Electricity Industry (Wholesale Electricity Market) Regulations 2004

# Wholesale Electricity Market Amendment (Miscellaneous Amendments No. 2) Rules 2021

**Commencement**

- The amending rules set out in Schedule A come into operation immediately after the commencement of:

  - the amending rules in the *Wholesale Electricity Market Amendment (Reserve Capacity Pricing Reforms) Rules 2019*, that commence at 8:00 AM (WST) on 1 October 2021;

  - the amending rules set out in Schedule C of the *Wholesale Electricity Market Amendment (Tranche 1 Amendments) Rules 2020*, that commence at 8:00 AM (WST) on 1 October 2021;

  - the amending rules set out in Schedule C of the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020* specified in Part 2 of the commencement notice dated 24 May 2021, that commence at 8:00 AM (WST) on 1 October 2021; and

  - the amending rules set out in Schedule C of the *Wholesale Electricity Market Amendment (Miscellaneous Amendments No. 1) Rules 2021*, that commence at 8:00 AM (WST) on 1 October 2021.

- The amending rules set out in Schedule B come into operation immediately after the commencement of:

  - the amending rules set out in Schedule C of the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020* specified in Part 3 of the commencement notice dated 24 May 2021, that commence at 8:00 AM (WST) on 1 November 2021; and

  - the amending rules set out in Schedule C of the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020* specified in Part 2 of the commencement notice dated 24 September 2021, that commence at 8:00 AM (WST) on 1 November 2021.

- The amending rules set out in Schedule C come into operation at 8:00 AM (WST) on 1 December 2021.

- The amending rules set out in Schedule D come into operation immediately after the commencement of:

  - the amending rules set out in Schedule C of the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020* specified in Part 4 of the commencement notice dated 24 May 2021, that commence at 8:00 AM (WST) on 1 March 2022; and

  - the amending rules set out in Schedule D of the *Wholesale Electricity Market Amendment (Miscellaneous Amendments No. 1) Rules 2021*, that commence at 8:00 AM (WST) on 1 March 2022.

- The amending rules set out in Schedule E come into operation at 8:00 AM (WST) on 1 June 2022.

- The amending rules set out in Schedule F come into operation at 8:00 AM (WST) on 1 July 2022.

- The amending rules set out in Schedule G come into operation at a time specified by the Minister in a notice published in the Gazette. Different days may be specified for different provisions.

## Schedule A

**1.      Section 1.7 amended**

1.1      Clause 1.7.3A is amended by inserting a full stop at the end of the clause number so that it reads '1.7.3A.'.

**2.      Section 1.17A amended**

2.1      Section 1.17A heading is amended by inserting a full stop at the end of the heading section number so that it reads '1.17A.'.

2.2      Section 1.17A is amended by deleting the long dash (—) in each place where it appears in the section and replacing it with a colon (:).

**3.      Section 1.19A amended**

3.1      Clause 1.19A.2 is amended by deleting the words 'WEM Website' and replacing them with the words 'relevant Transferee's website'.

**4.      Section 1.36B amended**

4.1      Insert the following new clause 1.36B.2A:

1.36B.2A.  If, following the initial publication of the timetable referred to in clause 1.36B.2, clause 1.36B.6 is amended to include a new key event in section 4.1, AEMO must, within 20 Business Days of the amendment commencing, determine and publish an updated timetable to include the modified or extended date and time, as applicable, for the new key event.

4.2     Insert the following new clause 1.36B.6(qA):

(qA)     clause 4.1.22 is amended so that AEMO must set the number of Capacity Credits to be associated with each component of a Facility in accordance with clause 4.20.17 and publish that information by the date and time specified in the timetable published by AEMO under clause 1.36B.2 and as may be updated by AEMO in accordance with clause 1.36B.3;

**5.     Section 1.51 added**

5.1     Insert the following new section 1.51:

**1.51.     Specific Transitional Provisions – Automatic Generation Control Dispatch**

1.51.1.     Where AEMO considers that it is necessary to test or implement operational controls required for AEMO and Market Participants to operate under any of the provisions of the Tranches 2 and 3 Amending Rules (as defined in clause 1.43.1) and associated WEM Procedures, AEMO may request approval from a Market Participant to control specified operations of the Market Participant's Registered Facility. Where a Market Participant approves AEMO's request, AEMO's operational control of the Registered Facility may include:

(a)     the starting, loading and stopping of the Registered Facility; and

(b)     limiting the injection of the Registered Facility.

1.51.2.     AEMO's operational control of a Registered Facility pursuant to clause 1.51.1:

(a)     does not remove AEMO's obligation to issue and record Dispatch Instructions for the Registered Facility during the period of AEMO's operational control; and

(b)     does not affect, modify or limit a Market Participant's rights and obligations in respect of the Registered Facility under these WEM Rules including the obligation to comply with the most recently issued Dispatch Instruction.

1.51.3.     Where AEMO has operational control of a Registered Facility pursuant to clause 1.51.1:

(a)     AEMO is not required to issue a Dispatch Instruction to the Registered Facility with respect to an operational control that relates to the implementation of a previously issued Dispatch Instruction; and

(b)     AEMO must seek to operate the Registered Facility in compliance with Dispatch Instructions recorded for the Registered Facility.

1.51.4.     Where AEMO does not operate the Registered Facility in accordance with clause 1.51.3(b), the relevant Market Participant is not taken to be non-compliant with the relevant Dispatch Instruction.

**6. Section 1.52 added**

6.1     Insert the following new section 1.52:

### 1.52. Specific Transitional Provisions – Staged Commencement of Prescribed WEM Technical Standards

1.52.1.    Notwithstanding any other provision of these WEM Rules:

(a)     a reference to each of the provisions specified in clauses 2.8.14(b), 2.8.14(c), 2.8.14(d) and 2.8.14(e) is a reference to a Specific Amending Rule (as defined in clause 1.36C.1);

(b)     clauses 2.4.3B and 2.5.1D do not apply to a Specific Amending Rule specified in clause 1.52.1(a) until the Specific Amending Rule (as defined in clause 1.36C.1) is a Commenced Tranches 2 and 3 Amending Rule (as defined in clause 1.36C.1); and

(c)     for the purposes of this clause 1.52.1 a Specific Amending Rule (as defined in clause 1.36C.1) includes any subsequent amendment or replacement of the Specific Amending Rule in a subsequent instrument made by the Minister under regulation 7(5) of the WEM Regulations.

**7. Section 2.3 amended**

7.1     Clause 2.3.2 is amended by deleting the first colon immediately after the words 'matters including'.

**8. Section 2.4 amended**

8.1     Clause 2.4.3 is amended by:

(a)     deleting the word 'and' at the end of clause 2.4.3(dA);

(b)     deleting the full stop at the end of clause 2.4.3(e) and replacing it with the word '; and'; and

(c)     inserting the following new clause 2.4.3(f):

(f)     any advice or information provided by AEMO or a Network Operator under clause 2.4.3C.

8.2     Insert the following new clauses 2.4.3B, 2.4.3C, 2.4.3D and 2.4.3E:

2.4.3B.    If the Coordinator considers that making Amending Rules will directly or indirectly affect a WEM Technical Standard, the Coordinator must request advice, which may include a request to provide information, from AEMO and each Network Operator that the Coordinator considers will be affected by the relevant Amending Rules to assist the Coordinator in assessing the relevant Rule Change Proposal. The following applies to a request:

(a) the Coordinator must consult with each recipient of the request, on the requirements in the request and the timeframes for responding to the request; and

(b) the Coordinator may, at her or his discretion, require each recipient of the request to provide the advice jointly or independently.

2.4.3C. Subject to clause 2.4.3D, each recipient of a request under clause 2.4.3B must provide the advice or information requested by the Coordinator under clause 2.4.3B in accordance with the timeframes and any other requirements specified in the request.

2.4.3D. If a recipient of a request under clause 2.4.3B requires a longer timeframe to provide the advice or information requested by the Coordinator under clause 2.4.3B, the recipient:

(a) may seek an extension to the timeframe from the Coordinator; and

(b) must outline the reasons for seeking the extension.

2.4.3E. The Coordinator may, in her or his sole discretion, approve or decline a request for an extension of time made under clause 2.4.3D.

8.3 Clause 2.4.4 is amended by deleting the words 'Rule Change Panel must maintain on the WEM Website' and replacing them with the words 'Coordinator must maintain on the Coordinator's Website'.

**9. Section 2.5 amended**

9.1 Insert the following new clause 2.5.1D:

2.5.1D. Where AEMO or a Network Operator wishes to make a Rule Change Proposal that may directly or indirectly affect a WEM Technical Standard, then, without limiting any other requirements applying to a Rule Change Proposal in these WEM Rules or a WEM Procedure, AEMO or the Network Operator must, before making the Rule Change Proposal:

(a) where AEMO wishes to make a Rule Change Proposal, AEMO must consult in good faith with each Network Operator that may be directly or indirectly affected by the relevant proposed Amending Rules; and

(b) where a Network Operator wishes to make a Rule Change Proposal, the Network Operator must consult in good faith with AEMO and each other Network Operator that may be directly or indirectly affected by the relevant proposed Amending Rules.

9.2 Clause 2.5.7 is amended by deleting the words 'WEM Website' and replacing them with the words 'Coordinator's Website'.

9.3     Clause 2.5.11 is amended by deleting the word 'it' immediately after the words 'she or he'.

**10.     Section 2.6 amended**

10.1    Clause 2.6.1 is amended by inserting a full stop at the end of the clause.

**11.     Section 2.7 amended**

11.1    Clause 2.7.2 is amended by inserting the word 'WEM' immediately after the word 'these'.

11.2    Clause 2.7.7 is amended by inserting the following new clause 2.7.7(cA):

(cA)    a summary of any advice provided by AEMO or a Network Operator under clause 2.4.3C, and reasons if the Coordinator does not propose to follow partially or fully the advice;

11.3    Clause 2.7.8 is amended by inserting the following new clause 2.7.8(bB):

(bB)    reasons if the Coordinator has decided not to follow partially or fully any advice provided by AEMO or a Network Operator under clause 2.4.3C;

**12.     Section 2.8 amended**

12.1    Insert the following new clause 2.8.14:

2.8.14.    The following clauses are WEM Technical Standards:

(a)     section 3.1;

(b)     clause 3.2.5;

(c)     clauses 3.3.3 and 3.4.3;

(d)     section 3.6;

(e)     section 3.7;

(f)     chapter 3A and appendix 12; and

(g)     chapter 3B.

**13.     Section 2.9 amended**

13.1    Clause 2.9.2D(a) is amended by deleting with the words 'or Power System Operation Procedure'.

**14.     Section 2.10 amended**

14.1    Clause 2.10.2A(b) is deleted and replaced with the following:

(b)     publish details of whether a Procedure Change Proposal will be progressed with respect to the suggested amendment to or replacement of a WEM Procedure and the reasons for that decision on AEMO's, the Economic Regulation Authority's, the Coordinator's or the Network Operator's website, as applicable.

14.2 Clause 2.10.9 is amended by deleting the words 'the independent Chair of the Market Advisory Committee' and replacing them with the words 'The independent Chair of the Market Advisory Committee'.

14.3 Clause 2.10.10 is amended by deleting the words ', the Coordinator' immediately after the words 'the Economic Regulation Authority'.

14.4 Clause 2.10.13(c) is amended by deleting the words ', the Coordinator' immediately after the words 'the Economic Regulation Authority'.

**15. Section 2.11 amended**

15.1 Clause 2.11.2 is amended by deleting the words 'the Rule Change Panel's decision,'.

**16. Section 2.16 amended**

16.1 Clause 2.16.5 is amended by deleting the words 'AEMO must, on request from the Economic Regulation Authority,' and replacing them with the words 'AEMO must, on request from the Coordinator or the Economic Regulation Authority (as applicable),'.

16.2 Clause 2.16.9D is amended by deleting the words 'the WEM Website' and replacing them with the words 'its website'.

16.3 Clause 2.16.9FA is amended by deleting the words 'the WEM Website' and replacing them with the words 'its website'.

16.4 Clause 2.16.14 is amended by:

(a) deleting the words 'the Economic Regulation Authority's functions' and replacing them with the words 'the Coordinator's functions or the Economic Regulation Authority's functions (as applicable)'; and

(b) deleting the words 'AEMO must use information provided to it by the Economic Regulation Authority under clause 2.16.6(c) only for the purpose of carrying out its functions under this section 2.16.  AEMO must treat information provided to it by the Economic Regulation Authority under clause 2.16.6(c) as confidential and must not publish any of that information other than in accordance with this section 2.16' and replacing them with the words 'AEMO must use information provided to it by the Coordinator or the Economic Regulation Authority under clause 2.16.6(c) only for the purpose of carrying out its functions under this section 2.16. AEMO must treat information provided to it by the Coordinator or the Economic Regulation Authority under clause 2.16.6(c) as confidential and must not publish any of that information other than in accordance with this section 2.16'.

**17. Section 2.24 amended**

17.1 Clause 2.24.1(a) is amended by inserting the words ', Coordinator Fees' immediately after the words 'System Operation Fees'.

