



National Electricity Amendment (Generating System Model Guidelines) Rule 2017 No. 11

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; 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.

John Pierce
Chairman
Australian Energy Market Commission

National Electricity Amendment (Generating System Model Guidelines) Rule 2017 No. 11

1 Title of Rule

This Rule is the *National Electricity Amendment (Generating System Model Guidelines) Rule 2017 No.11*.

2 Commencement

Schedules 1, 2, 3 and 4 commence operation on 1 July 2018, immediately after Schedules 4 to 9 of the *National Electricity Amendment (Managing power system fault levels) Rule 2017 No. 10*.

Schedule 5 commences operation on 19 September 2017.

3 Amendment of the National Electricity Rules

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

4 Amendment of the National Electricity Rules

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

5 Amendment of the National Electricity Rules

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

6 Amendment of the National Electricity Rules

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

7 Savings and Transitional Amendments to the National Electricity Rules

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

Schedule 1 Amendment to the National Electricity Rules

(Clause 3)

[1] Clause 3.11.5 Tender process for network support and control ancillary services

Omit clause 3.11.5(b)(5) and substitute:

- (5) a requirement for a tenderer to provide sufficient data, models and parameters of relevant *plant* in accordance with the requirements specified in the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*, to facilitate a thorough assessment of the *network* impacts and *power station* impacts of the use of the relevant *network support and control ancillary service*;

[2] Clause 3.11.9 Acquisition of system restart ancillary services by AEMO

Omit clause 3.11.9(g) and substitute:

- (g) A prospective *SRAS Provider* must provide to *AEMO* sufficient data, models and parameters of relevant *plant* in accordance with the requirements specified in the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*, to facilitate a thorough assessment of the *network* impacts and *power station* impacts of the use of the relevant *system restart ancillary service*.

[3] Clause 3.13.3 Standing data

In clause 3.13.3(k)(2) after the words “*power system*” insert “simulation”.

[4] Clause 3.13.3 Standing data

After clause 3.13.3(k), insert:

- (k1) *AEMO* must set out in the *Power System Model Guidelines* the circumstances in which *AEMO* will consider the information under paragraph (k)(2) to be reasonably required by a *Registered Participant*.

Schedule 2 Amendment to the National Electricity Rules

(Clause 4)

[1] Clause 4.3.4 Network Service Providers

After clause 4.3.4(m), insert:

- (n) If in *AEMO*'s reasonable opinion, there is a risk that an alteration to a *network element*, or the *connection* of any new or additional equipment to a *network*, will:
 - (1) adversely affect *network capability*, *power system security*, quality or reliability of *supply*, *inter-regional power transfer capability*; or
 - (2) the use of a *network* by a *Network User*,

AEMO may request the relevant *Network Service Provider* to provide the information specified in paragraph (o) and the relevant *Network Service Provider* must provide the information requested.

- (o) For the purposes of paragraph (n), *AEMO* may request the relevant *Network Service Provider* to provide the following information:
 - (1) to *AEMO* and any other relevant *Network Service Provider*:
 - (i) information about the *protection systems* of the equipment;
 - (ii) information about the control systems of the equipment including:
 - (A) a set of functional block diagrams, including all functions between feedback signals and output;
 - (B) the parameters of each functional block, including all settings, gains, time constants, delays, deadbands and limits;
 - (C) the characteristics of non-linear elements;
 - (D) encrypted models in a form suitable for the software simulation products nominated by *AEMO* in the *Power System Model Guidelines*;
 - (iii) any other information specified in the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*;
 - (2) to *AEMO*, model source code (in the circumstances required by the *Power System Model Guidelines*) associated with the

model in subparagraph (ii)(D) in an unencrypted form suitable for at least one of the software simulation products nominated by *AEMO* in the *Power System Model Guidelines*, and in a form that would allow conversion for use with other software simulation products nominated by *AEMO* in the *Power System Model Guidelines*.

- (p) The information provided under paragraph (o) must contain sufficient detail for *AEMO* and any other relevant *Network Service Provider(s)* to perform *power system* simulation studies in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*.
- (q) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraph (o) must be treated as *confidential information* by those recipients.

