

Draft National Electricity Amendment (Five Minute Settlement) Rule 2017

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

Draft National Electricity Amendment (Five Minute Settlement) Rule 2017

1 Title of Rule

This Rule is the *Draft National Electricity Amendment (Five Minute Settlement)* Rule 2017.

2 Commencement

Schedule 7 will commence operation on [date rule is made].

Schedules 1 to 6 will commence operation on 1 July 2021.

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 Amendment of the National Electricity Rules

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

8 Amendment of the National Electricity Rules

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

9 Savings and Transitional Amendments to the National Electricity Rules

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

Schedule 1 Amendment to the National Electricity Rules

(Clause 3)

[1] Clause 3.2.2 Spot market

In clause 3.2.2(c), after "spot prices", insert "and ancillary service prices".

[2] Clause 3.2.2 Spot market

Omit clause 3.2.2(c1), and substitute "[**Deleted**]".

[3] Clause 3.4.1 Establishment of spot market

Omit clause 3.4.1(a)(3), and substitute:

(a) for each *trading interval*, setting a *spot price* for electricity at each *regional reference node* and *market connection point*, and *ancillary service prices* at each *regional reference node*.

[4] Clause 3.4.1 Establishment of spot market

Omit clauses 3.4.1(b)(1) and (2) and substitute:

- (1) a spot price for energy; and
- (2) ancillary service prices,

to apply at each regional reference node for each trading interval.

[5] Clause 3.4.2 Trading day and trading interval

Omit clause 3.4.2 in its entirety and substitute "[**Deleted**]".

[6] Clause 3.7.3 Short term PASA

In clauses 3.7.3(b), (d)(4), (e)(1), (e)(2) and (h), omit "trading interval" and substitute "30-minute period".

[7] Clause 3.8.1 Central Dispatch

In clause 3.8.1(e), omit "dispatch interval" and substitute "trading interval".

[8] Clause 3.8.4 Notification of scheduled capacity

In clauses 3.8.4(c)(1), (d)(1) and (e)(1), omit "48" and substitute "288".

[9] Clause 3.8.6 Generating unit offers for dispatch

In clauses 3.8.6(a)(2) and (g), omit "48" and substitute "288".

[10] Clause 3.8.6A Scheduled network service offers for dispatch

In clause 3.8.6A(b), omit "48" and substitute "288".

[11] Clause 3.8.7 Bids for scheduled load

In clause 3.8.7(c), omit "48" and substitute "288".

[12] Clause 3.8.7A Market ancillary service offers

In clause 3.8.7A(b), omit "48" and substitute "288".

[13] Clause 3.8.11 Ancillary services constraints

In clause 3.8.11(a1), omit "dispatch interval" and substitute "trading interval".

[14] Clause 3.8.20 Pre-dispatch schedule

Omit clauses 3.8.20(b) and (c) and substitute:

- (b) The *pre-dispatch* process is to have a resolution of:
 - (1) one 30-minute period; and
 - (2) one *trading interval*, for the period of 60 minutes from the time that the relevant *pre-dispatch schedule* is *published* by *AEMO*, provided that *AEMO* may at any stage provide the resolution required by this clause 3.8.20(b)(2) for a period longer than 60 minutes,

and no analysis will be made of operations within the *trading interval*, other than to ensure that *contingency capacity reserves* are adequate as set out in Chapter 4.

- (c) Subject to clause 3.8.20(b), *AEMO* must determine the *pre-dispatch* schedule on the basis of:
 - (1) dispatch bids, dispatch offers and market ancillary service offers submitted for the relevant trading interval or trading intervals;
 - (2) AEMO's forecast power system load for each region for the relevant trading interval or trading intervals; and
 - (3) the unconstrained intermittent generation forecasts,

and by using a process consistent with the principles for *central dispatch* as set out in clause 3.8.1.

[15] Clause 3.8.20 Pre-dispatch schedule

At the beginning of clause 3.8.20(j), insert "Subject to clause 3.8.20(b),".

[16] Clause 3.8.20 Pre-dispatch schedule

In clause 3.8.20(j), omit "The" and substitute "the".

[17] Clause 3.8.20 Pre-dispatch schedule

Omit clause 3.8.20(j)(2) and substitute:

(2) scheduled *trading interval* or *30-minute period loading level* (as applicable) for each scheduled entity;

[18] Clause 3.8.20 Pre-dispatch schedule

Omit clauses 3.8.20(j)(6) and (7) and substitute:

- (6) unconstrained intermittent generation forecasts for each trading interval or 30-minute period (as applicable); and
- (7) for each *semi-scheduled generating unit* and *trading interval* or *30-minute period* (as applicable), whether or not a condition for setting a *semi-dispatch interval* or *semi-dispatch intervals* applies.

[19] Clause 3.8.21 On-line dispatch process

Omit clauses 3.8.21(a1), (b) and (c), and substitute:

- (a1) [**Deleted**]
- (b) The *dispatch algorithm* is to be run by *AEMO* for each *trading interval*. If the *dispatch algorithm* is not successfully run for any *trading interval* then the values of the last successful run of the *dispatch algorithm* must be used for that *trading interval*.
- (c) Central dispatch results in the setting of spot prices and ancillary services prices for each trading interval in accordance with rule 3.9.

[20] Clause 3.8.21 On-line dispatch process

Omit clauses 3.8.21(j) and (k) and substitute:

(j) If a scheduled load, scheduled generating unit or semi-scheduled generating unit, in respect of which a dispatch inflexibility profile has been notified to AEMO in accordance with clause 3.8.19, is dispatched from 0 MW in any trading interval by the central dispatch process, then the specified dispatch inflexibility profile must be used by AEMO as a constraint on the dispatch of that plant for the relevant subsequent trading intervals.

