



Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021

under the National Electricity Law to the extent applied by:

- (a) the National Electricity (South Australia) Act 1996 of South Australia;
- (b) the Electricity (National Scheme) Act 1997 of the Australian Capital Territory;
- (c) the Electricity - National Scheme (Queensland) Act 1997 of Queensland;
- (d) the Electricity - National Scheme (Tasmania) Act 1999 of Tasmania;
- (e) the National Electricity (New South Wales) Act 1997 of New South Wales;
- (f) the National Electricity (Victoria) Act 2005 of Victoria;
- (g) the National Electricity (Northern Territory) (National Uniform Legislation) Act 2015 of the Northern Territory; and
- (h) the Australian Energy Market Act 2004 of the Commonwealth.

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

Anna Collyer
Chairperson
Australian Energy Market Commission

Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021

1 Title of Rule

This Rule is the *Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021*.

2 Commencement

Schedule 1 of this rule commences operation on [30 September 2022].

Schedule 2 of this rule commences operation on [30 September 2022].

Schedule 3 of this rule commences operation on [15 March 2023].

Schedule 4 of this rule commences operation on [15 March 2023].

Schedule 5 of this rule commences operation on [15 March 2023].

Schedule 6 of this rule commences operation on [15 March 2023].

Schedule 7 of this rule commences operation on [15 March 2023].

Schedule 8 of this rule commences operation on [15 March 2023].

Schedule 9 of this rule commences operation on [30 September 2022].

Schedule 10 of this rule commences operation on [the date the Rule is made].

3 Amendment to the National Electricity Rules

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

4 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 2.

5 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 3.

6 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 4.

7 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 5.

8 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 6.

9 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 7.

10 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 8.

11 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 9.

12 Amendment to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 10.

Schedule 1 Amendment to the National Electricity Rules

(Clause 3)

[1] Clause 4.2.6 General principles for maintaining power system security

In clause 4.2.6(g), omit "*fault level node*" and substitute "*system strength node*".

[2] Clause 4.4.5 Instructions to enable system strength services

In clause 4.4.5(a), omit all references to "*fault level node*" and substitute "*system strength node*".

[3] Clause 4.6.1 Power system fault levels

In clause 4.6.1(a)(2), omit "*fault level nodes*" and substitute "*system strength nodes*".

[4] Clause 4.6.1 Power system fault levels

In clause 4.6.1(b)(2), omit "*fault level node*" and substitute "*system strength node*".

Schedule 2 Amendment to the National Electricity Rules

(Clause 4)

[1] Clause 5.12.2 Transmission Annual Planning Report

In clause 5.12.2(c)(8)(ii), omit "to provide *inertia network services, inertia support activities or system strength services*" and substitute "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 node*".

[2] Clause 5.12.2 Transmission Annual Planning Report

In clause 5.12.2(c)(11), omit "; and" and substitute ";".

[3] Clause 5.12.2 Transmission Annual Planning Report

In clause 5.12.2(c)(12), omit "." and substitute "; and".

[4] Clause 5.12.2 Transmission Annual Planning Report

After clause 5.12.2(c)(12), insert:

- (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*.

[5] Clause 5.14.3 Joint planning obligations of Transmission Network Service Providers

In clause 5.14.3(a), omit "; and" and substitute "and that *constraint* is not already being considered under other processes under the *Rules*; or".

[6] Clause 5.14.3 Joint planning obligations of Transmission Network Service Providers

Omit clause 5.14.3(b) and substitute:

- (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*.

[7] Clause 5.14.4 Joint planning by Transmission Network Service Providers and AEMO

After clause 5.14.4(c), insert:

- (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.

[8] Clause 5.15A.1 General principles and application

In clause 5.15A.1(c), omit "or the provision of *system strength services* required under clause 5.20C.3".

[9] Clause 5.16.3 Investments subject to the regulatory investment test for transmission

In clause 5.16.3(a)(9), omit "or a *system strength service payment*;" and substitute "; or".

[10] Clause 5.16.3 Investments subject to the regulatory investment test for transmission

In clause 5.16.3(a)(10)(ii), omit "; or" and substitute ".".

[11] Clause 5.16.3 Investments subject to the regulatory investment test for transmission

Omit clause 5.16.3(a)(11).

[12] Clause 5.16.4 Regulatory investment test for transmission procedures

In clause 5.16.4(b)(5), after "alternative *transmission* options, *interconnectors*, *generation*", insert "*system strength services*".

[13] Clause 5.20.6 Publication of system strength requirements methodologies

In clause 5.20.6(e), omit "*fault level nodes* and the minimum *three phase fault level*" and substitute "*system strength requirements*".

[14] Clause 5.20.6 Publication of system strength requirements methodologies

In clause 5.20.6(e)(1), omit "*fault level node*" and substitute "*system strength node*".

[15] Clause 5.20.6 Publication of system strength requirements methodologies

In clause 5.20.6(e)(5), omit all references to "*fault level node*" and substitute "*system strength node*".

[16] Clause 5.20.6 Publication of system strength requirements methodologies

In clause 5.20.6(e)(7), omit "as".

[17] Clause 5.20.6 Publication of system strength requirements methodologies

After clause 5.20.6(e), insert:

- (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
 - (iii) 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).

[18] Clause 5.20.7 Publication of System Strength Report

In clause 5.20.7(a), omit "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".

[19] Clause 5.20.7 Publication of System Strength Report

Omit clause 5.20.7(b) and substitute:

- (b) the *system strength requirements* determined for each *system strength node*;

[20] Clause 5.20.7 Publication of System Strength Report

Omit clause 5.20.7(c) and substitute:

- (c) the system strength standard specification (as defined in clause S5.1.14(a)) applicable at each *system strength node* during the 12 months following publication of the *System Strength Report*;

[21] Clause 5.20.7 Publication of System Strength Report

After clause 5.20.7(c), insert:

- (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.

[22] Clause 5.20C.1 System strength requirements

Omit clause 5.20C.1 and substitute:

- (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*.

[23] Clause 5.20C.2 Fault level shortfalls

Omit clause 5.20C.2 and substitute "[Deleted]".

[24] Clause 5.20C.3 System Strength Service Provider to make available system strength services

Omit the heading of clause 5.20C.3 and substitute:

5.20C.3 System Strength Service Provider

[25] Clause 5.20C.3 System Strength Service Provider

Omit clause 5.20C.3(b) and substitute "[Deleted]".

[26] Clause 5.20C.3 System Strength Service Provider

Omit clause 5.20C.3(c) and substitute "[Deleted]".

[27] Clause 5.20C.3 System Strength Service Provider

Omit clause 5.20C.3(d) and substitute "[Deleted]".

[28] Clause 5.20C.3 System Strength Service Provider

In clause 5.20C.3(e), omit "required to make *system strength services* available under paragraph (b)".

[29] Clause 5.20C.3 System Strength Service Provider

In clause 5.20C.3(e)(2), omit "non network option" and substitute "*non-network option*".

[30] Clause 5.20C.3 System Strength Service Provider

In clause 5.20C.3(f), omit "about the activities undertaken to satisfy its obligations to make *system strength services* available under paragraph (b)" and substitute "about the *system strength nodes* for which it is the *System Strength Service Provider* including;".

[31] Clause 5.20C.3 System Strength Service Provider

Omit clause 5.20C.3(f) and substitute:

- (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;
 - (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*.

