

TRANCHE 6: EXPOSURE DRAFT 1

PROPOSED WHOLESALE ELECTRICITY MARKET (WEM) AMENDING RULES

Explanatory Note for Exposure Draft 1 of the Tranche 6 Proposed WEM Amending Rules

This is the first of two Exposure Drafts of amendments to be included in the Tranche 6 WEM Amending Rules. Energy Policy WA expects to publish the second Exposure Draft for consultation in August 2022.

This Exposure Draft contains proposed Amending Rules for the following areas of the WEM Rules:

1. Scheduling Day processes and STEM obligations (pg. 2)
2. Outage quantity calculations (pg. 38)
3. Reserve Capacity Mechanism – Certification and Network Access Quantities (pg. 44)
4. Non-Co-optimised Essential System Services (NCESS) – Submission of requests to the Coordinator of Energy (pg. 56)
5. Supplementary Essential System Service Mechanism (SESSM) – Market Participant obligations (pg. 60)
6. Reporting on the effectiveness of the market (pg. 69).

The draft rules presented in this Exposure Draft are pending legal review. Following industry consultation and legal review, the proposed Amending Rules in this Exposure Draft and Exposure Draft 2 will be submitted to the Minister for Energy for making and gazettal in late 2022.

Tentative commencement dates, where available, have been provided in the explanatory notes preceding the relevant draft rules.

Energy Policy WA is seeking stakeholder feedback on this Exposure Draft by 5:00 PM on 12 May 2022. Feedback can be sent to energymarkets@energy.wa.gov.au.

Mark-up Colour guide:

Text in black	Rules that are in force
Text in green	Amending Rules that have been made and will commence on a specified date
Text in blue	Amending Rules that have been made but no commencement date has been specified (it is expected that most of these Amending Rules will be commenced close to or at commencement of the new market)
Text in red - <u>underlined</u> and striketrough	New amendments proposed under Tranche 6

1. Scheduling Day processes and STEM obligations

Explanatory Note:

The proposed Amending Rules in this section implement changes to Scheduling Day processes and STEM obligations that were discussed at Meeting No. 40 of the Transformation Design and Operation Working Group (**TDOWG**) on 18 November 2021. An overview of the proposed amendments and their rationale is available in the slide pack for that meeting at: [Transformation Design and Operation Working Group \(www.wa.gov.au\)](http://www.wa.gov.au).

The Amending Rules in this section are expected to commence on New WEM Commencement Day.

4.26. Financial Implications of Failure to Satisfy Reserve Capacity Obligations

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Explanatory Note

Clause 4.26.2AD is amended to include a specific clause reference for the calculation of STEMCAFO(f,DI) values.

4.26.2AD.STEMFREQ(f,DI) for Facility f in Dispatch Interval DI is:

$$\text{STEMFREQ}(f, DI) = \text{STEMRCOQ}(f, DI) - \text{Max}(0, \text{STEMCAFO}(f, DI) - \text{CAFO}(f, DI))$$

where:

- (a) STEMRCOQ(f,DI) is the STEM Reserve Capacity Obligation Quantity determined for Facility f in Dispatch Interval DI;
- (b) STEMCAFO(f,DI) is the estimate of the Capacity Adjusted Forced Outage Quantity for Facility f in Dispatch Interval DI determined on the Scheduling Day for the relevant Trading Day ~~in accordance with Chapter 6 under clause 6.3A.3(g)~~; and
- (c) CAFO(f,DI) is the Capacity Adjusted Forced Outage Quantity determined for Facility f in Dispatch Interval DI under clause 3.21.7C.

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Explanatory Note

Clause 4.26.2AH is amended to include a specific clause reference for the calculation of STEMCAPO(f,t) values.

4.26.2AH.RTCR(p,t) for Market Participant p in Trading Interval t is:

$$\begin{aligned} \text{RTCR}(p, t) = & \sum_{f \in \text{SFFFacilities}(p, t)} (\text{CAFO}(f, t) + \text{NISCRQ}(f, t) + \text{ESRCSF}(f, t) \\ & + \text{RTMOSF}(f, t) \\ & + \text{max}(0, \text{NIMGRPPO}(f, t) + \text{ESRRPPO}(f, t) - \text{STEMCAPO}(f, t))) \end{aligned}$$

where:

- (a) CAFO(f,t) is the Capacity Adjusted Forced Outage Quantity determined for Facility f in Trading Interval t under clause 3.21.7B;
- (b) NISCRQ(f,t) is the Not In-Service Capacity Refund Quantity determined for Facility f in Trading Interval t under clause 4.26.1D;
- (c) ESRCSF(f,t) is the ESR Charge Shortfall determined for Facility f in Trading Interval t under clause 4.26.1E;
- (d) RTMOSF(f,t) is the Real-Time Market Offer Shortfall determined for Facility f in Trading Interval t under clause 4.26.1G;
- (e) NIMGRPPO(f,t) is the quantity of Refund Payable Planned Outage determined for Facility f in Trading Interval t under clause 4.26.1C;
- (f) ESRPPO(f,t) is the quantity of Refund Payable Planned Outage determined for Facility f in Trading Interval t under clause 4.26.1CA;
- (g) STEMCAPO(f,t) is the estimate of the Capacity Adjusted Planned Outage Quantity for Facility f in Trading Interval t determined on the Scheduling Day for the relevant Trading Day ~~in accordance with Chapter 6 under~~ clause 6.3A.3(g); and
- (h) $f \in \text{SFFacilities}(p,t)$ denotes all Scheduled Facilities and Semi-Scheduled Facilities for which Market Participant p holds Capacity Credits in Trading Interval t and which AEMO considers to be in Commercial Operation in Trading Interval t.

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6. The Short Term Energy Market

Energy Scheduling Timetable and Process

6.1. [Blank]

6.2. Bilateral Submission Timetable and Process

Explanatory Note

Clause 6.2.1 is amended to restore the current window for Bilateral Submissions for the New WEM.

- 6.2.1. A Market Participant may submit Bilateral Submission data for a Trading Day to AEMO ~~at any time before the Bilateral Submission Cutoff for the Trading Day.~~ between:
- (a) 8:00 AM on the day seven days prior to the start of the Scheduling Day for the Trading Day; and
 - (b) the Bilateral Submission Cutoff for the Trading Day.

Explanatory Note

Clause 6.2.2 is amended to restore the current arrangements for the processing of Standing Bilateral Submissions for the New WEM, i.e. so that they are used to make Bilateral Submissions for a Trading Day at the time the Trading Day enters the Bilateral Submission window.

~~6.2.2. Where, at the Bilateral Submission Cutoff for a Trading Day:~~

- ~~(a) AEMO holds a Standing Bilateral Submission applicable to the Trading Day for a Market Participant; and~~
- ~~(b) AEMO does not hold a Bilateral Submission applicable to the Trading Day for the Market Participant;~~

~~AEMO must make the Standing Bilateral Submission the Bilateral Submission for the Trading Day for the Market Participant.~~

6.2.2. Where, at the time specified in clause 6.2.1(a) for a Trading Day:

- (a) AEMO holds a Standing Bilateral Submission applicable to the Trading Day for a Market Participant; and
- (b) the Standing Bilateral Submission conforms to the requirements of section 6.7 at that time,

AEMO must make the Standing Bilateral Submission the Bilateral Submission for the Trading Day for the Market Participant as at the time specified in clause 6.2.1(a).

Explanatory Note

Clause 6.2.2A is amended to reflect the above restoration of the current Bilateral Submission window arrangements.

6.2.2A. Where AEMO receives Bilateral Submission data from a Market Participant under clause 6.2.1, AEMO must, as soon as practicable after receiving the Bilateral Submission data:

- (a) if the Bilateral Submission data complies with section 6.7 and was provided ~~before the Bilateral Submission Cutoff~~ during the period described in clause 6.2.1, make the Bilateral Submission data the Bilateral Submission for the Trading Day; and
- (b) notify the Market Participant which submitted the Bilateral Submission data under clause 6.2.1, that:
 - i. the Bilateral Submission data has been made the Bilateral Submission for the Trading Day to which the Bilateral Submission data submitted under clause 6.2.1 relates; or
 - ii. AEMO rejects the Bilateral Submission data as it does not comply with section 6.7, or was not received ~~after the Bilateral Submission Cutoff~~ during the period described in clause 6.2.1 for the Trading

Day to which the Bilateral Submission data submitted under clause 6.2.1 relates.

Explanatory Note:

Clause 6.2.3 is amended to:

- reflect the above restoration of the current Bilateral Submission window arrangements;
- require the Bilateral Submission quantities to be provided for each Trading Interval in the Bilateral Submission Results Window, instead of each Trading Interval in the Week-Ahead Schedule Horizon; and
- update the list of events that will trigger an update of the Bilateral Submission quantities.

6.2.3. AEMO must **maintain and provide** to each Market Participant the Bilateral Submission quantities associated with that Market Participant ~~(whether from Bilateral Submissions or Standing Bilateral Submissions)~~ for each Trading Interval ~~in the Week-Ahead Schedule Horizon~~ **Bilateral Submission Results Window**, including the party supplying, or being supplied by, the Market Participant. **AEMO must update this information whenever AEMO:**

- (a) ~~accepts Bilateral Submission data under clause 6.2.2A(a)~~ **makes a Bilateral Submission under clause 6.2.2;**
- (b) ~~accepts Standing Bilateral Submission data under clause 6.2A.2(a);~~ **accepts Bilateral Submission data under clause 6.2.2A(a); or**
- (c) ~~receives cancellation of Bilateral Submission data under clause 6.2.4B that has been previously accepted under clause 6.2.2A(a); or~~ **disregards cancelled Bilateral Submission data from a Bilateral Submission under clause 6.2.5(a).**
- (d) ~~receives cancellation of Standing Bilateral Submission data under clause 6.2A.4 that has been previously accepted under clause 6.2A.2(a).~~

6.2.4. [Blank]

6.2.4A. [Blank]

Explanatory Note

Clause 6.2.4B is amended to reflect the above restoration of the current Bilateral Submission window arrangements.

6.2.4B. A Market Participant may cancel Bilateral Submission data ~~accepted by AEMO under clause 6.2.2A(a)~~ **held by AEMO for any Trading Interval during the period described in clause 6.2.1 before the Bilateral Submission Cutoff for the Trading Day to which the cancelled Bilateral Submission data relates.**

6.2.5. Where any Bilateral Submission data is cancelled in accordance with clause 6.2.4B, AEMO must, as soon as practicable:

- (a) disregard the cancelled Bilateral Submission data from the Bilateral Submission; and
- (b) notify the Market Participant which cancelled the Bilateral Submission that the data has been disregarded from the Bilateral Submission for the Trading Interval of the Trading Day to which the cancelled Bilateral Submission data relates.

6.2.6. [Blank]

6.2.7. By submitting Bilateral Submission data, a Market Participant acknowledges that it is acting with the permission of all affected Market Participants.

Explanatory Note

Clause 6.2.8 is deleted and the obligations on AEMO regarding confirmation and notification of Electric Storage Resource Obligation Intervals are covered in clauses 6.3.1 and 6.3A.2.

~~6.2.8. Where AEMO has determined, in accordance with the WEM Procedure referred to in clause 4.11.3A, that the Electric Storage Resource Obligation Intervals for a Trading Day are not the Electric Storage Resource Obligation Intervals published by AEMO under clause 4.11.3A, AEMO must, no later than one hour before the Bilateral Submission Cutoff for a Trading Day, notify each Market Participant to which an Electric Storage Resource or a Facility containing an Electric Storage Resource is registered, of the Trading Intervals in that Trading Day for which a Reserve Capacity Obligation Quantity will apply in respect of its Facility.~~

6.2A. Standing Bilateral Submission Timetable and Process

- 6.2A.1. A Market Participant may submit Standing Bilateral Submission data to AEMO at any time.
- 6.2A.2. AEMO must, as soon as practicable after receiving Standing Bilateral Submission data under clause 6.2A.1:
 - (a) accept the Standing Bilateral Submission data provided it complies with section 6.7 and revise the Standing Bilateral Submission to reflect the Standing Bilateral Submission data; and
 - (b) notify the Market Participant which submitted the Standing Bilateral data under clause 6.2A.1 that:
 - i. AEMO accepts the Standing Bilateral Submission data and has revised the Standing Bilateral Submission to reflect the Standing Bilateral Submission data; or
 - ii. AEMO rejects the Standing Bilateral Submission data as it does not comply with section 6.7.

Explanatory Note

Clause 6.2A.2A is amended to restore the current arrangements for the processing of Standing Bilateral Submissions for the New WEM.

6.2A.2A. Standing Bilateral Submission data accepted by AEMO under clause 6.2A.2 will apply from the ~~time specified for the Standing Bilateral Submission under clause 6.7.1(b)(ii)(2)~~ next time that AEMO is required to use Standing Bilateral Submissions to make Bilateral Submissions under clause 6.2.2.

6.2A.3. Standing Bilateral Submission data must be associated with a day of the week and when used as Bilateral Submission data will only apply to Trading Days commencing on that day of the week.

Explanatory Note

Clause 6.2A.4 is amended to clarify the level of granularity permitted for cancellations of Standing Bilateral Submission data.

6.2A.4. A Market Participant may cancel Standing Bilateral Submission data accepted by AEMO under clause 6.2A.2(a) for any Trading Interval of a day of the week at any time.

6.2A.5. Where any Standing Bilateral Submission data is cancelled in accordance with clause 6.2A.4, AEMO must, as soon as practicable:

- (a) disregard the cancelled Standing Bilateral Submission data from the Standing Bilateral Submission; and
- (b) notify the Market Participant which cancelled the Standing Bilateral Submission data under clause 6.2A.4, that the cancelled Standing Bilateral Submission data has been disregarded from the Standing Bilateral Submission,

for the Trading Interval of the day of the week to which the cancelled Standing Bilateral Submission data relates.

6.3. ~~{Blank}~~Determination of Electric Storage Resource Obligation Intervals

Explanatory Note

New clause 6.3.1 requires AEMO to finalise the Electric Storage Resource Obligation Intervals for the next Trading Day and document its expectation of the Electric Storage Resource Obligation Intervals for the subsequent seven Trading Days by 8:00 AM on each Scheduling Day. This information is then made available to all Market Participants under clause 6.3A.2 and used to determine capacity adjusted outage quantity and Reserve Capacity Obligation Quantity estimates under clause 6.3A.3.

6.3.1. AEMO must, in accordance with the WEM Procedure referred to in clause 4.11.3A, determine and record the following information by 8:00 AM on each Scheduling Day:

- (a) the Electric Storage Resource Obligation Intervals that will apply during the Trading Day for the Scheduling Day; and
- (b) the Electric Storage Resource Obligation Intervals that AEMO expects will apply during each of the seven following Trading Days.

6.3A. Information to Support the Bilateral and STEM Submission Process

Explanatory Note:

Clause 6.3A.1 is amended to:

- reflect the above restoration of the current Bilateral Submission window arrangements;
- require the total energy quantity to be published for each Trading Interval in the Bilateral Submission Results Window, instead of each Trading Interval in the Week-Ahead Schedule Horizon; and
- update the list of events that will trigger an update of the total energy quantity.

6.3A.1. AEMO must publish the total energy, in MWh, as measured at the Reference Node, scheduled with AEMO under bilateral contracts for each Trading Interval in the ~~Week-Ahead Schedule Horizon~~ Bilateral Submission Results Window. AEMO must update this information whenever AEMO:

- (a) ~~AEMO accepts Bilateral Submission data under clause 6.2.2A(a)~~ makes a Bilateral Submission under clause 6.2.2;
- (b) ~~AEMO accepts Standing Bilateral Submission data under clause 6.2A.2(a);~~ accepts Bilateral Submission data under clause 6.2.2A(a); or
- (c) ~~AEMO removes cancelled Bilateral Submission data under clause 6.2.5(a); or disregards cancelled Bilateral Submission data from a Bilateral Submission under clause 6.2.5(a).~~
- (d) ~~AEMO removes cancelled Standing Bilateral Submission data under clause 6.2A.5.~~

Explanatory Note:

New clause 6.3A.2 requires AEMO to make available the following information to all Market Participants by 8:00 AM on each Scheduling Day:

- a demand forecast for the Trading Day for the Scheduling Day, derived from the most recently published Pre-Dispatch Schedule (which replaces the previous demand forecast requirement in clause 6.3A.3(g); and
- details of the Electric Storage Resource Obligation Intervals for the next eight Trading Days, as determined under clause 6.3.1 (which replaces the previous requirement to notify Market Participants with Electric Storage Resources of changes to the Electric Storage Resource Obligation Intervals for the next Trading Day in clause 6.2.8).

6.3A.2. ~~[Blank]~~ AEMO must make the following information available to each Market Participant by 8:00 AM on each Scheduling Day:

- (a) for each Trading Interval in the Trading Day for the Scheduling Day, the sum of the Forecast Operational Demand and scheduled Loss-Factor

adjusted Withdrawals for Registered Facilities as published in the most recent Pre-Dispatch Schedule, in both MW and MWh;

(b) the Electric Storage Resource Obligation Intervals that will apply for the Trading Day for the Scheduling Day, as determined by AEMO under clause 6.3.1(a); and

(c) the Electric Storage Resource Obligation Intervals that AEMO expects will apply for each of the seven Trading Days following the Trading Day for the Scheduling Day, as determined by AEMO under clause 6.3.1(b).