(k) A scheduled load or generating unit whose dispatch is constrained in any trading interval due to a dispatch inflexibility profile submitted under clause 3.8.19 cannot be used as the basis for setting the spot price in that trading interval at any location.

[21] Clause 3.8.22A Offers, bids and rebids must not be false or misleading

Omit clause 3.8.22A(e)(2), excluding the note, and substitute:

(2) the importance of *rebids* being made, where possible, in sufficient time to allow reasonable opportunity for other *Market Participants* to respond (including by making responsive *rebids*, by bringing one or more *generating units* into operation or increasing or decreasing the *loading level* of any *generating units*, or by adjusting the *loading level* of any *load*) prior to the commencement of the *trading interval* to which the *rebid* relates, and may have regard to any other relevant matter, including any of the matters referred to in sub-paragraphs (c)(1) to (5).

[22] Clause 3.8.24 Scheduling errors

In clause 3.8.24(a)(3), omit "dispatch interval" and substitute "trading interval".

[23] Clause 3.9.1 Principles applicable to spot price determination

Omit clause 3.9.1(a) and substitute:

- (a) The principles applying to the determination of prices in the *spot* market are as follows:
 - (1) [Deleted]
 - (2) a spot price at a regional reference node is determined by the central dispatch process at that regional reference node for each trading interval;
 - (2A) the *central dispatch process* must determine an *ancillary* service price for each market ancillary service at each regional reference node for each interval trading interval;
 - (3) *spot prices* determine *dispatch* such that a *generating unit* or load whose dispatch bid or dispatch offer at a location is below the *spot price* at that location will normally be *dispatched*;
 - (3A) generating units, scheduled network services or scheduled loads which operate in accordance with a direction, are to be taken into account in the central dispatch process, but the

- dispatch offer, in the case of a generating unit or scheduled network service, which operates in accordance with a direction, or the dispatch bid, in the case of a scheduled load which operates in accordance with a direction, will not be used in the calculation of the spot price for the relevant trading interval;
- (3B) ancillary service generating units and ancillary service loads the subject of a fixed constraint (within the meaning of clause 3.8.23(g)) are to be taken into account in the *central dispatch* process, but the price in a *market ancillary service offer* which operates in accordance with a fixed constraint will not be used in the calculation of the *ancillary service price* for that *market ancillary service* for the relevant *trading interval*;
- (3C) generating units or loads which operate in accordance with a direction to provide an ancillary service are to be taken into account in the central dispatch process, but the price in a market ancillary service offer which operates in accordance with a direction, will not be used in the calculation of the ancillary service price for that market ancillary service for the relevant trading interval;
- (4) network losses, network constraints, the availability of scheduled network services and network dispatch offers are taken into account in the determination of dispatch and consequently affect spot prices and (apart from network losses) ancillary services prices;
- (5) where the *energy* output of a *Registered Participant* is limited above or below the level at which it would otherwise have been *dispatched* by *AEMO* on the basis of its *dispatch offer* or *dispatch bid* due to an *ancillary services direction*, the *Registered Participant's dispatch offer* or *dispatch bid* is taken into account in the determination of *dispatch* but the *dispatch offer* or *dispatch bid* will not be used in the calculation of the *spot price* for the relevant *trading interval*;
- (5A) market ancillary service offers, in other ancillary services markets, due to an ancillary services direction are taken into account in the determination of dispatch and consequently affect ancillary service prices in those other ancillary services markets;
- (6) when the *spot price* is determined, it applies to both sales and purchases of electricity at a particular location and time;
- (6A) when an *ancillary service price* is determined for an *ancillary service*, it applies to purchases of that *ancillary service*;

- (6B) when an *ancillary service price* is determined under paragraph (6A) for a *regulation service*, it applies to purchases of that *regulation service* and, where appropriate, purchases of a *delayed service*;
- (7) *spot prices* provide *Market Participants* with signals as to the value of providing or cost of consuming electricity at a particular location at a particular time; and
- (7A) *ancillary service prices* provide *Ancillary Service Providers* with signals as to the value of providing the relevant *market ancillary service* within a particular *region* at a particular time.

[24] Clause 3.9.2 Determination of spot prices

Omit clauses 3.8.2(c), (d) and (e) and substitute:

- (c) Each time the *dispatch algorithm* is run by *AEMO*, it must determine a *spot price* for each *regional reference node* for a *trading interval* in accordance with clause 3.8.21(b), provided that if *AEMO* fails to run the *dispatch algorithm* to determine *spot prices* for any *trading interval* then the *spot price* for that *trading interval* is the last *spot price* determined by the *dispatch algorithm* prior to the relevant *trading interval*.
- (d) The *spot price* at a *regional reference node* represents the marginal value of *supply* at that location and time, this being determined as the price of meeting an incremental change in *load* at that location and time in accordance with clause 3.8.1(b) provided that if *AEMO* has made a declaration that the *market* is suspended under clause 3.14.3, then the *spot price* for any *trading interval* during the period during which the *spot market* is suspended must be determined in accordance with clause 3.14.5.
- (e) Notwithstanding clauses 3.9.2(c) or (d), for any trading interval if:
 - (1) the *spot price* for that *trading interval*has not already been set by the *central dispatch process* and *AEMO* reasonably determines that the *central dispatch process* may determine that all *load* in a *region* could not otherwise be supplied and *AEMO* issues instructions that are current for that *trading interval* to *Network Service Providers* or *Market Participants* to shed *load*, then *AEMO* must set the *spot price* at that *region's regional reference node* to equal the *market price cap*;
 - (2) *AEMO* has declared a *trading interval* to be an *intervention pricing interval* under clause 3.9.3(a), then subject to clauses 3.9.3(c) and 3.9.3(d) *AEMO* must set the *spot price* in accordance with clause 3.9.3; and

(3) [Deleted]

(4) an *administered price period* in accordance with rule 3.14 applies, then *AEMO* must limit the *spot price* in accordance with clause 3.14.2(d1).