Schedule 3 Amendment to the National Electricity Rules

(Clause 5)

[1] Clause 5.2.3 Obligations of Network Service Providers

After clause 5.2.3(i), insert:

- (j) If in *AEMO's* reasonable opinion, there is a risk a *Network Service Provider's plant* or equipment will:
 - (1) adversely affect *network capability, power system security, quality or reliability of supply, inter-regional power transfer capability*;
 - (2) adversely affect the use of a *network* by a *Network User*; or
 - (3) have an *adverse system strength impact*,

AEMO may request the *Network Service Provider* to provide information of the type described in clause 4.3.4(o), and following such a request, the *Network Service Provider* must provide the information to *AEMO* and any other relevant *Network Service Provider(s)* in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*.

- (k) If in *AEMO's* reasonable opinion, information of the type described in clause 4.3.4(o) is required to enable a *Network Service Provider* to conduct the assessment required by clause 5.3.4B, *AEMO* may request any other relevant *Network Service Provider* to provide the information, and following such a request, that *Network Service Provider* must provide the information to *AEMO* and the other relevant *Network Service Provider*.
- (l) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraphs (j) and (k) must be treated as *confidential information* by those recipients.

[2] New Clause 5.2.3A Obligations of Market Network Service Providers

After clause 5.2.3, insert new clause 5.2.3A:

Clause 5.2.3A Obligations of Market Network Service Providers

- (a) If in *AEMO's* reasonable opinion, there is a risk a *Market Network Service Provider's plant* or equipment will:

- (1) adversely affect *network capability, power system security, quality or reliability of supply, inter-regional power transfer capability*;
- (2) adversely affect the use of a *network* by a *Network User*; or
- (3) have an *adverse system strength impact*,

AEMO may request the *Market Network Service Provider* to provide information of the type described in clause S5.3a.1(a1), and following such a request, the *Market Network Service Provider* must provide the information to *AEMO* and the relevant *Network Service Provider(s)* in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*.

- (b) If in *AEMO's* reasonable opinion, information of the type described in clause S5.3a.1(a1) is required to enable a *Network Service Provider* to conduct the assessment required by clause 5.3.4B, *AEMO* may request a *Market Network Service Provider* to provide the information, and following such a request, the *Market Network Service Provider* must provide the information to *AEMO* and the relevant *Network Service Provider*.
- (c) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraphs (a) and (b) must be treated as *confidential information* by those recipients.

[3] Clause 5.2.4 Obligations of Customers

After clause 5.2.4(b), insert:

- (c) If in *AEMO's* reasonable opinion, there is a risk that a *Customer's plant* will:
 - (1) adversely affect *network capability, power system security, quality or reliability of supply, inter-regional power transfer capability*;
 - (2) adversely affect the use of a *network* by a *Network User*; or
 - (3) have an *adverse system strength impact*,

AEMO may request a *Customer* to which Schedule 5.3 applies to provide information of the type described in clause S5.3.1(a1), and following such a request, the *Customer* must provide the information to *AEMO* and the relevant *Network Service Provider(s)* in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*.

- (d) If in *AEMO's* reasonable opinion, information of the type described in clause S5.3.1(a1) is required to enable a *Network Service Provider* to conduct the assessment required by clause 5.3.4B, *AEMO* may request a *Customer* to which Schedule 5.3 applies, to provide the information, and following such a request, the *Customer* must provide the information to *AEMO* and the relevant *Network Service Provider*.
- (e) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraphs (c) and (d) must be treated as *confidential information* by those recipients.