[32] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(a), omit "required to make *system strength services* available under clause 5.20C.3(b)" and substitute "who makes *system strength services* available for the purposes of clause S5.1.14".

[33] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(a)(1), omit "*fault level node* in the *region* for which there is a *fault level shortfall*" and substitute "*system strength node*".

[34] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(c), omit "required to make *system strength services* available under clause 5.20C.3(b)".

[35] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(c), after "details for each *system strength service*", insert "it makes available to *AEMO* under the *Rules*".

[36] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(c)(1)(v), omit "*fault level node*" and substitute "*system strength node*".

[37] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(c)(2)(i), omit "*fault level node*" and substitute "*system strength node*".

[38] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(d), omit "required to make *system strength services* available under clause 5.20C.3(b)".

[39] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(d), after "details for each *system strength service*", insert "it makes available to *AEMO* under the *Rules*".

[40] Clause 5.20C.4 System strength services information and approvals

In clause 5.20C.4(d)(2)(iii), after "and the *Registered Participants*", insert "or other persons".

[41] New clause S5.1a.9 Minimum three phase fault levels and stability for system strength nodes

After clause S5.1a.8, insert:

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

- (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*.

[42] Clause S5.1.1 Introduction

In clause S5.1.1, after the first paragraph, insert:

"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)."

[43] New clause S5.1.14 Minimum three phase fault levels and stability for system strength nodes

After clause S5.1.13, insert:

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 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*.

[44] Schedule 5.8 Distribution Annual Planning Report

In schedule 5.8(m), omit "and".

[45] Schedule 5.8 Distribution Annual Planning Report

In schedule 5.8(n)(2), omit "." and substitute "; and".

[46] Schedule 5.8 Distribution Annual Planning Report

After schedule 5.8(n), insert:

- (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*.

Schedule 3 Amendment to the National Electricity Rules

(Clause 5)

[1] Clause 4.6.6 System strength impact assessment guidelines

Omit clause 4.6.6(a), and substitute:

- (a) *AEMO* must make, publish and may amend *system strength impact assessment guidelines* that:
 - (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*;
 - (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*.

[2] Clause 4.6.6 System strength impact assessment guidelines

In clause 4.6.6(b), omit "The" and substitute "For paragraph (a)(1), the".

[3] Clause 4.6.6 System strength impact assessment guidelines

Omit clause 4.6.6(b)(1) and substitute:

- (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);

[4] Clause 4.6.6 System strength impact assessment guidelines

After clause 4.6.6(b)(1), insert:

- (1A) require the preliminary assessment to be carried out using a simply isolated model such as a single machine infinite bus model;

[5] Clause 4.6.6 System strength impact assessment guidelines

In clause 4.6.6(b)(3), omit "*an adverse system strength impact*" and substitute "*the general system strength impact*".

[6] Clause 4.6.6 System strength impact assessment guidelines

In clause 4.6.6(b)(5), omit "*adverse system strength impacts*" and substitute "*general system strength impacts*".

[7] Clause 4.6.6 System strength impact assessment guidelines

In clause 4.6.6(b)(6), omit "*an adverse system strength impact*" and substitute "*a general system strength impact*".

[8] Clause 4.6.6 System strength impact assessment guidelines

In clause 4.6.6(b)(7), omit ";" and substitute ";".

[9] Clause 4.6.6 System strength impact assessment guidelines

In clause 4.6.6(b)(8), omit "." and substitute ";".

[10] Clause 4.6.6 System strength impact assessment guidelines

After clause 4.6.6(b)(8), insert:

- (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*.

[11] Clause 4.6.6 System strength impact assessment guidelines

In clause 4.6.6(e), omit "*Generator or Connection Applicant*" and substitute "person seeking a *connection* referred to in clause 5.3.4B(a)".

[12] Clause 4.6.6 System strength impact assessment guidelines

In clause 4.6.6(f), omit "*Generator or a Connection Applicant*" and substitute "person seeking a *connection* referred to in clause 5.3.4B(a)".

[13] Clause 5.1.2 Overview of Part B and connection and access under the Rules

In clause 5.1.2(d), in the row numbered 6 in the table, after the words "*become a Registered Participant*" insert "or a person seeking *connection* for a *large inverter based resource*".

[14] Clause 5.1.2 Overview of Part B and connection and access under the Rules

In clause 5.1.2(d), after the row numbered 8 in the table, insert a new row and renumber the subsequent rows:

9	A <i>Network User</i> wishing to alter <i>connected plant</i> in the circumstances set out in clause 5.3.12	Clause 5.3.12 applies
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[15] Clause 5.1.2 Overview of Part B and connection and access under the Rules

In clause 5.1.2(d), in the renumbered row 10 in the table, after "set out in clause 5.3.9" insert "or alteration of *connected plant* in the circumstances set out in clause 5.3.12".

[16] Clause 5.1.2 Overview of Part B and connection and access under the Rules

In clause 5.1.2(d), in the renumbered row 13 in the table, after "(unless it is acting as the agent of a *retail customer*)" insert "and is not *connecting a large inverter based resource*".

[17] Clause 5.2.3A Obligations of Market Network Service Providers

After clause 5.2.3A(c), insert:

- (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.

[18] Clause 5.2.4 Obligations of customers

After clause 5.2.4(e), insert:

- (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.

[19] Clause 5.2A.3 Connection and access to transmission services

In clause 5.2A.3(c), after "circumstances set out in clause 5.3.9" insert "or alter other *plant* in the circumstances set out in clause 5.3.12".

[20] Clause 5.3.1 Process and procedures

In clause 5.3.1(a), after "circumstances set out in clause 5.3.9" insert "or alterations to *connected plant* in the circumstances set out in clause 5.3.12".

[21] Clause 5.3.1 Process and procedures

In clause 5.3.1(c), after "must comply with clause 5.3.9" insert "and a *Network User* or *Market Network Service Provider* to whom clause 5.3.12 applies must comply with clause 5.3.12".

[22] Clause 5.3.1A Application of rule to connection of embedded generating units

In clause 5.3.1A(c)(2), omit "or".

[23] Clause 5.3.1A Application of rule to connection of embedded generating units

In clause 5.3.1A(c)(3), omit ", " and substitute "; or".

[24] Clause 5.3.1A Application of rule to connection of embedded generating units

After clause 5.3.1A(c)(3), insert:

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

[25] Clause 5.3.3 Response to connection enquiry

Omit clause 5.3.3(b5) and substitute:

- (b5) For a *connection point* for a proposed new *connection* to which clause 5.3.4B applies, 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*;
 - (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*.

[26] Clause 5.3.4 Application for connection

In clause 5.3.4(b)(4), omit "." and substitute "; and".

[27] Clause 5.3.4 Application for connection

After clause 5.3.4(b)(4), insert:

- (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).

[28] Clause 5.3.4A Negotiated access standards

In clause 5.3.4A(b)(1A), after "*Generator* under clause 5.3.9(b)(3)", insert "or a *Network User* or *Market Network Service Provider* under clause 5.3.12(b)(3)".

[29] Clause 5.3.4A Negotiated access standards

In clause 5.3.4A(b)(1A), after "to the *generating system*", insert "or *plant* (as applicable)".

[30] Clause 5.3.4A Negotiated access standards

In clause 5.3.4A(b1), after "5.3.9(b)(3)", insert ", 5.3.12(b)(3)".