[25] Clause 3.9.2 Determination of spot prices

Omit clause 3.9.2(h) and substitute:

(h) [Deleted]

[26] Clause 3.9.2 Determination of spot prices

Omit clause 3.9.2(k) and substitute:

(k) If a test is being conducted on a *generating unit* or *scheduled load* in accordance with clause 3.11.2 and for the purpose of conducting that test, the *generating unit* or *scheduled load* is excluded from *central dispatch*, then that *generating unit* or *scheduled load* cannot be used to set the *spot price* for the relevant *trading interval*.

[27] Clause 3.9.2A Determination of ancillary services prices

Omit clause 3.9.2A(a) and substitute:

(a) Each time the dispatch algorithm is run by AEMO, it must determine an ancillary service price for each market ancillary service for each regional reference node which is to apply until the next time the dispatch algorithm is run, provided that if AEMO fails to run the dispatch algorithm to determine ancillary service prices for any trading interval then the ancillary service price for that trading interval is the last ancillary service price determined by the dispatch algorithm prior to the relevant trading interval.

[28] Clause 3.9.2B Pricing where AEMO determines a manifestly incorrect input

In clause 3.9.2B(a), omit the definition of "Last correct dispatch interval" and substitute:

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

[29] Clause 3.9.2B Pricing where AEMO determines a manifestly incorrect input

Omit clauses 3.9.2B(b), (c), (d), (e) and (f) and substitute:

- (b) *AEMO* may apply the automated procedures developed in accordance with clause 3.9.2B(h), to identify a *trading interval* as subject to review ("a *trading interval* subject to review").
- (c) *AEMO* may also determine that a *trading interval* is subject to review if *AEMO* considers that it is likely to be subject to a manifestly incorrect input, but only where the *trading interval* immediately preceding it was a *trading interval* subject to review.
- (d) *AEMO* must determine whether a *trading interval* subject to review contained a manifestly incorrect input to the *dispatch algorithm* ("an affected *trading interval*").
- (e) Where AEMO determines an affected trading interval AEMO must:
 - (1) replace all *spot prices* and *ancillary service prices* with the corresponding prices for the last correct *trading interval*; and
 - (2) recalculate, in accordance with clause 3.9.2(h), and adjust the *spot price* for each affected *trading interval*.
- (f) *AEMO* may only carry out the action described in clause 3.9.2B(e) if no more than 30 minutes have elapsed since the publication of the *spot prices* for the *trading interval* subject to review.

[30] Clause 3.9.2B Pricing where AEMO determines a manifestly incorrect input

Omit clauses 3.9.2B(h) and substitute:

(h) *AEMO* must, in consultation with *Registered Participants*, develop procedures for the automatic identification of *trading intervals* subject to review under clause 3.9.2B (b) ("the **automated procedures**").

[31] Clause 3.9.2B Pricing where AEMO determines a manifestly incorrect input

Omit clause 3.9.2B(l) and substitute:

(1) AEMO must report on the findings of the review under clause 3.9.2B(k) and must include in that report details of all trading intervals subject to review that were not affected trading intervals and an analysis of why such intervals were identified as subject to review.

[32] Clause 3.9.3 Pricing in the event of intervention by

Omit clauses 3.9.3(a) to (e) and substitute:

- (a) In respect of a *trading interval* where an *AEMO intervention event* occurs *AEMO* must declare that *trading interval* to be an *intervention pricing interval*.
- (b) Subject to paragraphs (c) and (d), *AEMO* must in accordance with the methodology or assumptions *published* pursuant to paragraph (e) set the *spot price* and *ancillary service prices* for an *intervention pricing interval* at the value which *AEMO*, in its reasonable opinion, considers would have applied as the *spot price* and *ancillary service price* for that *trading interval* in the relevant *region* had the *AEMO intervention event* not occurred.
- (c) *AEMO* may continue to set *spot prices* pursuant to clause 3.9.2 and *ancillary service prices* pursuant to clause 3.9.2A until the later of:
 - (1) the second *trading interval* after the first *trading interval* in which the *AEMO intervention event* occurred; or
 - (2) if applicable, the second *trading interval* after the restoration of the *power system* to a *secure operating state* after any *direction* which constitutes the *AEMO intervention event* was issued, provided that *AEMO* must use its reasonable endeavours to set *spot prices* and *ancillary service prices* pursuant to this clause 3.9.3 as soon as practicable following the *AEMO intervention event*.
- (d) AEMO must continue to set *spot prices* pursuant to clause 3.9.2 and ancillary service prices pursuant to clause 3.9.2A if a direction given to a Registered Participant in respect of plant at the regional reference node would not in AEMO's reasonable opinion have avoided the need for any direction which constitutes the AEMO intervention event to be issued.
- (e) Subject to paragraph (g), *AEMO* must develop in accordance with the *Rules consultation procedures* and *publish* details of the methodology it will use, and any assumptions it may be required to make, to determine *spot prices* and *ancillary service prices* for the purposes of paragraph (b).

[33] Clause 3.9.4 Market Price Cap

Omit clause 3.9.4(a) and substitute:

(a) The *market price cap* is a price cap which is to be applied to *spot prices*.

[34] Clause 3.9.5 Application of the Market Price Cap

In clause 3.9.5(a), omit "Dispatch prices" and substitute "Spot prices".