[4] Clause 5.2.5 Obligations of Generators

After clause 5.2.5(c), insert:

- (d) If in *AEMO's* reasonable opinion, there is a risk that a *Generator's plant* will:
 - (1) adversely affect *network capability, power system security, quality or reliability of supply, inter-regional power transfer capability*;
 - (2) adversely affect the use of a *network* by a *Network User*; or
 - (3) have an *adverse system strength impact*,

AEMO may request a *Generator* to provide information of the type described in clause S5.2.4, and following such a request, the *Generator* must provide the information to *AEMO* and the relevant *Network Service Provider(s)* in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*.
- (e) If in *AEMO's* reasonable opinion, information of the type described in clause S5.2.4 is required to enable a *Network Service Provider* to conduct the assessment required by clause 5.3.4B, *AEMO* may request a *Generator* to provide the information, and following such a request, the *Generator* must provide the information to *AEMO* and the relevant *Network Service Provider*.
- (f) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraphs (c) and (d) must be treated as *confidential information* by those recipients.

[5] Clause 5.3.4A Negotiated access standards

Omit clause 5.3.4A(d) and substitute:

- (d) *AEMO* must within 20 *business days* following the later of:

(1) receipt of a proposed *negotiated access standard* under clause 5.3.4(e), clause 5.3A.9(f) or paragraph (h)(3); and

(2) receipt of all information required to be provided by the *Connection Applicant* under clause S5.2.4, clause S5.5.6, clause S5.3.1(a1) or S5.3a.1(a1) (as applicable),

respond to the *Network Service Provider* in writing in respect of any *AEMO advisory matters*.

[6] Clause 5.3.4A Negotiated access standards

Omit clause 5.3.4A(e) and substitute:

(e) A *Network Service Provider* must within 30 *business days* following the later of:

(1) receipt of a proposed *negotiated access standard* in accordance with clause 5.3.4(e), clause 5.3A.9(f) or paragraph (h)(3); and

(2) receipt of all information required to be provided by the *Connection Applicant* under clause S5.2.4, clause S5.5.6, clause S5.3.1(a1) or S5.3a.1(a1) (as applicable),

accept or reject a proposed *negotiated access standard*.

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

After clause 5.3.9(a)(2) insert:

(3) will, in *AEMO's* reasonable opinion, adversely affect *network capability, power system security, quality or reliability of supply, inter-regional power transfer capability* or the use of a *network* by another *Network User*.

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

Omit clause 5.3.9(b)(2), and substitute:

(2) in respect of the proposed alteration to the *generating system*, details of the *generating unit* design data and *generating unit* setting data in accordance with the *Power System Model Guidelines, Power System Design Data Sheet* and *Power System Setting Data Sheet*;

[9] Clause 5.7.6 Tests of generating units requiring changes to normal operation

In clause 5.7.6(b)(2), omit “*Generating System Model Guidelines*” and substitute “*Power System Model Guidelines*”.

[10] Clause 5.7.6 Tests of generating units requiring changes to normal operation

In clause 5.7.6(h), omit “*Generating System Model Guidelines*” and substitute “*Power System Model Guidelines*”.

[11] Schedule 5.2.4 Provision of information

Omit clause S5.2.4(b)(5) and substitute:

- (5) to *AEMO* and the relevant *Network Service Provider(s)* (including the relevant *Transmission Network Service Provider* in respect of an *embedded generating unit*):
 - (i) information about the *protections systems* of the *generating system*;
 - (ii) information about the *control systems* of the *generating system* including:
 - (A) a set of functional block diagrams, including all functions between feedback signals and generating system output;
 - (B) the parameters of each functional block, including all settings, gains, time constants, delays, deadbands and limits;
 - (C) the characteristics of non-linear elements;
 - (D) encrypted models in a form suitable for the software simulation products nominated by *AEMO* in the *Power System Model Guidelines*;

[12] Schedule 5.2.4 Provision of information

Omit clause S5.2.4(b)(6), and substitute:

- (6) to *AEMO*, the model source code (in the circumstances required by the *Power System Model Guidelines*) associated with the *power system* simulation model in subparagraph (ii)(D) in an unencrypted form suitable for at least one of the software simulation products nominated by *AEMO* in the *Power System Model Guidelines*, and in a form that would allow conversion for use with other software products nominated by *AEMO* in the *Power System Model Guidelines*;

[13] Schedule 5.2.4 Provision of information

After clause S5.2.4(b)(7) insert:

- (7A) to *AEMO* and the relevant *Network Service Provider(s)*, any other information specified in the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*; and

[14] Schedule 5.2.4 Provision of information

After clause S5.2.4(b), insert:

- (b1) The information provided under paragraph (b) must contain sufficient detail for *AEMO* and the relevant *Network Service Provider(s)* to perform *power system* simulation studies in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*.