[31] Clause 5.3.4A Negotiated access standards

In clause 5.3.4A(c), after "5.3.9(b)(3)", insert ", 5.3.12(b)(3)".

[32] Clause 5.3.4A Negotiated access standards

In clause 5.3.4A(d)(1), after "5.3.9(b)(3)", insert ", 5.3.12(b)(3)".

[33] Clause 5.3.4A Negotiated access standards

In clause 5.3.4A(e)(1), after "5.3.9(b)(3)", insert ", 5.3.12(b)(3)".

[34] Clause 5.3.4B System strength remediation for new connections

Omit the heading of clause 5.3.4B and substitute:

5.3.4B System strength mitigation requirement

[35] Clause 5.3.4B System strength mitigation requirement

Omit clause 5.3.4B(a) and substitute:

- (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.

[36] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(b), after "the preliminary assessment and", insert "where applicable".

[37] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(b), omit "or *Generator*".

[38] Clause 5.3.4B System strength mitigation requirement

After clause 5.3.4B(b), insert:

- (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.

[39] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(c)(2), omit "A" and substitute "a".

[40] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(c)(3), omit "paragraph (a)" and substitute "paragraph (a2)(3)".

[41] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(c)(4), omit "paragraph (a)." and substitute "paragraph (a2)(3); and".

[42] Clause 5.3.4B System strength mitigation requirement

After clause 5.3.4B(c)(4), insert:

- (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),

[43] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(d), omit "an *adverse system strength impact*" and substitute "the *general system strength impact*".

[44] Clause 5.3.4B System strength mitigation requirement

Omit clause 5.3.4B(e) and substitute:

- (e) Subject to paragraph (f), a *Network Service Provider* must undertake *system strength connection works* at the cost of the *Connection Applicant* 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*.

[45] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(f)(2), omit "*adverse system strength impact*" and substitute "*general system strength impact*".

[46] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(f)(2), omit "*Registered Participant*" and substitute "*Connection Applicant*".

[47] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(f)(2), omit "; or" and substitute ";".

[48] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(f)(3), omit "." and substitute "; or".

[49] Clause 5.3.4B System strength mitigation requirement

After clause 5.3.4B(f)(3), insert:

- (4) the *Connection Applicant* has elected for the *system strength charge* to be payable in relation to the new *connection* or *connection* alteration.

[50] Clause 5.3.4B System strength mitigation requirement

In clause 5.3.4B(g), after "its proposal under clause 5.3.9(b)(4)", insert "or under clause 5.3.12(b)(4).".

[51] New clause 5.3.4C Information about system strength connection points

After clause 5.3.4B, insert:

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 5.3.4B(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, within 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.

[52] Clause 5.3.9 Procedure to be followed by a Generator proposing to alter a generating system

In clause 5.3.9(a)(2), omit "an *adverse system strength impact*" and substitute "a *general system strength impact*".

[53] Clause 5.3.9 Procedure to be followed by a Generator proposing to alter a generating system

In clause 5.3.9(b)(4), at the end of the sentence insert "or its election for the *system strength charge* to be payable in relation to the *connection* alteration".

[54] Clause 5.3.9 Procedure to be followed by a Generator proposing to alter a generating system

In clause 5.3.9, in the table in paragraph (d), insert "5.2.5.15" in the second column in the row for 'power converter'.

[55] Clause 5.3.9 Procedure to be followed by a Generator proposing to alter a generating system

In clause 5.3.9, in the table in paragraph (d), insert "5.2.5.16" in the second column in the row for '*protection system*'.

[56] New clause 5.3.12 Procedure to be followed for other connection alterations

After clause 5.3.11, insert:

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 1 civil penalty provision.

[57] Clause 5.3A.1 Application of rule 5.3A

In clause 5.3A.1(a), omit the space above "[Deleted]".

[58] Clause 5.3A.1 Application of rule 5.3A

In clause 5.3A.1(c)(1)(ii), omit "or".

[59] Clause 5.3A.1 Application of rule 5.3A

In clause 5.3A.1(c)(1)(iii), omit "." and substitute "; or".

[60] Clause 5.3A.1 Application of rule 5.3A

After clause 5.3A.1(c)(1)(iii), insert:

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

[61] Clause 5.3A.2 Miscellaneous

In clause 5.3A.2(a), omit the space above "[Deleted]".

[62] Clause 5.3A.3 Publication of Information

In clause 5.3A.3(b)(1)(vi), at the end of the sentence after "and *system strength remediation schemes*", insert "and where applicable, in determining the *system strength locational factor*".

[63] Clause 5.3A.9 Application for connection

In clause 5.3A.9(b), after "to the *Distribution Network Service Provider*", insert "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)".

[64] New clause S5.2.5.15 Short circuit ratio

After clause S5.2.5.14, insert:

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).

[65] New clause S5.2.5.16 Voltage phase angle shift

After clause S5.2.5.15, insert:

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 settings of any *protection system* must be recorded in the *performance standards*.

[66] Clause S5.3.1a Introduction to the schedule

In clause S5.3.1a(a)(4), omit "*supply it takes from*" and substitute "*its connection to*".

[67] Clause S5.3.1 Information

In clause S5.3.1(a1), after "*additional equipment to a network*", insert "*or if earlier, in accordance with the requirements of this Chapter*".

[68] New clause S5.3.11 Short circuit ratio (customers)

After clause S5.3.10, insert:

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).

[69] Clause S5.3a.7 [Deleted]

Omit clause S5.3a.7, including the heading, and substitute:

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).

[70] Schedule 5.4A Preliminary Response

In schedule 5.4A(a)(9), omit "*an adverse system strength impact*" and substitute "*a general system strength impact*".

[71] Schedule 5.4A Preliminary Response

In schedule 5.4A(i1), omit "*an adverse system strength impact*" and substitute "*a general system strength impact* and whether a *system strength locational factor* can be calculated in relation to the new *connection*";".

[72] Schedule 5.4B Detailed Response to Enquiry

In schedule 5.4B(e1)(1), omit "and".

[73] Schedule 5.4B Detailed Response to Enquiry

In schedule 5.4B(e1)(2), omit ";" and substitute "; and".

[74] Schedule 5.4B Detailed Response to Enquiry

After schedule 5.4B(e1)(2), insert:

- (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*.

[75] Clause S5.5.7 Power System Design Data Sheet, Power System Setting Data Sheet and Power System Model Guidelines

In clause S5.5.7(a)(1), after "5.2.5(e), 5.3.9(b)(2)", insert "5.3.12(b)(2)".

[76] Clause S5.5.7 Power System Design Data Sheet, Power System Setting Data Sheet and Power System Model Guidelines

In clause S5.5.7(a)(2), after "5.2.5(e), 5.3.9(b)(2)", insert "5.3.12(b)(2)".

[77] Clause S5.5.7 Power System Design Data Sheet, Power System Setting Data Sheet and Power System Model Guidelines

In clause S5.5.7(a)(3), after "5.2.5(e), 5.3.9(b)(2)", insert "5.3.12(b)(2)".

[78] Clause S5.5.7 Power System Design Data Sheet, Power System Setting Data Sheet and Power System Model Guidelines

In clause S5.5.7(b1)(1)(iii), after "clause 5.2.4(d)", insert ", clause 5.3.12".