[35] Clause 3.9.5 Application of the Market Price Cap

In clause 3.9.5(b), omit "dispatch prices" and substitute "spot prices".

[36] Clause 3.9.5 Application of the Market Price Cap

In clause 3.9.5(b), omit "dispatch price" wherever occurring and substitute "spot price".

[37] Clause 3.9.5 Application of the Market Price Cap

In clause 3.9.5(c), omit "dispatch prices" and substitute "spot prices".

[38] Clause 3.9.5 Application of the Market Price Cap

In clause 3.9.5(c), omit "dispatch price" and substitute "spot price".

[39] Clause 3.9.5 Application of the Market Price Cap

In clause 3.9.5(c), omit "dispatch interval" and substitute "trading interval".

[40] Clause 3.9.6 Market Floor Price

In clause 3.9.6(a), omit "dispatch prices" and substitute "spot prices".

[41] Clause 3.9.6A Application of the Market Floor Price

In clause 3.9.6A(a), omit "Dispatch prices" and substitute "Spot prices".

[42] Clause 3.9.6A Application of the Market Floor Price

In clause 3.9.6A(b), omit "dispatch prices" and substitute "spot prices".

[43] Clause 3.9.6A Application of the Market Floor Price

In clause 3.9.6A(b), omit "dispatch price" wherever occurring and substitute "spot price".

[44] Clause 3.9.6A Application of the Market Floor Price

In clause 3.9.6A(c), omit "dispatch price" and substitute "spot price".

[45] Clause 3.9.6A Application of the Market Floor Price

In clause 3.9.6A(c), omit "dispatch prices" and substitute "spot prices".

[46] Clause 3.9.6A Application of the Market Floor Price

In clause 3.9.6A(c), omit "dispatch interval" and substitute "trading interval".

[47] Clause 3.9.7 Pricing for constrained-on scheduled generating units

In clause 3.9.7(a), omit "dispatch interval," wherever occurring and substitute "trading interval,".

[48] Clause 3.9.7 Pricing for constrained-on scheduled generating units

In clause 3.9.7(a), omit "dispatch price" and substitute "spot price".

[49] Clause 3.9.7 Pricing for constrained-on scheduled generating units

In clause 3.9.7(b), omit "dispatch price" and substitute "spot price".

[50] Clause 3.12.2 Affected Participants and Market Customers entitlements to compensation in relation to AEMO intervention

In clause 3.12.2(b), omit "\$5,000" and substitute "\$1,000".

[51] Clause 3.12.2 Affected Participants and Market Customers entitlements to compensation in relation to AEMO intervention

In clause 3.12.2(d)(1), omit "\$5,000" and substitute "\$1,000".

[52] Clause 3.12.2 Affected Participants and Market Customers entitlements to compensation in relation to AEMO intervention

In clause 3.12.2(i), omit "\$5,000" and substitute "\$1,000".

[53] Clause 3.12A.4 Rebid of capacity under restriction offers

In clause 3.12A.4, omit "dispatch interval" wherever occurring and substitute "trading interval".

[54] Clause 3.12A.5 Dispatch of restriction offers

In clause 3.12A.5(a), omit "dispatch interval" and substitute "trading interval".

[55] Clause 3.12A.6 Pricing during a restriction price trading interval

In clause 3.12A.6, omit "dispatch prices" and substitute "spot prices".

[56] Clause 3.12A.6 Pricing during a restriction price trading interval

In clause 3.12A.6, omit "dispatch price" and substitute "spot price".

[57] Clause 3.13.4 Spot market

In Clause 3.13.4(c), omit "trading interval" and substitute "30-minute period".

[58] Clause 3.13.4 Spot market

In clause 3.13.4(f) omit "Details" and substitute "Subject to clause 3.7.20(b) details".

[59] Clause 3.13.4 Spot market

In clause 3.13.4(f) after "trading interval" insert "or 30-minute period (as applicable)".

[60] Clause 3.13.4 Spot market

In clause 3.13.4(g) omit "or *dispatch interval* (as applicable)" and insert "or *30-minute period* (as applicable)

[61] Clause 3.13.4 Spot market

Omit clause 3.13.4(h), and substitute:

(h) Together with its forecast *spot prices*, *AEMO* must *publish* details of the expected sensitivity of the forecast *spot prices* for each *30-minute period* to changes in the forecast *load* or *generating unit* availability.

[62] Clause 3.13.4 Spot market

In clause 3.13.4(1) omit "dispatch price" and insert "spot price".

[63] Clause 3.13.4 Spot market

After clause 3.13.4(1), insert:

(11) In addition to the *spot price*, *AEMO* must *publish* a 30-minute price for a *regional reference node* for each *30-minute period*. The 30-minute price must be calculated in accordance with clause 11.100.7.

[64] Clause 3.13.4 Spot market

In clause 3.13.4(p)(7), omit "dispatch interval" and substitute "trading interval".

[65] Clause 3.13.4 Spot market

In clause 3.13.4(p)(8), omit "dispatch interval" and substitute "trading interval".

[66] Clause 3.13.4 Spot market

In clause 3.13.4(q)(1), omit "and dispatch interval".

[67] Clause 3.13.4 Spot market

Omit clause 3.13.4(q)(2) and substitute:

(2) for each *semi-scheduled generating unit* in each *trading interval*, whether or not a condition for setting a *semi-dispatch interval* applied,

[68] Clause 3.13.4 Spot market

In clause 3.13.4(u), omit "dispatch interval" and substitute "trading interval".

[69] Clause 3.13.4 Spot market

In clause 3.13.4(u) (3), omit "dispatch price" and substitute "spot price".