[15] Schedule 5.2.4 Provision of information

In clause S5.2.4(c)(2), omit “*Generating System Model Guidelines*” and substitute “*Power System Model Guidelines*”.

[16] Schedule 5.2.4 Provision of information

In clause S5.2.4(c)(2), omit “.” at the end of the clause and substitute “and (where applicable) specialised *power system* studies.”.

[17] Schedule 5.3.1 Information

After clause S5.3.1(a) insert:

- (a1) Before a *Network User* connects any new or additional equipment to a *network*, the *Network User* must submit:
 - (1) to *AEMO* and the relevant *Network Service Provider(s)*, information about the *protection systems* of the equipment;
 - (2) to *AEMO* and the relevant *Network Service Provider(s)*, information about the *control systems* of the equipment including:
 - (i) a set of functional block diagrams, including all functions between feedback signals and output;
 - (ii) the parameters of each functional block, including all settings, gains, time constants, delays, deadbands and limits;
 - (iii) the characteristics of non-linear elements;

- (iv) encrypted models in a form suitable for the software simulation products nominated by *AEMO* in the *Power System Model Guidelines*;
 - (3) to *AEMO* and the relevant *Network Service Provider(s)*, any other information specified in the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*;
 - (4) to *AEMO*, model source code (in the circumstances required by the *Power System Model Guidelines*) associated with the model in subparagraph (2)(iv) in an unencrypted form suitable for at least one of the software simulation products nominated by *AEMO* in the *Power System Model Guidelines* and in a form that would allow conversion for use with other software simulation products nominated by *AEMO* in the *Power System Model Guidelines*.
- (a2) The information provided under paragraph (a1) must contain sufficient detail for *AEMO* and the relevant *Network Service Provider(s)* to perform *power system* simulation studies in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*.
- (a3) Notwithstanding paragraph (a1), *AEMO* may exempt a *Network User* or class of *Network Users* from the requirement to provide some or all of the information specified in paragraph (a1), and must do so in accordance with the circumstances set out in the *Power System Model Guidelines*.
- (a4) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraph (a1) or pursuant to paragraph (a3) must be treated as *confidential information* by those recipients.

[18] Schedule 5.3a.1 Provision of Information

After clause S5.3a.1(a) insert:

- (a1) Before a *Market Network Service Provider* connects any new or additional equipment to a *network*, the *Market Network Service Provider* must submit:
- (1) to *AEMO* and the relevant *Network Service Provider(s)*, information about the *protection systems* of the equipment;
 - (2) to *AEMO* and the relevant *Network Service Provider(s)*, information about the *control systems* of the equipment including:
 - (i) a set of functional block diagrams, including all functions between feedback signals and output;

- (ii) the parameters of each functional block, including all settings, gains, time constraints, delays, deadbands and limits;
 - (iii) the characteristics of non-linear elements;
 - (iv) encrypted models in a form suitable for the software simulation products nominated by *AEMO* in the *Power System Model Guidelines*;
- (3) to *AEMO* and the relevant *Network Service Provider(s)*, any other information specified in the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*;
- (4) to *AEMO*, model source code (in the circumstances required by the *Power System Model Guidelines*) associated with the model in subparagraph (2)(iv) in an unencrypted form suitable for at least one of the software simulation products nominated by *AEMO* in the *Power System Model Guidelines* and in a form that would allow conversion for use with other software simulation products nominated by *AEMO* in the *Power System Model Guidelines*.
- (a2) The information provided under paragraph (a1) must contain sufficient detail for *AEMO* and the relevant *Network Service Provider(s)* to perform *power system* simulation studies in accordance with the requirements and circumstances specified in the *Power System Model Guidelines*.
- (a3) All information provided to *AEMO* and the relevant *Network Service Provider(s)* under paragraph (a1) must be treated as *confidential information* by those recipients.