[79] Clause S5.5.7 Power System Design Data Sheet, Power System Setting Data Sheet and Power System Model Guidelines

In clause S5.5.7(b1)(1)(iv), after "clause 5.2.3A(b)", insert ", clause 5.3.12".

[80] Clause S5.5.7 Power System Design Data Sheet, Power System Setting Data Sheet and Power System Model Guidelines

In clause S5.5.7(b1)(4), after "5.2.4(e), 5.3.9(b)(2)", insert "5.3.12(b)(2)".

[81] Schedule 5.5.4 Network Plant and Apparatus Setting Data

Omit the two paragraphs in the left column under the heading **short circuit ratio** and substitute:

"The value of the *short circuit ratio* in 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, a *negotiated access standard* agreed pursuant to clause S5.2.5.15(c), clause S5.3.11(c) or clause S5.3a.7(c) (as applicable)."

Schedule 4 Amendment to the National Electricity Rules

(Clause 6)

[1] Clause 5A.A.2 Application of this Chapter

After clause 5A.A.2(a), insert:

- (a1) This Chapter, other than Part E, does not apply to, or in relation to, a *connection applicant* in relation to the provision of a *connection service* in respect of a *large inverter based resource*.

[2] Clause 5A.A.2 Application of this Chapter

In clause 5A.A.2(b), after "Where a *non-registered embedded generator*", insert "(other than a *non-registered embedded generator* to whom paragraph (a1) applies)".

[3] Clause 5A.E.1 Connection charge principles

After clause 5A.E.1(b), insert:

- (b1) Paragraph (a) does not apply to charges for *system strength connection works* in accordance with clause 5.3.4B(e).

Schedule 5 Amendment to the National Electricity Rules

(Clause 7)

[1] Clause 6.18.1A Tariff structure statement

At the end of clause 6.18.1A(d), add "except to the extent necessary to comply with clause 6.20.3A".

[2] Clause 6.18.7 Recovery of designated pricing proposal charges

After clause 6.18.7(d)(3), insert:

- (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*.

[3] Rule 6.20 Billing and Settlements Process

Omit the introduction for rule 6.20 and substitute:

"This 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."

[4] New Clause 6.20.3A Billing to recover system strength charges

After clause 6.20.3, insert:

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.

[5] Clause 6.20.4 Obligation to pay

In clause 6.20.4, after "pay *distribution service charges*", insert "and charges to recover *system strength charges*".

Schedule 6 Amendment to the National Electricity Rules

(Clause 8)

[1] Clause 6A.7.3 Cost pass through

In clause 6A.7.3(a1)(5), at the end of the sentence, insert "and".

[2] Clause 6A.7.3 Cost pass through

In clause 6A.7.3(a1)(6), omit "; and" and substitute ".".

[3] Clause 6A.7.3 Cost pass through

Omit clause 6A.7.3(a1)(7).

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

In rule 6A.15(d), after "*regulatory control period*", insert "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*".

[5] Clause 6A.22.2 Annual service revenue requirement (ASRR)

In clause 6A.22.2, after "the *attributable cost share* for that category of services", insert "and making any applicable adjustments".

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

After clause 6A.23.2(d), insert:

- (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).

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

In clause 6A.23.3(e)(5), omit "; and" and substitute ";".

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

In clause 6A.23.3(e)(6), omit "," and substitute "; and".

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

After clause 6A.23.3(e)(6), insert:

- (7) adding or subtracting any adjustment arising as a result of the application of clause 6A.23.3A(b),

[10] New clause 6A.23.3A Forecast annual system strength revenue and system strength revenue adjustment for a System Strength Service Provider

After clause 6A.23.3, insert:

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):

actual annual system strength revenue 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;

forecast annual system strength revenue 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);

forecast actual annual system strength revenue 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;

"year t" means the *regulatory year* for which the adjustments are being determined;

"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*; and

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

- (1) the first year of a *regulatory control period*, the penultimate *regulatory year* of the previous *regulatory control period*; or
- (2) the second year of a *regulatory control period*, the last *regulatory year* of the previous *regulatory control period*.

[11] Clause 6A.23.4 Principles for the recovery of the Annual Service Revenue Requirement as prices

In clause 6A.23.4(a)(4), omit "and".

[12] Clause 6A.23.4 Principles for the recovery of the Annual Service Revenue Requirement as prices

In clause 6A.23.4(a)(5), omit "." and substitute "; and".

[13] Clause 6A.23.4 Principles for the recovery of the Annual Service Revenue Requirement as prices

After clause 6A.23.4(a)(5), insert:

- (6) *system strength transmission services.*

[14] Clause 6A.23.4 Principles for the recovery of the Annual Service Revenue Requirement as prices

After clause 6A.23.4(g), insert:

- (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.

[15] New Clause 6A.23.5 System strength charge

After clause 6A.23.4, insert:

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*.

[16] New Clause 6A.23.6 System strength pass through charge

After clause 6A.23.5, insert:

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*.

[17] Clause 6A.24.1 Pricing methodologies generally

In clause 6A.24.1(b)(3), omit "and".

[18] Clause 6A.24.1 Pricing methodologies generally

In clause 6A.24.1(b)(4), omit "." and substitute "; and".

[19] Clause 6A.24.1 Pricing methodologies generally

After clause 6A.24.1(b)(4), insert:

- (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*.

[20] Clause 6A.24.1 Pricing methodologies generally

In clause 6A.24.1(e), after "the relevant *regulatory control period*", insert "(or in the case of the *system strength unit price*, for the *system strength charging period* commencing in the *regulatory control period*)".

[21] Clause 6A.24.2 Publication of pricing methodology and transmission network prices

In clause 6A.24.2(b), omit "and".

[22] Clause 6A.24.2 Publication of pricing methodology and transmission network prices

In clause 6A.24.2(c)(2), omit "." and substitute "; and".

[23] Clause 6A.24.2 Publication of pricing methodology and transmission network prices

After clause 6A.24.2(c)(2), insert:

- (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*.

[24] Clause 6A.26.1 Agreements for prudent discounts for prescribed transmission services

In clause 6A.26.1(b), after "provided to that beneficiary", insert "(other than *system strength charges*)".

[25] Clause 6A.26.1 Agreements for prudent discounts for prescribed transmission services

In clause 6A.26.1(c), after "or *prescribed common transmission services*", insert "(other than *system strength charges*)".

[26] Clause 6A.27.1 Billing for prescribed transmission services

Omit clause 6A.27.1(a) and substitute:

- (a) For each *connection point* on its *transmission network*, a *Transmission Network Service Provider* must calculate the:
 - (1) *transmission service charges* payable by *Transmission Network Users* 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.

[27] Clause 6A.27.1 Billing for prescribed transmission services

In clause 6A.27.1(b), after "issue a bill to *Transmission Network Users*", insert "and *System Strength Transmission Service Users*".

[28] Clause 6A.27.2 Minimum information to be provided in network service bills

In clause 6A.27.2(a), after "directly to a *Transmission Network User*" insert, "or *System Strength Transmission Service User*".

[29] Clause 6A.27.2 Minimum information to be provided in network service bills

In clause 6A.27.2(b)(1), omit "and".

[30] Clause 6A.27.2 Minimum information to be provided in network service bills

In clause 6A.27.2(b)(2), omit "." and substitute "; and".