**18. Section 2.25 amended**

18.1    Clause 2.25.1A is amended by deleting the comma immediately after the word 'of'.

18.2    Clause 2.25.4 is amended by deleting the words 'AEMO in its capacity as System Management'.

**19. Section 2.32 amended**

19.1    Clause 2.32.7A is amended by:

(a)    deleting the words 'or AEMO' and replacing them with the word 'AEMO'; and

(b)    deleting the words 'clause 2.28.1(b) or (c)' and replacing them with the words 'clauses 2.28.1(b) or 2.28.1(c)'.

**20. Section 2.34A amended**

20.1    Clause 2.34A.6 is deleted and replaced with the following:

2.34A.6.    If AEMO approves an application for accreditation of a Facility made pursuant to clause 2.34A.2, it must, as soon as possible, inform the Market Participant, together with notification of any required amendments, including revised or additional parameters or settings, and the Market Participant must include the following information in its Standing Data for the Facility, or in such other place as specified in the WEM Procedure referred to in clause 2.34A.13, in respect of each Frequency Co-optimised Essential System Service referred to in clause 2.34A.1 that the Facility is accredited to provide:

(a)    the maximum quantity of each applicable Frequency Co-optimised Essential System Service for each relevant Facility operating configuration;

(b)    the Standing Enablement Minimum and Standing Enablement Maximum for each relevant Facility operating configuration;

(c)    the Standing Low Breakpoint and Standing High Breakpoint for each relevant Facility operating configuration;

(d)    where the Facility is accredited to provide Contingency Reserve:

i.    the Facility Speed Factor (which must be based on the Facility's actual or modelled response to a local frequency excursion determined in accordance with the WEM Procedure referred to in clause 2.34A.13); and

ii.    whether the Facility is subject to the Maximum Contingency Reserve Block Size;

(e)     where the Facility is accredited to provide Regulation or RoCoF Control Service, a Facility Performance Factor of one for each of these Essential System Services; and

(f)     any other performance parameters that may be specified in the WEM Procedure referred to in clause 2.34A.13.

20.2    Clause 2.34A.8 is deleted and replaced with the following:

2.34A.8.    Where, in the Market Participant's reasonable opinion, the performance of the Facility is varying significantly, or is likely to vary significantly, from Frequency Co-optimised Essential System Service Accreditation Parameters for the Facility, or any performance requirements specified in the WEM Procedure referred to in clause 2.34A.13, the Market Participant must provide the information in respect of those matters to AEMO as soon as possible and request AEMO to amend the Frequency Co-optimised Essential System Service Accreditation Parameters for the Facility to reflect the actual or likely varied performance.

20.3    Clause 2.34A.11 is deleted and replaced with the following:

2.34A.11.    If AEMO becomes aware, either pursuant to clause 2.34A.10 or through its own monitoring activities, that the performance of a Facility has varied, is varying, or is likely to vary, significantly from the Frequency Co-optimised Essential System Service Accreditation Parameters for the Facility, or any performance requirements specified in the WEM Procedure referred to in clause 2.34A.13, AEMO may reassess the Frequency Co-optimised Essential System Service Accreditation Parameters, and notify the Market Participant of its decision to either:

(a)     amend the Frequency Co-optimised Essential System Service Accreditation Parameters, the amendments it will make and the date that the amendments will take effect from; or

(b)     not amend the Frequency Co-optimised Essential System Service Accreditation Parameters,

and the reasons for its decision.

## 21.    Section 3.13 amended

21.1    Clause 3.13.3A is deleted and replaced with the following:

3.13.3A.    For each Financial Year, by 31 March prior to the start of that Financial Year, the Economic Regulation Authority must determine values for the parameters Margin_Peak and Margin_Off-Peak, taking into account the Wholesale Market Objectives and in accordance with the following:

(a) for the reserve availability payment margin applying for Peak Trading Intervals, Margin_Peak, the Economic Regulation Authority must take account of:

i. the margin Synergy could reasonably have been expected to earn on energy sales forgone due to the supply of Spinning Reserve Service during Peak Trading Intervals; and

ii the loss in efficiency of Synergy's Scheduled Generators that AEMO has scheduled (or caused to be scheduled) to provide Spinning Reserve Service during Peak Trading Intervals that could reasonably be expected due to the scheduling of those reserves;

(b) for the reserve availability payment margin applying for Off-Peak Trading Intervals, Margin_Off-Peak, the Economic Regulation Authority must take account of:

i. the margin Synergy could reasonably have been expected to earn on energy sales forgone due to the supply of Spinning Reserve Service during Off-Peak Trading Intervals; and

ii. the loss in efficiency of Synergy's Scheduled Generators that AEMO has scheduled (or caused to be scheduled) to provide Spinning Reserve Service during Off-Peak Trading Intervals that could reasonably be expected due to the scheduling of those reserves; and

(c) the Economic Regulation Authority must undertake a public consultation process, which must include publishing an issues paper and issuing an invitation for public submissions.

21.2 Clause 3.13.3B(a) is amended by:

(a) deleting the words 'by 30 November of the year prior to the start of the Review Period, AEMO must submit a proposal for the Cost_LR parameter for the Review Period to the Economic Regulation Authority.'; and

(b) inserting the word 'and' after the semi-colon at the end of the clause.

21.3 Clause 3.13.3C is amended by:

(a) deleting the word 'AEMO' immediately after the words 'For any year within a Review Period if' and replacing it with the words 'the Economic Regulation Authority';

(b) deleting the words 'by 30 November of the year prior to the start of the relevant Financial Year, AEMO must submit an updated proposal for the Cost_LR parameter to the Economic Regulation Authority.' in clause 3.13.3C(a); and

(c) inserting the word 'and' after the semi-colon at the end of clause 3.13.3C(a).

**22. Section 4.4 amended**

22.1 Clause 4.4.1(bA) is deleted and replaced with the following:

(bA) if the Facility contains an Energy Producing System:

    i. the expected nameplate capacity for each technology; and

    ii. the maximum Reserve Capacity anticipated to be available from each technology;

**23. Section 4.4A amended**

23.1 Clause 4.4A.1 is amended by inserting the words 'Demand Side Programme with less than 10 MW of Capacity Credits assigned to the Demand Side Programme at the time the notice is given or required to be given under this clause 4.4A.1 or a' immediately after the words 'Where a Facility, that is not a'.

**24. Section 4.8 amended**

24.1 Clause 4.8.3 is deleted and replaced with the following:

4.8.3. Clause 4.8.2 does not apply to:

(a) an application for Early Certified Reserve Capacity submitted under clause 4.28C.2 for a facility, or an upgrade of a Facility; or

(b) an application for Conditional Certified Reserve Capacity submitted under clause 4.9.1(b) for a facility.

**25. Section 4.9 amended**

25.1 Clause 4.9.3(b) is deleted and replaced with the following:

(b) in the case of an application for certification of Reserve Capacity for a Non-Scheduled Facility (excluding where clause 4.11.1(bD)(ii) applies) or an Intermittent Generating System that is yet to enter service, the report described in clause 4.10.3;

25.2 Insert the following new clause 4.9.3(bA):

(bA) in the case of an application for certification of Reserve Capacity for a Facility containing an Intermittent Generating System which has installed Facility Sub-Metering in accordance with clause 2.29.12, the data from the Facility Sub-Metering for the period identified in step 1(a) of the Relevant Level Methodology during which the Facility Sub-Metering was installed; and

25.3 Clause 4.9.5(c) is amended by inserting the words 'a Non-Scheduled Facility (excluding where clause 4.11.1(bD)(ii) applies) or' immediately after the words 'that were previously conditionally assigned, set or determined by AEMO, subject to the Certified Reserve Capacity for'.

25.4    Clause 4.9.9(f) is amended by deleting the words 'for which a Market Participant nominated to use' and replacing them with the words 'assessed under'.

**26.    Section 4.10 amended**

26.1    Clause 4.10.2(a) is amended by inserting the words 'and Scheduled Facilities' immediately after the words 'Semi-Scheduled Facilities'.

**27.    Section 4.11 amended**

27.1    Clause 4.11.1(a) is amended by:

(a)      deleting the words 'Scheduled Facility comprising only Non-intermittent Generating Systems' and replacing them with the words 'Non-Intermittent Generating System'; and

(b)      deleting the word '41oC' and replacing it with the words '41 degrees Celsius'.

27.2    Clause 4.11.1(b) is deleted and replaced with the following:

(b)      the Certified Reserve Capacity for a Non-Intermittent Generating System must not exceed the capacity specified in clause 4.10.1(e)(ii);

27.3    Clause 4.11.1(bA) is deleted and replaced with the following:

(bA)     where the Facility is an Energy Producing System, the Certified Reserve Capacity must not exceed:

i.       where that Facility is a Constrained Access Facility, the Constrained Access Entitlement as at the date and time specified in clause 4.1.12(b); or

ii.      otherwise, the level of unconstrained network access as referred to in clause 4.10.1(bA)(iii);

27.4    Clause 4.11.3 is amended by:

(a)      deleting the word 'clause 4.11.1(bD)' and replacing it with the word 'clause 4.11.1(bD)(i)'; and

(b)      deleting the word 'De-rated' and replacing it with the word 'Derating'.

27.5    Clause 4.11.3BA(b)(i) is amended by inserting the words 'or relevant component of a Facility,' immediately after the word 'Facility,'.

27.6    Clause 4.11.6 is amended by inserting the word 'an' immediately after the words 'Reserve Capacity of'.

**28.    Section 4.16 amended**

28.1    Clause 4.16.6 is amended by deleting the words 'the WEM Website' and replacing them with the words 'its website'.

28.2 Clause 4.16.7 is amended by deleting the words 'the WEM Website' and replacing them with the words 'its website'.

28.3 Clause 4.16.8 is amended by deleting the words 'the WEM Website' and replacing them with the words 'its website'.

**29. Section 6.20 amended**

29.1 Clause 6.20.9 is amended by deleting the words 'the WEM Website' and replacing them with the words 'its website'.

29.2 Clause 6.20.9A is amended by deleting the words 'the WEM Website' and replacing them with the words 'its website'.

**30. Section 10.2 amended**

30.1 Clause 10.2.2(d)(iiiB) is amended by deleting the words 'Rule Change Panel' and replacing them with the word 'Coordinator'.

30.2 Clause 10.2.3 is amended by deleting the words 'clauses 10.3.2B and 10.3.2BA' and replacing them with the words 'clauses 10.2.3A, 10.2.3B and 10.2.3BA'.

30.3 Clause 10.2.3(c) is amended by inserting the words 'or permitted' immediately after the words 'is required'.

30.4 Clause 10.2.3(ca) is deleted and replaced with the following:

(cA) the Economic Regulation Authority may make available to a person information if the Economic Regulation Authority is required or permitted to do so by law or these WEM Rules;

30.5 Clause 10.2.3(cb) is deleted and replaced with the following:

(cB) the Coordinator may make available to a person information if the Coordinator is required or permitted to do so by law or these WEM Rules;

**31. Chapter 11 Glossary amended**

31.1 The definition for 'Availability Class 1' is deleted and replaced with the following:

**Availability Class 1**: The Availability Class assigned by AEMO to a facility containing an Intermittent Generating System or Non-Intermittent Generating System, and any other facility that is expected to be available to be dispatched for all Trading Intervals in a Capacity Year, under clause 4.11.4(a).

31.2 The definition for 'Benchmark Reserve Capacity Price' is deleted and replaced with the following:

**Benchmark Reserve Capacity Price**: In respect of a Reserve Capacity Cycle, the price published by the Economic Regulation Authority under clause 4.16.1.

31.3.    The definition for 'Charge Level' is amended by deleting the word 'Chapter 2' and replacing it with the word 'section 2.36A'.

31.4    The following definition for 'Coordinator' is deleted:

**Coordinator**: Means the Coordinator of Energy referred to in section 4 of the Energy Coordination Act 1994 (WA).

31.5    Insert the following new definition for 'Electric Storage Resource':

**Electric Storage Resource**: A system or resource capable of receiving and storing energy for later production of electric energy.

31.6    Insert the following new definition for 'Separately Certified Component':

**Separately Certified Component**: Any component of a Scheduled Facility or Semi-Scheduled Facility which AEMO has assessed separately in the determination of Certified Reserve Capacity for the Facility, and for which AEMO assigned Capacity Credits for any Trading Interval in the Capacity Year.

31.7    Insert the following new definition for 'WEM Technical Standard':

**WEM Technical Standard:** A provision of the WEM Rules, identified in clause 2.8.14.

**32.    Appendix 9 amended**

32.1    Appendix 9 is amended by deleting the contents of it, except for the Appendix 9 heading, and replacing them with the following:

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**Appendix 9 Overview**

- Part A of this Appendix 9 sets out definitions and introductory material.
- Part B sets out the Relevant Level Methodology.

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# Part A: Introduction

## Interpretations and Definitions

A.1.    This Appendix 9 presents the methodology for determining the Relevant Levels for Candidate Facilities for a given Reserve Capacity Cycle.

