirements determined for each region together with the results of its assessment under clause 5.20C.2 in the System Strength Report.~~

5.20C.2 [Deleted] Fault level shortfalls

- ~~(a) AEMO must as soon as practicable following its determination of the system strength requirements for a region under clause 5.20C.1 assess:~~
- ~~(1) the three phase fault level typically provided at each fault level node in the region having regard to typical patterns of dispatched generation in central dispatch;~~
 - ~~(2) whether in AEMO's reasonable opinion, there is or is likely to be a fault level shortfall in the region and AEMO's forecast of the period over which the fault level shortfall will exist; and~~
 - ~~(3) where AEMO has previously assessed that there was or was likely to be a fault level shortfall, whether in AEMO's reasonable opinion that fault level shortfall has been or will be remedied.~~
- ~~(b) In making its assessment under paragraph (a) for a region, AEMO must take into account:~~
- ~~(1) over what time period and to what extent the three phase fault levels at fault level nodes that are typically observed in the region are likely~~

- ~~to be insufficient to maintain the power system in a secure operating state; and~~
- ~~(2) any other matters that AEMO reasonably considers to be relevant in making its assessment.~~
- ~~(c) If AEMO assesses that there is or is likely to be a fault level shortfall in a region, AEMO must publish and give to the System Strength Service Provider for the region a notice of that assessment that includes AEMO's specification of:~~
- ~~(1) the extent of the fault level shortfall; and~~
- ~~(2) the date by which the System Strength Service Provider must ensure the availability of system strength services in accordance with clause 5.20C.3(b), which must not be earlier than 12 months after the notice is published unless an earlier date is agreed with the System Strength Service Provider.~~
- ~~(d) If AEMO assesses that a fault level shortfall in a region has been or will be remedied, AEMO must publish and give to the System Strength Service Provider for the region a notice of that assessment that includes AEMO's specification of the date from which the obligation of the System Strength Service Provider under clause 5.20C.3(b) ceases, which must not be earlier than 12 months after the notice is published unless an earlier date is agreed with the System Strength Service Provider.~~

5.20C.3 System Strength Service Provider ~~to make available system strength services~~

- (a) The System Strength Service Provider for a region is:
- (1) the Transmission Network Service Provider for the region; or
- (2) if there is more than one Transmission Network Service Provider for a region, the jurisdictional planning body for the participating jurisdiction in which the region is located.
- (b) ~~[Deleted] If AEMO gives a notice under clause 5.20C.2(c) that AEMO has assessed that there is or is likely to be a fault level shortfall at a fault level node in a region, the System Strength Service Provider for the region must make system strength services available in accordance with paragraph (c) that when enabled will address the fault level shortfall at the relevant fault level node.~~

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] For the purposes of paragraph (b), a System Strength Service Provider for a region must:~~
- ~~(1) use reasonable endeavours to make the system strength services available by the date specified by AEMO in the notice under clause 5.20C.2(c);~~

- ~~(2) make a range and level of system strength services available such that it is reasonably likely that system strength services that address the fault level shortfall when enabled are continuously available, taking into account planned outages, the risk of unplanned outages and the potential for the system strength services to impact typical patterns of dispatched generation in central dispatch; and~~
- ~~(3) maintain the availability of those system strength services until the date the System Strength Service Provider's obligation ceases, as specified by AEMO under clause 5.20C.2(d).~~
- (d) ~~[Deleted] A System Strength Service Provider required to make system strength 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 system strength services available continues.~~
- (e) A System Strength Service Provider ~~required to make system strength services available under paragraph (b)~~ must prepare and publish information to enable potential providers of system strength services to develop non-network options for consideration by the System Strength Service Provider including:
- (1) a description of the requirement for system strength services including timing;
 - (2) the technical characteristics that a non-network option ~~non-network option~~ would be required to deliver, such as the contribution to the three phase fault level, location, availability, response time and operating profile;
 - (3) a summary of potential options to make the system strength services available identified by the System Strength 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 System Strength Service Provider including details of how to submit a proposal for consideration.
- (f) A System Strength Service Provider must provide information in its Transmission Annual Planning Report about the system strength nodes for which it is the System Strength Service Provider including: ~~about the activities undertaken to satisfy its obligation to make system strength services available under paragraph (b).~~
- (1) the activities undertaken or planned to satisfy its obligations under clause S5.1.14 in relation to each system strength node;
 - (2) modelling methodologies, assumptions and results used by the System Strength Service Provider in planning the activities referred to in subparagraph (1); and
 - (3) the System Strength Service Provider's forecast of the available fault level at each system strength node over the period for which AEMO has determined system strength requirements, where applicable

determined in a manner consistent with the methodology in the system strength impact assessment guidelines.

- (g) If the *System Strength Service Provider* proposes *network* investment for the purpose specified in paragraph (f), the *System Strength 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;
 - (4) the indicative total costs of any *non-network options* considered.
- (h) A *System Strength Service Provider* may include the cost of *system strength service payments* in the calculation of *network support payments* in accordance with Chapter 6A.

5.20C.4 System strength services information and approvals

- (a) A *System Strength Service Provider* ~~whorequired to~~ makes *system strength services* available ~~for the purposes of clause S5.1.14 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 ~~system strength nodefault 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* 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* 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.)

- (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* it makes available to AEMO under the Rules:
- (1) a description of the *system strength service*, including:
 - (i) the nature of the *system strength service*;
 - (ii) the *generating 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 ~~*system strength node 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 ~~*system strength node 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* it makes available to AEMO under the Rules:
- (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* or other persons 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 5.1a System standards

S5.1a.1 Purpose

The purpose of this schedule is to establish *system standards* that:

- (a) are necessary or desirable for the safe and reliable operation of the *facilities of Registered Participants*;
- (b) are necessary or desirable for the safe and reliable operation of equipment;
- (c) could be reasonably considered *good electricity industry practice*; and
- (d) seek to avoid the imposition of undue costs on the industry or *Registered Participants*.

A *Registered Participant* should not, by virtue of this schedule, rely on *system standards* being fully complied with at a *connection point* under all circumstances. However, a *Registered Participant* should expect to be reasonably informed of circumstances where the standard of *supply* at its *connection points* will not conform to the *system standards*.

Except for standards of *frequency* and system stability, a *Registered Participant* should have the opportunity to negotiate or renegotiate relevant terms of a *connection agreement* (including relevant charges), to improve the standard of *supply* to the level of the *system standard*.

The *system standards* are set out below.

...

S5.1a.9 Minimum three phase fault levels and stability for system strength

- (a) The *power system* should have minimum *three phase fault levels* sufficient to enable:
 - (1) the *protection systems of transmission networks, distribution networks, Transmission Network Users and Distribution Network Users* to operate correctly;
 - (2) *voltage control systems* (such as reactive bank switching and dynamic

- voltage control) to be stable; and
- (3) the power system to remain stable following any credible contingency event or protected event.
- (b) There should be stable voltage waveforms at connection points in the power system such that:
- (1) in steady state conditions, plant does not create, amplify or reflect instabilities in response to small signals; and
- (2) following any credible contingency event, plant remains synchronised.

Schedule 5.1 Network Performance Requirements to be Provided or Co-ordinated by Network Service Providers

S5.1.1 Introduction

This schedule describes the planning, design and operating criteria that must be applied by *Network Service Providers* to the *transmission networks* and *distribution networks* which they own, operate or control. It also describes the requirements on *Network Service Providers* to institute consistent processes to determine the appropriate technical requirements to apply for each *connection enquiry* or *application to connect* processed by the *Network Service Provider* with the objective that all *connections* satisfy the requirements of this schedule.

Together, these are the power system performance and quality of supply standards that Network Service Providers must comply with in accordance with clause 5.2.3(b).

The criteria and the obligations of *Registered Participants* to implement them, fall into two categories, namely:

- (a) those required to achieve adequate levels of *network power transfer capability* or *quality of supply* for the common good of all, or a significant number of, *Registered Participants*; and
- (b) those required to achieve a specific level of *network service* at an individual *connection point*.

A *Network Service Provider* must:

- (1) fully describe the quantity and quality of *network services* which it agrees to provide to a person under a *connection agreement* in terms that apply to the *connection point* as well as to the *transmission system* or *distribution system* as a whole;
- (2) ensure that the quantity and quality of those *network services* are not less than could be provided to the relevant person if the *national grid* were planned, designed and operated in accordance with the criteria set out in this clause S5.1.1 and recognising that levels of service will vary depending on location of the *connection point* in the *network*; and
- (3) observe and apply the relevant provisions of the *system standards* in accordance with this schedule 5.1.

To the extent that this schedule 5.1 does not contain criteria which are relevant to the description of a particular *network service*, the *Network Service Provider* must describe the *network service* in terms which are fair and reasonable.

This schedule includes provisions for *Network Service Providers* and *Registered Participants* to negotiate the criteria to apply to a *connection* within defined ranges between a lower bound (*minimum access standard*) and an upper bound (*automatic access standard*). All criteria which are intended to apply to a *connection* must be recorded in a *connection agreement*. Where it is intended to apply a *negotiated access standard* in accordance with clause 5.3.4A of the *Rules*, the *Network Service Provider* must first be satisfied that the application of the *negotiated access standard* will not adversely affect other *Registered Participants*.

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* 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* 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.

...

S5.1.14 Minimum three phase fault levels and stability for system strength nodes

- (a) In this clause:

relevant year means each period of 12 months commencing 1 September.

system strength standard specification means, for a *system strength node* at any time in a relevant year, the forecast system strength requirements for the *system strength node* determined for the relevant year three years prior (that is, in the *system strength requirements* due to be determined by 31 August falling three years before the relevant year commenced and disregarding any revision under clause 5.20C.1(f)).

Example

If the relevant year is 1 September 2026 to 31 August 2027, the system strength planning standard specification on each day during that year will be the forecast made in the determination of the system strength requirements due to be made by 31 August 2023.

forecast system strength requirements means, for a *system strength node* for a relevant year, *AEMO's* forecast under clause 5.20C.1(c) of:

- (i) the minimum three phase fault level applicable at the system strength node; and
 - (ii) the level and type of inverter based resources and market network service facilities projected by AEMO for the system strength node.
- (b) A Transmission Network Service Provider who is a System Strength Service Provider must use reasonable endeavours to plan, design, maintain and operate its transmission network, or make system strength services available to AEMO, to meet the following requirements at system strength nodes on its transmission network in each relevant year:
- (1) maintain the minimum three phase fault level specified by AEMO for the system strength node in the system strength standard specifications for the system strength node for the relevant year; and
 - (2) achieve stable voltage waveforms such that for the level and type of inverter based resources and market network service facilities projected by AEMO in the system strength standard specifications for

the system strength node for the relevant year:

- (i) in steady state conditions, the inverter based resources and market network service facilities do not create, amplify or reflect instabilities in response to small signals; and
 - (ii) following any credible contingency event described in clause S5.1.2.1, the inverter based resources and market network service facilities remain synchronised.
- (c) Paragraph (b) does not apply in relation to a system strength node until the start of the third relevant year after the relevant year in which AEMO declares the system strength node.

Schedule 5.2 Conditions for Connection of Generators

S5.2.1 Outline of requirements

- (a) This schedule sets out details of additional requirements and conditions that *Generators* must satisfy as a condition of *connection* of a *generating system* to the *power system*.
- (b) This schedule does not apply to any *generating system* that is:
 - (1) subject to an exemption from registration under clause 2.2.1(c); or
 - (2) eligible for exemption under any guidelines issued under clause 2.2.1(c),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*:
 - (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* must be designed to withstand without damage the range of operating conditions which may arise consistent with the *system standards*.
- (e) *Generators* 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* 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*.

S5.2.5 Technical requirements

...

S5.2.5.15 Short circuit ratio

(a) This clause S5.2.5.15:

- (1) applies to a generating system comprised solely of asynchronous generating units;
- (2) does not apply to a generating system comprised solely of synchronous generating units; and
- (3) for a generating system comprised of both synchronous generating units and asynchronous generating units, applies only to the asynchronous generating units and to the generating system to the extent it relates to its asynchronous generating units.

Minimum access standard

(b) The minimum access standard is a generating system comprised of asynchronous generating units must have plant capability sufficient to meet its performance standards at a short circuit ratio of 3.0 and design capability to remain stable during steady state operation.

General requirements

- (c) The agreed value of the short circuit ratio for any negotiated access standard and the rated active power used to calculate the value must be recorded in the performance standards.
- (d) The control system and protection system settings for the plant must be set at a level such that the plant meets its other performance standards suitable for the technical performance requirements needed for the location of the connection point in the power system, regardless of the control system and protection system settings that are required to demonstrate compliance with paragraph (b), or where a negotiated access standard applies, paragraph (c).

S5.2.5.16 Voltage phase angle shift

(a) This clause S5.2.5.16:

- (1) applies to a generating system comprised solely of asynchronous generating units;
- (2) does not apply to a generating system comprised solely of synchronous generating units; and
- (3) for a generating system comprised of both synchronous generating

units and asynchronous generating units, applies only to the asynchronous generating units and to the generating system to the extent it relates to its asynchronous generating units.

Minimum access standard

(b) The minimum access standard is a generating system and each of its asynchronous generating units must not include any vector shift or similar relay or protective function that acts upon voltage phase angle which might operate for phase angle changes less than 20 degrees at the connection point.

General requirements

(c) The agreed value of the setting of any protection system must be recorded in the performance standards, regardless of the control system and protection system settings that are required to demonstrate compliance with paragraph (b), or where a negotiated access standard applies, paragraph (c).

...

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*;
 - (2) a *Second-Tier Customer* in respect of its *second-tier load*;
 - (3) a *Market Customer* in respect of its *market load*;
 - (4) a *Non-Registered Customer* in respect of its connection to 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*. 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*.

S5.3.1 Information

- (a) Before a *Network User* connects any new or additional equipment to a *network*, the *Network User* must submit the following kinds of information to the *Network Service Provider*:
 - (1) a single line diagram with the protection details;
 - (2) *metering system* design details for any metering equipment being provided by the *Network User*;
 - (3) a general arrangement locating all the equipment on the site;
 - (4) a general arrangement for each new or altered *substation* showing all exits and the position of all electrical equipment;
 - (5) type test certificates for all new switchgear and *transformers*, including measurement *transformers* to be used for metering purposes in accordance with Chapter 7 of the *Rules*;
 - (6) earthing details;
 - (7) the proposed methods of earthing cables and other equipment to comply with the regulations of the relevant *participating jurisdiction*;
 - (8) *plant* and earth grid test certificates from approved test authorities;
 - (9) a secondary injection and trip test certificate on all circuit breakers;
 - (10) certification that all new equipment has been inspected before being *connected* to the *supply*; and
 - (11) operational arrangements.
- (a1) Before a *Network User* connects any new or additional equipment to a *network* or if earlier, in accordance with the requirements of this Chapter, the *Network User* must submit:
 - (1) to AEMO and the relevant *Network Service Provider(s)*, information about the *protection systems* of the equipment;
 - (2) to AEMO and the relevant *Network Service Provider(s)*, information about the *control systems* of the equipment including:
 - (i) a set of functional block diagrams, including all functions between feedback signals and output;

- (ii) the parameters of each functional block, including all settings, gains, time constants, delays, deadbands and limits;
 - (iii) the characteristics of non-linear elements;
 - (iv) encrypted models in a form suitable for the software simulation products nominated by *AEMO* in the *Power System Model Guidelines*;
 - (3) 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*;
 - (4) to *AEMO*, model source code (in the circumstances required by the *Power System Model Guidelines*) associated with the model in subparagraph (2)(iv) 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 simulation products nominated by *AEMO* in the *Power System Model Guidelines*.
- (a2) The information provided under paragraph (a1) 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*.
- (a3) Notwithstanding paragraph (a1), *AEMO* may exempt a *Network User* or class of *Network Users* from the requirement to provide some or all of the information specified in paragraph (a1), and must do so in accordance with the circumstances set out in the *Power System Model Guidelines*.
- (a4) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraph (a1) or pursuant to paragraph (a3) must be treated as *confidential information* by those recipients.
- (b) For the purposes of clause 5.3.2(f) of the *Rules*, the technical information that a *Network Service Provider* must, if requested, provide to a *Connection Applicant* in respect of the proposed *connection* includes:
- (1) the highest expected single phase and three phase fault levels at the *connection point* without the proposed *connection*;
 - (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* without the proposed *connection*;
 - (4) technical information relevant to the *connection point* without the proposed *connection* including equivalent source impedance information, sufficient to estimate fault levels, *voltage* fluctuations, harmonic *voltage* distortion and *voltage* unbalance; and
 - (5) any other information or data not being *confidential information* relating to the performance of the *Network Service Provider's facilities*

that is reasonably necessary for the *Connection Applicant* to prepare an *application to connect*;

except where the *Connection Applicant* agrees the *Network Service Provider* may provide alternative or less detailed technical information in satisfaction of this clause S5.3.1.(b).

...

S5.3.11 Short circuit ratio (customers)

(a) This clause S5.3.11 applies to a *Network User* where the *plant to be connected* includes any *inverter based resource*.

Minimum access standard

(b) The *minimum access standard* is electrical *plant* must have *plant capability sufficient to meet its performance standards at a short circuit ratio of 3.0 and design capability to remain stable during steady state operation*.

General requirements

(c) The agreed value of the *short circuit ratio* for any *negotiated access standard* and the *maximum demand* used to calculate the agreed value must be recorded as part of the *performance standards in the connection agreement*.

(d) The *control system* and *protection system* settings for the *plant* must be set at a level such that the *plant* meets its other *performance standards* suitable for the technical performance requirements needed for the location of the *connection point* in the *power system*, regardless of the *control system* and *protection system* settings that are required to demonstrate compliance with paragraph (b), or where a *negotiated access standard* applies, paragraph (c).

Schedule 5.3a Conditions for connection of Market Network Services

S5.3a.1a Introduction to the schedule

This schedule sets out obligations of *Market Network Service Providers* who *connect* to either a *transmission network* or a *distribution network*. It represents the requirements to be met for access to a *network*. Particular provisions may be varied by the *Network Service Provider* under the provisions of the *Rules* for the application of *minimum access standards* and *automatic access standards*.

This schedule includes specific provisions for the determination of *automatic access standards* and *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*.

In this schedule, the term *Network Service Provider* applies only to the *Network Service Provider* with whom the *Market Network Service Provider* has lodged, or is considering lodging, an *application to connect*.

- (a) The schedule includes, in respect of each *market network service*, provisions regarding the capability to:
 - (1) automatically control the transfer of real power at the *connection point* for any given set of system conditions within the limits permitted under the *Rules*;
 - (2) respond to control requirements under expected normal and abnormal conditions;
 - (3) comply with general requirements to meet quality of *supply* obligations in accordance with clauses S5.3a.9, S5.3a.10 and S5.3a.11 and to maintain security of *supply* to other *Registered Participants*; and
 - (4) automatically *disconnect* itself when necessary to prevent any damage to the *market network service facilities* or threat to *power system security*.
- (b) This schedule also sets out the requirements and conditions, which (subject to clause 5.2.3 of the *Rules*) are obligations of *Market Network Service Providers* to:
 - (1) co--operate with the relevant *Network Service Provider* on technical matters when making a new *connection*;
 - (2) provide information to the *Network Service Provider* or *AEMO*; and
 - (3) observe and apply the relevant provisions of the *system standards* contained in schedule 5.1a in relation to the planning, design and operation of its *market network service facilities*.
- (c) This schedule does not set out arrangements by which a *Market Network Service 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 service to facilitate management of the *market*.

S5.3a.7 — [Deleted]

S5.3a.7 Short circuit ratio

- (a) This clause S5.3a.7 applies to all *Market Network Service Providers* specified in clause S5.3a.1a.

Minimum access standard

- (b) The *minimum access standard* is an installation comprised of electrical plant must have plant capability sufficient to meet its performance standards at a short circuit ratio of 3.0 and design capability to remain stable during steady state operation.

General requirements

- (c) The agreed value of the *short circuit ratio* for any negotiated access standard and the rated power transfer capability used to calculate the value must be recorded in the performance standards in the connection

agreement.

- (d) The control system and protection system settings for the plant must be set at a level such that the plant meets its other performance standards suitable for the technical performance requirements needed for the location of the connection point in the power system, regardless of the control system and protection system settings that are required to demonstrate compliance with paragraph (b), or where a negotiated access standard applies, paragraph (c).

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 demand of whole *plant* – (maximum MW and/or MVA, or average over 15 minutes or similar).
- (d) Expected *energy* production or consumption (MWh per month).
- (e) *Plant* type and configuration – (eg. number and type of *generating 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* (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*).
- (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* 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 ~~a general system strength impact~~*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;

- (i) 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~~ general system strength impact and whether a system strength locational factor can be calculated in relation to the new connection;
- (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 5.4B Detailed Response to Enquiry

For the purposes of clause 5.3A.8(g), the following information must be included in the *detailed response*:

- (a) the contact details for the relevant point of contact within the *Distribution Network Service Provider* who will manage the *application to connect*;
- (b) written details of each technical requirement relevant to the proposed *plant* as relevant to the:
 - (1) *automatic access standards*;
 - (2) *minimum access standards*;
 - (3) any applicable *plant standards*; and
 - (4) *normal voltage* level, if that is to change from the *nominal voltage* level;
- (c) details of the *connection* requirements based on the *Connection Applicant's* specifications of the *facility* to be *connected*;
- (d) details of the level and standard of service of *power transfer capability* that the *Distribution Network Service Provider*, with reasonable endeavours, considers the *network* provides at the location of the *connection point* or *connection points*, if options have been made available under clause S5.4A(n);
- (e) *negotiated access standards* that will require *AEMO's* involvement in accordance with clause 5.3.4A(c);
- (e1) written details of:
 - (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; and
 - (3) except where, under clause 5.3.4B(a3), the *Network Service Provider* is not required to calculate the *system strength locational factor*:
 - (i) the *indicative system strength quantity* for the *connection point*;
 - (ii) the *system strength locational factor* for the *connection point*; and
 - (iii) the *relevant system strength node* and the *indicative system strength charge* for the *connection point* using the then applicable *system strength unit price*.
- (f) 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*. The list provided under this paragraph (f) will generally be in the nature of the information set out in schedule 5.5 but may be varied by the *Distribution Network Service Provider* as appropriate to suit the size and complexity of the proposed *facility* to be *connected*;

- (g) commercial information to be supplied by the *Connection Applicant* to allow a *Network Service Provider* (as is relevant) 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;
- (h) so far as is relevant, and in relation to services that the *Distribution Network Service Provider* intends to provide, an itemised estimate of *connection* costs including:
 - (1) *connection services* charges;
 - (2) costs associated with the proposed metering requirements for the *connection*;
 - (3) costs of any *network extension*;
 - (4) details of *augmentation* required to provide the *connection* and associated costs;
 - (5) details of the interface equipment required to provide the *connection* and associated costs;
 - (6) details of any ongoing operation and maintenance costs and charges to be undertaken by the *Distribution Network Service Provider*; and
 - (7) other incidental costs and their basis of calculation;
- (i) an explanation of the factors affecting each component of the itemised estimate of *connection* costs and the further information that will be taken into account by the *Distribution Network Service Provider* in preparing the final itemised statement of *connection* costs to be provided under clause 5.3.6(b2)(1);
- (j) using reasonable endeavours, all risks and obligations in respect of the proposed *connection* associated with planning and environmental laws not contained in the *Rules*;
- (k) a draft *connection agreement* that contains the proposed terms and conditions for *connection* to the *network* including those of the kind set out in schedule 5.6 and:
 - (1) an explanation of the terms and conditions in the *connection agreement* that need to be finalised; and
 - (2) if relevant, further information necessary from the *Connection Applicant* to finalise the *connection agreement*;
- (l) a description of the process for lodging the *application to connect*, including:
 - (1) the options open to the *Connection Applicant* in submitting an *application to connect* in accordance with clause 5.3A.9;
 - (2) the further analysis to be undertaken by the *Distribution Network Service Provider* as part of the *Distribution Network Service Provider's* assessment of the *application to connect*;
 - (3) further information required from the *Connection Applicant* for the *Distribution Network Service Provider* to assess the *application to connect*; and

- (4) an outline of proposed milestones (and their timeframes) 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;
- (m) the application fee payable when submitting an *application to connect*;
- (n) whether the *Distribution Network Service Provider* agrees to the *detailed response* remaining valid for a specified period of time to allow the *Connection Applicant* to lodge an *application to connect* within that time; and
- (o) any additional information relevant to the *application to connect*.

Schedule 5.5 Technical Details to Support Application for Connection and Connection Agreement

S5.5.1 Introduction to the schedule

Various sections of the *Rules* require that *Registered Participants* submit technical data to the *Network Service Provider*. This schedule lists the range of data which may be required. The actual data required will be advised by the *Network Service Provider*, and will form part of the technical specification in the *connection agreement*. These data will also be made available to *AEMO* and to other *Network Service Providers* by the *Network Service Provider* at the appropriate time.

S5.5.2 Categories of data

Data is coded in categories, according to the stage at which it is available in the build-up of data during the process of forming a *connection* or obtaining access to a *network*, with data acquired at each stage being carried forward, or enhanced in subsequent stages, eg. by testing.

The *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet* identify for each type of data, its category in terms of clause S5.5.2.

Codes:

S = Standard Planning Data;

D = Detailed Planning Data;

R = Registered Data (R1 pre-*connection*, R2 post-*connection*)

Preliminary system planning data

Preliminary system planning data is required for submission with the *application to connect*, to allow the *Network Service Provider* to prepare an offer of terms and conditions for a *connection agreement* and to assess the requirement for, and effect of, *network augmentation* or *extension* options. Such data is normally limited to the items denoted as Standard Planning Data (S) in the *Power System Model Guidelines*, *Power System Design Data Sheet*, *Power System Setting Data Sheet* and in schedules 5.5.3 to 5.5.5.

The *Network Service Provider* may, in cases where there is reasonable doubt as to the viability of a proposal, require the submission of other data before making an offer to *connect* or to amend a *connection agreement*.

Registered system planning data

Registered system planning data is the class of data which will be included in the *connection agreement* signed by both parties. It consists of the preliminary system planning data plus those items denoted in the attached schedules as Detailed Planning Data (D). The latter must be submitted by the *Registered Participant* in time for inclusion in the *connection agreement*.

Registered data

Registered Data consists of data validated and agreed between the *Network Service Provider* and the *Registered Participant*, such data being:

- (a) prior to actual *connection* and provision of access, data derived from manufacturers' data, detailed design calculations, works or site tests etc. (R1); and
- (b) after connection, data derived from on-system testing (R2).

All of the data will, from this stage, be categorised and referred to as Registered Data; but for convenience the schedules omit placing a higher ranked code next to items which are expected to already be valid at an earlier stage.

S5.5.3 Review, change and supply of data

Data will be subject to review at reasonable intervals to ensure its continued accuracy and relevance. The *Network Service Provider* must initiate this review. A *Registered Participant* may change any data item at a time other than when that item would normally be reviewed or updated by submission to the *Network Service Provider* of the revised data, together with authentication documents, eg. test reports.

The *Network Service Provider* must supply data relating to its system to other *Network Service Providers* for planning purposes and to other *Registered Participants* and *AEMO* as specified in the various sections of the *Rules*, including through the *statement of opportunities*.

S5.5.4 Data Requirements

Schedules 5.5.3 to 5.5.5 cover the following data areas:

- (a) schedule 5.5.3 - Network Plant Technical Data. This comprises fixed electrical parameters.
- (b) schedule 5.5.4 - Plant and Apparatus Setting Data. This comprises settings which can be varied by agreement or by direction of the *Network Service Provider* or *AEMO*.
- (c) schedule 5.5.5 - *Load* Characteristics. This comprises the estimated design parameters of *loads*.

The documents and schedules applicable to each class of *Registered Participant* are as follows:

- (a) *Generators: the Power System Model Guidelines, Power System Design Data Sheet and Power System Setting Data Sheet;*
- (b) *Customers and Network Service Providers: schedules 5.5.3, 5.5.4 and the Power System Model Guidelines, Power System Design Data Sheet and Power System Setting Data Sheet;*
- (c) *Customers: schedule 5.5.5 and the Power System Model Guidelines, Power System Design Data Sheet and Power System Setting Data Sheet; and*
- (d) *Market Network Service Providers: schedules 5.5.3 and 5.5.4 and the Power System Model Guidelines, Power System Design Data Sheet and Power System Setting Data Sheet.*

S5.5.5 Asynchronous generating unit data

A *Generator* that connects a generating system, that is an *asynchronous generating 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*, 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*, as determined by the *Network Service Provider*.

S5.5.6 Generating units smaller than 30MW data

A *Generator* 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)

S5.5.7 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), 5.3.9(b)(2), [5.3.12\(b\)\(2\)](#), 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), 5.3.9(b)(2), [5.3.12\(b\)\(2\)](#), 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), 5.3.9(b)(2), [5.3.12\(b\)\(2\)](#), 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* must provide under clause 5.2.5(d), clause 5.2.5(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), [clause 5.3.12](#) and clause S5.3.1(a1);
 - (iv) *Market Network Service Providers* must provide under clause 5.2.3A(a), clause 5.2.3A(b), [clause 5.3.12](#) 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* 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), 5.3.9(b)(2), [5.3.12\(b\)\(2\)](#), 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 5.5.1 [Deleted]

Schedule 5.5.2 [Deleted]

Schedule 5.5.3 Network and plant technical data of equipment at or near connection point

Data Description	Units	Data Category
Voltage Rating		
<i>Nominal voltage</i>	kV	S, D
Highest <i>voltage</i>	kV	D
Insulation Co-ordination		
Rated lightning impulse withstand <i>voltage</i>	kVp	D
Rated short duration power <i>frequency</i> withstand <i>voltage</i>	kV	D
Rated Currents		
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

Data Description	Units	Data Category
Earthing		
System Earthing Method	Text	S, D
Earth grid rated current	kA for seconds	D
Insulation Pollution Performance		
Minimum total creepage	mm	D
Pollution level	Level of IEC 815	D
Controls		
Remote control and data transmission arrangements	Text	D
Metering Provided by Customer		
Measurement <i>transformer</i> ratios:		D
<i>Current transformers</i>	A/A	D
<i>Voltage transformers</i>	V/kV	D
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
Network Impedance		
For each item of <i>plant</i> :	% on 100 MVA	S, D, R1

Data Description	Units	Data Category
details of the positive, negative and zero sequence series and shunt impedance, including mutual coupling between physically adjacent elements.	base	

Short Circuit Infeed to the Network

Maximum generator 3-phase short circuit infeed including infeeds from <i>generating units connected to the Registered Participant's system</i> , 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 network at connection point</i> .	% on 100 MVA base	D, R1
Minimum negative sequence impedance of <i>Registered Participant's network at 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*:

<i>Load</i> normally taken from <i>connection point X</i>	MW	D, R1
<i>Load</i> normally taken from <i>connection point Y</i>	MW	D, R1
Arrangements for transfer under planned or fault <i>outage</i> conditions	Text	D

Circuits Connecting Embedded Generating 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	D, R

Data Description	Units	Data Category
	base	
Normal and short-time emergency ratings	MVA	D,R
<p>Technical Details of <i>generating units</i> and <i>generating systems</i> as per the <i>Power System Design Data Sheet, Power System Setting Data Sheet</i> and the <i>Power System Model Guidelines</i> where such details are not <i>confidential information</i></p>		
<i>Transformers at connection points:</i>		
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
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
Protection Data for Protection relevant to Connection Point:		
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

Data Description	Units	Data Category
Tap Change Control Data:		
Time delay settings of all <i>transformer</i> tap changers.	Seconds	D, R1
Reactive Compensation:		
Location and Rating of individual <i>shunt reactors</i>	MVA _r	D, R1
Location and Rating of individual <i>shunt capacitor banks</i>	MVA _r	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
For each shunt reactor or capacitor bank:		
Method of switching	Text	S
Details of automatic control logic such that operating characteristics can be determined	Text	D, R1
FACTS Installation:		
Data sufficient to enable static and dynamic performance of the installation to be modelled	Text, diagrams	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

Data Description	Units	Data Category
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

Short circuit ratio

<p><u>The value of the <i>short circuit ratio</i> in the <i>minimum access standard</i> in clause S5.2.5.15(b), clause S5.3.11(b) or clause S5.3a.7(b) (as applicable) or if the procedures in clause 5.3.4A have been followed, a <i>negotiated access standard</i> agreed pursuant to clause S5.2.5.15(c), clause S5.3.11(c) or clause S5.3a.7(c) (as applicable). The lowest short circuit ratio at the <i>connection point</i> for which the <i>generating 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.</u></p> <p><u>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</i> (expressed in MW or MVA).</u></p>	Numeric ratio	S, D, R1
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Schedule 5.5.5 Load Characteristics at Connection Point

Data Description	Units	Data Category
For all Types of Load		

Data Description	Units	Data Category
Type of <i>Load</i> eg controlled rectifiers or large motor drives	Text	S
For Fluctuating Loads		
Cyclic variation of <i>active power</i> over period	Graph MW/time	S
Cyclic variation of <i>reactive power</i> over period	Graph MVar/time	S
Maximum rate of change of <i>active power</i>	MW/s	S
Maximum rate of change of <i>reactive power</i>	MVar/s	S
Shortest Repetitive time interval between fluctuations in active and <i>reactive power</i> reviewed annually	s	S
Largest Step Change:		
In <i>active power</i>	MW	S
In <i>reactive power</i>	MVar	S
...		

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 capacity of known *embedded generating 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*;
 - (ii) key issues arising from *applications to connect embedded generating 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

- (iv) the *Distribution Network Service Provider's* plans for demand management and *generation* from *embedded generating 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 *system strength locational factor* for each *system strength connection point* for which it is the *Network Service Provider* and the corresponding *system strength node*.

CHAPTER 6

DRAFT DETERMINATION VERSION (ERC0300)

Indicative markup of the National Electricity Rules showing changes made by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021.

Note: This is an indicative consolidated version of the National Electricity Rules as amended by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021. It includes a markup of amendments made to relevant extracts of Chapters 4, 5, 5A, 6, 6A and 10 of version 159 of the National Electricity Rules. Only extracts of the relevant Chapters are provided in order to reduce the size of the document. Complete and current versions of the official NER should be viewed on the AEMC's website.

This document is provided for information purposes only. The Australian Energy Market Commission does not guarantee the accuracy, reliability or completeness of this indicative consolidated version of the National Electricity Rules.

6. Economic Regulation of Distribution Services

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Part I Distribution Pricing Rules

6.18 Distribution Pricing Rules

6.18.1 Application of this Part

This Part applies to tariffs and *tariff classes* related to *direct control services*.

6.18.1A Tariff structure statement

- (a) A *tariff structure statement* of a *Distribution Network Service Provider* must include the following elements:
- (1) the *tariff classes* into which *retail customers* for *direct control services* will be divided during the relevant *regulatory control period*;
 - (2) the policies and procedures the *Distribution Network Service Provider* will apply for assigning *retail customers* to tariffs or reassigning *retail customers* from one tariff to another (including any applicable restrictions);
 - (3) the structures for each proposed tariff;
 - (4) the *charging parameters* for each proposed tariff; and
 - (5) a description of the approach that the *Distribution Network Service Provider* will take in setting each tariff in each *pricing proposal* of the *Distribution Network Service Provider* during the relevant *regulatory control period* in accordance with clause 6.18.5.
- (b) A *tariff structure statement* must comply with the *pricing principles* for *direct control services*.
- (c) A *Distribution Network Service Provider* must comply with the *tariff structure statement* approved by the AER and any other applicable requirements in the *Rules*, when the provider is setting the prices that may be charged for *direct control services*.
- (d) Subject to clause 6.18.1B, a *tariff structure statement* may not be amended during a *regulatory control period* [except to the extent necessary to comply with clause 6.20.3A](#).

Note

Rule 6.13 still applies in relation to a *tariff structure statement* because that rule deals with the revocation and substitution of a distribution determination (which includes a *tariff structure statement*) as opposed to its amendment.

- (e) A *tariff structure statement* must be accompanied by an *indicative pricing schedule* which sets out, for each tariff for each *regulatory year* of the *regulatory control period*, the indicative price levels determined in accordance with the *tariff structure statement*.

6.18.1B Amending a tariff structure statement with the AER's approval

- (a) No later than nine months before the start of a *regulatory year* (other than the first *regulatory year* of a *regulatory control period*) (**relevant regulatory year**), a *Distribution Network Service Provider* may request the *AER* to approve an amendment to its current *tariff structure statement*.
- (b) A request for an amendment to a *tariff structure statement* under paragraph (a) must include:
 - (1) the proposed amended *tariff structure statement*;
 - (2) a description of the event that has occurred to cause the *Distribution Network Service Provider* to seek an amendment to its current *tariff structure statement* and why the event:
 - (i) was beyond the reasonable control of the *Distribution Network Service Provider*; and
 - (ii) could not reasonably have been foreseen by the *Distribution Network Service Provider* at the time its current *tariff structure statement* was approved by the *AER*.
 - (3) a description and justification of the differences between the proposed amended *tariff structure statement* and the *Distribution Network Service Provider's* current *tariff structure statement*;
 - (4) a description of how the differences referred to in sub-paragraph (3) would impact the other elements of the *tariff structure statement*;
 - (5) a description of how the proposed amended *tariff structure statement* would better comply with the *pricing principles for direct control services* than the current *tariff structure statement*; and
 - (6) a description of how the *Distribution Network Service Provider* has engaged with *retail customers* and *retailers* in developing the proposed amended *tariff structure statement* and has sought to address any relevant concerns identified as a result of that engagement.
- (c) The *AER* must, on receipt of a *Distribution Network Service Provider's* request for an amendment to its *tariff structure statement*, *publish* the request.
- (d) The *AER* must approve the request for an amendment to a *tariff structure statement* under paragraph (a) if the *Distribution Network Service Provider* demonstrates to the reasonable satisfaction of the *AER* that:
 - (1) an event has occurred that:
 - (i) was beyond the reasonable control of the *Distribution Network Service Provider*; and
 - (ii) could not reasonably have been foreseen by the *Distribution Network Service Provider* at the time its current *tariff structure statement* was approved by the *AER*; and
 - (2) as a result of the event referred to in sub-paragraph (1), the proposed amended *tariff structure statement* would, or would be likely to, materially better comply with the *pricing principles for direct control*

services than the Distribution Network Service Provider's current tariff structure statement.