[31] Clause 6A.27.2 Minimum information to be provided in network service bills

After clause 6A.27.2(b)(2), insert:

(3) where applicable, *system strength charges*.

[32] Clause 6A.27.2 Minimum information to be provided in network service bills

After clause 6A.27.2(c), insert:

- (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*.

[33] Clause 6A.27.3 Obligation to pay charges for prescribed transmission services

In clause 6A.27.3, after "A *Transmission Network User*", insert "or *System Strength Transmission Service User*".

Schedule 7 Amendment to the National Electricity Rules

(Clause 9)

[1] Clause 6A.25.2 Contents of pricing methodology guidelines

In clause 6A.25.2(f), omit "and".

[2] Clause 6A.25.2 Contents of pricing methodology guidelines

In clause 6A.25.2(g)(3), omit "." and substitute "; and".

[3] Clause 6A.25.2 Contents of pricing methodology guidelines

After clause 6A.25.2(g), insert:

- (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*.

Schedule 8 Amendment to the National Electricity Rules

(Clause 10)

[1] Chapter 10 Substituted definition

In paragraph (b) in the definition of "*adverse system strength impact*", omit "a *generating system* or *market network service facility* forming" and substitute "a *generating system, market network service facility* or *inverter based load* forming".

[2] Chapter 10 Substituted definition

In the definition of "*AEMO advisory matter*", omit "S5.2.5.14" and substitute "S5.2.5.16, S5.3.11, S5.3a.7,"

[3] Chapter 10 Substituted definition

In the definition of "*negotiated transmission service*", in the last sentence, omit "or a *market network service*" and substitute ", a *market network service* or a *system strength transmission service*".

[4] Chapter 10 Substituted definition

In the definition of "*prescribed transmission service*", in paragraph (b), after "including such of those services as are:", insert "*system strength transmission service* or are:".

[5] Chapter 10 Substituted definition

In the title of the definition "*prescribed TUOS services or prescribed transmission use of system services*", omit ";".

[6] Chapter 10 Substituted definition

In the definition of "*prescribed TUOS services or prescribed transmission use of system services*", omit "*Prescribed transmission services*" and substitute "*System strength transmission services* and *prescribed transmission services*"

[7] Chapter 10 Substituted definitions

Omit the following definitions and substitute:

system strength connection works

Investment in a *transmission system* or *distribution system* in order to remedy or avoid a *general system strength impact* arising from establishing a *connection* or alteration to a *connection* in relation to which clause 5.3.4B applies.

system strength impact assessment

Power system studies to assess the general system strength impact of a connection or alteration to a connection in relation to which clause 5.3.4B applies.

system strength requirements

The matters determined by *AEMO* for a *system strength node* under clause 5.20C.1(c).

system strength requirements methodology

The process *AEMO* uses to determine the *system strength requirements* for each *system strength node* published by *AEMO* under clause 5.20.6(a).

[8] Chapter 10 Substituted definition

After paragraph (b) in the definition of "*regulatory control period*", insert:

- (c) In respect of *AEMO*, a period over which its approved *pricing methodology* applies.

[9] Chapter 10 Substituted definition

In the definition of "*system strength remediation scheme*", omit "*an adverse system strength impact*" and substitute "*a general system strength impact*".

[10] Chapter 10 Substituted definition

In the definition of "*system strength impact assessment guidelines*", omit "for conducting *system strength impact assessments*".

[11] Chapter 10 New definitions

In chapter 10, insert the following definitions in alphabetical order:

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*.

available fault level

Has the meaning given in the *system strength impact assessment guidelines*.

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*.

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 *inverter based resource* divided by the *maximum demand* at the *connection point* (expressed in MW).

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 quantity

Has the meaning given to it in clause 6A.23.5(j).

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*.

Schedule 9 Amendment to the National Electricity Rules

(Clause 11)

[1] Chapter 10 Substituted definition

In the definition of "*enable*", omit "*fault level node*" and substitute "*system strength node*".

[2] Chapter 10 Substituted definition

In the definition of "*network support event*", in paragraph (b), omit "or a *fault level shortfall event*".

[3] Chapter 10 Substituted definition

In the definition of "*network support payment allowance*" omit all references to "or a *fault level shortfall event*".

[4] Chapter 10 Substituted definition

In the definition of "*NSCAS need*", in paragraph (c) omit "to address a *fault level shortfall* through the arrangements in rule 5.20C must be treated as a *fault level shortfall* and".

[5] Chapter 10 Substituted definition

In the definition of "*system strength service*", omit "the *three phase fault level* at a *fault level node*" and substitute "the standard in clause S5.1.14 in relation to a *system strength node*".

[6] Chapter 10 Substituted definition

In the definition of "*system strength service payment*", omit "clause 5.20C.3" and substitute "clause S5.1.14".

[7] Chapter 10 New definitions

In chapter 10, insert the following definitions in alphabetical order:

IBR (inverter based resources)

Asynchronous generating units and inverter based load.

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*.

large inverter based resource

An *inverter based resource* classified as a *large inverter based resource* under the *system strength impact assessment guidelines*.

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).

[8] Chapter 10 Omitted definitions

In chapter 10, omit the following definitions: "*fault level node*", "*fault level shortfall*", "*fault level shortfall event*",

Schedule 10 Amendment to the National Electricity Rules

(Clause 12)

[1] New Part ZZZZ[X] Efficient management of system strength on the power system

In Chapter 11, after Part ZZZZ[X], insert:

Part ZZZZ[X] Efficient management of system strength on the power system

11.[XXX] Rules consequential on the making of the National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021

11.[XXX].1 Definitions

- (a) For the purposes of this rule 11.[XXX]:

Amending Rule means the Draft National Electricity Amendment (Efficient management of system strength on the power system) Rule 2021.

applicable TNSP means TransGrid, ElectraNet, AusNet, Powerlink.

Ausgrid means Ausgrid Operator Partnership ABN 78 508 211 731.

commencement date means the date of commencement of [Schedules 3, 4, 5, 6, 8 and 9] of the Amending Rule.

effective date means the date of commencement of [Schedules 1 and 2] of the Amending Rule.

ElectraNet means ElectraNet Pty Ltd ABN 41 094 482 416.

Existing Application To Connect has the meaning given in clause 11.xxx.9(a)(1) or clause 11.xxx.9A(a)(1), as applicable.

Existing Connection Enquiry has the meaning given in clause 11.xxx.8(a)(1).