[19] Clause S5.5.2 Categories of data

In clause S5.5.2, after the first paragraph ending “eg. by testing.” insert a new paragraph:

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

Codes:

S = Standard Planning Data

D = Detailed Planning Data

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

[20] Clause S5.5.2 Categories of data

In clause S5.5.2, omit “*Generating System Model Guidelines*” and substitute “*Power System Model Guidelines*”.

[21] Clause S5.5.2 Categories of data

In clause S5.5.2, omit “*Generating System Design Data Sheet*” and substitute “*Power System Design Data Sheet*”.

[22] Clause S5.5.2 Categories of data

In clause S5.5.2, omit “*Generating System Setting Data Sheet*” and substitute “*Power System Setting Data Sheet*”.

[23] Clause S5.5.4 Data requirements

In clause S5.5.4, omit “*Generating System Model Guidelines*” and substitute “*Power System Model Guidelines*”.

[24] Clause S5.5.4 Data requirements

In clause S5.5.4, omit “*Generating System Design Data Sheet*” and substitute “*Power System Design Data Sheet*”.

[25] Clause S5.5.4 Data requirements

In clause S5.5.4, omit “*Generating System Setting Data Sheet*” and substitute “*Power System Setting Data Sheet*”.

[26] Clause S5.5.5 Asynchronous generating unit data

In clause S5.5.5, omit “*Generating System Model Guidelines*” and substitute “*Power System Model Guidelines*”.

[27] Clause S5.5.4 Data requirements

In clause S5.5.4, omit the second occurrence of paragraph (b) and substitute:

- (b) *Customers and Network Service Providers*: schedules 5.5.3, 5.5.4 and the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*;

[28] Clause S5.5.4 Data requirements

In clause S5.5.4, omit the second occurrence of paragraph (c) and substitute:

- (c) *Customers*: schedule 5.5.5 and the *Power System Model Guidelines*, *Power System Design Data Sheet* and *Power System Setting Data Sheet*; and

[29] Clause S5.5.4 Data requirements

In clause S5.5.4, after the second occurrence of paragraph (c), insert:

- (d) *Market Network Service Providers: schedules 5.5.3 and 5.5.4 and the Power System Model Guidelines, Power System Design Data Sheet and Power System Setting Data Sheet.*

[30] Clause S5.5.5 Asynchronous generating unit data

In clause S5.5.5, omit “*Generating System Design Data Sheet*” and substitute “*Power System Design Data Sheet*”.

[31] Clause S5.5.5 Asynchronous generating unit data

In clause S5.5.5, omit “*Generating System Design Data Sheet*” and substitute “*Power System Design Data Sheet*”.

[32] Clause S5.5.6 Generating units equal to or smaller than 30MW data

Omit clause S5.5.6 in its entirety, including the heading, and substitute:

S5.5.6 Generating units smaller than 30MW data

A Generator that connects a generating unit smaller than 30 MW or generating units totalling less than 30 MW to a connection point to a distribution network must submit registered system planning data and registered data to AEMO and the relevant Network Service Provider in accordance with the requirements specified in the Power System Model Guidelines, Power System Design Data Sheet and Power System Setting Data Sheet.

Codes:

S = Standard Planning Data

D = Detailed Planning Data

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

[33] Clause S5.5.7 Generating System Design Data Sheet, Generating System Setting Data Sheet and Generating System Model Guidelines

Omit clause S5.5.7 in its entirety, including the heading, and substitute:

S5.5.7 Power System Design Data Sheet, Power System Setting Data Sheet and Power System Model Guidelines