[70] Clause 3.13.7 Monitoring of significant variation between forecast and actual prices by AER

Omit clause 3.13.7(d) and substitute:

- (d) The AER must, within 40 business days of the end of a week in which any 30 minute price published under clause 3.13.4(11) exceeded \$5,000/MWh, prepare and publish a report which must:
 - (1) describe the significant factors that contributed to 30 minute price exceeding \$5,000/MWh, including the withdrawal of *generation* capacity and *network* availability;
 - (2) assess whether *rebidding* pursuant to clause 3.8.22 contributed to 30 minute price exceeding \$5,000/MWh; and
 - (3) identify the marginal scheduled generating units and semi-scheduled generating units for the relevant period and all scheduled generating units and semi-scheduled generating units for which any dispatch offer for a trading interval in the relevant period was equal to or greater than \$5,000/MWh and compare these dispatch offers to relevant dispatch offers in previous trading intervals.

[71] Clause 3.13.7 Monitoring of significant variation between forecast and actual prices by AER

In clause 3.13.7(e), after "Where" insert ":"

[72] Clause 3.13.7 Monitoring of significant variation between forecast and actual prices by AER

In clause 3.13.7(e)(1), after "relevant spot price" omit "for energy"

[73] Clause 3.13.7 Monitoring of significant variation between forecast and actual prices by AER

In clause 3.13.7(e)(2), omit "trading intervals and substitute "30-minute periods".

[74] Clause 3.13.7 Monitoring of significant variation between forecast and actual prices by AER

In clauses 3.13.7(e)(3) and (5), omit "\$5,000/Mw." and substitute "\$5,000/MW."

[75] Clause 3.14.1 Cumulative Price Threshold and Administered Price Cap

In clause 3.14.1(e), omit the formula term for "BVCPT" and substitute:

BV^{CPT} is \$1,125,000 (being 6 times the value of the *cumulative price threshold* calculated on a 30-minute basis prior to 1 July 2012);

[76] Clause 3.14.2 Application of Administered Price Cap

In clause 3.14.2(c)(1), omit "336" and substitute "2016".

[77] Clause 3.14.2 Application of Administered Price Cap

Omit clause 3.14.2(c)(1A) and substitute:

(1A) a trading interval, where the sum of the ancillary service prices for a market ancillary service in the previous 2016 trading intervals, calculated as if this clause did not apply, exceeds the cumulative price threshold; or

[78] Clause 3.14.2 Application of Administered Price Cap

In clause 3.14.2(c)(2), omit ";" and substitute ".".

[79] Clause 3.14.2 Application of Administered Price Cap

Omit clause 3.14.2(c)(2A) and substitute "[**Deleted**]".

[80] Clause 3.14.2 Application of Administered Price Cap

Omit clause 3.14.2(c)(2B) and substitute "[**Deleted**]".

[81] Clause 3.14.2 Application of Administered Price Cap

In clauses 3.14.2(d1), (d1)(1) and (d1)(2), omit "dispatch price" and substitute "spot price".

[82] Clause 3.14.2 Application of Administered Price Cap

In clause 3.14.2(e), omit "dispatch price" and substitute "spot price".

[83] Clause 3.14.2 Application of Administered Price Cap

In clause 3.14.2(e), omit "dispatch prices" wherever occurring and substitute "spot prices".

[84] Clause 3.14.2 Application of Administered Price Cap

In clause 3.14.2(e), omit "dispatch interval" wherever occurring and substitute "trading interval".

[85] Clause 3.14.6 Compensation due to the application of an administered price cap or administered floor price

In clause 3.14.6, omit the definition of "eligibility period" and substitute:

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

[86] Clause 3.14.6 Compensation due to the application of an administered price cap or administered floor price

In clause 3.14.6, omit the definition of "**price limit event**" and substitute:

price limit event means:

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

power is set as a result of the application of clause 3.14.2(e)(2).

(4) for Ancillary Service Providers, in respect of an ancillary generating unit or an ancillary service load, the ancillary service price for a trading interval is set by the administered price cap during an administered price period.

[87] Clause 3.14.6 Compensation due to the application of an administered price cap or administered floor price

In clause 3.14.6, omit the definition of "relevant region" and substitute:

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

[88] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(a), omit the formula and substitute:

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

where:

TA (in \$) = the *trading amount* to be determined (which is a

positive number);

EA (in MW) = the amount of the relevant *market ancillary*

service which the ancillary service generating unit or ancillary service load has been enabled to

provide in the *trading interval*; and

ASP (in \$ per MW per = the ancillary service price for the market

hour) ancillary service for the trading interval for the region in which the ancillary service generating

unit or ancillary service load has been enabled.

[89] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(f), after "in respect of each" omit "*dispatch interval* which falls within the".

[90] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(f)(1), after "allocate for each region and for" omit "each dispatch interval within".

[91] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(f)(2), omit "calculate for each relevant *dispatch interval*" and substitute "calculate for the relevant *trading interval*".

[92] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(f)(3), omit "allocate for each relevant *dispatch interval*" and substitute "allocate for the relevant *trading interval*".

[93] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(f)(i), omit "all dispatch intervals in".

[94] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(f)(ii), omit "all dispatch intervals in".

[95] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(f), in the formula term definition of "RTCRSP (in \$)" omit "*dispatch intervals* which fall in"

[96] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(g), omit "dispatch interval which falls within the".

[97] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(g)(1), omit "each dispatch interval within".

[98] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(g)(2), omit "calculate for each relevant *dispatch interval*" and substitute "calculate for the relevant *trading interval*".

[99] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(g)(3), omit "allocate for each relevant *dispatch interval*" and substitute "allocate for the relevant *trading interval*".