A.2.    In this Appendix 9:

(a)    a Candidate Facility is a Facility, or a component of a Facility, for which:

i.    a Market Participant has applied for:

1.    Certified Reserve Capacity for the relevant Reserve Capacity Cycle under section 4.9;

2.    Conditional Certified Reserve Capacity for a future Reserve Capacity Cycle under section 4.9, where AEMO is required under clause 4.9.7A to process the application at the time it processes

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applications for Certified Reserve Capacity for the relevant Reserve Capacity Cycle; or

3. Early Certified Reserve Capacity for a Reserve Capacity Cycle under clause 4.28C.2, where AEMO is required to process the application at the time it processes applications for Certified Reserve Capacity for the relevant Reserve Capacity Cycle;

ii. the Market Participant's application includes all supporting information required under section 4.10 or clause 4.28C.5 (as applicable); and

iii. the Certified Reserve Capacity, Conditional Certified Reserve Capacity or Early Certified Reserve Capacity (as applicable) is required to be determined in accordance with clause 4.11.2(b);

(b) the full operation date of a Candidate Facility for the relevant Reserve Capacity Cycle ("Full Operation Date") is:

i. the date provided under clause 4.10.1(c)(iii)(7) or revised in accordance with clause 4.27.11A, where at the time the application for certification of Reserve Capacity is made the Candidate Facility is yet to enter service; or

ii. the date most recently provided for a Reserve Capacity Cycle under clause 4.10.1(k) otherwise; and

(c) a Candidate Facility will be considered to be:

i. a new Candidate Facility if the five-year period identified in Step 1(a) of this Appendix 9 commenced before 8:00 AM on the Full Operation Date for the Facility ("New Candidate Facility"); or

ii. an existing Candidate Facility ("Existing Candidate Facility") otherwise.

A.3. AEMO must determine the Relevant Levels for Candidate Facilities for a given Reserve Capacity Cycle by following each of the steps set out in Part B of this Appendix 9.

# Part B: Process Steps

***Determining Existing Facility Load for Scheduled Generation***

Step 1: Identify:

(a) the five year period ending at 8:00 AM on 1 April of Capacity Year 1 of the relevant Reserve Capacity Cycle;

(b) any 12 month period, from 1 April to 31 March, occurring during the five year period identified in Step 1(a), where the 12 Trading Intervals with the highest Existing Facility Load for Scheduled Generation in that 12 month period have not previously been determined under this Appendix 9; and

(c) any 12 month period, from 1 April to 31 March, occurring during the five year period identified in Step 1(a), where the 12 Trading Intervals with the highest

Existing Facility Load for Scheduled Generation in that 12 month period have previously been determined under this Appendix 9.

Step 2: Determine the quantity of electricity (in MWh) sent out by each Candidate Facility:

(a) using Facility Sub-Metering, where the Candidate Facility is a component of a Facility for which Facility Sub-Metering is required to be installed; and

(b) using Sent Out Metered Schedules, where the Candidate Facility is not a component of a Facility for which Facility Sub-Metering is required to be installed,

for each of the Trading Intervals in the period identified in Step 1(b).

Step 3: For each Candidate Facility, identify any Trading Intervals in the period identified in Step 1(b) where:

(a) the Candidate Facility, other than a Facility in the Balancing Portfolio, was directed to restrict its output under a Dispatch Instruction as provided in a schedule under clause 7.13.1(c); or

(b) the Candidate Facility, if in the Balancing Portfolio, was instructed by AEMO to deviate from its Dispatch Plan or change its commitment or output as provided in a schedule under clause 7.13.1C(d); or

(c) the Candidate Facility was affected by a Consequential Outage; or

(d) the Candidate Facility was directed to restrict its output under an Operating Instruction issued in accordance with a Network Control Service Contract, as provided in a schedule under clause 7.13.1(cC).

Step 4: For each Candidate Facility and Trading Interval identified in Step 3(a):

(a) identify the actual quantity as determined in Step 2 if:

i. AEMO has made a revised estimate of the maximum quantity in accordance with clause 7.7.5A(c) and the WEM Procedure specified in clause 7.7.5A; and

ii. the revised estimate of the maximum quantity is lower than the actual quantity as determined in Step 2;

(b) identify the actual quantity as determined in Step 2 if:

i. Step 4(a) does not apply; and

ii. the estimated maximum quantity determined by AEMO under clause 7.13.1(eF) is lower than the actual quantity as determined in Step 2; and

(c) if Steps 4(a) and 4(b) do not apply:

   i.  identify the revised estimate of the maximum quantity determined by AEMO in accordance with the WEM Procedure specified in clause 7.7.5A; or

   ii.  if there is no revised estimate, identify the estimate determined by AEMO under clause 7.13.1(eF).

Step 5: For each Candidate Facility and Trading Interval identified in Step 3(b) use:

  (a) the estimate recorded by AEMO under clause 7.13.1C(e); and

  (b) the quantity determined for the Candidate Facility and Trading Interval in Step 2,

to estimate the quantity of energy (in MWh) that would have been sent out by the Candidate Facility had it not complied with AEMO's instruction to change its commitment or output during the Trading Interval.

Step 6: For each Candidate Facility and Trading Interval identified in Step 3(c) use:

  (a) the Unadjusted Consequential Outage Quantity for the Candidate Facility for the Trading Interval;

  (b) the quantity determined for the Candidate Facility and Trading Interval in Step 2; and

  (c) the information recorded by AEMO under clause 7.13.1C(a),

to estimate the quantity of energy (in MWh) that would have been sent out by the Candidate Facility had it not been affected by the Consequential Outage during the Trading Interval.

Step 6A: For each Candidate Facility and Trading Interval identified in Step 3(d) use:

  (a) the schedule of Operating Instructions determined by AEMO under clause 7.13.1(cC);

  (b) the quantity determined for the Candidate Facility and Trading Interval in Step 2; and

  (c) the information recorded by AEMO under clause 7.13.1C(a),

to estimate the quantity of energy (in MWh) that would have been sent out by the Candidate Facility had it not been subject to an Operating Instruction during the Trading Interval.

Step 7: Determine for each Trading Interval in each 12 month period identified in Step 1(b) the Existing Facility Load for Scheduled Generation (in MWh) as:

(Total_Generation + DSP_Reduction + Interruptible_Reduction + Involuntary_Reduction) – CF_Generation

where

Total_Generation is the Total Sent Out Generation of all Registered Facilities;

DSP_Reduction is the total quantity of Deemed DSM Dispatch for all Demand Side Programmes for that Trading Interval;

Interruptible_Reduction is the total quantity by which all Interruptible Loads reduced their consumption in accordance with the terms of an Ancillary Service Contract, as recorded by AEMO under clause 7.13.1C(c);

Involuntary_Reduction is the total quantity of energy not served due to involuntary load shedding (manual and automatic), as recorded by AEMO under clause 7.13.1C(b); and

CF_Generation is the total sent out generation of all Candidate Facilities, as determined in Step 2 or estimated in Steps 4, 5, 6 or 6A as applicable.

Step 8: Determine for each 12 month period identified in Step 1(b) the 12 Trading Intervals, occurring on separate Trading Days, with the highest Existing Facility Load for Scheduled Generation.

Step 9: Identify, for each 12 month period identified in Step 1(c), the following:

(a) the Existing Facility Load for Scheduled Generation previously determined under this Appendix 9 for each Trading Interval in the 12 month period;

(b) subject to Step 9A, the sent out generation (in MWh) for each Candidate Facility and for each Trading Interval in that 12 month period, where that sent out generation was used to determine the CF_Generation (which is one of the variables used to determine the Existing Facility Load for Scheduled Generation in Step 7) for that Trading Interval; and

(c) the 12 Trading Intervals occurring on separate Trading Days that were previously determined to have the highest Existing Facility Load for Scheduled Generation in the 12 month period.

Step 9A: For the purposes of Step 9(b), if:

(a) AEMO has determined a revised estimate of the maximum quantity in accordance with the WEM Procedure specified in clause 7.7.5A;

(b) the revised estimate relates to a Candidate Facility and a Trading Interval in a 12 month period identified in Step 1(c); and

(c) AEMO determined the sent out generation for that Candidate Facility and for that Trading Interval in accordance with Step 4 before it revised the estimate,

then AEMO must redetermine the sent out generation for that Candidate Facility and that Trading Interval in accordance with Step 4.

*Determining New Facility Load for Scheduled Generation*

Step 10: For each New Candidate Facility determine, for each Trading Interval in the period identified in Step 1(a) that falls before 8:00 AM on the Full Operation Date for the Candidate Facility, an estimate of the quantity of energy (in MWh) that would have been sent out by the Candidate Facility in the Trading Interval, if it had been in operation with the configuration proposed under clause 4.10.1(dA) in the relevant application for certification of Reserve Capacity. The estimates must reflect the estimates in the expert report provided for the Candidate Facility under clause 4.10.3, unless AEMO reasonably considers the estimates in the expert report to be inaccurate.

Step11: For each New Candidate Facility determine, for each Trading Interval in the period identified in Step 1(a), the New Facility Load for Scheduled Generation (in MWh) as:

(a) if the Trading Interval falls before 8:00 AM on the Full Operation Date for the Facility:

EFLSG + Actual_CF_Generation – Estimated_CF_Generation

where

EFLSG is the Existing Facility Load for Scheduled Generation for the Trading Interval, determined in Step 7 or identified in Step 9(a) as applicable;

Actual_CF_Generation is the sent out generation of the New Candidate Facility for the Trading Interval, as identified in Step 9(b), determined in Step 2 or estimated in Steps 4, 5, 6 or 6A as applicable; and

Estimated_CF_Generation is the quantity determined for the New Candidate Facility and the Trading Interval in Step 10;

or

(b) the Existing Facility Load for Scheduled Generation for the Trading Interval, otherwise.

Step 12: For each New Candidate Facility determine, for each 12 month period identified in Step 1(a), the 12 Trading Intervals, occurring on separate Trading Days, with the highest New Facility Load for Scheduled Generation.

*Determining the Facility Average Performance Level*

Step 13: For each Existing Candidate Facility, determine the 60 quantities comprising:

(a)     the MWh quantities determined in Step 2 or estimated in Steps 4, 5, 6 or 6A as applicable for each of the Trading Intervals determined in Step 8, multiplied by 2 to convert to units of MW; and

(b)     the MWh quantities determined in Step 9(b) for each of the Trading Intervals identified in Step 9(c), multiplied by 2 to convert to units of MW.

Step 14:   For each New Candidate Facility, determine the 60 quantities comprising:

(a)     the MWh quantities identified in Step 9(b), determined in Step 2 or estimated in Steps 4, 5, 6 or 6A as applicable for each of the Trading Intervals identified in Step 12 that fall after 8:00 AM on the Full Operation Date for the Candidate Facility, multiplied by 2 to convert to units of MW; and

(b)     the MWh quantities determined in Step 10 for each of the Trading Intervals identified in Step 12 that fall before 8:00 AM on the Full Operation Date of the Candidate Facility, multiplied by 2 to convert to units of MW.

Step 15:   Determine the average performance level (in MW) for each Candidate Facility f ("Facility Average Performance Level") as the mean of the 60 quantities determined for Candidate Facility f in Step 13 or Step 14 as applicable.

***Determine the Facility Adjustment Factor***

Step 16:   Determine the variance (in MW) for each Candidate Facility f ("Facility Variance") as the variance of the MW quantities determined for Candidate Facility f in Step 13 or Step 14 as applicable.

Step 17:   Determine the facility adjustment factor (in MW) for each Candidate Facility f ("Facility Adjustment Factor") in accordance with the following formula:

Facility Adjustment Factor = min(G x Facility Variance (f), Facility Average Performance Level (f) / 3 + K x Facility Variance (f))

Where

G = K + U / Facility Average Performance Level (f)

K is determined in accordance with the following table:

| Reserve Capacity Cycle | Capacity Year | K value |
|---|---|---|
| 2012 | 2014/15 | 0.001 |
| 2013 | 2015/16 | 0.002 |
| 2014 | 2016/17 | 0.003 |
| 2015 onwards | From 2017/18 onwards | To be determined by the Economic Regulation Authority |

| | | in accordance with clause 4.11.3C. |
|---|---|---|

U is determined in accordance with the following table:

| Reserve Capacity Cycle | Capacity Year | U |
|---|---|---|
| 2012 | 2014/15 | 0.211 |
| 2013 | 2015/16 | 0.422 |
| 2014 | 2016/17 | 0.635 |
| 2015 onwards | From 2017/18 onwards | To be determined by the Economic Regulation Authority in accordance with clause 4.11.3C. |

*Determining the Relevant Level for a Candidate Facility*

Step 18:   Determine the Relevant Level for each Candidate Facility f (in MW) in accordance with the following formula:

Relevant Level (f) = max(0, Facility Average Performance Level (f) - Facility Adjustment Factor (f))

*Publication of information*

Step 19:   Publish on the WEM Website by 1 June of Year 1 of the relevant Reserve Capacity Cycle on a provisional basis:

(a)     a forecast of the Trading Intervals that may be identified in Step 8; and

(b)     a forecast of the Existing Facility Load for Scheduled Generation quantities that may be determined in Step 7.

Step 20:   Publish on the WEM Website within three Business Days after the date specified in clause 4.1.11 (as modified or extended) for the relevant Reserve Capacity Cycle:

(a)     the Trading Intervals identified in Step 8; and

(b)     the Existing Facility Load for Scheduled Generation quantities determined in Step 7.