Explanatory Note:

The substantive content of clauses 6.3A.3 to 6.3A.5 has been moved to other clauses. Specifically:

- the provision of Reserve Capacity-related information under clauses 6.3A.3(a)-(b) is replaced by the provision of equivalent information under clauses 6.3A.5(b)-(c);
- the provision of STEM Submission feedback under clause 6.3A.3(c) is replaced by the provision of STEM Submission feedback under clause 6.3B.4;
- the provision of STEM Submission quantity limits under clauses 6.3A.3(d)-(f) is replaced by the provision of Maximum Facility Supply Capability, Maximum Supply Capability and Maximum Consumption Capability values under clause 6.3A.5(a); and
- the provision of a demand forecast under clause 6.3A.3(g) is replaced by the provision of a demand forecast for the next Trading Day under clause 6.3A.2(a).

Except for STEM Submission feedback, the relevant information will be provided to Market Participants once each Scheduling Day, rather than being continuously updated.

~~6.3A.3.—AEMO must calculate and make available to each Market Participant the following parameters for information in forming its STEM Submissions for each Trading Interval in the Week-Ahead Schedule Horizon:~~

- ~~(a) —the total quantity of Capacity Credits held by that Market Participant for each Trading Interval;~~
- ~~(b) —the sum of all Capacity-Adjusted Planned Outage Quantities for that Market Participant for the Trading Interval, where the quantity for a Trading Interval of a Capacity-Adjusted Planned Outage Quantity is the average of all Capacity-Adjusted Planned Outage Quantities in each Dispatch Interval within that Trading Interval;~~
- ~~(c) —the total quantity specified in any Portfolio Supply Curve from that Market Participant that has been accepted by AEMO for that Trading Interval, represented in units of MW by multiplying by the number of minutes in an hour divided by the number of minutes in a Trading Interval;~~
- ~~(d) —the Maximum Consumption Capability where this equals the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be consumed during a Trading Interval by that Market Participant's Registered Facilities and Non-Dispatchable Loads based on the Standing Data maximum consumption quantities for those Facilities and Non-Dispatchable Loads;~~

- ~~(e) — the sum of the Loss Factor adjusted Available Capacity and In-Service Capacity offered into the Real-Time Market in accordance with section 7.4 for the Market Participant's Registered Facilities, represented in units of MWh by multiplying by the number of minutes in a Trading Interval divided by the number of minutes in an hour;~~
- ~~(f) — the sum of the Loss Factor adjusted Available Capacity and In-Service Capacity offered into the Real-Time Market in accordance with section 7.4 for each of the Market Participant's Registered Facilities, represented in units of MWh by multiplying by the number of minutes in a Trading Interval divided by the number of minutes in an hour; and~~
- ~~(g) — the sum of the Forecast Operational Demand and scheduled Loss Factor adjusted Withdrawals for Registered Facilities as published in the most recent Pre-Dispatch Schedule or Week-Ahead Schedule, in both MW and MWh.~~

~~6.3A.4. — AEMO must update the information under clause 6.3A.3 whenever there is a change in the data used to calculate that information.~~

~~6.3A.5 — Where the Bilateral Submission Cutoff for a Trading Day has passed, AEMO must make available to each Market Participant the information in clause 6.4A.3 as at the Bilateral Submission Cutoff for that Trading Day.~~

Explanatory Note:

Revised clause 6.3A.3 requires AEMO to do the following on the morning of each Scheduling Day between 8:00 AM and 8:30 AM:

- record a snapshot of the approved Commissioning Test Plans, Planned Outages and Forced Outages that are expected to occur during the STEM Submission Information Window (the eight Trading Days starting with the Trading Day for the Scheduling Day);
- use this snapshot information to determine the required STEM Submission quantity limits, capacity adjusted outage quantity estimates and Reserve Capacity Obligation Quantity estimates for each Trading Interval and/or Dispatch Interval (as appropriate) in the STEM Submission Information Window.

The Maximum Supply Capability and Maximum Consumption Capability limits are each set to a minimum of 0.001 MWh, to ensure that a Market Participant is always able to submit a Portfolio Supply Curve/Portfolio Demand Curve with at least one Price-Quantity Pair. This removes the need to include distinct Participant Interval Minimum STEM Price and Participant Interval Maximum STEM Price parameters in STEM Submissions, because a Market Participant will be able to effectively specify these values through the minimum and maximum prices in their Price-Quantity Pairs.

6.3A.3. Between 8:00 AM and 8:30 AM each Scheduling Day, AEMO must:

- (a) identify and record the details of each approved Commissioning Test Plan that includes one or more Dispatch Intervals in the STEM Submission Information Window;
- (b) identify and record the details of each Planned Outage or Forced Outage for energy recorded by AEMO for a Scheduled Facility, Semi-Scheduled

Facility or Non-Scheduled Facility with a duration that includes one or more Dispatch Intervals in the STEM Submission Information Window;

- (c) determine the Maximum Facility Supply Capability for each Scheduled Facility, Semi-Scheduled Facility and Non-Scheduled Facility f for each Dispatch Interval DI in the STEM Submission Information Window as:

$$\text{MFSC}(f,DI) = \text{MinAvail}(f,DI) \times \text{LF}(f,DI) / 12$$

where:

- i. MinAvail(f,DI) is:

1. where no Planned Outages or Forced Outages for Facility f with a duration that includes Dispatch Interval DI were identified under clause 6.3A.3(b), the maximum sent out capacity of Facility f as recorded in Standing Data for Dispatch Interval DI; and
2. otherwise, the minimum Remaining Available Capacity for energy recorded for Facility f in Dispatch Interval DI for the Planned Outages and Forced Outages identified under clause 6.3A.3(b); and

- ii. LF(f,DI) is the Loss Factor for Facility f in Dispatch Interval DI;

- (d) determine the Maximum Facility Supply Capability for each Scheduled Facility, Semi-Scheduled Facility and Non-Scheduled Facility f for each Trading Interval t in the STEM Submission Information Window as:

$$\text{MFSC}(f,t) = \sum_{DI \in t} \text{MFSC}(f,DI)$$

where:

- i. MFSC(f,DI) is the Maximum Facility Supply Capability determined by AEMO for Facility f for Dispatch Interval DI under clause 6.3A.3(c); and
- ii. DI \in t denotes all Dispatch Intervals DI in Trading Interval t.

- (e) determine the Maximum Supply Capability for each Market Participant p for each Trading Interval t in the STEM Submission Information Window as:

$$\text{MSC}(p,t) = \max \left(0.001, \sum_{f \in \text{Facilities}(p,t)} \text{MFSC}(f,t) \right)$$

where:

- i. MFSC(f,t) is the Maximum Facility Supply Capability determined by AEMO for Facility f for Trading Interval t under clause 6.3A.3(d); and
- ii. f \in Facilities(p,t) denotes all Scheduled Facilities, Semi-Scheduled Facilities and Non-Scheduled Facilities f registered to Market Participant p in Trading Interval t;

- (f) determine the Maximum Consumption Capability for each Market Participant p for each Trading Interval t in the STEM Submission Information Window as:
- $$MCC(p,t)=\max(0.001, \text{StandingMCC}(p,t))$$
- where:
- i. StandingMCC(p,t) is the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be consumed during Trading Interval t by Market Participant p's Registered Facilities and Non-Dispatchable Loads, as specified in Standing Data;
- (g) using the assumptions specified in clause 6.3A.4, determine and record an estimate of the Capacity Adjusted Forced Outage Quantity and Capacity Adjusted Planned Outage Quantity for each Separately Certified Component of a Scheduled Facility or Semi-Scheduled Facility for each Dispatch Interval and each Trading Interval in the STEM Submission Information Window in which AEMO considers the relevant Facility will be in Commercial Operation; and
- (h) using the assumptions specified in clause 6.3A.4, determine and record an estimate of the Reserve Capacity Obligation Quantity for each Separately Certified Component of a Scheduled Facility or Semi-Scheduled Facility for each Dispatch Interval in the STEM Submission Information Window in which AEMO considers the relevant Facility will be in Commercial Operation.

Explanatory Note:

Revised clause 6.3A.4 sets out the assumptions that AEMO must use when determining capacity adjusted outage quantity and Reserve Capacity Obligation Quantity estimates under clause 6.3A.3.

6.3A.4. When determining Capacity Adjusted Planned Outage Quantity, Capacity Adjusted Forced Outage Quantity and Reserve Capacity Obligation Quantity estimates on a Scheduling Day under clauses 6.3A.3(g) and 6.3A.3(h), AEMO must assume that:

- (a) the Electric Storage Resource Obligation Intervals for the Trading Days in the STEM Submission Information Window are the same as those determined by AEMO on the Scheduling Day under clause 6.3.1;
- (b) the Commissioning Test Plan details for each Facility for each Dispatch Interval in the STEM Submission Information Window are the same as those identified by AEMO on the Scheduling Day under clause 6.3A.3(a);
- (c) the Planned Outage and Forced Outage details for each Separately Certified Component for each Dispatch Interval in the STEM Submission Information Window are the same as those identified by AEMO on the Scheduling Day under clause 6.3A.3(b);

- (d) the maximum daily temperature at the site of each relevant Facility does not exceed 41 degrees Celsius on any Trading Day in the STEM Submission Information Window; and
- (e) the Reserve Capacity Obligation Quantity of an Electric Storage Resource is not reduced under clause 4.12.5(g) for any Dispatch Interval in the STEM Submission Information Window.

Explanatory Note:

Revised clause 6.3A.5 requires AEMO to make available to Market Participants by 8:30 AM on the Scheduling Day the STEM Submission quantity limits, capacity adjusted outage quantity estimates and Reserve Capacity Obligation Quantity estimates that it has determined under clause 6.3A.3.

6.3A.5. By 8:30 AM on each Scheduling Day, AEMO must make available to each Market Participant the following parameters for information in forming its STEM Submissions:

- (a) for each Trading Interval in the STEM Submission Information Window:
 - i. the Maximum Facility Supply Capability determined on the Scheduling Day under clause 6.3A.3(d) for each Scheduled Facility, Semi-Scheduled Facility and Non-Scheduled Facility registered to the Market Participant in the Trading Interval;
 - ii. the Maximum Supply Capability determined on the Scheduling Day under clause 6.3A.3(e) for the Market Participant; and
 - iii. the Maximum Consumption Capability determined on the Scheduling Day under clause 6.3A.3(f) for the Market Participant;
- (b) for each Trading Interval in the STEM Submission Information Window, for each Separately Certified Component of a Scheduled Facility or Semi-Scheduled Facility for which the Market Participant holds Capacity Credits in the Trading Interval and which AEMO considers to be in Commercial Operation in the Trading Interval:
 - i. the Capacity Adjusted Forced Outage Quantity estimate determined on the Scheduling Day under clause 6.3A.3(f); and
 - ii. the Capacity Adjusted Planned Outage Quantity estimate determined on the Scheduling Day under clause 6.3A.3(f); and
- (c) for each Dispatch Interval in the STEM Submission Information Window, for each Separately Certified Component of a Scheduled Facility or Semi-Scheduled Facility for which the Market Participant holds Capacity Credits in the Dispatch Interval and which AEMO considers to be in Commercial Operation in the Dispatch Interval:
 - i. the Capacity Adjusted Forced Outage Quantity estimate determined on the Scheduling Day under clause 6.3A.3(f);
 - ii. the Capacity Adjusted Planned Outage Quantity estimate determined on the Scheduling Day under clause 6.3A.3(f); and

- iii. the Reserve Capacity Obligation Quantity estimate determined on the Scheduling Day under clause 6.3A.3(g).

Explanatory Note

Clause 6.3B.1 is amended to make the window for STEM Submissions similar to that used for Bilateral Submissions.

6.3B. STEM Submissions Timetable and Process

6.3B.1. ~~A Market Participant may submit STEM Submission data to AEMO for any Trading Day covered by a published Week-Ahead Schedule at any time before the STEM Submission Cutoff, for a Trading Day to AEMO between:~~

- (a) 8:30 AM on the day seven days prior to the start of the Scheduling Day for the Trading Day; and
- (b) the STEM Submission Cutoff for the Trading Day.

Explanatory Note

Clause 6.3B.1A is amended to restore the current arrangements for the processing of Standing STEM Submissions for the New WEM, i.e. so that they are used to make STEM Submissions for a Trading Day at the time the Trading Day enters the STEM Submission window.

~~6.3B.1A. Where, at the STEM Submission Cutoff for a Trading Day:~~

- (a) ~~AEMO holds a Standing STEM Submission applicable to the Trading Day for a Market Participant; and~~
- (b) ~~AEMO does not hold a STEM Submission applicable to the Trading Day for the Market Participant,~~

~~AEMO must, subject to clause 6.3B.1B, make the Standing STEM Submission the STEM Submission for the Trading Day for the Market Participant.~~

6.3B.1A. Where, at the time specified in clause 6.3B.1(a) for a Trading Day:

- (a) AEMO holds a Standing STEM Submission applicable to the Trading Day for a Market Participant; and
- (b) the Standing STEM Submission conforms to the requirements of section 6.6 at that time,

AEMO must, subject to clause 6.3B.1B, make the Standing STEM Submission the STEM Submission for the Trading Day for the Market Participant as at the time specified in clause 6.3B.1(a).

Explanatory Note

Clause 6.3B.1B is amended to move the details of the STEM Submission adjustment process to clause 6.3B.2. This process will also be used by AEMO for the daily adjustments to STEM Submissions required under the new clause 6.3B.1C.

~~6.3B.1B. If AEMO is required to use a Standing STEM Submission as the STEM Submission for a Trading Day under clause 6.3B.1A, but the Standing STEM Submission does not comply with section 6.6, AEMO must adjust the Standing STEM Submission data to enable it to make a STEM Submission with respect to the Trading Day that complies with section 6.6. The adjustment will be made as follows:~~

- ~~(a) — if the cumulative MWh quantity over all Price-Quantity Pairs is greater than the quantity calculated under clause 6.3A.3(e), the Price-Quantity Pairs will be adjusted downward so that the cumulative MWh quantity over all Price-Quantity Pairs equals the quantity calculated under clause 6.3A.3(e). This will be achieved by deleting successively or reducing the highest price Price-Quantity Pairs until the cumulative MWh quantity over all remaining Price-Quantity Pairs equals the quantity calculated under clause 6.3A.3(e); and~~
- ~~(b) — available dual fuel generators shall be declared to be using the same fuel as in the existing Standing STEM Submission;~~

6.3B.1B. If AEMO is required to use a Standing STEM Submission to make a STEM Submission for a Trading Day under clause 6.3B.1A, but the Standing STEM Submission does not comply with section 6.6, then AEMO must, using the process specified in clause 6.3B.2, adjust the Standing STEM Submission to make it a valid STEM Submission with respect to each Trading Interval in the Trading Day.

Explanatory Note

New clause 6.3B.1C requires AEMO to review and adjust any previously accepted STEM Submissions that have become invalid following changes to relevant factors such as Outages, Commissioning Tests or Energy Price Limits.

6.3B.1C. Between 8:30 AM and 9:00 AM each Scheduling Day, AEMO must use the process specified in clause 6.3B.2 to review and where necessary adjust each STEM Submission it holds for a Trading Interval in the STEM Submission Information Window.

Explanatory Note

New clause 6.3B.2 specifies the STEM Submission adjustment process used to ensure that the Price-Quantity Pairs in Portfolio Supply Curves and Portfolio Demand Curves comply with the requirements of section 6.6.

6.3B.2. ~~[Blank]~~AEMO must use the following process to adjust a Standing STEM Submission to make a valid STEM Submission for a Trading Interval under clause 6.3B.1B and to review and adjust a STEM Submission for a Trading Interval under clause 6.3B.1C:

- (a) If the cumulative MWh quantity over all Price-Quantity Pairs in the Portfolio Supply Curve is greater than the Maximum Supply Capability for the Market Participant for the Trading Interval which was determined on the current Scheduling Day under clause 6.3A.3(e), the Price-Quantity Pairs

must be adjusted downward so that the cumulative MWh quantity over all the Price-Quantity Pairs equals the Maximum Supply Capability. This must be achieved by deleting successively or reducing the highest price Price-Quantity Pairs until the cumulative MWh quantity over all remaining Price-Quantity Pairs equals the Maximum Supply Capability.

