Electricity Industry (Wholesale Electricity Market) Regulations 2004

Wholesale Electricity Market Amendment (Cost Allocation Reform) Rules 2024

Commencement

- The amending rules set out in Schedule 1 come into operation at a time specified by the Minister in a notice published in the Gazette.
- The amending rules set out in Schedules 2, 3 and 4 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.

Where there are market rules made by the Minister for Energy in accordance with regulation 7(5) of the Electricity Industry (Wholesale Electricity Market) Regulations 2004 prior to the date this Instrument is made which are specified to come into operation on the same day as the amending rules set out in this Instrument, the amending rules set out in this Instrument come into operation immediately after the commencement of those market rules.

Schedule 1

1. Section 1.33 amended

1.1 Clause 1.33.1(a) is amended by deleting the words ', without limiting clause 1.20.2'.

1.2 Clause 1.33.1(b)(v) is amended by deleting the words '-section 1.20 and'.

2. Clause 1.63.3 added

2.1 Insert the following new clause 1.63.3:

1.63.3. For the purposes of Steps 3 and 4 of Appendix 9, notwithstanding clause 7.13.6, AEMO must estimate the output of a Facility for any Trading Interval before the New WEM Commencement Day in which the Facility was either:

(a) affected by a Consequential Outage under the WEM Rules as in force immediately before the New WEM Commencement Day, in which case AEMO must treat the Facility as if the Facility was restricted by a Network limitation; or

(b) a GIA Facility and was issued an Operating Instruction under a Network Control Service Contract under the WEM Rules as in force immediately before the New WEM Commencement Day, in which case AEMO must treat the Facility as if the Facility was restricted by a Dispatch Instruction.

3. Clause 1.63.4 added

3.1 Insert the following new clause 1.63.4:

1.63.4. If a Facility specified in an application for Certified Reserve Capacity is subject to clause 4.10.1B, AEMO is not required to provide the details of the Facility to the Network Operator under clause 4.4B.7(a).

4. Section 1.64 added

4.1 Insert the following new section 1.64 Specific Transitional Provisions – Capacity Investment Scheme:

1.64. Specific Transitional Provisions - Capacity Investment Scheme

1.64.1. In this section 1.64:

Capacity Investment Scheme means the Capacity Investment Scheme Program prescribed under section 33 of the *Industry Research and Development Act 1986* (Cth) and as described in the *Industry Research and Development (Capacity Investment Scheme Program) Instrument 2023* (as may be amended).

CIS WA Target means the target for renewable generation capacity and clean dispatchable capacity in the Wholesale Electricity Market to be delivered through the Capacity Investment Scheme.

1.64.2. AEMO is conferred the function in respect of planning and market and system operations to advise on and assist with the implementation and operation of the Capacity Investment Scheme as it relates to the Wholesale Electricity Market, including tender design, tender processes and assessment, market design and investment contract management in respect of Market Participants to assist in the delivery of the CIS WA Target.

5. Clause 3.18E.8 amended

5.1 Clause 3.18E.8 is amended by inserting a space before the word 'including'.

6. Clause 4.3.1 amended

6.1 Clause 4.3.1(i)(iv) is amended by deleting the full stop at the end of the clause and replacing it with a semicolon.

7. Clause 4.4A.2 amended

7.1 Clause 4.4A.2 is amended by inserting a space before the words 'as applicable'.

8. Section 4.4B amended

8.1 Clause 4.4B.4 is amended by deleting the words 'Subject to clause 4.4B.4A, ' at the start of the clause.

8.2 Clause 4.4B.6 is amended by deleting the colon at the end of the clause and replacing it with a full stop.

9. Clause 4.7.3 amended

9.1 Clause 4.7.3(a) is amended by inserting ' and' after the semicolon at the end of the clause.

10. Clause 4.8A.4 amended

10.1 Clause 4.8A.4(b) is amended by inserting a full stop at the end of the clause.

11. Section 4.10 amended

11.1 Clause 4.10.1(bA) is amended by deleting the duplicate comma after the words 'a Demand Side Programme'.

11.2 Insert the following new clause 4.10.1B:

> 4.10.1B. A Market Participant applying for certification of Reserve Capacity for the 2024 Reserve Capacity Cycle, for a Demand Side Programme with more than one Associated Load, is exempt from the requirement in clause 4.10.1(f)(viii) if the expected quantity of Peak Capacity for each Associated Load associated with the Demand Side Programme is less than 5 MW.