**33.   Appendix A12 amended**

33.1   Part A12.1 of Appendix A12 is amended by:

(a)     deleting the definition for 'Credible Contingency Event';

(b)     deleting the definition for 'Rise Time' and replacing it with the following:

**Rise Time**: In relation to a control system, means the time taken for an output quantity to rise from its initial value to 90% of the final value induced by a step change of an input quantity, including in response to a disturbance as required under section A12.9.

(c) deleting the definition for 'Settling Time' and replacing it with the following:

**Settling Time**: In relation to a control system, means the time measured from initiation of a step change in an input quantity to the time when the magnitude of error between the output quantity and its final settling value remains less than 10% of:

(a) if the sustained change in the quantity is less than half of the maximum change in that output quantity, half of the maximum change induced in that output quantity; or otherwise

(b) the sustained change induced in that output quantity.

(d) inserting the following new definitions:

**Credible Contingency**: An unplanned disconnection of equipment, or other event, that a Generating System may reasonably be exposed to as described in the Technical Rules.

**Frequency Dead Band**: The range through which power system frequency can vary without the frequency control system initiating an active power response.

33.2 Clause A12.4.2.10(d) and footnote 7 associated with that clause are deleted and replaced with the following:

(d) achieves a minimum equivalent gain of 200.[9]

[9] For both proportional and integral control actions. Note that one per unit excitation voltage is that field voltage required to produce nominal voltage on the air gap line of the Generating Unit open circuit characteristic (refer IEEE Standard 115-1983 - Test Procedures for Synchronous Machines).

33.3 Clause A12.4.2.11 is amended by deleting Table A12.4.2.11 'Synchronous Generating Unit Excitation Control System performance requirements' and replacing it with the following:

| Performance Item | Units | Static Excitation | AC exciter or rotating rectifier | Notes |
|---|---|---|---|---|
| **Generating Unit Field voltage *Rise Time:*** In relation to field voltage rising from rated field voltage to excitation ceiling voltage following the application of a short duration impulse to the voltage reference. | Second | 0.05 maximum | 0.5 maximum | 1 and 2 |
| ***Settling Time*** with the Generating Unit | Second | 1.5 maximum | 2.5 maximum | 2 |

| | | | | |
|---|---|---|---|---|
| unsynchronised following a disturbance equivalent to a 5% step change in the sensed Generating Unit terminal voltage. | | | | |
| **Settling Time** with the Generating Unit synchronised following a disturbance equivalent to a 5% step change in the sensed Generating Unit terminal voltage. It must be met at all operating points within the Generating Unit capability. | Second | 2.5 maximum | 5 maximum | 2 |
| **Settling Time** following any disturbance which causes an excitation limiter to operate. | Second | 5 maximum | 5 maximum | 2 |

**Notes:**

1. Rated field voltage is that voltage required to give nominal Generating Unit terminal voltage when the Generating Unit is operating at its Rated Maximum Apparent Power.

2. For rotating rectifier excitation system where the field voltage is not accessible for direct measurement, the main exciter field voltage must comply with this clause A12.4.2.11.

**Table A12.4.2.11: Synchronous Generating Unit Excitation Control System performance requirements**

33.4    Clause A12.4.2.15 is amended by deleting the first and second rows of Table A12.4.2.15 'Asynchronous Generating System Control System performance requirements' and replacing them with the following:

| Performance Item | Units | Limiting Value | Notes |
|---|---|---|---|
| **Rise Time:** The controlled parameter (voltage or Reactive Power output) following the application of a 5% step change to the Control System reference. | Second | 1.5 maximum | 1 and 3 |

33.5    Insert the following new clause A12.5.1.6:

A12.5.1.6.    The requirements in this Part A12.5 do not override any specific Active Power ramping requirements specified in Part A12.6 in response to frequency deviations.

33.6    Insert the following new clause A12.6.1.6:

A12.6.1.6.    Unless otherwise agreed by the relevant Network Operator and AEMO, protection or other schemes that disconnect the Generating System or elements of the Generating System, must not be used in order to meet the requirements of this Part A12.6.

33.7    Insert the following new clause A12.6.1.7:

A12.6.1.7.    A Generating System must:

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(a)     have an automatic variable Active Power control characteristic; and

(b)     where the Generating System contains a Generating Unit with a Turbine Control System, it must include equipment for both speed and Active Power control.

33.8     Insert the following new clause A12.6.1.8:

A12.6.1.8.     All Generating Units, or the Generating System, as applicable, must operate in a mode in which it will automatically alter its Active Power output to arrest and correct changes in power system frequency, unless instructed otherwise or approved for testing purposes by AEMO.

33.9     Insert the following new clause A12.6.1.9:

A12.6.1.9.     The Frequency Dead Band on each Generating Unit, or the Generating System, as applicable, must be no greater than +/-0.025 Hz around 50.0Hz.

33.10     Insert the following new clause A12.6.1.10:

A12.6.1.10.     Unless otherwise stated in this Part A12.6, the overall required frequency response of each Generating Unit, or Generating System, as applicable, must be settable and be capable of:

(a)     automatically achieving an increase in Active Power output proportional to a change in power system frequency of not less than 5% of the Rated Maximum Active Power for each 0.1 Hz reduction in power system frequency from the lower level of Frequency Dead Band, provided the output is above the Rated Minimum Active Power; and

(b)     automatically achieving a reduction in Active Power output proportional to a change in power system frequency of not less than 5% of the Rated Maximum Active Power for each 0.1 Hz increase in power system frequency from the upper level of Frequency Dead Band, provided this does not require operation below the Rated Minimum Active Power.

33.11     Insert the following new clause A12.6.1.11:

A12.6.1.11.     The frequency response capability described in clause A12.6.1.10:

(a)     must not exhibit any step changes in Active Power as the power system frequency changes, unless otherwise agreed by the relevant Network Operator and AEMO under clause A12.6.1.6;

(b)     must commence responding with a delay no greater than that required to ensure stable operation or to allow for control system latency, as agreed by the relevant Network Operator and AEMO;

(c)     must not increase Active Power output in response to an increase in power system frequency; and

(d)     must not decrease Active Power output in response to a decrease in power system frequency.

33.12     Clause A12.6.2.1 is deleted and replaced with the following:

A12.6.2.1. The Ideal Generator Performance Standard requires that control ranges, response times and sustain times, are achieved for Generating Units, or the Generating System, as applicable, such that, subject to energy source availability:

(a) the required frequency response in clause A12.6.1.10(a) can be complied with for any initial output up to Rated Maximum Active Power;

(b) for Synchronous Generating Systems, for any frequency disturbance where the change in power system frequency is sufficient to change the Active Power of the Generating System by at least 5% of its Maximum Rated Active Power, the Generating Unit or Generating System achieves at least 90% of the required frequency response specified in clause A12.6.1.10 within 6 seconds;

(c) for Asynchronous Generating Systems, for any frequency disturbance where the change in power system frequency is sufficient to change the Active Power of the Generating System by at least 5% of its Maximum Rated Active Power, the Generating Unit or Generating System achieves at least 90% of the required frequency response specified in clause A12.6.1.10 within 2 seconds;

(d) the required frequency response specified in clause A12.6.1.10 is sustained for not less than a further 10 seconds beyond the timeframes specified in clause A12.6.2.1(b) and clause A12.6.2.1(c), as applicable, subject to a restoration of power system frequency in which case the Active Power output must be changed in proportion to the power system frequency in accordance with the required frequency response specified in clause A12.6.1.10; and

(e) each Generating Unit's or Generating System's, as applicable, capability to sustain response beyond the timeframe specified in clause A12.6.2.1(d) must be included as part of the relevant Generator Performance Standard.

33.13 Clause A12.6.3.1 is amended by deleting the contents of it and replacing them with '[Blank]'.

33.14 Clause A12.6.3.2 is deleted and replaced with the following:

A12.6.3.2. Subject to energy source availability, a Generating System is required to have control ranges and response times for each Generating Unit, or Generating Systems as applicable, such that:

(a) it is able to comply with the required frequency response specified in clause A12.6.1.10(a), up to 85% of Rated Maximum Active Power output;

(b) for initial outputs above 85% of Rated Maximum Active Power output, each Generating Unit's or Generating System's, as applicable, response capability must be agreed with the relevant Network Operator and AEMO, and included as part of the relevant Generator Performance Standard;

(c) for Synchronous Generating Systems, for any frequency disturbance where the change in frequency is sufficient to change the Active Power of the Generating System by at least 5% of its Maximum Rated Active Power output, the Generating Unit or Generating System achieves at least 60% of the required frequency response specified in clause A12.6.1.10 within 6 seconds, and 90% of the required frequency response specified in clause A12.6.1.10 within 15 seconds;

(d) for Asynchronous Generating Systems, for any frequency disturbance where the change in frequency is sufficient to change the Active Power of the Generating System by at least 5% of its Maximum Rated Active Power output, the Generating Unit or Generating System achieves at least 60% of the required frequency response specified in clause A12.6.1.10 within 6 seconds, and at least 90% of the required frequency response specified in clause A12.6.1.10 within 15 seconds;

(e) the required frequency response specified in clause A12.6.1.10 is sustained for not less than a further 10 seconds beyond the latest timeframe specified in clause A12.6.3.2(c) and clause A12.6.3.2(d), as applicable, subject to a restoration of power system frequency in which case the Active Power output must be changed in proportion to the power system frequency in accordance with the required frequency response specified in clause A12.6.1.10; and

(f) each Generating Unit's or Generating System's, as applicable, capability to sustain response beyond the timeframe specified in clause A12.6.3.2(e) must be included as part of the relevant Generator Performance Standard.

33.15   Delete clauses A12.6.4.3 and A12.6.4.4.

33.16   Insert the following new clause A12.7.1.3:

A12.7.1.3.   Where the relevant Network Operator and AEMO have agreed to a protection, or other scheme, that will disconnect the Generating System or elements of the Generating System, in order to satisfy the requirements of Part A12.6, the operation of those schemes based on their agreed parameters will not be taken to be a breach of the requirements of this Part A12.7.

33.17   Clause A12.9.2.2(a) is amended by deleting the word 'Event'.

33.18   Clause A12.9.3.2(a) is amended by deleting the word 'Event'.

**Schedule B**

**1.      Section 1.53 added**

1.1      Insert the following new section 1.53:

### 1.53. Specific Transitional Provision – Early Certification of Reserve Capacity for the 2022 Reserve Capacity Cycle and any subsequent Reserve Capacity Cycle

1.53.1. Notwithstanding section 4.28C, an application for Early Certified Reserve Capacity for the 2022 Reserve Capacity Cycle and any subsequent Reserve Capacity Cycle cannot be made under section 4.28C prior to:

    (a)    where the application includes a nomination that the Facility is expected to be classified as a Network Augmentation Funding Facility pursuant to clause 4.4.1(d)(vi), 1 March 2022; and

    (b)    otherwise, 1 November 2021.

1.53.2. Notwithstanding clause 4.28C.15, AEMO is not required to document the processes relating to or in connection with the following clauses in a WEM Procedure until 1 September 2022:

    (a)    clause 4.28C.7A;

    (b)    clause 4.28C.7AA;

    (c)    clause 4.28C.7B;

    (d)    clause 4.28C.7C;

    (e)    clause 4.28C.7D; and

    (f)    clause 4.28C.8A (but only in respect of the processes relating to the lapsing of any Indicative Network Access Quantity determined for the Facility).

## 2. Section 4.5 amended

2.1    Clause 4.5.2 is amended by:

    (a)    deleting clause 4.5.2(c) and replacing it with the following:

        (c)    generation capacity expected to be available, including details of any Early Certified Reserve Capacity, seasonal capacities, Essential System Service capabilities, long duration outages, and production profiles for Intermittent Generating Systems;

    (b)    deleting the word 'and' after the semi-colon at the end of clause 4.5.2(d);

    (c)    deleting the full stop at the end of clause 4.5.2(e) and replacing it with the word '; and'; and

    (d)    inserting the following new clause 4.5.2(f):

        (f)    expected Electric Storage Resource capabilities.

**3.     Section 4.9 amended**

3.1     Clause 4.9.10(c) is amended by:

(a)     inserting the word "and" after the semi-colon at the end of clause 4.9.10(c)(i);

(b)     deleting clause 4.9.10(c)(ii); and

(c)     renumbering clause 4.9.10(c)(iii) to clause 4.9.10(c)(ii).

**4.     Section 4.28C amended**

4.1     Clause 4.28C.8 is amended by deleting the word 'clause 4.28C.7B(a)' and replacing it with the word 'clause 4.1.12'.

## Schedule C

**1.     Section 2.29 amended**

1.1     Clause 2.29.12 is deleted and replaced with the following:

2.29.12.     A Market Participant must install Facility Sub-Metering for a Scheduled Facility or Semi-Scheduled Facility containing:

(a)     multiple Separately Certified Components; or

(b)     a single Separately Certified Component and any Energy Producing Systems that are not that Separately Certified Components.

**2.     Section 4.8A amended**

2.1     Clause 4.8A.3 is deleted and replaced with the following:

4.8A.3.     A person that intends to apply for Early Certified Reserve Capacity under section 4.28C for a new facility or facility upgrade, or Conditional Certified Reserve Capacity under clause 4.9.1(b) for a new facility, must, prior to submitting the application, apply to AEMO for an indicative Facility Class and one or more indicative Facility Technology Type to be assigned to the facility or facility upgrade.