- (b) If the cumulative MWh quantity over all Price-Quantity Pairs in the Portfolio Demand Curve is greater than the Maximum Consumption Capability for the Market Participant for the Trading Interval which was determined on the current Scheduling Day under clause 6.3A.3(f), the Price-Quantity Pairs must be adjusted downward so that the cumulative MWh quantity over all the Price-Quantity Pairs equals the Maximum Consumption Capability. This must be achieved by deleting successively or reducing the highest price Price-Quantity Pairs until the cumulative MWh quantity over all remaining Price-Quantity Pairs equals the Maximum Consumption Capability.
- (c) If the price in any Price-Quantity Pair in the Portfolio Supply Curve or Portfolio Demand Curve is greater than the Alternative Maximum STEM Price which will apply (or which AEMO expects will apply) in the Trading Interval, the price in the Price-Quantity Pair must be replaced by the Alternative Maximum STEM Price which will apply (or which AEMO expects will apply) in the Trading Interval.
- (d) If the price in any Price-Quantity Pair in the Portfolio Supply Curve or Portfolio Demand Curve is less than the Minimum STEM Price which will apply (or which AEMO expects will apply) in the Trading Interval, the price in the Price-Quantity Pair must be replaced by the Minimum STEM Price which will apply (or which AEMO expects will apply) in the Trading Interval.
- (e) If the cumulative MWh quantity over all Price-Quantity Pairs in the Portfolio Supply Curve with prices which exceed the Maximum STEM Price which will apply (or which AEMO expects will apply) in the Trading Interval (**“liquid priced quantity”**) is greater than the sum over all Registered Facilities declared in the Fuel Declaration to be operating on Liquid Fuel of the Maximum Facility Supply Capability determined for the Facility for the Trading Interval on the current Scheduling Day under clause 6.3A.3(d) (**“allowed quantity”**), the Price-Quantity Pairs must be adjusted so that the liquid priced quantity is less than or equal to the allowed quantity. This must be achieved by successively replacing the price of the Price-Quantity Pair with the lowest price which exceeds the Maximum STEM Price with the Maximum STEM Price, until the liquid priced quantity is less than or equal to the allowed quantity.
- (f) If multiple Price-Quantity Pairs in the Portfolio Supply Curve share the same price, they must be replaced with a single Price-Quantity Pair for that price with a MWh quantity equal to the sum of the MWh quantities in the Price-Quantity Pairs which are being replaced.

(g) If multiple Price-Quantity Pairs in the Portfolio Demand Curve share the same price, they must be replaced with a single Price-Quantity Pair for that price with a MWh quantity equal to the sum of the MWh quantities in the Price-Quantity Pairs which are being replaced.

To avoid doubt, the process steps specified in this clause 6.3B.2 must be performed in the order listed, and a reference to a Portfolio Supply Curve or Portfolio Demand Curve in those clauses is a reference to the Portfolio Supply Curve or Portfolio Demand Curve as adjusted by any earlier steps in the process.

6.3B.3. Where AEMO receives STEM Submission data from a Market Participant under clause 6.3B.1, AEMO must, as soon as practicable after receiving the STEM submission data:

- (a) if the STEM Submission data complies with section 6.6, make the STEM Submission data the STEM Submission for that Trading Day; and
- (b) notify the Market Participant which submitted the STEM Submission data under clause 6.3B.1, that:
 - i. the STEM Submission data has been made the STEM Submission for that Trading Day; or
 - ii. AEMO has rejected the STEM Submission data as it did not comply with section 6.6.

Explanatory Note:

Clause 6.3B.4 is amended to:

- reflect the above restoration of the current Standing STEM Submission arrangements;
- clarify that the STEM Submission details provided by AEMO will incorporate any adjustments it has made under clauses 6.3B.1B or 6.3B.1C;
- require the details to be provided for each Trading Interval in the STEM Submission Results Window, instead of each Trading Interval in the Week-Ahead Schedule Horizon; and
- update the list of events that will trigger an update of the STEM Submission details.

6.3B.4. AEMO must maintain and provide to each Market Participant ~~the STEM Submissions associated with the Market Participant (whether from STEM Submission data or Standing STEM Submission data) for each Trading Interval in the Week-Ahead Schedule Horizon~~ full details of the Market Participant's STEM Submissions, as adjusted under clauses 6.3B.1B and 6.3B.1C, for each Trading Interval in the STEM Submission Results Window. AEMO must update this information whenever AEMO:

- (a) ~~AEMO accepts STEM Submission data under clause 6.3B.3(a); makes a STEM Submission from a Standing STEM Submission under clause 6.3B.1A;~~
- (b) ~~AEMO accepts Standing STEM Submission data under clause 6.3C.3(a); accepts STEM Submission data under clause 6.3B.3(a);~~

- (c) ~~AEMO removes cancelled STEM Submission data under clause 6.3B.7B(a); or adjusts STEM Submission data under clause 6.3B.1C; or~~
- (d) ~~AEMO removes cancelled Standing STEM Submission data under clause 6.3C.6C(a); disregards cancelled STEM Submission data under clause 6.3B.6(a).~~

Explanatory Note

Clause 6.3B.5 is amended to reflect the changes to the window for STEM Submissions.

- 6.3B.5. A Market Participant may cancel any STEM Submission data ~~accepted by AEMO under clause 6.3B.3(a) for any Trading Interval of the Trading Day at any time before the STEM Submission Cutoff held by AEMO for a Trading Interval in a Trading Day during the time interval specified for the Trading Day in clause 6.3B.1.~~

Explanatory Note

Clause 6.3B.6 is amended to correct a clause reference.

- 6.3B.6. Where any STEM Submission data is cancelled in accordance with clause 6.3B.5, AEMO must, as soon as practicable:
- (a) disregard the cancelled STEM Submission data from the STEM Submission; and
 - (b) notify the Market Participant which cancelled the STEM Submission data under clause ~~6.3B.7A~~ 6.3B.5, that the cancelled STEM Submission data has been disregarded from the STEM Submission,
- for the Trading Interval of the Trading Day to which the cancelled Standing STEM Submission data relates.

6.3C. Standing STEM Submission Timetable and Process

- 6.3C.1. A Market Participant may submit Standing STEM Submission data to AEMO at any time.
- 6.3C.2. [Blank]
- 6.3C.3. AEMO must, as soon as practicable after receiving Standing STEM Submission data under clause 6.3C.1:
- (a) accept the Standing STEM Submission data provided it complies with section 6.6 and revise the Standing STEM Submission to reflect the Standing STEM Submission data; and
 - (b) notify the Market Participant which submitted the Standing STEM Submission data under clause 6.3C.1 that:

- i. AEMO accepts the Standing STEM Submission data and has revised the Standing STEM Submission to reflect the Standing STEM Submission data; or
- ii. AEMO rejects the Standing STEM Submission data as it does not comply with section 6.6.

Explanatory Note

Clause 6.3C.4 is amended to reflect the above restoration of the current arrangements for the use of Standing STEM Submissions to make STEM Submissions.

- 6.3C.4. Standing STEM Submission data accepted by AEMO under clause 6.3C.3 will apply from the ~~time specified for the Standing STEM Submission under clause 6.6.1(e)~~ next time that AEMO is required to use Standing STEM Submissions to make STEM Submissions under clause 6.3B.1A.
- 6.3C.5. [Blank]
- 6.3C.6. [Blank]
- 6.3C.6A. Standing STEM Submission data must be associated with a day of the week and when used as STEM Submission data will only apply to Trading Days commencing on that day of the week.
- 6.3C.6B. A Market Participant may cancel Standing STEM Submission data accepted by AEMO under clause 6.3C.3(a) for any Trading Interval of a day of the week at any time.
- 6.3C.6C. Where any Standing STEM Submission data is cancelled under clause 6.3C.6B, AEMO must, as soon as practicable:
- (a) remove the cancelled Standing STEM Submission data from the Standing STEM Submission; and
 - (b) notify the Market Participant which cancelled the Standing STEM Submission data under clause 6.3C.6B, that the cancelled Standing STEM Submission data has been removed from the Standing STEM Submission, for the Trading Interval of the day of the week to which the cancelled Standing STEM Submission data relates.
- 6.3C.7. [Blank]
- 6.3C.8. [Blank]
- 6.3C.9. If a Market Participant's ability to consume or supply energy in any Trading Interval of a Trading Day is less than the maximum level of its STEM supply or consumption as indicated by its current Standing STEM Submission then that Market Participant must either:

- (a) submit to AEMO Standing STEM Submission data so as to revise its Standing STEM Submission to comply with this clause 6.3C.9; or
- (b) for each Trading Interval for which the current Standing STEM Submission over-states the Market Participant's supply or consumption capabilities, submit STEM Submission data that complies with section 6.6 to AEMO.

6.4. The STEM Auction Timetable and Process

- 6.4.1. AEMO must undertake the process described in section 6.9 and determine the STEM Auction results for a Trading Day after the STEM Submission Cutoff, and before the STEM Results Deadline.
- 6.4.2. AEMO must determine the total quantity of energy scheduled to be supplied under Bilateral Contracts and in the STEM Auction, by each Market Participant, for each Trading Interval of a Trading Day by the STEM Results Deadline.
- 6.4.3. AEMO must make available to each Market Participant the following information in relation to a Trading Day by the STEM Results Deadline:
 - (a) the Trading Intervals, if any, in which the STEM Auction was suspended;
 - (b) the STEM Clearing Price in all Trading Intervals for which the STEM Auction was not suspended;
 - (c) the quantities scheduled in respect of that Market Participant in the STEM Auction for each Trading Interval; and
 - (d) the Net Contract Position of the Market Participant in each Trading Interval, as determined in accordance with clause 6.9.13.
- 6.4.4. [Blank]
- 6.4.5. [Blank]

Explanatory Note:

Clause 6.4.6 is amended to:

- update the list of information preparation clauses;
- reflect that timelines other than the Bilateral Submission Cutoff, STEM Submission Cutoff and STEM Results deadline may need to be extended; and
- refine the list of requirements that an extension must meet.

- 6.4.6. In the event of a failure of AEMO's software systems or supporting infrastructure, or any delay in AEMO publishing a Pre-Dispatch Schedule which includes all Trading Intervals in the relevant Trading Day, or AEMO preparing information under clauses 6.2.3, 6.3.1, 6.3A.1, 6.3A.2, 6.3A.3, 6.3A.5 or ~~clause 6.3A.3~~ 6.3B.4, which prevents AEMO from completing the relevant processes, AEMO may extend one or more of the ~~Bilateral Submission Cutoff, the STEM Submission Cutoff or the STEM Results Deadline~~ timelines prescribed in sections 6.2, 6.3, 6.3A, 6.3B and this section 6.4, subject to any such extension:

- (a) ~~any such extension not resulting in more than a two-hour delay to any of the Bilateral Submission Cutoff, the STEM Submission Cutoff or the STEM Results Deadline~~ the timelines prescribed in sections 6.2, 6.3, 6.3A, 6.3B and this section 6.4; and
- (b) ~~maintaining a window of at least 50 minutes between AEMO making available the data referred to in clause 6.3A.2 and the Bilateral Submission Cutoff;~~
- (c) ~~maintaining a window of at least 20 minutes between AEMO making available the data referred to in clause 6.3A.5 and the Bilateral Submission Cutoff; and~~
- (~~b~~d) ~~any such extension~~ maintaining a window of at least 110 minutes between each of the following events and the STEM Submission Cutoff:
 - i. publication of the first Pre-Dispatch Schedule that includes all Trading Intervals in the relevant Trading Day ~~and the STEM Submission Cutoff;~~
 - ii. ~~the Bilateral Submission Cutoff and the STEM Submission Cutoff; and~~
 - iii. AEMO making available the data referred to in clause ~~6.3A.3~~ 6.2.3 as at the Bilateral Submission Cutoff ~~and the STEM Submission Cutoff;~~ and
 - iii. ~~AEMO making available the data referred to in clauses 6.3A.2 and 6.3A.5.~~

Explanatory Note:

Clause 6.4.6A is amended to:

- update the list of clauses under which information is made available;
- reflect that timelines other than the Bilateral Submission Cutoff, STEM Submission Cutoff and STEM Results deadline may need to be extended; and
- refine the list of requirements that an extension must meet.

6.4.6A. If AEMO becomes aware of an error in any of the information contained in a Pre-Dispatch Schedule or made available under clauses 6.2.3, 6.3A.1, 6.3A.2, 6.3A.5 or ~~clause 6.3A.3~~ 6.3B.4 at any time before the publication of the relevant STEM Auction results under clause 6.4.3 or a suspension of the STEM under clause 6.10.1, AEMO may:

- (a) publish or release (as applicable) corrected or updated versions of the information it has published or released under clauses 6.2.3, 6.3A.1, ~~6.3A.3, 6.3A.4 or 6.3A.5~~ 6.3A.2, 6.3A.5 or 6.3B.4; and
- (b) ~~extend any of the Bilateral Submission Cutoff, the STEM Submission Cutoff or the STEM Results Deadline~~ relevant timelines prescribed in sections 6.2, 6.3, 6.3A, 6.3B and this section 6.4 to address the error, subject to any such extension:

- i. ~~any such extension not resulting in more than a two-hour delay to any of the Bilateral Submission Cutoff, the STEM Submission Cutoff or the STEM Results Deadline~~ timelines prescribed in sections 6.2, 6.3, 6.3A, 6.3B and this section 6.4; and
- ii. maintaining a window of at least 50 minutes between AEMO making available the data referred to in clause 6.3A.2 and the Bilateral Submission Cutoff;
- iii. maintaining a window of at least 20 minutes between AEMO making available the data referred to in clause 6.3A.5 and the Bilateral Submission Cutoff; and
- iiiv. ~~any such extension maintaining at least a 110-minute window a~~ window of at least 110 minutes between each of the following events and the STEM Submission Cutoff:
 - 1. ~~publication of the first error-free Pre-Dispatch Schedule that includes all Trading Intervals in the relevant Trading Day and the STEM Submission Cutoff;~~
 - 2. ~~the Bilateral Submission Cutoff and the STEM Submission Cutoff; and~~
 - 32. AEMO making available the data referred to in clause 6.2.3 as at the Bilateral Submission Cutoff and the STEM Submission Cutoff; and
 - 3. AEMO making available the data referred to in clauses 6.3A.2 and 6.3A.5.

Explanatory Note

Clauses 6.4.6B and 6.4.6C are amended to reflect that timelines other than the Bilateral Submission Cutoff, STEM Submission Cutoff and STEM Results Deadline may need to be extended.

- 6.4.6B. If AEMO extends one or more of the ~~Bilateral Submission Cutoff, the STEM Submission Cutoff or the STEM Results Deadline~~ timelines in sections 6.2, 6.3, 6.3A, 6.3B and this section 6.4 under clauses 6.4.6 or 6.4.6A or publishes or releases corrected information under clause 6.4.6A(a), AEMO must notify Rule Participants of any extension and any amended timelines and any corrected information as soon as possible.
- 6.4.6C. If AEMO considers that extending one or more of the ~~Bilateral Submission Cutoff, the STEM Submission Cutoff or the STEM Results Deadline~~ timelines in sections 6.2, 6.3, 6.3A, 6.3B and this section 6.4 under clauses 6.4.6 or 6.4.6A would not provide enough time to allow AEMO to undertake the process described in section 6.9 and publish a valid STEM auction result under clauses 6.4.3(b), 6.4.3(c) and 6.4.3(d) by 1.30 ~~pm~~ PM on the relevant Scheduling Day, AEMO must suspend the STEM auction under clause 6.10.1.

- 6.4.7. Once published under clause 6.4.3, STEM Clearing Prices cannot be altered, either through disagreement under clause 9.20.6, or through dispute under clause 9.21.

6.5. [Blank]

STEM Submission and Bilateral Submission Formats

6.6. Format of STEM Submission and Standing STEM Submission Data

Explanatory Note:

Clause 6.6.1 is amended to:

- remove the concept of Participant Interval Minimum STEM Prices and Participant Interval Maximum STEM Prices; and
- remove the requirement to specify an effective date for Standing STEM Submissions.

- 6.6.1. A Market Participant submitting STEM Submission data or a Standing STEM Submission data must include the following information in the applicable submission:
- (a) the identity of the Market Participant making the submission;
 - (b) for STEM Submission data, for each Trading Interval included in the submission:
 - i. a Fuel Declaration;
 - ii. a Portfolio Supply Curve; and
 - iii. a Portfolio Demand Curve; ~~and~~
 - iv. ~~a Participant Interval Minimum STEM Price and a Participant Interval Maximum STEM Price;~~
 - (c) for Standing STEM Submission data, the day of the week to which the submission relates, where data provided for a day of the week relates to the Trading Day commencing on that day, ~~the date on which the Standing Bilateral Submission data is to take effect,~~ and for each Trading Interval included in the submission:
 - i. a Fuel Declaration;
 - ii. a Portfolio Supply Curve; and
 - iii. a Portfolio Demand Curve; ~~;~~
 - iv. ~~a Participant Interval Minimum STEM Price and a Participant Interval Maximum STEM Price; and~~
 - v. ~~the date on which the Standing STEM Submission is to take effect, where this is for a Trading Day for which the STEM Submission Cutoff has not yet occurred.~~

Explanatory Note:

Clause 6.6.1A is deleted to reflect the removal of Participant Interval Minimum STEM Prices and Participant Interval Maximum STEM Prices.

~~6.6.1A. Where:~~

- ~~(a) a Market Participant has not specified a Participant Interval Minimum STEM Price in the STEM Submission data under clause 6.6.1(b)(iv) or Standing STEM Submission data under clause 6.6.1(c)(iv), AEMO must use the Minimum STEM Price as the Participant Interval Minimum STEM Price for the STEM Submission or Standing STEM Submission; and~~
- ~~(b) a Market Participant has not specified a Participant Interval Maximum STEM Price in the STEM Submission data under clause 6.6.1(b)(iv) or Standing STEM Submission data under clause 6.6.1(c)(iv), AEMO must use the Alternative Maximum STEM Price as the Participant Interval Maximum STEM Price for the STEM Submission or Standing STEM Submission.~~

6.6.2. [Blank]

Explanatory Note:

Clause 6.6.2A(a) is amended to address a manifest error in the current WEM Rules regarding the treatment of Registered Facilities that can only operate on liquid fuel. Currently clause 6.6.2A(d)(iii)(1) effectively excludes liquid-only Facilities from the calculation of the maximum quantity that can be included in a Portfolio Supply Curve at prices above the Maximum STEM Price, because it only considers Facilities listed in the Fuel Declaration and the Fuel Declaration is restricted to dual-fuel Facilities.