11.3 Clause 4.10.2(b) is amended by deleting the word 'Methodology' and replacing it with the word 'Method'.

11.4 Clause 4.10.2(c) is amended by deleting the word 'Methodology' and replacing it with the word 'Method'.

11.5 Clause 4.10.3(d) is amended by deleting the word 'Methodology' and replacing it with the word 'Method'.

12. Section 4.11 amended

12.1 Clause 4.11.3A(a) is amended by deleting both instances of the word 'Intervals' and replacing them with the word 'Interval'.

12.2 Clause 4.11.3BA(b) is amended by deleting the single quotation mark immediately before the word 'Relevant'.

13. Clause 4.15.5 amended

13.1 Clause 4.15.5(b) is amended by deleting the words 'Early Certified Reserve Capacity' and replacing them with the words 'Peak Early Certified Reserve Capacity'.

13.2 Clause 4.15.5(c) is amended by deleting the words 'Early Certified Reserve Capacity' and replacing them with the words 'Peak Early Certified Reserve Capacity'.

14. Section 4.16 amended

14.1 The heading immediately above section 4.16 is amended by:

(a) deleting the word 'The'; and

(b) deleting the word 'Price' and replacing it with the word 'Prices'.

14.2 The heading for section 4.16 is amended by deleting the word 'Price' and replacing it with the word 'Prices'.

15. Clause 4.20.5A amended

15.1 Clause 4.20.5A(b)(ii)(1) is amended by inserting the word '-and' at the end of the clause after the semicolon.

16. Clause 5.3.1 amended

16.1 Clause 5.3.1(a) is amended by inserting the words 'for the Facility-' before the words 'to be paid'.

16.2 Clause 5.3.1(b) is amended by inserting the words 'for the Facility-' before the words 'to be paid'.

17. Clause 7.5.8A added

17.1 Insert the following new clause 7.5.8A:

7.5.8A. AEMO may include allowances for droop response and measurement errors when it assesses whether a Registered Facility is operating within its Enablement Limits for the purpose of clause 7.5.8.

18. Clause 7.6.5B amended

18.1 Clause 7.6.5B(a) is amended by deleting the words 'Relevant Level' and replacing them with the words 'Relevant Demand'.

19. Clause 7.14.1 amended

19.1 Clause 7.14.1 is amended by:

(a) deleting the formula in the clause and replacing it with the following formula:

$$CongestionRental(f,DI) = \sum_{n \in N} ConstraintCoefficient(f,n,DI) \times MarginalConstraintValue(n,DI)$$

; and

(b) deleting the word 'Where' and replacing it with the word 'where'.

20. Chapter 11 (Glossary) amended

20.1 The definition for 'AEMO Intervention Event' in Chapter 11 (Glossary) is amended by inserting the words ' clause 3.5.5(a), clause 3.5.5(b),' after the words 'clause 3.4.5,'.

21. Appendix 3: Determination of Network Access Quantities amended

21.1 Step 3A in Part A of Appendix 3 is amended by replacing the words 'Step 13(c)(i)' in sub paragraph (a)(i)(1) with the words 'Step 10(c)(i)'.

21.2 Step 3A in Part B of Appendix 3 is amended by replacing the words 'Step 13(c)(i)' in sub paragraph (a)(i)(1) with the words 'Step 10(c)(i)'.

21.3 Step 6 in Part B of Appendix 3 is amended by replacing the words ‘Step 6C’ in sub paragraph (b) with the words ‘Step 7’.

22. Appendix 9: Relevant Level Determination amended

22.1 The 'Overview' in the text box in Appendix 9 is amended by deleting the word 'Methodology' and replacing it with the word 'Method'.

22.2 Paragraph A.1 in Part A of Appendix 9 is amended by deleting the word 'Methodology' and replacing it with the word 'Method'.

