



Draft National Electricity Amendment (Mandatory primary frequency response) Rule 2020

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.

John Pierce
Chairman
Australian Energy Market Commission

Draft National Electricity Amendment (Mandatory primary frequency response) Rule 2020

1 Title of Rule

This Rule is the *Draft National Electricity Amendment (Mandatory primary frequency response) Rule 2020*.

2 Commencement

Schedule 1 of this Rule commences operation on [4 June 2020].

Schedule 2 of this Rule commences operation on [4 June 2023].

Schedule 3 of this Rule commences operation on [date 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 Savings and Transitional Amendment to the National Electricity Rules

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

Schedule 1 Amendment to the National Electricity Rules

(Clause 3)

[1] Clause 3.15.6A Ancillary service transactions

Omit clause 3.15.6A(k)(5)(i) and substitute:

- (i) subject to the provision of *primary frequency response* by that Scheduled Participant in accordance with the *Primary Frequency Response Requirements*, the Scheduled Participant achieves its *dispatch* target at a uniform rate;

[2] Clause 3.15.6A Ancillary service transactions

Omit clause 3.15.6A(k)(7)(i) and substitute:

- (i) subject to the provision of *primary frequency response* by that *semi-scheduled generating unit* in accordance with the *Primary Frequency Response Requirements*, the *semi-scheduled generating unit* achieves its *dispatch level* at a uniform rate;

[3] Clause 4.4.1 Power system frequency control responsibilities

In clause 4.4.1(b), omit "set out in the *power system security standards*".

[4] Clause 4.4.2 Operational frequency control requirements

In clause 4.4.2, omit paragraphs (b) to (d) and substitute:

- (b) each *Generator* must ensure that all of its *generating units* meet the technical requirements for *frequency* control in clause S5.2.5.11;

Note

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

- (c) *AEMO* must use reasonable endeavours to arrange to be available and allocated to *regulating duty* such *generating plant* as *AEMO* considers appropriate for automatic control or direction by *AEMO* to ensure that all normal *load* variations do not result in *frequency* deviations outside the limitations specified in clause 4.2.2(a);
- (c1) subject to clause 4.4.2A(c), each *Scheduled Generator* and *Semi-Scheduled Generator* that has received a *dispatch instruction* to generate a volume greater than zero MW must operate its *generating system* in accordance with the *Primary Frequency Response Requirements* as applicable to that *generating system*;

Note

The *AEMC* proposes to recommend that this clause be classified as a civil penalty provision under the National Electricity (South Australia) Regulations.

- (d) *AEMO* must use reasonable endeavours to ensure that adequate *facilities* are available and under the direction of *AEMO* to allow the managed recovery of the *satisfactory operating state* of the *power system*.

[5] New clause 4.4.2A Primary Frequency Response Requirements

After clause 4.4.2, insert:

4.4.2A Primary Frequency Response Requirements

- (a) *AEMO* must develop, publish on its website and maintain, the *Primary Frequency Response Requirements* in accordance with the *Rules consultation procedures*.
- (b) The *Primary Frequency Response Requirements* must include:
 - (1) a requirement that *Scheduled Generators* and *Semi-Scheduled Generators* set their *generating systems* to operate in *frequency response mode* within one or more performance parameters (which may be specific to different types of *plant*), including but not limited to:
 - (i) maximum allowable deadbands, which must not be narrower than the *primary frequency control band* outside of which *Scheduled Generators* and *Semi-Scheduled Generators* must provide *primary frequency response*;
 - (ii) droop; and
 - (iii) response time,
(the *primary frequency response parameters*).
 - (2) subject to rule 4.4.2B, the conditions or criteria on which a *Scheduled Generator* or *Semi-Scheduled Generator* may request, and *AEMO* may approve, a variation to, or exemption from, any *primary frequency response parameters* applicable to its *scheduled generating system* or *semi-scheduled generating system*;
 - (3) the process and timing for an application for a variation to, or exemption from, any *primary frequency response parameters* applicable to a *scheduled generating system* or *semi-scheduled generating system*, and the process for approval by *AEMO* of such variation or exemption; and

- (4) details of the information to be provided by *Scheduled Generators* and *Semi-Scheduled Generators* to verify compliance with the *Primary Frequency Response Requirements* and any compliance audits or tests to be conducted by *AEMO*.
- (c) The *Primary Frequency Response Requirements* cannot require a *Scheduled Generator* or *Semi-Scheduled Generator* to maintain stored energy in its *generating system* for the purposes of satisfying clause 4.4.2(c1).
- (d) *AEMO* must publish on its website and maintain, a register of *Scheduled Generators* and *Semi-Scheduled Generators* who have been granted a variation or exemption from any *primary frequency response parameters* in the *Primary Frequency Response Requirements*.
- (e) *AEMO* may make minor or administrative amendments to the *Primary Frequency Response Requirements* without complying with the *Rules consultation procedures*.