- (a) *AEMO* must, subject to paragraphs (b) and (c), develop, *publish* and maintain, in accordance with the *Rules consultation procedures*:
- (1) a *Power System Design Data Sheet* describing, for relevant *plant technologies*, *plant* design parameters including *plant* configurations, impedances, time constants, non-linearities, ratings and capabilities to be provided under clauses 3.11.5(b)(5), 3.11.9(g), 4.3.4(o), 5.2.3(j), 5.2.3(k), 5.2.3A(a), 5.2.4(c), 5.2.4(d), 5.2.5(d), 5.2.5(e), 5.3.9(b)(2), S5.2.4, S5.3.1, S5.3a.1 and this schedule 5.5;
 - (2) a *Power System Setting Data Sheet* describing, for relevant *power systems* and *control system* technologies, the *protection system* and *control system* functions and their settings, including configurations, gains, time constants, delays, deadbands, non-linearities and limits to be provided under clauses 3.11.5(b)(5), 3.11.9(g), 4.3.4(o), 5.2.3(j), 5.2.3(k), 5.2.3A(a), 5.2.3A(b), 5.2.4(c), 5.2.4(d), 5.2.5(d), 5.2.5(e), 5.3.9(b)(2), S5.2.4, S5.3.1, S5.3a.1 and this schedule 5.5; and
 - (3) *Power System Model Guidelines* describing, for relevant *power system* technologies at the *transmission system* and *distribution system* level, *AEMO's* requirements when developing mathematical models for *plant*, including the impact of their *control systems* and *protection systems* on *power system security* to be provided under clauses 3.11.5(b)(5), 3.11.9(g), 4.3.4(o), 5.2.3(j), 5.2.3(k), 5.2.3A(a), 5.2.3A(b), 5.2.4(c), 5.2.4(d), 5.2.5(d), 5.2.5(e), 5.3.9(b)(2), S5.2.4, S5.3.1, S5.3a.1 and this schedule 5.5.
- (b) When developing, *publishing* and maintaining the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet* under paragraph (a), *AEMO* must have regard to the purpose of the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*, which is to:
- (1) allow *plant* and equipment to be mathematically modelled by *AEMO* with sufficient accuracy to permit:
 - (i) the *power system* operating limits for ensuring *power system security* to be quantified with the lowest practical safety margins;
 - (ii) the assessment of proposed *negotiated access standards*;
 - (iii) settings of *control systems* and *protection systems* of *plant* and *networks* to be assessed and quantified for

- maximum practical performance of the *power system*;
and
 - (iv) the efficient procurement of *system restart ancillary services* and *network support and control ancillary services*; and
 - (2) identify for each type of data its category in terms of clause S5.5.2.
- (b1) The *Power System Model Guidelines* must specify:
- (1) the information, including the types of models, that:
 - (i) *Generators* must provide under clause 5.2.5(d), clause 5.2.5(e), clause 5.3.9(b)(2), clause S5.2.4 and clause S5.5.6;
 - (ii) *Network Service Providers* must provide under clause 4.3.4(o), clause 5.2.3(j) and clause 5.2.3(k);
 - (iii) *Network Users* must provide under clause 5.2.4(c), clause 5.2.4(d) and clause S5.3.1(a1);
 - (iv) *Market Network Service Providers* must provide under clause 5.2.3A(a), clause 5.2.3A(b) and clause S5.3a.1(a1);
 - (v) prospective *NSCAS* tenderers must provide under clause 3.11.5(b)(5); and
 - (vi) prospective *SRAS Providers* must provide under clause 3.11.9(g);
 - (2) the model accuracy requirements that are applicable to each type of model provided, as well as the types of *generating systems* and *plant* and equipment that the model accuracy requirements apply to;
 - (3) when information to which the *Power System Model Guidelines* relates must be provided;
 - (4) a process to be followed in circumstances where a person is unable to provide information required to be provided under clauses 3.11.5(b)(5), 3.11.9(g), 4.3.4(o), 5.2.3(j), 5.2.3(k), 5.2.3A(a), 5.2.3A(b), 5.2.4(c), 5.2.4(d), 5.2.5(d), 5.2.4(e), 5.3.9(b)(2), S5.2.4, S5.3.1, S5.3a.1, S5.5.6, schedule 5.5 or as otherwise required by the *Power System Model Guidelines*, *Power System Design Data Sheet* or *Power System Setting Data Sheet*;