## Schedule D

**1.     Section 4.1 amended**

1.1     Clause 4.1.22 is deleted and replaced with the following:

4.1.22.     Within five Business Days after the notification deadline specified in clause 4.1.21A, AEMO must:

(a)     set the number of Capacity Credits to be associated with each component of a Facility in accordance with clause 4.20.17; and

(b)     publish the information in clause 4.1.22(a) on the WEM Website.

**2. Section 4.15 deleted**

2.1     Section 4.15 is amended by deleting the contents of it and replacing them with '[Blank]'.

**3. Section 4.14 amended**

3.1     Clause 4.14.1 is amended by inserting the words 'and component of a Facility' immediately after the words 'provide the following information to AEMO for each Facility'.

3.2     Delete clause 4.14.1A.

**4. Section 4.20 amended**

4.1     Clause 4.20.5A(a) is amended by deleting the words 'and record the Capacity Credits associated with each component of the Facility, where relevant,'.

4.2     Clause 4.20.17 is deleted and replaced with the following:

4.20.17.     Where AEMO has assigned Capacity Credits to a Facility for a Capacity Year, AEMO must set the number of Capacity Credits to be associated with each component of the Facility for the Capacity Year as:

(a)     the number of Capacity Credits the Market Participant nominated to trade bilaterally under clause 4.14.1; or

(b)     where clause 4.20.16 applies, the number of Capacity Credits notified to AEMO under that clause to be associated with each component of the Facility.

**Schedule E**

**1. Section 1.54 added**

1.1     Insert the following new section 1.54:

**1.54.     Specific Transitional Provisions – System Restart**

1.54.1.     Prior to the New WEM Commencement Day, AEMO must develop and consult with stakeholders on a standard form contract for System Restart Service submissions for a period of at least two weeks. The standard form contract must include, at a minimum, the matters specified in clause 3.7.30.

1.54.2.     AEMO must publish the standard form contract on the WEM Website.

1.54.3.     AEMO must take into account stakeholder feedback received during the consultation process and make any reasonable amendments to the standard form contract that it considers appropriate, and republish the standard form contact for System Restart Service submissions, before the New WEM Commencement Day.

1.54.4. Any existing System Restart Service Contracts on the New WEM Commencement Day continue to apply, and are deemed to comply with section 3.7, for the remainder of their contract term.

1.54.5. Any System Restart Service Contracts entered into after the New WEM Commencement Day are subject to section 3.7.

**2. Section 3.6 amended**

2.1 Section 3.6 is deleted and replaced with the following:

**3.6. Under Frequency Load Shedding**

3.6.1. AEMO must:

(a) subject to clause 3.6.3, determine the UFLS Requirements, taking into account the SWIS Frequency Operating Standards; and

(b) publish the UFLS Requirements, and any amendments to them, on the WEM Website.

3.6.2. The UFLS Requirements must contain guidance to enable each Network Operator whose Network is impacted by the UFLS Requirements to design and implement automatic under frequency load shedding schemes that support Power System Security in respect of their Network. The guidance must include:

(a) the quantity of load required for shedding, or guidance on how to determine the required quantities;

(b) prioritisation of load types;

(c) details of any staging requirements;

(d) initiation criteria;

(e) speed of operation;

(f) any required variation in settings or functional requirements based on conditions in the SWIS; and

(g) any other relevant matters required to support Power System Security.

3.6.3. AEMO must consult in good faith with each Network Operator whose Network the UFLS Requirements apply to when AEMO determines the UFLS Requirements in accordance with clause 3.6.1 and periodically reviews the UFLS Requirements under clause 3.6.11.

3.6.4. AEMO or a Network Operator may propose an amendment to the UFLS Requirements. In respect of a proposed amendment:

(a) where AEMO is proposing the amendment, AEMO must consult in good faith with each Network Operator whose Network is likely to be impacted by the proposed amendment;

(b) where a Network Operator is proposing the amendment, the Network Operator must consult in good faith with AEMO and each other Network Operator whose Network is likely to be impacted by the proposed amendment; and

(c) AEMO must only progress the proposed amendment where AEMO and each Network Operator whose Network is likely to be impacted by the proposed amendment agree, acting reasonably, that the proposed amendment is reasonably necessary.

3.6.5. Each Network Operator whose Network the UFLS Requirements apply to must develop and maintain an UFLS Specification. The UFLS Specification must set out how the Network Operator's schemes meet the UFLS Requirements.

3.6.6. Each Network Operator must submit the UFLS Specification that it has developed for its Network under clause 3.6.5 to AEMO for approval, and following the initial approval of the UFLS Specification, whenever:

(a) the Network Operator seeks to amend its UFLS Specification; or

(b) amendments are required as a result of an amendment to the UFLS Requirements.

3.6.7. Where AEMO receives an UFLS Specification from a Network Operator under clause 3.6.6, AEMO must, within a reasonable timeframe agreed with the relevant Network Operator, determine whether to approve or reject the UFLS Specification or the amendment to it, as applicable. Where AEMO:

(a) approves the UFLS Specification or the amendment to it, as applicable, AEMO must notify the relevant Network Operator that the UFLS Specification or the amendment to it, as applicable, has been approved; or

(b) rejects the UFLS Specification or the amendment to it, as applicable, AEMO must notify the relevant Network Operator:

i. that the UFLS Specification or the amendment to it, as applicable, has been rejected; and

ii. the amendments to the UFLS Specification that AEMO reasonably considers are required for the UFLS Specification to meet the UFLS Requirements.

3.6.8. Where a Network Operator receives a notice from AEMO under clause 3.6.7(b), the Network Operator:

(a) may consult with AEMO on the amendments AEMO considers are reasonably required to the UFLS Specification, both parties acting reasonably and in good faith; and

(b) must resubmit the UFLS Specification incorporating the amendments requested by AEMO under clause 3.6.7(b)(ii) or as agreed with AEMO

pursuant to clause 3.6.8(a), as applicable, to AEMO for approval under clause 3.6.7.

3.6.9.    Each Network Operator must implement and maintain systems, schemes or standards in accordance with its UFLS Specification, and must agree a timeframe with AEMO for changes to its systems, schemes, or standards triggered by any changes to its UFLS Specification.

3.6.10.   Each Network Operator must, in respect of its Network, provide a report to AEMO on the compliance of its UFLS Specification with the UFLS Requirements:

(a)    annually, on the projected ability to meet the requirements over a future ten-year horizon; and

(b)    within a timeframe agreed with AEMO, both parties acting reasonably, following each under frequency load shedding event.

3.6.11.   Without limiting AEMO's ability to amend the UFLS Requirements in accordance with this section 3.6, AEMO must review the UFLS Requirements to ensure they are appropriate and consistent with the requirements of this section 3.6 within three years of the date the UFLS Requirements are first published by AEMO under clause 3.6.1(b) and then at least once in every three-year period from completion of the previous review.

**3.    Section 3.7 amended**

3.1    Section 3.7 is deleted and replaced with the following:

**3.7.    System Restart**

**System Restart Standard and System Restart Plan**

3.7.1.    AEMO must determine the System Restart Standard in accordance with clause 3.7.2.

3.7.2.    The System Restart Standard:

(a)    must identify the minimum length of time for which a System Restart Service may be required to operate continuously following a system shutdown or major supply disruption;

(b)    must specify the technical requirements that a Registered Facility must demonstrate to be eligible to provide a System Restart Service;

(c)    must include guidelines addressing the diversity of System Restart Services, including diversity of locations within the SWIS;

(d)    must include requirements for mitigating against the risk of unavailability of any System Restart Service during a system shutdown or major supply disruption; and

(e)     may include any other matters that AEMO determines are necessary to ensure the SWIS is restarted in the event of a system shutdown or major supply disruption.

3.7.3.     AEMO must develop and maintain the System Restart Plan for the purposes of managing and coordinating restart and restoration of the SWIS in the event of a system shutdown or major supply disruption.

3.7.4.     The System Restart Plan must:

(a)     be consistent with the System Restart Standard;

(b)     cover the whole of the SWIS but may consist of one or more separable components; and

(c)     take into account any Local Black Start Procedures.

3.7.5.     AEMO must in:

(a)     developing the System Restart Plan in accordance with clause 3.7.3; and

(b)     making any revisions to the System Restart Plan pursuant to clauses 3.7.10 or 3.7.11,

consult in good faith with each Network Operator that AEMO considers may be impacted by the System Restart Plan, or the proposed revision to it, to assist AEMO to ensure that the System Restart Plan is effective and achievable, including in relation to viable restart paths.

3.7.6.     Each Network Operator that may be impacted by the System Restart Plan must conduct any studies or analyses that are reasonably required to provide input into the System Restart Plan, within a reasonable timeframe to be agreed with AEMO.

3.7.7.     AEMO must, in developing, and making revisions to, the System Restart Plan, take into account any input provided by a Network Operator under clause 3.7.6, including any information in relation to:

(a)     viable restart paths; and

(b)     following a successful restart, the restoration of any sensitive Loads on the Network Operator's Network.

3.7.8.     Where a Network Operator considers that the conditions on its Network have changed sufficiently to require changes to the System Restart Plan, the Network Operator:

(a)     may request AEMO to review the System Restart Plan; and

(b)     must, where a request is made by the Network Operator under clause 3.7.8(a), provide details of the changes to the conditions on its Network with the request.

3.7.9. Where the System Restart Plan, or any revision to it, requires a Network Operator to change or modify any Network equipment, AEMO and the Network Operator must agree a timeframe that is sufficient for the Network Operator to make any such change or modification, including time to undertake appropriate and reasonable testing.

3.7.10. Where AEMO:

(a) has received a request from a Network Operator under clause 3.7.8; or

(b) considers, for any reason, that the System Restart Standard (or any part of it) is no longer achievable or effective,

AEMO must review the System Restart Standard or the System Restart Plan, or both, if required, and make any revisions that AEMO considers are necessary to ensure that the System Restart Standard and the System Restart Plan are achievable and effective for restarting the SWIS in the event of a system shutdown or major supply disruption.

3.7.11. Without limiting the frequency of reviews AEMO may undertake in accordance with clause 3.7.10, AEMO must review the System Restart Standard and the System Restart Plan to ensure they are appropriate and consistent with the requirements of this section 3.7 within three years of the commencement of the System Restart Standard and System Restart Plan and then at least once in every three-year period from completion of the previous review.

**Local Black Start Procedures**

3.7.12. AEMO must publish guidelines for developing Local Black Start Procedures on the WEM Website.

3.7.13. Unless exempted by AEMO (in its absolute discretion), a Market Participant with a Registered Facility that is an energy producing system must:

(a) develop and maintain Local Black Start Procedures in accordance with the guidelines published by AEMO under clause 3.7.12 and any modifications published under clause 3.7.16; and

(b) promptly provide the Local Black Start Procedures to AEMO, including any amendments to them.

3.7.14. Local Black Start Procedures must provide sufficient information to enable AEMO to understand the likely condition and capabilities of Registered Facilities following a system shutdown or major supply disruption such that AEMO is able to develop and maintain the System Restart Plan.

3.7.15. If AEMO forms the view, acting reasonably, that it would be useful for the effective operation of the System Restart Plan, AEMO must provide each Network Operator

with the Local Black Start Procedures that AEMO considers are relevant to the Network Operator.

3.7.16. Following a review conducted under clause 3.7.10 or clause 3.7.11, AEMO may modify the guidelines for Local Black Start Procedures by publishing the modified guidelines on the WEM Website, which are deemed to take effect from the date of publication or later date notified by AEMO.

3.7.17. Following any modification to the guidelines for Local Black Start Procedures, AEMO may require a Market Participant with a Registered Facility that is an energy producing system to amend the Local Black Start Procedures for the Registered Facility. Any such request by AEMO must:

(a) set out the reasons for the requested amendments; and

(b) specify a timeframe, which must be reasonable having regard to the extent and complexity of the request, by when the amendments to the Market Participant's Local Black Start Procedures for the Registered Facility must be made.

**Publication**

3.7.18. AEMO must publish the System Restart Standard, including any revisions following a review in accordance with clause 3.7.10 or clause 3.7.11, on the WEM Website.

3.7.19. The System Restart Plan, and any revisions following a review in accordance with clause 3.7.10 or clause 3.7.11, are AEMO Confidential. Notwithstanding the AEMO Confidential classification, AEMO may disclose information contained in the System Restart Plan with System Restart Service Providers and prospective System Restart Service Providers, where AEMO considers that disclosure would support provision of a System Restart Service.

**Obligations to Restart the SWIS**

3.7.20. AEMO must use its reasonable endeavours to ensure the SWIS is restarted and restored in the event of a system shutdown or major supply disruption.

3.7.21. In performing its obligation under clause 3.7.20, AEMO must, when coordinating with Network Operators regarding the restoration of the SWIS following a successful restart, have reasonable regard to information provided by Network Operators.

3.7.22. Each Network Operator must use its reasonable endeavours to ensure that, at all times, its Network is capable of being restarted or restored in accordance with the System Restart Plan in the event of a system shutdown or major supply disruption.