- (e) No later than four months before the start of the relevant *regulatory year*, the *AER* must either approve or refuse to approve the request for an amendment to a *tariff structure statement* under paragraph (a) and set out reasons for its decision.
- (f) If the *AER* refuses to approve the request for an amendment to a *tariff structure statement* under paragraph (a), the current *tariff structure statement* will apply for the relevant *regulatory year* and, subject to any subsequent amendment approved under this clause 6.18.1B, the remainder of the *regulatory control period*.

Note

Rule 6.13 still applies in relation to a *tariff structure statement* because that rule deals with the revocation and substitution of a distribution determination (which includes a *tariff structure statement*) as opposed to its amendment.

6.18.1C Sub-threshold tariffs

- (a) No later than four months before the start of a *regulatory year* (other than the first *regulatory year* of a *regulatory control period*), a *Distribution Network Service Provider* may notify the *AER*, affected *retailers* and affected *retail customers* of a new proposed tariff (a **relevant tariff**) that is determined otherwise than in accordance with the *Distribution Network Service Provider's current tariff structure statement*, if both of the following are satisfied:
 - (1) the *Distribution Network Service Provider's* forecast revenue from the relevant tariff during each *regulatory year* in which the tariff is to apply is no greater than 0.5 per cent of the *Distribution Network Service Provider's annual revenue requirement* for that *regulatory year* (the **individual threshold**); and
 - (2) the *Distribution Network Service Provider's* forecast revenue from the relevant tariff, as well as from all other relevant tariffs, during each *regulatory year* in which those tariffs are to apply is no greater than one per cent of the *Distribution Network Service Provider's annual revenue requirement* for that *regulatory year* (the **cumulative threshold**).
- (b) Notwithstanding any other provision in the *Rules* to the contrary, a relevant tariff notified by the *Distribution Network Service Provider* in accordance with paragraph (a) is, for the remainder of the *regulatory control period* in which the notification is given:
 - (1) not required to comply with the *pricing principles for direct control services*; and
 - (2) for the purposes of the submission and approval of a *pricing proposal*, deemed to comply with the *Distribution Network Service Provider's current tariff structure statement*,

unless, at any point in time after the notification of the relevant tariff is given under paragraph (a) (the **post-notification point**), either the

individual threshold or the cumulative threshold (in each case calculated using actual rather than forecast revenue) are exceeded by virtue of the amount of revenue that is attributable to the relevant tariff, in which case sub-paragraphs (1) and (2) cease to apply to the relevant tariff in relation to the *regulatory years* that commence after the post-notification point.

- (c) Where sub-paragraphs (b)(1) and (2) cease to apply to a relevant tariff in accordance with paragraph (b), then sub-paragraphs (b)(1) and (2) will be taken to continue to apply to other relevant tariffs that were notified before the post-notification point, but only to the extent that those sub-paragraphs would apply if the first-mentioned relevant tariff were not a relevant tariff.

6.18.2 Pricing proposals

- (a) A *Distribution Network Service Provider* must:
- (1) submit to the *AER*, as soon as practicable, and in any case within 15 *business days*, after *publication* of the distribution determination, a *pricing proposal* (the **initial pricing proposal**) for the first *regulatory year* of the *regulatory control period*; and
 - (2) submit to the *AER*, at least 3 months before the commencement of the second and each subsequent *regulatory year* of the *regulatory control period*, a further *pricing proposal* (an **annual pricing proposal**) for the relevant *regulatory year*.
- (b) A *pricing proposal* must:
- (1) **[Deleted]**;
 - (2) set out the proposed tariffs for each *tariff class* that is specified in the *Distribution Network Service Provider's tariff structure statement* for the relevant *regulatory control period*;
 - (3) set out, for each proposed tariff, the *charging parameters* and the elements of service to which each *charging parameter* relates;
 - (4) set out, for each *tariff class* related to *standard control services*, the expected weighted average revenue for the relevant *regulatory year* and also for the current *regulatory year*;
 - (5) set out the nature of any variation or adjustment to the tariff that could occur during the course of the *regulatory year* and the basis on which it could occur;
 - (6) set out how *designated pricing proposal charges* are to be passed on to customers and any adjustments to tariffs resulting from over or under recovery of those charges in the previous *regulatory year*;
 - (6A) set out how *jurisdictional scheme amounts* for each *approved jurisdictional scheme* are to be passed on to customers and any adjustments to tariffs resulting from over or under recovery of those amounts;
 - (6B) describe how each *approved jurisdictional scheme* that has been amended since the *last jurisdictional scheme approval date* meets the *jurisdictional scheme eligibility criteria*;

- (7) demonstrate compliance with the *Rules* and any applicable distribution determination, including the *Distribution Network Service Provider's tariff structure statement* for the relevant *regulatory control period*;
 - (7A) demonstrate how each proposed tariff is consistent with the corresponding indicative pricing levels for the relevant *regulatory year* as set out in the relevant *indicative pricing schedule*, or explain any material differences between them; and
 - (8) describe the nature and extent of change from the previous *regulatory year* and demonstrate that the changes comply with the *Rules* and any applicable distribution determination.
- (c) The *AER* must on receipt of a *pricing proposal* from a *Distribution Network Service Provider* publish the proposal.
 - (d) At the same time as a *Distribution Network Service Provider* submits a *pricing proposal* under paragraph (a), the *Distribution Network Service Provider* must submit to the *AER* a revised *indicative pricing schedule* which sets out, for each tariff and for each of the remaining *regulatory years* of the *regulatory control period*, the indicative price levels determined in accordance with the *Distribution Network Service Provider's tariff structure statement* for that *regulatory control period* and updated so as to take into account that *pricing proposal*.
 - (e) Where the *Distribution Network Service Provider* submits an annual *pricing proposal*, the revised *indicative pricing schedule* referred to in paragraph (d) must also set out, for each relevant tariff under clause 6.18.1C, the indicative price levels for that relevant tariff for each of the remaining *regulatory years* of the *regulatory control period*, updated so as to take into account that *pricing proposal*.

6.18.3 Tariff classes

- (a) **[Deleted]**.
- (b) Each *retail customer* for *direct control services* must be a member of 1 or more *tariff classes*.
- (c) Separate *tariff classes* must be constituted for *retail customers* to whom *standard control services* are supplied and *retail customers* to whom *alternative control services* are supplied (but a *retail customer* for both *standard control services* and *alternative control services* may be a member of 2 or more *tariff classes*).
- (d) A *tariff class* must be constituted with regard to:
 - (1) the need to group *retail customers* together on an economically efficient basis; and
 - (2) the need to avoid unnecessary transaction costs.

6.18.4 Principles governing assignment or re-assignment of retail customers to tariff classes and assessment and review of basis of charging

- (a) In formulating provisions of a distribution determination governing the assignment of *retail customers* to *tariff classes* or the re-assignment of *retail customers* from one *tariff class* to another, the *AER* must have regard to the following principles:
- (1) *retail customers* should be assigned to *tariff classes* on the basis of one or more of the following factors:
 - (i) the nature and extent of their usage;
 - (ii) the nature of their *connection* to the *network*;
 - (iii) whether remotely-read interval metering or other similar metering technology has been installed at the *retail customer's* premises as a result of a *regulatory obligation or requirement*;
 - (2) *retail customers* with a similar *connection* and usage profile should be treated on an equal basis;
 - (3) however, *retail customers* with micro-generation facilities should be treated no less favourably than *retail customers* without such facilities but with a similar load profile;
 - (4) a *Distribution Network Service Provider's* decision to assign a customer to a particular *tariff class*, or to re-assign a customer from one *tariff class* to another should be subject to an effective system of assessment and review.

Note:

If (for example) a customer is assigned (or reassigned) to a *tariff class* on the basis of the customer's actual or assumed *maximum demand*, the system of assessment and review should allow for the reassignment of a customer who demonstrates a reduction or increase in *maximum demand* to a *tariff class* that is more appropriate to the customer's *load* profile.

- (b) If the *charging parameters* for a particular tariff result in a basis of charge that varies according to the usage or load profile of the customer, a distribution determination must contain provisions for an effective system of assessment and review of the basis on which a customer is charged.

6.18.5 Pricing principles

Network pricing objective

- (a) The *network pricing objective* is that the tariffs that a *Distribution Network Service Provider* charges in respect of its provision of *direct control services* to a *retail customer* should reflect the *Distribution Network Service Provider's* efficient costs of providing those services to the *retail customer*.

Application of the pricing principles

- (b) Subject to paragraph (c), a *Distribution Network Service Provider's* tariffs must comply with the pricing principles set out in paragraphs (e) to (j).

- (c) A *Distribution Network Service Provider's* tariffs may vary from tariffs which would result from complying with the pricing principles set out in paragraphs (e) to (g) only:
 - (1) to the extent permitted under paragraph (h); and
 - (2) to the extent necessary to give effect to the pricing principles set out in paragraphs (i) to (j).
- (d) A *Distribution Network Service Provider* must comply with paragraph (b) in a manner that will contribute to the achievement of the *network pricing objective*.

Pricing principles

- (e) For each *tariff class*, the revenue expected to be recovered must lie on or between:
 - (1) an upper bound representing the stand alone cost of serving the *retail customers* who belong to that class; and
 - (2) a lower bound representing the avoidable cost of not serving those *retail customers*.
- (f) Each tariff must be based on the *long run marginal cost* of providing the service to which it relates to the *retail customers* assigned to that tariff with the method of calculating such cost and the manner in which that method is applied to be determined having regard to:
 - (1) the costs and benefits associated with calculating, implementing and applying that method as proposed;
 - (2) the additional costs likely to be associated with meeting demand from *retail customers* that are assigned to that tariff at times of greatest utilisation of the relevant part of the *distribution network*; and
 - (3) the location of *retail customers* that are assigned to that tariff and the extent to which costs vary between different locations in the *distribution network*.
- (g) The revenue expected to be recovered from each tariff must:
 - (1) reflect the *Distribution Network Service Provider's* total efficient costs of serving the *retail customers* that are assigned to that tariff;
 - (2) when summed with the revenue expected to be received from all other tariffs, permit the *Distribution Network Service Provider* to recover the expected revenue for the relevant services in accordance with the applicable distribution determination for the *Distribution Network Service Provider*; and
 - (3) comply with sub-paragraphs (1) and (2) in a way that minimises distortions to the price signals for efficient usage that would result from tariffs that comply with the pricing principle set out in paragraph (f).
- (h) A *Distribution Network Service Provider* must consider the impact on *retail customers* of changes in tariffs from the previous *regulatory year* and may vary tariffs from those that comply with paragraphs (e) to (g) to the extent

the *Distribution Network Service Provider* considers reasonably necessary having regard to:

- (1) the desirability for tariffs to comply with the pricing principles referred to in paragraphs (f) and (g), albeit after a reasonable period of transition (which may extend over more than one *regulatory control period*);
 - (2) the extent to which *retail customers* can choose the tariff to which they are assigned; and
 - (3) the extent to which *retail customers* are able to mitigate the impact of changes in tariffs through their usage decisions.
- (i) The structure of each tariff must be reasonably capable of being understood by *retail customers* that are assigned to that tariff, having regard to:
- (1) the type and nature of those *retail customers*; and
 - (2) the information provided to, and the consultation undertaken with, those *retail customers*.
- (j) A tariff must comply with the *Rules* and all *applicable regulatory instruments*.

6.18.6 Side constraints on tariffs for standard control services

- (a) This clause applies only to *tariff classes* related to the provision of *standard control services*.
- (b) The expected weighted average revenue to be raised from a *tariff class* for a particular *regulatory year* of a *regulatory control period* must not exceed the corresponding expected weighted average revenue for the preceding *regulatory year* in that *regulatory control period* by more than the permissible percentage.
- (c) The permissible percentage is the greater of the following:
- (1) the CPI-X limitation on any increase in the *Distribution Network Service Provider's* expected weighted average revenue between the two *regulatory years* plus 2%;

Note:
The calculation is of the form $(1 + \text{CPI})(1 - X)(1 + 2\%)$
 - (2) CPI plus 2%.

Note:
The calculation is of the form $(1 + \text{CPI})(1 + 2\%)$
- (d) In deciding whether the permissible percentage has been exceeded in a particular *regulatory year*, the following are to be disregarded:
- (1) the recovery of revenue to accommodate a variation to the distribution determination under rule 6.6 or 6.13;
 - (2) the recovery of revenue to accommodate pass through of *designated pricing proposal charges* to *retail customers*;

- (3) the recovery of revenue to accommodate pass through of *jurisdictional scheme amounts* for *approved jurisdictional schemes*.

(e) **[Deleted]**.

6.18.7 Recovery of designated pricing proposal charges

- (a) A *pricing proposal* must provide for tariffs designed to pass on to *retail customers* the *designated pricing proposal charges* to be incurred by the *Distribution Network Service Provider*.
- (b) The amount to be passed on to *retail customers* for a particular *regulatory year* must not exceed the estimated amount of the *designated pricing proposal charges* adjusted for over or under recovery in accordance with paragraph (c).
- (c) The over and under recovery amount must be calculated in a way that:
 - (1) subject to subparagraphs (2) and (3) below, is consistent with the method determined by the *AER* in the relevant distribution determination for the *Distribution Network Service Provider*;
 - (2) ensures a *Distribution Network Service Provider* is able to recover from *retail customers* no more and no less than the *designated pricing proposal charges* it incurs; and
 - (3) adjusts for an appropriate cost of capital that is consistent with the *allowed rate of return* used in the relevant distribution determination for the relevant *regulatory year*.
- (d) Notwithstanding anything else in this clause 6.18.7, a *Distribution Network Service Provider* may not recover charges under this clause to the extent these are:
 - (1) recovered through the *Distribution Network Service Provider's annual revenue requirement*;
 - (2) recovered under clause 6.18.7A; or
 - (3) recovered from another *Distribution Network Service Provider*.
- (e) Notwithstanding anything else in this clause 6.18.7, a *Distribution Network Service Provider* must provide for a charge applicable to each *system strength connection point* for which it is the *Network Service Provider* to recover from the relevant *Distribution Network User*, on a pass through basis as described in clause 6.20.3A, the *annual system strength charges* for the *system strength connection point* determined by the relevant *System Strength Service Provider*.

...

Part J Billing and Settlements

6.20 Billing and Settlements Process

This ~~clause~~rule describes the manner in which *Distribution Customers* and *Embedded Generators* are billed by *Distribution Network Service Providers* for *distribution services* and to pass through system strength charges and how

payments for *distribution services* [and pass through of system strength charges](#) 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*:
 - (i) by applying the charge for *entry service* as a fixed annual charge to each *Embedded Generator*; 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 half-hourly 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
 - (2) *Market Customer*; and
 - (3) *Second-Tier 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*, *Market Customers* and *Second-Tier Customers* with *connection points* that have a type 1, 2, 3 or 4 *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*, *Market Customers* and *Second-Tier Customers* with *connection points* that have a type 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) *Non-Registered Customers*; and
 - (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 *Non-Registered Customers* and *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.

6.20.2 Minimum information to be provided in distribution network service bills

- (a) The following is the minimum information that must be provided with a bill for a *network coupling point* issued by a *Distribution Network Service Provider* directly to a *Registered Participant*:

- (1) the *network coupling point* identifier; and
 - (2) the dates on which the billing period starts and ends; and
 - (3) the identifier of the *distribution service* price from which the *network coupling point* charges are calculated; and
 - (4) measured quantities, billed quantities, prices and amounts charged for each component of the total *distribution service* account.
- (b) In addition to the minimum information requirements in paragraph (a), a bill for a *network coupling point* issued by a *Distribution Network Service Provider* directly to another *Distribution Network Service Provider* must separately identify the component of *designated pricing proposal services*, if any, to which each amount charged in the bill relates.

6.20.3 Settlement between Distribution Network Service Providers

The billing and settlement process specified in this clause must be applied to all *Distribution Customers* including other *Distribution Network Service Providers*.

6.20.3A Billing to recover system strength charges

- (a) A *Distribution Network Service Provider* must bill *Distribution Network Users* at *system strength connection points* on its *distribution network* to pass through *system strength charges* in accordance with this clause.
- (b) The *Distribution Network Service Provider* must bill the *Distribution Network User* on a pass through basis so that the amount, structure and timing of the amount billed by the *Distribution Network Service Provider* replicates as far as is reasonably practicable the amount, structure and timing of the corresponding *system strength charge* billed to the *Distribution Network Service Provider* by the relevant *System Strength Service Provider*.
- (c) A bill for charges to recover *system strength charges* from a *Distribution Network User* must be issued to the relevant *Distribution Network User* and must identify the *system strength connection point* and provide other information required by the *Distribution Network User* to verify the charge.
- (d) To avoid doubt, charges to recover *system strength charges* from *Distribution Network Users* billed in accordance with this clause are not *network charges* within the meaning of clause 6B.A1.2.

6.20.4 Obligation to pay

A *Distribution Network User* must pay *distribution service charges* and charges to recover *system strength charges* properly charged to it and billed in accordance with this clause by the due date specified in the bill.

Part K Prudential requirements, capital contributions and prepayments

CHAPTER 6A

DRAFT DETERMINATION VERSION (ERC0300)

Indicative markup of the National Electricity Rules showing changes made by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021.

Note: This is an indicative consolidated version of the National Electricity Rules as amended by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021. It includes a markup of amendments made to relevant extracts of Chapters 4, 5, 5A, 6, 6A and 10 of version 159 of the National Electricity Rules. Only extracts of the relevant Chapters are provided in order to reduce the size of the document. Complete and current versions of the official NER should be viewed on the AEMC's website.

This document is provided for information purposes only. The Australian Energy Market Commission does not guarantee the accuracy, reliability or completeness of this indicative consolidated version of the National Electricity Rules.

6A. Economic Regulation of Transmission Services

...

6A.7.3 Cost pass through

(a1) Any of the following is a *pass through event* for a *transmission determination*:

- (1) a *regulatory change event*;
- (2) a *service standard event*;
- (3) a *tax change event*;
- (4) an *insurance event*;
- (5) any other event specified in a *transmission determination* as a *pass through event* for the determination; and
- (6) an *inertia shortfall event*; ~~and~~

Note

This paragraph (6) does not apply in Victoria (see clause 5.20B.4(a)).

~~(7) — a *fault level shortfall event*.~~

- (a) If a *positive change event* occurs, a *Transmission Network Service Provider* may seek the approval of the *AER* to pass through to *Transmission Network Users* a *positive pass through amount*.
- (b) If a *negative change event* occurs, the *AER* may require the *Transmission Network Service Provider* to pass through to *Transmission Network Users* a *negative pass through amount* as determined by the *AER* under paragraph (g).

Positive pass through

- (c) To seek the approval of the *AER* to pass through a *positive pass through amount*, a *Transmission Network Service Provider* must submit to the *AER*, within 90 *business days* of the relevant *positive change event* occurring, a written statement which specifies:
 - (1) the details of the *positive change event*;
 - (2) the date on which the *positive change event* occurred;
 - (3) the *eligible pass through amount* in respect of that *positive change event*;
 - (4) the *positive pass through amount* the *Transmission Network Service Provider* proposes in relation to the *positive change event*;
 - (5) the amount of the *positive pass through amount* that the *Transmission Network Service Provider* proposes should be passed through to *Transmission Network Users* in the *regulatory year* in which, and each *regulatory year* after that in which, the *positive change event* occurred;
 - (6) evidence:
 - (i) of the actual and likely increase in costs referred to in subparagraph (3); and

- (ii) that such costs occur solely as a consequence of the *positive change event*; and
 - (7) such other information as may be required pursuant to any relevant *regulatory information instrument*.
- (d) If the *AER* determines that a *positive change event* has occurred in respect of a statement under paragraph (c), the *AER* must determine:
 - (1) the *approved pass through amount*; and
 - (2) the amount of that *approved pass through amount* that should be passed through to *Transmission Network Users* in the *regulatory year* in which, and each *regulatory year* after that in which, the *positive change event* occurred,taking into account the matters referred to in paragraph (j).
- (e) Subject to paragraph (1), the *AER* does not make the determinations referred to in paragraph (d) within 40 *business days* from the later of the date it receives the *Transmission Network Service Provider's* statement and accompanying evidence under paragraph (c), and the date it receives any additional information required under paragraph (e1), then, on the expiry of that period, the *AER* is taken to have determined that:
 - (1) the *positive pass through amount* as proposed in the *Transmission Network Service Provider's* statement under paragraph (c) is the *approved pass through amount* in respect of that *positive change event*; and
 - (2) the amount of that *positive pass through amount* that the provider proposes in its statement under paragraph(c) should be passed through to *Transmission Network Users* in the *regulatory year* in which, and each *regulatory year* after that in which, the *positive change event* occurred, is the amount that should be so passed through in each such *regulatory year*.
- (e1) A *Transmission Network Service Provider* must provide the *AER* with such additional information as the *AER* requires for the purpose of making a determination under paragraph (d) within the time specified by the *AER* in a notice provided to the *Transmission Network Service Provider* by the *AER* for that purpose.

Negative pass through

- (f) A *Transmission Network Service Provider* must submit to the *AER*, within 90*business days* of becoming aware of the occurrence of a *negative change event* for the *Transmission Network Service Provider*, a written statement which specifies:
 - (1) the details of the *negative change event* concerned;
 - (2) the date the *negative change event* occurred;
 - (3) the costs in the provision of *prescribed transmission services* that the *Transmission Network Service Provider* has saved and is likely to save as a result of the *negative change event* until:

- (i) unless sub paragraph(ii) applies – the end of the *regulatory control period* in which the *negative change event* occurred; or
 - (ii) if the *transmission determination* for the *regulatory control period* following that in which the *negative change event* occurred does not make any allowance for the pass through of the cost savings - the end of the *regulatory control period* following that in which the *negative change event* occurred;
- (4) the aggregate amount of those saved costs that the *Transmission Network Service Provider* proposes should be passed through to *Transmission Network Users*;
 - (5) the amount of the costs referred to in subparagraph(4) the *Transmission Network Service Provider* proposes should be passed through to *Transmission Network Users* in the *regulatory year* in which, and each *regulatory year* after that in which, the *negative change event* occurred; and
 - (6) such other information as may be required pursuant to any relevant *regulatory information instrument*.
- (f1) If the occurrence of the *negative change event* is not notified by the *Transmission Network Service Provider* to the *AER* under paragraph (f) then, as soon as is reasonably practicable and before making a determination referred to in paragraph (g), the *AER* must notify the *Transmission Network Service Provider* of the occurrence of that *negative change event*.
- (g) If a *negative change event* occurs (whether or not the occurrence of that *negative change event* is notified by the provider to the *AER* under paragraph (f) and the *AER* determines to impose a requirement on the *Transmission Network Service Provider* in relation to that *negative change event* as described in paragraph (b), the *AER* must determine:
- (1) the *required pass through amount*; and
 - (2) taking into account the matters referred to in paragraph (j):
 - (i) how much of that required pass through amount should be passed through to *Transmission Network Users* (the *negative pass through amount*); and
 - (ii) the amount of that *negative pass through amount* that should be passed through to *Transmission Network Users* in the *regulatory year* in which, and each *regulatory year* after that in which, the *negative change event* occurred.
- (g1) Subject to paragraph (l), if the *AER* does not make the determinations referred to in paragraph (g) within 40 *business days* from:
- (1) where the *Transmission Network Service Provider* notifies the *AER* of the occurrence of the *negative change event* under paragraph (f) - the later of the date the *AER* receives the *Transmission Network Service Provider's* statement under paragraph (f) and the date the *AER* receives any information required by the *AER* under paragraph (h); or
 - (2) where the *Transmission Network Service Provider* does not notify the *AER* of the occurrence of the *negative change event* under paragraph (f)

– the later of the date the *AER* notifies the *Transmission Network Service Provider* under paragraph (g1) and the date the *AER* receives any information required by the *AER* under paragraph (h),

then the *AER* is taken to have determined that the required pass through amount is zero.

- (h) A *Transmission Network Service Provider* must provide the *AER* with such information as the *AER* requires for the purpose of making a determination under paragraph (g) within the time specified by the *AER* in a notice provided to the *Transmission Network Service Provider* by the *AER* for that purpose.

Consultation

- (i) Before making a determination under paragraph (d) or (g), the *AER* may consult with the relevant *Transmission Network Service Provider* and such other persons as the *AER* considers appropriate, on any matters arising out of the relevant *pass through event* as the *AER* considers appropriate.

Relevant factors

- (j) In making a determination under paragraph (d) or (g) in respect of a *Transmission Network Service Provider*, the *AER* must take into account:
- (1) the matters and proposals set out in any statement given to the *AER* by the *Transmission Network Service Provider* under paragraphs (c) or (f) (as the case may be);
 - (2) in the case of a *positive change event*, the increase in costs in the provision of *prescribed transmission services* that, as a result of the *positive change event*, the *Transmission Network Service Provider* has incurred and is likely to incur until:
 - (i) unless subparagraph(ii) applies – the end of the *regulatory control period* in which the *positive change event* occurred; or
 - (ii) if the *transmission determination* for the *regulatory control period* following that in which the *positive change event* occurred does not make any allowance for the recovery of that increase in costs – the end of the *regulatory control period* following that in which the *positive change event* occurred;
 - (2A) in the case of a *negative change event*, the costs in the provision of *prescribed transmission services* that, as a result of the *negative change event*, the *Transmission Network Service Provider* has saved and is likely to save until:
 - (i) unless subparagraph(ii) applies – the end of the *regulatory control period* in which the *negative change event* occurred; or
 - (ii) if the *transmission determination* for the *regulatory control period* following that in which the *negative change event* occurred does not make any allowance for the pass through of those cost savings to *Transmission Network Users* – the end of the *regulatory control period* following that in which the *negative change event* occurred;

- (3) in the case of a *positive change event*, the efficiency of the provider's decisions and actions in relation to the risk of the *positive change event*, including whether the provider has failed to take any action that could reasonably be taken to reduce the magnitude of the *eligible pass through amount* in respect of that *positive change event* and whether the provider has taken or omitted to take any action where such action or omission has increased the magnitude of the amount in respect of that *positive change event*;
- (4) the time cost of money based on the *allowed rate of return* for the *Transmission Network Service Provider* for the *regulatory control period* in which the *pass through event* occurred;
- (5) the need to ensure that the *Transmission Network Service Provider* only recovers any actual or likely increment in costs under this paragraph (j) to the extent that such increment is solely as a consequence of a *pass through event*;
- (6) in the case of a *tax change event*, any change in the way another *tax* is calculated, or the removal or imposition of another *tax*, which, in the *AER's* opinion, is complementary to the *tax change event* concerned;
- (6A) whether the costs of the *pass through event* have already been factored into the calculation of the provider's *maximum allowed revenues* for the *regulatory control period* in which the *pass through event* occurred or will be factored into the calculation of the provider's *maximum allowed revenues* for a subsequent *regulatory control period*;
- (6B) the extent to which the costs that the *Transmission Network Service Provider* has incurred and is likely to incur are the subject of a previous determination made by the *AER* under this clause 6A.7.3; and
- (7) any other factors the *AER* considers relevant

Extension of time limits

- (k) The *AER* must, by written notice to a *Transmission Network Service Provider*, extend a time limit fixed in paragraph (c) or (f) if the *AER* is satisfied that the difficulty of assessing or quantifying the effect of the relevant *pass through event* justifies the extension.
- (l) If the *AER* is satisfied that the making of a determination under paragraph (d) or (g) involves issues of such complexity or difficulty that the time limit fixed in paragraph (e) or (g1) should be extended, the *AER* may extend that time limit by a further period of up to 60 *business days*, provided that it gives written notice to the *Transmission Network Service Provider* of that extension not later than 10 *business days* before the expiry of that time limit.
- (m) If the *AER* extends a time limit under paragraph (l), it must make available on its website a notice of that extension as soon as is reasonably practicable.
- (n) Subject to paragraph (q), if the *AER* gives a written notice to the *Transmission Network Service Provider* stating that it requires information from an *Authority* in order to make a determination under paragraph (d) or (g) then, for the purpose of calculating elapsed time, the period between when the *AER*

gives that notice to the *Transmission Network Service Provider* and when the *AER* receives that information from that *Authority* is to be disregarded.

- (o) Subject to paragraph (q), if the *AER* gives a written notice to the *Transmission Network Service Provider* stating that, in order to make a determination under paragraph (d) or (g), it requires information that it anticipates will be made publicly available by a judicial body or royal commission then, for the purpose of calculating elapsed time, the period between when the *AER* gives that notice to the *Transmission Network Service Provider* and when that information is made publicly available is to be disregarded.
- (p) Where the *AER* gives a notice to the *Transmission Network Service Provider* under paragraph (n) or (o), it must:
 - (1) as soon as reasonably practicable make available on its website a notice stating when the period referred to in paragraph (n) or (o), as the case may be, has commenced;
 - (2) as soon as is reasonably practicable make available on its website a notice stating when the period referred to in paragraph (n) or (o), as the case may be, has ended; and
 - (3) if the information specified in that notice is required from an *Authority*, promptly request that information from the relevant *Authority*.
- (q) Paragraphs (n) and (o) do not apply if the *AER* gives the notice specified in those paragraphs to the *Transmission Network Service Provider* later than 10 *business days* before the expiry of the time limit fixed in paragraphs (e) or (g1).

Part D [Deleted]

Part E Procedure - Revenue determinations and pricing methodologies

...

6A.15 Revocation of revenue determination or amendment of pricing methodology for wrong information or error

- (a) The *AER* may (but is not required to) revoke a *revenue determination* or amend an existing *pricing methodology* during a *regulatory control period* if it appears to the *AER* that the *revenue determination* or *pricing methodology* is affected by a material error or deficiency of one or more of the following kinds:
 - (1) a clerical error or an accidental slip or omission;
 - (2) a miscalculation or misdescription;
 - (3) a defect in form; or
 - (4) a deficiency resulting from the provision of false or materially misleading information to the *AER*.
- (b) If the *AER* revokes a *revenue determination* under paragraph (a), the *AER* must make a new *revenue determination* in substitution for the revoked

revenue determination to apply for the remainder of the *regulatory control period* for which the revoked *revenue determination* was to apply.

- (c) If the *AER* revokes and substitutes a *revenue determination* under paragraphs (a) and (b), the substituted *revenue determination* must only vary from the revoked *revenue determination* to the extent necessary to correct the relevant error or deficiency.
- (d) If the *AER* amends a *pricing methodology* under paragraph (a), the amended methodology applies to the setting of prices for the next *financial year* and for the remainder of the relevant *regulatory control period* or in the case of a change to the methodology for setting the system strength charge, for the next regulatory year and the remaining regulatory years in the system strength charging period.
- (e) If the *AER* amends a *pricing methodology* under paragraph (a), the amended methodology must only vary from the existing *pricing methodology* to the extent necessary to correct the relevant error or deficiency.
- (f) The *AER* may only revoke and substitute a *revenue determination* or amend a *pricing methodology* under this rule 6A.15, if it has first consulted with the relevant *Transmission Network Service Provider* and such other persons as it considers appropriate.

Part J Prescribed Transmission Services - Regulation of Pricing

6A.22 Terms used in Part J

6A.22.1 Aggregate annual revenue requirement (AARR)

For the purposes of this Part J, the *aggregate annual revenue requirement (AARR)* for *prescribed transmission services* provided by a *Transmission Network Service Provider*, is the *maximum allowed revenue* referred to in clause 6A.3.1 adjusted:

- (1) in accordance with clause 6A.3.2;
- (2) by subtracting the operating and maintenance costs expected to be incurred in the provision of *prescribed common transmission services*; and
- (3) by any allocation as agreed between *Transmission Network Service Providers* in accordance with clause 6A.29.3.

6A.22.2 Annual service revenue requirement (ASRR)

For the purposes of this Part J, the *annual service revenue requirement (ASRR)* for a *Transmission Network Service Provider* is the portion of the *AARR* for *prescribed transmission services* provided by a *Transmission Network Service Provider* that is allocated to each category of *prescribed transmission services* for that *Transmission Network Service Provider* and that is calculated by multiplying the *AARR* by the *attributable cost share* for that category of services and making any applicable adjustments in accordance with the principles in clause 6A.23.2.

6A.22.3 Meaning of attributable cost share

- (a) For a *Transmission Network Service Provider* for a *category of prescribed transmission services*, the *attributable cost share* for that *Transmission*

Network Service Provider for that category of services must, subject to any adjustment required or approved, under this Part, substantially reflect the ratio of:

- (1) the costs of the *transmission system* assets directly attributable to the provision of that *category of prescribed transmission services*; to
 - (2) the total costs of all the *Transmission Network Service Provider's transmission system* and any other *transmission system* assets directly attributable to the provision of *prescribed transmission services*.
- (b) The costs of the *transmission system* assets referred to in paragraph (a) refers to optimised replacement cost or to an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the *Transmission Network Service Provider*.

6A.22.4 Meaning of attributable connection point cost share

- (a) For a *Transmission Network Service Provider* for *prescribed entry services* and *prescribed exit services*, the *attributable connection point cost share* for that *Transmission Network Service Provider* for each of those categories of services must substantially reflect the ratio of:
- (1) the costs of the *transmission system* assets directly attributable to the provision of *prescribed entry services* or *prescribed exit services*, respectively, at a *transmission network connection point*; to
 - (2) the total costs of all the *Transmission Network Service Provider's transmission system* assets directly attributable to the provision of *prescribed entry services* or *prescribed exit services*, respectively.
- (b) The costs of the *transmission system* assets referred to in paragraph (a) refers to optimised replacement cost or to an accepted equivalent to optimised replacement cost that is referable to values contained in the accounts of the *Transmission Network Service Provider*.

6A.23 Pricing Principles for Prescribed Transmission Services

6A.23.1 Introduction

- (a) This rule 6A.23 sets out the principles that constitute the *Pricing Principles for Prescribed Transmission Services*.
- (b) The *Pricing Principles for Prescribed Transmission Services* are given effect by *pricing methodologies*.

6A.23.2 Principles for the allocation of the aggregate annual revenue requirement

The *aggregate annual revenue requirement* for *prescribed transmission services* provided by a *Transmission Network Service Provider* is to be allocated in accordance with the following principles:

- (a) The *AARR* for a *Transmission Network Service Provider* must be allocated to each *category of prescribed transmission services* in accordance with the *attributable cost share* for each such category of services.

- (b) This allocation results in the *annual service revenue requirement (ASRR)* for that category of services.
- (c) The allocation of the *AARR* must be such that:
 - (1) every portion of the *AARR* is allocated; and
 - (2) the same portion of the *AARR* is not allocated more than once.
- (d) Where, as a result of the application of the *attributable cost share*, a portion of the *AARR* would be attributable to more than one category of *prescribed transmission services*, that *attributable cost share* is to be adjusted and applied such that any costs of a *transmission system* asset that would otherwise be attributed to the provision of more than one category of *prescribed transmission services*, is allocated as follows:
 - (1) to the provision of *prescribed TUOS services*, but only to the extent of the *stand-alone amount* for that *category of prescribed transmission services*;
 - (2) if any portion of the costs of a *transmission system* asset is not allocated to *prescribed TUOS services*, under subparagraph (1), that portion is to be allocated to *prescribed common transmission services*, but only to the extent of the *stand-alone amount* for that *category of prescribed transmission services*;
 - (3) if any portion of the costs of a *transmission system* asset is not attributed to *prescribed transmission services* under subparagraphs (1) and (2), that portion is to be attributed to *prescribed entry services* and/or *prescribed exit services*.
- (e) In the case of a *Transmission Network Service Provider* who is a *System Strength Service Provider*:
 - (1) the *annual service revenue requirement* for *prescribed TUOS services* calculated in accordance with the principles in this clause must be adjusted by subtracting the *Transmission Network Service Provider's* forecast of its *annual system strength revenue* made in accordance with clause 6A.23.3A(a)(1); and
 - (2) a reference to the *annual service revenue requirement* or *ASRR* for *prescribed TUOS services* for that *Transmission Network Service Provider* is taken to be a reference to the amount adjusted in accordance with paragraph (e)(1).