- (5) guidance on the factors that *AEMO* will take into account when determining the circumstances under which *AEMO* will request information to be provided, including the *power system* conditions that necessitate the usage of a certain type of model in order to achieve the desired level of accuracy;
 - (6) the format in which information must be provided and any material *AEMO* requires to assess the accuracy of information provided to it; and
 - (7) the circumstances in which model source code is required to be provided.
- (c) In developing and amending the *Power System Model Guidelines*, the *Power System Design Data Sheet* and the *Power System Setting Data Sheet*, *AEMO* must:
- (1) have regard to the reasonable costs of efficient compliance by *Registered Participants* with those guidelines and data sheets compared to the likely benefits from the use of the information provided under the guidelines and data sheets;
 - (2) have regard to any requirements to protect the intellectual property and confidential information of third parties, including where those third parties are not *Registered Participants*; and
 - (3) have regard to *Distribution Network Service Providers*' and *Transmission Network Service Providers*' requirements for data and modelling information that is reasonably necessary for the relevant provider to fulfil its obligations under the *Rules* or *jurisdictional electricity legislation*.
- (d) *AEMO* may amend the *Power System Model Guidelines*, the *Power System Design Data Sheet* or the *Power System Setting Data Sheet* from time to time.
- (e) Any person may submit a written request (with reasons) for *AEMO* to amend the *Power System Model Guidelines*, the *Power System Design Data Sheet* or the *Power System Setting Data Sheet* from time to time.
- (f) In developing and amending the *Power System Model Guidelines*, the *Power System Design Data Sheet* or the *Power System Setting Data Sheet*, *AEMO* must, subject to paragraph (g), consult with *Registered Participants* and such other persons who, in *AEMO*'s reasonable opinion have, or have identified themselves as having, an interest in the *Power System Model Guidelines*, in accordance with the *Rules consultation procedures*.

- (g) *AEMO* is not required to comply with the *Rules consultation procedures* when making minor or administrative amendments to the *Power System Model Guidelines*, the *Power System Design Data Sheet* or the *Power System Setting Data Sheet*.
- (h) *AEMO* may at the conclusion of the *Rules consultation procedures* under paragraph (f) or otherwise under paragraph (g), amend the relevant data sheet or guidelines (if necessary).

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

In the table in Schedule 5.5.3 under the heading “Circuits Connecting Embedded Generating Units to the Network”, omit “*Generating System Model Guidelines*” and substitute “*Power System Model Guidelines*”.

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

In the table in Schedule 5.5.3 under the heading “Circuits Connecting Embedded Generating Units to the Network”, omit “*Generating System Design Data Sheet*” and substitute “*Power System Design Data Sheet*”.

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

In the table in Schedule 5.5.3 under the heading “Circuits Connecting Embedded Generating Units to the Network”, omit “*Generating System Setting Data Sheet*” and substitute “*Power System Setting Data Sheet*”.

Schedule 4 Amendment to the National Electricity Rules

(Clause 6)

[1] Chapter 10 Omitted Definitions

In Chapter 10, omit the definitions of “*Generating System Design Data Sheet*”, “*Generating System Model Guidelines*” and “*Generating System Setting Data Sheet*”.

[2] Chapter 10 New Definitions

In Chapter 10, insert the following new definitions in alphabetical order:

Power System Design Data Sheet

The data sheet *published* by AEMO under clause S5.5.7(a)(1).

Power System Model Guidelines

The guidelines *published* by AEMO under clause S5.5.7(a)(3).

Power System Setting Data Sheet

The data sheet *published* by AEMO under clause S5.5.7(a)(2).

Schedule 5 Savings and Transitional Amendments to the National Electricity Rules

(Clause 7)

[1] Chapter 11 Savings and Transitional Amendments to the National Electricity Rules

In Chapter 11, after Part ZZZC, insert:

Part ZZZD Generating System Model Guidelines

11.102 Making of Power System Model Guidelines

- (a) By 1 July 2018, *AEMO* must develop and *publish* the *Power System Model Guidelines*, the *Power System Design Data Sheet*, and the *Power System Setting Data Sheet* to take account of the National Electricity Amendment (Generating system model guidelines) Rule 2017 No. 11.

[END OF RULE AS MADE]