22.3 Paragraph A.2 in Part A of Appendix 9 is amended by:

(a) at the start of clause (a)(i)(1), inserting the word 'Peak ' before the word 'Certified';

(b) in clause (a)(i)(2), inserting the word 'Peak' after the word 'Conditional'; and

(c) at the start of clause (a)(i)(3), inserting the word 'Peak' before the word 'Early';

(d) deleting clause (a)(iii) and replacing it with:

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

(e) at the end of clause (b)(ii) deleting the word 'and' after the semicolon;

(f) at the end of clause (c)(ii) deleting the full stop and replacing it with a semicolon; and

(g) inserting new clause (d) as follows:

(d) "Existing Facility Load for Scheduled Generation" means the MWh quantity determined for a Trading Interval under Step 7 in Part B of this Appendix 9; and

(h) inserting new clause (e) as follows:

(e) "New Facility Load for Scheduled Generation" means the MWh quantity determined for a Trading Interval under Step 11 in Part B of this Appendix 9.

22.4 Step 3 in Part B of Appendix 9 is deleted and replaced as follows:

Step 3: For each Candidate Facility, identify any Trading Intervals in the period identified in Step 1(b) in which the output of the Candidate Facility was restricted by a

Dispatch Instruction or Network limitation, and estimate the quantity of electricity (in MWh) sent out by the Candidate Facility had it not been restricted by the Dispatch Instruction or Network limitation.

22.5 Step 4 in Part B of Appendix 9 is deleted and replaced as follows:

Step 4: For each Candidate Facility and Trading Interval identified in Step 3 identify the higher of:

(a) the actual quantity determined in Step 2; and

(b) any estimate determined by AEMO under clause 7.13.6 or revised under clause 7.13.7 as applicable.

22.6 Step 5 in Part B of Appendix 9 is deleted and replaced with the word '[Blank]'.

22.7 Step 6 in Part B of Appendix 9 is deleted and replaced with the word '[Blank]'.

22.8 Step 6A in Part B of Appendix 9 is deleted in its entirety.

22.9 Step 7 in Part B of Appendix 9 is deleted and replaced as follows:

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 + SC_Reduction + NCESS_Reduction) – CF_Generation

where:

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

DSP_Reduction is half the sum of the quantities calculated by AEMO under clause 7.13.5 for each Demand Side Programme for the Trading Interval;

Interruptible_Reduction is the total quantity by which all Interruptible Loads reduced their consumption in the provision of Contingency Reserve Raise, as recorded by AEMO under clause 7.13.1F(b);

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

SC_Reduction is the total quantity of energy by which Facilities reduced their consumption in accordance with the terms of a Supplementary Capacity Contract for the Trading Interval;

NCESS_Reduction is the total quantity of energy by which Facilities reduced their consumption in accordance with the terms of an NCESS Contract for the Trading Interval; and

CF_Generation is the total sent out generation of all Candidate Facilities, as identified in Step 4.

22.10 Step 9A in Part B of Appendix 9 is amended in paragraph (a) by deleting the words 'the WEM Procedure specified in clause 7.7.5A' and replacing them with the words 'clause 7.13.7'.

22.11 Step 11 in Part B of Appendix 9 is amended by:

(a) Deleting 'Step11:' and replacing it with 'Step 11:';

(b) in paragraph (a) in the definition of ' Actual_CF_Generation' by:

(i) inserting the words 'Step 4 or ' immediately before the words 'Step 9(b)'; and

(ii) deleting the words ', determined in Step 2 or estimated in Steps 4, 5, 6 or 6A'.

22.12 Step 13 in Part B of Appendix 9 is amended in paragraph (a) by deleting the words 'determined in Step 2 or estimated in Steps 4, 5, 6 or 6A as applicable' and replacing them with the words 'identified in Step 4'.

22.13 Step 14 in Part B of Appendix 9 is amended in paragraph (a) by:

(a) inserting the words ' Step 4 or' immediately before the words 'Step 9(b)'; and

(b) deleting the words ', determined in Step 2 or estimated in Steps 4, 5, 6 or 6A'.

22.14 Step 21 in Part B of Appendix 9 is amended by deleting the word 'Methodology' and replacing it with the word 'Method'.

Schedule 2

1. Clause 7.13.1FA added

1.1 Insert the following new clause 7.13.1FA:

7.13.1FA. AEMO must prepare and publish on the WEM Website, for each Trading Interval of a Trading Week, by noon on the first Business Day following the Settlement Date for the Trading Week as published under clause 9.3.1(d):

(a) an estimate of the total quantity of energy (in MWh) by which Facilities reduced their consumption in accordance with the terms of a Supplementary Capacity Contract; and

(b) an estimate of the total quantity of energy (in MWh) by which Facilities reduced their consumption in accordance with the terms of an NCESS Contract.