[6] New clause 4.4.2B Approval of variations or exemptions

After clause 4.4.2A, insert:

4.4.2B Approval of variations or exemptions

- (a) In considering whether to approve an exemption from, or a variation to, any of the *primary frequency response parameters* applicable to a *Scheduled Generator's* or *Semi-Scheduled Generator's* *generating system*, *AEMO* must have regard to:
 - (1) the capability of the *generating system* to operate in *frequency response mode*;
 - (2) the costs that are likely to be incurred in augmenting the *generating system* to be able to operate in *frequency response mode* relative to the turnover derived from, and the operating hours of, the *generating system* in relation to its operation in the *national electricity market*;
 - (3) the stability of the *generating system* when operating in *frequency response mode*, and the potential impact this may have on *power system security*;
 - (4) the ongoing costs of operating the *generating system* in *frequency response mode*; and
 - (5) any other physical characteristics of the *generating system* which may affect its ability to operate in *frequency response mode*, including (but not limited to) *dispatch inflexibility profile*, operating requirements, or *energy constraints*.

- (b) A dispute between *AEMO* and a *Scheduled Generator* or *Semi-Scheduled Generator* relating to a variation or exemption from any of the *primary frequency response parameters* applicable to a *Scheduled Generator's* or *Semi-Scheduled Generator's generating system* may be determined under rule 8.2.

[7] Clause 4.9.4 Dispatch related limitations on Scheduled Generators and Semi-Scheduled Generators

In clause 4.9.4(a), omit "from the *generating unit*" and substitute "from a *generating unit*".

[8] Clause 4.9.4 Dispatch related limitations on Scheduled Generators and Semi-Scheduled Generators

After clause 4.9.4(a)(3), insert:

- (3A) as a consequence of its operation in *frequency response mode* in order to adjust *power system frequency* in response to *power system* conditions; or

[9] Clause 4.9.4 Dispatch related limitations on Scheduled Generators and Semi-Scheduled Generators

Omit clause 4.9.4(a)(4) and substitute:

- (4) in the case of a *scheduled generating unit*, in accordance with the *self-commitment* process specified in clause 4.9.6 up to the *self-dispatch level*;

[10] Clause 4.9.8 General responsibilities of Registered Participants

In clause 4.9.8, after paragraph (a), insert:

- (a1) A *Scheduled Generator* or *Semi-Scheduled Generator* is not taken to have failed to comply with a *dispatch instruction* as a consequence of its *generating unit* operating in *frequency response mode* in order to adjust *power system frequency* in response to *power system* conditions.

[11] Clause S5.2.5.11 Frequency control

After clause S5.2.5.11(b)(2), insert:

Note

Clause 4.4.2(b) of the *Rules* sets out the obligations on *Generators* in relation to compliance with the technical requirements in clause S5.2.5.11, including being capable of operating in *frequency response mode*. Clause 4.4.2(c1) of the *Rules* sets out the obligations on *Scheduled* and *Semi-Scheduled Generators* in relation to the *Primary Frequency Response Requirements*.

[12] Clause S5.2.5.11 Frequency control

After clause S5.2.5.11(c)(2), insert:

Note

Clause 4.4.2(b) of the *Rules* sets out the obligations on *Generators* in relation to compliance with the technical requirements in clause S5.2.5.11, including being capable of operating in *frequency response mode*. Clause 4.4.2(c1) of the *Rules* sets out the obligations on *Scheduled* and *Semi-Scheduled Generators* in relation to the *Primary Frequency Response Requirements*.

[13] Clause S5.2.5.11 Frequency control

Omit clause S5.2.5.11(i)(4) and substitute "[Deleted]".

[14] Chapter 10 New definitions

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

primary frequency control band

In relation to the *frequency* of the *power system*, means the range 49.985Hz to 50.015Hz, or such other range as specified by the *Reliability Panel* in the *power system security standards*.

primary frequency response

An automatic change in a *generating system's active power* output, to oppose or arrest *frequency* changes, measured at or behind the *generating system's connection point*.

primary frequency response parameters

Has the meaning given in clause 4.4.2A.