To address this error, clause 6.6.2A(a) is amended to require the Market Participant to include all of its Facilities that are assumed to be operating on liquid fuel in its Fuel Declaration, including those that can only run on liquid fuel.

Clauses 6.6.2A(d) and 6.6.2A(e) are also amended, to use the defined terms Maximum Supply Capability, Maximum Facility Supply Capability and Maximum Consumption Capability.

6.6.2A For:

- (a) a Fuel Declaration the Market Participant must declare ~~for each of its dual fuel Facilities whether or not that Facility is~~ which of its Liquid Fuel capable Registered Facilities are assumed to be operating on Liquid Fuel ~~or Non-Liquid Fuel~~ in forming the Portfolio Supply Curve;
- (b) [Blank]
- (c) [Blank]
- (d) a Portfolio Supply Curve:
 - i. one or more Price-Quantity Pairs may be specified;
 - ii. the cumulative MWh quantity over all Price-Quantity Pairs must not ~~exceed the quantity calculated under clause 6.3A.3(e); the~~ Maximum Supply Capability determined under clause 6.3A.3(e);

- iii. the cumulative MWh quantity over all Price-Quantity Pairs with prices exceeding the Maximum STEM Price must not exceed the sum over all Registered Facilities declared in the Fuel Declaration to be operating on Liquid Fuel of the ~~MWh quantity specified in~~ Maximum Facility Supply Capability determined under clause 6.3A.3(f) 6.3A.3(d);
 - (e) a Portfolio Demand Curve:
 - i. one or more Price-Quantity Pairs may be specified; and
 - ii. the cumulative quantity included in the Price-Quantity Pairs must not exceed the ~~quantity calculated under clause 6.3A.3(d)~~ Maximum Consumption Capability determined under clause 6.3A.3(f).
- 6.6.3. A Market Participant must not, for any Trading Interval, offer prices within its Portfolio Supply Curve that do not reflect the Market Participant's reasonable expectation of the short run marginal cost of generating the relevant electricity when such behaviour relates to market power.
- 6.6.4. The maximum number of Price-Quantity Pairs which a Market Participant may include in a Portfolio Supply Curve is 30.

Explanatory Note:

Clause 6.6.5 is amended to:

- require prices in Portfolio Supply Curve Price-Quantity Pairs to be less than or equal to the Alternative Maximum STEM Price; and
- delete clause 6.6.5(b)(iiA), which is unnecessary given the requirements specified in clauses 6.6.2A(d)(iii) and 6.6.5(b)(iv).

- 6.6.5. For Price-Quantity Pairs in Portfolio Supply Curves:
- (a) each Price-Quantity Pair must comprise one price and one quantity;
 - (b) each Price-Quantity Pair price must be:
 - i. in units of \$/MWh expressed to a precision of \$0.01/MWh;
 - ii. [Blank]
 - ~~iiA. set such that:~~
 - ~~1. the sum of the Price-Quantity Pair quantities from Price-Quantity Pairs in the Portfolio Supply Curve with prices exceeding the Maximum STEM Price must not exceed the cumulative MWh quantity that the Market Participant can offer at the Alternative Maximum STEM Price, as defined in clause 6.6.2A(d)(iii);~~

~~2. the prices for the Price-Quantity Pairs in the Portfolio Supply Curve to which clause 6.6.5(b)(iiA)(1) does not relate must not exceed the Maximum STEM Price;~~

- iii. greater than or equal to the Minimum STEM Price;
 - iv. ~~[Blank]~~less than or equal to the Alternative Maximum STEM Price;
and
 - v. set such that no two Price-Quantity Pairs in a Portfolio Supply Curve have the same price;
- (c) each Price-Quantity Pair quantity must be
- i. in units of MWh expressed to a precision of 0.001 MWh;
 - ii. Loss Factor adjusted; and
- (d) a Price-Quantity Pair means that the Market Participant is prepared to sell a quantity of energy into the STEM for that Price-Quantity Pair equal to:
- i. 0 MWh if the STEM Clearing Price is less than the Price-Quantity Pair price;
 - ii. the Price-Quantity Pair quantity if the STEM Clearing Price is greater than the Price-Quantity Pair price; and
 - iii. an amount between 0 MWh and the Price-Quantity Pair quantity if the STEM Clearing Price equals the Price-Quantity Pair price.

6.6.6. [Blank]

6.6.7. The maximum number of Price-Quantity Pairs to be included in a Portfolio Demand Curve is 30.

Explanatory Note:

Clause 6.6.8 is amended to remove the concept of Participant Interval Minimum STEM Prices and Participant Interval Maximum STEM Prices.

6.6.8. For Price-Quantity Pairs in Portfolio Demand Curves:

- (a) each Price-Quantity Pair price must be:
- i. in units of \$/MWh expressed to a precision of \$0.01/MWh;
 - ii. less than or equal to the ~~Participant Interval~~ Alternative Maximum STEM Price;
 - iii. greater than or equal to the Minimum STEM Price; and
 - iv. set such that no two Price-Quantity Pairs in a Portfolio Demand Curve have the same price;
- (b) each Price-Quantity Pair quantity must be
- i. in units of MWh expressed to a precision of 0.001 MWh;

- ii. Loss Factor adjusted; and
 - (c) a Price-Quantity Pair means that the Market Participant is prepared to buy a quantity of energy from the STEM for that Price-Quantity Pair equal to:
 - i. 0 MWh if the STEM Clearing Price is greater than the Price-Quantity Pair price;
 - ii. the Price-Quantity Pair quantity if the STEM Clearing Price is less than the Price-Quantity Pair price; and
 - iii. an amount between 0 MWh and the Price-Quantity Pair quantity if the STEM Clearing Price equals the Price-Quantity Pair price.
- 6.6.9. A Market Participant may apply to AEMO for all or part of the capacity of one of its Scheduled Facilities that is not Liquid Fuel capable to be treated as if it was dual-fuel capable where one fuel is Liquid Fuel for the purposes of the STEM, the Real-Time Market and settlement. The application must be in a form specified by AEMO, including evidence of the arrangement described in clause 6.6.10(a), and must specify the period to which the application relates.
- 6.6.10. AEMO must assess an application made under clause 6.6.9 and inform the Market Participant whether or not the application is approved. AEMO must approve the application only where the Market Participant provides evidence satisfactory to AEMO that:
- (a) the Market Participant has an arrangement with a user of fuel (“**Fuel User**”) to release a quantity of fuel for use in a Scheduled Facility which is not Liquid Fuel capable and is registered by the Market Participant;
 - (b) the use of fuel released under the arrangement would result in the Fuel User using Liquid Fuel in a Facility or other equipment; and
 - (c) as a consequence of clause 6.6.10(a) and (b), the short run marginal cost of generating electricity using the Scheduled Facility using fuel released under the arrangement would be above the Maximum STEM Price.
- 6.6.11. Where AEMO approves an application under clause 6.6.9, AEMO must:
- (a) notify the Market Participant that the application has been approved as soon as practicable; and
 - (b) update the relevant Standing Data in accordance with clause 2.34.
- 6.6.12. When AEMO does not approve an application under clause 6.6.9, AEMO must notify the Market Participant as soon as practicable.

6.7. Format of Bilateral Submission Data

Explanatory Note:

Clause 6.7.1 is amended to remove the requirement to specify an effective date in a Standing Bilateral Submission.

6.7.1. A Market Participant submitting Bilateral Submission data or Standing Bilateral Submission data must include in the submission:

- (a) the identity of the Market Participant making the submission;
- (b) in the case of:
 - i. Bilateral Submission data, the Trading Day to which the submission relates; and
 - ii. Standing Bilateral Submission data: the day of the week to which the submission relates, where data provided for a day of the week relates to the Trading Day commencing on that day; and
 - ~~1. the day of the week to which the submission relates, where data provided for a day of the week relates to the Trading Day commencing on that day; and~~
 - ~~2. the date on which the Standing Bilateral Submission is to take effect where this is for a Trading Day for which the Bilateral Submission Cutoff has not yet occurred and is not more than 4 weeks in the future; and~~
- (c) for each Trading Interval included in the submission:
 - i. the net quantity of energy to be sold by the submitting Market Participant;
 - ii. the identity of each Market Participant purchasing the energy covered by the Bilateral Submission;
 - iii. the net quantity of energy sold to each Market Participant identified in clause 6.7.1(c)(ii); and
 - iv. the sum of the quantities in clauses 6.7.1(c)(i) and ~~clause 6.7.1(c)(iii)~~ must be zero.

6.7.2. All quantities specified in a Bilateral Submission or a Standing Bilateral Submission:

- (a) must be in units of MWh;
- (b) must equal or exceed 0 MWh for net supply (that is, sold) by the relevant Market Participant;
- (c) must be less than 0 MWh for net consumption (that is, purchased) from the relevant Market Participant;
- (d) must be expressed to a precision of 0.001 MWh; and

- (e) must be Loss Factor adjusted.
- 6.7.3. A Market Participant must not specify quantities in a Bilateral Submission or a Standing Bilateral Submission which exceed the quantity of energy that the Market Participant is contracted to supply to the relevant Market Participant.
- 6.7.4. A Market Participant must not significantly over-state its consumption as indicated by its Net Contract Position with a regularity that cannot be explained by a reasonable allowance for forecast uncertainty or the impact of Loss Factors.
- 6.8. **[Blank]**

The STEM Auction Process

6.9. The STEM Auction

- 6.9.1. AEMO must undertake the process described in this clause 6.9 for each Trading Interval in a Trading Day.
- 6.9.2. The Net Bilateral Position for Market Participant p in Trading Interval t is:
 - (a) the sum of the quantities of energy referred to in clauses 6.7.1(c)(i) and 6.7.1(c)(iii) for the Market Participant in all Bilateral Submissions for Trading Interval t; or
 - (b) zero if no Bilateral Submissions for Trading Interval t refer to the Market Participant.
- 6.9.3. Subject to clause 6.9.4, AEMO must determine STEM Offers and STEM Bids for each Market Participant for each Trading Interval in accordance with Appendix 6 using the valid STEM Submissions and Bilateral Submissions relating to that Trading Interval.
- 6.9.4. Where AEMO does not hold a STEM Submission for a Market Participant for a Trading Interval, AEMO must not determine STEM Offers or STEM Bids for that Market Participant in that Trading Interval.
- 6.9.5. AEMO must determine an aggregate STEM bid curve for each Trading Interval from the STEM Bids where this aggregate STEM bid curve:
 - (a) describes the quantity that Market Participants in aggregate wish to purchase from AEMO through the STEM at every price between, and including, the Minimum STEM Price and the Alternative Maximum STEM Price; and
 - (b) passes through the point indicating zero consumption at the Alternative Maximum STEM Price.
- 6.9.6. AEMO must determine an aggregate STEM offer curve for each Trading Interval from the STEM Offers where this aggregate STEM offer curve:

- (a) describes the quantity that Market Participants in aggregate wish to sell to AEMO through the STEM at every price between, and including, the Minimum STEM Price and the Alternative Maximum STEM Price; and
 - (b) passes through the point indicating zero supply at the Minimum STEM Price.
- 6.9.7. AEMO will determine the STEM Clearing Price for a Trading Interval as the lowest price at which the STEM offer curve for a Trading Interval intersects the STEM bid curve for the Trading Interval.
- 6.9.8. AEMO will determine the STEM Clearing Quantity for a Trading Interval as the greatest quantity at which the STEM offer curve for the Trading Interval intersects the STEM bid curve for the Trading Interval.
- 6.9.9. All STEM Bid Price-Quantity Pairs for the Trading Interval with a price greater than the STEM Clearing Price for the Trading Interval must be scheduled by AEMO.
- 6.9.10. A STEM Bid Price-Quantity Pair with a price equal to the STEM Clearing Price for the Trading Interval must be scheduled by AEMO up to the Price-Quantity Pair quantity multiplied by:
 - (a) the STEM Clearing Quantity less the total quantity for STEM Bid Price-Quantity Pairs scheduled by AEMO in accordance with clause 6.9.9; divided by
 - (b) the total quantity for all STEM Bid Price-Quantity Pairs with a price equal to the STEM Clearing Price.
- 6.9.11. All STEM Offer Price-Quantity Pairs for a Trading Interval with a price less than the STEM Clearing Price for the Trading Interval must be scheduled by AEMO.
- 6.9.12. A STEM Offer Price-Quantity Pair for a Trading Interval with a price equal to the STEM Clearing Price for the Trading Interval must be scheduled by AEMO up to the Price-Quantity Pair quantity multiplied by:
 - (a) the STEM Clearing Quantity less the total quantity for STEM Offer Price-Quantity Pairs scheduled by AEMO in accordance with clause 6.9.11; divided by
 - (b) the total quantity for all STEM Offer Price-Quantity Pairs with a price equal to the STEM Clearing Price.
- 6.9.13. The Net Contract Position for Market Participant p in Trading Interval t is:
 - (a) the Net Bilateral Position for Market Participant p in Trading Interval t; minus,
 - (b) the amount of energy purchased by the Market Participant from AEMO through the STEM at the STEM Clearing Price, which is the total quantity associated with Price-Quantity Pairs for Market Participant p scheduled by

AEMO under clause 6.9.9 or 6.9.10 for Trading Interval t where this energy purchased is represented as a positive value; plus

- (c) the amount of energy sold by the Market Participant to AEMO through the STEM at the STEM Clearing Price, which is the total quantity associated with Price-Quantity Pairs for Market Participant p scheduled by AEMO under clause 6.9.11 or 6.9.12 for Trading Interval t where this energy sold is represented as a positive value.

6.10. Suspension of the STEM

Explanatory Note:

Clause 6.10.1 is amended to use standard section and clause reference terminology.

- 6.10.1. AEMO must suspend the STEM auction for a Trading Interval if AEMO considers that it will not be in a position to undertake the process described in ~~clause section~~ 6.9 and publish a valid STEM auction result under clauses 6.4.3(b), 6.4.3(c) and 6.4.3(d) for that Trading Interval by the STEM Results Deadline.
- 6.10.2. In the event that the STEM auction for a Trading Interval is suspended under clause 6.10.1, no Market Participant can purchase energy from or sell energy to AEMO through the STEM for that Trading Interval and no STEM Clearing Price is to be declared for that Trading Interval.
- 6.10.3. No compensation is due or payable to any Market Participant in the event that the STEM auction for a Trading Interval is suspended under clause 6.10.1.

...

Glossary

Bilateral Submission Results Window: For a point in time in the 24-hour period starting at 8:00 AM on a Scheduling Day, the period of eight consecutive Trading Days starting with the Trading Day for the Scheduling Day.

Maximum Consumption Capability: For ~~each a~~ Market Participant ~~is~~, the maximum cumulative MWh quantity that the Market Participant is permitted to include in a Portfolio Demand Curve for a Trading Interval, ~~determined as calculated in accordance with clause 6.3A.3(d)~~ 6.3A.3(f).

Maximum Facility Supply Capability: The MWh contribution of a Scheduled Facility, Semi-Scheduled Facility or Non-Scheduled Facility over a Dispatch Interval or Trading Interval to the Maximum Supply Capability of a Market Participant, determined in accordance with clauses 6.3A.3(c) (for a Dispatch Interval) and 6.3A.3(d) (for a Trading Interval).

Maximum Supply Capability: For ~~each a~~ Market Participant ~~is~~, the maximum cumulative MWh quantity that the Market Participant is permitted to include in a Portfolio Supply Curve

for a Trading Interval, determined as calculated in accordance with clause ~~6.3A.2(a)~~ 6.3A.3(e).

Participant Interval Maximum STEM Price: For a Market Participant in a Trading Interval, a price in \$/MWh which:

- ~~(a) — is less than or equal to the Alternative Maximum STEM Price;~~
- ~~(b) — has been provided by that Market Participant as part of a STEM Submission or Standing STEM submission; and~~
- ~~(c) — is the maximum price that may be associated with its Portfolio Demand Curve.~~

Participant Interval Minimum STEM Price: For a Market Participant in a Trading Interval, a price in \$/MWh which:

- ~~(a) — is greater than or equal to the Minimum STEM Price;~~
- ~~(b) — has been provided by that Market Participant as part of a STEM Submission or Standing STEM submission; and~~
- ~~(c) — is the minimum price that may be associated with its Portfolio Supply Curve.~~

STEM Reserve Capacity Obligation Quantity: An estimate of the Reserve Capacity Obligation Quantity for a Separately Certified Component of a Scheduled Facility or Semi-Scheduled Facility for a Dispatch Interval that is determined by AEMO on the Scheduling Day for the relevant Trading Day in accordance with ~~Chapter 6 clause 6.3A.3(h).~~

STEM Submission Information Window: For a Scheduling Day, the period of eight consecutive Trading Days starting with the Trading Day for the Scheduling Day.

STEM Submission Results Window: For a point in time in the 24-hour period starting at 8:30 AM on a Scheduling Day, the period of eight consecutive Trading Days starting with the Trading Day for the Scheduling Day.

Explanatory Note:

Appendix 1(l) is amended to remove the concept of Participant Interval Minimum STEM Prices and Participant Interval Maximum STEM Prices.