[100] Clause 3.15.6A Ancillary service transactions

In clause (g)(i), omit "all dispatch intervals in".

[101] Clause 3.15.6A Ancillary service transactions

In clause (g)(ii), omit "all dispatch intervals in".

[102] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(g), in the formula term definition of "RTCLSP (in \$)" omit "dispatch intervals which fall in"

[103] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(h), omit "dispatch interval which falls within the".

[104] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(h)(1), omit "each dispatch interval within".

[105] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(h)(2), omit "calculate for each relevant *dispatch interval*" and substitute "calculate for the relevant *trading interval*".

[106] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(i)(1), omit "dispatch interval in the".

[107] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(i)(1), in the formula term definition of "TSFCAS (in \$)" omit "dispatch interval" and substitute "trading interval".

[108] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(i)(1), in the formula term definition of "AMPF (a number)" omit "dispatch interval" and substitute "trading interval".

[109] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(i)(2), omit "dispatch interval in the".

[110] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(i)(2), in the formula term definition of "AMPF (a number)" omit "dispatch interval" and substitute "trading interval".

[111] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(k)(5), omit "dispatch interval" and substitute "trading interval".

[112] Clause 3.15.6A Ancillary service transactions

In clause 3.15.6A(k)(7), omit "dispatch interval" and substitute "trading interval".

[113] Clause 3.15.7B Claim for additional compensation by Directed Participants

In clause 3.15.7B(a4), omit "\$5,000" and substitute "\$1,000".

[114] Clause 3.15.10 Administered price cap or administered floor price compensation payments

In clause 3.15.10(a1), in the definition of "**cost recovery region**" omit "*dispatch price*" and substitute "*spot price*".

[115] Clause 3.15.10 Administered price cap or administered floor price compensation payments

In clause 3.15.10(b), in the formula term definition of " E_i " omit "region-i." and substitute "region."

[116] Clause 3.16.2 Dispute resolution panel to determine compensation

In clause 3.16.2(f), omit "dispatch price" and substitute "spot price".

[117] Clause 3.16.2 Dispute resolution panel to determine compensation

In clause 3.16.2(h)(1), omit "dispatch interval" and substitute "trading interval".

[118] Clause 3.16.2 Dispute resolution panel to determine compensation

In clause 3.16.2(h)(2), omit "dispatch interval" and substitute "trading interval".

Schedule 2 Amendment to the National Electricity Rules

(Clause 4)

[1] Clause 4.9.1 Load forecasting

In clause 4.9.1(a)(1) and (2), omit "trading interval" and substitute "30-minute period".

[2] Clause 4.9.5 Form of dispatch instructions

Omit clause 4.9.5(a)(6)(i) and substitute:

(i) a notification as to whether the *trading interval* to which the *dispatch instruction* relates is a *semi-dispatch interval* or a *non semi-dispatch interval*; and

Schedule 3 Amendment to the National Electricity Rules

(Clause 5)

[1] Clause 6.20.1 Billing for distribution services

In clause 6.20.1(a)(2)(i), omit "half hourly".

Schedule 4 Amendment to the National Electricity Rules

(Clause 6)

[1] Clause 7.8.2 Metering installation components

In clause 7.8.2(a)(11), omit "continuously recording," and substitute "continuously recording,".

[2] Clause 7.8.2 Metering installation components

After clause 7.8.2(a), insert:

- (a1) *AEMO* may exempt a *Metering Provider* at a *connection point* from complying with the data storage requirements under clause 7.8.2(a)(9) for types 1, 2, 3, and 4 *metering installations* installed prior to 1 July 2021. *AEMO* may only grant an exemption under this clause where it is reasonably satisfied that the *Metering Provider* will be able to otherwise satisfy the requirements of Chapter 7.
- (a2) *AEMO* must establish, maintain and *publish* a procedure setting out the requirements for applying for an exemption under clause 7.8.2(a1).

[3] Clause 7.8.2 Metering installation components

After clause 7.8.2(b), insert:

- (b1) Any type 4 metering installation at a:
 - (1) transmission network connection point; or
 - (2) distribution network connection point where the relevant financially responsible Market Participant is a Market Generator or Small Generation Aggregator,

must be capable of recording and providing, and configured to record and provide, *trading interval energy data*.

[4] Clause 7.8.2 Metering installation components

In clause 7.8.2(f)(5), omit "interval energy," and substitute "interval energy data,"

[5] New Clause 7.8.2A New and replacement metering installations

After clause 7.8.2 insert:

7.8.2A New and replacement metering installations

The *Metering Coordinator* at a *connection point* must ensure that all new and replacement *metering installations* are capable of recording and providing, and configured to record and provide, *trading interval energy data*.

[6] Clause 7.10.2 Data management and storage

In clause 7.10.2(j) omit ", if any,".

[7] Clause 7.10.5 Periodic energy metering

Omit clause 7.10.5(a) and substitute:

- (a) The *Metering Data Provider* must, for types 1, 2 and 3 *metering installations* and type 4 *metering installations* that provide *trading interval energy data*, collate metering data relating to:
 - (1) the amount of active energy; and
 - (2) reactive energy (where relevant) passing through a connection point,

in trading intervals within a metering data services database unless it has been agreed between AEMO, the Local Network Service Provider, Embedded Network Manager in relation to child connection points and the financially responsible Market Participant that metering data may be recorded in sub-multiples of a trading interval.

[8] Clause 7.10.5 Periodic energy metering

In clause 7.10.5(b), omit "For type 6 *metering installations*," and substitute "For types 4A, 5 and 6 *metering installations* and type 4 *metering installations* that do not provide *trading interval energy data*,"

[9] Clause 7.15.5 Access to data

In clause 7.15.5(a), omit "rule" and substitute "clause 7.15.4(c)".