Primary Frequency Response Requirements

The requirements developed, published and maintained by *AEMO* under clause 4.4.2A(a).

Schedule 2 Amendment to the National Electricity Rules

(Clause 4)

[1] Clause 3.15.6A Ancillary service transactions

Omit clause 3.15.6A(k)(5)(i) and substitute:

- (i) the Scheduled Participant achieves its *dispatch* target at a uniform rate;

[2] Clause 3.15.6A Ancillary service transactions

Omit clause 3.15.6A(k)(7)(i) and substitute:

- (i) achieves its *dispatch level* at a uniform rate;

[3] Clause 4.4.2 Operational frequency control requirements

In clause 4.4.2, omit paragraph (c1) and substitute "[Deleted]".

[4] Clause 4.4.2A Primary Frequency Response Requirements

Omit clause 4.4.2A and the heading and substitute "[Deleted]".

[5] Clause 4.4.2B Approval of variations or exemptions

Omit clause 4.4.2B and the heading and substitute "[Deleted]".

[6] Clause S5.2.5.11 Frequency control

In the note after clause S5.2.5.11(b)(2), omit "Clause 4.4.2(c1) of the *Rules* sets out the obligations on *Scheduled* and *Semi-Scheduled Generators* in relation to the *Primary Frequency Response Requirements*".

[7] Clause S5.2.5.11 Frequency control

In the note after clause S5.2.5.11(c)(2), omit "Clause 4.4.2(c1) of the *Rules* sets out the obligations on *Scheduled* and *Semi-Scheduled Generators* in relation to the *Primary Frequency Response Requirements*".

[8] Chapter 10 Omitted definitions

In Chapter 10, omit the following definitions: *primary frequency control band*, *primary frequency response*, *primary frequency response parameters*, *Primary Frequency Response Requirements*.

Schedule 3 Savings and Transitional Amendment to the National Electricity Rules

(Clause 5)

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

After Part ZZZ[X], insert:

Part ZZZ[X] Mandatory primary frequency response

11.[XXX] Rules consequential on the making of the National Electricity Amendment (Mandatory primary frequency response) Rule 2019

11.[XXX].1 Definitions

For the purposes of this rule 11.[XXX]:

Amending Rule means the National Electricity Amendment (Mandatory primary frequency response) Rule 2019.

commencement date means [date the rule is made].

interim Primary Frequency Response Requirements means the interim requirements developed and published by *AEMO* in accordance with clause 11.XXX.2(a).

new clause 4.4.2A(a) means clause 4.4.2A(a) of the *Rules* as in force on the commencement date.

new clause 4.4.2A(b) means clause 4.4.2A(b) of the *Rules* as in force on the commencement date

11.[XXX].2 Interim Primary Frequency Response Requirements

- (a) *AEMO* must develop, publish on its website and maintain interim Primary Frequency Response Requirements by 4 June 2020 to apply until the Primary Frequency Response Requirements are made and published under paragraph (d).
- (b) *AEMO* is not required to comply with the *Rules consultation procedures* when making the interim Primary Frequency Response Requirements under paragraph (a) but must publish a draft of the interim Primary Frequency Response Requirements on its website by 9 April 2020 and provide at least 20 business days for written submissions from any person on this draft.
- (c) The interim Primary Frequency Response Requirements must:

- (1) take into account any submissions on the draft of the interim Primary Frequency Response Requirements received under paragraph (b);
 - (2) include the matters to be included in the Primary Frequency Response Requirements under new clause 4.4.2A(b); and
 - (3) set out the process for the coordinated activation of changes to *generating systems*, including the date (which may vary according to *plant* type) by which *Scheduled Generators* and *Semi-Scheduled Generators* must effect changes to their *plant*, to comply with the Interim Primary Frequency Response Requirements.
- (d) *AEMO* must publish the Primary Frequency Response Requirements under new clause 4.4.2A(a) by [6 December 2021].

11.[XXX].3 Action taken prior to commencement

Any action taken by *AEMO*, a *Scheduled Generator*, or *Semi-Scheduled Generator* prior to the commencement date in anticipation of the commencement of the Amending Rule is deemed to have been taken for the purpose of the Amending Rule and continues to have effect for that purpose.