3.7.23. Each Network Operator must take all actions necessary to support and enable AEMO to implement the System Restart Plan in the event the System Restart Plan is enacted, including by:

(a)    complying with any directions from AEMO;

(b)    providing timely information to AEMO on the status of its Network and whether the System Restart Plan may need to be adjusted to address the actual conditions on the Network at that time;

(c)    coordinating with AEMO during the restoration of the SWIS on revisions that may be required to the System Restart Plan to address the actual conditions on the Network during the restoration; and

(d)    cooperating with any requests from AEMO, including using best endeavours to provide any information requested by AEMO within the time specified by AEMO.

3.7.24. Where directed by AEMO, a Market Participant must take all actions necessary to support the enactment of the System Restart Plan, including by:

(a)    committing or de-committing any, or all, of its Facilities, or individual energy producing systems within its Facilities, or operating them in a manner required by AEMO;

(b)    operating a Facility or individual energy producing system or equipment within a Facility in a particular manner, consistent with the relevant Registered Generator Performance Standards or Standing Data for that Facility;

(c)    providing an Essential System Service if the Facility is accredited for that Essential System Service; and

(d)    cooperating with any requests from AEMO, including using best endeavours to provide any information requested by AEMO within the time specified by AEMO.

**Procurement of System Restart Services**

3.7.25. AEMO must use its reasonable endeavours to procure System Restart Services to meet the System Restart Standard.

3.7.26. AEMO may enter into a System Restart Service Contract with a Market Participant.

3.7.27. AEMO must prepare a specification for a System Restart Service requirement to meet the System Restart Standard in accordance with the WEM Procedure specified in clause 3.7.40.

3.7.28. AEMO must publish a call for submissions for the provision of System Restart Service, no later than 20 Business Days prior to the proposed closing date for submissions, on the WEM Website and at least one major tender portal.

3.7.29. AEMO must include in the call for submissions referred to in clause 3.7.28:

(a) the date and time for lodgement of submissions;

(b) contact details for AEMO;

(c) a description of the technical requirements, including any locational requirements, for the System Restart Service;

(d) the location on the WEM Website of the standard form contract referred to in clause 3.7.30; and

(e) the location on the WEM Website of the specification prepared by AEMO in accordance with clause 3.7.27 for the System Restart Service.

3.7.30. AEMO must develop, maintain and publish on the WEM Website, a standard form contract for the provision of a System Restart Service which must include, at a minimum, the following fields:

(a) the name of the Market Participant and its Registered Facility that is proposed to provide the System Restart Service;

(b) the offer price for each cost component specified by AEMO, which may include, where applicable:

i. a price to cover the cost of capital works;

ii. a service availability price, including for ongoing maintenance works;

iii. a service testing price; and

iv. a service usage price;

(c) the proposed contract term for the System Restart Service;

(d) the availability requirements for the System Restart Service; and

(e) a standard list of terms and conditions to apply to the contract.

3.7.31. A submission made by a prospective System Restart Service Provider in response to a call for submissions under clause 3.7.28 must:

(a) be made in good faith;

(b) incorporate the standard form contract published by AEMO in accordance with clause 3.7.30;

(c)    be capable of being accepted by AEMO and binding on the Market Participant and AEMO; and

(d)    include the cost information and any assumptions used to calculate the proposed offer for the provision of the System Restart Service.

3.7.32.    Any costs incurred by a prospective System Restart Provider to determine the adequacy and capability of its equipment to assist it in making a valid submission under clause 3.7.31 are to be borne by that prospective System Restart Provider. To avoid doubt, this includes the costs of any negotiations with a Network Operator in respect to any Network equipment augmentation that may assist the prospective System Restart Service Provider in making a valid submission.

3.7.33.    Where a prospective System Restart Service Provider initiates discussions with a Network Operator with respect to a proposed submission made by the prospective System Restart Service Provider under clause 3.7.31, the Network Operator must negotiate in good faith with the prospective System Restart Service Provider with respect to identifying and, if possible, resolving issues that would prevent the delivery of effective System Restart Services proposed by the prospective System Restart Service Provider.

**Sharing System Restart Service submissions**

3.7.34.    Where a prospective System Restart Service Provider makes a submission under clause 3.7.31, the Market Participant consents to AEMO sharing information contained in the submission in accordance with clause 3.7.35.

3.7.35.    AEMO may, as part of assessing a submission made under clause 3.7.31, provide details of the submission, except for the offer price and any other commercially sensitive information, to each relevant Network Operator to assist AEMO to determine whether the proposal in the submission is technically feasible, including whether any augmentation of the Network would be required to make the proposal technically feasible.

**Awarding System Restart Service Contract**

3.7.36.    Where AEMO accepts a submission made under clause 3.7.31, it must:

(a)    notify the Market Participant within five Business Days of accepting the submission; and

(b)    publish a notice on the WEM Website within five Business Days of accepting the submission.

3.7.36A.    AEMO and Market Participants, when entering into a System Restart Service Contract, must use the standard form contract published under clause 3.7.30.

3.7.36B.   AEMO may allow a System Restart Service contract to vary from the standard form contract where AEMO considers that those variations are reasonably required, having regard to the specific characteristics of the Facility providing the System Restart Service.

3.7.37.   AEMO's acceptance of a submission made under clause 3.7.31 forms a binding System Restart Service Contract between the Market Participant and AEMO.

**Network Operator's Obligations to Facilitate System Restart Services**

3.7.38.   A Network Operator must:

(a)   provide any information to AEMO and conduct any analysis which AEMO reasonably requires in order for AEMO to assess the capability of a proposed System Restart Service to meet the System Restart Standard; and

(b)   where it is reasonable and practicable to do so, participate in or facilitate testing of a System Restart Service proposed to be provided by a prospective System Restart Service Provider, and any further testing once a System Restart Service Provider is contracted to provide a System Restart Service, to confirm the ongoing availability of the System Restart Service in accordance with the terms of the System Restart Service Contract.

**Recovery of Costs**

3.7.39.   Except to the extent specified in these WEM Rules or the System Restart Service Contract, AEMO, each Network Operator and each System Restart Service Provider must bear their own costs in respect of:

(a)   a System Restart Service Contract (including, to avoid doubt, the preparation or negotiation of it in accordance with this section 3.7); and

(b)   the provision of a System Restart Service.

3.7.40.   AEMO must document in a WEM Procedure:

(a)   the methodology and processes it uses to determine the System Restart Standard and System Restart Plan;

(b)   any matters, in addition to the requirements specified in clause 3.7.30, that the standard form contract for System Restart Service submissions may address;

(c)   the factors AEMO may consider when determining whether changes from the standard form contract are reasonably required for the purposes of clause 3.7.36B;

   (d)  the processes to be followed by AEMO and Rule Participants in relation to the procurement of System Restart Services by AEMO;

   (e)  the methodologies and processes to be followed by AEMO in:

      i.  determining whether a System Restart Service submission is valid;

      ii.  analysing and selecting System Restart Service submissions to meet the System Restart Standard; and

      iii.  accepting a System Restart Service submission to become an effective System Restart Service Contract;

   (f)  the processes to be followed by AEMO in conducting a review under clauses 3.7.10 and 3.7.11 and consulting with Network Operators; and

   (g)  any other matters AEMO considers as reasonably required in relation to System Restart Service provision or operation.

## 4.  Section 3.10 amended

4.1  Delete clause 3.10.6.

## 5.  Chapter 11 Glossary amended

5.1  The definition for 'Local Black Start Procedures' is deleted and replaced with the following:

**Local Black Start Procedures**: The procedures developed by a Market Participant under clause 3.7.13 in accordance with the guidelines published by AEMO under clause 3.7.12.

5.2  The definition for 'System Restart Service' is deleted and replaced with the following:

**System Restart Service**: The ability of a Registered Facility with an energy producing system to start without requiring energy to be supplied from a Network to assist in the re-energisation of the SWIS in the event of a system shut down or major supply disruption.

5.3  Insert the following new definitions:

**System Restart Plan**: The plan described in clause 3.7.4.

**System Restart Service Contract**: A contract between AEMO and a Market Participant for the provision of a System Restart Service to AEMO by that Market Participant's Registered Facility.

**System Restart Service Provider**: A Market Participant who provides System Restart Service to AEMO under a System Restart Service Contract.

**System Restart Standard**: The standard, determined by AEMO under clause 3.7.1 and described in clause 3.7.2, for procurement of System Restart Services.

**UFLS Requirements**: The functional requirements for the SWIS under frequency load shedding system published by AEMO in accordance with section 3.6, and as may be amended from time to time in accordance with section 3.6.

**UFLS Specification**: The document referred to in clause 3.6.5 containing the Network Operator's design specification for its under frequency load shedding system in respect of its Network, which must meet the UFLS Requirements.

## Schedule F

**1.     Section 4.11 amended**

1.1     Clause 4.11.1(bA) is deleted and replaced with the following:

(bA)     where the Facility is an Energy Producing System, the Certified Reserve Capacity must not exceed the Declared Sent Out Capacity for the Facility notified to AEMO under clause 4.10.1(bA)(iii);

## Schedule G

**1.     Section 3.4 amended**

1.1     Clause 3.4.4(a) is amended by deleting the words 'In order to maintain Power System Security or Power System Reliability' and replacing them with the words 'In order to restore and maintain Power System Security or Power System Reliability'.

1.2     Clause 3.4.4(e) is amended by inserting the words ', in which case AEMO must first consult with the relevant Network Operator,' immediately after the words 'direct a Network Operator'.

1.3     Clause 3.4.4(f) is amended by inserting the words ', in which case AEMO must first consult with the relevant Network Operator,' immediately after the words 'direct a Network Operator'.

1.4     Insert the following new clause 3.4.5A:

3.4.5A.     Where AEMO issues a direction under clauses 3.4.4(d), 3.4.4(e) or 3.4.4(f) or takes any other action under clause 3.4.5, AEMO must record:

(a)     the date and time of the direction or action;

(b)     the name of the Registered Facility or relevant equipment impacted by the direction or action;

(c)     the nature of the direction or action; and

(d)     the reasons for the direction or action.

**2.     Section 3A.4 amended**

2.1    Clause 3A.4.4 is deleted and replaced with the following:

3A.4.4.    A Network Operator must:

(a)    prepare guidelines in consultation with AEMO, to provide information to Market Participants as to how the standard or technical level of performance in respect of each Technical Requirement will be assessed for each type of generating unit; and

(b)    publish those guidelines on its website.

## 3.    Section 3.8 amended

3.1    Clause 3.8.7 is deleted and replaced with the following:

3.8.7.    Where AEMO recommends to the Economic Regulation Authority pursuant to clause 3.8.5A or a Network Operator pursuant to clause 3.8.6 that changes to a WEM Procedure are necessary, the Economic Regulation Authority or the Network Operator, as applicable, must publish:

(a)    the changes recommended by AEMO; and

(b)    its decision and reasons as to whether the changes recommended by AEMO are necessary,

on the Economic Regulation Authority's or the Network Operator's website, as applicable.

## 4.    Section 3.21 amended

4.1    Insert the following new clause 3.21.7C:

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:

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

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.

4.2    Clause 3.21.10 is deleted and replaced with the following:

3.21.10.  AEMO must document the processes to be followed in reporting Forced Outages, including the determination of Forced Outage quantities pursuant to clause 4.26.1F, in a WEM Procedure.

**5.  Section 4.9 amended**

5.1  Clause 4.9.10(b) is deleted and replaced with the following:

(b)  the methodology AEMO uses for determining Planned Outage rates and Forced Outage rates, which must treat Charge Level shortfalls for Electric Storage Resources, as calculated under clause 4.26.1E, as Forced Outages; and

**6.  Section 4.25 amended**

6.1  Clause 4.25.4E is amended by deleting the contents of it and replacing them with '[Blank].

**7.  Section 4.26 amended**

7.1  Clause 4.26.1A(a)(ii)(3) is deleted and replaced with the following:

3.  if Facility f is considered by AEMO to have been in Commercial Operation in Trading Interval t and is either a Scheduled Facility, a Semi-Scheduled Facility or a Non-Scheduled Facility:

$$\min(CCIG(f,t),$$
$$\max(0, \min(RL(f,t) - 2 \times MAX2(f,t), RL(f,t) - A(f,t))))$$
$$+ RTMRCD(f,t)$$

where:

i.  $CCIG(f,t)$ is the number of Capacity Credits held for Facility f associated with Separately Certified Components of Facility f which are Intermittent Generating Systems of the Facility in Trading Interval t;

ii.  $RL(f,t)$ is the Required Level for Facility f, adjusted to 100 percent of the level of Capacity Credits held for Facility f in Trading Interval t;

iii.  $MAX2(f,t)$ is the second highest value of the output for Facility f (in MWh) achieved for a Trading Interval during the Trading Day in which Trading Interval t falls, as measured in Meter Data Submissions received by AEMO in accordance with section 8.4, that has been achieved since the date AEMO determined the Facility to be in Commercial Operation up to the relevant Trading Day, where this value must be set equal to or greater than the Max2 applied by AEMO for the previous Trading Day;

iv.  $A(f,t)$ is the level of output (in MW) detailed in the most recent report provided prior to Trading Interval t by the Market Participant for Facility f under clause 4.13.10C; and

v. RTMRCD(f,t) is the Real-Time Market Reserve Capacity Deficit determined for Facility f in Trading Interval t under clause 4.26.1B; and

7.2 Clause 4.26.1B is deleted and replaced with the following:

4.26.1B. AEMO must calculate the Real-Time Market Reserve Capacity Deficit for each Scheduled Facility, Semi-Scheduled Facility or Non-Scheduled Facility f for each Trading Interval t in which AEMO considers the Facility to have been in Commercial Operation as either:

(a) where Facility f is a Non-Scheduled Facility:

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

(b) otherwise:

$$RTMRCD(f,t) = min(RCOQ(f,t), CAFO(f,t) + NISCRQ(f,t) \\ + ESRCSF(f,t) + RTMOSF(f,t)) + NIMGRPPO(f,t) \\ + ESRRPPO(f,t)$$

where:

i. RCOQ(f,t) is the Reserve Capacity Obligation Quantity determined for Facility f in Trading Interval t;

ii. CAFO(f,t) is the Capacity Adjusted Forced Outage Quantity determined for Facility f in Trading Interval t under clause 3.21.7B;

iii. NISCRQ(f,t) is the Not In-Service Capacity Refund Quantity determined for Facility f in Trading Interval t under clause 4.26.1D;

iv. ESRCSF(f,t) is the ESR Charge Shortfall determined for Facility f in Trading Interval t under clause 4.26.1E;

v. RTMOSF(f,t) is the Real-Time Market Offer Shortfall determined for Facility f in Trading Interval t under clause 4.26.1G;

vi. NIMGRPPO(f,t) is the quantity of Refund Payable Planned Outage determined for Facility f in Trading Interval t under clause 4.26.1C; and

vii. ESRRPPO(f,t) is the quantity of Refund Payable Planned Outage determined for Facility f in Trading Interval t under clause 4.26.1CA.