Appendix 1: Standing Data

This Appendix describes the Standing Data to be maintained by AEMO for use by AEMO in market processes and in dispatch processes.

Standing Data required to be provided as a pre-condition of Facility Registration and which Rule Participants are to update as necessary, is described in clauses (a) to (h).

Standing Data not required to be provided as a pre-condition of Facility Registration but which AEMO is required to maintain, and which Rule Participants are to update as necessary, includes the data described in clauses (j) to (n).

(a) [Blank]

...

(l) For each Market Participant:

- i. the Individual Reserve Capacity Requirement for the Market Participant;
- ii. a list of Non-Temperature Dependent interval meters; and
- iii. a Standing STEM Submission (if provided by the Market Participant) comprising for each Trading Interval for a Trading Week:
 1. a Fuel Declaration;
 2. [Blank];
 3. [Blank];
 4. a Portfolio Supply Curve; and
 5. a Portfolio Demand Curve; and
 6. ~~at the Market Participant's discretion, a Participant Interval Minimum STEM Price and a Participant Interval Maximum STEM Price; and~~

...

Explanatory Note

Appendix 6(b) and Appendix 6(c) are amended to implement an alternative to the use of Participant Interval Minimum STEM Price and Participant Interval Maximum STEM Price. Under the alternative approach:

- if the minimum STEM Price Curve quantity is equal to the maximum STEM Price Curve quantity for every price between the Minimum STEM Price and the Alternative Maximum STEM Price (i.e. there are no entries in the STEM Price Curve with a non-zero quantity range) then the STEM Price Curve entry for the Minimum STEM Price or Alternative Maximum STEM Price (as applicable) is adjusted to cover the Net Bilateral Position;
- otherwise, the lowest-price or highest-price entry (as applicable) in the STEM Price Curve which has a non-zero quantity range is adjusted to cover the Net Bilateral Position.

Appendix 6: STEM Price Curve Determination

The first part of this appendix describes a process for converting a Market Participant's Portfolio Supply Curve and Portfolio Demand Curve into a single STEM Price Curve and to then convert a Market Participant's STEM Price Curve into STEM Bids and STEM Offers relative to its Net Bilateral Position.

For each Market Participant and for each Trading Interval in the Trading Day except those for which AEMO has recorded that the Market Participant has not made a STEM Submission:

- (a) Determine for every price between the Minimum STEM Price and the Alternative Maximum STEM Price:
 - i. the maximum cumulative quantity the Market Participant is prepared to sell into the STEM from all of its Price-Quantity Pairs in its Portfolio Supply Curve;
 - ii. the minimum cumulative quantity the Market Participant is prepared to sell into the STEM from all of its Price-Quantity Pairs in its Portfolio Supply Curve;
 - iii. the maximum cumulative quantity the Market Participant is prepared to buy from the STEM from all of its Price-Quantity Pairs in its Portfolio Demand Curve;
 - iv. the minimum cumulative quantity the Market Participant is prepared to buy from the STEM from all of its Price-Quantity Pairs in its Portfolio Demand Curve;
 - v. the STEM Price Curve quantity for that price where:
 1. the minimum STEM Price Curve quantity for that price equals the value in [Appendix 6\(a\)\(ii\)](#) less the value in [Appendix 6\(a\)\(iii\)](#);
 2. the maximum STEM Price Curve quantity for that price equals the value in [Appendix 6\(a\)\(i\)](#) less the value in [Appendix 6\(a\)\(iv\)](#); and
 3. the STEM Price Curve for that price includes all quantities between those in [Appendix 6\(a\)\(v\)\(1\)](#) and [Appendix 6\(a\)\(v\)\(2\)](#).
- (b) ~~If the minimum quantity in a STEM Price Curve is greater than the Net Bilateral Position of the Market Participant then extend the STEM Price Curve to include the range between the Net Bilateral Position and the minimum quantity in the STEM Price Curve where this range is priced at the Participant Interval Minimum STEM Price. If the minimum of the quantities determined under Appendix 6(v)(1) for the Market Participant for the Trading Interval is greater than the Net Bilateral Position of the Market Participant in the Trading Interval then:~~
 - ~~i. if, for every price between the Minimum STEM Price and the Alternative Maximum STEM Price, the quantity determined under Appendix 6(a)(v)(1) is equal to the quantity determined under Appendix 6(a)(v)(2), then amend the STEM Price Curve for the Minimum STEM Price to include all quantities between the Net Bilateral Position of the Market Participant and the quantity~~

determined for the Minimum STEM Price under Appendix 6(a)(v)(2); and

- ii. otherwise, amend the STEM Price Curve for the lowest price for which the quantity determined under Appendix 6(a)(v)(1) is not equal to the quantity determined under Appendix 6(a)(v)(2), to include all quantities between the Net Bilateral Position of the Market Participant and the quantity determined for the price under Appendix 6(a)(v)(2).

- (c) ~~If the maximum quantity in a STEM Price Curve is less than the Net Bilateral Position of the Market Participant then extend the STEM Price Curve to include the range between the maximum quantity in the STEM Price Curve and the Net Bilateral Position where this range is priced at the Participant Interval Maximum STEM Price. If the maximum of the quantities determined under Appendix 6(a)(v)(2) for the Market Participant for the Trading Interval is less than the Net Bilateral Position of the Market Participant then:~~

- i. ~~if, for every price between the Minimum STEM Price and the Alternative Maximum STEM Price, the quantity determined under Appendix 6(a)(v)(1) is equal to the quantity determined under Appendix 6(a)(v)(2), then amend the STEM Price Curve for the Alternative Maximum STEM Price to include all quantities between the quantity determined for the Alternative Maximum STEM Price under Appendix 6(a)(v)(1) and the Net Bilateral Position of the Market Participant; and~~
- ii. ~~otherwise, amend the STEM Price Curve for the highest price for which the quantity determined under Appendix 6(a)(v)(1) is not equal to the quantity determined under Appendix 6(a)(v)(2), to include all quantities between the quantity determined for the price under Appendix 6(a)(v)(1) and the Net Bilateral Position of the Market Participant.~~

- (d) If the Net Bilateral Position equals the minimum STEM Price Curve quantity then there are no STEM Bids, otherwise:

- i. for the STEM Price Curve between the minimum STEM Price Curve quantity and the Net Bilateral Position of that Market Participant identify each price for which more than one STEM Price Curve quantity is defined;
- ii. for each price identified in Appendix 6(d)(i) identify the minimum STEM Price Curve quantity for which that price applies, such that the STEM Price Curve quantity lies between the minimum STEM Price Curve quantity and the Net Bilateral Position;
- iii. for each price identified in Appendix 6(d)(i) identify the maximum STEM Price Curve quantity for which that price applies, such that

the STEM Price Curve quantity lies between the minimum STEM Price Curve quantity and the Net Bilateral Position;

- iv. for each price identified in [Appendix 6\(d\)](#)(i) set a Price-Quantity Pair price equal to that price;
- v. for each price identified in [Appendix 6\(d\)](#)(i) set a Price-Quantity Pair quantity equal to the quantity defined in [Appendix 6\(d\)](#)(iii) less the quantity defined in [Appendix 6\(d\)](#)(ii); and
- vi. set the Market Participant's STEM Bids to be the set of Price-Quantity Pairs defined in [Appendix 6\(d\)](#)(iv) and [Appendix 6\(d\)](#)(v) where each Price-Quantity Pair means that the Market Participant is prepared to buy a quantity of energy from the STEM for that Price-Quantity Pair equal to:
 - 1. 0 MWh if the STEM Clearing Price is greater than the Price-Quantity Pair price;
 - 2. the Price-Quantity Pair quantity if the STEM Clearing Price is less than the Price-Quantity Pair price; and
 - 3. an amount between 0 MWh and the Price-Quantity Pair quantity if the STEM Clearing Price equals the Price-Quantity Pair price; and

(e) If the Net Bilateral Position equals the maximum STEM Price Curve quantity then there are no STEM Offers, otherwise:

- i. for the STEM Price Curve between the Net Bilateral Position of that Market Participant and the maximum STEM Price Curve quantity identify each price for which more than one STEM Price Curve quantity is defined;
- ii. for each price identified in [Appendix 6\(e\)](#)(i) identify the minimum STEM Price Curve quantity for which that price applies, such that the STEM Price Curve quantity lies between the Net Bilateral Position and the maximum STEM Price Curve quantity;
- iii. for each price identified in [Appendix 6\(e\)](#)(i) identify the maximum STEM Price Curve quantity for which that price applies, such that the STEM Price Curve quantity lies between the minimum STEM Price Curve quantity and the Net Bilateral Position;
- iv. for each price identified in [Appendix 6\(e\)](#)(i) set a Price-Quantity Pair price equal to that price;
- v. for each price identified in [Appendix 6\(e\)](#)(i) set a Price-Quantity Pair quantity equal to the quantity defined in [Appendix 6\(e\)](#)(iii) less the quantity defined in [Appendix 6\(e\)](#)(ii); and
- vi. set the Market Participant's STEM Offers to be the set of Price-Quantity Pairs defined in [Appendix 6\(e\)](#)(iv) and [Appendix 6\(e\)](#)(v) where each Price-Quantity Pair means that the Market Participant is

prepared to sell a quantity of energy into the STEM for that Price-Quantity Pair equal to:

1. 0 MWh if the STEM Clearing Price is less than the Price-Quantity Pair price;
2. the Price-Quantity Pair quantity if the STEM Clearing Price is greater than the Price-Quantity Pair price; and
3. an amount between 0 MWh and the Price-Quantity Pair quantity if the STEM Clearing Price equals the Price-Quantity Pair price; .

2. Outage quantity calculations

Explanatory Note:

Clauses 3.21.7 – 3.21.8B are amended and new clause 3.21.8C added to improve clarity, apply standard formatting and ensure that all the required capacity adjusted outage quantities are defined.

3.21. Forced Outages

...

3.21.7. ~~AEMO must determine the~~ The Capacity Adjusted Forced Outage Quantity ~~for energy for each~~ Dispatch Interval DI ~~for each~~ Separately Certified Component c of a Registered Facility is:

$$CAFO(c, DI) = \max \left(0, \sum_{o \in FO} Q(c, DI, o) - (MaxCap(c, DI) - DefRCOQ(c, DI)) \right)$$

~~Where~~ where:

~~CAFO(c, DI) = Capacity Adjusted Forced Outage Quantity for Separately Certified Component c in Dispatch Interval DI~~

~~FO is the set of all Forced Outages for Separately Certified Component c that include Dispatch Interval DI~~

~~(a) o ∈ FO denotes all Forced Outages o for Separately Certified Component c that include Dispatch Interval DI;~~

~~Q(c, DI, o) = outage quantity for Outage o of Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.6~~

~~(b) Q(c, DI, o) is the outage quantity for Outage o of Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.6;~~

~~MaxCap(c, DI) = maximum capacity for the energy Outage Capability of Separately Certified Component c in Dispatch Interval DI as specified in Standing Data~~

~~(c) MaxCap(c, DI) is the maximum capacity for the energy Outage Capability of Separately Certified Component c in Dispatch Interval DI as specified in Standing Data; and~~

~~DefRCOQ(c, DI) = the Reserve Capacity Obligation Quantity that would apply to Separately Certified Component c in Dispatch Interval DI if the Separately Certified Component was not subject to an Outage or an approved Commissioning Test Plan~~

~~(d) DefRCOQ(c, DI) is the Reserve Capacity Obligation Quantity that would apply to Separately Certified Component c in Dispatch Interval DI if the Separately Certified Component was not subject to an Outage or an approved Commissioning Test Plan.~~

3.21.7A. ~~AEMO must determine the~~ The Capacity Adjusted Forced Outage Quantity for
~~energy for each Trading Interval t for each Separately Certified Component c of a~~
~~Registered Facility is:~~

$$CAFO(c, t) = \frac{\sum_{DI \in t} CAFO(c, DI)}{6}$$

~~Where~~ where:

~~CAFO(c,t) is the Capacity Adjusted Forced Outage Quantity for Separately~~
~~Certified Component c in Trading Interval t~~

~~DI in t denotes all Dispatch Intervals in Trading Interval t~~

~~CAFO(c,DI) is the Capacity Adjusted Forced Outage Quantity for Separately~~
~~Certified Component c in Dispatch Interval DI as calculated in clause 3.21.7~~

- ~~(a) $DI \in t$ denotes all Dispatch Intervals DI in Trading Interval t ; and~~
- ~~(b) CAFO(c,DI) is the Capacity Adjusted Forced Outage Quantity for~~
~~Separately Certified Component c in Dispatch Interval DI as calculated in~~
~~clause 3.21.7.~~

3.21.7B. ~~AEMO must determine the~~ The Capacity Adjusted Forced Outage Quantity for
~~each Trading Interval t for each Registered Facility with a Reserve Capacity~~
~~Obligation Quantity greater than zero f is:~~

- ~~(a) where no Capacity Credits are assigned to Registered Facility f in Trading~~
~~Interval t or Registered Facility f is a Non-Scheduled Facility:~~

$$CAFO(f, t) = 0$$

- ~~(b) otherwise:~~

$$CAFO(f, t) = \sum_{c \in f} CAFO(c, t)$$

~~Where~~ where:

~~CAFO(f,t) is the Capacity Adjusted Forced Outage Quantity for Facility f in~~
~~Trading Interval t~~

- ~~i. $c \in f$ denotes all Separately Certified Components c of Facility f ;~~
~~and~~
- ~~ii. CAFO(c,t) is the Capacity Adjusted Forced Outage Quantity for~~
~~Separately Certified Component c in Trading Interval t as~~
~~calculated in clause 3.21.7A.~~

3.21.7C. ~~AEMO must determine the Capacity Adjusted Forced Outage Quantity for each~~
~~Dispatch Interval for each Registered Facility with a Reserve Capacity Obligation~~
~~Quantity greater than zero:~~

$$CAFO(f, DI) = \sum_{c \in f} CAFO(c, DI)$$

~~where:~~

- ~~(a) CAFO(f,DI) is the Capacity Adjusted Forced Outage Quantity for Facility f in Dispatch Interval DI;~~
- ~~(b) c in f denotes all Separately Certified Components of Facility f; and~~
- ~~(c) CAFO(c,DI) is the Capacity Adjusted Forced Outage Quantity for Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.7.~~

3.21.7C. The Capacity Adjusted Forced Outage Quantity for Dispatch Interval DI for Registered Facility f is:

- (a) where no Capacity Credits are assigned to Registered Facility f in Dispatch Interval DI or Registered Facility f is a Non-Scheduled Facility:

$$\text{CAFO}(f, DI) = 0$$

- (b) otherwise:

$$\text{CAFO}(f, DI) = \sum_{c \in f} \text{CAFO}(c, DI)$$

where:

- i. c ∈ f denotes all Separately Certified Components c of Facility f;
and
- ii. CAFO(c,DI) is the Capacity Adjusted Forced Outage Quantity for Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.7.

3.21.8. AEMO must determine the The Capacity Adjusted Planned Outage Quantity for energy for each Dispatch Interval DI for each Separately Certified Component c of a Registered Facility is:

$$\text{CAPO}(f, c, DI) = \max \left(0, \sum_{o \in PO} Q(c, DI, o) - \max \left(0, \text{MaxCap}(c, DI) - \text{DefRCOQ}(c, DI) - \sum_{o \in FO} Q(c, DI, o) \right) \right)$$

Where:

~~CAPO(c,DI) = Capacity Adjusted Planned Outage Quantity for Separately Certified Component c in Dispatch Interval DI~~

~~PO is the set of all Planned Outages for Separately Certified Component c that include Dispatch Interval DI~~

- (a) o ∈ PO denotes all Planned Outages o for Separately Certified Component c that include Dispatch Interval DI;

~~FO is the set of all Forced Outages for Separately Certified Component c that include Dispatch Interval DI~~

(b) $o \in FO$ denotes all Forced Outages o for Separately Certified Component c that include Dispatch Interval DI ;

~~$Q(c, DI, o)$ = outage quantity for Outage o of Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.6~~

(c) $Q(c, DI, o)$ is the outage quantity for Outage o of Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.6;

~~$MaxCap(c, DI)$ = maximum capacity for the energy Outage Capability of Separately Certified Component c in Dispatch Interval DI as specified in Standing Data~~

(d) $MaxCap(c, DI)$ is the maximum capacity for the energy Outage Capability of Separately Certified Component c in Dispatch Interval DI as specified in Standing Data; and

~~$DefRCOQ(c, DI)$ = the Reserve Capacity Obligation Quantity that would apply to Separately Certified Component c in Dispatch Interval DI if the Separately Certified Component was not subject to an Outage or an approved Commissioning Test Plan~~

(e) $DefRCOQ(c, DI)$ is the Reserve Capacity Obligation Quantity that would apply to Separately Certified Component c in Dispatch Interval DI if the Separately Certified Component was not subject to an Outage or an approved Commissioning Test Plan.

3.21.8A. ~~AEMO must determine the~~ The Capacity Adjusted Planned Outage Quantity for energy for each Trading Interval t for each Separately Certified Component c of a Registered Facility is:

$$CAPO(c, t) = \frac{\sum_{DI \in t} CAPO(c, DI)}{6}$$

Where:

~~$CAPO(c, t)$ is the Capacity Adjusted Planned Outage Quantity for Separately Certified Component c in Trading Interval t~~

~~DI in t denotes all Dispatch Intervals in Trading Interval t~~

~~$CAPO(c, DI)$ is the Capacity Adjusted Planned Outage Quantity for Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.8~~

(a) $DI \in t$ denotes all Dispatch Intervals DI in Trading Interval t ; and

(b) $CAPO(c, DI)$ is the Capacity Adjusted Planned Outage Quantity for Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.8.