Existing Connection Agreement means a *connection agreement* entered into before the commencement date.

fault level shortfall means a shortfall in the *three phase fault level* typically provided at a *system strength 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 *system strength node* in the *system strength requirements*.

fault level shortfall event means a *Transmission Network Service Provider* is required to:

- (a) make *system strength services* available under clause 11.[xxx].15 during the system strength transition period as a consequence of an assessment by *AEMO* under clause 11.[xxx].14(b) that there is a *fault level shortfall* at a *system strength node* in a *region* for which the *Transmission Network Service Provider* is the *System Strength Service Provider*; or
- (b) cease making *system strength services* available under clause 11.[xxx].15 during the system strength transition period as a consequence of an assessment by *AEMO* under clause 11.[xxx].14(e) that a *fault level shortfall* at a *system strength node* has ceased,

where:

- (c) the *Transmission Network Service Provider* is required to provide, or cease providing, *system strength services* during the course of its *regulatory control period*; and
- (d) 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*.

former Chapter 5 means Chapter 5 of the *Rules* as in force immediately prior to the commencement date.

former Chapter 5A means Chapter 5A of the *Rules* as in force immediately prior to the commencement date.

former clause 5.20C.2(c) means clause 5.20C.2(c) as in force immediately before the effective date.

former clause 5.20C.3 means clause 5.20C.3 as in force immediately before the effective date.

new clause S5.2.5.15 means clause S5.2.5.15 as it will be in force on and from the commencement date.

new clause S5.2.5.16 means clause S5.2.5.16 as it will be in force on and from the commencement date.

new clause 5.3.3(b5)(3) means clause 5.3.3(b5)(3) as it will be in force on and from the commencement date.

new clause 5.3.4B means clause 5.3.4C as it will be in force on and from the commencement date.

new clause 5.3.4C means clause 5.3.4B as it will be in force on and from the commencement date.

new clause 5.12.2(c)(13) means clause 5.12.2(c)(13) as it will be in force on and from the commencement date.

new clause 5.20C.1 means clause 5.20C.1 as it will be in force on and from the effective date.

new clause 5.20C.1(b) means clause 5.20C.1(b) as it will be in force on and from the effective date.

new clause 5.20C.1(c) means clause 5.20C.1(c) as it will be in force on and from the effective date.

new clause 5.16.3(a) means clause 5.16.3(a) as it will be in force on and from the effective date.

new clause 5.20C.3(e) means clause 5.20C.3(e) as it will be in force on and from the effective date.

new clause 5.20C.3(f) means clause 5.20C.3(f) as it will be in force on and from the effective date.

new clause 5.20C.4 means clause 5.20C.4 as it will be in force on and from the effective date.

new clause 5A.A.2(a1) means clause 5A.A.2(a1) as it will be in force on and from the effective date.

new clause 6A.7.3(a1) means clause 6A.7.3(a1) as it will be in force on and from the effective date.

new clause 6A.25.2 means clause 6A.25.2 as it will be in force on and from the commencement date.

new Chapter 5 means Chapter 5 of the *Rules* as it will be in force on and from the commencement date, and amended from time to time.

new Chapter 5A means Chapter 5A of the *Rules* as it will be in force on and from the commencement date, and amended from time to time.

new Chapter 6A means Chapter 6A of the *Rules* as it will be in force on and from the effective date.

new Chapter 10 means Chapter 10 of the *Rules* as it will be in force on and from the commencement date, and amended from time to time.

new Schedule 5.8(o) means Schedule 5.8(o) of the *Rules* as it will be in force on and from the effective date.

Powerlink means Queensland Electricity Transmission Corporation Limited ABN 82 078 849 233.

proposed amended pricing methodology means proposed amendments to the *pricing methodology* by a *Transmission Network Service Provider* as referred to in clause 11.xxx.5(a)(1) or clause 11.xxx.5(b)(1), as applicable.

system strength transition period means the period from the effective date to 1 September 2025.

TasNetworks means Tasmanian Networks Pty Ltd ABN 24 167 357 299.

TransGrid means NSW Electricity Networks Operations Pty Ltd ABN 19 622 755 775.

- (b) Italicised terms used in this rule 11.xxx have the same meaning as in new Chapter 10.

11.[XXX].2 Publication of initial documents

- (a) By [30 September 2022], *AEMO* must amend and publish the *system strength requirements methodology* under new clause 5.20.6 to take into account the Amending Rule.
- (b) By [30 September 2022], *AEMO* must publish the first *System Strength Report* under new clause 5.20.7, which includes the *system strength requirements* that *AEMO* has determined in accordance with new clause 5.20C.1 and clause 11.xxx.3.
- (c) By [15 March 2023], *AEMO* must amend and publish the *system strength impact assessment guidelines* under new clause 4.6.6 to take into account the Amending Rule.

11.[XXX].3 Declaration of system strength nodes and meeting the standard

- (a) At the effective date, any existing *fault level nodes* are deemed to be *system strength nodes*.
- (b) The new *Rules* apply to a *system strength node* deemed under paragraph (a) as if it were declared as a new *system strength node* under new clause 5.20C.1(a) on the effective date.

11.[XXX].4 Amendments to pricing methodology guidelines

- (a) By no later than [31 August 2022], the *AER* must amend and *publish* the *pricing methodology guidelines* under new clause 6A.25.2 to take into account the Amending Rule.

11.[XXX].5 Amendments to pricing methodologies of TNSPs

- (a) By no later than [30 November 2022], each applicable TNSP must:
- (1) make proposed changes to its *pricing methodology* to take into account the Amending Rule and the requirements of the revised *pricing methodology guidelines* made by the *AER* pursuant to clause 11.xxx.4(a) ("**proposed amended pricing methodology**"); and

- (2) submit the proposed amended pricing methodology to the *AER*.
- (b) Despite clause S6A.4.2(f)1(a), by no later than [30 November 2022], *AEMO* must:
 - (1) make proposed changes to its *pricing methodology* to take into account the Amending Rule and the requirements of the revised *pricing methodology guidelines* made by the *AER* pursuant to clause 11.xxx.4(a) ("**proposed amended pricing methodology**"); and
 - (2) submit the proposed amended pricing methodology to the *AER*.
- (c) Despite the date referred to in paragraphs (a) or (b) (as applicable), each applicable TNSP and *AEMO* must use its best endeavours to submit its proposed amended pricing methodology as soon as practicable after the *AER* has published its amended *pricing methodology guidelines* pursuant to clause 11.xxx.4(a).
- (d) All references in clauses 6A.11.1, 6A.11.2, 6A.14.3(g) and 6A.14.3(h) to the "*proposed pricing methodology*" apply to the proposed amended pricing methodology submitted in accordance with subparagraph (a)(2) or (b)(2) (as applicable).
- (e) Clause 6A.11.3 does not apply to a proposed amended pricing methodology.
- (f) Despite anything else in the *Rules*, the *AER* and each applicable TNSP, and the *AER* and *AEMO*, must cooperate with each other so that by no later than [31 January 2023], the *AER* must *publish*:
 - (1) notice of the making of the final decision on the proposed amended pricing methodology submitted in accordance with paragraph (a)(2) or (b)(2) (as applicable); and
 - (2) the final decision on the proposed amended pricing methodology, including the reasons required to be included in it.
- (g) Despite clause 6A.24.1(e), clause 6A.24.1(f) and item 2 in clause S6A.4.2(k), a proposed amended pricing methodology that is approved by the *AER* will be deemed to be the *pricing methodology* for each applicable TNSP or *AEMO* (as applicable) from the date of its approval by the *AER*.
- (h) For the avoidance of doubt, TransGrid and ElectraNet must submit a proposed *pricing methodology* to the *AER* by 31 January 2022, pursuant to clause 6A.10.1(a), in respect of their *regulatory control periods* commencing on 1 July 2023, and must also submit a proposed amended pricing methodology by [30 November 2022] in accordance with paragraph (b).