6A.23.3 Principles for the allocation of the annual service revenue requirement to connection points

The allocation of the *annual service revenue requirement* of a *Transmission Network Service Provider* for each *category of prescribed transmission services* to the relevant *connection points* (other than the *connection points* of any *Market Network Service Provider*), and the manner and sequence in which adjustments can be made to those allocations, for the relevant *regulatory year* to which the *maximum allowed revenue* relates, must be in accordance with the following principles:

- (a) The *annual service revenue requirement* for *prescribed TUOS services* is to be allocated between a locational component (*pre-adjusted locational*

component) and a non-locational component (*pre-adjusted non-locational component*) either:

- (1) as to 50% to each component; or
 - (2) an alternative allocation to each component, that is based on a reasonable estimate of future *network* utilisation and the likely need for future *transmission* investment, and that has the objective of providing more efficient locational signals to *Market Participants*, *Intending Participants* and end users.
- (b) Subject to paragraph (d), the *pre-adjusted locational component* is to be adjusted by:
- (1) subtracting any amount estimated as proceeds from *auctions* or any portion of *settlements residue* allocated to the *directional interconnector* which is not the subject of a *SRD agreement* estimated to be receivable by the *Transmission Network Service Provider* from the *connection points* for each relevant *directional interconnector* as referred to in clause 3.18.4, with that amount including an adjustment calculated in accordance with paragraph (f); and
 - (2) adding or subtracting the amount estimated by the *Co-ordinating Network Service Provider* for the *modified load export charge* receivable by or payable to the *Transmission Network Service Provider* under clause 6A.29A.5, with that amount including an adjustment calculated in accordance with paragraph (f),
- (the *adjusted locational component*).
- (c) If the *adjusted locational component* is a positive amount, it is to be allocated to *transmission network connection points* of *Transmission Customers* on the basis of their proportionate use of the relevant *transmission system* assets. The *CRNP methodology* and the *modified CRNP methodology* are two permitted methodologies to estimate the proportionate use of the relevant *transmission system* assets as referred to in paragraph (b).
- (d) If the *adjusted locational component* is a negative amount, then the *adjusted locational component* will be deemed to be zero and the absolute value of that negative amount is to be subtracted from the *pre-adjusted non-locational component* under subparagraph (e)(1).
- (e) The *pre-adjusted non-locational component* is to be adjusted by:
- (1) subtracting the absolute value of the amount (if any) referred to in paragraph (d);
 - (2) adding or subtracting any amount for *settlements residue* (not being any *auction* amount referred to in subparagraph (b)(1), but including any amount of *settlements residue* due to *intra-regional loss factors*) estimated to be receivable by or payable to the *Transmission Network Service Provider* in accordance with clause 3.6.5(a)(3);
 - (3) adding or subtracting any adjustment arising as a result of the application of clauses 6A.23.4(c) and (d);
 - (4) adding or subtracting any amount arising as a result of the application of prudent discounts (if any) under clauses 6A.26.1(d) to (g);

- (5) adding or subtracting any *over-recovery amount* or *under-recovery amount*, with that amount including an adjustment calculated in accordance with paragraph (f); ~~and~~
- (6) adding the amount of *NTP function* fees advised to the *Co-ordinating Network Service Provider* in accordance with clause 2.11.3(ba); ~~and~~
- (7) adding or subtracting any adjustment arising as a result of the application of clause 6A.23.3A(b),
(the *adjusted non-locational component*).
- (f) The adjustment referred to in subparagraphs (b)(1), (b)(2) and (e)(5) must be calculated as the sum of:
- (1) the difference between:
- (i) the estimated amount payable or receivable for a service (or component of a service) referred to in subparagraphs (b)(1), (b)(2) and (e)(5) in year $t - 1$; and
- (ii) the amount actually payable or receivable for that service (or that component of service) in year $t - 1$;
- (2) the difference between:
- (i) the actual amount payable or receivable for that service (or that component of service) in year $t - 2$; and
- (ii) the estimate of the amount payable or receivable for that service (or component of a service) in year $t - 2$ that was used for the purposes of clause (f)(1)(i) in accordance with the *Co-ordinating Network Service Provider's* or the *Transmission Network Service Provider's* (as the case may be) *pricing methodology* that applied in year $t - 1$; and
- (3) grossed up on the basis of the *allowed rate of return* that applies to the *Transmission Network Service Provider* at the time when the further adjustment is to be made.
- (g) For the purposes of paragraph (f):

"year t " means the *regulatory year* in which adjustments are made under paragraph (f).

"year $t - 1$ " means the *regulatory year* immediately prior to year t or, where year t is the first year of a *regulatory control period*, the last *regulatory year* of the previous *regulatory control period*.

"year $t - 2$ " means the *regulatory year* immediately prior to year $t - 1$ or, where year t is the:

- (1) first year of a *regulatory control period*, the penultimate *regulatory year* of the previous *regulatory control period*; and

- (2) second year of a *regulatory control period*, the last *regulatory year* of the previous *regulatory control period*.
- (h) The *annual service revenue requirement* for *prescribed common transmission services* is to be adjusted by adding the operating and maintenance costs incurred in the provision of those services (to the extent that those costs were subtracted from the *maximum allowed revenue* in accordance with clause 6A.22.1).
- (i) The whole of the *annual service revenue requirement* for *prescribed entry services* is to be allocated to *transmission network connection points* (other than *connection points* of any *Market Network Service Provider*) in accordance with the *attributable connection point cost share* for *prescribed entry services* that are provided by the *Transmission Network Service Provider* at that *connection point*.
- (j) The whole of the *annual service revenue requirement* for *prescribed exit services* is to be allocated to *transmission network connection points* (other than *connection points* of any *Market Network Service Provider*) in accordance with the *attributable connection point cost share* for *prescribed exit services* that are provided by the *Transmission Network Service Provider* at that *connection point*.

6A.23.3A Forecast annual system strength revenue and system strength revenue adjustment for a System Strength Service Provider.

- (a) A Transmission Network Service Provider who is a System Strength Service Provider must determine:
- (1) a forecast of its annual system strength revenue for year t applying the principles in the pricing methodology guidelines;
 - (2) a forecast of its actual annual system strength revenue for year t-1 applying the principles in the pricing methodology guidelines; and
 - (3) its actual annual system strength revenue for year t-2.
- (b) For year t, the pre-adjusted non-locational component is to be adjusted by calculating the following adjustment amount and (if positive) adding the adjustment amount or (if negative) subtracting the absolute value of the adjustment amount:
- (1) the forecast annual system strength revenue for year t-1 less the forecast actual annual system strength revenue for year t-1; plus
 - (2) the forecast actual annual system strength revenue for year t-2 less the actual annual system strength revenue for year t-2; then
 - (3) grossed up on the basis of the allowed rate of return that applies to the Transmission Network Service Provider at the time when the adjustment is made.
- (c) For the purposes of paragraph (b):

<u>actual annual system strength revenue</u>	<u>means for a regulatory year, the actual annual system strength revenue for the regulatory year calculated at the time of setting prices in March of the year after the relevant regulatory year ends;</u>
<u>forecast annual system strength revenue</u>	<u>means for a regulatory year, the Transmission Network Services Provider's forecast of system strength revenue determined in accordance with clause 6A.23.3A(a)(1) and deducted under clause 6A.23.2(e)(1);</u>
<u>forecast actual annual system strength revenue</u>	<u>means for a regulatory year, the forecast of actual annual system strength revenue for the regulatory year made at the time of setting prices in March of the year before the relevant regulatory year starts;</u>
<u>"year t"</u>	<u>means the regulatory year for which the adjustments are being determined;</u>
<u>"year t - 1"</u>	<u>means the regulatory year immediately prior to year t or, where year t is the first year of a regulatory control period, the last regulatory year of the previous regulatory control period; and</u>
<u>"year t - 2"</u>	<u>means the regulatory year immediately prior to year t - 1 or, where year t is:</u> <u>(1) the first year of a regulatory control period, the penultimate regulatory year of the previous regulatory control period; or</u> <u>(2) the second year of a regulatory control period, the last regulatory year of the previous regulatory control period.</u>

6A.23.4 Principles for the recovery of the Annual Service Revenue Requirement as prices

The recovery of the *annual service revenue requirement* for a *Transmission Network Service Provider* as prices for *Transmission Customers* (but not *Market Network Service Providers*) for the relevant *regulatory year* to which the *maximum allowed revenue* relates, must be made in accordance with the following principles:

- (a) The *Transmission Network Service Provider* must have separate prices for:
- (1) *prescribed TUOS services – adjusted locational component;*
 - (2) *prescribed TUOS services – adjusted non-locational component;*
 - (3) *prescribed common transmission services;*
 - (4) *prescribed entry services; and*
 - (5) *prescribed exit services; and*
 - (6) *system strength transmission services.*

- (b) Prices for recovering the *prescribed TUOS services - adjusted locational component*:
- (1) must be based on demand at times of greatest utilisation of the *transmission network* by *Transmission Customers* and for which *network* investment is most likely to be contemplated;
 - (2) subject to subparagraph (3) below, must not change by more than 2% on a *load* weighted average basis for the relevant *region* compared with the previous *regulatory year*; and
 - (3) are not subject to the limitation in subparagraph (2):
 - (i) to the extent that the change in prices relate to the adjusted *modified load export charge* as referred to in clause 6A.23.3(b)(2); or
 - (ii) if, since the commencement of the previous *regulatory year*:
 - (A) the *load* at the *connection point* has materially altered;
 - (B) in connection with that alteration, the *Transmission Customer* requested a renegotiation of its *connection agreement* with the *Transmission Network Service Provider*; and
 - (C) the *AER* approved the change.
- (c) If, in the case of an increase in prices for recovering the *prescribed TUOS services - adjusted locational component*, the application of paragraph (b)(2) would result in a shortfall for the *prescribed TUOS services - adjusted locational component*, any shortfall may be recovered by increasing the *prescribed TUOS services - non-locational component* in clause 6A.23.3(e)(3).
- (d) If, in the case of a decrease in prices for recovering the *prescribed TUOS services - adjusted locational component*, the application of paragraph (b)(2) would result in a surplus for the *prescribed TUOS services - adjusted locational component*, any surplus must be offset by decreasing the *prescribed TUOS services - non-locational component* in clause 6A.23.3(e)(3).
- (e) Prices for recovering the *prescribed TUOS services - adjusted non-locational component* must be on a *postage-stamp basis*.
- (f) Prices for recovering *prescribed common transmission services* must be on a *postage-stamp basis*.
- (g) Prices for recovering *prescribed entry services* and *prescribed exit services* must be a fixed annual amount.
- (h) Prices for or in respect of *system strength transmission services* must be determined in accordance with clause 6A.23.5 or clause 6A.23.6, as applicable.

6A.23.5 System strength charge

- (a) This clause applies to a *Transmission Network Service Provider* who is a *System Strength Service Provider*.

(b) In this clause:

system strength charging period means, for a *System Strength Service Provider*, each period running from the start of the second *regulatory year* in a *regulatory control period* of the *System Strength Service Provider* to the end of the first *regulatory year* in the next *regulatory control period* of the *System Strength Service Provider*.

(c) The pricing methodology of a Transmission Network Service Provider who is a System Strength Service Provider must provide for the System Strength Transmission Service User for a system strength connection point to pay an annual system strength charge for the system strength connection point determined in accordance with this rule, in equal monthly instalments from the time determined in accordance with the pricing methodology guidelines.

(d) If the obligation to pay the system strength charge in relation to a system strength connection point commences part way through a regulatory year, the System Strength Service Provider must calculate the monthly instalments of the annual system strength charge for the remaining months of the regulatory year on a pro rata basis.

(e) The annual system strength charge for a system strength connection point for a regulatory year must be calculated in accordance with the following formula:

$$SSC = SSUP \times SSL \times SSQ$$

where:

SSC is the *annual system strength charge for the regulatory year (in \$)*;

SSUP is the *system strength unit price of the System Strength Service Provider for the system strength charging period in which the regulatory year falls (in \$/MVA) and for the system strength node used to determine the system strength locational factor for the system strength connection point*;

SSL is the *system strength locational factor applicable to the system strength connection point for the system strength charging period in which the regulatory year falls, determined in accordance with paragraph (h); and*

SSQ is the *system strength quantity for the system strength connection point, determined in accordance with paragraph (j) (in MVA).*

(f) The system strength unit price of a System Strength Service Provider for a system strength node must be the same for each regulatory year in a system strength charging period except to the extent the pricing methodology guidelines permit indexation.

(g) A System Strength Service Provider must determine the system strength node used to determine the system strength locational factor for a system strength

connection point in accordance with the system strength impact assessment guidelines.

- (h) The system strength locational factor applicable to a system strength connection point is determined by the Network Service Provider for the system strength connection point. Where:
- (1) the System Strength Service Provider is also the Network Service Provider for the system strength connection point, the System Strength Service Provider must calculate the system strength locational factor applicable to each system strength connection point for which it is the Network Service Provider for each year of a system strength charging period in accordance with the system strength impact assessment guidelines; and
 - (2) the System Strength Service Provider is not the Network Service Provider for the system strength connection point, the System Strength Service Provider must in accordance with clause 5.3.4C(c) request the relevant Network Service Provider to calculate and notify to the System Strength Service Provider the system strength locational factor.
- (i) A System Strength Service Provider must not change the system strength locational factor used to calculate the system strength charge for a system strength connection point during a system strength charging period.
- (j) Subject to paragraph (k), the system strength quantity for a system strength connection point is the product of the short circuit ratio and the rated active power, rated power transfer capability or maximum demand for the system strength connection point agreed in accordance with clause S5.2.5.15, clause S5.3.11 or clause S5.3a.7 (as applicable) and recorded in the relevant performance standards for the plant connected at the system strength connection point.
- (k) If a change to the system strength quantity for a system strength connection point comes into effect part way through a regulatory year, the System Strength Service Provider must calculate the monthly instalments of the annual system strength charge for the remaining months of the regulatory year using the new system strength quantity.

6A.23.6 System strength pass through charge

- (a) This clause applies to a Transmission Network Service Provider who is not a System Strength Service Provider.
- (b) The pricing methodology of a Transmission Network Service Provider who is not a System Strength Service Provider must provide for a charge applicable to each system strength connection point on its network to recover from the relevant Transmission Network User, on a pass through basis as described in paragraph (c), the annual system strength charge for the system strength connection point determined by the relevant System Strength Service Provider.
- (c) The amount, structure and timing of the amount billed by the Transmission Network Service Provider to the Transmission Network User must replicate as far as is reasonably practical the amount, structure and timing of the

[corresponding system strength charge billed to the Transmission Network Service Provider.](#)

6A.24 Pricing methodology

6A.24.1 Pricing methodologies generally

- (a) In making a *transmission determination* under Part E of this Chapter 6A, the *AER* must include a decision to approve a proposed *pricing methodology* as part of that *transmission determination*, in accordance with that Part.
- (b) A *pricing methodology* is a methodology, formula, process or approach that, when applied by a *Transmission Network Service Provider* (or a *Co-ordinating Network Service Provider* on behalf of *Transmission Network Service Providers* within a region);
 - (1) allocates the *aggregate annual revenue requirement* for *prescribed transmission services* provided by the *Transmission Network Service Provider* to each *category of prescribed transmission services*;
 - (2) provides for the manner and sequence of adjustments to the *annual service revenue requirement*;
 - (3) allocates the *annual service revenue requirement* to *transmission network connection points* (other than *connection points* of any *Market Network Service Provider*); ~~and~~
 - (4) determines the structure and recovery of prices for each *category of prescribed transmission services* under 6A.23.4(a); [and](#)
 - (5) [for a Transmission Network Service Provider who is a System Strength Service Provider, determines, for each system strength node on its transmission network, the system strength unit price of the System Strength Service Provider for the system strength charging period commencing in the regulatory control period.](#)
- (b1) In addition to complying with any other requirements under this Chapter 6A, the *pricing methodology* of a *Transmission Network Service Provider* that is the *Co-ordinating Network Service Provider* for a *region* must provide for:
 - (1) the allocation of the *AARR* for *prescribed transmission services* provided by *Transmission Network Service Providers* within that *region*, including any allocation of the *AARR* as agreed between *Transmission Network Service Providers* in accordance with clause 6A.29.3;
 - (2) the calculation of *modified load export charges* consistent with clause 6A.29A.2;
 - (3) the allocation of *modified load export charges*:
 - (i) receivable by other *Co-ordinating Network Service Providers* in interconnected regions; and
 - (ii) payable to other *Co-ordinating Network Service Providers* in interconnected regions,

- to each *Transmission Network Service Provider* within its *region* under clause 6A.29A.5; and
- (4) the allocation of proceeds from *auctions* receivable by or payable to the *Transmission Network Service Provider* in its *region* as referred to in clause 6A.23.3(b)(1).
- (c) The *pricing methodology* proposed by a *Transmission Network Service Provider* and approved by the AER in accordance with Part E of this Chapter 6A must:
- (1) give effect to and be consistent with the *Pricing Principles for Prescribed Transmission Services*; and
- (2) comply with the requirements of, and contain or be accompanied by such information as is required by, the *pricing methodology guidelines* made for that purpose under rule 6A.25.
- (d) A *Transmission Network Service Provider* must comply with the *pricing methodology* approved by the AER as part of a *transmission determination* that applies to that *Transmission Network Service Provider*, and any other applicable requirements in the *Rules*, when the *Transmission Network Service Provider* is setting the prices that may be charged for the provision of *prescribed transmission services*.
- (d1) Where this Chapter provides that a matter is to be determined in accordance with the *pricing methodology* of a *Transmission Network Service Provider* who is the *Co-ordinating Network Service Provider* for a *region*, then no other *pricing methodology* applies in relation to that matter.
- (e) Subject to clause 6A.24.3, a *pricing methodology* applies for the duration of the relevant *regulatory control period* (or in the case of the *system strength unit price*, for the *system strength charging period* commencing in the *regulatory control period*).
- (f) Subject to rule 6A.15, a *pricing methodology* may not be amended during the *regulatory control period*.

6A.24.2 Publication of pricing methodology and transmission network prices

A *Transmission Network Service Provider* must publish:

- (a) a current copy of its *pricing methodology* on its website;
- (b) if that *Transmission Network Service Provider* is also a *Co-ordinating Network Service Provider*, details of all *modified load export charges* to apply for the following *financial year* in accordance with the *pricing methodology guidelines* by 15 February each year; ~~and~~
- (c) the prices for each of the *categories of prescribed transmission services* to apply for the following *financial year* by:
- (1) 15 March each year, if the *regulatory year* which commences after that date begins on the commencement of a *financial year*; or
- (2) 15 May each year, if the *regulatory year* which commences after that date does not begin on the commencement of a *financial year*; and
- (d) for a *Transmission Network Service Provider* who is a *System Strength*

Service Provider, the system strength unit price for each system strength node on its transmission network for each regulatory year in the regulatory control period, updated for indexation (if applicable) at the commencement of each regulatory year.

6A.24.3 Basis for setting prices pending approval of pricing methodology

- (a) This clause 6A.24.3 applies where:
- (1) a *Transmission Network Service Provider* has submitted or resubmitted a proposed *pricing methodology* to the *AER* under clause 6A.10.1, 6A.11.2 or 6A.12.3;
 - (2) the *AER* has not made a final decision approving or amending that methodology under rule 6A.13 by a date that is 5 months prior to the commencement of the first *financial year* that a methodology referred to in subparagraph (1) would, if approved, apply (the **first pricing year**); and
 - (3) the *Transmission Network Service Provider* is reasonably required to commence the process of setting prices for the first pricing year.
- (b) Despite clause 6A.24.1(d), a *Transmission Network Service Provider* must set prices for the first pricing year in accordance with:
- (1) in the case where the *AER* has made a draft decision in which it proposes to approve a proposed *pricing methodology* - that proposed *pricing methodology*;
 - (2) if subparagraph (1) does not apply, the *pricing methodology* most recently approved for that *Transmission Network Service Provider* prior to the proposed *pricing methodology* referred to in subparagraph (a)(1);
 - (3) if there is no previously approved *pricing methodology* for that *Transmission Network Service Provider*, the previous method used by the *Transmission Network Service Provider* to establish prices, however determined, must be used in place of an approved *pricing methodology*.
- (c) Despite the *AER* subsequently approving a *pricing methodology* for a *Transmission Network Service Provider*:
- (1) the approved *pricing methodology* applies to the setting of prices for the year after the first pricing year and for the remainder of the relevant *regulatory control period*; and
 - (2) the *Transmission Network Service Provider* is not required to adjust, reverse or recompense any amounts to *Transmission Network Users* or their customers in connection with charges for services established pursuant to this clause 6A.24.3.

6A.24.4 Basis for setting prices pending approval of maximum allowed revenue

- (a) This clause 6A.24.4 applies where:
- (1) a *Transmission Network Service Provider* has submitted or resubmitted a *Revenue Proposal* under clause 6A.10.1, 6A.11.2 or 6A.12.3;

- (2) the *AER* has not made a final decision on that *Revenue Proposal* under rule 6A.13 by a date that is 5 months prior to the commencement of the first *financial year* that a *Revenue Proposal* referred to in subparagraph (1) would, if approved, apply (the **first pricing year**); and
 - (3) the *Transmission Network Service Provider* is reasonably required to commence the process of setting prices for the first pricing year referred to in subparagraph (2)
- (b) Despite any other applicable requirements in the *Rules*, a *Transmission Network Service Provider* may set prices for the first pricing year referred to in clause 6A.24.4(a)(2) in accordance with:
- (1) in the case where the *AER* has made a draft decision in which it proposes to approve the proposed *maximum allowed revenue* for the first pricing year referred to in clause 6A.24.4(a)(2), that proposed *maximum allowed revenue* amount; or
 - (2) in the case where the *AER* has made a draft decision in which it has refused to approve the proposed *maximum allowed revenue* for the first pricing year referred to in clause 6A.24.4(a)(2), the *maximum allowed revenue* for the first pricing year that the *AER* has proposed for that amount in the draft decision made under clause 6A.12.1.
- (c) For the avoidance of doubt, any *over-recovery amount* or *under-recovery amount* arising from the application of this clause 6A.24.4 is to be treated in accordance with clause 6A.23.3(c)(2)(iii).

6A.25 Pricing methodology guidelines for prescribed transmission services

6A.25.1 Making and amending of pricing methodology guidelines

- (a) The *AER* must, in accordance with the *transmission consultation procedures*, make and *publish* guidelines (the *pricing methodology guidelines*) relating to the preparation by a *Transmission Network Service Provider* of a proposed *pricing methodology*.
- (b) The *pricing methodology guidelines* must give effect to, and be consistent with, the *Pricing Principles for Prescribed Transmission Services*.
- (c) The *AER* must *publish* the first *pricing methodology guidelines* by 31 October 2007 and there must be *pricing methodology guidelines* in force at all times after that date.
- (d) In the event of an inconsistency between the *Rules* and the *pricing methodology guidelines*, the *Rules* prevail to the extent of that inconsistency.
- (e) The *pricing methodology guidelines* are binding on the *AER* and each *Transmission Network Service Provider* to which they apply.

6A.25.2 Contents of pricing methodology guidelines

The *pricing methodology guidelines* must specify or clarify:

- (a) the information that is to accompany a proposed *pricing methodology* being information that is necessary to allow the *AER* to form a view as to whether

the proposed methodology is consistent with and gives effect to, the *Pricing Principles for Prescribed Transmission Services* and the requirements of this Part J;

- (b) permitted pricing structures for recovery of the locational component of providing *prescribed TUOS services* under clause 6A.23.4(e), having regard to:
 - (1) the desirability of consistent pricing structures across the *NEM*; and
 - (2) the role of pricing structures in signaling efficient investment decisions and *network* utilisation decisions;
- (c) in relation to prices set on a *postage-stamp basis*, permissible postage stamping structures for the prices for *prescribed common transmission services* and the recovery of the adjusted non-locational component of providing *prescribed TUOS services* having regard to:
 - (1) the desirability of a consistent approach across the *NEM*, particularly for *Transmission Customers* that have operations in multiple *participating jurisdictions*; and
 - (2) the desirability of signaling to actual and potential *Transmission Network Users* efficient investment decisions and *network* utilisation decisions;
- (d) the types of *transmission system assets* that are directly attributable to each *category of prescribed transmission services*, having regard to the desirability of consistency of cost allocation across the *NEM*;
- (e) those parts (if any) of a proposed *pricing methodology* or the information accompanying it, that will not be publicly disclosed without the consent of the *Transmission Network Service Provider*;
- (f) those parts (if any) of a proposed *pricing methodology* or the information accompanying it, that will not be publicly disclosed without the consent of the *Transmission Network Service Provider*; ~~and~~
- (g) the matters which *Transmission Network Service Providers* that are also *Co-ordinating Network Service Providers* must include in their *pricing methodologies* in accordance with clause 6A.24.1(b1) for:
 - (1) the allocation of the *AARR* for *prescribed transmission services* provided by *Transmission Network Service Providers* within that *region*, including any allocation of the *AARR* as agreed between *Transmission Network Service Providers* in accordance with clause 6A.29.3;
 - (2) the calculation of *modified load export charges* consistent with clause 6A.29A.2; and
 - (3) the allocation of *modified load export charges*:
 - (i) receivable by other *Co-ordinating Network Service Providers* in interconnected regions; and
 - (ii) payable to other *Co-ordinating Network Service Providers* in interconnected regions,

to each *Transmission Network Service Provider* within its *region* under clause 6A.29A.5; and

- (h) permitted methodologies for determining the *system strength unit price component of the system strength charge*, having regard to the following:
 - (1) the *system strength charge structure* in clause 6A.23.5;
 - (2) the desirability of providing efficient investment and *system strength transmission service utilisation signals to actual and potential System Strength Transmission Service Users* based on the long run cost of providing *system strength transmission services* at the relevant location;
 - (3) the desirability of consistent pricing structures across the *NEM*; and
 - (4) the costs and benefits associated with calculating, implementing and applying the methodology; and
- (i) principles for determining forecast *annual system strength revenue* and forecast actual *annual system strength revenue*.

6A.26 Prudent discounts

6A.26.1 Agreements for prudent discounts for prescribed transmission services

- (a) Subject to this clause 6A.26.1, the prices for *prescribed transmission services* that are determined in accordance with the *pricing methodology* of a *Transmission Network Service Provider*, are the maximum prices that a *Transmission Network Service Provider* is entitled to charge for the provision of the relevant *prescribed transmission services*.
- (b) A *Transmission Network Service Provider* may, but is not required to, agree with a *Transmission Customer* (the **beneficiary**) to charge lower prices for *prescribed TUOS services* and *prescribed common transmission services* provided to that beneficiary (other than *system strength charges*), than the prices determined in accordance with the provider's *pricing methodology*.
- (c) Where a *Transmission Customer* requests a *Transmission Network Service Provider* to charge that user reduced charges for *prescribed TUOS services* or *prescribed common transmission services* (other than *system strength charges*) (**reduced charges**), the *Transmission Network Service Provider* must negotiate in good faith;
- (d) Subject to this clause 6A.26.1, a *Transmission Network Service Provider* who agrees to charge a beneficiary reduced charges may recover the difference between the revenue that would be recovered by the application of the maximum prices referred to in paragraph (a) and the reduced charges (the **discount amount**) from *Transmission Customers* through charges for either or both:
 - (1) the *adjusted non-locational component*; and
 - (2) *prescribed common transmission services*,in accordance with the *Co-ordinating Network Service Provider's* or *Transmission Network Service Provider's pricing methodology* (as the case may be).

- (e) A *Transmission Network Service Provider* may recover up to 70 per cent of a discount amount through the charges referred to in subparagraphs (d)(1) and (2).
- (f) A *Transmission Network Service Provider* may recover greater than 70 percent of the discount amount through either or both the charges referred to in subparagraphs (d)(1) and (2) if;
 - (1) the discount amount is no larger than that necessary to prevent the charges referred to in subparagraphs (d)(1) and (2) altering the beneficiary's behaviour to the point of adopting the most attractive alternative in place of the course of action the beneficiary would have adopted if no such charges were levied; and
 - (2) the giving of the discount would not place other customers of the *Transmission Network Service Provider* in a worse position than if the discount was not offered.
- (g) Where for any reason the *Transmission Network Service Provider* does not recover the proportion of a discount amount that the *Transmission Network Service Provider* is entitled to recover from other *Transmission Customers* under this clause in the *financial year* in which the reduced charges apply, the *Transmission Network Service Provider* may recover the difference through charges to *Transmission Customers* for the *adjusted non-locational component* of *prescribed TUOS services* to apply in a subsequent *financial year*, in accordance with the *Transmission Network Service Provider's pricing methodology*.

6A.26.2 Application to AER for approval of proposed prudent discount amounts

- (a) This clause applies where a *Transmission Network Service Provider* has agreed or proposes to agree, to reduced charges in accordance with clause 6A.26.1 and seeks to recover greater than 70 per cent of the discount amount through the charges referred to in clause 6A.26.1(d) to its other *Transmission Customers* (the **proposed recovery amount**).
- (b) A *Transmission Network Service Provider* may apply to the *AER* for approval to recover the proposed recovery amount.
- (c) A *Transmission Network Service Provider* seeking approval must submit to the *AER* a written application in accordance with any relevant requirements of the *information guidelines* in force under clause 6A.17.2.
- (d) If the *AER* determines that the requirements of clause 6A.26.1(f) are satisfied, the *AER* may approve the recovery of the proposed recovery amount, taking into account the matters referred to in paragraph (i).
- (e) If the *AER* determines that the requirements of clause 6A.26.1(f) are not satisfied, the *AER* may refuse the recovery of the proposed recovery amount, and must set out its reasons.
- (f) If the *AER* does not make a decision referred to in paragraph (d) or (e) within 60 *business days* from the date it receives the *Transmission Network Service Provider's* application and accompanying evidence under paragraph (c), then,

on the expiry of that period, the *AER* is taken to have approved the recovery of the proposed recovery amount.

- (g) A *Transmission Network Service Provider* must provide the *AER* with such information as the *AER* requires for the purpose of making a determination under paragraphs (d) or (e) within the time specified by the *AER* in a notice provided to the provider by the *AER* for that purpose.

Consultation

- (h) Before making a determination under paragraph (d) or (e), the *AER* may consult with the relevant *Transmission Network Service Provider* and such other persons as the *AER* considers appropriate, on any matters arising out of an application to recover a proposed recovery amount as the *AER* considers appropriate.

Relevant factors

- (i) In making a determination under paragraph (d) or (e), the *AER* must take into account:
 - (1) the matters and proposals set out in the application referred to in paragraph (c);
 - (2) the requirements of clause 6A.26.1(f); and
 - (3) any other factors the *AER* considers relevant.
- (j) If the *AER* approves or is taken to approve recovery of the proposed recovery amount under paragraph (d) or (f), that approval is valid so long as the agreement between the *Transmission Network Service Provider* and the *Transmission Customer* remains in effect and its terms are not renegotiated, except where the *Transmission Network Service Provider* has provided information in its application that was materially false or misleading.
- (k) Where a *Transmission Network Service Provider* agrees to charge reduced charges in accordance with clause 6A.26.1, and no approval is granted under this clause 6A.26.2, the *AER* must review the discount amount in the course of making a subsequent *revenue determination* for that provider, and if the recovery of any part of the discount amount does not comply with clause 6A.26.1(f), the *AER* may adjust (with interest) the *total revenue cap* of the *Transmission Network Service Provider* for the following *regulatory control period* in respect of the total amount that has been earned by the *Transmission Network Service Provider* and does not satisfy the requirements under the *Rules*.

6A.27 Billing Process

This rule describes the manner in which *Transmission Network Users* are billed for *prescribed transmission services* and how payments for those services are made.

6A.27.1 Billing for prescribed transmission services

- (a) For each *connection point* on its *transmission networks*, a *Transmission Network Service Provider* must calculate the:

- (1) transmission service charges payable by Transmission Network Users in ~~in~~ accordance with the transmission service prices published under clause 6A.24.2.; and
 - (2) system strength charges payable by System Strength Transmission Service Users in accordance with clause 6A.23.5 and the system strength unit prices published under clause 6A.24.2.
- (b) A Transmission Network Service Provider must issue a bill to Transmission Network Users and System Strength Transmission Service Users for prescribed transmission services.
 - (c) Where the billing 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 and, where the previous year's billing quantities are unavailable or no longer suitable, nominated quantities may be used as agreed between the parties.
 - (d) Where charges are to be determined for *prescribed transmission services* from *metering data*, these charges must be based on kW or kWh obtained from the *metering data* managed by AEMO.

6A.27.1A Billing of modified load export charges

This rule does not apply to the process of calculating and billing *modified load export charges*, which is regulated under rule 6A.29A.

6A.27.2 Minimum information to be provided in network service bills

- (a) The following is the minimum information that must be provided with a bill for a *connection point* issued by a Transmission Network Service Provider directly to a Transmission Network User or System Strength Transmission Service User:
 - (1) the *connection point* identifier;
 - (2) the dates on which the *billing period* starts and ends;
 - (3) the identifier of the published *transmission service* price from which the *connection point* charges are calculated; and
 - (4) measured quantities, billed quantities, agreed quantities, prices and amounts charged for each component of the total *transmission service* account.
- (b) In addition to the minimum information requirements set out in paragraph (a), a bill for a *connection point* issued by a Transmission Network Service Provider directly to a Transmission Customer must separately identify, for the total amount levied in relation to *prescribed TUOS services* in the *billing period* for that *connection point* each of the following components:
 - (1) charges for the *adjusted locational component* and the *adjusted non-locational component* of *prescribed TUOS services*; ~~and~~
 - (2) charges for *prescribed common transmission services*; and
 - (3) where applicable, system strength charges.

- (c) In addition to the minimum information requirements in paragraph (a), a bill for a *connection point* issued by a *Transmission Network Service Provider* directly to a *Distribution Network Service Provider* must separately identify the component of *designated pricing proposal services*, if any, to which each amount charged in the bill relates.
- (d) In addition to the minimum information requirements in paragraph (a), a bill for a *connection point* issued by a *System Strength Service Provider* directly to a *Distribution Network Service Provider* or *Transmission Network Service Provider* relating to *system strength charges* must separately identify the *system strength charge by connection point*.

6A.27.3 Obligation to pay charges for prescribed transmission services

A *Transmission Network User* or *System Strength Transmission Service User* must pay charges for *prescribed transmission services* properly charged to it and billed in accordance with the *pricing methodology* of the relevant *Transmission Network Service Provider* by the date specified in the bill.

6A.27.4 Payments between Transmission Network Service Providers in the same region

- (a) A *Transmission Network Service Provider* must pay other *Transmission Network Service Providers* within the same *region* an amount of revenue equal to that which it is estimated it will collect during the following *regulatory year* or *financial year* (as the case may be), as charges for *prescribed transmission services* for the use of *transmission systems* owned by those other *Transmission Network Service Providers*.
- (b) The amount of any financial transfer under paragraph (a) must be determined by the relevant *Co-ordinating Network Service Provider* and paid in equal monthly instalments.
- (c) [Deleted]

6A.27.5 Calculation of financial transfers between Transmission Network Service Providers in the same region

- (a) If the *prescribed transmission use of system* revenue allocation and price and charge calculation under the *pricing methodology* of a *Transmission Network Service Provider* result in the allocation of some of a *Transmission Network Service Provider's* revenue to a *Transmission Customer* in relation to a *connection point* with another *Network Service Provider* in the same *region* then financial transfers between *Network Service Providers* must be made in accordance with paragraph (b).
- (b) Financial transfers referred to in paragraph (a) must be determined by the *Co-ordinating Network Service Provider* for the relevant *region* as a fixed annual amount for the next *financial year*. The *survey period* for this allocation is the most recent full *financial year* for which operating data is available.

...

Schedule 6A.4 Application of this Chapter to AEMO and declared transmission system operators

S6A.4.1 Application of this Chapter to AEMO etc

- (a) For the purpose of applying this Chapter, *AEMO* will be regarded as a *Transmission Network Service Provider* providing *shared transmission services*.
- (b) However, in the application of this Chapter to *transmission services* provided by means of, or in connection with, the *declared transmission system* of an *adoptive jurisdiction*, a reference to a *Transmission Network Service Provider* is, in relation to the provision of *entry services*, *exit services* or *shared network capability services* to be read as a reference to a *declared transmission system operator*.

S6A.4.2 Exclusions, qualifications and modifications

- (a) This Chapter will be read subject to the following exclusions, qualifications and modifications.
- (b) **Part A (Introduction)**
Clause 6A.1.4(b) is excluded.
- (c) **Part B (Transmission Determinations Generally)**
This Part applies subject to the following exclusions, qualifications and modifications:
Clause 6A.2.2 (Components of transmission determinations):
 - (1) *A transmission determination for AEMO will not include a revenue determination.*
 - (2) However, *AEMO* must have a revenue methodology (which will not be subject to the *AER's* approval) setting out the method for calculating *AEMO's maximum allowed revenue* for the provision of *prescribed transmission services* for each *regulatory year*.
 - (3) In formulating its revenue methodology, or an amendment to its revenue methodology, *AEMO* must consult with the public.
 - (4) *AEMO's maximum allowed revenue* consists of:
 - (i) so much of the aggregate annual revenue requirement of each declared transmission system operator for *AEMO's* regulatory year as relates to the provision to *AEMO* of shared network capability services; and
 - (ii) the other costs forecast to be incurred by *AEMO* in the same *regulatory year* for the provision of *prescribed shared transmission services*.

Note:

The costs under subparagraph (ii) might include the cost of *electricity network services* provided by a *declared transmission system operator* where those

services are, from the standpoint of the operator, not *prescribed transmission services*.

- (5) The revenue methodology must include a description of:
 - (i) the categories of costs to be recovered; and
 - (ii) the method (which must be consistent with the Cost Allocation Principles) for allocating costs to prescribed transmission services and negotiated transmission services; and
 - (iii) how under and over recovery of revenue in a particular *regulatory year* is to be treated.
- (6) The revenue methodology must be consistent with section 52 of the *NEL* and the provisions of Chapter 2 of the *Rules* applicable to *AEMO*.
- (7) *AEMO* must comply with its revenue methodology.
- (8) Before the commencement of the *regulatory year* to which *AEMO*'s revenue methodology applies, *AEMO* must *publish*:
 - (i) the revenue methodology; and
 - (ii) a report on how it has applied its revenue methodology for the purpose of determining prices for the ensuing *regulatory year*.
- (9) However, for the *regulatory year* commencing on 1 July 2009, *AEMO* may, instead of formulating and publishing its own revenue methodology, adopt as its revenue methodology relevant provisions of the *transmission determination* that would have applied to VENCORP for that *regulatory year* if the legislative and regulatory changes that took effect at the commencement of that *regulatory year* had not been made.