[10] Clause 7.16.3 Requirements of the metrology procedure

Omit clause 7.16.3(c)(6)(iii)(A) and substitute:

(A) by which interval metering data for types 4A and 5 metering installations and type 4 metering installations that do not provide trading interval energy data, and accumulated metering data is to be converted by AEMO into trading interval metering data; and

[11] Clause 7.16.4 Jurisdictional metrology material in metrology procedure

Omit clause 7.16.4(d) and substitute:

(d) *Jurisdictional metrology material* may address the specification of the type 5 accumulation boundary.

[12] Clause S7.1.2 Metering register information

In clause S7.1.2(e)(1) and (2), omit "half hourly" and substitute "trading interval".

[13] Clause S7.3.3 Capabilities of Metering Data Providers

Omit clause S7.3.3(d) and substitute:

- (d) Authorised access to *metering* software for the:
 - (1) collection of metering data;
 - (2) establishment, maintenance and operation of a *metering data* services database for the storage and management of *metering data* and *NMI Standing Data*; and
 - (3) the validation, substitution and estimation of *metering data*.

[14] Table S7.4.3.1 Overall Accuracy Requirements of *Metering installation* Components

In table S7.4.3.1 omit the text from rows 4, 4A and 5 and substitute:

4	less than 750 MWh (Item 2)	1.5	n/a	Either 0.5 CT and 1.0 meter Wh; or whole current general purpose meter Wh: • meets the requirements of clause 7.8.2(a)(9); and	
				 meets the requirements of clause 7.10.6(d). (Item 1) 	
				For type 4 metering installations that do not provide trading interval energy data, processes used to convert the interval metering data into trading interval metering	

				data and estimated metering data where necessary are included in the metrology procedure.	
4A	less than x MWh Item 3	1.5	3.0	Either 0.5 CT and 1.0 meter Wh; or whole current general purpose meter Wh: • meets the requirements of clause 7.8.2(a)(10); and • has the capability, if remote access is activated, of providing the services in table \$7.5.1.1; and • meets the requirements of clause 7.10.7(d). Processes used to convert the interval metering data for type 4A metering installations into trading interval metering data where necessary are included in the metrology procedure.	±20 (Item 2a)
5	less than x MWh (Item 3)	1.5 (Item 3b)	n/a	Either 0.5 CT and 1.0 meter Wh; or whole current general purpose meter Wh: • meets the requirements of clause 7.8.2(a)(10); and • meets the requirements of clause 7.10.7(d). Processes used to convert the interval metering data for type 5 metering installation into trading interval metering data and estimated metering data where necessary are included in the metrology procedure.	±20 (Item 3a)

[15] Clause S7.4.4 Check metering

In clause S7.4.4(d), omit "30 min" and substitute "trading interval".

Schedule 5 Amendment to the National Electricity Rules

(Clause 7)

[1] Schedule 9G1 Metering Transitional Arrangements

In Clause 3. of Schedule 9G1, omit "half hour energy flows" and substitute "interval energy data"

Schedule 6 Amendment to the National Electricity Rules

(Clause 8)

[1] Chapter 10 New Definitions

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

30-minute period

A 30 minute period ending on the hour (*EST*) or on the half-hour, and comprising 6 consecutive *trading intervals*. Where a *30-minute period* is identified by a time, it means the 30-minute period ending at that time.

trading interval energy data

Interval energy data prepared and recorded by a *metering installation* in intervals which correspond to a *trading interval*.

[2] Chapter 10 Substituted Definitions

In Chapter 10, substitute the following definitions:

accumulated energy data

The data that results from the measurement of the flow of electricity in a power conductor where the data represents a period in excess of a 30-minute period. Accumulated energy data is held in the metering installation. The measurement is carried out at a metering point.

administered price cap

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

ancillary service price

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

billing period

The period of 7 days commencing at the start of the trading interval ending 12.05 am Sunday.

dispatch level

Means:

(a) for a *semi-trading interval*, the amount of electricity specified in a *dispatch instruction* as the *semi-scheduled generating unit's*

maximum permissible *active power* at the end of the *trading interval* specified in the dispatch instruction; and

(b) for a non *semi-trading interval*, an estimate of the *active power* at the end of the *trading interval* specified in the *dispatch instruction*.

interval energy data

The data that results from the measurement of the flow of electricity in a power conductor where the data is prepared and recorded by the *metering installation* in intervals which:

- (a) for types 1, 2 and 3 metering installations and type 4 metering installations to which clauses 7.8.2(b1) and 7.8.2A apply, correspond to a trading interval or are submultiples of a trading interval; and
- (b) for all other type 4 *metering installations* and types 4A and 5 *metering installations*, correspond to a 30-minute period or are submultiples of a 30-minute period.

Interval energy data is held in the *metering installation*.

intervention pricing interval

A trading interval declared by AEMO to be an intervention pricing interval in accordance with clause 3.9.3.

late rebidding period

In respect of a trading interval, the period beginning 30 minutes before the commencement of the trading interval.

non semi-dispatch interval

For a semi-scheduled generating unit, a trading interval other than a semi-dispatch interval.

semi-dispatch interval

For a semi-scheduled generating unit, a trading interval for which either:

- (a) a *network constraint* would be violated if the *semi-scheduled* generating unit's generation were to exceed the dispatch level specified in the related dispatch instruction at the end of the trading interval; or
- (b) the *dispatch level* specified in that *dispatch instruction* is less than the *unconstrained intermittent generation forecast* at the end of the *trading interval*,

and which is notified by AEMO in that dispatch instruction to be a semi-dispatch interval.

spot price forecast

A forecast of the *spot price* published by *AEMO* in accordance with clause 3.13.4.

trading day

The 24 hour period commencing at 4.00 am (EST) and finishing at 4.00 am on the following day.

trading interval

A 5 minute period ending on the hour (*EST*) and each continuous period of 5 minutes thereafter and, where identified by a time, means the 5 minute period ending at that time.