- (i) In respect of its *regulatory control period* commencing on 1 July 2024, TasNetworks must submit a proposed *pricing methodology* to the *AER* by 31 January 2023, pursuant to clause 6A.10.1(a), and in doing so, must comply with the requirements of the Amending Rule and the requirements of the revised *pricing methodology guidelines* made by the *AER* pursuant to clause 11.xxx.4(a).
- (j) In respect of its *regulatory control period* commencing on 1 July 2024, Ausgrid must submit a proposed *pricing methodology* to the *AER* by 31 January 2023, pursuant to clause 6.18.2 and Part N of Chapter 6, and in doing so, must comply with the requirements of the Amending Rule and the requirements of the revised *pricing methodology guidelines* made by the *AER* pursuant to clause 11.xxx.4(a).

11.[XXX].6 Commencement of system strength charge

- (a) Each *System Strength Service Provider* that is required to publish prices for each of the *categories of prescribed transmission services* under clause 6A.24.2(c) by 15 March 2023 must include its *system strength unit prices* for *system strength charges*.
- (b) The prices that *AEMO* is required to publish for each of the *categories of prescribed transmission services* under clause 6A.24.2(c)(2), as modified by clause S6A.4.2(k), must include its *system strength unit prices* for *system strength charges*.

11.[XXX].7 Application to distribution network service provider pricing proposal

- (a) For the avoidance of doubt, a *Distribution Network Service Provider* must submit an annual *pricing proposal* or *initial pricing proposal* (as applicable) by the relevant date required under clause 6.18.2 that complies with the requirements of the Amending Rule.

11.[XXX].8 Application of the Amending Rule to existing connection enquiries

- (a) This clause applies where, before the commencement date, a *Connection Applicant* has, in respect of *plant* that the *Connection Applicant* proposes to *connect*:
 - (1) made a *connection* enquiry in accordance with clause 5.3.2 (**Existing Connection Enquiry**); and
 - (2) not made an *application to connect* to a *Network Service Provider* under clause 5.3.4.
- (b) On and from the commencement date:

- (1) new Chapter 5 applies for the purposes of determining the *access standards* that apply to the *plant* that the *Connection Applicant* proposes to *connect*;
- (2) the Existing Connection Enquiry will be taken to be a valid *connection* enquiry under the new Chapter 5 with respect to the proposed *plant*; and
- (3) the *Network Service Provider* must:
 - (i) within 10 *business days* after the commencement date, use its reasonable endeavours to provide written notification to a *Connection Applicant* to which this clause 11.xxx.8 applies that the Existing Connection Enquiry will be treated as a *connection* enquiry under the new Chapter 5; and
 - (ii) within 20 *business days* after providing the written notification in subparagraph (3)(i), in consultation with *AEMO* and where necessary, provide each *Connection Applicant* notified under subparagraph (3)(i) with:
 - (A) any further information required under clause 5.3.3 of the new Chapter 5 relevant to the proposed *plant*; and
 - (B) written notice of any further information or data to be provided by the *Connection Applicant* to the *Network Service Provider*, to enable the *Connection Applicant* to submit an *application to connect* in accordance with the new Chapter 5 with respect to the proposed *plant*.
- (c) Where the *Network Service Provider* has charged the *Connection Applicant* any fees or charges with respect to the Existing Connection Enquiry, the *Network Service Provider* must not charge the *Connection Applicant* any additional fees or charges on or from the commencement date with respect to such Existing Connection Enquiry, except to the extent necessary to cover the reasonable costs of work required to notify the *Connection Applicant* and provide any relevant information under paragraph (b)(3)(ii). For the avoidance of doubt, this clause does not preclude a *Network Service Provider* recovering an application fee from the *Connection Applicant* under clause 5.3.4(b).

11.[XXX].9 Application of the Amending Rule to existing applications to connect under Chapter 5

- (a) This clause applies where, before the commencement date, a *Connection Applicant* has, in respect of *plant* that the *Connection Applicant* proposes to *connect*:

- (1) made an *application to connect* to a *Network Service Provider* in accordance with clause 5.3.4 (**Existing Application To Connect**); and
 - (2) not received an offer to *connect* from the relevant *Network Service Provider* in respect of the Existing Application To Connect.
- (b) Subject to paragraph (c), on and from the commencement date:
- (1) former Chapter 5 applies for the purposes of determining the *access standards* that apply to the *plant* that the *Connection Applicant* proposes to *connect*;
 - (2) the Existing Application To Connect will be taken to be a valid *application to connect* under the new Chapter 5 with respect to the proposed *plant*; and
 - (3) the *Network Service Provider* must, within 10 *business days* after the commencement date, use its reasonable endeavours to provide written notification to a *Connection Applicant* to which this clause applies that, notwithstanding the commencement of new Chapter 5, former Chapter 5 continues to apply to the Existing Application To Connect for the purposes of determining the *access standards* that apply to the *plant* that the *Connection Applicant* proposes to *connect*.
- (c) Despite the application of paragraph (b), a *Connection Applicant* may, in response to a *Network Service Provider's* notification under paragraph (b)(3), provide written notification to the relevant *Network Service Provider* that the *Connection Applicant* elects for new Chapter 5 to apply to its Existing Application to Connect instead of former Chapter 5 or former Chapter 5A.
- (d) If a *Connection Applicant* makes an election under paragraph (c), the Existing Application To Connect be will be treated as an *application to connect* under the new Chapter 5 and the *Rules* as amended by the Amending Rule apply to the Existing Application to Connect and the parties must comply with paragraphs (e) to (i).
- (e) Within 30 *business days* of receiving the written notification from a *Connection Applicant* under paragraph (c), the *Network Service Provider* must, in consultation with *AEMO*, and where necessary, provide the *Connection Applicant* with any further information required under the new Chapter 5 relevant to the proposed *plant*, including:
- (1) for each technical requirement, written details of the *minimum access standards* and *negotiated access standards* that are *AEMO advisory matters*;

- (2) written notice of any further information to be provided by the *Connection Applicant* (which may include information required to be provided under clauses 5.2.5(d) and (e) and Schedule 5.5);
- (3) the information required under new clause 5.3.3(b5)(3);
- (4) written notice of any further information to be provided by the *Connection Applicant* in order for the *Network Service Provider* to comply with its obligations under new clause 5.3.4B and new clause 5.3.4C,

such that the *Network Service Provider* can prepare an offer to *connect* in accordance with the new Chapter 5 with respect to the proposed *plant*.

- (f) Where paragraphs (c) to (e) apply, and the *Network Service Provider* has charged the *Connection Applicant* any fees or charges with respect to the Existing Application To Connect, the *Network Service Provider* must not charge the *Connection Applicant* any additional fees or charges on or from the commencement date with respect to an Existing Application To Connect, except to the extent necessary to cover the reasonable costs of work required for the *Network Service Provider* to prepare an offer to *connect* in accordance with the new Chapter 5, including the requirements to notify the *Connection Applicant* and provide any relevant information under paragraph (e).
- (g) A *Network Service Provider* to which paragraphs (c) to (f) apply, may extend the time period referred to in clause 5.3.6(a) to reasonably allow for any additional time taken in excess of the period allowed in the *preliminary program* that is necessary to take account of the differences between former Chapter 5 and new Chapter 5.