(d) **Part C (Regulation of Revenue – Prescribed Transmission Services)**

This Part is not applicable to *AEMO*.

This Part applies to a *declared transmission system operator* with the following modification of clause 6A.7.1:

If a *declared transmission system operator* is directed by *AEMO*, or is required by or agrees with a *Connection Applicant*, to construct an *augmentation*, clause 6A.7.1 applies as if:

- (1) the direction, requirement or agreement were an event in respect of which the *declared transmission system operator* were unconditionally authorised under clause 6A.7.1(a) to apply to the *AER* for revocation and substitution of a *revenue determination*; and
- (2) clause 6A.7.1(a)(1) to (7) were inapplicable to an application founded on such an event; and
- (3) the following were added after clause 6A.7.1(d):
 - (da) If a *declared transmission system operator* is directed by *AEMO*, or is required by or agrees with a *Connection Applicant*, to construct an *augmentation*, and the operator applies to the *AER* for revocation of a *revenue determination* on that ground, the *AER* must revoke the *revenue determination*.

(e) **[Deleted]**

(f) **Part E (Revenue determinations and pricing methodologies)**

Part E applies subject to the following exclusions, qualifications and modifications:

1. Clause 6A.10.1 (Submission of proposal, pricing methodology and information)

Clause 6A.10.1 applies to *AEMO* as if for paragraphs (a), (b) and (c) the following were substituted:

(a) *AEMO* must, as and when required by the *AER*, submit to the *AER*:

(1) a proposed *pricing methodology* relating to *shared transmission services* that are *prescribed TUOS services* or *prescribed common transmission services* (**prescribed shared transmission services**).

(2) **[Deleted]**

(b) *AEMO*'s pricing methodology:

(1) must be designed to recover no more than *AEMO*'s *maximum allowed revenue* for the provision of *prescribed shared transmission services*; and

(2) must set out the principles on which prices for *prescribed shared transmission services* are to be determined.

(c) Exact equivalence is not required between the costs of providing a service and the revenue derived from providing the service in a particular *regulatory year* if there are reasonable grounds to believe that costs will over time approximate revenue.

(ca) **[Deleted]**

1A. Clause 6A.10.1A (*AER*'s framework and approach paper)

Clause 6A.10.1A is not applicable to *AEMO*.

2. **[Deleted]**

3. Clause 6A.11.1 (Preliminary examination and determination of non-compliance with relevant requirements)

Clause 6A.11.1 applies to *AEMO* only insofar as relevant to a *pricing methodology*.

4. Clause 6A.11.2 (Resubmission of proposal, pricing methodology or information)

Clause 6A.11.2 applies to *AEMO* only insofar as relevant to a *pricing methodology*.

5. Clause 6A.11.3 (Resubmission of proposal, pricing methodology or information)

Clause 6A.11.3 applies to *AEMO* only insofar as relevant to a *pricing methodology*.

6. Rule 6A.12 (Draft decision and further consultation)

This *Rule* applies to *AEMO* only insofar as relevant to a decision on a *pricing methodology*.

7. Rule 6A.13 (Final decision)

This *Rule* applies to *AEMO* only insofar as relevant to a decision on a *pricing methodology*.

8. Rule 6A.14 (Requirements relating to draft and final decisions)

(a) This *Rule* applies to *AEMO* only insofar as relevant to a decision on a *pricing methodology*.

(b) Clause 6A.14.3(e) (which requires the *AER* to approve a *regulatory control period* of 5 *regulatory years*) is inapplicable to *AEMO*.

Note:

The *Rule* is thus largely inapplicable. Of clause 6A.14.1 only paragraphs (6), (7) and (8) are applicable. Clause 6A.14.2 requires the *AER* to give reasons setting out the basis and rationale of its decision. This requirement is relevant to a decision on a *pricing methodology* but the matters of detail mentioned in paragraphs (1) to (4) would, as a general rule, be irrelevant to such a decision. Of clause 6A.14.3 only paragraphs (f) to (i) would be relevant.

9. Rule 6A.15 (Revocation of revenue determination or amendment of pricing methodology for wrong information or error)

This *Rule* applies to *AEMO* only insofar as relevant to the amendment of a *pricing methodology*.

10. Rule 6A.16 (Miscellaneous)

This *Rule* applies as if it included the following additional paragraphs:

(g) *AEMO* must, on or before 15 May in each year, *publish* its prices for *prescribed shared transmission services* for its next *regulatory year*.

(h) A *declared transmission system operator* must notify *AEMO* of its revenue requirement for the provision of *shared network capability services* for *AEMO's* next *regulatory year* in sufficient time to enable *AEMO* to calculate prices in accordance with the approved *pricing methodology* and meet its obligations under paragraph (g).

(g) **Part F (Information Disclosure)**

This Part is not applicable to *AEMO*.

(h) **Part G (Cost Allocation)**

AEMO's revenue methodology must be consistent with the *Cost Allocation Principles* set out in this Part: see clause S6A.4.2(c)(5). This Part applies to *AEMO* only insofar as it is relevant to that requirement.

(i) **Part H (Transmission Consultation Procedures)**

No exclusions, qualifications or modifications are prescribed.

(j) **Part I (Ring-Fencing Arrangements for Transmission Network Service Providers)**

This Part is not applicable to *AEMO*.

(k) **Part J (Prescribed Transmission Services – Regulation of Pricing)**

Part J applies subject to the following exclusions, qualifications and modifications:

1. Rule 6A.23 (Pricing Principles for Prescribed Transmission Services)

Clause 6A.23.3 applies as if it included the following additional paragraphs:

(g) In relation to the declared transmission system of an adoptive jurisdiction:

- (1) *AEMO* is responsible for allocating the *ASRR* for *prescribed TUOS services* and *prescribed common transmission services*; and
- (2) the relevant *declared transmission system operator* is responsible for allocating the *ASRR* for *prescribed entry services* and *prescribed exit services*.

(h) A declared transmission system operator must:

- (1) allocate costs between *shared network capability services* and *prescribed connection services*; and
- (2) notify *AEMO* of its allocation (and the basis on which it was made) in sufficient time to calculate prices for *AEMO's* next *regulatory year* in accordance with its *pricing methodology*; and
- (3) provide *AEMO* (as and when requested by *AEMO*) with the information *AEMO* reasonably requires to allocate *ASRR* for *prescribed TUOS services* and *prescribed common transmission services*.

Clause 6A.23.4 applies as if it included the following additional paragraph:

(k) A *declared transmission system operator* is not required to develop separate prices for recovery of the *ASRR* referable to *shared network capability services*.

[For clause 6A.23.5, the definition of *system strength charging period* in paragraph \(b\) is replaced with the following definitions](#)

[**system strength charging period** means, for a *System Strength Service Provider*, the period from the commencement of this definition until 30 June 2027 and each subsequent period of 5 years except that if a *pricing methodology* of the *System Strength Service Provider* commences at the start of any such period and is in effect for longer than 5 years, the subsequent period ending when that *pricing methodology* ends.](#)

2. Rule 6A.24 (Pricing Methodology)

Clause 6A.24.1 applies as if the following paragraphs were substituted for paragraphs (e) and (f):

- (e) Subject to express provisions of the *Rules* to the contrary, a *pricing methodology*:
 - (1) applies for the duration of the relevant *regulatory control period* (or in the case of the *system strength unit price*, for the relevant *system strength charging period*); and
 - (2) may not be amended during the *regulatory control period*.
- (f) However, the *AER* may, on an application made by *AEMO* during the *regulatory year* commencing on 1 July 2009, amend *AEMO's pricing methodology* as it applies to the setting of prices for the *regulatory year* commencing on 1 July 2010 and later *regulatory years*.

Clause 6A.24.2 applies as if the following sub-paragraphs were substituted for sub-paragraphs (c)(1) and (c)(2):

- (1) [deleted]; or
- (2) 15 May each year.

3. Clause 6A.26.1 (Agreements for prudent discounts for prescribed transmission services)

Clause 6A.26.1 applies as if:

- (1) the power under paragraph (b) to agree to charge lower prices for *prescribed TUOS services* and *prescribed common transmission services* were vested in *AEMO* to the exclusion of the relevant *declared transmission system operator*; and
- (2) an additional provision is included that the relevant *declared transmission system operator* must, at the request of *AEMO*, provide to *AEMO* all information *AEMO* reasonably requires for the purpose of considering a proposal for the exercise of that power.

4. Clause 6A.26.2 (Application to *AER* for approval of proposed prudent discount amounts)

- (1) Clause 6A.26.2(b) applies as if the word "may" is substituted for "must".
- (2) Clause 6A.26.2(k) is not applicable to *AEMO*.

5. Clause 6A.29.1 (Multiple Transmission Network Service Providers within a region)

Clause 6A.29.1 applies as if it included the following additional paragraph:

- (g) *AEMO* is (without appointment under clause 6A.29.1(a)) the *Coordinating Network Service Provider* for a *region* that includes the whole or the major part of the *declared shared network*.

- (l) **[Deleted]**

(m) **Schedule S6A.1 (Contents of Revenue Proposals)**

This Schedule is not applicable to *AEMO*.

(n) **Schedule S6A.2 (Regulatory Asset Base)**

This Schedule is not applicable to *AEMO*.

Clause S6A.2.3(a)(3)(i) is not applicable to a *declared transmission system operator*.

(o) **Schedule S6A.3 (CRNP methodology and modified CRNP methodology)**

This Schedule applies without exclusion, qualification or modification.

CHAPTER 10

DRAFT DETERMINATION VERSION (ERC0300)

Indicative markup of the National Electricity Rules showing changes made by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021.

Note: This is an indicative consolidated version of the National Electricity Rules as amended by the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021. It includes a markup of amendments made to relevant extracts of Chapters 4, 5, 5A, 6, 6A and 10 of version 159 of the National Electricity Rules. Only extracts of the relevant Chapters are provided in order to reduce the size of the document. Complete and current versions of the official NER should be viewed on the AEMC's website.

This document is provided for information purposes only. The Australian Energy Market Commission does not guarantee the accuracy, reliability or completeness of this indicative consolidated version of the National Electricity Rules.

10. Glossary

AARR

The *aggregate annual revenue requirement for prescribed transmission services*.

abnormal conditions

A condition described in clause 4.2.3A(a).

above-standard system shared transmission service

A *shared transmission service* that exceeds the requirements referred to in paragraph (a)(1) or (2) of the definition of *negotiated transmission service* principally as a consequence of investments that have benefits extending to *Transmission Network Users* beyond those *connected* at a single *transmission network connection point*.

ACCC

Australian Competition and Consumer Commission as established under the *Competition and Consumer Act 2010* (Cth).

acceptable credit criteria

The credit criteria defined in clause 3.3.3.

access charge

For a *Distribution Network Service Provider* - in respect of access to:

- (a) *negotiated distribution services* which would have been *negotiated distribution services* regardless of the operation of clause 6.24.2(c), an amount described in clause 5.3AA(f)(4).
- (b) **[Deleted]**

access party

In respect of a service that is listed in column 1 of Table S7.5.1.1, the party listed in column 3 of Table S7.5.1.1.

access policy

An access policy as required for *large DCA services* under clause 5.2A.8.

access standard

Either an *automatic access standard* or a *negotiated access standard* for a particular technical requirement as recorded in a *connection agreement*.

Accredited Service Provider category

A category of registration of a *Metering Provider* established by AEMO under S7.2.2(b) as a consequence of requirements of a *participating jurisdiction* to install *metering installations*.

accumulated energy data

The data that results from the measurement of the flow of electricity in a power conductor where the data represents a period in excess of a *trading interval*.

Accumulated energy data is held in the *metering installation*. The measurement is carried out at a *metering point*.

accumulated metering data

The *accumulated energy data*, once collected from a *metering installation*, is *accumulated metering data*. *Accumulated metering data* is held in a *metering data services database* and the *metering database*.

actionable ISP project

A project:

- (a) that relates to a *transmission asset* or *non-network option* the purpose of which is to address an *identified need* specified in an *Integrated System Plan* and which forms part of an *optimal development path*; and
- (b) for which a *project assessment draft report* is required to be published in the *Integrated System Plan* that identifies that project.

activate

The operation of a *generating unit* (other than a *scheduled generating 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 energy

A measure of electrical energy flow, being the time integral of the product of *voltage* and the in-phase component of current flow across a *connection point*, expressed in watthour (Wh).

active power

The rate at which *active energy* is transferred.

active power capability

The maximum rate at which *active energy* may be transferred from a *generating unit* to a *connection point* as specified or proposed to be specified in a *connection agreement* (as the case may be).

additional intervention claim

Has the meaning given in clause 3.12.2(k).

adequately damped

In relation to a *control system*, when tested with a step change of a feedback input or corresponding reference, or otherwise observed, any oscillatory response at a *frequency* of:

- (a) 0.05 Hz or less, has a damping ratio of at least 0.4;
- (b) between 0.05 Hz and 0.6 Hz, has a halving time of 5 seconds or less (equivalent to a damping coefficient -0.14 nepers per second or less); and
- (c) 0.6 Hz or more, has a damping ratio of at least 0.05 in relation to a *minimum access standard* and a damping ratio of at least 0.1 otherwise.

adjusted gross energy

The *energy* adjusted in accordance with clause 3.15.5 (for a *transmission network connection point*) or clause 3.15.5A (for a *virtual transmission node*) or clause 3.15.4 (for any other *connection point*).

adjusted locational component

Has the meaning given to it in clause 6A.23.3(b).

adjusted non-locational component

Has the meaning given to it in clause 6A.23.3(e).

administered floor price

A price floor to apply to a *regional reference price*, with the levels of the price floor being administered under clause 3.14.1 and the circumstances under which it can be invoked by *AEMO* being determined as set out in clause 3.14.2.

administered price cap

A price cap to apply to a *dispatch price*, *regional reference price* or *ancillary service price* as specified in clause 3.14.1.

administered price period

A period declared by *AEMO*, in accordance with clause 3.14.2, in which an *administered price cap* may be invoked.

adoptive jurisdiction

Has the meaning given in the *NEL*.

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*, ~~or~~ *market network service facility* or inverter-based load 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*.

Adviser

The Dispute Resolution Adviser specified in clause 8.2.2(a).

Adviser referral notice

A notice referring a dispute to the *Adviser* for the purposes of clause 8.2.5.

AEMC

The Australian Energy Market Commission, which is established under section 5 of the *Australian Energy Market Commission Establishment Act 2004* (SA).

AEMO

Means Australian Energy Market Operator Limited (ACN 072 010 327)

Note

Before its change of name, AEMO was known as NEMMCO.

AEMO advisory matter

A matter that relates to *AEMO's* functions under the *NEL* and a matter in which *AEMO* has a role under clause 5.3.4B or in schedules 5.1a, 5.1, 5.2, 5.3 and 5.3a. Advice on the acceptability of *negotiated access standards* under the following clauses are deemed to be *AEMO advisory matters*: S5.1.9, S5.2.5.1, S5.2.5.3 to S5.2.5.5, S5.2.5.7 to ~~S5.2.5.16~~[S5.2.5.14](#), [S5.3.11](#), [S5.3a.7](#), S5.2.6.1, S5.2.6.2, S5.3a.4.1 and S5.3a.14.

AEMO co-ordinating centre

The control centre from which *AEMO* conducts *market* related activities and the coordination of the operation of the *national grid*.

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 *RERT* in accordance with rule 3.20 by:
 - (1) *dispatching scheduled generating units, scheduled network services or scheduled loads* in accordance with a *scheduled reserve contract*; or
 - (2) *activating loads or generating units* under an *unscheduled reserve contract*.

AEMO Member

A person appointed as a *Member* by *AEMO* to represent *AEMO* in accordance with clause 7.17.10(c).

AEMO power system security responsibilities

The responsibilities described in clause 4.3.1.

AER

The Australian Energy Regulator, which is established by section 44AE of the *Competition and Consumer Act 2010* (Cth).

AER PoLR report

Has the meaning given in clause 4A.F.8(a).

affected participant's adjustment claim

Has the meaning given in clause 3.12.2(g)(3).

Affected Participant

- (a) In respect of a particular *direction* in an *intervention price trading interval*:
 - (1) a *Scheduled Generator* or *Scheduled Network Service Provider*:
 - (i) which was not the subject of the *direction*, that had its *dispatched* quantity affected by that *direction*; or
 - (ii) which was the subject of the *direction*, that had its *dispatched* quantity for other *generating units* or other services which were

- not the subject of that *direction* affected by that *direction*, however, the *Scheduled Generator* or *Scheduled Network Service Provider* is only an *Affected Participant* in respect of those *generating 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 price trading interval*, as a result of the *direction*; and
- (b) in relation to the exercise of the *RERT* under rule 3.20:
- (1) a *Scheduled Generator* or *Scheduled Network Service Provider*:
 - (i) whose *plant* or *scheduled network service* was not *dispatched* under a *scheduled reserve contract*, that had its *dispatched* 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* quantity affected by the *activation* of *generating units* or *loads* under that *unscheduled reserve contract*;
 - (2) a *Scheduled Generator* or *Scheduled Network Service Provider* whose *plant* or *scheduled network service* was *dispatched* under a *scheduled reserve contract*, that had its *dispatched* quantity for other *generating 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* or *Scheduled Network Service Provider* is only an *Affected Participant* in respect of those *generating 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 price trading interval*, as a result of the *dispatch* of *plant* or *scheduled network service* under a *scheduled reserve contract* or the *activation* of *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* operating on automatic generation control in accordance with clause 3.8.21(d).

aggregate annual revenue requirement

For *prescribed transmission services*, the meaning in clause 6A.22.1 and for any other service, the calculated total annual revenue to be earned by an entity for a defined class or classes of service.

aggregate payment due

The aggregate of the net amounts payable by *AEMO* to each of the *Market Participants* to whom payments are to be made in relation to *spot market transactions* or *reallocation transactions* in respect of a *billing period* determined in accordance with clause 3.15.22(c).

agreed capability

In relation to a *connection point*, the capability to receive or send out power for that *connection point* determined in accordance with the relevant *connection agreement*.

allowed imputation credits

for a *Network Service Provider* for a *regulatory year* means the value of imputation credits for the *regulatory year* stated, or calculated in the way stated, in the *applicable rate of return instrument* for the *Network Service Provider* for the *regulatory year*.

allowed rate of return

for a *Network Service Provider* for a *regulatory year* means the rate of return calculated in the way stated in the *applicable rate of return instrument* for the *Network Service Provider* for the *regulatory year*.

alternative control service

A *distribution service* that is a *direct control service* but not a *standard control service*.

alternative network constraint formulation

A *network constraint* equation formulation used by *AEMO* other than a *fully co-optimised network constraint formulation*.

Amending Rule

A Rule made by the *AEMC* under section 103 of the *NEL* on and from the date of commencement of the operation of that Rule, or parts of that Rule.

ancillary service fees

The fees determined by *AEMO* under Chapter 2 in relation to *ancillary services*.

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 price

In respect of a *dispatch interval*, for a *market ancillary service*, the common clearing price for the *market ancillary service* determined in accordance with clause 3.9.

Ancillary Service Provider

A person 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 services

Market ancillary services and *non-market ancillary services*.

ancillary services agreement

An agreement under which an *NMAS provider* agrees to provide one or more services described in paragraph (b) of *non-market ancillary services* to *AEMO*.

annual benchmarking report

Has the meaning given to it by clause 6.27 or clause 6A.31, as the case may be.

annual building block revenue requirement

The amount representing the revenue requirement of a *Transmission Network Service Provider* for each *regulatory year* of a *regulatory control period* calculated in accordance with clause 6A.5.4.

annual revenue requirement

An amount representing revenue for a *Distribution Network Service Provider*, for each *regulatory year* of a *regulatory control period*, calculated in accordance with Part C of Chapter 6.

annual service revenue requirement (or "ASRR")

Has the meaning set out in clause 6A.22.2.

annual system strength revenue

For a *System Strength Service Provider*, the total amount of the *system strength charges* paid to the *System Strength Service Provider* in respect of *system strength transmission services* provided in a *regulatory year*.

apparent power

The square root of the sum of the squares of the *active power* and the *reactive power*.

applicable rate of return instrument

for a *Network Service Provider* for a *regulatory year* means the rate of return instrument in force when the network revenue or pricing determination for the *Network Service Provider* for the *regulatory control period* to which the *regulatory year* belongs is made (disregarding any determination made in substitution for an earlier determination for the *Network Service Provider* for that *regulatory control period*).

applicable regulatory instruments

All laws, regulations, orders, licences, codes, determinations and other regulatory instruments (other than the *Rules*) which apply to *Registered Participants* from time to time, including those applicable in each *participating jurisdiction* as listed below, to the extent that they regulate or contain terms and conditions relating to

access to a *network*, *connection to a network*, the provision of *network services*, *network service price* or *augmentation of a network*.

- (1) New South Wales:
 - (a) the *Electricity Supply Act 1995* (**ES Act**);
 - (b) all regulations made and licences (**Licences**) issued under the ES Act;
 - (c) the *Independent Pricing and Regulatory Tribunal Act 1992* (**IPART Act**);
 - (d) all regulations and determinations made under the IPART Act;
 - (e) all regulatory instruments applicable under the Licences; and
 - (f) *Commercial Arbitration Act 2010*.
- (2) Victoria:
 - (a) the *Electricity Industry Act 2000* (**EI Act**);
 - (b) all regulations made and licences (**Licences**) issued under the EI Act;
 - (c) the *Essential Services Commission Act 2001* (**ESCV Act**);
 - (d) all regulations and determinations made under the ESCV Act;
 - (e) all regulatory instruments applicable under the Licences; and
 - (f) the Tariff Order made under section 158A(1) of the *Electricity Industry Act 1993* and continued in effect by clause 6(1) of Schedule 4 to the *Electricity Industry (Residual Provisions) Act 1993*, as amended or varied in accordance with section 14 of the EI Act.
- (3) South Australia:
 - (a) the *Electricity Act 1996*;
 - (b) all regulations made and licences (**Licences**) issued under the Electricity Act;
 - (c) the *Essential Services Commission Act 2002* (**ESCSA Act**);
 - (d) all regulations and determinations made under the ESCSA Act;
 - (e) all regulatory instruments applicable under the Licences; and
 - (f) the Electricity Pricing Order made under section 35B of the Electricity Act.
- (4) Australian Capital Territory:
 - (a) the *Utilities Act 2000*;
 - (b) all regulations made and licences (**Licences**) issued under the Utilities Act;
 - (c) the *Independent Competition and Regulatory Commission Act 1997* (**ICRC Act**);
 - (d) all regulations and determinations made under the ICRC Act; and
 - (e) all regulatory instruments applicable under the Licences.
- (5) Queensland:

- (a) the *Electricity Act 1994*;
 - (b) all regulations made and authorities and special approvals (**Licences**) granted under the *Electricity Act*;
 - (c) the *Queensland Competition Authority Act 1997 (QCA Act)*;
 - (d) all regulations and determinations made under the *QCA Act*;
 - (e) all regulatory instruments applicable under the *Licences*; and
 - (f) the *Gladstone Power Station Agreement Act 1993* and associated agreements.
- (6) Tasmania:
- (a) the *Electricity Supply Industry Act 1995*;
 - (b) all regulations made and licences (**Licences**) issued under the *Electricity Supply Industry Act*;
 - (c) all regulatory instruments under the *Electricity Supply Industry Act* or the *Licences* (including, without limitation, determinations of the Tasmanian Electricity Regulator under the *Electricity Supply Industry (Price Control) Regulations*); and
 - (d) the Tasmanian Electricity Code issued under section 49A of the *Electricity Supply Industry Act*.

application to connect

An application made by a *Connection Applicant* in accordance with rule 5.3 or rule 5.3A for *connection* to a *network* and/or the provision of *network services* or modification of a *connection* to a *network* and/or the provision of *network services*.

approved jurisdictional scheme

For a *Distribution Network Service Provider*, means a *jurisdictional scheme* in relation to which the *AER*:

- (a) has made a decision under clause 6.12.1(20);
- (b) has made a determination under clause 6.6.1A(e); or
- (c) is taken to have made a determination under clause 6.6.1A(f).

approved pass through amount

In respect of a *positive change event* for a *Transmission Network Service Provider*:

- (a) the amount which the *AER* determines should be passed through to *Transmission Network Users* under clause 6A.7.3(d)(2); or
- (b) the amount which the *AER* is taken to have determined under clause 6A.7.3(e)(1),

as the case may be.

In respect of a *positive change event* for a *Distribution Network Service Provider*:

- (a) the amount the *AER* determines should be passed through to *Distribution Network Users* under clause 6.6.1(d)(2); or

- (b) the amount the *AER* is taken to have determined under clause 6.6.1(e)(1), as the case may be.

approved pricing proposal

A *pricing proposal* approved by the *AER*.

ASRR

The *annual service revenue requirement*.

asset exemption

Has the meaning given in clause 6.4B.1(a).

Asset Exemption Guidelines

Guidelines developed, maintained and *published* by the *AER* under clause 6.4B.1(c).

asset management

Has the meaning given to it in clause 5.10.2.

asynchronous generating unit

A *generating unit* that is not a *synchronous generating unit*.

attributable connection point cost share

Has the meaning set out in clause 6A.22.4.

attributable cost share

Has the meaning set out in clause 6A.22.3.

auction

A *settlement residue* auction held under clause 3.18.

auction amounts

All amounts:

- (a) payable by *AEMO* to *eligible persons* under *SRD agreements*; or
- (b) distributed to *Network Service Providers* under clause 3.18.4; or
- (c) recovered by *AEMO* under clause 3.18.4, clause 3.18.4A or the *auction rules*, including *auction expense fees*; or
- (d) payable by *eligible persons* to *AEMO* under *SRD agreements* including any margin referred to in clause 3.18.4A(b).

auction expense fees

The costs and expenses incurred by *AEMO* referred to in clause 3.18.4(b).

auction participation agreement

Has the meaning given in clause 3.18.1(a).

auction rules

The rules developed by *AEMO* under clause 3.18.3, as amended from time to time in accordance with that clause.

augmentation

Has the meaning given in the *NEL*.

augmentation technical report

A report on *augmentation* under rule 5.21.

Australian Standard (AS)

The most recent edition of a standard publication by Standards Australia (Standards Association of Australia).

Australian Government's National Greenhouse and Energy Reporting Framework

The reporting framework developed under the National Greenhouse and Energy Reporting Act 2007 (Cth).

Authority

Any government, government department, instrumentality, *Minister*, agency, statutory authority or other body in which a government has a controlling interest, and includes the *AEMC*, *AEMO*, the *AER* and the *ACCC* and their successors.

automatic access standard

In relation to a technical requirement of access, a standard of performance, identified in a schedule of Chapter 5 as an automatic access standard for that technical requirement, such that a *plant* that meets that standard would not be denied access because of that technical requirement.

automatic reclose equipment

In relation to a *transmission line* or *distribution line*, the equipment which automatically recloses the relevant line's circuit breaker(s) following their opening as a result of the detection of a fault in the *transmission line* or the *distribution line* (as the case may be).

available capacity

The total MW capacity available for *dispatch* by a *scheduled generating unit*, *semi-scheduled generating 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).

[available fault level](#)

[Has the meaning given in the system strength impact assessment guidelines.](#)

average electrical energy loss

The volume-weighted average of the *electrical energy losses* incurred in each *trading interval* over all *trading intervals* in a defined period of time

average loss factor

A multiplier used to describe the *average electrical energy loss* for electricity used or transmitted.

avoided Customer TUOS charges

The charges described in rule 5.3AA(h).

B2B Change Party

A person who has provided a change proposal to the *Information Exchange Committee* under clause 7.17.4(f) and is not otherwise a *B2B Party*.

B2B Communications

Communications between *B2B Parties* relating to end-users or *supply* to end-users provided for in the *B2B Procedures*.

B2B costs

The following costs incurred by *AEMO*:

- (a) the costs of the development of the *B2B Procedures*;
- (b) the costs of the establishment and operation of the *Information Exchange Committee* (including the engagement costs of specialist advisers), all of which must be set out in the budget and annual report prepared by the *Information Exchange Committee* pursuant to clause 7.17.7; and
- (c) the operational costs associated with any service provided by *AEMO* to facilitate *B2B Communications* (including providing, maintaining, upgrading and operating a *B2B e-Hub*).

B2B Data

Data relating to *B2B Communications*.

B2B Decision

A decision of *AEMO* to approve or not approve an *Information Exchange Committee Recommendation*.

B2B Determination Dispute

A dispute in relation to either a *B2B Decision* or an *Information Exchange Committee Recommendation*.

B2B e-Hub

An electronic information exchange platform provided, maintained and operated by *AEMO* to facilitate *B2B Communications*.

B2B e-Hub Participant

A person who has been accredited by *AEMO* as a *B2B e-Hub Participant* under clause 7.17.2.

B2B factors

The following factors:

- (a) The reasonable costs of compliance by *AEMO* and *B2B Parties* with the *B2B Procedures* compared with the likely benefits from *B2B Communications*;
- (b) The likely impacts on innovation in and barriers to entry to the markets for services facilitated by advanced meters resulting from changing the existing *B2B Procedures*; and

- (c) The implementation timeframe reasonably necessary for *AEMO* and *B2B Parties* to implement systems or other changes required to be compliant with any change to existing *B2B Procedures*.

B2B Party

Distribution Network Service Providers, retailers, Local Retailers, Metering Coordinators, Metering Providers, Metering Data Providers, Embedded Network Managers and other *Third Party B2B Participants*.

B2B Principles

The following principles:

- (a) *B2B Procedures* should provide a uniform approach to *B2B Communications* in *participating jurisdictions*;
- (b) *B2B Procedures* should detail operational and procedural matters and technical requirements that result in efficient, effective and reliable *B2B Communications*;
- (c) *B2B Procedures* should avoid unreasonable discrimination between *B2B Parties*; and
- (d) *B2B Procedures* should protect the confidentiality of commercially sensitive information.

B2B Procedures

The *B2B Procedures* made under Part H with the content required under clause 7.17.3.

B2B Procedures Change Pack

A document consisting of:

- (a) a *B2B Proposal*;
- (b) a report setting out an overview of the likely impact of the *B2B Proposal* on *AEMO* and *B2B Parties*;
- (c) draft *B2B Procedures* (incorporating proposed changes in mark up, where appropriate); and
- (d) an issues paper explaining why the *B2B Proposal* is being presented.

B2B Proposal

A proposal for *B2B Procedures*, or a change to the *B2B Procedures*, which is the subject of consultation by the *Information Exchange Committee*.

bank bill rate

On any *day*, the rate determined by *AEMO* (having regard to such market indicators as *AEMO* in its discretion selects) to be the market rate as at 10.00 am on that *day* (or if not a *business day*, on the previous *business day*) for Australian dollar denominated bank accepted bills of exchange having a tenor of 30 *days*.

basic connection service

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1.

basic micro EG connection service

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1.

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* and *scheduled market network services* in accordance with schedule 3.1.

billed but unpaid charges

For a *Distribution Network Service Provider*, *network charges* that have been billed to a *failed retailer* by the *Distribution Network Service Provider*, but that the *failed retailer* has not yet paid (whether before or after the relevant due date for payment).

billing period

The period of 7 days commencing at the start of the *trading interval* ending 12.30 am Sunday.

black start capability

A capability that allows a *generating 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*,

without taking *supply* from any part of the *power system* following *disconnection*.

black system

The absence of *voltage* on all or a significant part of the *transmission system* or within a *region* during a *major supply disruption* affecting a significant number of customers.

book build participant

A person who is accredited by *AEMO* to participate in a voluntary book build under clause 4A.H.4.

breaker fail

In relation to a *protection system*, that part of the *protection system* that protects a *Market Participant's facilities* against the non-operation of a circuit breaker that is required to open.

breaker fail protection system

A *protection system* that protects a *facility* against the non-operation of a circuit breaker that is required to open to clear a fault.

building block determination

The component of a distribution determination relevant to the regulation of *standard control services* (See rule 6.3).

building block proposal

For a *Distribution Network Service Provider*, the part of the provider's *regulatory proposal* relevant to the regulation of *standard control services* (See clause 6.3.1).

busbar

A common *connection point* in a *power station switchyard* or a *transmission network substation*.

business day

A day that is not:

- (a) a Saturday or Sunday; or
- (b) observed as a public holiday on the same day in each of the *participating jurisdictions* (except the Commonwealth).

calculated metering data

The *trading interval* data corresponding to the calculation of consumed *energy* for a type 7 *metering installation* in accordance with the *metrology procedure*. *Calculated metering data* is held in the *metering data services database* and the *metering database*.

call amount

The amount determined pursuant to the formula in clause 3.3.11 for the purposes of a *call notice* where the *outstandings* of a *Market Participant* exceed its *trading limit*.

call notice

A notice issued by AEMO pursuant to clause 3.3.11 where the *outstandings* of a *Market Participant* exceed its *trading limit*.

capacitor bank

Electrical equipment used to generate *reactive power* and therefore support *voltage* levels on *transmission line* or *distribution line* in periods of high *load*.

capacity reserve

At any time, the amount of surplus or unused generating capacity indicated by the relevant *Generators* 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.

capital expenditure criteria

For a *Transmission Network Service Provider* – the matters listed in clause 6A.6.7(c)(1)–(3).

For a *Distribution Network Service Provider* – the matters listed in clause 6.5.7(c)(1)–(3).

capital expenditure factors

For a *Transmission Network Service Provider* - the factors listed in clause 6A.6.7(e)(1)-(14).

For a *Distribution Network Service Provider* - the factors listed in clause 6.5.7(e)(1)-(12).

Capital Expenditure Incentive Guidelines

Guidelines made by the AER under clause 6.4A(b) or clause 6A.5A(b), as the case may be.

capital expenditure incentive objective

Has the meaning given to it by clause 6.4A(a) or clause 6A.5A(a), as the case may be.

capital expenditure objectives

For a *Transmission Network Service Provider* – the objectives set out in clause 6A.6.7(a).

For a *Distribution Network Service Provider* – the objectives set out in clause 6.5.7(a).

capital expenditure sharing scheme

A scheme developed and *published* by the AER in accordance with clause 6.5.8A or clause 6A.6.5A, as the case may be.

capital expenditure sharing scheme principles

Has the meaning given to it by clause 6.5.8A(c) or clause 6A.6.5(c), as the case may be.

capitalisation requirement

The requirement set out in clause S6.2.2A(e) or clause S6A.2.2A(e), as the case may be.

carbon dioxide equivalent intensity index

The index published by AEMO in accordance with clause 3.13.14(f).

carbon dioxide equivalent intensity index procedures

The procedures published by AEMO in accordance with clause 3.13.14(a).

cascading outage

The occurrence of an uncontrollable succession of *outages*, each of which is initiated by conditions (e.g. instability or overloading) arising or made worse as a result of the event preceding it.

categories of prescribed transmission services

For the purposes of pricing for *prescribed transmission services*:

- (a) *prescribed entry services*;
- (b) *prescribed exit services*;
- (c) *prescribed common transmission services*; and
- (d) *prescribed TUOS services*.

central dispatch

The process managed by *AEMO* for the *dispatch* of *scheduled generating units*, *semi-scheduled generating units*, *scheduled loads*, *scheduled network services* and *market ancillary services* in accordance with rule 3.8.

changeover date

Has the meaning given in the *NEL*.

charging parameters

The constituent elements of a tariff.

check meter

An additional *meter* used as a source of *check metering data* for Type 1 and Type 2 *metering installations* as specified in schedule 7.4.

check metering data

The *energy data*, once collected from a *check metering installation*, is *check metering data*. *Check metering data* is held in a *metering data services database* and the *metering database*.

check metering installation

A *metering installation* that includes a *check meter* which is used as the source of *check metering data* for validation in the *settlements* process.

child connection point

The agreed point of *supply* between an *embedded network* and an electrical installation, *generating unit* or other *network connected* to that *embedded network*, for which a *Market Participant* is, or proposes to be, *financially responsible*.

clause 4.8.9 instruction

Has the meaning given in clause 4.8.9(a1)(2).

closure date

Has the meaning given in clause 2.10.1(c1).

commercial arbitrator

A dispute resolution panel (within the meaning of section 2 of the *NEL*) established pursuant to clause 6A.30.2(b).

commitment

The commencement of the process of starting up and *synchronising* a *generating unit* to the *power system*.

communications interface

The modem and other devices and processes that facilitate the connection between the *metering installation* and the *telecommunications network* for the purpose of the *remote acquisition* of *energy data*.

compensation recovery amount

Has the meaning given in clause 3.15.8(a).

confidential information

In relation to a *Registered Participant* or *AEMO*, information which is or has been provided to that *Registered Participant* or *AEMO* 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.

Note:

In the context of Chapter 5A, the above definition has been displaced by a definition specifically applicable to that Chapter. See clause 5A.A.1.

congestion information resource

The information resource developed, *published* and amended from time to time by *AEMO* in accordance with rule 3.7A.

congestion information resource guidelines

Guidelines developed and *published* by *AEMO* in accordance with rules 3.7A(k) to (m).

congestion information resource objective

The objective of the *congestion information resource* which is set out in rule 3.7A(a).

connect

To form a physical link to or through a *transmission network* (including to a *network connection asset* or a *dedicated connection asset* that is physically linked to that *transmission network*) or *distribution network*.

Note:

In the context of Chapter 5A, the above definition has been displaced by a definition specifically applicable to that Chapter. See clause 5A.A.1.

connection agreement

An agreement between a *Network Service Provider* and a *Registered Participant* or other person by which the *Registered Participant* or other person is *connected* to the *Network Service Provider's transmission network* or *distribution network* and/or receives *transmission services* or *distribution services*. In some *participating jurisdictions*, the *Registered Participant* or other person may have one *connection agreement* with a *Network Service Provider* for *connection services* and another agreement with a different *Network Service Provider* for *network services* provided by the *transmission network*.

connection alteration

Has (in the context of Chapters 5A and 7) the meaning given in clause 5A.A.1.