3.21.8B. ~~AEMO must determine the~~ The Capacity Adjusted Planned Outage Quantity for each Trading Interval t for each Registered Facility with a Reserve Capacity Obligation Quantity greater than zero f is:

(a) where no Capacity Credits are assigned to Registered Facility f in Trading Interval t or Registered Facility f is a Non-Scheduled Facility;

$$\text{CAFO}(f, t) = 0$$

(b) otherwise:

$$\text{CAPO}(f, t) = \sum_{c \in f} \text{CAPO}(c, t)$$

Where:

~~CAPO(f, t) is the Capacity Adjusted Planned Outage Quantity for Facility f in Trading Interval t~~

i. ~~c in f~~ denotes all Separately Certified Components c of Facility f; and

ii. ~~CAPO(c, t) is the Capacity Adjusted Planned Outage Quantity for Separately Certified Component c in Trading Interval t as calculated in clause 3.21.8A.~~

3.21.8C. The Capacity Adjusted Planned Outage Quantity for Dispatch Interval DI for Registered Facility f is:

(a) where no Capacity Credits are assigned to Registered Facility f in Dispatch Interval DI or Registered Facility f is a Non-Scheduled Facility:

$$\text{CAPO}(f, \text{DI}) = 0$$

(b) otherwise:

$$\text{CAPO}(f, \text{DI}) = \sum_{c \in f} \text{CAPO}(c, \text{DI})$$

where:

i. c ∈ f denotes all Separately Certified Components c of Facility f; and

ii. CAPO(c, DI) is the Capacity Adjusted Planned Outage Quantity for Separately Certified Component c in Dispatch Interval DI as calculated in clause 3.21.8.

Explanatory Note:

Clause 3.21.9 is no longer required because the definition of DefRCOQ in the capacity adjusted outage quantity calculations incorporates the required temperature-related adjustment.

~~3.21.9. [Blank]Where required under clause 4.12.4(b), AEMO must revise the quantities calculated in this section 3.21 to account for actual temperatures.~~

...

Glossary

Capacity Adjusted Forced Outage Quantity: Means, the quantity, in MW, of the derating of a Facility or Separately Certified Component in a Dispatch Interval or Trading Interval from

the Reserve Capacity Obligation Quantity for the Facility or Separately Certified Component as determined by AEMO in accordance with:

- (a) for a Separately Certified Component in a Dispatch Interval, the formula in clause ~~3.21.8~~ 3.21.7;
- (b) for a Separately Certified Component in a Trading Interval, the formula in clause ~~3.21.8A~~ 3.21.7A;
- (c) for a Facility in a Trading Interval, the formula in clause ~~3.21.8B~~ 3.21.7B; and
- (d) for a Facility in a Dispatch Interval, the formula in clause 3.21.7C.

Capacity Adjusted Planned Outage Quantity: Means, the quantity, in MW, of the derating of a Facility or Separately Certified Component in a Dispatch Interval or Trading Interval from the Reserve Capacity Obligation Quantity for the Facility or Separately Certified Component as determined by AEMO in accordance with:

- (a) for a Separately Certified Component in a Dispatch Interval, the formula in clause ~~3.21.78~~ 3.21.8;
- (b) for a Separately Certified Component in a Trading Interval, the formula in clause 3.21.8A;
- (c) for a Facility in a Trading Interval, the formula in clause 3.21.8B-; and
- (d) for a Facility in a Dispatch Interval, the formula in clause 3.21.8C.

3. Reserve Capacity Mechanism – Certification and Network Access Quantities

Explanatory Note:

The proposed Amending Rules in this section address various minor issues relating to processes that occur during Year 1 of a Reserve Capacity Cycle, which have been identified since the gazettal of the *Wholesale Electricity Market Amendment (Tranche 5 Amendments) Rules 2021*.

Most of the changes in this section are expected to commence immediately after the gazettal of the Tranche 6 Amending Rules. The remaining changes, which are shown at the end of the section, are expected to commence on New WEM Commencement Day.

Amending Rules to commence on gazettal

Explanatory Note:

Western Power requires the Access Proposal/Offer application reference number and date of application to identify the list of new facilities for which an Expression of Interest for a Reserve Capacity Cycle has been submitted. Currently, Western Power is unable to trace a Facility name back to the correct Access application given the large number of applications and the fact that the WEMS facility name does not always match the facility name in the Access Arrangement.

Clause 4.4.1(d) is amended to require this information to be provided if it is available.

- 4.4.1. An Expression of Interest for a Reserve Capacity Cycle must include the following information:

...

- (d) for each Facility:
- i. the expected earliest date that the Facility will be able to be fully operational;
 - ii. the status of any applications for Access Proposals in respect of that Facility;
 - iii. the status of any applications for Environmental Approvals required in respect of that Facility;
 - iv. details of the type and quantity of fuel expected to be available to that Facility;
 - v. the hours during a typical week when the Facility will not be available to be dispatched due to staffing restrictions or other factors;
 - vi. whether the Facility is expected to be nominated to be classified as a Network Augmentation Funding Facility; ~~and~~
 - vii. whether the Facility has entered into or is expected to enter into an NCESS Contract; ~~and~~

viii. if an application under clause 4.4.1(d)(ii) has been submitted, the application reference number provided by the Network Operator; and

ix. if an application under clause 4.4.1(d)(ii) has been submitted, the date the application was submitted to the Network Operator.

...

Explanatory Note:

Clause 4.5.10(a) is amended to capitalise the defined term “Energy Producing System”.

4.5.10. AEMO must use the information assembled to:

- (a) assess the extent to which the anticipated installed capacity of the ~~energy producing systems~~ Energy Producing Systems and Demand Side Management capacity is capable of satisfying the Planning Criterion, identifying any capacity shortfalls in each Relevant Year in the Long Term PASA Study Horizon, for each of the following scenarios:
- i. median peak demand assuming low demand growth;
 - ii. one in ten year peak demand assuming low demand growth;
 - iii. median peak demand assuming expected demand growth;
 - iv. one in ten year peak demand assuming expected demand growth;
 - v. median peak demand assuming high demand growth;
 - vi. one in ten year peak demand assuming high demand growth,
- where the low, expected, and high demand growth cases reflect demand changes stemming from different levels of economic growth, with these being temperature adjusted to produce the one in ten year peak demand cases.

...

...

Explanatory Note:

Clause 4.9.8(b) is amended to correct a clause reference.

4.9.8. AEMO must notify applicants for certification of Reserve Capacity for:

- (a) the current Reserve Capacity Cycle, of the quantity of the Certified Reserve Capacity assigned to each Facility covered by the application, by the date and time specified in clause 4.1.12;
- (b) a future Reserve Capacity Cycle, of the quantity of Conditional Certified Reserve Capacity assigned to each Facility covered by that application by the date and time specified in clause ~~4.1.2~~ 4.1.12 in the Reserve Capacity

Cycle when AEMO next processes applications for Certified Reserve Capacity in accordance with section 4.11.

Explanatory Note:

Clause 4.10.1 is amended to:

- clarify which requirements under clause 4.10.1(e) relate to a Non-Intermittent Generating System rather than its parent Facility;
- remove unnecessary repetition by combining clauses 4.10.1(fA), 4.10.1(fB) and 4.10.1(fC) into a single clause 4.10.1(fA);
- extend clause 4.10.1(fD)(ii) to require the provision of maximum Charge Level capabilities and temperature dependence information for Non-Scheduled Facilities that comprise only Electric Storage Resources; and
- clarify that the test in clause 4.10.1(k) should only use configuration information provided under clause 4.10.1(dA) that applies to the components being assigned Certified Reserve Capacity using the Relevant Level Methodology. For example, for a Semi-Scheduled Facility comprising an Electric Storage Resource and an Intermittent Generating System, only the configuration information provided under clause 4.10.1(dA) for the Intermittent Generating System should be considered.

4.10.1. Each Market Participant must ensure that information submitted to AEMO with an application for certification of Reserve Capacity pertains to the Reserve Capacity Cycle to which the certification relates, and is supported by documented evidence and includes, where applicable, except to the extent that it is already accurately provided in Standing Data, the following information:

- (a) the identity of the Facility;
- (b) the Reserve Capacity Cycle to which the application relates;
- (bA) with the exception of applications for Conditional Certified Reserve Capacity, the following:
 - i. evidence of an Arrangement for Access or evidence that the Market Participant has accepted an Access Proposal from the relevant Network Operator made in respect of the Facility;
 - ii. evidence that the Facility will be entitled to have access from a specified date occurring prior to the date specified in clause 4.10.1(c)(iii)(7); and
 - iii. except where the Facility is a Demand Side Programme, the Declared Sent Out Capacity for the Facility at the relevant connection point;
- (c) if the Facility, or part of the Facility, is yet to enter service:
 - i. [Blank]
 - ii. with the exception of applications for Conditional Certified Reserve Capacity, evidence that any necessary Environmental Approvals have been granted or evidence supporting the Market Participant's expectation that any necessary Environmental Approvals will be

granted in time to have the Facility meet its Reserve Capacity Obligations by the date specified in clause 4.10.1(c)(iii)(7); and

- iii. the Key Project Dates occurring after the date the request is submitted, including, if applicable, but not limited to:
 - 1. when all approvals will be finalised or, in the case of Demand Side Programmes, when all required contracts will be in place;
 - 2. when financing will be finalised;
 - 3. when site preparation will begin;
 - 4. when construction will commence;
 - 5. when generating equipment will be installed or, in the case of Demand Side Programmes, when all required control equipment will be in place;
 - 6. when the Facility, or part of the Facility, will be ready to undertake Commissioning Tests; and
 - 7. when the Facility, or part of the Facility, will have completed all Commissioning Tests and be capable of meeting Reserve Capacity Obligations in full;

- (d) if the Facility is a Registered Facility that will be decommissioned prior to the date specified in clause 4.1.30(a) for the Reserve Capacity Cycle to which the application relates, the planned decommissioning date;
- (dA) except where the Facility is a Demand Side Programme, a description and a configuration of the main components of the Facility including the nameplate capacity of each component, expressed in MW;
- (dB) for a Semi-Scheduled Facility or Scheduled Facility, the minimum stable loading level of the Facility expressed in MW;
- (e) for a Non-Intermittent Generating System:
 - i. the capacity of the ~~Facility~~ Non-Intermittent Generating System and the temperature dependence of that capacity;
 - ii. the maximum sent out capacity, net of Intermittent Loads, embedded and Parasitic Loads, that can be guaranteed to be available for supply to the relevant Network from the ~~Facility~~ Non-Intermittent Generating System when it is operated normally at an ambient temperature of 41oC;
 - iii. [Blank]
 - iv. at the option of the applicant, the method to be used to measure the ambient temperature at the site of the ~~Facility~~ Non-Intermittent Generating System for the purpose of defining the Reserve Capacity Obligation Quantity, where the method specified may be either:

1. a publicly available daily maximum temperature at a location representative of the conditions at the site of the Facility as reported daily by a meteorological service; or
2. a daily maximum temperature measured at the site of the generator Facility by the SCADA system operated by AEMO or the relevant Network Operator (as applicable).

(Where no method is specified, a temperature of 41°C will be assumed);

v. details of primary and any alternative fuels,¹ including:

1. where the ~~Facility~~ Non-Intermittent Generating System has primary and alternative fuels:
 - i. the process for changing from one fuel to another; and
 - ii. the fuel or fuels which the ~~Facility~~ Non-Intermittent Generating System is to use in respect of the application for Certified Reserve Capacity; and
2. details acceptable to AEMO together with supporting evidence of both firm and any non-firm fuel supplies and the factors that determine restrictions on fuel availability that could prevent the ~~Facility~~ Non-Intermittent Generating System operating at its full capacity for Peak Trading Intervals on Business Days;

vi. the expected forced and unforced outage rate based on manufacturer data; and

vii. for ~~Facilities~~ Non-Intermittent Generating Systems that have operated for at least 12 months, the forced and unforced outage rate of the ~~Facility~~ Non-Intermittent Generating System;

(f) for Demand Side Programmes:

- i. the amount of Reserve Capacity the Market Participant expects to make available from the Facility;
- ii. the maximum number of hours that the Demand Side Programme will be available to provide Reserve Capacity during a Capacity Year, which must be at least 200 hours;
- iii. the maximum number of hours per day that the Facility will be available to provide Reserve Capacity if issued a Dispatch Instruction, where this must be at least twelve hours;
- iv. [Blank]

¹ A Facility may satisfy its fuel obligations using a combination of primary and alternative fuels.

- v. the minimum notice period required for dispatch under clause 7.6.15 of the Facility;
- vi. the periods when the Facility can be dispatched, which must include the period between 8:00 AM and 8:00 PM on all Business Days;
- vii. the proposed DSP Ramp Rate Limit for the Facility; and
- viii. the single Transmission Node Identifier for the Facility;

(fA) ~~for a Scheduled Facility comprising only an Electric Storage Resource an~~
Electric Storage Resource, except where clause 4.10.1(fD) applies:

- i. the nameplate capacity and maximum and minimum Charge Level capabilities of the Electric Storage Resource and the temperature dependence of that capacity;
- ii. the maximum sent out capacity, net of embedded and Parasitic Loads, that can be guaranteed to be available for supply to the relevant Network from the ~~Facility~~ Electric Storage Resource when it is operated normally at an ambient temperature of 41oC;
- iii. the sent-out capacity, net of Parasitic Loads that can be guaranteed to be available for supply across the Electric Storage Resource Obligation Duration, to the relevant Network from the Electric Storage Resource when it is operated normally at an ambient temperature of 41oC for each year of the expected life of the Electric Storage Resource, which must be supported by manufacturer data;
- iv. manufacturer nameplate capacity and maximum Charge Level capability and minimum Charge Level capability data of the Electric Storage Resource for each year of its expected remaining life; and
- v. the expected forced and unforced outage rate of the Electric Storage Resource taking into account the Electric Storage Resource Obligations Duration based on manufacturer data;

(fB) ~~[Blank]in addition to any other requirements in this clause 4.10.1 for a Scheduled Facility, for a Scheduled Facility containing an Electric Storage Resource:~~

- ~~i. the nameplate capacity and maximum and minimum Charge Level capabilities of the Electric Storage Resource and the temperature dependence of that capacity;~~
- ~~ii. the maximum sent out capacity, net of embedded and Parasitic Loads associated with the Electric Storage Resource, that can be guaranteed to be available for supply to the relevant Network from the Facility when it is operated normally at an ambient temperature of 41oC;~~
- ~~iii. the sent-out capacity, net of Parasitic Loads that can be guaranteed to be available for supply across the Electric Storage Resource~~

~~Obligation Duration, to the relevant Network from the Electric Storage Resource when it is operated normally at an ambient temperature of 41oC for each year of the expected life of the Electric Storage Resource, supported by manufacturer data;~~

- ~~iv. — manufacturer nameplate capacity and maximum Charge Level capability and minimum Charge Level capability data for the Electric Storage Resource for each year of its expected remaining life; and~~
- ~~v. — the expected forced and unforced outage rate of the Electric Storage Resource taking into account the Electric Storage Resource Obligations Duration based on manufacturer data;~~

(fC) ~~[Blank]in addition to any other requirements in this clause 4.10.1 for a Semi-Scheduled Facility, for a Semi-Scheduled Facility containing an Electric Storage Resource:~~

- ~~i. — the nameplate capacity and maximum and minimum Charge Level capabilities of the Electric Storage Resource and the temperature dependence of that capacity;~~
- ~~ii. — the maximum sent out capacity, net of embedded and Parasitic Loads, that can be guaranteed to be available for supply to the relevant Network from the Facility when it is operated normally at an ambient temperature of 41oC;~~
- ~~iii. — the sent-out capacity, net of Parasitic Loads that can be guaranteed to be available for supply across the Electric Storage Resource Obligation Duration, to the relevant Network from the Electric Storage Resource when it is operated normally at an ambient temperature of 41oC for each year of the expected life of the Electric Storage Resource, supported by manufacturer data;~~
- ~~iv. — manufacturer nameplate capacity and maximum Charge Level capability and minimum Charge Level capability data of the Electric Storage Resource for each year of its expected remaining life; and~~
- ~~v. — the expected forced and unforced outage rate of the Electric Storage Resource taking into account the Electric Storage Resource Obligations Duration based on manufacturer data;~~

(fD) in addition to any other requirements in this clause 4.10.1 for a Non-Scheduled Facility, for a Non-Scheduled Facility comprising only an Electric Storage Resource, including a Small Aggregation comprising aggregated Electric Storage Resources:

- i. the location of the single Transmission Node Identifier behind which the aggregated Electric Storage Resources will be connected;
- ii. the nameplate capacity and minimum and maximum Charge Level capabilities of each Electric Storage Resource and the temperature dependence of that capacity;

- iii. the sent-out capacity, net of Parasitic Loads that can be guaranteed to be available for supply across the Electric Storage Resource Obligation Duration, to the relevant Network from each Electric Storage Resource when it is operated normally at an ambient temperature of 41oC for each year of the expected life of the Electric Storage Resource, supported by manufacturer data; and
 - iv. evidence that demonstrates the Electric Storage Resources are expected to discharge during the Electric Storage Resource Obligation Intervals;
- (g) for all Facilities:
 - i. any restrictions on the availability of the Facility due to staffing constraints; and
 - ii. any other restrictions on the availability of the Facility;
- (h) whether the application relates to confirmation of Conditional Certified Reserve Capacity;
- (i) [Blank];
- (j) evidence of whether the Facility will be subject to an NCESS Contract;
- (k) where a Facility, or component of a Facility, is being assigned Certified Reserve Capacity or Conditional Certified Reserve Capacity using the methodology described in clause 4.11.2(b) and the Facility or relevant component of the Facility is already in full operation under the configuration for which certification is being sought (as ~~outlined in~~ specified for the Facility or component under clause 4.10.1(dA)), the date on which the Facility or component of the Facility became fully operational under this configuration, unless this date has already been provided to AEMO in a previous application for certification of Reserve Capacity;
- (l) evidence of the extent to which the Facility will be able to receive, confirm and implement Dispatch Instructions from AEMO; and
- (m) subject to clauses 4.10A.2 and 4.10A.3, a Market Participant that wishes to nominate that its Facility or an upgrade of its Facility, be classified as a Network Augmentation Funding Facility, must provide to AEMO:
 - i. a notice in writing from the Market Participant nominating that the Facility, part of the Facility or an upgrade of the Facility, as applicable, be classified as a Network Augmentation Funding Facility; and
 - ii. the information specified in clause 4.10A.6.