Schedule 3

1. Section 3B.3 amended

1.1 Clause 3B.3.2 is amended by deleting the word 'exceed' and replacing it with the words 'deviate outside of'.

1.2 Clause 3B.3.3 is amended by deleting the word 'exceed' and replacing it with the words 'deviate outside of'.

1.3 Clause 3B.3.4 is amended by deleting the word 'exceed' and replacing it with the words 'deviate outside of'.

1.4 Clause 3B.3.5 is amended by:

(a) inserting the words ' rate of change of' before the words 'SWIS Frequency'; and

(b) deleting the word 'requirements' and replacing it with the words 'of frequency safe limit'.

1.5 Clause 3B.3.7 is amended by:

(a) deleting the word 'the ' before the words 'SWIS Frequency'; and

(b) deleting the word 'exceed' and replacing it with the words 'deviate outside of'.

1.6 Clause 3B.3.10 is amended by deleting the word 'exceed' and replacing it with the words 'deviate outside of'.

1.7 Clause 3B.3.11 is amended to delete the word 'the ' appearing immediately before each reference to the words 'SWIS Frequency'.

1.8 Clause 3B.3.12 is amended by deleting the words 'exceeds the frequencies in' and replacing them with the words 'deviates outside of'.

2. Clause 7.2.5 amended

2.1 Clause 7.2.5(b) is amended by deleting the words 'methodology it' and replacing them with the words 'method AEMO'.

2.2 Clause 7.2.5 is amended by inserting new subclause (bA) as follows:

(bA) how and under what circumstances AEMO will determine alternative forecast quantities under clause 7.2.4A to the Unconstrained Injection Forecast and Unconstrained Withdrawal Forecast provided in a Real-Time Market Submission for use as inputs to the Dispatch Algorithm;

2.3 Clause 7.2.5(d) is amended by deleting the word 'methodology' and replacing it with the word 'method'.

3. Section 7.13 amended

3.1 Clause 7.13.1E(d) is amended to delete the word 'and' at the end of the clause after the semicolon.

3.2 Clause 7.13.1E(e) is amended to delete the full stop at the end of the clause and replace it with a semicolon.

3.3 Clause 7.13.1E is amended to insert new subclauses (f), (g) and (h) after subclause (e) as follows:

(f) each Frequency Excursion Dispatch Interval in the Trading Day;

(g) for each Frequency Excursion Dispatch Interval in the Trading Day, the identity of each Frequency Response Deviation Facility; and

(h) for each Dispatch Interval in the Trading Day, the identity of each Direction Deviation Facility.

4. Clause 7.13.1M added

4.1 Insert the following new clause 7.13.1M:

7.13.1M. AEMO must determine and publish on the WEM Website for each Trading Interval in a Trading Week, the identity of each Facility that is an Unavailable SCADA Facility in the Trading Interval by no later than the Interval Meter Deadline for the Trading Week.

5. Section 7.15 added

5.1 Insert the following new section 7.15 and associated heading and section heading after section 7.14:

Deviation Facilities

7.15. Frequency Excursion Dispatch Intervals and Deviation Facilities

7.15.1. For each Dispatch Interval of a Trading Day, AEMO must:

(a) determine whether the Dispatch Interval was a Frequency Excursion Dispatch Interval;

(b) if AEMO determines that the Dispatch Interval was a Frequency Excursion Dispatch Interval under clause 7.15.1(a), identify each Registered Facility that is monitored by AEMO's SCADA system that provided a response beneficial to SWIS Frequency; and

(c) identify each Registered Facility that was subject to a direction from AEMO in the Dispatch Interval that required the Registered Facility to deviate from a Dispatch Instruction.

6. Section 7.16 added

6.1 Insert the following new section 7.16 and associated heading and section heading after section 7.15:

Treatment of Missing or Spurious SCADA Data

7.16. Treatment of Missing or Spurious SCADA Data

7.16.1. AEMO must:

(a) use reasonable endeavours to identify, in accordance with the WEM Procedure referred to in clause 7.16.3, any spurious values in the SCADA data AEMO uses to prepare SCADA-Derived Quantities; and

(b) exclude from its calculations any spurious SCADA data values identified under clause 7.16.1(a) when preparing SCADA-Derived Quantities.