11.[XXX].9A Application of the Amending Rule to existing applications to connect under Chapter 5A

- (a) This clause applies where, before the commencement date, a *connection applicant* has, in relation to the provision of a *connection service* in respect of a *large inverter based resource*:
 - (1) made an *application to connect* to a *Network Service Provider* in accordance with former Chapter 5A (**Existing Application To Connect**); and
 - (2) not received a *connection offer* from the relevant *Network Service Provider* in respect of the Existing Application To Connect.
- (b) Despite new clause 5A.A.2(a1), on and from the commencement date:
 - (1) new Chapter 5A applies for the purposes of determining the Existing Application To Connect; and

- (2) the Existing Application To Connect will be taken to be a valid application to connect under the new Chapter 5A with respect to the proposed plant.

11.[XXX].10 Application of the Amending Rule to existing offers to connect

- (a) This clause applies where, before the commencement date, a *Connection Applicant* under former Chapter 5:
 - (1) has received a valid offer to *connect* from the relevant *Network Service Provider* in respect of an *application to connect*; and
 - (2) has not entered into a *connection agreement* with the relevant *Network Service Provider* in respect of that *application to connect*.
- (b) This clause also applies where, before the commencement date, a *connection applicant* under former Chapter 5A:
 - (1) has received a valid *connection offer* from the relevant *Distribution Network Service Provider* in respect of a *connection application*; and
 - (2) has not entered into a *connection agreement* with the relevant *Distribution Network Service Provider* in respect of that *connection application*.
- (c) On and from the commencement date, the *Rules* as amended by the Amending Rule do not apply in relation to the offer to *connect* or *connection offer* (as applicable) and former Chapter 5 or former Chapter 5A (as applicable) applies to the *plant* that the applicant proposes to *connect* under that offer to *connect* or *connection offer* (as applicable).

11.[XXX].11 Application of the Amending Rule to Existing Connection Agreements

- (a) The Amending Rule is neither intended to, nor to be read or construed as having, the effect of:
 - (1) altering the terms of an Existing Connection Agreement;
 - (2) altering the contractual rights or obligations of any of the parties under an Existing Connection Agreement; or
 - (3) relieving the parties under any such Existing Connection Agreement of their contractual obligations under such an agreement.
- (b) Subject to paragraph (c), if, after the commencement date, a *Generator* who has entered into an Existing Connection Agreement is required, in accordance with the *Rules*, to amend any of the

performance standards set out in that Existing Connection Agreement, then new Chapter 5 applies for the purposes of amending such *performance standards*.

- (c) Notwithstanding any other provision of the *Rules*, new clause S5.2.5.15 and new clause S5.2.5.16 do not apply to a *Generator* who, after the commencement date, proposes to alter its *generating system* and has advised *AEMO* in accordance with clause 5.3.9, unless *AEMO*, the *Generator* and the relevant *Network Service Provider* agree to apply new clause 5.2.5.15 or new clause 5.2.5.16.
- (d) The Amending Rule is neither intended to have, nor is it to be read or construed as having, the effect of changing the application of clause 11.6.11 (if applicable) in relation to *connection services* provided under an Existing Connection Agreement.

11.[XXX].12 Annual planning reports

- (a) A *Transmission Network Service Provider* who is a *System Strength Service Provider* is not required to comply with new clause 5.12.2(c)(13) and new clause 5.20C.3(f) until 31 October 2023.
- (b) For the avoidance of doubt, by 31 October 2023, each *Transmission Network Service Provider* must publish the first *Transmission Annual Planning Report* that complies with new clause 5.12.2(c)(13) and new clause 5.20C.3(f).
- (c) By the date required under clause 5.13.2(a) in the year 2023, a *Distribution Network Service Provider* must publish the first *Distribution Annual Planning Report* that complies with new Schedule 5.8(o).

11.[XXX].13 System strength services for existing fault level shortfalls in the system strength transition period

- (a) A *System Strength Service Provider* who, immediately before the effective date, was required to make *system strength services* available under former clause 5.20C.3:
 - (1) subject to paragraph (b), must continue to comply with that obligation on and from the effective date in accordance with clause 11.[xxx].15 as if the notice under former clause 5.20C.2(c) were a notice under clause 11.[xxx].14(d); and
 - (2) may include the cost of *system strength service payments* in the calculation of *network support payments* in accordance with new Chapter 6A.
- (b) The obligation of a *System Strength Service Provider* under paragraph (a) to make *system strength services* available expires at the end of the system strength transition period.

11.[XXX].14 Fault level shortfalls determinations in the system strength transition period

- (a) This clause (other than paragraph (f)) applies during the system strength transition period. Paragraph (f) continues to apply after the end of the system strength transition period.
- (b) *AEMO* must as soon as practicable following its determination of the *system strength requirements* under new clause 5.20C.1 assess:
 - (1) the *three phase fault level* typically provided at each *system strength node* in each *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* during the system strength transition period 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 during the system strength transition period.
- (c) In making its assessment under paragraph (b) for a *region*, *AEMO* must take into account:
 - (1) over what time period and to what extent the *three phase fault levels* at *system strength 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.
- (d) If at any time before the expiry of the system strength transition period *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 paragraph (e), which must not be:
 - (i) earlier than 12 months after the notice is published unless an earlier date is agreed with the *System Strength Service Provider*; or
 - (ii) after the end of the system strength transition period.

- (e) If *AEMO*, before the end of the system strength transition period, 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 11.[xxx].15.(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*.
- (f) *AEMO* must include in its *System Strength Reports* details of *AEMO's* assessment of any *fault level shortfall* and *AEMO's* forecast of any *fault level shortfall* under this clause.

11.[XXX].15 System strength services for new fault level shortfalls in the system strength transition period

- (a) This clause (other than paragraphs (f) and (g)) applies during the system strength transition period. Paragraphs (f) and (g) continue to apply after the end of the system strength transition period.
- (b) If, before the end of the system strength transition period, *AEMO* gives a notice under clause 11.[xxx].14(d) that *AEMO* has assessed that there is or is likely to be a *fault level shortfall* at a *system strength 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 *system strength node*.
- (c) 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 11.[xxx].14(d);
 - (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 earlier of:
 - (i) the date the *System Strength Service Provider's* obligation ceases, as specified by *AEMO* under clause 11.[xxx].14(e); and
 - (ii) the end of the system strength transition period.

- (d) 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 comply with new clause 5.20C.3(e) and new clause 5.20C.4 in relation to those *system strength services*.
- (f) A *System Strength Service Provider* must provide information in its *Transmission Annual Planning Report* about the activities undertaken to satisfy its obligation to make *system strength services* available under paragraph (b) including, in the case of proposed *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*;
 - (3) the total cost of the proposed relevant *network investment*;
 - (4) the indicative total costs of any *non-network options* considered.
- (g) A *System Strength Service Provider* may include the cost of *system strength service payments* in the calculation of *network support payments* in accordance with new Chapter 6A.

11.xxx.16 Investments subject to the regulatory investment test for transmission and cost pass through

- (a) The following additional exception applies under new clause 5.16.3(a) in relation to proposed expenditure during the system strength transition period:
 - (1) 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 11.[xxx].15 to make available *system strength services* in relation to a *fault level shortfall* for a *system strength node* and:
 - (i) immediately prior to the notice of the *fault level shortfall* being given by *AEMO* under clause 11.[xxx].14(d), the *System Strength Service Provider* is not under an obligation to provide *system strength services* for that *system strength node* (including under rule 11.101 or clause 11.[xxx].13); 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 11.[xxx].14(d).
- (b) During the system strength transition period, a fault level shortfall event will be taken to be an additional *pass through event* for the purposes of new clause 6A.7.3(a1).