7.3 Clause 4.26.1D is deleted and replaced with the following:

4.26.1D. AEMO must calculate the Not In-Service Capacity Refund Quantity for each Scheduled Facility or Semi-Scheduled Facility f for each Trading Interval t in which AEMO considers the Facility to have been in Commercial Operation as:

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$$NISCRQ(f,t) = \frac{\sum_{DI \in t}(min(RCOQ(f,DI) - CAFO(f,DI),\ NISCap(f,DI)))}{6}$$

where:

(a)     RCOQ(f,DI) is the Reserve Capacity Obligation Quantity determined for Facility f in Dispatch Interval DI;

(b)     CAFO(f,DI) is the Capacity Adjusted Forced Outage Quantity determined for Facility f in Dispatch Interval DI under clause 3.21.7C;

(c)     NISCap(f,DI) is the Not In-Service Capacity quantity determined for Facility f in Dispatch Interval DI under clause 7.13A.1; and

(d)     DI∈t denotes all Dispatch Intervals DI in Trading Interval t.

7.4     Clause 4.26.1E is deleted and replaced with the following:

4.26.1E.     AEMO must calculate the ESR Charge Shortfall for each Scheduled Facility or Semi-Scheduled Facility f for each Trading Interval t in which AEMO considers the Facility to have been in Commercial Operation as:

$$ESRChargeShortfall(f,t) = \frac{\sum_{DI \in t}\sum_{c \in f}ESRCSF(c,DI)}{6}$$

where:

(a)     ESRCSF(c,DI) is the capacity shortfall in MW determined for Separately Certified Component c in Dispatch Interval DI under clause 4.26.1F;

(b)     DI∈t denotes all Dispatch Intervals DI in Trading Interval t; and

(c)     c∈f denotes all Separately Certified Components c of Facility f that are Electric Storage Resources.

7.5     Insert the following new clause 4.26.1F:

4.26.1F.     ESRCSF(c,DI) for Separately Certified Component c (which is an Electric Storage Resource) for Dispatch Interval DI is:

$$ESRCSF(c,DI) = max(0, RCOQ(c,DI) - CAFO(c,DI) - 12 \times$$
$$max(0, ChargeLevel(c,DI) - MinChargeLevel(c,DI)))$$

where:

(a)     RCOQ(c,DI) is the Reserve Capacity Obligation Quantity determined for Separately Certified Component c in Dispatch Interval DI;

(b)     CAFO(c,DI) is the Capacity Adjusted Forced Outage Quantity determined for Separately Certified Component c in Dispatch Interval DI under clause 3.21.7;

(c)     ChargeLevel(c,DI) is the Charge Level in MWh, or alternative estimate from AEMO where the Charge Level is not available, of Separately Certified Component c determined at the start of Dispatch Interval DI; and

(d)     MinChargeLevel(c,DI) is the minimum Charge Level capability in MWh as specified in Standing Data for Separately Certified Component c in Dispatch Interval DI.

7.6     Insert the following new clause 4.26.1G:

4.26.1G.    AEMO must determine the shortfall in Reserve Capacity offered into the Real-Time Market ("Real-Time Market Offer Shortfall") for each Scheduled Facility or Semi-Scheduled Facility f for each Trading Interval t in which AEMO considers the Facility to have been in Commercial Operation as:

$$RTMOSF(f,t) = max\left(0, \frac{\sum_{DI \in t} RTMOSF(f,DI)}{6} - CAFO(f,t) - NISCRQ(f,t) - ESRCSF(f,t)\right)$$

where:

(a)     RTMOSF(f,DI) is the shortfall in Reserve Capacity offered into the Real-Time Market determined for Facility f in Dispatch Interval DI under clause 4.26.1H;

(b)     CAFO(f,t) is the Capacity Adjusted Forced Outage Quantity determined for Facility f in Trading Interval t under clause 3.21.7B;

(c)     NISCRQ(f,t) is the Not In-Service Capacity Refund Quantity determined for Facility f in Trading Interval t under clause 4.26.1D; and

(d)     ESRCSF(f,t) is the ESR Charge Shortfall determined for Facility f in Trading Interval t under clause 4.26.1E.

7.7     Insert the following new clause 4.26.1H:

4.26.1H.    RTMOSF(f,DI) for Facility f in Dispatch Interval DI is:

$$RTMOSF(f,DI) = max(0, RCOQ(f,DI) - OfferAvail(f,DI))$$

where:

(a)     RCOQ(f,DI) is the Reserve Capacity Obligation Quantity determined for Facility f in Dispatch Interval DI; and

(b)     OfferAvail(f,DI) is the total MW quantity included in Real-Time Market Offers for energy from Facility f in Dispatch Interval DI (whether offered as Available Capacity or In-Service Capacity) that were used to calculate Dispatch Instructions and Market Clearing Prices for that Dispatch Interval.

7.8     Insert the following new clause 4.26.1I:

4.26.1I.    AEMO must calculate the Generation Reserve Capacity Deficit Refund for each Market Participant for each Trading Interval as the sum of the Facility Reserve Capacity Deficit Refunds for the Trading Interval for each Scheduled Facility, Semi-

Scheduled Facility and Non-Scheduled Facility registered to the relevant Market Participant.

7.9     Insert the following new clause 4.26.1J:

4.26.1J.    Where a Scheduled Facility or a Semi-Scheduled Facility that has a Reserve Capacity Obligation Quantity greater than zero for a Dispatch Interval:

(a)     has been issued a Dispatch Target or a Dispatch Cap less than or equal to its Reserve Capacity Obligation Quantity and did not Inject at a level of the Dispatch Cap or Dispatch Target during the Dispatch Interval; or

(b)     has been issued a Dispatch Target or a Dispatch Cap greater than its Reserve Capacity Obligation Quantity and did not Inject at least at a level of the Reserve Capacity Obligation Quantity during the Dispatch Interval,

the Market Participant for the Facility must, as soon as practicable at the end of the Dispatch Interval, or in any event, within 24 hours of the end of the Dispatch Interval, submit a Forced Outage in accordance with the WEM Procedure specified in clause 3.21.10.

7.10    Insert the following new clause 4.26.2AA:

4.26.2AA.   AEMO must determine the net STEM shortfall ("Net STEM Shortfall") in Reserve Capacity supplied by each Market Participant p holding Capacity Credits for one or more Scheduled Facilities, Semi-Scheduled Facilities or Non-Scheduled Facilities in each Trading Interval t as:

$$STEMSF(p, t) = max(0, STEMREQ(p, t) - CAPASTEM(p, t) - RTCR(p,t))$$

where:

(a)     STEMREQ(p,t) is determined for Market Participant p in Trading Interval t under clause 4.26.2AB;

(b)     CAPASTEM(p,t) is determined for Market Participant p in Trading Interval t under clause 4.26.2AE; and

(c)     RTCR(p,t) is determined for Market Participant p in Trading Interval t under clause 4.26.2AH.

7.11    Insert the following new clause 4.26.2AB:

4.26.2AB.   STEMREQ(p,t) for Market Participant p in Trading Interval t is:

$$STEMREQ(p, t) = \frac{\sum_{DI \in t} STEMREQ(p, DI)}{6}$$

where:

(a)     STEMREQ(p,DI) is determined for Market Participant p in Dispatch Interval DI under clause 4.26.2AC; and

(b)     DI∈t denotes all Dispatch Intervals DI in Trading Interval t.

7.12    Insert the following new clause 4.26.2AC:

4.26.2AC.   STEMREQ(p,DI) for Market Participant p in Dispatch Interval DI is:

$$STEMREQ(p, DI) = \sum_{f \in SFFacilities(p,DI)} STEMFREQ(f, DI)$$

where:

(a)     STEMFREQ(f,DI) is determined for Facility f in Dispatch Interval DI under clause 4.26.2AD; and

(b)     f∈SFFacilities(p,DI) denotes all Scheduled Facilities and Semi-Scheduled Facilities for which Market Participant p holds Capacity Credits in Dispatch Interval DI and which AEMO considers to be in Commercial Operation in Dispatch Interval DI.

7.13    Insert the following new clause 4.26.2AD:

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

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

where:

(a)     BSRCOQ(f,DI) is the Reserve Capacity Obligation Quantity determined for Facility f in Dispatch Interval DI at the time of Bilateral Submission Cutoff;

(b)     BSCAFO(f,DI) is the Capacity Adjusted Forced Outage Quantity determined for Facility f in Dispatch Interval DI at the time of Bilateral Submission Cutoff; 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.

7.14    Insert the following new clause 4.26.2AE:

4.26.2AE.   CAPASTEM(p,t) for Market Participant p in Trading Interval t is:

(a)     where the STEM Auction has been suspended by AEMO in accordance with section 6.10 or where STEMREQ(p,t)=0:

$$CAPASTEM(p, t) = STEMREQ(p, t)$$

(b)     otherwise:

$$\text{CAPASTEM}(p,t)$$

$$= \left( \frac{\text{NCP}(p,t) + \text{UnclearedSTEMOffers}(p,t) + \text{ClearedSTEMBids}(p,t)}{\text{LF}(p,t) \times \frac{30}{60}} \right)$$

where:

i.       STEMREQ(p,t) is determined for Market Participant p in Trading Interval t under clause 4.26.2AB;

ii.      NCP(p,t) is Market Participant p's Net Contract Position for Trading Interval t in MWh;

iii.     UnclearedSTEMOffers(p,t) is the total MWh quantity covered by the STEM Offers which were not scheduled in the relevant STEM Auction, determined by AEMO for Market Participant p under section 6.9 for Trading Interval t;

iv.     ClearedSTEMBids(p,t) is the total MWh quantity covered by the STEM Bids which were scheduled in the relevant STEM Auction, determined by AEMO for Market Participant p under section 6.9 for Trading Interval t; and

v.      LF(p,t) is determined for Market Participant p in Trading Interval t under clause 4.26.2AF.

7.15    Insert the following new clause 4.26.2AF:

4.26.2AF.  LF(p,t) for Market Participant p for Trading Interval t is:

$$\text{LF}(p,t) = \frac{\sum_{\text{DI} \in t} \text{LF}(p,\text{DI})}{6}$$

where:

(a)     LF(p,DI) is the capacity obligation weighted average of the Loss Factors for Market Participant p's Scheduled Facilities and Semi-Scheduled Facilities in Dispatch Interval DI determined under clause 4.26.2AG; and

(b)     DI∈t denotes all Dispatch Intervals in Trading Interval t.

7.16    Insert the following new clause 4.26.2AG:

4.26.2AG.  LF(p,DI) for Market Participant p in Dispatch Interval DI is:

$$\text{LF}(p,\text{DI}) = \frac{\sum_{f \in \text{SFFacilities}(p,\text{DI})} (\text{LossFactor}(f,\text{DI}) \times \text{BSRCOQ}(f,\text{DI}))}{\sum_{f \in \text{SFFacilities}(p,\text{DI})} \text{BSRCOQ}(f,\text{DI})}$$

where:

(a)     LossFactor(f,DI) is the Loss Factor for Facility f in Dispatch Interval DI;

(b) BSRCOQ(f,DI) is the Reserve Capacity Obligation Quantity determined for Facility f in Dispatch Interval DI at the time of Bilateral Submission Cutoff; and

(c) f∈SFFacilities(p,DI) denotes all Scheduled Facilities and Semi-Scheduled Facilities for which Market Participant p holds Capacity Credits in Dispatch Interval DI and which AEMO considers to be in Commercial Operation in Dispatch Interval DI.