7.16.2. If AEMO determines, in accordance with the WEM Procedure referred to in clause 7.16.3, that due to the extent of missing or spurious SCADA data values it is unable to prepare the SCADA-Derived Quantities required by Appendix 2D for a Facility for one or more Dispatch Intervals in a Trading Interval, then AEMO must determine that Facility to be an Unavailable SCADA Facility for that Trading Interval.

7.16.3. AEMO must document in a WEM Procedure:

(a) the processes AEMO uses to identify and exclude spurious SCADA data values when preparing SCADA-Derived Quantities; and

(b) the criteria AEMO uses to determine whether a Facility is an Unavailable SCADA Facility for a Trading Interval.

7. Section 9.10 amended

7.1 Clause 9.10.36 is amended by deleting the words 'in accordance with clause 9.10.37' at the end of paragraph (b) and replacing them with the words 'following the steps set out in Appendix 2D and as finally calculated in clause 4.3 of Appendix 2D'

7.2 Clause 9.10.37 is deleted and replaced with the word '[Blank]'.

7.3 Clause 9.10.38 is deleted and replaced with the word '[Blank]'.

7.4 Clause 9.10.39 is deleted and replaced with the word '[Blank]'.

8. Chapter 11 (Glossary) amended

8.1 Insert each of the following new defined terms in Chapter 11 (Glossary) in the appropriate alphabetical order:

Deviation Facility: A Facility in respect of a Dispatch Interval that is:

(a) a Scheduled Facility or Semi-Scheduled Facility for which:

i. the RR_EnablementQuantity(f,DI) for the Dispatch Interval specified in clause 9.10.22(c) is greater than zero; or

ii. the RL_EnablementQuantity(f,DI) for the Dispatch Interval specified in clause 9.10.23(c) is greater than zero;

(b) a Frequency Response Deviation Facility in the Dispatch Interval; or

(c) a Direction Deviation Facility in the Dispatch Interval.

Direction Deviation Facility: A Registered Facility in respect of a Dispatch Interval as identified by AEMO under clause 7.15.1(c) for the Dispatch Interval.

Frequency Excursion Dispatch Interval: A Dispatch Interval during which SWIS Frequency deviated outside of the Normal Operating Frequency Excursion Band, as determined by AEMO under clause 7.15.1(a).

Frequency Response Deviation Facility: A Registered Facility in respect of a Frequency Excursion Dispatch Interval as identified by AEMO under clause 7.15.1(b) for the Frequency Excursion Dispatch Interval.

SCADA-Derived Quantity: Each of the quantities required to be prepared or determined by AEMO in accordance with:

(a) clause 7.13.1E(a);

(b) clause 7.13.1E(aA);

(c) Appendix 2D; and

(d) Appendix 2E.

Unavailable SCADA Facility: A Facility in respect of a Trading Interval as determined by AEMO under clause 7.16.2 for the Trading Interval.

9. Appendix 2D added

9.1 Insert new Appendix 2D: Calculation of Regulation Shares for Regulation Cost Recovery as follows:

Appendix 2D: Calculation of Regulation Shares for Regulation Cost Recovery

1. Interpretation

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

1.2 AEMO must calculate the share of the total cost of Regulation payable by each Market Participant p for Trading Interval t by following each of the steps set out in this Appendix 2D.

1.3 For the purpose of this Appendix 2D, a quantity of Injection is positive and a quantity of Withdrawal is negative.

1.4 In this Appendix 2D:

(a) “Residual Load” means, for Trading Interval t, a notional entity representing all Semi-Scheduled Facilities, Non-Scheduled Facilities and Non-Dispatchable Loads (including Intermittent Loads and the Notional Wholesale Meter) which are

not included in the set RegulationFacilities(t) under clause 2.1 of this Appendix 2D;

(b) "Assessment Time" means each point in time commencing at the start of Trading Interval t and then each 4 seconds after that until the end of Trading Interval t (inclusive);

(c) For the purposes of clauses 2.6 and 3.1 of this Appendix 2D, the Assessment Times associated with a Dispatch Interval include all Assessment Times that fall:

i. after the start of the Dispatch Interval; and

ii. on or before the end of the Dispatch Interval.

2. Determine expected and actual SCADA quantities for regulation entities

2.1 Determine RegulationFacilities(t) for Trading Interval t as the set comprising each:

(a) Scheduled Facility;

(b) Semi-Scheduled Facility;

(c) Non-Scheduled Facility that is monitored by AEMO's SCADA system; or

(d) Non-Dispatchable Load that is:

i. individually monitored by AEMO's SCADA system;

ii. not included in the Notional Wholesale Meter; and

iii. not associated with an Intermittent Load served by a Scheduled Facility or Semi-Scheduled Facility,

that is not an Unavailable SCADA Facility in Trading Interval t.