...

Explanatory Note:

Clause 4.10.3 is amended to clarify that the test in clause 4.10.3(d) should only use configuration information provided under clause 4.10.1(dA) that applies to the part of the Facility being assessed under the Relevant Level Methodology.

4.10.3. An application for certification of Reserve Capacity for a Facility, or component of a Facility, that is to be assessed using the methodology described in clause 4.11.2(b) for a Facility, or relevant component of a Facility, that:

- (a) is yet to enter service;
- (b) is to re-enter service after significant maintenance;
- (c) is to re-enter service after having been upgraded; or
- (d) has not operated with the configuration ~~outlined in~~ specified for the Facility or component (as applicable) under clause 4.10.1(dA) for the full period of performance assessment identified in step 1(a) of the Relevant Level Methodology,

must include a report prepared by an expert accredited by AEMO in accordance with clause 4.11.6. AEMO will use the report to assign Certified Reserve Capacity for the Facility, or the relevant component of the Facility, that is to be assessed using the methodology described in clause 4.11.2(b) and to determine the Required Level for that Facility.

...

Explanatory Note:

Clause 4.15.5, which will be replaced by the *Wholesale Electricity Market Amendment (Tranche 5 Amendments) Rules 2021* on 1 September 2022, is further amended to ensure that the facility dispatch scenarios developed by AEMO for use with the Network Access Quantity Model consider Facilities with Early Certified Reserve Capacity.

4.15.5. The facility dispatch scenarios to be developed by AEMO pursuant to clause 4.15.4 must:

- (a) include, in AEMO's sole discretion, variations in the output of Facilities dispatched to meet peak demand (as described in clause 4.15.3(c));
- (b) include Facilities with Certified Reserve Capacity or Early Certified Reserve Capacity for the relevant Reserve Capacity Cycle;
- (c) ensure the sum of facility dispatch in each scenario equals peak demand (as described in clause 4.15.3(c));
- (d) ensure a Facility is not dispatched to a level greater than the Certified Reserve Capacity or Early Certified Reserve Capacity for the Facility;
- (e) subject to clause 4.15.5(d), account for any services that are required at peak demand to be provided by a Facility with Certified Reserve Capacity under an NCESS Contract; and

- (f) include any other factors specified in the WEM Procedure referred to in clause 4.15.17.

...

Explanatory Note:

Clause 4.15.16, which will be inserted by the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020* on 1 September 2022, is further amended to require AEMO to publish Indicative Network Access Quantities at the same time as it publishes Network Access Quantities.

- 4.15.16. AEMO must publish the following information on the WEM Website by the date and time specified in clause 4.1.16A(d):
- (a) the Network Access Quantity Model Inputs; and
 - (b) ~~the name of each Facility for which a~~ Network Access Quantity or ~~Indicative Network Access Quantity has been determined and the Network Access Quantity~~ determined for ~~the~~ each Facility.

...

Explanatory Note:

Clauses 5.2A.2 and 5.2A.3 require a Market Participant to apply for Certified Reserve Capacity if it has entered into a Network Control Service Contract or Dispatch Support Service Contract prior to the close of the Certified Reserve Capacity application window. Clause 4.8A.3 requires a Market Participant to apply for an indicative Facility Class prior to submitting an application for Certified Reserve Capacity.

If a Market Participant enters into a contract a short period (e.g. a day or even a week) before the certification application window closes, it would have a rule obligation to apply for Certified Reserve Capacity. However, this would not provide AEMO with sufficient time to assign the Facility an indicative Facility Class and create a Certified Reserve Capacity application in its systems to enable the Market Participant to submit an application before the certification window closes. This would force either AEMO or the Market Participant into non-compliance.

To resolve this issue, clause 5.2A.3 is amended to shift the relevant deadline to the opening of the certification application window (as specified under clause 4.1.7).

Clause 5.2A.2 is also amended to remove a superfluous comma.

- 5.2A.2. Where a Market Participant enters into a Dispatch Support Service Contract or a Network Control Service Contract for a Facility, and the Facility would ordinarily be capable of being assigned Certified Reserve Capacity, then the Market Participant must meet the requirements of clause 4.8A.3(c) where applicable, and use best endeavours to meet the requirements of clause 4.10.1, in respect of each Reserve Capacity Cycle that the Facility would be eligible to participate in over the period for which a service will be provided under the relevant Dispatch Support Service Contract or Network Control Service Contract.
- 5.2A.3. Clause 5.2A.2 does not require a Market Participant to apply for Certified Reserve Capacity for a Facility for a Reserve Capacity Cycle where the Market Participant has entered into a Network Control Service Contract or Dispatch Support Service

Contract in respect of the Facility after the date and time specified under clause ~~4.1.14~~ 4.1.7 for that relevant Reserve Capacity Cycle.

...

Glossary

Explanatory Note:

The definition of Network Access Quantity Model Inputs, which will be inserted by the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020* on 1 September 2022, is further amended to require AEMO to publish adjusted Indicative Network Access Quantities for each applicable step in Appendix 3. This is because Indicative Network Access Quantities, like preliminary Network Access Quantities, can be adjusted in each step of the process.

Network Access Quantity Model Inputs: Means, in respect of the relevant Reserve Capacity Cycle:

- (a) the preliminary Network Access Quantity determined by AEMO for a Facility and, where applicable, the adjusted Indicative Network Access Quantity determined for a Facility that is classified as an Indicative NAQ Facility under Appendix 3, for each applicable step in Appendix 3;
- (b) each of the assumptions and parameters used by AEMO in the Network Access Quantity Model;
- (c) each RCM Constraint Equation that is used in the Network Access Quantity Model; and
- (d) RCM Limit Advice used in the Network Access Quantity Model.

Explanatory Note:

The definition of Network Augmentation Funding Facility is amended to ensure it is aligned with section 4.10A (Network Augmentation Funding Facility).

Network Augmentation Funding Facility: ~~A Facility that was assigned Capacity Credits for a Reserve Capacity Cycle in which it nominated in accordance with clause 4.10.1(m) to be classified as a Network Augmentation Funding Facility for the Reserve Capacity Cycle. For a Reserve Capacity Cycle, a Facility or upgrade to a Facility that a Market Participant has nominated to be classified as a Network Augmentation Funding Facility for the Reserve Capacity Cycle in an application for certification of Reserve Capacity under clause 4.10.1(m), and which AEMO has classified as a Network Augmentation Funding Facility for the Reserve Capacity Cycle.~~

Amending Rules expected to commence on New WEM Commencement Day

Explanatory Note:

New clause 4.11.3BA, which will be inserted in the WEM Rules by the *Wholesale Electricity Market Amendment (Tranche 5 Amendments) Rules 2021* (Schedule I, paragraph 26.4), is further amended to reflect the proposed aggregation of clauses 4.10.1(fA), 4.10.1(fB) and 4.10.1(fC) into a single clause 4.10.1(fA).

This change is expected to commence immediately after the insertion of clause 4.11.3BA.

4.11.3BA. The Required Level for a Separately Certified Component of a Scheduled Facility or Semi-Scheduled Facility is:

...

- (c) for an Electric Storage Resource assigned Certified Reserve Capacity under clause 4.11.3 calculated by AEMO using the Capacity Credits associated with the Electric Storage Resource and temperature dependence information submitted to AEMO under clauses ~~4.10.1(fA); 4.10.1(fB) or 4.10.1(fC)~~ or provided in Standing Data (where available) and converted to a sent out basis to 41 degrees Celsius.

...

Explanatory Note:

The amendment to clause 5.2A.3 described above will need to be remade following the replacement of that clause by the *Wholesale Electricity Market Amendment (Tranche 5 Amendments) Rules 2021* (Schedule I, paragraph 37.2).

5.2A.3. Clause 5.2A.2 does not require a Market Participant to apply for Certified Reserve Capacity for a Facility for a Reserve Capacity Cycle where the Market Participant has entered into an NCESS Contract in respect of the Facility after the date and time specified under clause ~~4.1.14~~ 4.1.7 for that relevant Reserve Capacity Cycle.

4. Non-Co-optimised Essential System Services (NCESS) – Submission of requests to the Coordinator

Amending Rules to commence on gazettal

Explanatory Note:

Clauses 3.11A.2 and 3.11A.2A are amended to improve coordination between AEMO and Network Operators by requiring:

- a Network Operator to notify AEMO before the Network Operator makes a submission to request the Coordinator to determine whether to trigger an NCESS procurement process; and
- AEMO to notify Western Power before AEMO makes a submission to request the Coordinator to determine whether to trigger an NCESS procurement process.

3.11A.2. Where a Network Operator reasonably considers that one or more of the following events has occurred or applies, ~~the Network Operator must make a submission to request the Coordinator to determine whether or not to trigger an NCESS procurement process in accordance with section 3.11B:~~

- (a) frequent intervention by AEMO in the dispatch merit order to relieve non-frequency control constraints, such as loss of reactive power or system strength, indicates a network security problem, and a case could be made to procure a locational security NCESS;
- (b) if network planning assumptions change at any time during the network planning timeframe (for example, demand is lower or higher than forecast), it may signal the need for an emerging service such as reactive power support or voltage stability which could be provided by non-network services located in the relevant part of the network; or
- (c) a modification to an existing Power System Security or Power System Reliability standard or the introduction of a new Power System Security or Power System Reliability standard within a network planning cycle may trigger the need to procure a NCESS.

the Network Operator must:

(d) as soon as practicable, but in any event before making a submission under clause 3.11A.2(e), notify AEMO of each event that it considers has occurred or applies; and

(e) make a submission to request the Coordinator to determine whether to trigger an NCESS procurement process in accordance with section 3.11B.

3.11A.2A. Where AEMO reasonably considers that one or more of the following events has occurred or applies, ~~AEMO must make a submission to request the Coordinator to determine whether or not to trigger an NCESS procurement process in accordance with section 3.11B:~~

- (a) in the course of its normal power system operations, that a significant threat to Power System Security or Power System Reliability exists or is emerging, and the existing mechanisms under these WEM Rules may not be sufficient to address the threat; or
- (b) a modification to an existing WEM Technical Standard, or introduction of a new WEM Technical Standard, that may impact Power System Security or Power System Reliability, and the existing market mechanisms may not be sufficient to meet the modified or new standard.

AEMO must:

- (c) as soon as practicable, but in any event before making a submission under clause 3.11A.2A(d), notify Western Power of each event that it considers has occurred or applies; and
- (d) make a submission to request the Coordinator to determine whether to trigger an NCESS procurement process in accordance with section 3.11B.

Explanatory Note:

It may not always be possible for AEMO or a Network Operator to comply with clause 3.11A.3(b) as currently drafted. This is because the NCESS process includes several mandatory steps with timeframes for which the relevant party is not fully responsible.

Clause 3.11A.3(b) is amended to prevent a potential compliance risk by requiring AEMO and Western Power to apply “reasonable consideration” around the expected process timeframes.

Clause 3.11A.3(c) is amended to extend its scope to cover AEMO’s trigger events, which are listed in clause 3.11A.2A, as well as the Network Operator trigger events listed in clause 3.11A.2.

3.11A.3. A submission by a Network Operator or AEMO under clauses 3.11A.2 or 3.11A.2A must:

- (a) be in writing;
- (b) be made by a date that the Network Operator or AEMO, as applicable, reasonably considers allows sufficient time to enable the NCESS procurement process set out in section 3.11B to be conducted; and
- (c) contain sufficient information and analysis regarding the potential or actual impact on Power System Security, Power System Reliability or costs for each trigger event in clauses 3.11A.2 or 3.11A.2A that is specified in the submission to enable the Coordinator to consider the factors outlined in clause 3.11A.7.

Amending Rules expected to commence on New WEM Commencement Day

Explanatory Note:

Section 3.11A is expected to be replaced on New WEM Commencement Day by the *Wholesale Electricity Market Amendment (Tranche 5 Amendments) Rules 2021* (Schedule I, paragraph 17.1). Following this replacement, further amendments will be required to reapply the changes described above to clauses 3.11A.2 (which replaces clauses 3.11A.2 and 3.11A.2A) and 3.11A.3(b).

3.11A.2. ~~Where-If~~ AEMO or a Network Operator reasonably considers that one or more of the following events has occurred or applies, ~~the Network Operator or AEMO (or, at their discretion, both of them), must make a submission (jointly or separately) to request the Coordinator to determine whether or not to trigger an NCESS procurement process in accordance with section 3.11B:~~

- (a) if the forecasted or actual magnitude and frequency of Energy Uplift Payments in the WEM increases to an uneconomic level (assuming locational and situational market power is being controlled under the relevant processes), this indicates a locational constraint in the network and a case may be made to procure locational services to relieve the network constraint;
- (b) frequent AEMO Intervention Events to relieve non-frequency control constraints such as loss of reactive power or system strength indicates a network security problem, and a case could be made to procure a locational security NCESS;
- (c) if network planning assumptions change at any time during the network planning timeframe (for example, demand is lower or higher than forecast), it may signal the need for an emerging service such as reactive power support or voltage stability which could be provided by non-network services located in the relevant part of the network;
- (d) a modification to an existing Power System Security or Power System Reliability standard or the introduction of a new Power System Security or Power System Reliability standard within a network planning cycle may trigger the need to procure a NCESS; or
- (e) AEMO considers, in the course of its normal power system operations, that a significant threat to Power System Security or Power System Reliability exists or is emerging, and the existing mechanisms under these WEM Rules may not be sufficient to address the threat.

then:

- (f) AEMO must notify Western Power, or the Network Operator must notify AEMO (as applicable), of each event that AEMO or the Network Operator (as applicable) considers has occurred or applies, as soon as practicable but in any event before making a submission under clause 3.11A.2(g); and
- (g) AEMO or the relevant Network Operator (or, at their discretion, both of them) must make a submission (jointly or separately) to request the Coordinator to determine whether to trigger an NCESS procurement process in accordance with section 3.11B.

3.11A.3. A submission by a Network Operator or AEMO under clause 3.11A.2 must:

- (a) be in writing;

- (b) be made by a date that the Network Operator or AEMO, as applicable, reasonably considers allows sufficient time to enable the NCESS procurement process set out in section 3.11B to be conducted; and
- (c) contain sufficient information and analysis regarding the potential or actual impact on Power System Security, Power System Reliability or costs for each trigger event in clause 3.11A.2 that is specified in the submission to enable the Coordinator to consider the factors outlined in clause 3.11A.7.

5. Supplementary Essential System Services Mechanism – Market Participant obligations

Explanatory Note

Clause 7.4.5 is amended to address the following issues:

- When the Pre-Dispatch Schedule projects a shortfall in a Frequency Control Essential System Service (FCESS), clause 7.4.5(b) requires SESSM Award holders to update their Real-Time Market Submissions to offer all the available accredited capacity of their awarded Facilities as In-Service Capacity. This could result in more capacity being offered as In-Service Capacity than is necessary or desirable.
- The clause does not correctly account for a Facility that is not subject to any Outage in a Dispatch Interval, e.g. clause 7.4.5(a) would require the Market Participant to offer the maximum accredited quantity of the relevant FCESS instead of the contracted quantity in this situation.

Under the proposed amendments, a Market Participant holding a SESSM Award must:

- under normal conditions, offer (at least) the lower of their contracted quantity and available accredited capacity in the relevant FCESS, as either Available or In-Service Capacity (clause 7.4.5(a));
- if the Reference Scenario for a Pre-Dispatch Interval projects a shortfall in the FCESS, ensure that they are offering all their available accredited capacity in the FCESS, as either Available or In-Service Capacity (clause 7.4.5(b)); and
- if the Reference Scenario for a Pre-Dispatch Interval or Dispatch Interval projects that the relevant Facility will be enabled to provide the FCESS, ensure that they are offering the relevant Essential System Service Enablement Quantity as In-Service Capacity, as well as sufficient In-Service energy capacity to facilitate the FCESS enablement (clause 7.4.5(c)).