7.17    Insert the following new clause 4.26.2AH:

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

$$RTCR(p,t) = \sum_{f \in SFFacilities(p,t)} (CAFO(f,t) + NISCRQ(f,t) + ESRCSF(f,t)$$
$$+ RTMOSF(f,t)$$
$$+ \max(0, NIMGRPPO(f,t) + ESRRPPO(f,t) - BSCAPO(f,t)))$$

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) ESRRPPO(f,t) is the quantity of Refund Payable Planned Outage determined for Facility f in Trading Interval t under clause 4.26.1CA;

(g) BSCAPO(f,t) is the Capacity Adjusted Planned Outage Quantity determined for Facility f in Trading Interval t at the time of Bilateral Submission Cutoff; and

(h) f∈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.

7.18    Clause 4.26.3 is deleted and replaced with the following:

4.26.3.   The Generation Capacity Cost Refund for Trading Interval t in Capacity Year y for a Market Participant p holding Capacity Credits associated with an Energy Producing System or an Electric Storage Resource is the lesser of:

(a)   the Maximum Participant Generation Refund determined for Market Participant p and Capacity Year y less all Generation Capacity Cost Refunds applicable to Market Participant p in previous Trading Interval t falling in Capacity Year y; and

(b)   the Generation Reserve Capacity Deficit Refund for Market Participant p and Trading Interval t, plus the Net STEM Refund in Trading Interval t for Market Participant p, where the Net STEM Refund is calculated as follows:

$$N\ STEM\ Refund(p,t) = TIRR\ weighted(p,t) \times N\ STEM\ Short(p,t)$$

where:

i.   N STEM Refund(p, t) is the Net STEM Refund for Market Participant p in Trading Interval t;

ii.   TIRR weighted(p, t) is the weighted average of the Trading Interval Refund Rate in Trading Interval t for each Registered Facility that Market Participant p holds Capacity Credits for and is calculated as follows:

$$TIRR\ weighted(p,t) = \sum_{f \in F} \frac{TIRR(f,t) \times CC(f,t)}{\sum_{f \in F} CC(f,t)}$$

where:

1.   F denotes the set of all Registered Facilities registered to Market Participant p in Trading Interval t, for which Market Participant p holds Capacity Credits in Trading Interval t, excluding Demand Side Programmes and f is a Facility within that set;

2.   TIRR(f, t) is the Trading Interval Refund Rate for Facility f in Trading Interval t; and

3.   CC(f,t) is the number of Capacity Credits associated with Facility f in Trading Interval t; and

iii.   N STEM Short(p, t) is the Net STEM Shortfall for Market Participant p in Trading Interval t.

7.19   Clause 4.26.6(b) is amended by deleting the words 'and any amounts collected in accordance with 4.25.4E,'.

7.20   Clause 4.26.6(e)(i)(3) is deleted and replaced with the following:

3. the sum of all Trading Interval Capacity Cost Refunds in Capacity Year y that the Trading Interval t falls in, for Trading Intervals prior to and including Trading Interval t, is less than the Maximum Participant Refund for the Market Participant p which the Facility is registered to, in Capacity Year y; and

7.21 Clause 4.26.6(e)(ii)(2) is amended by deleting the word 'and' after the semi-colon at the end of the clause.

7.22 Inserting the following new clause 4.26.6(e)(ii)(4):

4. the sum of all Trading Interval Capacity Cost Refunds in Capacity Year y that the Trading Interval t falls in, for Trading Intervals prior to and including Trading Interval t, is less than the Maximum Participant Refund for the Market Participant p which the Facility is registered to, in Capacity Year y; and

## 8. Section 7.4 amended

8.1 Clause 7.4.40 is amended by:

(a) deleting the words 'up to the number of Price-Quantity Pairs specified in the WEM Procedure referred to in clause 7.4.38, where:' and replacing them with the words 'up to the number of Price-Quantity Pairs specified in the WEM Procedure referred to in clause 7.4.38, where, for each Price-Quantity Pair:';

(b) deleting the word 'and' after the semi-colon at the end of clause 7.4.40(g)(iv);

(c) deleting the word 'and' after the semi-colon at the end of clause 7.4.40(g)(v); and

(d) inserting the following new clauses 7.4.40(g)(vi) and 7.4.40(g)(vii):

vi. the minimum time to synchronise the Available Capacity for Injection is provided in minutes; and

vii. the minimum time to synchronise the Available Capacity for Withdrawal is provided in minutes; and

## 9. Section 7.8 amended

9.1 Clause 7.8.5(c) is deleted and replaced with the following:

(c) exclude any Available Capacity in Real-Time Market Submissions where the Start Decision Cutoff for the Registered Facility has passed.

9.2 Clause 7.8.5A(b) is deleted and replaced with the following:

(b) exclude any Available Capacity in Real-Time Market Submissions where the Start Decision Cutoff for the Registered Facility has passed.

## 10. Section 7.13 amended

10.1 Clause 7.13.1B is amended by:

(a) deleting the word 'and' at the end of clause 7.13.1B(j);

(b) deleting the full stop at the end of clause 7.13.1B(k) and replacing it with the word ';
and'; and

(c) inserting the following new clause 7.13.1B(l):

(l) the AEMO estimated quantity of Not In-Service Capacity for each Scheduled
Facility or Semi-Scheduled Facility for which a Market Participant holds
Capacity Credits, in each Dispatch Interval.

**11.  Section 7.13A added**

11.1 Insert the following new section 7.13A:

### 7.13A.  Not In-Service Capacity

7.13A.1. AEMO must determine the Not In-Service Capacity for each Scheduled Facility or
Semi-Scheduled Facility f for which a Market Participant holds Capacity Credits, in
the Dispatch Interval DI as either:

(a) where AEMO has directed a Registered Facility to offer its capacity as In
Service:

$$NISCap(f,DI) = Max(0, Min(RCOQ(f,DI), ReqDispEnergy(f,DI))) -$$
$$Max(ISSDCEnergy(f,DI), ISDispEnergy(f,DI))$$
or

(b) otherwise:

$$NISCap(f,DI) = Max(0, Min(RCOQ(f,DI), EstDispEnergy(f,DI))) -$$
$$Max(ISSDCEnergy(f,DI), ISDispEnergy(f,DI))$$

where:

i. $NISCap(f,DI)$ is the Not In-Service Capacity quantity for the
relevant Facility f in Dispatch Interval DI;

ii. $EstDispEnergy(f,DI)$ is the quantity of estimated energy dispatch
immediately prior to the Start Decision Cutoff time for the relevant
Facility f in Dispatch Interval DI, calculated in accordance with
clause 7.13A.2;

iii. $ISSDCEnergy(f,DI)$ is the quantity of In-Service Capacity offered
immediately after the Start Decision Cutoff time for the relevant
Facility f in Dispatch Interval DI, calculated in accordance with
clause 7.13A.3;

iv. $ISDispEnergy(f,DI)$ is the total MW quantity of In-Service Capacity
for the relevant Facility f included in the Real-Time Market Offers
for energy that were used to formulate Dispatch Instructions and
calculate Market Clearing Prices for Dispatch Interval DI; and

v. $ReqDispEnergy(f,DI)$ is the quantity of In-Service Capacity for the
relevant Facility f required by AEMO in Dispatch Interval DI.

7.13A.2.　EstDispEnergy(f, DI) for each Scheduled Facility or Semi-Scheduled Facility f in Dispatch Interval DI is determined from the most recent Market Schedule published before the Start Decision Cutoff from the Price-Quantity Pair for the relevant Facility f with the longest minimum time to synchronise, as specified in clause 7.4.40(g)(vi), as applicable:

(a)　where at least one Dispatch Schedule has been published that contains Dispatch Interval DI within a Trading Interval, the total MW quantity of energy scheduled for dispatch in the Dispatch Interval DI for the relevant Facility f determined in the Reference Scenario of the Dispatch Schedule; or

(b)　where at least one Pre-Dispatch Schedule has been published that contains Dispatch Interval DI within a Trading Interval, then the total MW quantity of energy scheduled for dispatch in the Trading Interval for the relevant Facility f determined in the Reference Scenario of the Pre-Dispatch Schedule; or

(c)　where at least one Week-Ahead Schedule has been published that contains Dispatch Interval DI within a Trading Interval, then the total MW quantity of energy scheduled for dispatch in the Trading Interval for the relevant Facility f determined in the Reference Scenario of the Week-Ahead Schedule; or

(d)　otherwise, zero.

7.13A.3.　ISSDCEnergy(f,DI) for each Scheduled Facility or Semi-Scheduled Facility f in Dispatch Interval DI is determined from the most recent Market Schedule published after the Start Decision Cutoff from the Price-Quantity Pair for the relevant Facility f with the longest minimum time to synchronise, as specified in clause 7.4.40(g)(vi), as applicable:

(a)　where at least one Dispatch Schedule has been published that contains Dispatch Interval DI within a Trading Interval, the total MW quantity of In-Service Capacity included in the Real-Time Market Submission for energy from the relevant Facility f in the Dispatch Interval DI; or

(b)　where at least one Pre-Dispatch Schedule has been published that contains Dispatch Interval DI within a Trading Interval, the total MW quantity of In-Service Capacity included in the Real-Time Market Submission for energy from the relevant Facility f in the Trading Interval; or

(c)　where at least one Week-Ahead Schedule has been published that contains Dispatch Interval DI within a Trading Interval, the total MW quantity of In-Service Capacity included in the Real-Time Market Submission for energy from the relevant Facility f in the Trading Interval; or

(d) otherwise, zero.

## 12. Chapter 11 Glossary amended

12.1 The definition for 'Available Capacity' is deleted and replaced with the following:

**Available Capacity**: For a Registered Facility in a Dispatch Interval, the sent out capacity in MW that is not currently synchronised and is not expected to be synchronised in the Dispatch Interval, but would be available for dispatch if the Registered Facility was given notice in accordance with minimum times to synchronise in its Real-Time Market Submission.

12.2 The definition for 'Charge Level' is deleted and replaced with the following:

**Charge Level**: An Equipment Limit indicating the current level of stored energy in MWh in an Electric Storage Resource, as provided to AEMO in a real-time data feed in accordance with section 2.36A.

12.3 Insert the following new definition for 'ESR Charge Shortfall':

**ESR Charge Shortfall**: The MW quantity of capacity of a Scheduled Facility or Semi-Scheduled Facility that is subject to a capacity refund in a Trading Interval due to the inadequate Charge Level of an Electric Storage Resource, calculated in accordance with clause 4.26.1E.

12.4 The definition for 'Generation Reserve Capacity Deficit Refund' is amended by deleting the word 'clause 4.26.1B' and replacing it with the word 'clause 4.26.1I'.

12.5 The definition for 'Net STEM Shortfall' is amended by deleting the word 'clause 4.26.2' and replacing it with the word 'clause 4.26.2AA'.

12.6 Insert the following new definition for 'Not In-Service Capacity':

**Not In-Service Capacity**: Means, for a Scheduled Facility or a Semi-Scheduled Facility in a Dispatch Interval, the sent-out capacity, in MW, that was expected to be dispatched in the Reference Scenario of the relevant Market Schedule at the Start Decision Cutoff, but was not offered as In-Service Capacity, as calculated in clause 7.13A.1.

12.7 Insert the following new definition for 'Not In-Service Capacity Refund Quantity':

**Not In-Service Capacity Refund Quantity**: The MW quantity of Not In-Service Capacity of a Scheduled Facility or Semi-Scheduled Facility that is subject to a capacity refund in a Trading Interval, calculated in accordance with clause 4.26.1D.

12.8 Insert the following new definition for 'Start Decision Cutoff':

**Start Decision Cutoff**: For a Registered Facility, the latest time before the start of the Dispatch Interval at which a Market Participant could change a quantity of Available Capacity to In-Service Capacity so as to achieve synchronisation for the energy for that Dispatch Interval, as reflected in its Real-Time Market Submission.

12.9 Insert the following new definition for 'Real-Time Market Offer Shortfall':

**Real-Time Market Offer Shortfall**: Has the meaning given in clause 4.26.1G.

12.10   Insert the following new definition for 'Real-Time Market Reserve Capacity Deficit':

**Real-Time Market Reserve Capacity Deficit**: Has the meaning given in clause 4.26.1B.

## 13.   Appendix 2A amended

13.1   Clause 5.3(b) of Appendix 2A is amended by deleting the formula in it and replacing it with the following:

$$\text{NetworkComponentShare}(p,DI) = \text{NetworkComponent}(DI) \times$$

$$\sum_{nc \in \text{ApplicableNetworkContingencies}(DI)} \sum_{f \in \text{CauserFacilities}(nc,p,DI)} \text{NetworkShare}(nc,f,DI)$$

13.2   Clause 5.3(b)(iv) is deleted and replaced with the following:

iv.      NetworkShare(nc,f,DI) is Registered Facility f's cost share associated with Network Contingency nc in Dispatch Interval DI as calculated in clause 5.2 of this Appendix 2A.

## 14.   Appendix 2C amended

14.1   Clause 2.6 of Appendix 2C is amended by deleting the formula in it and replacing it with the following:

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

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