Connection Applicant

A person who wants to establish or modify *connection* to a *transmission network* or *distribution network* and/or who wishes to receive *network services* and who makes a *connection enquiry* as described in clause 5.3.2 or clause 5.3A.5.

In respect of establishing or modifying a *connection* to a *transmission network* of a *Primary Transmission Network Service Provider*, a *Connection Applicant* includes:

- (a) a person seeking to *connect* its *facilities* to a *dedicated connection asset* that is or will be *connected* to the *transmission network* of that *Primary Transmission Network Service Provider*; and
- (b) a person seeking to negotiate a *network operating agreement* for a *third party IUSA*.

Note

A person seeking access to *large DCA services* from a *third party DCA* under an *access policy* may also need to negotiate with the *Primary Transmission Network Service Provider*.

In the context of Chapter 5A, the above definition has been displaced by a definition specifically applicable to that Chapter. See clause 5A.A.1.

connection application

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1.

connection assets

For the *declared transmission system* of an *adoptive jurisdiction*, and a *distribution system*, those components of a *transmission system* or *distribution system* which are used to provide *connection services*.

For other *transmission systems*, *dedicated connection assets* and *network connection assets*.

Note

A *third party DCA* is a *connection asset* but for the purpose of registration under Chapter 2 also constitutes a *transmission system*.

connection charge

Has the meaning given in clause 5A.A.1.

connection charge guidelines

Has the meaning given in clause 5A.E.3.

connection charge principles

Has the meaning given in clause 5A.E.1.

connection contract

Has (in the context of Chapters 5A and 7) the meaning given in clause 5A.A.1.

connection offer

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1.

connection point

In relation to a *declared shared network* and a *distribution network* (other than an *embedded network*), the agreed point of supply established between *Network Service Provider(s)* and another *Registered Participant*, *Non-Registered Customer* or *franchise customer* and includes a *parent connection point*.

In relation to other *transmission networks*, the point at which power flows to or from the person or *identified user group* connected to the *transmission network* can be isolated from the *transmission network*. If there is more than one such point, the *Network Service Provider* and that person or *identified user group* will agree which point is the *connection point* in their *connection agreement*.

In relation to an *embedded network*, the *child connection point*, unless otherwise specified.

connection policy

Has the meaning given in clause 5A.A.1.

connection service

An *entry service* (being a service provided to serve a *Generator* or a group of *Generators*, 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.

considered project

- (a) In respect of a *transmission network augmentation*, a project that meets the following criteria:
- (1) the *Network Service Provider* has acquired the necessary land and easements;
 - (2) the *Network Service Provider* has obtained all necessary planning and development approvals;
 - (3) as applicable:
 - (i) the *augmentation* project has passed the *regulatory investment test for transmission*;
 - (ii) the *augmentation* has passed the *regulatory investment test for distribution*;
 - (iii) in respect of a *transmission investment* which has not been subject to a *regulatory investment test for transmission* or the *regulatory investment test for distribution*, an intention to proceed with the project has been published in the *Network Service Provider's Transmission Annual Planning Report* or *Distribution Annual Planning Report* (as the case may be); or
 - (4) construction has either commenced or the *Network Service Provider* has set a firm date for it to commence.
- (b) In respect of a *distribution network augmentation*, a project that meets the following criteria:
- (1) the *Network Service Provider* has acquired the necessary land and easements;
 - (2) the *Network Service Provider* has obtained all necessary planning and development approvals; and
 - (3) construction has either commenced or the *Network Service Provider* has set a firm date for it to commence.

constrained off

In respect of a *generating unit*, the state where, due to a *constraint* on a *network*, the 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*.

constrained on

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 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 offer*.

constraint

A limitation on the capability of a *network*, *load* or a *generating unit* such that it is unacceptable to either transfer, consume or generate the level of electrical power that would occur if the limitation was removed.

consulting party

The person who is required to comply with the *Rules consultation procedures*.

Consumer Member

A person appointed by AEMO as a *Member* to represent *small customers* in accordance with the *Rules* (including clause 7.17.10(b)).

consumer panel report

Has the meaning given to it in clause 5.10.2.

contestable

- (a) In relation to *transmission services* a service which is permitted by the laws of the relevant *participating jurisdiction* to be provided by more than one *Transmission Network Service Provider* as a contestable service or on a competitive basis.
- (b) In relation to *distribution services*, a service which is permitted by the laws of the relevant *participating jurisdiction* to be provided by more than one *Distribution Network Service Provider* as a contestable service or on a competitive basis.

Note:

In the context of Chapter 5A, the above definition has been displaced by a definition specifically applicable to that Chapter. See clause 5A.A.1.

contestable IUSA components

Those components of the *identified user shared asset* that satisfy the criteria set out in clause 5.2A.4(c).

contingency capacity reserve

Actual *active* and *reactive energy* capacity, *interruptible load* arrangements and other arrangements organised to be available to be utilised on the actual occurrence of one or more *contingency events* to allow the restoration and maintenance of *power system security*.

contingency capacity reserve standards

The standards set out in the *power system security standards* to be used by AEMO to determine the levels of *contingency capacity reserves* necessary for *power system security*.

contingency event

An event described in clause 4.2.3(a).

contingent project

In relation to a distribution determination, a *proposed contingent project* that is determined by the AER, in accordance with clause 6.6A.1(b), to be a *contingent project* for the purposes of that distribution determination.

In relation to a *revenue determination*, has the meaning given in clause 6A.8.1A.

continuous uninterrupted operation

In respect of a *generating system* or *generating 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.

contracted demand side participation

Has the meaning given to it in clause 3.7D(a).

control centre

The *facilities* used by AEMO for managing *power system security* and administering the *market*.

control system

Means of monitoring and controlling the operation of the *power system* or equipment including *generating units connected to a transmission network* or *distribution network*.

cooling off period

Has the same meaning as in rule 47(2) of the *NERR*.

Co-ordinated Universal Time (UTC)

The time as determined by the International Bureau of Weights and Measures and maintained under section 8AA of the *National Measurement Act*.

Co-ordinating Network Service Provider

A *Network Service Provider* appointed by multiple *Transmission Network Service Providers* to allocate AARR in accordance with rule 6A.29.

Cost Allocation Guidelines

For a *Transmission Network Service Provider* – the guidelines referred to in clause 6A.19.3.

For a *Distribution Network Service Provider* – the guidelines referred to in clause 6.15.3.

Cost Allocation Method

For a *Distribution Network Service Provider*, the Cost Allocation Method approved by the AER for that *Distribution Network Service Provider* under clause 6.15.4(c) and (d) as amended from time to time in accordance with clause 6.15.4(f) and (g).

Cost Allocation Methodology

For a *Transmission Network Service Provider*, the Cost Allocation Methodology approved or taken to be approved by the AER for that *Transmission Network Service Provider* under clauses 6A.19.4(c) and (d) as amended from time to time in accordance with clauses 6A.19.4(f) and (g).

Cost Allocation Principles

For a *Transmission Network Service Provider* – the principles set out in clause 6A.19.2.

For a *Distribution Network Service Provider* – the principles set out in clause 6.15.2.

Cost Benefit Analysis Guidelines

Has the meaning given to it in clause 5.10.2.

cost threshold

Has the meaning given to it in clause 5.10.2.

cost threshold determination

Has the meaning given to it in clause 5.10.2.

CPI

As at a particular time, the Consumer Price Index: All Groups Index Number, weighted average of eight capital cities published by the Australian Bureau of Statistics for the most recent quarter that precedes that particular time and for which the index referred to has been published by the Australian Bureau of Statistics as at that time. If that index ceases to be published or is substantially changed, *CPI* will be such other index as is determined by the AER as a suitable benchmark for recording general movements in prices.

credible contingency event

An event described in clause 4.2.3(b), certain examples of which are set out in schedule 5.1.

credible option

Has the meaning given to it in clause 5.10.2.

credit support

For the purposes of Chapter 3—an obligation owed to *AEMO* by a third party supporting the obligations of a *Market Participant* and having the characteristics required by clause 3.3.2.

For the purposes of Chapter 6B—a security supporting the obligations of a *retailer* to a *Distribution Network Service Provider* under Chapter 6B.

credit support provider

The issuing party that assumes obligations to *AEMO* pursuant to a *credit support*.

CRNP (cost reflective network pricing methodology)

The cost allocation methodology set out in clause S6A.3.2.

cumulative price threshold

The threshold for imposition of an *administered price cap* as defined in clause 3.14.1.

current rating

The maximum current that may be permitted to flow (under defined conditions) through a *transmission line* or *distribution line* or other item of equipment that forms part of a *power system*.

current transformer (CT)

A *transformer* for use with *meters* and/or protection devices in which the current in the secondary winding is, within prescribed error limits, proportional to and in phase with the current in the primary winding.

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.

customer authorised representative

A person authorised by a *retail customer* to request and receive information under Chapter 7 on the *retail customer's* behalf.

customer connection service

Has (in the context of Chapter 6B) the meaning given in clause 6B.A1.2.

Customer transmission use of system, Customer transmission use of system service

A service provided to a *Transmission Network User* for use of the *transmission network* for the conveyance of electricity that can be reasonably allocated to a *Transmission Network User* on a locational basis, but does not include *Generator transmission use of system services*.

DAPR date

Has the meaning given to it in clause 5.13.2.

date of issue

Has (in the context of Chapter 6B) the meaning given in clause 6B.A1.2.

date of issue

Has the meaning given to it in clause 6B.A1.2.

day

Unless otherwise specified, the 24 hour period beginning and ending at midnight *Eastern Standard Time (EST)*.

declared NEM project

A project determined to be a declared NEM project under clause 2.11.1(ba) or 2.11.1(bd), for which there is special treatment in the timing of cost recovery.

declared network functions

Has the meaning given in the *NEL*.

declared shared network

Has the meaning given in the *NEL*.

declared transmission system

Has the meaning given in the *NEL*.

declared transmission system operator

Has the meaning given in the *NEL*.

decommission, decommit

In respect of a *generating unit*, ceasing to generate and *disconnecting* from a *network*.

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*;
 - (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*.

Dedicated Connection Asset Service Provider

A *Transmission Network Service Provider* to the extent that its *transmission system* or any part of it is classified as a *dedicated connection asset* in accordance with Chapter 2.

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.

default event

An event defined as such in clause 3.15.21(a).

default notice

A notice issued by *AEMO* pursuant to clause 3.15.21(b)(1).

default rate

Has (in the context of Chapter 6B) the meaning given in clause 6B.A1.2.

default rate

Has the meaning given to it in clause 6B.A1.2.

defaulting Market Participant

A *Market Participant* in relation to which a *default event* has occurred.

delayed lower service

The service of providing, in accordance with the *market ancillary service specification*, the capability of controlling the level of *generation* or *load* associated with a particular *facility* in response to a change in the *frequency* of the *power system* beyond a threshold or in accordance with electronic signals from *AEMO* in order to lower that *frequency* to within the *normal operating frequency band*.

delayed raise service

The service of providing, in accordance with the *market ancillary service specification*, the capability of controlling the level of *generation* or *load* associated with a particular *facility* in response to a change in the *frequency* of the *power system* beyond a threshold or in accordance with electronic signals from *AEMO* in order to raise that *frequency* to within the *normal operating frequency band*.

delayed service

A *delayed raise service* or a *delayed lower service*.

demand management incentive scheme

A scheme developed and *published* by the *AER* under clause 6.6.3.

demand management incentive scheme objective

Has the meaning given to it by clause 6.6.3(b).

demand management innovation allowance mechanism

A mechanism developed and *published* by the *AER* under clause 6.6.3A or 6A.7.6, as the case may be.

demand management innovation allowance objective

Has the meaning given to it by clause 6.6.3A(b) or 6A.7.6(b), as the case may be.

demand side engagement document

Has the meaning given to it in clause 5.10.2.

demand side engagement register

Has the meaning given to it in clause 5.10.2.

demand side engagement strategy

Has the meaning given to it in clause 5.10.2.

demand side participation information

Information referred to in clause 3.7D(e)(1).

de-rate

Has the meaning given to it in clause 5.10.2.

DER generation information

Standing data in relation to a *small generating unit*.

DER register

The register established and maintained by *AEMO* in accordance with rule 3.7E.

DER register information

The information contained in the *DER register*.

DER register information guidelines

Guidelines made, amended and *published* by *AEMO* in accordance with clauses 3.7E(g) to (k).

DER register report

The report of aggregated *DER register information* required to be developed and *published* by *AEMO* under clause 3.7E(l).

designated pricing proposal charges

Any of the following:

- (a) charges for *designated pricing proposal services*;

- (b) *avoided Customer TUOS charges*;
- (c) charges for *distribution services* provided by another *Distribution Network Service Provider*, but only to the extent those charges comprise:
 - (1) charges incurred by that *Distribution Network Service Provider* for *designated pricing proposal services*; or
 - (2) charges for *standard control services*;
- (d) charges or payments specified in rule 11.39.

designated pricing proposal services

Any of the following services:

- (a) *prescribed exit services*;
- (b) *prescribed common transmission services*; and
- (c) *prescribed TUOS services*.

design fault level

Has the meaning given to it in clause 5.10.2.

de-synchronising / de-synchronisation

The act of *disconnection* of a *generating unit* from the *connection point* with the *power system*, normally under controlled circumstances.

detailed response

Has the meaning given to it in clause 5.3A.A1.

development path

Has the meaning given to it in clause 5.10.2.

direct control service

A *distribution service* that is a direct control network service within the meaning of section 2B of the Law.

Directed Participant

A *Scheduled Generator*, *Semi-Scheduled Generator*, *Market Generator*, *Market Ancillary Service Provider*, *Scheduled Network Service Provider* or *Market Customer* the subject of a *direction*.

direction

Has the meaning given in clause 4.8.9(a1)(1).

directional interconnector

Has the meaning given in clause 3.18.1(c).

Disclosee

In relation to a *Registered Participant*, a person to whom that *Registered Participant* discloses *confidential information*.

disconnect

The operation of switching equipment or other action so as to prevent the flow of electricity at a *connection point*.

Discretionary Member

A person appointed as a *Member* by *AEMO* to represent a class or classes of persons who have an interest in the *B2B Procedures* in accordance with the *Rules* (including clause 7.17.10(d)).

dispatch

The act of initiating or enabling all or part of the response specified in a *dispatch bid*, *dispatch offer* or *market ancillary service offer* in respect of a *scheduled generating unit*, *semi-scheduled generating unit*, a *scheduled load*, a *scheduled network service*, an *ancillary service generating unit* or an *ancillary service load* 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 algorithm

The algorithm used to determine *central dispatch* developed by *AEMO* in accordance with clause 3.8.1(d).

dispatch bid

A notice submitted by a *Market Participant* to *AEMO* relating to the *dispatch* of a *scheduled load* in accordance with clause 3.8.7.

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 loads* or *scheduled generating units* which are not *slow start generating units*.

dispatch instruction

An instruction given to a *Registered Participant* under clauses 4.9.2, 4.9.2A, 4.9.3, 4.9.3A, or to an *NMAS provider* under clause 4.9.3A.

dispatch interval

A period defined in clause 3.8.21(a1) in which the *dispatch algorithm* is run in accordance with clause 3.8.21(b).

dispatch level

Means:

- (1) for a *semi-dispatch interval*, the amount of electricity specified in a *dispatch instruction* as the *semi-scheduled generating unit's* maximum permissible *active power* at the end of the *dispatch interval* specified in the *dispatch instruction*; and
- (2) for a *non semi-dispatch interval*, an estimate of the *active power* at the end of the *dispatch interval* specified in the *dispatch instruction*.

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*.

dispatch price

The price determined for each *regional reference node* by the *dispatch algorithm* each time it is run by *AEMO*.

dispatched generating unit

A *scheduled generating unit* which has received instructions from *AEMO* in accordance with a *dispatch schedule*.

dispatched generation

The *generation* which has been *dispatched* as part of *central dispatch*.

dispatched Generator

A *Generator* who has received a *dispatch instruction* from *AEMO*.

dispatched load

The *load* which has been *dispatched* as part of *central dispatch*.

dispute management system

The dispute management system which each *Registered Participant* and *AEMO* must adopt in accordance with clause 8.2.3.

dispute notice

Has the meaning given to it in clause 5.10.2.

dispute resolution panel

A dispute resolution panel established pursuant to clause 8.2.6A.

disputing party

Has the meaning given to it in clause 5.10.2.

distribution

Activities pertaining to a *distribution system* including the conveyance of electricity through that *distribution system*.

Distribution Annual Planning Report

A report prepared by a *Distribution Network Service Provider* under clause 5.13.2.

distribution asset

Has the meaning given to it in clause 5.10.2.

Distribution Confidentiality Guidelines

Guidelines made by the *AER* under clause 6.14A.

distribution connection assets

Those components of the *distribution system* which are used to provide *connection services* to a *Distribution Network User* or a group of *Distribution*

Network Users or a *Network Service Provider* or a group of *Network Service Providers*.

distribution consultation procedures

The procedures set out in Part G of Chapter 6.

Distribution Customer

A *Customer*, *Distribution Network Service Provider*, *Non-Registered Customer*, *franchise customer*, or *retail customer* having a *connection point* with a *distribution network*.

distribution line

A power line, including underground cables, that is part of a *distribution network*.

distribution loss factor

An *average loss factor* calculated according to clause 3.6.3.

distribution losses

Electrical energy losses incurred in distributing electricity over a *distribution network*.

distribution network

A *network* which is not a *transmission network*.

distribution network connection point

A *connection point* on a *distribution network*.

Distribution Network Service Provider

A person who engages in the activity of owning, controlling, or operating a *distribution system*.

Distribution Network Service Provider Member

A person nominated and elected as a *Member* by *Distribution Network Service Providers* to represent *Distribution Network Service Providers* in accordance with the *Rules* (including clause 7.17.10(e)) and *Information Exchange Committee Election Procedures*.

Distribution Network User

A *Distribution Customer* 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*,

at a *connection point* which has been negotiated in accordance with rule 5.5.

Distribution Reliability Measures Guidelines

Guidelines made by the *AER* under clause 6.28.

Distribution Ring-Fencing Guidelines

The guidelines developed by the *AER* under clause 6.17.2.

distribution service

A service provided by means of, or in connection with, a *distribution system*.

distribution services access dispute

A dispute referred to in clause 6.22.1.

Distribution Service Classification Guidelines

Guidelines developed, maintained and *published* by the AER under clause 6.2.3A.

distribution standard control service revenue

Has the meaning given in rule 6.26(b)(2).

distribution system

A *distribution network*, together with the *connection assets* associated with the *distribution network*, which is *connected* to another *transmission system* or *distribution system*.

Connection assets on their own, and *dedicated connection assets* in respect of which a *Primary Transmission Network Services Provider* is registered, do not constitute a *distribution system*.

Distribution System Operator

A person who is responsible, under the *Rules* or otherwise, for controlling or operating any portion of a *distribution system* (including being responsible for directing its operations during *power system* emergencies) and who is registered by AEMO as a *Distribution System Operator* under Chapter 2.

distribution use of system, distribution use of system service

A service provided to a *Distribution Network User* for use of the *distribution network* for the conveyance of electricity that can be reasonably allocated on a locational and/or *voltage* basis.

DMS

A *dispute management system*.

DMS Contact

A person appointed by a *Registered Participant* or AEMO pursuant to its *DMS* to be the first point of contact for the notification of disputes under clause 8.2.

DMS referral notice

A notice served on a *DMS Contact* pursuant to clause 8.2.4(a).

draft project assessment report

Has the meaning given to it in clause 5.10.2.

DRP

A *dispute resolution panel*.

dual function asset

Means any part of a *network* owned, operated or controlled by a *Distribution Network Service Provider* which operates between 66 kV and 220 kV and which operates in parallel, and provides support, to the higher voltage *transmission*

network which is deemed by clause 6.24.2(a) to be a *dual function asset*. For the avoidance of doubt:

- (a) a *dual function asset* can only be an asset which forms part of a *network* that is predominantly a *distribution network*; and
- (b) an asset which forms part of a *network* which is predominantly a *transmission network* cannot be characterised as a *dual function asset*, through the operation of clause 6.24.2(a).

due date for payment

Has (in the context of Chapter 6B) the meaning given in clause 6B.A1.2.

due date for payment

Has the meaning given to it in clause 6B.A1.2.

dynamic performance

The response and behaviour of *networks* and *facilities* which are *connected* to the *networks* when the *satisfactory operating state* of the *power system* is disturbed.

EAAP (energy adequacy assessment projection)

A projection of *AEMO's* assessment of *energy* availability that accounts for *energy constraints* for each month over a 24 month period, which is prepared and *published* in accordance with rule 3.7C and is measured as *unserved energy* for each *region*.

EAAP guidelines

The guidelines *published* by *AEMO* in accordance with clause 3.7C(k) that *AEMO* must comply with in preparing the *EAAP*.

EAAP principles

The principles referred to in clause 3.7C(b) that *AEMO* must comply with in preparing the *EAAP* and the *EAAP guidelines*.

Eastern Standard Time (EST)

The time which is set at 10 hours in advance of Co-ordinated Universal Time as maintained under section 8AA of the *National Measurement Act*.

EFCS settings schedule

The schedules developed by *AEMO* for each *participating jurisdiction* in accordance with clause 4.3.2(h)(2) specifying the settings for *emergency frequency control schemes* affecting *regions* in the *participating jurisdiction*.

efficiency benefit sharing scheme

For a *Transmission Network Service Provider* – a scheme developed and *published* by the *AER* under clause 6A.5.

For a *Distribution Network Service Provider* – a scheme developed and *published* by the *AER* under clause 6.5.8.

efficiency benefit sharing scheme parameters

For an *efficiency benefit sharing scheme*, those parameters that are *published* by the *AER* in respect of that scheme pursuant to clause 6A.6.5(c).

electrical energy loss

Energy loss incurred in the production, transportation and/or use of electricity.

electrical sub-network

A part of the *national grid* determined by AEMO in accordance with clause 3.11.8.

Electricity Procedures

Procedures made under the *Rules* including:

- (a) *Retail Market Procedures*; and
- (b) procedures governing the operation of the *NEM*; and
- (c) *RoLR procedures* for electricity; and
- (d) procedures dealing with any other subject on which the *Rules* the making of procedures.

electronic communication system

Includes the electronic communication and the *electronic data transfer* system provided to *Registered Participants* by AEMO.

electronic data transfer

The transfer of data by electronic means from one location to another.

eligibility period

Has the meaning given to it in clause 3.14.6(a).

eligible pass through amount

In respect of a *positive change event* for a *Transmission Network Service Provider*, the increase in costs in the provision of *prescribed transmission services* that, as a result of that *positive change event*, the *Transmission Network Service Provider* has incurred and is likely to incur (as opposed to the revenue impact of that event) until:

- (a) unless paragraph(b) applies – the end of the *regulatory control period* in which the *positive change event* occurred; or
- (b) if the *transmission determination* for the *regulatory control period* following that in which the *positive change event* occurred does not make any allowance for the recovery of that increase in costs (whether or not in the forecast operating expenditure or forecast capital expenditure accepted or substituted by the *AER* for that *regulatory control period*) – the end of the *regulatory control period* following that in which the *positive change event* occurred.

In respect of a *positive change event* for a *Distribution Network Service Provider*, the increase in costs in the provision of *direct control services* that, as a result of that *positive change event*, the *Distribution Network Service Provider* has incurred and is likely to incur (as opposed to the revenue impact of that event) until:

- (a) unless paragraph(b) applies – the end of the *regulatory control period* in which the *positive change event* occurred; or

- (b) if the distribution determination for the *regulatory control period* following that in which the *positive change event* occurred does not make any allowance for the recovery of that increase in costs (whether or not in the forecast operating expenditure or forecast capital expenditure accepted or substituted by the *AER* for that *regulatory control period*) – the end of the *regulatory control period* following that in which the *positive change event* occurred.

eligible person

Has the meaning given in clause 3.18.2(b).

embedded generating unit

A *generating unit connected* within a *distribution network* and not having direct access to the *transmission network*.

Embedded Generator

A *Generator* 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 network

A *distribution system, connected* at a *parent connection point* to either a *distribution system* or *transmission system* that forms part of the *national grid*, and which is owned, controlled or operated by a person who is not a *Network Service Provider*.

embedded network management services

Services that involve carrying out the roles, discharging the responsibilities and complying with the obligations of an *Embedded Network Manager* under the *Rules* and procedures authorised under the *Rules*.

Embedded Network Manager

A person:

- (a) who meets the requirements listed in schedule 7.7 and has been accredited and registered by *AEMO* as an *Embedded Network Manager*; and
- (b) who has not been deregistered by *AEMO* as an *Embedded Network Manager* under clause 7.4.4(d).

emergency frequency control scheme

Facilities for initiating automatic *load shedding* or automatic *generation shedding* to prevent or arrest uncontrolled increases or decreases in *frequency* (alone or in combination) leading to *cascading outages* or *major supply disruptions*.

emergency priority procedures

The procedures developed and *published* by *AEMO* in accordance with clause 7.8.5(b).

emission factor

The factor representing the amount of greenhouse gas emissions per unit of electricity (t CO₂-e/MWh) of energy produced by each *power station*.

enable

A *market ancillary service* is enabled when *AEMO* has selected the relevant *generating unit* or *load* 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 nodes](#) *system strength node*.

enablement limit

In relation to any *market ancillary service offer*, the level of associated *generation* or *load* (in MW) above or below which no response is specified as being available.

enabling price

Has the meaning given in clause 3.8.7A(d).

energise

The act of operation of switching equipment or the start-up of a *generating unit*, which results in there being a non-zero *voltage* beyond a *connection point* or part of the *transmission network* or *distribution network*.

energy

Active energy and/or *reactive energy*.

energy constrained scheduled generating unit

A *scheduled generating unit* in respect of which the amount of electricity it is capable of *supplying* on a *trading day* is less than the amount of electricity it would *supply* on that *trading day* if it were *dispatched* to its full nominated availability for the whole *trading day*.

energy constrained scheduled load

A *scheduled load* in respect of which the amount of electricity it 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 group of *generating units* to generate *active power* due to the restrictions in the availability of fuel or other necessary expendable resources such as, but not limited to, gas, coal, or water for operating turbines or for cooling.

energy conversion model

The model that defines how the *intermittent* input energy source (such as wind) is converted by the *semi-scheduled generating unit* into electrical output. That model must contain the information set out in the guidelines *published* by AEMO in accordance with clause 2.2.7(d).

energy data

Interval energy data or *accumulated energy data*.

energy laws

Has the meaning given in section 2(1) of the *NERL*

energy ombudsman

Has the same meaning as in the *NERL*.

energy support arrangement

A contractual arrangement between a *Generator* 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.

ENM conditions

An *Exempt Embedded Network Service Provider* must:

- (a) act as the *Embedded Network Manager* for the relevant *embedded network*;
or
- (b) engage an *Embedded Network Manager* to provide *embedded network management services* for the relevant *embedded network*; and
- (c) enter into an agreement with an *Embedded Network Manager* for the provision of *embedded network management services* where that person has engaged an *Embedded Network Manager* under paragraph (b).

ENM conditions trigger

In relation to a *small customer*, when the *small customer* enters a *market retail contract* for the sale of energy at the relevant *child connection point* and the *cooling off period* in relation to that contract has expired.

In relation to a *large customer*, when the *large customer* has entered a contract for the sale of energy at the relevant *child connection point*.

ENM service level procedures

The procedures established by AEMO in accordance with clause 7.16.6A.

enquiry

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1.

entry service

A service provided to serve a *Generator* or a group of *Generators*, or a *Network Service Provider* or a group of *Network Service Providers*, at a single *connection point*.

EN wiring information

Panel layouts and wiring diagrams relevant to an *embedded network*.

establish a connection

Has the meaning given to it in clause 5.3A.A1.

estimated metering data

The estimated values of *accumulated metering data*, *interval metering data* or *calculated metering data* that have been prepared in accordance with the *metrology procedure*. *Estimated metering data* is held in a *metering data services database* and the *metering database*.

excitation control system

In relation to a *generating unit*, the automatic *control system* that provides the field excitation for the generator of the *generating unit* (including excitation limiting devices and any *power system stabiliser*).

Exempt Embedded Network Service Provider

A person who engages in the activity of owning, controlling or operating an *embedded network* under an exemption granted or deemed to be granted by the AER under section 13 of the *NEL* and clause 2.5.1(d).

exemption application

Has the meaning given in clause 6.4B.2(a).

exit service

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*.

expected closure year

Has the meaning given in clause 2.2.1(e)(2A).

expenditure for a restricted asset

Capital expenditure for a *restricted asset*, excluding capital expenditure for the refurbishment of that asset.

Expenditure Forecast Assessment Guidelines

Guidelines made by the AER under clause 6.4.5(a) or clause 6A.5.6(a), as the case may be.

extension

An *augmentation* that requires the *connection* of a power line or *facility* outside the present boundaries of the *transmission network* or *distribution network* owned, controlled or operated by a *Network Service Provider*.

external administration default event

A *default event* of a type referred to in subparagraphs 3.15.21(a)(10) or (11).

extreme frequency excursion tolerance limits

In relation to the *frequency* of the *power system*, means the limits so described and specified in the *power system security standards*.

facilities

A generic term associated with the apparatus, equipment, buildings and necessary associated supporting resources provided at, typically:

- (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*.

failed retailer

Has the meaning given in the *NERL*.

fast lower service

The service of providing, in accordance with the requirements of the *market ancillary service specification*, the capability of rapidly controlling the level of *generation* or *load* associated with a particular *facility* in response to the locally sensed *frequency* of the *power system* in order to arrest a rise in that *frequency*.

fast raise service

The service of providing, in accordance with the requirements of the *market ancillary service specification*, the capability of rapidly controlling the level of *generation* or *load* associated with a particular *facility* in response to the locally sensed *frequency* of the *power system* in order to arrest a fall in that *frequency*.

fault clearance time

In respect of a *fault type*, the time within which the *protection system* is designed, operated and maintained to clear a *short circuit fault* of that *fault type* within its protection zone.

fault level node

~~A location on a transmission network that AEMO determines is a fault level node in its determination of system strength requirements under clause 5.20C.1(a).~~

fault level shortfall

~~A shortfall in the three phase fault level typically provided at a fault level node in a region (having regard to typical patterns of dispatched generation in central dispatch) compared to the minimum three phase fault level most recently determined by AEMO for the fault level node.~~

fault level shortfall event

~~A Transmission Network Service Provider is required to make system strength services available under clause 5.20C.3 as a consequence of an assessment by~~

~~AEMO under clause 5.20C.2(e) that there is a fault level shortfall at a fault level node in a region for which the Transmission Network Service Provider is the System Strength Service Provider or to cease making system strength services available under clause 5.20C.3 as a consequence of an assessment by AEMO under clause 5.20C.2(d) that a fault level shortfall at a fault level node has ceased and:~~

- ~~(a) the Transmission Network Service Provider is required to provide, or cease providing, system strength services during the course of a regulatory control period; and~~
- ~~(b) making system strength services available or ceasing to make system strength services available materially increases or materially decreases the Transmission Network Service Provider's costs of providing prescribed transmission services.~~

fault type

One of the following types of electrical fault:

- (a) three phase to ground fault;
- (b) three phase fault;
- (c) two phase to ground fault;
- (d) phase to phase fault; and
- (e) one phase to ground fault.

final project assessment report

Has the meaning given to it in clause 5.10.2.

final statement

A statement issued by AEMO under clause 3.15.15 to a *Market Participant*.

financial year

Means a period of 12 months beginning on 1 July.

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*.

firm delivery capacity

Has the meaning given to it in clause 5.10.2.

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 from the *Local Retailer* and which is classified as a *first-tier load* in accordance with Chapter 2.

forecast reliability gap

Has the meaning given in the *NEL* and as determined in accordance with clause 4A.A.2.

Forecasting Best Practice Guidelines

Has the meaning given to it in clause 5.10.2.

former Chapter 6A

Chapter 6A of the *Rules* as in force immediately prior to the commencement of Schedules 1, 2, 4, 5 and 6 of the *National Electricity Amendment (Transmission Connection and Planning Arrangements) Rule 2017 No.4* and which is applicable for a *declared transmission system* of an *adoptive jurisdiction* under clause 11.98.8, as amended from time to time.

forward planning period

Has the meaning given to it in clause 5.10.2.

framework and approach paper

A document prepared and issued as a framework and approach paper under clause 6.8.1.

franchise customer

A person who does not meet its local jurisdiction requirements to make it eligible to be registered by *AEMO* as a *Customer* for a *load*.

frequency

For alternating current electricity, the number of cycles occurring in each second. The term Hertz (Hz) corresponds to cycles per second.

frequency operating standard

The standards which specify the *frequency* levels for the operation of the *power system* set out in the *power system security standards*.

frequency response mode

The mode of operation of a *generating unit* which allows automatic changes to the generated power when the *frequency* of the *power system* changes.

fully co-optimised network constraint formulation

A *network constraint* equation formulation that allows *AEMO*, through direct physical representation, to control all the variables within the equation that can be determined through the *central dispatch* process. Some variables may not be included in accordance with clause 3.8.10(c) of the *Rules* if control of such variables would not materially enhance the security of the *power system* due to the small size of their coefficients.

funded augmentation

A *transmission network augmentation* for which the *Transmission Network Service Provider* is not entitled to receive a charge pursuant to Chapter 6A.

future ISP project

Has the meaning given to it in clause 5.10.2.

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* and updated in accordance with rule 3.7C for the purpose of the *EAAP*.

general regulatory information order

Has the meaning given in the *NEL*.

general system strength impact

The amount equal to a *plant's adverse system strength impact* as well as any additional amount the connecting party's *plant* reduces the *available fault level* at its *connection point*.

generated

In relation to a *generating unit*, the amount of electricity produced by the *generating unit* as measured at its terminals.

generating plant

In relation to a *connection point*, includes all equipment involved in generating electrical energy.

generating system

- (a) Subject to paragraph (b), for the purposes of the *Rules*, a system comprising one or more *generating units*.
- (b) For the purposes of clause 2.2.1(e)(3), 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

The plant used in the production of electricity and all related equipment essential to its functioning as a single entity.

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

The production of electrical power by converting another form of energy in a *generating unit*.

generation centre

A geographically concentrated area containing 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 information page

The information resource established, maintained and published by *AEMO* under rule 3.7F.

generation information guidelines

The guidelines developed, published and maintained by *AEMO* under clause 3.7F(e), or the interim generation information guidelines made and published by *AEMO* under clause 11.117.3(b), as applicable.

generation shedding

Disconnecting, or reducing the transfer of *active power* to the *power system* from, one or more *generating systems* or *generating units*.

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.

For the purposes of Chapter 5, the term includes a person who is required or intends to register in that capacity or 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* 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* for:

- (a) **[Deleted]**
- (b) use of a *transmission investment* for the conveyance of electricity that can be reasonably allocated to a *Generator* on a locational basis.

global market ancillary service requirement

Has the meaning given to it by clause 3.8.1(e2).

good electricity industry practice

The exercise of that degree of skill, diligence, prudence and foresight that reasonably would be expected from a significant proportion of operators of *facilities* forming part of the *power system* for the *generation, transmission* or *supply* of electricity under conditions comparable to those applicable to the relevant *facility* consistent with *applicable regulatory instruments, reliability, safety* and environmental protection. The determination of comparable conditions is to take into account factors such as the relative size, duty, age and technological status of the relevant *facility* and the *applicable regulatory instruments*.

high voltage (HV)

A *voltage* greater than 1 kV.

IASR review report

Has the meaning given to it in clause 5.10.2.

identified need

The objective a *Network Service Provider* or a group of *Network Service Providers* seeks to achieve by investing in the *network* in accordance with the *Rules* or an *Integrated System Plan*.

identified user group

One or more persons (other than a *Network Service Provider* who is not a *Market Network Service Provider*) who, from time to time, are *connected* to a *transmission network* at the same single *connection point*.

identified user shared asset

The apparatus, equipment, plant and buildings that:

- (a) are used for the purpose of *connecting* one or more *identified user groups* to an existing *transmission network*;
- (b) are not used exclusively by the relevant *identified user groups*;
- (c) under normal operating conditions, cannot be electrically isolated from the *transmission network* without affecting the provision of *shared transmission services* to persons who are not members of the relevant *identified user groups*; and
- (d) are not part of the *declared transmission system* of an *adoptive jurisdiction*.

Incoming Retailer

A *retailer* that:

- (a) has a contract with a customer at a *connection point*; and
- (b) has initiated the customer transfer process in accordance with the *Market Settlement and Transfer Solution Procedures*,

but which is not yet designated the *financially responsible Market Participant* for that *connection point*.