The available accredited capacity of the Facility in the relevant FCESS is determined as:

- the lowest Remaining Available Capacity for the FCESS under any applicable Outage for the Facility; or
- if there are no applicable Outages, the maximum accredited quantity of the Facility for the FCESS.

The amendments are expected to commence on New WEM Commencement Day, immediately after the replacement of sections 7.1-7.11 by the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020*.

7.4.5. For the purpose of a Real-Time Market Submission under clause 7.4.4, a Market Participant must:

- (a) for all Dispatch Intervals within the SESSM Service Timing and the Week-Ahead Schedule Horizon:
 - i. offer a quantity of the relevant Frequency Co-optimised Essential System Service greater than or equal to the lower of:
 - 1. the sum of the relevant Base ESS Quantity and Availability Quantity; and
 - 2. the lowest Remaining Available Capacity for that Frequency Co-optimised Essential System Service under any Outage applying to the Registered Facility in the Dispatch Interval, or, if there are no applicable Outages, the relevant maximum accredited quantity of that Frequency Co-optimised Essential System Service for the Registered Facility,

- ~~in Price-Quantity Pairs or, if there are no applicable Outages the relevant maximum accredited quantity of that Frequency Co-optimised Essential System Service for the Facility; and~~
- ii. specify an offer price in Price-Quantity Pairs relating to the Availability Quantity not exceeding the SESSM Offer Cap for the SESSM Award before accounting for Enablement Losses; ~~and~~
- (b) where the Reference Scenario for a Pre-Dispatch Interval projects a shortfall in an awarded Frequency Co-optimised Essential System Service, ~~adjust ensure that~~ the Real-Time Market Submission for the Registered Facility for that Pre-Dispatch Interval ~~so that the Registered Facility is:~~ offering a quantity of the relevant Frequency Co-optimised Essential System Service greater than or equal to the lowest Remaining Available Capacity for that Frequency Co-optimised Essential System Service under any Outage applying to the Registered Facility in the Pre-Dispatch Interval, or, if there are no applicable Outages, the relevant maximum accredited quantity of the Frequency Co-optimised Essential System Service for the Registered Facility; and
- ~~i. offering as In-Service Capacity for the relevant Frequency Co-optimised Essential System Service the lesser of:~~
- ~~1. its full accredited quantity of the relevant Frequency Co-optimised Essential System Service; or~~
- ~~2. the lowest Remaining Available Capacity for that Pre-Dispatch Interval for that Frequency Co-optimised Essential System Service for any Forced Outages, or any Outage Plans that have not been rejected or subjected to an Outage Recall Direction; and~~
- ~~ii. offering sufficient capacity as In-Service for energy to allow the facility to be dispatched for energy between any relevant Enablement Limits.~~
- (c) where the Reference Scenario for a Pre-Dispatch Interval or Dispatch Interval projects that the Registered Facility will be enabled to provide an awarded Frequency Co-optimised Essential System Service, ensure that the Real-Time Market Submission for the Registered Facility for that Pre-Dispatch Interval or Dispatch Interval:
- i. presents the relevant Essential System Service Enablement Quantity as In-Service Capacity; and
- ii. offers sufficient capacity as In-Service for energy to allow the Registered Facility to be dispatched for energy between any relevant Enablement Limits.

...

Appendix 2C: SESSM refund calculation method

Explanatory Note

Appendix 2C is amended to reflect the changes made to SESSM Award holder obligations under clause 7.4.5.

Other minor changes have been made to the appendix to:

- add missing variable definitions and remove an unused variable definition;
- correct typographical errors; and
- apply standard formatting and clause numbering conventions.

The amendments are expected to commence on New WEM Commencement Day, immediately after the insertion of Appendix 2C by the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020*.

1. Interpretation

- 1.1 Where anything is to be determined, calculated or done in this Appendix ~~2B~~ 2C, then except where otherwise stated, AEMO will determine, calculate or do, as the case may be, those things.

2. Supplementary Essential System Service Mechanism refund calculation methodology

- 2.1 AEMO must calculate the refund payable by a Market Participant in respect of their Registered Facility for not meeting the SESSM Availability Requirements set out in the relevant SESSM Awards by following each of the steps set out in the rest of this Appendix 2C.
- 2.2 Where AEMO has made a SESSM Award a in respect of a Registered Facility to provide a specific Frequency Co-optimised Essential System Service, that award specifies the following terms (which terms are applicable to the rest of this Appendix 2C):
- (a) the $\text{BaseQuantity}(a, DI)$, which is the Base ESS Quantity for SESSM Award a in Dispatch Interval DI;
 - (b) the $\text{AvailabilityQuantity}(a, DI)$, which is the SESSM Availability Quantity for SESSM Award a in Dispatch Interval DI ;
 - (c) the $\text{AvailabilityPayment}(a, DI)$, which is:
 - i. the Per-Dispatch Interval Availability Payment for SESSM Award a in Dispatch Interval DI if $\text{AvailabilityQuantity}(a, DI)$ is greater than zero; or
 - ii. if otherwise, zero; and
 - (d) $\text{MinAvailability}(a)$, which is the SESSM Availability Requirement for SESSM Award a.

2.3 For each Registered Facility that is providing a Frequency Co-optimised Essential System Service under a SESSM Award a, and for the duration of that SESSM Award a:

- (a) determine $N(a)$ to be the number of Dispatch Intervals in the SESSM Service Timing where $\text{AvailabilityQuantity}(a,DI)$ is greater than zero;
- (b) determine the maximum number of Dispatch Intervals for which the Registered Facility providing a Frequency Co-optimised Essential System Service under SESSM Award a may be unavailable during the SESSM Service Timing, as follows:

$$\text{MaxUnavailability}(a) = \text{FLOOR} \left(N(a) \times (1 - \text{MinAvailability}(a)) \right)$$

where:

- i. the $\text{FLOOR}()$ function rounds any non-integer figure down to the nearest integer; and
 - ii. $\text{MinAvailability}(a)$ is the percentage determined under clause 2.2(d) of this Appendix 2C; and
- (c) determine the total SESSM Availability Payments that would be made over the SESSM Service Timing if it met its SESSM Availability Requirement under SESSM Award a:

$$\text{PaymentCap}(a) = \sum_{DI \in a} \text{AvailabilityPayment}(a,DI)$$

where:

- i. $DI \in a$ denotes all Dispatch Intervals in the SESSM Service Timing; and
- ii. $\text{AvailabilityPayment}(a,DI)$ is the quantity determined under clause 2.2(c) of this Appendix 2C.

Explanatory Note

The calculation of the effective FCESS offer quantity for a Facility subject to a SESSM Award in a Dispatch Interval (ESSOffer(f,c,DI)) is amended to reflect the proposed changes to SESSM Award holder obligations under clause 7.4.5. Under the revised drafting:

- by default, ESSOffer(f,c,DI) is equal to the total quantity offered by the Market Participant for Facility f and FCESS c in Dispatch Interval DI in its Real-Time Market Submission (clause 2.4(a));
- however, AEMO may estimate a lower quantity if the Facility is subject to an Outage during the Dispatch Interval and AEMO considers the quantities in the Real-Time Market Submission did not accurately reflect the actual capability of the Facility during that Dispatch Interval; and
- if the Market Participant fails to meet its obligations under new clause 7.4.5(c), i.e. it does not update its Real-Time Market Submission to offer FCESS capacity that is projected to be required as In-Service Capacity, then AEMO will set ESSOffer(f,c,DI) to its reasonable estimate of the actual In-Service capability of the Facility in the Dispatch Interval.

2.4 For each Dispatch Interval DI determine whether a Registered Facility f was available (in respect of its obligations under SESSM Award a to provide Frequency Co-optimised Essential System Service c):

$$\text{IsAvailable}(a,DI) = \begin{cases} 1 & \text{if ESSOffer}(f,c,DI) \geq (\text{BaseQuantity}(a,DI) + \text{AvailabilityQuantity}(a,DI)) \\ & \text{or AvailabilityQuantity}(a,DI) = 0, \\ 0 & \text{otherwise} \end{cases}$$

where:

(a) ESSOffer(f,c,DI) is:

i. the sum of the quantities offered in the relevant Market Participant's Real-Time Market Submission in respect of Registered Facility f to provide Frequency Co-optimised Essential System Service c in Dispatch Interval DI; or

ii. if:

~~A.1.~~ Registered Facility f is subject to a Planned Outage or a Forced Outage in Dispatch Interval DI; and

~~B.2.~~ in AEMO's view, the sum of the quantities offered in the relevant Market Participant's Real-Time Market Submission in respect of Registered Facility f does not accurately reflect the Facility's capability to provide Frequency Co-optimised Essential System Service c in Dispatch Interval DI,

then, AEMO's reasonable estimate of Registered Facility f's capability in MW or MWs, as the case may be, to provide Frequency Co-optimised Essential System Service c in Dispatch Interval DI, if that quantity is lower than the quantity specified in clause 2.4(a)(i) of this Appendix 2C; or

iii. if the relevant Real-Time Market Submission:

1. did not present the relevant Essential System Service Enablement Quantity as In-Service Capacity in accordance with clause 7.4.5(c)(i); or
2. did not offer sufficient capacity as In-Service for energy to allow the Registered Facility to be dispatched for energy between its enablement limits in accordance with clause 7.4.5(c)(ii).

then AEMO's reasonable estimate of Registered Facility f's capability in MW or MWs, as applicable, that was In-Service Capacity in respect of Frequency Co-optimised Essential System Service c in Dispatch Interval DI, if that quantity is lower than the quantities specified in clauses 2.4(a)(i) or (if applicable) 2.4(a)(ii) of this Appendix 2C;

- (b) BaseQuantity(a,DI) is the quantity determined under clause 2.2(a) of this Appendix 2C; and
- (c) AvailabilityQuantity(a,DI) is the quantity determined under clause 2.2(b) of this Appendix 2C.

- 2.5 Calculate the number of Dispatch Intervals the Registered Facility providing Frequency Co-optimised Essential System Services under SESSM Award a has been unavailable for, from the first Dispatch Interval in the SESSM Service Timing up to and including Dispatch Interval DI:

$$\text{SESSMOutageCount}(a,DI) = \sum_{i=1}^{DI} (1 - \text{IsAvailable}(a,i))$$

where:

- (a) IsAvailable(a,i) means Registered Facility was available in respect of its obligations under SESSM Award a to provide Frequency Co-optimised Essential System Service c in Dispatch Interval i; and
- (b) i is a Dispatch Interval in the SESSM Service Timing.

- 2.6 Calculate the refund due in Dispatch Interval DI for the relevant Registered Facility providing Frequency Co-optimised Essential System Services under SESSM Award a, as follows:

$$\text{SESSMRefund}(a,DI) =$$

$$\left\{ \begin{array}{l} 0 \text{ if } \text{SESSMOutageCount}(a,DI) \leq \text{MaxUnavailability}(a) \text{ or} \\ \sum_{i=1}^{DI-1} \text{SESSMRefund}(a,i) \geq \text{PaymentCap}(a) \text{ or} \\ \text{AvailabilityQuantity}(a,DI) = 0, \\ \min \left(\begin{array}{l} \text{AvailabilityPayment}(a,DI) \times \text{SESSMRefundFactor} \times \text{SESSMShortfall}(a,DI), \\ \text{PaymentCap}(a) - \sum_{i=1}^{DI-1} \text{SESSMRefund}(a,i) \end{array} \right) \text{ otherwise} \end{array} \right.$$

where:

- (a) SESSMOutageCount(a,DI) is the quantity determined under clause 2.5 of this Appendix 2C;
- (b) MaxUnavailability(a) is the number of Dispatch Intervals determined in clause 2.3(b) of this Appendix 2C;
- (c) SESSMRefund(a,i) is the refund due in Dispatch Interval i for the relevant Registered Facility providing Frequency Co-optimised Essential System Services under SESSM Award a;
- (d) PaymentCap(a) is the quantity determined under clause 2.3(c) of this Appendix 2C;
- (e) SESSMRefundFactor is 3;
- (f) ~~[Blank] ESSOffer(f,c,DI) is the quantity determined under clause 2.4(a) of this Appendix 2C;~~
- (g) AvailabilityQuantity(a,DI) is the quantity determined under clause 2.2(b) of this Appendix 2C;
- (h) AvailabilityPayment(a,DI) is the quantity determined under clause 2.2(c) of this Appendix 2C; and
- (i) SESSMShortfall(a,DI) is the quantity determined under clause 2.7 of this Appendix 2C.

- 2.7 Calculate the SESSM shortfall for each SESSM Award for each Dispatch Interval as follows:

SESSMShortfall(a,DI) =

$$\max \left(0, \frac{\text{AvailabilityQuantity}(a,DI) - \max(0, \text{ESSOffer}(f,c,DI) - \text{BaseQuantity}(a,DI))}{\text{AvailabilityQuantity}(a,DI)} \right)$$

where:

- ~~i. (a)~~ AvailabilityQuantity(a,DI) is the quantity determined under clause 2.2(b) of this Appendix 2C;
- ~~ii. (b)~~ ESSOffer(f,c,DI) is the quantity determined under clause 2.4(a) of this Appendix 2C; and

- ~~ii-(c)~~ BaseQuantity(a,DI) is the quantity determined under clause 2.2(a) of this Appendix 2C.

2.8 Calculate the Per-Dispatch Interval Facility Availability Payments and Facility SESSM Refunds for Registered Facility f, as follows:

- (a) calculate the Per-Dispatch Interval Facility Availability Payments for Registered Facility f in respect of each Frequency Co-optimised Essential System Service in Dispatch Interval DI as follows:

~~i.~~ $RR_AvailabilityPayment(f,DI) = \sum_{a \in ARR} AvailabilityPayment(a,DI);$

~~ii.~~ $RL_AvailabilityPayment(f,DI) = \sum_{a \in ARL} AvailabilityPayment(a,DI);$

~~iii.~~ $CR_AvailabilityPayment(f,DI) = \sum_{a \in ACR} AvailabilityPayment(a,DI);$

~~iv.~~ $CL_AvailabilityPayment(f,DI) = \sum_{a \in ACL} AvailabilityPayment(a,DI);$

~~v.~~ $RCS_AvailabilityPayment(a,DI) = \sum_{a \in ARCS} AvailabilityPayment(a,DI);$

where:

~~A.i.~~ $a \in ARR$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide Regulation Raise in Dispatch Interval DI;

~~B.ii.~~ $a \in ARL$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide Regulation Lower in Dispatch Interval DI;

~~C.iii.~~ $a \in ACR$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide Contingency Reserve Raise in Dispatch Interval DI;

~~D.iv.~~ $a \in ACL$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide Contingency Reserve Lower in Dispatch Interval DI;

~~E.v.~~ $a \in ARCS$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide RoCoF Control Service in Dispatch Interval DI; and

~~F.vi.~~ AvailabilityPayment(a,DI) is the quantity determined under clause 2.2(c) of this Appendix 2C; and

- (b) calculate the Facility SESSM Refunds for Registered Facility f in respect of each Frequency Co-optimised Essential System Service in Dispatch Interval DI, as follows:

~~i.~~ $RR_SESSMRefund(f,DI) = \sum_{a \in ARR} SESSMRefund(a,DI);$

~~ii.~~ $RL_SESSMRefund(f,DI) = \sum_{a \in ARL} SESSMRefund(a,DI);$

~~iii.~~ $CR_SESSMRefund(f,DI) = \sum_{a \in ACR} SESSMRefund(a,DI);$

~~iv.~~ $CL_SESSMRefund(f,DI) = \sum_{a \in ACL} SESSMRefund(a,DI);$ and

~~v.~~ $RCS_SESSMRefund(f,DI) = \sum_{a \in ARCS} SESSMRefund(a,DI),$

where:

- ~~A.i.~~ $\text{SESSMRefund}(a, DI)$ is the quantity determined under clause 2.6 of this Appendix 2C;
- ~~B.ii.~~ $a \in \text{ARR}$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide Regulation Raise in Dispatch Interval DI ;
- ~~C.iii.~~ $a \in \text{ARL}$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide Regulation Lower in Dispatch Interval DI ;
- ~~D.iv.~~ $a \in \text{ACR}$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide Contingency Reserve Raise in Dispatch Interval DI ;
- ~~E.v.~~ $a \in \text{ACL}$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide Contingency Reserve Lower in Dispatch Interval DI ; and
- ~~F.vi.~~ $a \in \text{ARCS}$ is the set of SESSM Awards awarded to the Market Participant to whom Registered Facility f is registered to provide RoCoF Control Service in Dispatch Interval DI .

6. Monitoring the Effectiveness of the Market

Explanatory Note

Clause 2.16.13D is amended to set an explicit deadline for the Coordinator to deliver their first report to the Minister on the effectiveness of the market. In the context of the delayed New WEM Commencement Day to 1 October 2023, the proposed deadline of 1 July 2025 has been set to allow time for the new market arrangements to bed in after New WEM Commencement Day and provide sufficient historical data for a meaningful assessment and consultation with stakeholders.

The amendment to clause 2.16.13D is expected to commence immediately after gazettal of the Tranche 6 Amending Rules.

2.16.13D. The Coordinator must provide to the Minister a report dealing with the matters identified in clause 2.16.13A and 2.16.13B at least once in every three years, with the first such report due by 1 July 2025.