[3] Chapter 10 Omitted Definitions

Omit the definitions of "dispatch interval", "dispatch price", "intervention price dispatch interval", .

Schedule 7 Savings and Transitional Amendments to the National Electricity Rules

(Clause 9)

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

After Part ZZZA, insert:

Part ZZB Five Minute Settlement

11.100 Rules consequential on the making of the National Electricity Amendment (Five Minute Settlement) Rule 2017

11.100.1 Definitions

For the purposes of this rule 11.100:

Amending Rule means the National Electricity Amendment (Five Minute Settlement) Rule 2017.

commencement date means 1 July 2021.

new Chapter 7 means Chapter 7 of the *Rules* as in force immediately after the commencement date.

new Chapter 10 means Chapter 10 of the *Rules* as in force immediately after the commencement date.

new clause 3.8.9 means clause 3.8.9 of the *Rules* as in force immediately after the commencement date.

new clause 3.13.4(11) means clause 3.13.4(11) of the *Rules* as in force immediately after the commencement date.

new clause 7.8.2(a2) means clause 7.8.2(a2) of the *Rules* as in force immediately after the commencement date.

new clause 7.8.2(b1) means clause 7.8.2(b1) of the *Rules* as in force immediately after the commencement date.

new clause 7.8.2A means clause 7.8.2A of the *Rules* as in force immediately after the commencement date.

old Chapter 3 means Chapter 3 of the *Rules* and all related definitions in the Rules as in force immediately prior to the commencement date.

old clause 3.8.9 means clause 3.8.9 of the *Rules* as in force immediately prior to the commencement date.

11.100.2 Amendments to procedures

- (a) By 1 December 2020, *AEMO* must review and where necessary amend and *publish* the following documents to apply from the commencement date to take into account the Amending Rule:
 - (1) the credit limit procedures in accordance with clause 3.3.8;
 - (2) the *spot market* operations timetable in accordance with clause 3.4.3;
 - (3) the automated procedures relating to dispatch intervals subject to review in accordance with clause 3.9.2B:
 - (4) the methodology for determining *dispatch prices* and *ancillary services prices* in the event of intervention by *AEMO* in accordance with clause 3.9.3;
 - (5) the reliability standards and settings guidelines;
 - (6) the estimated price methodology and estimated price schedules for periods of market suspension in accordance with clause 3.14.5;
 - (7) the reallocation procedures;
 - (8) the *settlement residue* auction rules in accordance with clause 3.18.3:
 - (9) the methodology relating to dispatch pricing for unscheduled reserve price contracts in accordance with clause 3.20.4;
 - (10) the procedures relating to the exercise of the RERT in accordance with clause 3.20.7;
 - (11) the procedures maintained under clause 7.8.3(b) in respect of the *minimum services specification*;
 - (12) the *meter churn procedures* in accordance with clause 7.8.9;
 - (13) the metering data provision procedures;
 - (14) the Market Settlement and Transfer Solution Procedures;
 - (15) the metrology procedure; and
 - (16) the service level procedures.
- (b) The *Information Exchange Committee* must make an *Information Exchange Committee Recommendation* to change the *B2B Procedures* (**B2B Recommendation**) to take into account the Amending Rule by 3 December 2018.

- (c) Subject to clause 7.17.5(b), *AEMO* must *publish* the *B2B Procedures* in accordance with the *B2B Recommendation* within 10 *business days* of the *Information Exchange Committee* making the B2B Recommendation.
- (d) By 1 December 2020, the *AER* must amend and *publish* the following documents to apply from the commencement date to take into account the Amending Rule:
 - (1) the methodology relating to the *distribution loss factor* in accordance with clause 3.6.3;
 - (2) guidelines maintained under clause 3.8.22 in respect of *rebidding*; and
 - (3) criteria that the *AER* will use to determine whether there is a significant variation between the *spot price forecast* and the actual *spot price* in accordance with clause 3.13.7.

11.100.3 Exemption for type 4 metering installations installed prior to 1 December 2018

Subject to new clause 7.8.2(b1), from the commencement date, type 4 *metering installations* that were installed prior to 1 December 2018 do not have to be capable of recording and providing, or configured to record and provide, *trading interval energy data* (as defined under new Chapter 10) until they are replaced in accordance with new clause 7.8.2A.

11.100.4 New and replacement meters

From 1 December 2018 until the commencement date, the *Metering Coordinator* at a *connection point* must ensure that all new and replacement *metering installations* must be capable of recording and providing, and configured to record and provide, *trading interval energy data* as defined under new Chapter 10.

11.100.5 Exemption from meter data storage requirements

By 1 December 2020, *AEMO* must *establish* and *publish* the procedure required by new clause 7.8.2(a2) in respect of exemptions from data storage requirements.

11.100.6 Default offers and bids submitted prior to the commencement date

Any dispatch offer or dispatch bid submitted pursuant to old clause 3.8.9 for a trading interval prior to the commencement date will, from the commencement date, be deemed to be 6 equal dispatch offers or dispatch bids submitted in respect of the 6 consecutive trading intervals within the relevant 30-minute period until such time as that dispatch offer or dispatch bid is resubmitted under new clause 3.8.9.

11.100.7 AEMO publication of 30-minute price

For the purposes of new clause 3.13.4(11), the 30-minute price means the *spot price* calculated in accordance with old Chapter 3.