2.2 Determine RegulationEntities(t) for Trading Interval t as the set comprising:

(a) each Facility in RegulationFacilities(t); and

(b) the Residual Load.

2.3 For each member RE of RegulationEntities(t), for each Assessment Time s in Trading Interval t, determine SCADA_MW(RE,s) as follows:

(a) if RE is a Scheduled Facility or Semi-Scheduled Facility that contains an Intermittent Load, SCADA_MW(RE,s) is equal to the maximum of zero and AEMO's estimate of the MW level of Injection or Withdrawal at Assessment Time s prepared from SCADA data;

(b) if RE is:

i. a Scheduled Facility or Semi-Scheduled Facility that does not contain an Intermittent Load;

ii. a Non-Scheduled Facility; or

iii. a Non-Dispatchable Load,

SCADA_MW(RE,s) is equal to AEMO's estimate of the MW level of Injection or Withdrawal at Assessment Time s prepared from SCADA data; and

(c) if RE is the Residual Load:

$$SCADA\_MW(RE,s) = -1 \times \sum_{f \in RegulationFacilities(t)} SCADA\_MW(f,s)$$

where:

i. $f \in RegulationFacilities(t)$ denotes all members f of RegulationFacilities(t); and

ii. SCADA_MW(f,s) is the quantity determined for f for Assessment Time s in clauses 2.3(a) or 2.3(b) of this Appendix 2D.

2.4 For each member of RegulationEntities(t) RE, for each Dispatch Interval DI in Trading Interval t, set InitialReference(RE,DI) to the value of SCADA_MW(RE,s) determined in clause 2.3 of this Appendix 2D for the start of Dispatch Interval DI.

2.5 For each member of RegulationEntities(t) RE, for each Dispatch Interval DI in Trading Interval t, determine FinalReference(RE,DI) as follows:

(a) if:

i. AEMO has suspended the Real-Time Market under clause 7.11D.1 for Dispatch Interval DI; or

ii. AEMO has identified a replacement Market Schedule for Dispatch Interval DI under clause 7.11B.1B,

then FinalReference(RE,DI) is the value of SCADA_MW(RE,s) determined in clause 2.3 of this Appendix 2D for the end of Dispatch Interval DI; and

(b) otherwise:

i. if RE is a Scheduled Facility, then FinalReference(RE,DI) is Scheduled Facility RE's Dispatch Target for Dispatch Interval DI;

ii. if RE is a Semi-Scheduled Facility that was issued a Dispatch Target for Dispatch Interval DI under clause 7.6.11(b), then FinalReference(RE,DI) is Semi-Scheduled Facility RE's Dispatch Target for Dispatch Interval DI;

iii. if RE is a Semi-Scheduled Facility that was not issued a Dispatch Target for Dispatch Interval DI under clause 7.6.11(b), then FinalReference(RE,DI) is Semi-Scheduled Facility RE's Dispatch Forecast for Dispatch Interval DI;

iv. if RE is a Non-Scheduled Facility, then FinalReference(RE,DI) is Non-Scheduled Facility RE's Dispatch Forecast for Dispatch Interval DI;

v. if RE is a Non-Dispatchable Load, then FinalReference(RE,DI) is the value of SCADA_MW(RE,s) determined in clause 2.3 of this Appendix 2D for the end of Dispatch Interval DI; and

vi. if RE is the Residual Load:

FinalReference(RE,DI) =

$$-1 \times \sum_{f \in RegulationFacilities(t)} FinalReference(f,DI)$$

where:

1. f∈RegulationFacilities(t) denotes all members f of RegulationFacilities(t); and

2. FinalReference(f,DI) is the quantity determined for f for Dispatch Interval DI in this clause 2.5(b).

2.6 For each member of RegulationEntities(t) RE, for each Assessment Time s in Trading Interval t falling after the start of Trading Interval t, determine ExpectedMW(RE,s) as the expected MW level of Injection or Withdrawal for RE at Assessment Time s assuming that RE ramps at a constant rate from InitialReference(RE,DI) at the start of the associated Dispatch Interval DI to FinalReference(RE,DI) at the end of the associated Dispatch Interval DI.