Independent Engineer

A person appointed under rule 5.4.

independent person

A person who:

- (a) is not a member, employee or member of staff of the *AER* or the *AEMC*;
- (b) is not a director or employee of *AEMO*;
- (c) is not a director or employee of, or partner in, a *Registered Participant*;
- (d) does not have a direct or indirect financial interest (whether as shareholder, partner or other equity participant) in any *Registered Participant* or a *related body corporate* of any *Registered Participant*, other than an interest of less than 0.1% of the net shareholders funds of that entity (as determined at the date the relevant person is appointed to carry out a function under the *Rules*); or
- (e) is not a director or employee of a *related body corporate* of any *Registered Participant*.

independently controllable two-terminal link

A *two-terminal link* through which the *power transfer* can be independently controlled within a range determined by the *power transfer capability* of the *two-terminal link* and the conditions prevailing in the rest of the *power system*.

indexed amount

As at any time and in relation to a dollar value that is expressly set out in Part C of Chapter 6 or Part C of Chapter 6A, that dollar value multiplied by CPI_a/CPI_b

where:

CPI_a is the *CPI* as at that time; and

CPI_b is the Consumer Price Index: All Groups Index Number, weighted average of eight capital cities published by the Australian Bureau of Statistics for the quarter ending 30 June 2006.

indicative pricing schedule

For a *Distribution Network Service Provider*, means the schedule of indicative price levels as referred to in paragraph 6.18.1A(e).

indicative reliability forecast

For a *region* for a *financial year* in the last 5 years of a *statement of opportunities*, means the forecast of whether there is a *forecast reliability gap* for that *region* in that year.

inertia

Contribution to the capability of the *power system* to resist changes in *frequency* by means of an inertial response from a *generating 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 network service

A service for the provision of *inertia* to a *transmission system*.

Inertia Report

A report published by AEMO under clause 5.20.5.

inertia requirements

The *minimum threshold level of inertia* and the *secure operating level of inertia* for an *inertia sub-network* determined by AEMO under clause 5.20B.2(a).

inertia requirements methodology

The process AEMO uses to determine the *inertia requirements* for each *inertia sub-network*, published by AEMO under clause 5.20.4(a).

inertia service payment

A payment by a *Transmission Network Service Provider* made under an *inertia services agreement* where:

- (a) the payment is made for *inertia network services* or *inertia support activities* to be made available or provided as a service to the *Transmission Network Service Provider* in its capacity as an *Inertia Service Provider* to (in the case of *inertia network services*) satisfy an obligation under clause 5.20B.4 or (in the case of *inertia support activities*) resulting in an adjustment to the *minimum threshold level of inertia* or the *secure operating level of inertia*; and
- (b) the *inertia network services* are made available or provided, or the *inertia support activity* is undertaken, in accordance with:
 - (1) applicable technical specifications and performance standards approved by AEMO; and
 - (2) in the case of an *inertia support activity*, any conditions of AEMO's approval under clause 5.20B.5(a).

Inertia Service Provider

The *Inertia Service Provider* for an *inertia sub-network* as specified under clause 5.20B.4(a).

inertia services agreement

An agreement under which a person agrees to provide one or more *inertia network services* to an *Inertia Service Provider* or to undertake an *inertia support activity*.

inertia shortfall

A shortfall in the level of *inertia* typically provided in an *inertia sub-network* (having regard to typical patterns of *dispatched generation* in *central dispatch*) compared to the *secure operating level of inertia* most recently determined by AEMO for the *inertia sub-network*.

inertia shortfall event

A *Transmission Network Service Provider* is required to make *inertia network services* available under clause 5.20B.4 as a consequence of an assessment by AEMO under clause 5.20B.3(c) that there is an *inertia shortfall* in an *inertia sub-network* for which the *Transmission Network Service Provider* is the *Inertia Service Provider* or to cease making *inertia network services* available under clause 5.20B.4 as a consequence of an assessment by AEMO under clause 5.20B.3(d) that an *inertia shortfall* in the *inertia sub-network* has ceased and:

- (a) the *Transmission Network Service Provider* is required to provide, or cease providing, *inertia network services* during the course of a *regulatory control period*; and
- (b) making *inertia network services* available or ceasing to make *inertia network services* available *materially* increases or *materially* decreases the *Transmission Network Service Provider's* costs of providing *prescribed transmission services*.

inertia sub-network

A part of the *national grid* determined by AEMO in accordance with clause 5.20B.1.

inertia support activity

An activity approved by AEMO under clause 5.20B.5(a).

inflexible, inflexibility

In respect of a *scheduled generating unit*, *scheduled load* or *scheduled network service* for a *trading interval* means that the *scheduled generating 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).

Information Exchange Committee

The committee established under clause 7.17.6(a).

Information Exchange Committee Election Procedures

The procedures of that title which set out the process for election of *Members*.

Information Exchange Committee Operating Manual

The manual of that title prepared by the *Information Exchange Committee* which sets out the processes pursuant to which the *Information Exchange Committee* operates.

Information Exchange Committee Recommendation

- (a) For the purposes of Chapter 8 and any applicable definitions, a decision made by the *Information Exchange Committee* under clauses 7.17.4(n)(1) or 7.17.4(n)(2).
- (b) Otherwise, a decision made by the *Information Exchange Committee* under clause 7.17.4(n)(2).

Information Exchange Committee Works Programme

The work programme prepared by the *Information Exchange Committee* in respect of the development, implementation and operation of the *B2B Procedures*

and other matters which are incidental to effective and efficient *B2B Communications*.

information guidelines

Guidelines made by the *AER* for the purpose of guiding a *Transmission Network Service Provider* in the submission of certified annual statements and other related information in accordance with clause 6A.17.2.

information pack

Has the meaning given to it in clause 5.3A.A1.

Inputs, Assumptions and Scenario Report

Has the meaning given to it in clause 5.10.2.

insolvency official

A receiver, receiver and manager, administrator, provisional liquidator, liquidator, trustee in bankruptcy or person having a similar or analogous function.

instrument transformer

Either a *current transformer (CT)* or a *voltage transformer (VT)*.

insurance event

An event for which the risk of its occurrence is the subject of insurance taken out by or for a *Transmission Network Service Provider*, for which an allowance is provided in the *total revenue cap* for the *Transmission Network Service Provider* and in respect of which:

- (a) the cost of the premium paid or required to be paid by the *Transmission Network Service Provider* in the *regulatory year* in which the cost of the premium changes is higher or lower than the premium that is provided for in the *maximum allowed revenue* for the provider for that *regulatory year* by an amount of more than 1% of the *maximum allowed revenue* for the provider for that *regulatory year*;
- (b) the risk eventuates and, as a consequence, the *Transmission Network Service Provider* incurs or will incur all or part of a deductible where the amount so incurred or to be so incurred in a *regulatory year* is higher or lower than the allowance for the deductible (if any) that is provided for in the *maximum allowed revenue* for the provider for that *regulatory year* by an amount of more than 1% of the *maximum allowed revenue* for the provider for that *regulatory year*;
- (c) insurance becomes unavailable to the *Transmission Network Service Provider*; or
- (d) insurance becomes available to the *Transmission Network Service Provider* on terms materially different to those existing as at the time the *revenue determination* was made (other than as a result of any act or omission of the provider which is inconsistent with good electricity industry practice).

Integrated System Plan

A plan developed and published by *AEMO* under rule 5.22 as amended by an *ISP update* from time to time.

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.

Intending Participant

A person who is registered by *AEMO* as an *Intending Participant* under Chapter 2.

interconnector

A *transmission line* or group of *transmission lines* that *connects* the *transmission networks* in adjacent *regions*.

interconnector flow

The quantity of electricity in MW being transmitted by an *interconnector*.

interested party

- (a) In Chapter 5, a person including an end user or its *representative* who, in *AEMO's* opinion, has or identifies itself to *AEMO* as having an interest in relation to the *network* planning and development activities covered under Part B of Chapter 5 or in the determination of *plant standards* covered under clause 5.3.3(b2).
- (b) Despite the definition in (a) above, in clauses 5.16.4 and 5.16A.4, rule 5.16B and clauses 5.17.4 and 5.17.5, the meaning give to it in clause 5.15.1.
- (c) In Chapter 6 or Chapter 6A, a person (not being a *Registered Participant* or *AEMO*) that has, in the *AER's* opinion, or identifies itself to the *AER* as having, an interest in the *Transmission Ring-Fencing Guidelines* or the *Distribution Ring-Fencing Guidelines*.
- (d) In Chapter 2, a person including an end user or its *representative* who, in *AEMO's* opinion, has or identifies itself to *AEMO* as having an interest in relation to the structure of *Participant fees*.
- (e) In Chapter 7, a person that has, in *AEMO's* opinion, or identifies itself to *AEMO* as having, an interest in the relevant procedure in Chapter 7.

interim reliability measure

The measure specified in clause 3.9.3C(a1).

interim statement

Has the meaning given in clause 3.3.11(a)(1).

intermediary

A person who is registered by *AEMO* as a *Generator* 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.

inter-network test

A test conducted for the purpose of verifying the magnitude of the *power transfer capability* of more than one *transmission network* in accordance with clause 5.7.7.

inter-network testing constraint

A *constraint* on a *transmission network* as contemplated by clause 5.7.7.

inter-regional

Between *regions*.

inter-regional loss factor

A *marginal loss factor* determined according to clause 3.6.1.

inter-regional losses

Has the meaning given to it by clause 3.6.1(a).

interruptible load

A *load* which is able to be *disconnected*, either manually or automatically initiated, which is provided for the restoration or control of the *power system frequency* by AEMO to cater for *contingency events* or shortages of *supply*.

interval energy data

The data that results from the measurement of the flow of electricity in a power conductor where the data is prepared and recorded by the *metering installation* in intervals which correspond to a *trading interval* or are submultiples of a *trading interval*. *Interval energy data* is held in the *metering installation*.

interval metering data

The *interval energy data*, once collected from a *metering installation*, is *interval metering data*. *Interval metering data* is held in a *metering data services database* and the *metering database*.

intervention dispatch interval

A *dispatch interval* declared by AEMO to be an *intervention dispatch interval* in accordance with clause 3.9.3(a).

intervention price dispatch interval

An *intervention dispatch interval* in respect of which AEMO has set *dispatch prices* and *ancillary service prices* in accordance with clause 3.9.3(b).

intervention price trading interval

A *trading interval* that includes one or more *intervention price dispatch intervals*.

intervention settlement timetable

Has the meaning given in clause 3.12.1(b).

intra-regional

Within a *region*.

intra-regional loss factor

A *marginal loss factor* determined according to clause 3.6.2.

intra-regional losses

Has the meaning given to it by clause 3.6.2(a).

inverter based load

Means a load that is supplied by power electronics, including inverters, and potentially susceptible to inverter control instability, as specified in the *system strength impact assessment guidelines*.

inverter based resource

Asynchronous generating units and inverter-based load.

invoiced amount

The aggregate of the *settlement statements, interim, preliminary or final*, which at the time of issue of a *call notice* are unpaid by the *Market Participant*, notwithstanding that the usual time for issue or payment of those *settlement statements* has not been reached.

islanded

In relation to an *inertia sub-network* or a combination of two or more *inertia sub-networks*, temporary loss of synchronous *connection* to all adjacent parts of the *national grid*.

isolation

Electrical isolation of one part of a communication system from another but where the passage of *electronic data transfer* is not prevented.

ISP candidate option

Has the meaning given to it in clause 5.10.2.

ISP consumer panel

Has the meaning given to it in clause 5.10.2.

ISP database

The database that *AEMO* is required to establish and maintain under clause 5.22.16.

ISP development opportunity

Has the meaning given to it in clause 5.10.2.

ISP methodology

Has the meaning given to it in clause 5.10.2.

ISP parameters

Has the meaning given to it in clause 5.10.2.

ISP project

Has the meaning given to it in clause 5.10.2.

ISP review report

Has the meaning given to it in clause 5.10.2.

ISP timetable

Has the meaning given to it in clause 5.10.2.

ISP update

An update to an *Integrated System Plan* published by AEMO under clause 5.22.15.

joint planning project

Has the meaning given to it in clause 5.10.2.

jurisdictional derogation

Has the meaning given in the *NEL*. The jurisdictional derogations are included in Chapter 9.

jurisdictional electricity legislation

Has the meaning given to that term in the *NEL*.

jurisdictional metrology material

Jurisdictional metrology matters that are to be included in the *metrology procedure* for one or more of the *participating jurisdictions* and which is submitted by the *Ministers of the MCE* to AEMO under clause 7.16.4.

Jurisdictional NMI Standing Data schedule

The schedules described in clause 3.13.12(a), as amended from time to time in accordance with clause 3.13.12(b).

Jurisdictional NMI Standing Data suppliers

Registered Participants which are required by the relevant *participating jurisdiction's* legislation or licensing requirements to supply *NMI Standing Data* in respect of *connection points* in that *participating jurisdiction* to AEMO.

jurisdictional planning body

The entity nominated by the relevant *Minister* as having *transmission system* planning responsibility in that *participating jurisdiction*.

jurisdictional planning representative

The *representative* from the *jurisdictional planning body* for a *participating jurisdiction* nominated by that *jurisdictional planning body* as the *jurisdictional planning representative* for that *participating jurisdiction*.

Jurisdictional Regulator

The person authorised by a *participating jurisdiction* to regulate *distribution service* prices in that jurisdiction.

jurisdictional scheme

Has the meaning given in clause 6.18.7A(d).

jurisdictional scheme amounts

In respect of a *jurisdictional scheme*, the amounts a *Distribution Network Service Provider* is required under the *jurisdictional scheme obligations* to:

- (a) pay to a person;

- (b) pay into a fund established under an Act of a *participating jurisdiction*;
- (c) credit against charges payable by a person; or
- (d) reimburse a person,

less any amounts recovered by the *Distribution Network Service Provider* from any person in respect of those amounts other than under the *Rules*.

jurisdictional scheme eligibility criteria

The criteria specified in clause 6.18.7A(x)

jurisdictional scheme obligations

Obligations imposed on a *Distribution Network Service Provider* under:

- (a) an Act of a *participating jurisdiction* or an instrument, direction or order made under an Act of a *participating jurisdiction* (other than the *NEL* and the *Rules*); or
- (b) a condition of a distribution licence or authority held by a *Distribution Network Service Provider* in a *participating jurisdiction*.

Jurisdictional System Security Coordinator

Has the same meaning as 'jurisdictional system security coordinator' in the *NEL*.

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*);
- (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* (e.g. *synchronous generating unit*, induction generator, photovoltaic array, etc).

lack of reserve (LOR)

A condition declared by *AEMO* under clause 4.8.4(b).

large customer

- (a) In a *participating jurisdiction* where the *NERL* applies as a law of that *participating jurisdiction*, has the meaning given in the *NERL*.
- (b) Otherwise, has the meaning given in *jurisdictional electricity legislation*, or a *retail customer* that is not a *small customer*.

large DCA service

A service provided by means of a *large dedicated connection asset*.

large DCA services access dispute

A dispute between a *Dedicated Connection Asset Service Provider* and a person seeking access to *large DCA services* as referred to in clause 5.5.1(c), that is for determination by a *commercial arbitrator* under rule 5.5.

large dedicated connection asset

A *dedicated connection asset* where the total route length for any power lines forming part of the *dedicated connection asset* is 30 kilometres or longer.

large inverter based resource

An inverter based resource classified as a large inverter based resource under the system strength impact assessment guidelines.

last jurisdictional scheme approval date

For an *approved jurisdictional scheme* of a *Distribution Network Service Provider*, means the later of:

- (a) if the *approved jurisdictional scheme* is a *jurisdictional scheme* referred to in clause 6.18.7A(e), 1 July 2010;
- (b) if the *approved jurisdictional scheme* is not a *jurisdictional scheme* referred to in paragraph (a), the date on which the *AER* determined under clause 6.18.7A(l) that the scheme was a *jurisdictional scheme*;
- (c) if the *approved jurisdictional scheme* is a *jurisdictional scheme* in respect of which:
 - (i) a request has been made under clause 6.18.7A(o) or an assessment initiated under clause 6.18.7A(r); and
 - (ii) the *AER* has determined under clause 6.18.7A(u) that the scheme should not cease to be a *jurisdictional scheme*,the date of that determination; or
- (d) if in a previous *pricing proposal* the *Distribution Network Service Provider* provided information in respect of that *approved jurisdictional scheme* to the *AER* under clause 6.18.2(b)(6B), the date that such a *pricing proposal* was submitted.

last resort planning power

The *AEMC's* power to direct a *Registered Participant* under rule 5.22(c).

last resort planning power guidelines

The guidelines made by the *AEMC* relating to the exercise of the *last resort planning power* and referred to in rule 5.22(n) to (q).

late rebidding period

In respect of a *trading interval*, the period beginning 15 minutes before the commencement of the *trading interval*.

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*.

load centre

A geographically concentrated area containing *load* or *loads* with a significant combined consumption capability.

load shedding

Reducing or *disconnecting load* from the *power system*.

load shedding procedures

The procedures developed by *AEMO* for each *participating jurisdiction* in accordance with clause 4.3.2(h)(1) for the implementation of the *load shedding* priority and *sensitive load* priority advised by that *Jurisdictional System Security Coordinator* under clauses 4.3.2(f)(1) and (2).

load transfer capacity

Has the meaning given to it in clause 5.10.2.

loading level

The level of output, consumption or power flow (in MW) of a *generating unit*, *load* or *scheduled network service*.

loading price

The price specified for a *price band* and a *trading interval* in a *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*.

local black system procedures

The procedures, described in clause 4.8.12, applicable to a *local area* as approved by *AEMO* from time to time.

local market ancillary service requirement

Has the meaning given to it by clause 3.8.1(e2).

Local Network Service Provider

Within a *local area*, a *Network Service Provider* to which that geographical area has been allocated by the authority responsible for administering the *jurisdictional electricity legislation* in the relevant *participating jurisdiction*.

Local Retailer

In relation to a *local area*, the *Customer* who is:

1. a business unit or *related body corporate* of the relevant *Local Network Service Provider*; or
2. responsible under the laws of the relevant *participating jurisdiction* for the *supply* of electricity to *franchise customers* in that *local area*; or
3. if neither 1 or 2 is applicable, such other *Customer* as *AEMO* may determine.

long run marginal cost

For the purposes of clause 6.18.5, the cost of an incremental change in demand for *direct control services* provided by a *Distribution Network Service Provider* over a period of time in which all factors of production required to provide those *direct control services* can be varied.

loss factor

A multiplier used to describe the *electrical energy loss* for electricity used or transmitted.

low reserve

The conditions described in clause 4.8.4(a).

major supply disruption

The unplanned absence of *voltage* on a part of the *transmission system* affecting one or more *power stations* and which leads to a loss of *supply* to one or more *loads*.

margin requirement

The requirement set out in clause S6.2.2A(d) or clause S6A.2.2A(d), as the case may be.

marginal electrical energy loss

The *electrical energy loss* associated with an infinitesimal increment in electricity produced, transported and/or used.

marginal loss factor

A multiplier used to describe the *marginal electrical energy loss* for electricity used or transmitted.

market

Any of the markets or exchanges described in the *Rules*, for so long as the market or exchange is conducted by *AEMO*.

market ancillary service

A service identified in clause 3.11.2(a).

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 Provider

A person who offers and provides *load* as a *market ancillary service* under Chapter 2 and who is registered by *AEMO* as a *Market Ancillary Service Provider* under Chapter 2. The relevant person does not need to be the *Market Customer* for the relevant *load*.

market ancillary service specification

Has the meaning given in clause 3.11.2(b).

market auditor

A person appointed by *AEMO* to carry out a review under clause 3.13.10(a).

market commencement

The date declared as such by *AEMO*, on which trading in the *market* commences.

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* 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 customer's additional claim

Has the meaning given in clause 3.12.2(g)(4).

market floor price

A price floor on *regional reference prices* as described in clause 3.9.6.

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* 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 information

Information, other than *confidential information*, concerning the operation of the *spot market* or relating to the operation of, inputs to, or outputs from the *central dispatch* process.

market information bulletin board

A facility established by *AEMO* on the *electronic communication system* for the posting of information which may then be available to *Registered Participants*.

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 management systems

AEMO's market information systems and associated communications networks used to support the electronic communication by *Registered Participants* and

others connected to or making use of the systems and networks in the operation of the *market*.

Market Management Systems Access Procedures

The procedures to be followed by *Registered Participants*, *Metering Providers* and *Metering Data Providers* in connecting to and making use of the *market management systems* from time to time *published* by AEMO under rule 3.19.

market network service

A *network service* which is classified as a *market network service* in accordance with clause 2.5.2.

Market Network Service Provider

A *Network Service Provider* who has classified any of its *network services* as a *market network service* in accordance with Chapter 2 and who is also registered by AEMO as a *Market Network Service Provider* under Chapter 2.

Market Participant

A person who is registered by AEMO as a *Market Generator*, *Market Customer*, *Market Small Generation Aggregator*, *Market Ancillary Service Provider* or *Market Network Service Provider* under Chapter 2.

market price cap

A price cap on *regional reference prices* as described in clause 3.9.4.

market retail contract

Has the same meaning as in the *NERL*.

Market Settlement and Transfer Solution Procedures

The procedures from time to time *published* by AEMO under clause 7.16.2 which include those governing the recording of financial responsibility for *energy flows* at a *connection point*, the transfer of that responsibility between *Market Participants* and the recording of *energy flows* at a *connection point*.

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

Suspension of the *spot market* by AEMO in accordance with clause 3.14.3.

Market Suspension Compensation Claimant

- (a) A *Scheduled Generator* who supplied *energy* during a *market suspension pricing schedule period*:
 - (1) in a *suspended region*; or
 - (2) in a *region* where *dispatch 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 generating unit* which is also a *scheduled generating unit*, who provided *market ancillary services* during a *market suspension pricing schedule period*.

market suspension compensation methodology

Has the meaning given in clause 3.14.5A(h).

market suspension compensation recovery amount

Has the meaning given in clause 3.15.8A(a).

market suspension pricing methodology

Has the meaning given in clause 3.14.5(e)(1).

market suspension pricing schedule

Has the meaning given in clause 3.14.5(e)(1).

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 *dispatch interval* in which:
 - (1) for *Scheduled Generators*, the *dispatch price* for a *dispatch 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 generating unit*, the *ancillary service price* for a *dispatch 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 *dispatch intervals*:
 - (1) that occur during the period described in paragraph (a) above; and
 - (2) during which *dispatch prices* were affected in accordance with clause 3.14.5(f).

material inter-network impact

A material impact on another *Transmission Network Service Provider's network*, which impact may include (without limitation):

- (a) the imposition of *power transfer constraints* within another *Transmission Network Service Provider's network*; or
- (b) an adverse impact on the quality of *supply* in another *Transmission Network Service Provider's network*.

materially

For the purposes of the application of clause 6.6.1, an event results in a *Distribution Network Service Provider* incurring materially higher or materially

lower costs if the change in costs (as opposed to the revenue impact) that the *Distribution Network Service Provider* has incurred and is likely to incur in any *regulatory year* of a *regulatory control period*, as a result of that event, exceeds 1% of the *annual revenue requirement* for the *Distribution Network Service Provider* for that *regulatory year*.

For the purposes of the application of clause 6A.7.3, an event (other than a *network support event*) results in a *Transmission Network Service Provider* incurring materially higher or materially lower costs if the change in costs (as opposed to the revenue impact) that the *Transmission Network Service Provider* has incurred and is likely to incur in any *regulatory year* of a *regulatory control period*, as a result of that event, exceeds 1% of the *maximum allowed revenue* for the *Transmission Network Service Provider* for that *regulatory year*.

In other contexts, the word has its ordinary meaning.

maximum allowed revenue

For a *Transmission Network Service Provider*: the amount calculated as such for a *regulatory year* of a *regulatory control period* in accordance with rule 6A.3.

For *AEMO*: the amount calculated as such for a *regulatory year* of a *regulatory control period* in accordance with clause S6A.4.2(c)(4).

maximum demand

The highest amount of electrical power delivered, or forecast to be delivered, over a defined period (*day*, week, month, season or year) either at a *connection point*, or simultaneously at a defined set of *connection points*.

maximum ramp rate

The *maximum ramp rate* that an item of equipment is capable of achieving in normal circumstances. This may be:

- (a) as specified by the manufacturer; or
- (b) as independently certified from time to time to reflect changes in the physical capabilities of the equipment.

maximum total payment

The amount determined in accordance with clause 3.15.22.

measurement element

An energy measuring component which converts the flow of electricity in a power conductor into an electronic signal and / or a mechanically recorded electrical measurement.

medium term PASA

The *PASA* in respect of the period described in clause 3.7.2(a), as described under clause 3.7.2.

medium term PASA inputs

The inputs to be prepared in accordance with clauses 3.7.2(c) and (d).

Member

A person appointed or elected (as the case may be) to the *Information Exchange Committee* pursuant to the *Information Exchange Committee Election Procedures and Rules*, and includes all membership categories, unless a contrary intention appears.

meter

A device complying with *Australian Standards* which measures and records the production or consumption of electrical *energy*.

meter churn procedures

The procedures established by *AEMO* under clause 7.8.9(f).

Metering Coordinator

A person who is registered by *AEMO* as a *Metering Coordinator* under Chapter 2.

Metering Coordinator default event

In relation to a *Metering Coordinator*, means any of the following events or circumstances:

- (a) the *Metering Coordinator* ceases to be registered by *AEMO* as a *Metering Coordinator* under Chapter 2;
- (b) an *insolvency official* is appointed in respect of the *Metering Coordinator* or any property of the *Metering Coordinator*; or
- (c) an order is made for the winding up of the *Metering Coordinator* or a resolution is passed for the winding up of *Metering Coordinator*; or
- (d) a breach of the *Rules* or applicable procedures made under the *Rules* in relation to which *AEMO* has issued a *Metering Coordinator default notice* under clause 7.7.3(c)(3).

Metering Coordinator default notice

A notice issued by *AEMO* under clause 7.7.3(c)(3).

metering data

Accumulated metering data, interval metering data, calculated metering data, substituted metering data, estimated metering data and check metering data.

Metering Data Provider

A person who meets the requirements listed in schedule 7.3 and has been accredited and registered by *AEMO* as a *Metering Data Provider*.

metering data services

The services that involve the collection, processing, storage and delivery of *metering data* and the management of relevant *NMI Standing Data* in accordance with the *Rules*.

metering data provision procedures

Procedures for the provision of *metering data* requested under rule 7.14, developed and *published* by *AEMO*.

metering data services database

The database established and maintained by the *Metering Data Provider* that holds *metering data* and relevant *NMI Standing Data* relating to each *metering installation* for which the *Metering Coordinator* or the *financially responsible Market Participant* or *AEMO* (as the case may be) has engaged the *Metering Data Provider* to provide *metering data services*.

metering database

A database of *metering data* and *settlements ready data* maintained and administered by *AEMO* in accordance with clause 7.11.

metering installation

The assembly of components including the *instrument transformer*, if any, measurement element(s) and processes, if any, recording and display equipment, *communications interface*, if any, that are controlled for the purpose of metrology and which lie between the *metering point(s)* and the point at or near the *metering point(s)* where the *energy data* is made available for collection.

Note:

- (1) The assembly of components may include the combination of several *metering points* to derive the *metering data* for a *connection point*.
- (2) The *metering installation* must be classified as being for revenue purposes and/or as a *check metering installation*.

metering installation malfunction

The full or partial failure of the *metering installation* in which the *metering installation* does not:

- (a) meet the requirements of schedule 7.4; or
- (b) record, or incorrectly records, *energy data*; or
- (c) allow, or provides for, collection of *energy data*; or
- (d) in the case of a *small customer metering installation*, meet the requirements of schedule 7.5.

Metering Member

A person nominated and elected as a *Member* by *Metering Member Voters* to represent *Metering Member Voters* in accordance with the *Rules* (including clause 7.17.10(g)) and the *Information Exchange Committee Election Procedures*.

Metering Member Voters

Metering Coordinators, Metering Providers and Metering Data Providers.

metering point

The point of physical connection of the device measuring the current in the power conductor.

Metering Provider

A person who meets the requirements listed in schedule 7.2 and has been accredited by and registered by *AEMO* as a *Metering Provider*.

metering register

A register of information associated with a *metering installation* as required by schedule 7.1.

metering system

The collection of all components and arrangements installed or existing between each *metering point* and the *metering database*.

metrology procedure

The procedure developed and *published* by *AEMO* in accordance with rule 7.16.

micro EG connection

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1

micro embedded generator

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1

minimum access standard

In relation to a technical requirement of access, a standard of performance, identified in a schedule of Chapter 5 as a minimum access standard for that technical requirement, such that a *plant* that does not meet that standard will be denied access because of that technical requirement.

minimum services specification

The requirements in respect of a *metering installation* set out in Schedule 7.5.

minimum threshold level of inertia

For an *inertia sub-network*, the *minimum threshold level of inertia* determined by *AEMO* and referred to in clause 5.20B.2(b)(1).

Minister

A Minister of a *participating jurisdiction* within the meaning of section 6 of the *NEL*.

Ministers of the MCE

Ministers of the participating jurisdictions acting as the MCE where MCE has the same meaning as in the *NEL*.

mis-pricing

For a particular *network* node within a nominated *region*, the difference between:

- (a) the *regional reference price* for the *region*; and
- (b) an estimate of the marginal value of *supply* at the *network* node, which marginal value is determined as the price of meeting an incremental change in *load* at that *network* node.

MLEC CRNP Methodology

For the purposes of calculating the *modified load export charges*, the *CRNP Methodology* (and for the avoidance of doubt, not the *modified CRNP Methodology*) provided that each of the following is satisfied:

- (a) for the purposes of clause S6A.3.2(1), network 'costs' are attributed to all *transmission systems* assets of the relevant *Transmission Network Service Provider*; and
- (b) for the purposes of clause S6A.3.2(3):
 - (1) every *trading interval* of the previous *regulatory year* in order to determine the range of actual operating conditions from the previous *regulatory year*; and
 - (2) the peak usage of each *transmission system* asset by each *load* is used to determine the allocation of dispatched *generation* to loads from the previous *regulatory year*.

model standing offer

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1.

modified CRNP methodology

The cost allocation methodology set out in clause S6A.3.3.

modified load export charges

Charges received by or payable to the *Co-ordinating Network Service Provider* in a *region* by or to a *Co-ordinating Network Service Provider* in an *interconnected region* calculated under rule 6A.29A.2.

monitoring equipment

The testing instruments and devices used to record the performance of *plant* for comparison with expected performance.

month

Unless otherwise specified, the period beginning at 4.30 am on the relevant commencement date and ending at 4.30 am on the date in the next calendar month corresponding to the commencement date of the period.

nameplate rating

The maximum continuous output or consumption in MW of an item of equipment as specified by the manufacturer, or as subsequently modified.

NATA

National Association of Testing Authorities.

national electricity objective

The objective stated in section 7 of the Law.

national grid

The sum of all *connected transmission systems* and *distribution systems* within the *participating jurisdictions*.

National Measurement Act

The *National Measurement Act 1960* of the Commonwealth as amended from time to time.

national transmission grid

Has the meaning given in the *NEL*.

negative change event

For a *Distribution Network Service Provider*, a *pass through event* which entails the *Distribution Network Service Provider* incurring *materially* lower costs in providing *direct control services* than it would have incurred but for that event.

For a *Transmission Network Service Provider*, a *pass through event* which entails the *Transmission Network Service Provider* incurring *materially* lower costs in providing *prescribed transmission services* than it would have incurred but for that event.

negative network support event

A *network support event* which entails a *Transmission Network Service Provider* making lower *network support payments* in the preceding *regulatory year* than the amount of the *network support payment allowance* (if any) for that provider for that preceding *regulatory year*.

negative pass through amount

In respect of a *negative change event* for a *Transmission Network Service Provider*, an amount that is not greater than a *required pass through amount* as determined by the *AER* under clause 6A.7.3(g).

In respect of a *negative change event* for a *Distribution Network Service Provider*, an amount that is not greater than a *required pass through amount* as determined by the *AER* under clause 6.6.1(g).

negotiable service

- (a) In relation to *transmission services* means *negotiated transmission services*.
- (b) In relation to *distribution services* means *negotiated distribution services*.

negotiated access standard

In relation to a technical requirement of access for a particular *plant*, an agreed standard of performance determined in accordance with clause 5.3.4A and identified as a negotiated access standard for that technical requirement in a *connection agreement*.

negotiated distribution service

A *distribution service* that is a negotiated network service within the meaning of section 2C of the Law;

Negotiated Distribution Service Criteria

The criteria specified in a distribution determination in accordance with clause 6.7.4.

Negotiated Distribution Service Principles

The principles set out in clause 6.7.1.

negotiated transmission service

Any of the following services:

- (a) a *shared transmission service* that:
- (1) exceeds the *network* performance requirements (whether as to quality or quantity) (if any) as that *shared transmission service* is required to meet under any *jurisdictional electricity legislation*; or
 - (2) except to the extent that the *network* performance requirements which that *shared transmission service* is required to meet are prescribed under any *jurisdictional electricity legislation*, exceeds or does not meet the *network* performance requirements (whether as to quality or quantity) as are set out in schedule 5.1a or 5.1;
- (b) *connection services* that are provided to serve a *Transmission Network User*, or group of *Transmission Network Users*, at a *single transmission network connection point*, other than *connection services* that are provided by one *Network Service Provider* to another *Network Service Provider* to connect their *networks* where neither of the *Network Service Providers* is a *Market Network Service Provider*;
- (c) services specified to be *negotiated transmission services* under rule 5.2A.4; or
- (d) undertaking *system strength connection works*,
- but does not include an *above-standard system shared transmission service*, ~~or~~ a *market network service* or a system strength transmission service.

negotiated use of system charges

The charges described in clause 5.3AA(f)(3).

negotiating framework

For a *Distribution Network Service Provider*, a negotiating framework as approved or substituted by the AER in its final decision under clause 6.12.1(15).

negotiating principles

Those negotiating principles set out in schedule 5.11.

NEL (National Electricity Law)

The National Electricity Law set out in the schedule to the *National Electricity (South Australia) Act 1996* (SA) and applied in each of the *participating jurisdictions*.

NEM (National Electricity Market)

Has the meaning given in the *NEL*.

NEMMCO

Has the meaning given in the *NEL*.

NERL (National Energy Retail Law)

Means the National Energy Retail Law set out in the Schedule to the *National Energy Retail Law (South Australia) Act 2011* (SA).

NERR (National Energy Retail Rules)

Has the meaning given in the *NERL*.

network

The apparatus, equipment, plant and buildings used to convey, and control the conveyance of, electricity to customers (whether wholesale or retail) excluding any *connection assets*. In relation to a *Network Service Provider*, a *network* owned, operated or controlled by that *Network Service Provider*.

network agreement

has the meaning given in the National Electricity Law.

network capability

The capability of the *network* or part of the *network* to transfer electricity from one location to another.

network charges

Has (in the context of Chapter 6B) the meaning given in clause 6B.A1.2.

network charges

Has the meaning given to it in clause 6B.A1.2.

network connection

The formation of a physical link between the *facilities* of two *Registered Participants* or a *Registered Participant* and a customer being a *connection* to a *transmission network* or *distribution network* via *connection assets*.

network connection asset

Those components of a *transmission system* which are used to provide *connection services* between *Network Service Providers* (excluding a *Market Network Service Provider*).

network constraint

A *constraint* on a *transmission network* or *distribution network*.

network coupling point

The point at which *connection assets* join a *distribution network*, used to identify the *distribution service* price payable by a *Customer*.

network device

Apparatus or equipment that:

- (a) enables a *Local Network Service Provider* to monitor, operate or control the *network* for the purposes of providing *network services*, which may include switching devices, measurement equipment and control equipment;
- (b) is located at or adjacent to a *metering installation* at the *connection point* of a *retail customer*; and
- (c) does not have the capability to generate electricity.

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 element

A single identifiable major component of a *transmission system* or *distribution system* involving:

- (a) an individual *transmission* or *distribution* circuit or a phase of that circuit; or
- (b) a major item of apparatus or equipment associated with the function or operation of a *transmission line*, *distribution line* or an associated *substation* or *switchyard* which may include *transformers*, circuit breakers, *synchronous condensers*, *reactive plant* and *monitoring equipment* and control equipment.

network loop

A set of *network elements* that are *connected* together in the form of a closed path, that is in such a way that by progressing from each element to the next it is possible to return to the starting point.

network losses

Energy losses incurred in the transfer of electricity over a *transmission network* or *distribution network*.

network operating agreement

An agreement described in clause 5.2A.7.

network option

A means by which an *identified need* can be fully or partly addressed by expenditure on a *transmission asset* or a *distribution asset* which is undertaken by a *Network Service Provider*.

For the purposes of this definition, **transmission asset** and **distribution asset** has the same meaning as in clause 5.10.2.

network pricing objective

The network pricing objective set out in paragraph 6.18.5(a).

network service

Transmission service or *distribution service* associated with the conveyance, and controlling the conveyance, of electricity through the *network*.

Network Service Provider

A person who engages in the activity of owning, controlling or operating a *transmission system* or *distribution system* and who is registered by AEMO as a *Network Service Provider* under Chapter 2.

network service provider performance report

A report prepared by the AER under section 28V of the Law.

network support agreement

An agreement under which a person agrees to provide one or more *NSCASS*s to a *Network Service Provider*, including *network support services* to improve *network capability* by providing a non-*network* alternative to a *network augmentation*.

network support event

- (a) If, at the end of a *regulatory year* of a *regulatory control period*, the amount of *network support payments* made by a *Transmission Network Service Provider* for that previous *regulatory year* is higher or lower than the amount of the *network support payment allowance* (if any) for the *Transmission Network Service Provider* for that previous *regulatory year*, this constitutes a *network support event*.
- (b) In calculating the amount for the purposes of a *network support event* referred to in paragraph (a), the amount of *network support payments* made by a *Transmission Network Service Provider* must not include an amount of *network support payments* that are a substitute for a *network augmentation* where an allowance for capital expenditure in relation to that *network augmentation* has been provided for in the *revenue determination* or an *approved pass through amount* arising from an *inertia shortfall event* ~~or a~~ *fault level shortfall event*.

network support pass through amount

The amount that should be passed through to *Transmission Network Users* in the *regulatory year* following the preceding *regulatory year*, in respect of a *network support event* for a *Transmission Network Service Provider*.

network support payment

Any of the following payments:

- (a) a payment made by a *Transmission Network Service Provider* to:
 - (1) any *Generator* 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 support payment allowance

The amount of *network support payments* (if any) that is provided for a *Transmission Network Service Provider* for a *regulatory year* in:

- (a) the *annual building block revenue requirement* for the *Transmission Network Service Provider* for that *regulatory year*; or
- (b) any *approved pass through amount* for the *Transmission Network Service Provider* for that *regulatory year* arising from an *inertia shortfall event* ~~or a~~ *fault level shortfall event*,

less the amount (expressed as a positive) of avoided *network support payments* (if any) that is provided for in any *required pass through amount* for the *Transmission Network Service Provider* for that *regulatory year* arising from an *inertia shortfall event* ~~or a~~ *fault level shortfall event*.

Network User

A *Generator*, a *Transmission Customer*, a *Distribution Customer* or a *Market Network Service Provider*.

new connection

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1

NMAS (non-market ancillary service)

Any of the following services:

- (a) *NCASs* and other services acquired by *Transmission Network Service Providers* under *connection agreements* or *network support agreements* to meet the service standards linked to the technical requirements of schedule 5.1 or in *applicable regulatory instruments* (but to avoid doubt, excluding *inertia network services* and *system strength services*); and
- (b) *SRASs* acquired by *AEMO* under clause 3.11.9 and *NCASs* acquired by *AEMO* in the circumstances described in clause 3.11.3(c).

NMAS provider

A person who agrees to provide one or more *non-market ancillary services* to *AEMO* under an *ancillary services agreement*.

NMI

A National Metering Identifier as described in clause 7.8.2(c).

NMI Standing Data

The following data in respect of a *connection point*:

- (a) the *NMI* of the *connection point* and the street address of the relevant *connection point* to which that *NMI* is referable;
- (b) the *NMI* checksum for the *connection point*;
- (c) the identity of the *Local Network Service Provider* or, if the *connection point* is a *child connection point*, the identity of the *Embedded Network Manager* and the *Exempt Embedded Network Service Provider*;
- (d) the code (known as a *TNI*) identifying the relevant *transmission node* which identifies the *intra-regional loss factor* and/or *transmission use of system charge* for the *connection point* and, if the *connection point* is a *child connection point*, the *NMI* of the *parent connection point* on that *embedded network*;
- (e) the relevant *distribution loss factor* applicable to the *connection point*;
- (f) the *Network Tariff* (identified by a code) applicable in respect of the *connection point*;
- (g) the *NMI* classification code (as set out in the *Market Settlement and Transfer Solution Procedures*) of the *connection point*;
- (h) the read cycle date, or date of next scheduled read or date in a relevant code representing the read cycle date or date of next scheduled read, for that *connection point*;
- (i) the profile type applicable to the *connection point*; and

- (j) such other categories of data as may be referred to in the *Market Settlement and Transfer Solution Procedures* as forming *NMI Standing Data*,
and, for the avoidance of doubt, does not include any *metering data* or other details of an end-user's consumption at that *connection point*.

nomenclature standards

The standards approved by *AEMO* in conjunction with the *Network Service Providers* relating to numbering, terminology and abbreviations used for information transfer between *Registered Participants* as provided for in clause 4.12.

nominal voltage

The design *voltage* level, nominated for a particular location on the *power system*, such that power lines and circuits that are electrically connected other than through *transformers* have the same *nominal voltage* regardless of operating *voltage* and *normal voltage*.

nominated pass through event considerations

The *nominated pass through event considerations* are:

- (a) whether the event proposed is an event covered by a category of *pass through event* specified in clause 6.6.1(a1)(1) to(4) (in the case of a distribution determination) or clause 6A.7.3(a1)(1) to(4) (in the case of a transmission determination);
- (b) whether the nature or type of event can be clearly identified at the time the determination is made for the service provider;
- (c) whether a prudent service provider could reasonably prevent an event of that nature or type from occurring or substantially mitigate the cost impact of such an event;
- (d) whether the relevant service provider could insure against the event, having regard to:
- (1) the availability (including the extent of availability in terms of liability limits) of insurance against the event on reasonable commercial terms; or
 - (2) whether the event can be self-insured on the basis that:
 - (i) it is possible to calculate the self-insurance premium; and
 - (ii) the potential cost to the relevant service provider would not have a significant impact on the service provider's ability to provide *network services*; and.
- (e) any other matter the *AER* considers relevant and which the *AER* has notified *Network Service Providers* is a nominated pass through event consideration.

non-contestable IUSA components

Those components of the *identified user shared asset* that do not satisfy the criteria set out in clause 5.2A.4(c).

non-credible contingency event

An event described in clause 4.2.3(e).

non-market generating unit

A *generating unit* whose *sent out generation* is 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.

Non-Market Generator

A *Generator* who has classified a *generating unit* as a *non-market generating unit* in accordance with Chapter 2.

non-network option

A means by which an *identified need* can be fully or partly addressed other than by a *network option*.

non-network options report

Has the meaning given to it in clause 5.10.2.

non-network provider

Has the meaning given to it in clause 5.10.2.

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-registered embedded generator

In the context of clause 6.7A, has the meaning given in chapter 5A.

non-regulated transmission services

A *transmission service* that is neither a *prescribed transmission service* nor a *negotiated transmission service*.

non-scheduled generating unit

A *generating unit* so classified in accordance with Chapter 2.

non-scheduled generating system

A *generating system* comprising *non-scheduled generating units*.

Non-Scheduled Generator

A *Generator* in respect of which any *generating unit* is classified as a *non-scheduled generating unit* in accordance with Chapter 2.

non-scheduled load

A *market load* which is not a *scheduled load*.

non semi-dispatch interval

For a *semi-scheduled generating unit*, a *dispatch interval* other than a *semi-dispatch interval*.

non-suspension decision

A decision made by *AEMO* under clause 3.15.21(c1)(2) or (3) not to suspend some or all of the activities of a *defaulting Market Participant* following an *external administration default event*.

normal cyclic rating

Has the meaning given to it in clause 5.10.2.

normal operating frequency band

In relation to the *frequency* of the *power system*, means the range 49.9Hz to 50.1Hz or such other range so specified in the *power system security standards*.

normal operating frequency excursion band

In relation to the *frequency* of the *power system*, means the range specified as being acceptable for infrequent and momentary excursions of *frequency* outside the *normal operating frequency band*, being the range of 49.75 Hz to 50.25 Hz or such other range so specified in the *power system security standards*.

normal voltage

In respect of a *connection point*, its *nominal voltage* or such other *voltage* up to 10% higher or lower than *nominal voltage*, as approved by *AEMO*, for that *connection point* at the request of the *Network Service Provider* who provides *connection* to the *power system*.

normally off

Describes a *scheduled load* which, unless *dispatched* in accordance with its *dispatch bid*, and in accordance with clause 3.8.7(j), should be considered as being switched off.

normally on

Describes a *scheduled load* which, unless *dispatched* in accordance with its *dispatch bid*, and in accordance with clause 3.8.7(i), should be considered as being switched on.

NSCAS gap

Any *NSCAS need* that *AEMO* forecasts will arise at any time within a planning horizon of at least 5 years from the beginning of the year in which the most recent *NSCAS Report* applies.

NSCAS need

- (a) Subject to paragraphs (b) and (c), *NSCAS* required to:
 - (1) maintain *power system security* and reliability of *supply* of the *transmission network* in accordance with the *power system security standards* and the *reliability standard*; and
 - (2) maintain or increase the *power transfer capability* of that *transmission network* so as to maximise the present value of net economic benefit to all those who produce, consume or transport electricity in the *market*.
- (b) Any requirement for a service that satisfies paragraph (a) and is also capable of being made available as an *inertia network service* to address an *inertia*

shortfall through the arrangements in rule 5.20B must be treated as an *inertia shortfall* and is not an *NSCAS need*.

- (c) Any requirement for a service that satisfies paragraph (a) and is also capable of being made available as a *system strength service* ~~to address a fault level shortfall through the arrangements in rule 5.20C must be treated as a fault level shortfall and~~ is not an *NSCAS need*.

NSCAS (network support and control ancillary service)

A service (excluding an *inertia network service* or *system strength service*) with the capability to control the *active power* or *reactive power* flow into or out of a *transmission network* to address an *NSCAS need*.

NSCAS preferred tenderers

Persons that submitted tenders for *NSCAS* that are deemed to be non-competitive as selected by *AEMO* in accordance with clause 3.11.5(g).

NSCAS Provider

A person who agrees to provide one or more *NSCASs* to *AEMO* under an *ancillary services agreement*.

NSCAS Report

A report published by *AEMO* under clause 5.20.3.

NTP functions

Has the meaning given in the *NEL*.

off-loading price

The price specified for a *price band* and a *trading interval* in a *dispatch offer*, in accordance with clause 3.8.6, for the *off-loading* of a *scheduled generating unit* below its *self-dispatch level*.

off-loading, off-load

The reduction in electricity output or consumption.

operating expenditure criteria

For a *Transmission Network Service Provider* – the matters listed in clause 6A.6.6(c)(1)–(3).

For a *Distribution Network Service Provider* – the matters listed in clause 6.5.6(c)(1)–(3).

operating expenditure factors

For a *Transmission Network Service Provider* - the factors listed in clause 6A.6.6(e)(1)–(14).

For a *Distribution Network Service Provider* - the factors listed in clause 6.5.6(e)(1)–(12).

operating expenditure objectives

For a *Transmission Network Service Provider* – the objectives set out in clause 6A.6.6(a).

For a *Distribution Network Service Provider* – the objectives set out in clause 6.5.6(a).

operational communication

A communication concerning the arrangements for, or actual operation of, the *power system* in accordance with the *Rules*.

operational frequency tolerance band

The range of *frequency* within which the *power system* is to be operated to cater for the occurrence of a *contingency event* as specified in the *power system security standards*.

optimal development path

A *development path* identified by AEMO as the *optimal development path* in the most recent *Integrated System Plan* in accordance with rule 5.22.

ordinary majority

At least 60% of the number of *Members*.

outage

Any full or partial unavailability of equipment or *facility*.

outstandings

In relation to a *Market Participant*, the dollar amount determined by the formula in clause 3.3.9.

over-frequency scheme

An *emergency frequency control scheme* with capability to respond when *frequency* is above or climbing above the *normal operating frequency band*.

over-recovery amount

Any amount by which the revenue earned from the provision of *prescribed transmission services* in previous *regulatory years* exceeds the sum of the AARR in those *regulatory years*.

overspending requirement

The requirement set out in clause S6.2.2A(c) or clause S6A.2.2A(c), as the case may be.

parent connection point

The *connection point* between an *embedded network* and a *Network Service Provider's network*.

Participant compensation fund

The fund of that name referred to in clause 3.16.

participant derogation

Has the meaning given in the *NEL*. The participant derogations are included in Chapter 8A.

Participant fees

The fees payable by *Registered Participants* described in clause 2.11.

participating jurisdiction

A jurisdiction that is a "participating jurisdiction" under the *NEL*.

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 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.

PASA (projected assessment of system adequacy process)

The medium term and short term processes described in clause 3.7 to be administered by *AEMO*.

pass through event

For a distribution determination - the events specified in clause 6.6.1(a1)

For a *transmission determination* – the events specified in clause 6A.7.3(a1).

payment date

The 20th *business day* after the end of a *billing period*, or 2 *business days* after receiving a *final statement*, whichever is the later.

peak load

Maximum *load*.

performance incentive scheme parameters

For a *service target performance incentive scheme*, those parameters that are *published* by the *AER* in respect of that scheme pursuant to clause 6A.7.4(c).

performance standard

A standard of performance that:

- (a) is established as a result of it being taken to be an applicable performance standard in accordance with clause 5.3.4A(i); or
- (b) is included in the register of *performance standards* established and maintained by *AEMO* under rule 4.14(n),

as the case may be.

performance standards commencement date

For:

- (a) *Generators, 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, 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*.

physical plant capability

The maximum MW output or consumption which an item of electrical equipment is capable of achieving for a given period.

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* 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, utilising or transmitting electrical *energy*.
- (b) In relation to *dispatch bids* and *offers*, controllable generating equipment and controllable *loads*.
- (c) In relation to the *statement of opportunities* prepared by *AEMO*, individually controllable generating 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 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.

plant availability

The *active power capability* of a *generating 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.

plant standard

An Australian or international standard or a part thereof that:

- (a) the *Reliability Panel* determines to be an acceptable alternative to a particular *minimum access standard* or *automatic access standard* for a particular class of *plant*, or
- (b) a schedule in Chapter 5 establishes as an acceptable alternative to a particular *minimum access standard* or *automatic access standard* for a particular class of *plant*.

PoLR cost procedures

The procedures made by *AEMO* under clause 3.15.9A(1).

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).

positive change event

For a *Distribution Network Service Provider*:

- (a) a *pass through event*, other than a *retailer insolvency event*, which entails the *Distribution Network Service Provider* incurring *materially* higher costs in providing *direct control services* than it would have incurred but for that event, but does not include a *contingent project* or an associated *trigger event*; or
- (b) a *retailer insolvency event*.

For a *Transmission Network Service Provider*, a *pass through event* which entails the *Transmission Network Service Provider* incurring *materially* higher costs in providing *prescribed transmission services* than it would have incurred but for that event, but does not include a *contingent project* or an associated *trigger event*.

positive network support event

A *network support event* which entails a *Transmission Network Service Provider* making higher *network support payments* in the preceding *regulatory year* than the amount of the *network support payment allowance* (if any) for that provider for that preceding *regulatory year*.

positive pass through amount

For a *Transmission Network Service Provider*, an amount (not exceeding the *eligible pass through amount*) proposed by the provider under clause 6A.7.3(c).

For a *Distribution Network Service Provider*, an amount (not exceeding the *eligible pass through amount*) proposed by the provider under clause 6.6.1(c).

postage-stamp basis

A system of charging *Network Users* for *transmission service* or *distribution service* in which the price per unit is the same regardless of how much *energy* is used by the *Network User* or the location in the *transmission network* or *distribution network* of the *Network User*.

post-tax revenue model

For a *Transmission Network Service Provider*, the model prepared and *published* by the *AER* in accordance with clause 6A.5.2.

For a *Distribution Network Service Provider*, the model prepared and *published* by the *AER* in accordance with clause 6.4.1.

potential credible option

Has the meaning given to it in clause 5.10.2.

potential transmission project

Has the meaning given to it in clause 5.10.2.

potential value

In relation to a *transaction* for a *Market Participant*, the dollar amount determined by the procedure in clause 3.3.14.

power factor

The ratio of the *active power* to the *apparent power* at a *metering point*.

power station

In relation to a *Generator*, a *facility* in which any of that *Generator's generating units* are located.

power system

The electricity power system of the *national grid* including associated *generation* and *transmission* and *distribution networks* for the *supply* of electricity, operated as an integrated arrangement.

power system damping

The rate at which disturbances to the *satisfactory operating state* reduce in magnitude.

power system demand

The total *load* (in MW) supplied by the *power system*.

Power System Design Data Sheet

The data sheet *published* by AEMO under clause S5.5.7(a)(1).

Power System Model Guidelines

The guidelines *published* by AEMO under clause S5.5.7(a)(3).

power system needs

Has the meaning given to it in clause 5.10.2.

Power System Setting Data Sheet

The data sheet *published* by AEMO under clause S5.5.7(a)(2).

power system frequency risk review

A review described in clause 5.20A.1(c).

power system operating procedures

The procedures to be followed by *Registered Participants* in carrying out operations and/or maintenance activities on or in relation to primary and *secondary equipment connected* to or forming part of the *power system* or *connection points*, as described in clause 4.10.1.

power system reserve constraint

A *constraint* in the *central dispatch* due to the need to provide or maintain a specified type and level of *scheduled reserve*.

power system security

The safe scheduling, operation and control of the *power system* on a continuous basis in accordance with the principles set out in clause 4.2.6.

power system security standards

The standards (other than the *reliability standard* and the *system restart standard*) governing *power system security* and *reliability* of the *power system* to be approved by the *Reliability Panel* on the advice of *AEMO*, but which may include but are not limited to standards for the *frequency* of the *power system* in operation and *contingency capacity reserves* (including guidelines for assessing requirements).

power transfer

The instantaneous rate at which *active energy* is transferred between *connection points*.

power transfer capability

The maximum permitted *power transfer* through a *transmission network* or *distribution network* or part thereof.

pre-adjusted locational component

Has the meaning given to it in clause 6A.23.3(a).

pre-adjusted non-locational component

Has the meaning given to it in clause 6A.23.3(a).

pre-dispatch

Forecast of *dispatch* performed one *day* before the *trading day* on which *dispatch* is scheduled to occur.

pre-dispatch schedule

A schedule prepared in accordance with clause 3.8.20(a).

preferred option

Has the meaning given to it in clause 5.10.2.

preliminary program

The program to be prepared by a *Network Service Provider* showing proposed milestones for *connection* and access activities as specified in clause 5.3.3(b)(6).

preliminary response

Has the meaning given to it in clause 5.3A.A1.

preliminary statement

Has the meaning given in clause 3.15.14(a).

premises connection assets

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1

preparatory activities

Has the meaning given to it in clause 5.10.2.

prescribed common transmission services

Prescribed transmission services that provide equivalent benefits to

- (a) all *Transmission Customers* who have a *connection point* with the relevant *transmission network* without any differentiation based on their location within the *transmission system*; and
- (b) *Transmission Network Service Providers* in *interconnected regions*, without any differentiation based on the location of their direct or indirect *connection* or *interconnection* with the relevant *transmission system*.

prescribed connection services

Services that are either *prescribed entry services* or *prescribed exit services*.

prescribed entry services

Entry services that are *prescribed transmission services* by virtue of the operation of clause 11.6.11.

prescribed exit services

Exit services that are *prescribed transmission services* by virtue of the operation of clause 11.6.11 and *exit services* provided to *Distribution Network Service Providers*.

prescribed shared transmission services

Shared transmission services that are *prescribed TUOS services* or *prescribed common transmission services*.

prescribed transmission service

Any of the following services:

- (a) a *shared transmission service* that:
 - (1) does not exceed such *network* performance requirements (whether as to quality or quantity) as that *shared transmission service* is required to meet under any *jurisdictional electricity legislation*;
 - (2) except to the extent that the *network* performance requirements which that *shared transmission service* is required to meet are prescribed under any *jurisdictional electricity legislation*, does not exceed such *network* performance requirements (whether as to quality or quantity) as are set out in schedule 5.1a or 5.1; or
 - (3) is an *above-standard system shared transmission service*;
- (b) services that are required to be provided by a *Transmission Network Service Provider* under the *Rules*, or in accordance with *jurisdictional electricity legislation*, to the extent such services relate to the provision of the services referred to in paragraph (a), including such of those services as are [system strength transmission services](#) or are:
 - (1) required by *AEMO* to be provided under the *Rules*, but excluding those acquired by *AEMO* under rule 3.11; and
 - (2) necessary to ensure the integrity of a *transmission network*, including through the maintenance of *power system security* and assisting in the planning of the *power system*; or

- (c) *connection services* that are provided by a *Transmission Network Service Provider* to another *Network Service Provider* to connect their networks where neither of the *Network Service Providers* is a *Market Network Service Provider*,

but does not include a *negotiated transmission service* or a *market network service*.

prescribed TUOS services ~~or~~ prescribed transmission use of system services;

System strength transmission services and prescribed~~*prescribed*~~ *transmission services* that are not *prescribed common transmission services*, *prescribed entry services* or *prescribed exit services*, and that provide specific benefits to:

- (a) *Transmission Customers* who have a *connection point* with the relevant *transmission network*, based on the location of that *connection point* within the *transmission system*; and
- (b) *Transmission Network Service Providers* who have a direct or indirect *connection* or an *interconnection* with the relevant *transmission network*, based on the location of that *connection* or *interconnection* within the relevant *transmission system*.

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.

pricing methodology

For a *Transmission Network Service Provider*, means the pricing methodology approved by the AER for that *Transmission Network Service Provider* and included in a *transmission determination* as referred to in rule 6A.24.

pricing methodology guidelines

Guidelines made by the AER under rule 6A.25 that contain the matters set out in clause 6A.25.2.

pricing principles for direct control services

The requirements set out in clause 6.18.5.

Pricing Principles for Prescribed Transmission Services

The principles set out in rule 6A.23.

pricing proposal

A pricing proposal under Part I of Chapter 6.

pricing zone

A geographic area within which *Network Users* are charged a specific set of *distribution service* prices.

primary distribution feeder

Has the meaning given to it in clause 5.10.2.

primary frequency control band

In relation to the *frequency* of the *power system*, means the range 49.985Hz to 50.015Hz, or such other range as specified by the *Reliability Panel* in the *power system security standards*.

primary frequency response

An automatic change in a *generating system's active power* output, to oppose or arrest *frequency* changes, measured at or behind the *generating system's connection point*.

primary frequency response parameters

Has the meaning given in clause 4.4.2A.

Primary Frequency Response Requirements

The requirements developed, published and maintained by *AEMO* under clause 4.4.2A(a).

Primary Transmission Network Service Provider

The *Transmission Network Service Provider* who operates the largest *transmission network* in each *participating jurisdiction* but does not include a *Transmission Network Service Provider* for a *declared transmission system*.

project assessment conclusions report

Has the meaning given to it in clause 5.10.2.

project assessment draft report

Has the meaning given to it in clause 5.10.2.

project developer

A person whose application to *AEMO* under clause 3.13.3AA(b) has been granted pursuant to clause 3.13.3AA(c)(1) and not subsequently revoked pursuant to clause 3.13.3AA(c)(2).

project specification consultation report

Has the meaning given to it in clause 5.10.2.

Proponent

In respect of clause 5.7.7 has the meaning given in clause 5.7.7(a).

proposed contingent capital expenditure

For a *Distribution Network Service Provider*, the total forecast capital expenditure for the relevant *proposed contingent project*, as included in the *regulatory proposal* for that project.

For a *Transmission Network Service Provider*, the total forecast capital expenditure for the relevant *proposed contingent project*, as included in the *Revenue Proposal* for that project.

proposed contingent project

A proposal by a *Distribution Network Service Provider* as part of a *regulatory proposal* for a project to be determined by the *AER* as a *contingent project* for the purposes of a distribution determination accordance with clause 6.6A.1(b)(1).

A proposal by a *Transmission Network Service Provider* as part of a *Revenue Proposal* for a project to be determined by the *AER* as a *contingent project* for the purposes of a *revenue determination* in accordance with clause 6A.8.1(b)(1).

prospective reallocation

A *reallocation transaction* that occurs in a *trading interval* that takes place at a time after the *reallocation request* is made.

protected event

Has the meaning given in clause 4.2.3(f).

protected event EFCS investment

Has the meaning given to it in clause 5.10.2.

protected event EFCS standard

For an *emergency frequency control scheme* means the standard for the scheme determined by the *Reliability Panel* under clause 8.8.4 setting out:

- (a) a general description of the scheme including how it is proposed to operate and the new, existing or modified *facilities* likely to comprise the scheme; and
- (b) the *target capabilities* applicable to the scheme.

protection system

A system, which includes equipment, used to protect a *Registered Participant's facilities* from damage due to an electrical or mechanical fault or due to certain conditions of the *power system*.

prudential requirements

The requirements which must be satisfied as a condition of eligibility to remain a *Market Participant* in accordance with clause 3.3.

publish

A document is published by the *AER* if it is:

- (a) published on the *AER's* website; and
- (b) made available for public inspection at the *AER's* public offices; and
- (c) in the case of a document inviting submissions from members of the public – published in a newspaper circulating generally throughout Australia.

In Part B of Chapter 5, a document is published by the *Distribution Network Service Provider* if it is published on the *Distribution Network Service Provider's* website.

Otherwise, a document is published by someone else if it is made available to *Registered Participants* electronically.

ramp rate

The rate of change of *active power* (expressed as MW/minute) required for *dispatch*.

rated active power

- (1) In relation to a *generating unit*, the maximum amount of *active power* that the *generating unit* can continuously deliver at the *connection point* when operating at its *nameplate rating*.
- (2) In relation to a *generating system*, the combined maximum amount of *active power* that its in-service *generating units* can deliver at the *connection point*, when its in-service *generating units* are operating at their *nameplate ratings*.

reactive energy

A measure, in varhour (varh), of the alternating exchange of stored energy in inductors and capacitors, which is the time-integral of the product of *voltage* and the out-of-phase component of current flow across a *connection point*.

reactive plant

Plant which is normally specifically provided to be capable of providing or absorbing *reactive power* and includes the *plant* identified in clause 4.5.1(g).

reactive power

The rate at which *reactive energy* is transferred.

Reactive power is a necessary component of alternating current electricity which is separate from *active power* and is predominantly consumed in the creation of magnetic fields in motors and *transformers* and produced by *plant* such as:

- (a) alternating current generators;
- (b) capacitors, including the capacitive effect of parallel *transmission* wires; and
- (c) *synchronous condensers*.

reactive power capability

The maximum rate at which *reactive energy* may be transferred from a *generating unit* to a *connection point* as specified or proposed to be specified in a *connection agreement* (as the case may be).

reactive power reserve

Unutilised sources of *reactive power* arranged to be available to cater for the possibility of the unavailability of another source of *reactive power* or increased requirements for *reactive power*.

reactor

A device, similar to a *transformer*, specifically arranged to be *connected* into the *transmission system* during periods of low *load* demand or low *reactive power* demand to counteract the natural capacitive effects of long *transmission lines* in generating excess *reactive power* and so correct any *transmission voltage* effects during these periods.

real estate developer

Has the meaning given in clause 5A.A.1.

real estate development

Has the meaning given in clause 5A.A.1.

reallocation

A process under which two *Market Participants* request *AEMO* to make matching debits and credits to the position of those *Market Participants* with *AEMO*.

reallocation amount

In respect of a *Market Participant*, the positive or negative dollar amount in respect of a *reallocation transaction* being an amount payable to or by the *Market Participant*.

reallocation procedures

The procedures *published* by *AEMO* under clause 3.15.11A.

reallocation request

A request to *AEMO* for a *reallocation*, pursuant to clause 3.15.11(c).

reallocation transaction

A *transaction* which occurs when the applicable *trading interval* specified in a *reallocation request* occurs and the *reallocation request* has been registered and not deregistered before the expiration of the *trading interval*.

Reallocator

A person registered as a *Reallocator* by *AEMO* in accordance with rule 2.5B.

rebid

A variation to a bid or offer made in accordance with clause 3.8.22(b).

reconfiguration investment

Has the meaning given to it in clause 5.10.2.

reconnect

The operation of switching equipment or other action so as to enable the flow of electricity at a *connection point* following a *disconnection*.

Referred Affected Participant

An *Affected Participant* who has a claim referred to an independent expert pursuant to clauses 3.12.2(l) or 3.12.2(m).

Referred Directed Participant

A *Directed Participant* who has a claim referred to an independent expert pursuant to clauses 3.15.7B(c) or 3.15.7B(d).

Referred Market Customer

A *Market Customer* who has a claim referred to an independent expert pursuant to clauses 3.12.2(l) or 3.12.2(m).

Referred Market Suspension Compensation Claimant

A *Market Suspension Compensation Claimant* who has a claim referred to an independent expert pursuant to clauses 3.14.5B(f) or 3.14.5B(g).

region

An area determined by the *AEMC* in accordance with Chapter 2A, being an area served by a particular part of the *transmission network* containing one or more major *load centres* or *generation centres* or both.

regional benefit directions procedures

Has the meaning given in clause 3.15.8(b2).

regional reference node

A location on a *transmission network* or *distribution network* to be determined for each *region* by the *AEMC* in accordance with Chapter 2A.

regional reference price

Spot price at the *regional reference node*.

regional specific power system operating procedures

The procedures described in clause 4.10.1(a)(3).

Regions Publication

The document *published* by *AEMO* under clause 2A.1.3 that provides a list of all *regions*, *regional reference nodes* and the *region* to which each *market connection point* is assigned.

Registered Participant

A person who is registered by *AEMO* in any one or more of the categories listed in rules 2.2 to 2.7. However:

- (a) in the case of a person who is registered by *AEMO* as a *Trader*, such a person is only a *Registered Participant* for the purposes referred to in rule 2.5A;
- (b) in the case of a person who is registered by *AEMO* as a *Metering Coordinator*, such a person is only a *Registered Participant* for the purposes referred to in clause 2.4A.1(d);
- (c) as set out in rule 2.11.1A, for the purposes of rule 2.11 only, *Third Party B2B Participants* (other than *Third Party B2B Participants* who are also *Embedded Network Managers*) are also deemed to be *Registered Participants*;
- (d) as set out in clause 3.13.3AA, for the purposes of some provisions of clause 3.13.3 only, *project developers* are also deemed to be *Registered Participants*;
- (e) as set out in clause 8.2.1(a1) and 8.2A.2(b), for the purposes of some provisions of rule 8.2 only, *AEMO*, *Connection Applicants*, *Metering Providers*, *Metering Data Providers*, *Third Party B2B Participants* and *B2B Change Parties* who are not otherwise *Registered Participants* are also deemed to be *Registered Participants*;
- (f) as set out in clause 8.6.1A, for the purposes of Part C of Chapter 8 only, *Metering Providers*, *Metering Data Providers*, *Third Party B2B Participants* and *project developers* who are not otherwise *Registered Participants* are also deemed to be *Registered Participants*; and

- (g) as set out in clause 4.8.12(a3), for the purposes of Part C of Chapter 8 only, *Jurisdictional System Security Coordinators* are also deemed to be *Registered Participants*.

Registered Participant Agent

An agent of a *Registered Participant* appointed under clause 4.11.5.

registration category

Has the meaning given in clause 3.15.21(c1)(1).

regulated interconnector

An *interconnector* which is referred to in clause 11.8.2 of the *Rules* and is subject to *transmission service* regulation and pricing arrangements in Chapter 6A.

regulating capability

The capability to perform *regulating duty*.

regulating capability constraints

Constraints on the formulation of a realisable *dispatch* or *pre-dispatch schedule* due to the need to provide for *regulating capability*.

regulating duty

In relation to a *generating unit*, the duty to have its *generated* output adjusted frequently so that any *power system frequency* variations can be corrected.

regulating lower service

The service of controlling the level of *generation* or *load* associated with a particular *facility*, in accordance with the requirements of the *market ancillary service specification*, in accordance with electronic signals from *AEMO* in order to lower the *frequency* of the *power system*.

regulating raise service

The service of controlling the level of *generation* or *load* associated with a particular *facility*, in accordance with the requirements of the *market ancillary service specification*, in accordance with electronic signals from *AEMO* in order to raise the *frequency* of the *power system*.

regulation services

The *regulating raise service* and *regulating lower service*.

regulatory change event

A change in a *regulatory obligation* or *requirement* that:

- (a) falls within no other category of *pass through event*; and
- (b) occurs during the course of a *regulatory control period*; and
- (c) substantially affects the manner in which the *Transmission Network Service Provider* provides *prescribed transmission services* or the *Distribution Network Service Provider* provides *direct control services* (as the case requires); and
- (d) *materially* increases or *materially* decreases the costs of providing those services.

regulatory control period

- (a) In respect of a *Transmission Network Service Provider*, a period of not less than 5 *regulatory years* in which a *total revenue cap* applies to that provider by virtue of a *revenue determination*.
- (b) In respect of a *Distribution Network Service Provider*, a period of not less than 5 *regulatory years* for which the provider is subject to a control mechanism imposed by a distribution determination.
- (c) [In respect of AEMO, a period over which its approved pricing methodology applies.](#)

regulatory information instrument

Has the meaning given in the *NEL*.

regulatory investment test for distribution

The test developed and *published* by the *AER* in accordance with clauses 5.17.1 and 5.17.2, as in force from time to time, and includes amendments made in accordance with clause 5.17.2.

regulatory investment test for distribution application guidelines

Has the meaning given to it in clause 5.10.2.

regulatory investment test for transmission

The test developed and *published* by the *AER* in accordance with clauses 5.15A.1 and 5.16.2 as in force from time to time, and includes amendments made in accordance with clause 5.16.2.

regulatory investment test for transmission application guidelines

Has the meaning given to it in clause 5.10.2.

regulatory obligation or requirement

Has the meaning assigned in the Law.

regulatory proposal

A proposal (by a *Distribution Network Service Provider*) under rule 6.8.

regulatory year

Each consecutive period of 12 calendar months in a *regulatory control period*, the first such 12 month period commencing at the beginning of the *regulatory control period* and the final 12 month period ending at the end of the *regulatory control period*. For *AEMO*, each *financial year* is a *regulatory year*.

related body corporate

In relation to a body corporate, a body corporate that is related to the first-mentioned body by virtue of the *Corporations Act 2001* (Cth).

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(1) 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(I);
- (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* 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* or *generating 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* submits a proposal to alter a *connected generating system* or a *generating system*, for which *performance standards* have previously been accepted by *AEMO*, under clause 5.3.9;
 - (iv) the *Generator* is notified that the *Network Service Provider* and *AEMO* are satisfied with the proposed alterations to the *generating 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.

relevant AEMO intervention event

A *AEMO intervention event* that involves the exercise of the *RERT* in accordance with rule 3.20 as referred to in paragraph (b) of the definition of *AEMO intervention event*.

relevant tax

Any tax payable by a *Transmission Network Service Provider* or a *Distribution Network Service Provider* other than:

- (a) income tax and capital gains tax;
- (b) stamp duty, financial institutions duty and bank accounts debits tax;

- (c) penalties, charges, fees and interest on late payments, or deficiencies in payments, relating to any tax; or
- (d) any tax that replaces or is the equivalent of or similar to any of the taxes referred to in paragraphs (a) to (b) (including any State equivalent tax).

Relevant Transmission Network Service Provider, Relevant TNSP

In respect of clause 5.7.7 has the meaning given in clause 5.7.7(a).

reliability

The probability of a system, device, *plant* or equipment performing its function adequately for the period of time intended, under the operating conditions encountered.

reliability augmentation

A *transmission network augmentation* that is necessitated principally by inability to meet the minimum *network* performance requirements set out in schedule 5.1 or in relevant legislation, regulations or any statutory instrument of a *participating jurisdiction*.

reliability corrective action

Has the meaning given to it in clause 5.10.2.

reliability forecast

For a *region* for a *financial year*, means the forecast of whether there is *forecast reliability gap* for that *region* in that year and, when used in reference to a *statement of opportunities*, means the forecast for the *financial year* in which the *statement of opportunities* is *published* and the subsequent four *financial years* in that *statement of opportunities*. A *reliability forecast* includes an updated *reliability forecast* under clause 3.13.3A(b).

Reliability Forecast Guidelines

The guidelines made by *AEMO* under clause 4A.B.4.

reliability gap period

Has the meaning given in the *NEL*.

Reliability Panel

Has the meaning given in the *NEL*.

reliability settings

The following market settings:

- (a) the *market price cap*;
- (b) the *cumulative price threshold*;
- (c) the *market floor price*; and
- (d) the *administered price cap*.

reliability standard

The standard specified in clause 3.9.3C(a).

reliability standard and settings guidelines

The guidelines developed under clause 3.9.3A(a).

reliability standard and settings review

A review of the *reliability standard* and the *reliability settings*, including the manner of indexing the *market price cap* and the *cumulative price threshold*, conducted in accordance with clause 3.9.3A.

reliability standard implementation guidelines

The guidelines developed under clause 3.9.3D.

reliable

The expression of a recognised degree of confidence in the certainty of an event or action occurring when expected.

reliable operating state

In relation to the *power system*, has the meaning set out in clause 4.2.7.

remote acquisition

The acquisition of *interval metering data* from a *telecommunications network* connected to a *metering installation* that:

- (a) does not, at any time, require the presence of a person at, or near, the *interval metering installation* for the purposes of data collection or data verification (whether this occurs manually as a walk-by reading or through the use of a vehicle as a close proximity drive-by reading); and
- (b) includes but is not limited to methods that transmit data via:
 - (1) fixed-line telephone ('direct dial-up');
 - (2) satellite;
 - (3) the internet;
 - (4) wireless or radio, including mobile telephone networks;
 - (5) power line carrier; or
 - (6) any other equivalent technology.

Note:

For the requirements of clause 7.8.9(b) *remote acquisition* may collect data other than *interval metering data*.

remote control equipment

Equipment used to control the operation of elements of a *power station* or *substation* from a *control centre*.

remote monitoring equipment

Equipment installed to enable monitoring of a *facility* from a *control centre*.

representative

In relation to a person, any employee, agent or professional adviser of:

- (a) that person; or

- (b) a *related body corporate* of that person; or
- (c) a third party contractor to that person.

required pass through amount

In respect of a *negative change event* for a *Transmission Network Service Provider*, the costs in the provision of *prescribed transmission services* that, as a result of that *negative change event*, the *Transmission Network Service Provider* has saved and is likely to save (as opposed to the revenue impact of that event) until:

- (a) unless paragraph(b) applies – the end of the *regulatory control period* in which the *negative change event* occurred; or
- (b) if the *transmission determination* for the *regulatory control period* following that in which the *negative change event* occurred does not make any allowance for the pass through of the saved costs (whether or not in the forecast operating expenditure or forecast capital expenditure accepted or substituted by the *AER* for that *regulatory control period*) – the end of the *regulatory control period* following that in which the *negative change event* occurred.

In respect of a *negative change event* for a *Distribution Network Service Provider*, the costs in the provision of *direct control services* that, as a result of the *negative change event*, the *Distribution Network Service Provider* has saved and is likely to save (as opposed to the revenue impact of that event) until:

- (a) unless paragraph(b) applies – the end of the *regulatory control period* in which the *negative change event* occurred; or
- (b) if the distribution determination for the *regulatory control period* following that in which the *negative change event* occurred does not make any allowance for the pass through of the saved costs (whether or not in the forecast operating expenditure or forecast capital expenditure accepted or substituted by the *AER* for that *regulatory control period*) – the end of the *regulatory control period* following that in which the *negative change event* occurred.

RERT guidelines

The guidelines developed and *published* by the *Reliability Panel* under clause 3.20.8.

RERT principles

The principles referred to in clause 3.20.2(b).

RERT (reliability and emergency reserve trader)

The actions taken by *AEMO* as referred to in clause 3.20.2, in accordance with rule 3.20, to ensure reliability of *supply*.

reserve

Scheduled reserve or *unscheduled reserve*.

reserve contract

A *scheduled reserve contract* or an *unscheduled reserve contract*.

reserve level declaration guidelines

The guidelines *published* by AEMO under clause 4.8.4A(a).

response breakpoint

- (a) In relation to a *market ancillary service offer* 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* reduces with increased *generation* or *load* level; and
- (b) In relation to a *market ancillary service offer* 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* reduces with decreased *generation* or *load* level.

response capability

- (a) In relation to a *market ancillary service offer* to raise the *frequency* of the *power system*, the amount of the response in (MW) which is specified in the *offer* for every level of associated *generation* or *load* below the associated *response breakpoint*; and
- (b) In relation to a *market ancillary service offer* to lower the *frequency* of the *power system*, the amount of the response in (MW) which is specified in the *offer* for every level of associated *generation* or *load* above the associated *response breakpoint*.

responsible person

For the purposes of the NERL, the *Metering Coordinator*.

Note:

References to 'responsible person' in the *Rules* or a document produced under the *Rules* are deemed to be references to the *Metering Coordinator* under clause 11.86.4.

restricted asset

An item of equipment that is electrically connected to a *retail customer's connection point* at a location that is on the same side of that *connection point* as the *metering point*, but excludes:

- (a) such an item of equipment where that *retail customer* is a *Distribution Network Service Provider* and that *Distribution Network Service Provider* is the *Local Network Service Provider* for that *connection point*; or
- (b) a *network device*.

retail billing period

Has (in the context of Chapter 6B) the meaning given in clause 6B.A1.2.

retail customer

A *small customer* or a *large customer*.

Note:

In the context of Chapter 5A, the above definition has been supplemented by a definition specifically applicable to that Chapter, See clause 5A.A.1.

Retail Market Procedures

Procedures made under the *Rules* for or in *connection* with the sale and *supply* of electricity to *retail customers* or the operation of retail electricity *markets* including:

- (a) *B2B procedures*; and
- (b) the *Market Settlement and Transfer Solution Procedures*; and
- (c) the *metrology procedures*; and
- (d) other procedures dealing with, or incidental to, the retail sale or *supply* of electricity or related services.

retailer

Has the same meaning as in the *NEL*.

Otherwise, a *Customer* who engages in the activity of selling electricity to end users.

retailer insolvency costs

For a *Distribution Network Service Provider*:

- (a) *billed but unpaid charges*;
- (b) the actual amount of unbilled *network charges* accrued by a *failed retailer*; and
- (c) other costs that the *Distribution Network Service Provider* has incurred or is likely to incur as a result of a *retailer insolvency event*.

retailer insolvency event

The failure of a *retailer* during a *regulatory control period*, to pay a *Distribution Network Service Provider* an amount to which the service provider is entitled for the provision of *direct control services*, if:

- (a) an *insolvency official* has been appointed in respect of that *retailer*; and
- (b) the *Distribution Network Service Provider* is not entitled to payment of that amount in full under the terms of any *credit support* provided in respect of that *retailer*.

Retailer Member

A person nominated and elected as a *Member* by *Retailer Member Voters* to represent *Retailer Member Voters* in accordance with the *Rules* (including clause 7.17.10(f)) and *Information Exchange Committee Election Procedures*.

Retailer Member Voters

Retailers and *Local Retailers*.

retailer planned interruption

- (a) In a *participating jurisdiction* where the *NERR* apply as a law of that *participating jurisdiction*, has the meaning given in the *NERR*.
- (b) Otherwise, if defined in *jurisdictional electricity legislation*, has the meaning given in *jurisdictional electricity legislation*.

revenue determination

A determination referred to in clause 6A.2.2(1) and rule 6A.4 as substituted (if at all) pursuant to clause 6A.7.1 or rule 6A.15 or as amended pursuant to clause 6A.8.2.

Revenue Proposal

For a *Transmission Network Service Provider*, a proposal submitted or resubmitted by the *Transmission Network Service Provider* to the *AER* pursuant to clause 6A.10.1(a), clause 6A.11.2 or clause 6A.12.3(a) (as the context requires).

revised statement

A statement issued by *AEMO* under clause 3.15.19 following the resolution of a dispute regarding a *final statement*.

rise time

In relation to a *control system*, the time taken for an output quantity to rise from 10% to 90% of the maximum change induced in that quantity by a step change of an input quantity.

RIT-D project

Has the meaning given to it in clause 5.10.2.

RIT-D proponent

Has the meaning given to it in clause 5.10.2.

RIT-T project

Has the meaning given to it in clause 5.10.2.

RIT-T proponent

Has the meaning given to it in clause 5.10.2.

RMS phase voltage

The *voltage* of *supply* measured as the average of the root mean square of the *voltages* between each pair of phases.

roll forward model

According to context:

- (a) the model developed and published by the *AER* for the roll forward of the regulatory asset base for *transmission systems* in accordance with clause 6A.6.1;
- (b) the model developed and published by the *AER* for the roll forward of the regulatory asset base for *distribution systems* in accordance with clause 6.5.1.

RoLR cost recovery scheme distributor payment determination

Has the same meaning as in the *NERL*.

RoLR Procedures

Has the same meaning as in the *NERL*.

RoLR

Has the same meaning as in the *NERL*.

routine revised statement

A *settlement statement* issued by *AEMO* under clause 3.15.19(b).

Rule fund

Has the meaning given in the *NEL*, and includes the funds referred to in clause 1.11(a).

Rules

The rules called the National Electricity Rules made under Part 7 of the *NEL* as amended from time to time in accordance with that Part.

Rules bodies

Any person or body, other than *AEMO*, the *AER*, the *AEMC*, or the *ACCC*, that is appointed or constituted by the *Rules* to perform functions under the *Rules*.

Rules consultation procedures

The procedures for consultation with *Registered Participants* or other persons as set out in clause 8.9.

satisfactory operating state

In relation to the *power system*, has the meaning given in clause 4.2.2.

scheduled generating unit

- (a) A *generating unit* so classified 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 *generating units* referred to in paragraph (a) that have been aggregated in accordance with clause 3.8.3.

scheduled generating system

A *generating system* comprising *scheduled generating units*.

Scheduled Generator

A *Generator* in respect of which any *generating unit* is classified as a *scheduled generating unit* in accordance with Chapter 2.

scheduled high price

The dollar amount per MWh or MW, as the case may be, determined as such by *AEMO* pursuant to clause 3.3.17.

scheduled load

- (a) A *market load* 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 low price

The dollar amount per MWh or MW, as the case may be, determined as such by AEMO pursuant to clause 3.3.17.

scheduled network service

- (a) A *network service* which is classified as a *scheduled network service* in accordance with Chapter 2.
- (b) For the purposes of Chapter 3 (except clause 3.8.3A(b)(1)(ii)) and rule 4.9, two or more *scheduled network services* referred to in paragraph (a) that have been aggregated in accordance with clause 3.8.3.

Scheduled Network Service Provider

A *Network Service Provider* who has classified any of its *network services* as a *scheduled network service*.

scheduled plant

In respect of a *Registered Participant*, a *scheduled generating unit*, a *semi-scheduled generating unit*, 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*;
- (b) of *scheduled network services*; or
- (c) arising out of the ability to reduce *scheduled loads*.

scheduled reserve contract

A contract entered into by AEMO for the provision of *scheduled reserve* in accordance with rule 3.20.

scheduling error

Scheduling error means any of the events described in clause 3.8.24(a).

secondary equipment

Those assets of a *Market Participant's facility* which do not carry the *energy* being traded, but which are required for control, protection or operation of assets which carry such *energy*.

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* or the *spot market* and which is classified as a *second-tier load* in accordance with Chapter 2.

secure operating level of inertia

For an *inertia sub-network*, the *secure operating level of inertia* determined by AEMO and referred to in clause 5.20B.2(b)(2).

secure operating state

In relation to the *power system* has the meaning given in clause 4.2.4.

self-commitment, self-commit

Commitment, where the decision to *commit* a *generating unit* was made by the relevant *Generator* without instruction or direction from AEMO.

self-decommitment

Decommitment, where the decision to *decommit* a *generating unit* was made by the relevant *Generator* without instruction or direction from AEMO.

semi-dispatch interval

For a *semi-scheduled generating unit*, a *dispatch interval* for which either:

- (a) a *network constraint* would be violated if the *semi-scheduled generating unit's generation* were to exceed the *dispatch level* specified in the related *dispatch instruction* at the end of the *dispatch interval*; or
- (b) the *dispatch level* specified in that *dispatch instruction* is less than the *unconstrained intermittent generation forecast* at the end of the *dispatch interval*,

and which is notified by AEMO in that *dispatch instruction* to be a *semi-dispatch interval*.

self-dispatch level

The level of *generation* in MW, as specified in a *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 generating system

A *generating system* comprising *semi-scheduled generating units*.

semi-scheduled generating unit

- (a) A *generating unit* classified in accordance with clause 2.2.7.
- (b) For the purposes of Chapter 3 and rule 4.9, two or more *generating units* referred to in paragraph (a) that have been aggregated in accordance with clause 3.8.3.

Semi-Scheduled Generator

A *Generator* in respect of which any *generating unit* is classified as a *semi-scheduled generating unit* in accordance with Chapter 2.

sensitive loads

Loads defined as sensitive for each *participating jurisdiction* by the *Jurisdictional System Security Coordinator* for that *participating jurisdiction*.

sent out generation

In relation to a *generating unit*, the amount of electricity *supplied* to the *transmission network* or *distribution network* at its *connection point*.

Service Applicant

A person who asks a *Distribution Network Service Provider* for access to a *distribution service*.

service level procedures

The procedures established by *AEMO* in accordance with clause 7.16.6.

service standard event

A legislative or administrative act or decision that:

- (a) has the effect of:
 - (i) substantially varying, during the course of a *regulatory control period*, the manner in which a *Transmission Network Service Provider* is required to provide a *prescribed transmission service*, or a *Distribution Network Service Provider* is required to provide a *direct control service*; or
 - (ii) imposing, removing or varying, during the course of a *regulatory control period*, minimum service standards applicable to *prescribed transmission services* or *direct control services*; or
 - (iii) altering, during the course of a *regulatory control period*, the nature or scope of the *prescribed transmission services* or *direct control services*, provided by the service provider; and
- (b) *materially* increases or *materially* decreases the costs to the service provider of providing *prescribed transmission services* or *direct control services*.

service target performance incentive scheme

A For a *Transmission Network Service Provider* – a scheme developed and *published* by the *AER* in accordance with clause 6A.7.4.

For a *Distribution Network Service Provider* – a scheme developed and *published* by the *AER* in accordance with clause 6.6.2.

settlement amount

The amount calculated by *AEMO* pursuant to clause 3.15.12.

settlement statement

Includes an *interim statement*, *preliminary statement* and *final statement*.

settlements

The activity of producing bills and credit notes for *Market Participants*.

settlements ready data

The *metering data* that has undergone a validation and substitution process by *AEMO* for the purpose of *settlements* and is held in the *metering database*.

settlements residue

Any surplus or deficit of funds retained by *AEMO* upon completion of *settlements* to all *Market Participants* in respect of a *trading interval*, being either *inter-regional settlements residue* or *intra-regional settlements residue*.

settlement residue committee

The committee established by *AEMO* in accordance with clause 3.18.5.

settling time

In relation to a *control system*, the time measured from initiation of a step change in an input quantity to the time when the magnitude of error between the output quantity and its final settling value remains less than 10% of:

- (a) if the sustained change in the quantity is less than half of the maximum change in that output quantity, the maximum change induced in that output quantity; or
- (b) the sustained change induced in that output quantity.

Shared Asset Guidelines

Guidelines made by the *AER* under clause 6.4.4(d) or clause 6A.5.5(d), as the case may be.

shared asset principles

Has the meaning given to it by clause 6.4.4(c) or clause 6A.5.5(c), as the case may be.

shared customer

Has (in the context of Chapter 6B) the meaning given in clause 6B.A1.2.

shared customer

Has the meaning given in the *NERL*.

shared distribution service

A service provided to a *Distribution Network User* for use of a *distribution network* for the conveyance of electricity (including a service that ensures the integrity of the related *distribution system*).

shared network capability service

Has the meaning given in the *NEL*.

shared transmission service

A service provided to a *Transmission Network User* for use of a *transmission network* for the conveyance of electricity (including a service that ensures the integrity of the related *transmission system*).

short circuit fault

A fault having a metallic conducting path between any two or more conductors or between any conductor and ground, including touching conductors and faults through earthing facilities, and excluding faults within equipment at a station.

short circuit ratio

For a generating system, the synchronous three phase fault level (expressed in MVA) at the connection point for the generating system divided by the rated active power of the generating system (expressed in MW).

For a market network service facility, the synchronous three phase fault level (expressed in MVA) at the relevant connection point divided by the rated power transfer capability of the market network service facility (expressed in MW).

For an inverter based load, the synchronous three phase fault level (expressed in MVA) at the connection point for the IBR divided by the maximum demand at the connection point (expressed in MW).

short term PASA

The PASA in respect of the period described in clause 3.7.3(b), as described under clause 3.7.3.

short term PASA inputs

The inputs to be prepared in accordance with clauses 3.7.3(d) and (e).

shunt capacitor

A type of *plant connected to a network to generate reactive power.*

shunt reactor

A type of *plant connected to a network to absorb reactive power.*

single contingency

In respect of a *transmission network or distribution network* and *Network Users*, a sequence of related events which result in the removal from service of one *Network User, transmission line or distribution line, or transformer.* The sequence of events may include the application and clearance of a fault of defined severity.

slow lower service

The service of providing, in accordance with the requirements of the *market ancillary service specification*, the capability of controlling the level of *generation or load* associated with a particular *facility* in response to the locally sensed *frequency* of the *power system* in order to stabilise a rise in that *frequency*.

slow raise service

The service of providing, in accordance with the requirements of the *market ancillary service specification*, the capability of controlling the level of *generation or load* associated with a particular *facility* in response to the locally sensed *frequency* of the *power system* in order to stabilise a fall in that *frequency*.

slow start generating unit

A *generating unit* described in clause 3.8.17(a).

small customer

- (a) In a *participating jurisdiction* where the *NERL* applies as a law of that *participating jurisdiction*, has the meaning given in the *NERL*.
- (b) Otherwise, has the meaning given in *jurisdictional electricity legislation*.

small customer metering installation

A *metering installation* in respect of the *connection point* of a *small customer* which meets the *minimum services specification* or which is required to meet the *minimum services specification* under clause 7.8.3(a), clause 7.8.4(c) or clause 7.8.4(h)(2).

small dedicated connection asset

A *dedicated connection asset* that is not a *large dedicated connection asset*.

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* in respect of that *generating unit* in accordance with clause 2.2.1(c).

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-scale incentive scheme

A scheme developed and *published* by the *AER* in accordance with clause 6.6.4 or clause 6A.7.5, as the case may be.

Special Participant

A *System Operator* or a *Distribution System Operator*.

special revised statement

A *settlement statement* issued by *AEMO* under clause 3.15.19(a)(3).

spot market

The spot market established and operated by *AEMO* in accordance with clause 3.4.1.

spot market transaction

A transaction as defined pursuant to clause 3.15.6 which occurs in the *spot market*.

spot price

The price for electricity in a *trading interval* at a *regional reference node* or a *connection point* as determined in accordance with clause 3.9.2.

spot price forecast

A forecast of the *spot price*.

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* following a *major supply disruption*.

SRAS Guideline

The guideline developed and *published* by *AEMO* in accordance with clause 3.11.7(c) as in force from time to time and includes amendments made in accordance with clauses 3.11.7(f) and 3.11.7(g).

SRAS Objective

The objective for *SRASs* is to minimise the expected costs of a *major supply disruption*, to the extent appropriate having regard to the *national electricity objective*.

SRAS Provider

A person who agrees to provide one or more *SRASs* to *AEMO* under an *ancillary services agreement*.

SRAS Procurement Objective

Has the meaning given in clause 3.11.7(a1).

SRD (settlement residue distribution agreement)

Has the meaning given in clause 3.18.1(b).

SRD unit

A unit that represents a right for an *eligible person* to receive a portion of the net *settlements residue* under clause 3.6.5 allocated to a *directional interconnector* for the period specified in a *SRD agreement* entered into between that *eligible person* and *AEMO* in respect of that right.

stand-alone amount

For a *category of prescribed transmission services*, the costs of a *transmission system asset* that would have been incurred had that *transmission system asset* been developed, exclusively to provide that *category of prescribed transmission services*.

standard connection service

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1.

standard control service

A *direct control service* that is subject to a control mechanism based on a *Distribution Network Service Provider's total revenue requirement*.

Standards Australia

The Standards Association of Australia and includes its heirs or successors in business.

statement of charges

Has (in the context of Chapter 6B) the meaning given in clause 6B.A1.2.

statement of charges

Has the meaning given to it in clause 6B.A1.2.

statement of opportunities

A statement prepared by *AEMO* to provide information to assist *Scheduled Generators*, *Semi-Scheduled Generators*, *Transmission Network Service Providers* and *Market Participants* in making an assessment of the future need for electricity generating or demand management capacity or augmentation of the *power system*.

static excitation system

An *excitation control system* that does not use rotating machinery to produce the field current.

static VAR compensator

A device specifically provided on a *network* to provide the ability to generate and absorb *reactive power* and to respond automatically and rapidly to *voltage* fluctuations or *voltage* instability arising from a disturbance or disruption on the *network*.

substation

A *facility* at which two or more lines are switched for operational purposes. May include one or more *transformers* so that some *connected* lines operate at different nominal *voltages* to others.

substituted metering data

The substituted values of *accumulated metering data*, *interval metering data* or *calculated metering data* prepared in accordance with the *metrology procedure*. *Substituted metering data* is held in a *metering data services database* and the *metering database*.

sub-transmission

Has the meaning given to it in clause 5.10.2.

sub-transmission line

Has the meaning given to it in clause 5.10.2.

super majority

At least 70% of the number of *Members*.

supplementary carbon dioxide equivalent intensity indicator

Any indicators relating to a subset of *scheduled generating units* and *market generating units* published by *AEMO* in accordance with clause 3.13.14(h).

supply

The delivery of electricity.

supply scarcity mechanism means each of the following:

- (a) exercising the *RERT* in accordance with rule 3.20 by:
 - (1) *dispatching scheduled generating units, scheduled network services or scheduled loads* in accordance with any *scheduled reserve contract*; or
 - (2) *activating loads or generating units* 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.

supply service

Has (in the context of Chapter 5A) the meaning given in clause 5A.A.1

survey period

An agreed sample period used to determine the allocation of costs and prices for use of *transmission network* or *distribution network* assets.

suspended region

A region in which the *spot market* is suspended in accordance with clause 3.14.4.

suspension notice

A notice issued by *AEMO* to a *defaulting Market Participant* pursuant to clause 3.15.21(c) or (c1) under which *AEMO* notifies the *defaulting Market Participant*:

- (a) of the date and time from which it is suspended from specified activities;
- (b) the *registration categories* of the *defaulting Market Participant* to which the suspension relates; and
- (c) in respect of the *registration categories* referred to in paragraph (b), the activities (or subset of activities) of the *Market Participant* that have been suspended.

switchyard

The *connection point* of a *generating unit* into the *network*, generally involving the ability to *connect* the *generating unit* to one or more outgoing *network* circuits.

Sydney time

Eastern Standard Time or *Eastern Daylight Saving Time* as applicable in Sydney.

synchronise

The act of *synchronising* a *generating unit* or a *scheduled network service* to the *power system*.

synchronising

To electrically *connect* a *generating unit* or a *scheduled network service* to the *power system*.

synchronous condensers

Apparatus or equipment similar in construction to a *synchronous generating unit*, which operates at the equivalent speed of the *frequency* of the *power system*.

synchronous generating unit

The alternating current generators of most thermal and hydro (water) driven power turbines which operate at the equivalent speed of the *frequency* of the *power system* in its *satisfactory operating state*.

synchronous generator voltage control

The automatic *voltage control system* of a *generating unit* of the *synchronous generator* category which changes the output *voltage* of the *generating unit* through the adjustment of the generator rotor current and effectively changes the *reactive power* output from that *generating unit*.

system limitation

Has the meaning given to it in clause 5.10.2.

system limitation template

Has the meaning given to it in clause 5.10.2.

System Operator

A person whom *AEMO* has engaged as its agent, or appointed as its delegate, under clause 4.3.3 to carry out some or all of *AEMO's* rights, functions and obligations under Chapter 4 of the *Rules* and who is registered by *AEMO* as a *System Operator* under Chapter 2.

system restart plan

The plan described in clause 4.8.12(a).

system restart standard

The standard as determined by the *Reliability Panel* in accordance with clause 8.8.3(aa), for the acquisition of *SRASs*.

system restart test

A test conducted for the purpose of verifying whether the *system restart plan* is likely to be consistent with the achievement of the *system restart standard* or the *AEMO power system security responsibilities* in accordance with clause 4.3.6.

system standard

A standard for the performance of the *power system* as set out in schedule 5.1a.

system strength charge

The charge determined by a *System Strength Service Provider* in accordance with clause 6A.23.5.

system strength charging period

Has the meaning given in clause 6A.23.5(b).

system strength connection point

A *connection point* for a *connection* in respect of which an election is made under clause 5.3.4B(b1) to pay the *system strength charge*.

system strength connection works

Investment in a *transmission system* or *distribution system* in order to remedy or avoid a general system strength impact ~~an adverse system strength impact~~ arising from establishing a connection or alteration to a *connection* in relation to which clause 5.3.4B applies ~~a connection for a generating system or market network service facility~~ or from any alteration to a *generating 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 general system strength impact ~~impact~~ of a connection or alteration to a *connection* in relation to which clause 5.3.4B applies ~~the connection of a new generating system or market network service facility~~ or of any proposed alteration to a *generating 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 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 impact assessment guidelines

The guidelines ~~for conducting system strength impact assessments~~ developed by AEMO under clause 4.6.6.

system strength locational factor

A system strength locational factor determined by a Network Service Provider in accordance with the system strength impact assessment guidelines.

system strength node

A location on a transmission network that AEMO declares is a system strength node under clause 5.20C.1(a).

system strength transmission service

The provision of facilities and services to meet the standard in clause S5.1.14 at system strength nodes.

System Strength Transmission Service User

Means each:

(a) Transmission Network User in respect of its system strength connection points; and

(b) Network Service Provider whose network is connected to the transmission network of a System Strength Service Provider and whose network includes any system strength connection points.

system strength unit price

Means the price determined by a *System Strength Service Provider* for a *system strength node* in accordance with its *pricing methodology*.

system strength quantity

Has the meaning given to it in clause 6A.23.5(j).

system strength remediation scheme

A scheme agreed or determined under clause 5.3.4B required to be implemented as a condition of a *connection agreement* to remedy or avoid a *general system strength impact*~~an adverse system strength impact~~.

System Strength Report

A report published by AEMO under clause 5.20.7.

system strength requirements

The matters determined by AEMO for a *system strength node* under clause 5.20C.1(c).

~~*system strength requirements*~~

~~The matters determined by AEMO for a *region* under clause 5.20C.1(a).~~

system strength requirements methodology

The process AEMO uses to determine the *system strength requirements* for each *system strength node published region published* by AEMO under clause 5.20.6(a).

system strength service

A service for the provision of a contribution to the standard in clause S5.1.14 in relation to a *system strength node*~~the three phase fault level at a *fault level node*~~.

system strength service payment

A payment by a *Transmission Network Service Provider* made under a *system strength services agreement* where:

- (a) the payment is made for *system strength services* to be made available or provided as a service to the *Transmission Network Service Provider* in its capacity as a *System Strength Service Provider* to satisfy an obligation under clause S5.1.14~~clause 5.20C.3~~; and
- (b) the *system strength services* are made available or provided in accordance with applicable technical specifications and performance standards approved by AEMO.

System Strength Service Provider

The *System Strength Service Provider* for a *region* as specified under clause 5.20C.3(a).

system strength services agreement

An agreement made under which a person agrees to provide one or more *system strength services* to a *System Strength Service Provider*.

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* may have an associated tap-changing transformer, usually provided by the *Generator*.

TAPR Guidelines

Has the meaning given to it in clause 5.10.2.

target capabilities

For an *emergency frequency control scheme* means the technical parameters required to define the intended (but not guaranteed) service provided by the scheme which may include:

- (a) *power system* conditions within which the scheme is capable of responding;
- (b) the nature of the scheme's response (*load shedding* or *generation shedding* for the purposes of managing *frequency*);
- (c) the speed of the response;
- (d) the amount of *load shedding* or *generation shedding* that may occur when the scheme responds; and
- (e) capability to dynamically sense *power system* conditions.

tariff class

A class of *retail customers* for one or more *direct control services* who are subject to a particular tariff or particular tariffs.

tariff structure statement

For a *Distribution Network Service Provider*, means the *tariff structure statement* referred to in clause 6.18.1A that has been approved by the *AER* for that *Distribution Network Service Provider*.

tax

Any tax, levy, impost, deduction, charge, rate, rebate, duty, fee or withholding which is levied or imposed by an *Authority*.

tax change event

A tax change event occurs if:

- (a) any of the following occurs during the course of a *regulatory control period* for a *Transmission Network Service Provider* or a *Distribution Network Service Provider*:
 - (i) a change in a *relevant tax*, in the application or official interpretation of a *relevant tax*, in the rate of a *relevant tax*, or in the way a *relevant tax* is calculated;
 - (ii) the removal of a *relevant tax*;
 - (iii) the imposition of a *relevant tax*; and

- (b) in consequence, the costs to the service provider of providing *prescribed transmission services* or *direct control services* are *materially* increased or decreased.

technical envelope

The limits described in clause 4.2.5.

telecommunications network

A telecommunications network that provides access for public use or an alternate telecommunications network that has been approved by AEMO for the *remote acquisition of energy data*.

template for generator compliance programs

The template determined and *published* by the *Reliability Panel* under clause 8.8.3 of the *Rules*.

terms and conditions of access

According to context:

- (a) the terms and conditions described in clause 5.5.1(c); or
- (b) the terms and conditions described in clause 6.1.3.

Test Participant

The *Transmission Network Service Provider* and the *Registered Participants* notified of a *system restart test* under clause 4.3.6.

test program

In respect of an *inter-network test* or a *system restart test*, means the program and co-ordination arrangements for the test including (without limitation):

- (1) test procedures;
- (2) the proposed timing of the test;
- (3) operating procedures to manage *power system security* during the test;
- (4) required *power system* conditions for conducting the test;
- (5) for an *inter-network test*, test facilitation services including, as necessary, *ancillary services* required to achieve those *power system* conditions;
- (6) criteria for continuing or concluding a test and the decision-making process relevant to the test; and
- (7) contingency arrangements.

Third Party B2B Participant

A *B2B e-Hub Participant* who is not also a *Distribution Network Service Provider*, *retailer*, *Local Retailer*, *Metering Coordinator*, *Metering Provider* or *Metering Data Provider*.

Third Party B2B Participant Member

A person who is nominated and elected as a *Member* by *Third Party B2B Participants* to represent *Third Party B2B Participants* in accordance with the

Rules (including clause 7.17.10(h)) and the Information Exchange Committee Election Procedures.

third party DCA

A *dedicated connection asset* for which a person other than the *Primary Transmission Network Service Provider* is registered under Chapter 2.

third party IUSA

Those *contestable IUSA components* of an *identified user shared asset* that are not, or will not be, owned or leased by the *Primary Transmission Network Service Provider*.

three phase fault level

Measured in MVA at a location on a *transmission network* or a *distribution network*, the product of the pre-fault *nominal voltage* (measured in kV between a pair of phases), the fault current in each phase for a three phase fault at the location (measured in kA), and the square root of 3.

time

Eastern Standard Time.

time stamp

The means of identifying the *time* and date at which data is transmitted or received.

timetable

The timetable published by *AEMO* under clause 3.4.3 for the operation of the *spot market* and the provision of *market* information.

total capacity

Has the meaning given to it in clause 5.10.2.

total revenue cap

For a *Transmission Network Service Provider* for a *regulatory control period*, the sum of the *maximum allowed revenues* for that provider for each *regulatory year* of that *regulatory control period* as calculated in accordance with clause 6A.5.3 and set out in a *revenue determination*.

total revenue requirement

For a *Distribution Network Service Provider*, an amount representing revenue calculated for the whole of a *regulatory control period* in accordance with Part C of Chapter 6.

Trader

A person who is registered by *AEMO* as a *Trader* under Chapter 2.

trading amount

The positive or negative dollar amount resulting from a *transaction*, determined pursuant to clauses 3.15.6, 3.15.6A or 3.15.11.

trading day

The 24 hour period commencing at 4.00 am and finishing at 4.00 am on the following *day*.

trading interval

A 30 minute period ending on the hour (*EST*) or on the half hour and, where identified by a time, means the 30 minute period ending at that time.

trading limit

A dollar amount for a *Market Participant*, determined pursuant to clause 3.3.10.

trading margin

Has the meaning given in clause 3.3.15.

transaction

A *spot market transaction*, *reallocation transaction* or any other transaction either in the *market* or to which *AEMO* is a party.

transformer

A *plant* or device that reduces or increases the *voltage* of alternating current.

transformer tap position

Where a tap changer is fitted to a *transformer*, each tap position represents a change in *voltage* ratio of the *transformer* which can be manually or automatically adjusted to change the *transformer* output *voltage*. The tap position is used as a reference for the output *voltage* of the *transformer*.

transmission

Activities pertaining to a *transmission system* including the conveyance of electricity through that *transmission system*.

Transmission Annual Planning Report

A report prepared by a *Transmission Network Service Provider* under clause 5.12.2.

transmission asset

Has the meaning given to it in clause 5.10.2.

Transmission Confidentiality Guidelines

Guidelines made by the *AER* under clause 6A.16A.

transmission consultation procedures

The procedures set out in Part H of Chapter 6A that must be followed by:

- (a) the *AER* in making, developing or amending guidelines, models or schemes or in reviewing methodologies; or
- (b) the *AEMC* in developing or amending guidelines.

Transmission Customer

A *Customer*, *Non-Registered Customer* or *Distribution Network Service Provider* having a *connection point* with a *transmission network*.

transmission determination

Has the meaning given in the *NEL*, and includes a determination by the *AER* as described in rule 6A.2.

transmission-distribution connection point

Has the meaning given to it in clause 5.10.2.

transmission element

A single identifiable major component of a *transmission system* involving:

- (a) an individual *transmission* circuit or a phase of that circuit;
- (b) a major item of *transmission plant* necessary for the functioning of a particular *transmission* circuit or *connection point* (such as a *transformer* or a circuit breaker).

transmission investment

Expenditure on assets and services which is undertaken by a *Transmission Network Service Provider* or any other person to address an *identified need* in respect of its *transmission network*.

transmission line

A power line that is part of a *transmission network*.

transmission network

A *network* within any *participating jurisdiction* operating at nominal *voltages* of 220kV and above plus:

- (a) any part of a *network* operating at nominal *voltages* between 66 kV and 220 kV that operates in parallel to and provides support to the higher voltage *transmission network*;
- (b) any part of a *network* operating at nominal *voltages* between 66kV and 220 kV that is not referred to in paragraph (a) but is deemed by the *AER* to be part of the *transmission network*.

For a *participating jurisdiction* other than the State of Victoria, an *identified shared user asset* owned, controlled or operated by a *Primary Transmission Network Service Provider* (including a *third party IUSA* that is the subject of a *network operating agreement*) forms part of that *Primary Transmission Network Service Provider's transmission network*.

transmission network connection point

A *connection point* on a *transmission network*.

Transmission Network Service Provider

A person who engages in the activity of owning, controlling or operating a *transmission system*.

Transmission Network User

In relation to a *transmission network*, a *Transmission Customer* and:

- (a) a *Generator* whose *generating 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*.

transmission plant

Apparatus or equipment associated with the function or operation of a *transmission line* or an associated *substation* or *switchyard*, which may include *transformers*, circuit breakers, *reactive plant* and *monitoring equipment* and control equipment.

Transmission Ring-Fencing Guidelines

The Guidelines made under rule 6A.21.

transmission service

The services provided by means of, or in connection with, a *transmission system*.

transmission services access dispute

A dispute 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* as referred to in clause 5.5.1(c), that is for determination by a *commercial arbitrator* under rule 5.5.

transmission standard control service

Has the meaning given in rule 6.25(a).

transmission standard control service revenue

Has the meaning given in rule 6.26(b)(1).

transmission system

A *transmission network*, together with the *connection assets* associated with the *transmission network*, which is *connected* to another *transmission system* or *distribution system*.

For a *participating jurisdiction* other than the State of Victoria, a *transmission system* includes for the purposes of Chapter 2, a *third party DCA*, which is not a Notified Existing DCA within the meaning of clause 11.98.1.

Note

An *identified user shared asset* or a *dedicated connection asset* for which the *Primary Transmission Network Service Provider* is registered will form part of that provider's broader *transmission system* (even if the *dedicated connection asset* is operating at a *distribution voltage*) rather than constituting a separate *transmission system* requiring separate registration under Chapter 2. A person owning, controlling or operating a *third party DCA* is required to be registered under Chapter 2 as a *Transmission Network Service Provider*.

trigger event

For a *Distribution Network Service Provider*, in relation to a *proposed contingent project* or a *contingent project*, a specific condition or event described in clause 6.6A.1(c), the occurrence of which, during the relevant *regulatory control period*, may result in the amendment of a distribution determination under clause 6.6A.2.

For a *Transmission Network Service Provider*, in relation to:

- (a) a *proposed contingent project* or a *contingent project* in a *revenue determination*, a specific condition or event described in clause 6A.8.1(c), the occurrence of which, during the relevant *regulatory control period*, may result in the amendment of a *revenue determination* under clause 6A.8.2; and
- (b) an *actionable ISP project*, the event specified in clause 5.16A.5, the occurrence of which, during the relevant *regulatory control period*, may result in the amendment of a *revenue determination* under clause 6A.8.2.

TUOS (transmission use of system, TUOS service)

A *Generator transmission use of system service* or a *Customer transmission use of system service*.

two-terminal link

One or more *network elements* that together enable the transfer of *energy* between two, and only two, *connection points*.

type 5 accumulation boundary

The volume of *energy* for a *connection point* that has a *type 5 metering installation* above which the *metering data* must be collected as *interval metering data* for the purpose of producing *settlements ready data*.

Note:

Below the *type 5 accumulation boundary*, the *metering data* may be collected from the *metering installation* as *accumulated metering data* for the purpose of producing *settlements ready data*, in which case the *metering installation* must be registered with AEMO as a *type 6 metering installation*. Otherwise, the *metering data* may be collected as *interval metering data* for the purpose of producing *settlements ready data* in which case the *metering installation* must be registered with AEMO as a *type 5 metering installation*.

typical accrual

Has the meaning given in clause 3.3.12(a).

uncompleted transaction

Has the meaning given in clause 3.3.16(b).

unconstrained intermittent generation forecast

The forecast prepared by AEMO in accordance with rule 3.7B of the *available capacity* of each *semi-scheduled generating unit*.

uncontracted MW position

Has the meaning given in clause 4A.F.8(b).

under-frequency scheme

An *emergency frequency control scheme* with capability to respond when *power system frequency* is below or falling below the *normal operating frequency band*.

under-recovery amount

Any amount by which the sum of the *AARR* in previous *regulatory years* exceeds the revenue earned from the provision of *prescribed transmission services* in those *regulatory years*.

unscheduled generation

Has the meaning given to it in clause 3.7D.

unscheduled reserve

The amount of surplus or unused capacity:

- (a) of *generating units* (other than *scheduled generating units*); or
- (b) arising out of the ability to reduce demand (other than a *scheduled load*).

unscheduled reserve contract

A contract entered into by *AEMO* for the provision of *unscheduled reserve* in accordance with rule 3.20.

unserved energy

The amount of *energy* demanded, but not supplied, in a *region* determined in accordance with clause 3.9.3C(b), expressed as:

- (a) GWh; or
- (b) a percentage of the total *energy* demanded in that *region* over a specific period of time such as a *financial year*.

use of system

Includes *transmission use of system* and *distribution use of system*.

use of system services

TUOS service and *distribution use of system service*.

violation

In relation to *power system security*, a failure to meet the requirements of Chapter 4 or the *power system security standards*.

virtual transmission node

A non-physical node used for the purpose of *market settlements*, having a *intra-regional loss factor* determined in accordance with clause 3.6.2(b)(3).

voltage

The electronic force or electric potential between two points that gives rise to the flow of electricity.

voltage transformer (VT)

A *transformer* for use with *meters* and/or protection devices in which the *voltage* across the secondary terminals is, within prescribed error limits, proportional to and in phase with the *voltage* across the primary terminals.

voluntary book build

The book build mechanism described in Chapter 4A, Part H and set out in the Book Build Procedures made by *AEMO* under that Part.

Voter Category

Means:

- (a) in respect of the *Distribution Network Service Provider Member, Distribution Network Service Providers*;
- (b) in respect of the *Retailer Member, Retailer Member Voters*, collectively;
- (c) respect of the *Metering Member, Metering Member Voters*, collectively; and
- (d) in respect of the *Third Party B2B Participant Member, Third Party B2B Participants*.

zone substation

Has the meaning given to it in clause 5.10.2.