3. Calculate accumulated deviation quantities

3.1 For each member of RegulationEntities(t) RE, for each Dispatch Interval DI in Trading Interval t, for each Assessment Time s associated with Dispatch Interval DI, determine:

$$\text{Deviation(RE,s)} = \begin{cases} 0, \text{ if RE} \in \text{DeviationFacilities(DI)} \\ \text{SCADA\_MW(RE,s)} - \text{ExpectedMW(RE,s)}, \text{ otherwise} \end{cases}$$

where:

(a) DeviationFacilities(DI) is the set of Registered Facilities that are Deviation Facilities in Dispatch Interval DI;

(b) SCADA_MW(RE,s) is the quantity determined for RE for Assessment Time s in clause 2.3 of this Appendix 2D; and

(c) ExpectedMW(RE,s) is the quantity determined for RE for Assessment Time s in clause 2.6 of this Appendix 2D.

3.2 For each member of RegulationEntities(t) RE, determine:

$$\text{AccumulatedDeviation(RE,t)} = \sum_{s \in t} |\text{Deviation(RE,s)}|$$

where:

(a) s∈t denotes all Assessment Times s in Trading Interval t falling after the start of Trading Interval t; and

(b) Deviation(RE,s) is the quantity determined for RE for Assessment Time s in clause 3.1 of this Appendix 2D.

3.3 Determine:

$$\text{TotalAccumulatedDeviation(t)} = \sum_{\text{RE} \in \text{RegulationEntities(t)}} \text{AccumulatedDeviation(RE,t)}$$

where:

(a) RE∈RegulationEntities(t) denotes all members RE of RegulationEntities(t); and

(b) AccumulatedDeviation(RE,t) is the quantity determined for RE for Trading Interval t in clause 3.2 of this Appendix 2D.

4. Calculate contribution factors and Regulation_Share(p,t)

4.1 For each member of RegulationEntities(t) RE, determine:

$$\text{ContributionFactor(RE,t)} = \frac{\text{AccumulatedDeviation(RE,t)}}{\text{TotalAccumulatedDeviation(t)}}$$

where:

(a) AccumulatedDeviation(RE,t) is the quantity determined for RE for Trading Interval t in clause 3.2 of this Appendix 2D; and

(b) TotalAccumulatedDeviation(t) is the quantity determined for Trading Interval t in clause 3.3 of this Appendix 2D.

4.2 For each Market Participant p, determine:

$$\text{RLContributionFactor(p,t)} = \text{ContributionFactor(RL,t)} \times \frac{\sum_{f \in p} |\text{MeteredSchedule(f,t)}|}{\sum_{f \in RL} |\text{MeteredSchedule(f,t)}|}$$

where:

(a) ContributionFactor(RL,t) is the quantity determined for the Residual Load for Trading Interval t in clause 4.1 of this Appendix 2D;

(b) f∈p denotes all Semi-Scheduled Facilities, Non-Scheduled Facilities and Non-Dispatchable Loads f that are not members of RegulationFacilities(t) and are associated with Market Participant p in Trading Interval t (including the Notional Wholesale Meter where Synergy is Market Participant p);

(c) f∈RL denotes all Semi-Scheduled Facilities, Non-Scheduled Facilities and Non-Dispatchable Loads f that are not members of RegulationFacilities(t) (including the Notional Wholesale Meter); and

(d) MeteredSchedule(f,t) is the Metered Schedule of Facility f in Trading Interval t.

4.3 For each Market Participant p, determine:

$$\text{Regulation\_Share(p,t)} = \text{RLContributionFactor(p,t)} + \sum_{f \in \text{RegulationFacilities(p,t)}} \text{ContributionFactor(f,t)}$$

where:

(a) RLContributionFactor(p,t) is the quantity determined for Market Participant p for Trading Interval t in clause 4.2 of this Appendix 2D;

(b) f∈RegulationFacilities(p,t) denotes all members of RegulationFacilities(t) that are associated with Market Participant p in Trading Interval t; and

(c) ContributionFactor(f,t) is the quantity determined for f for Trading Interval t in clause 4.1 of this Appendix 2D.

Schedule 4

1. Clause 7.2.4 amended

1.1 Clause 7.2.4 is amended by:

(a) deleting the word 'and' at the end of subclause (n); and

(b) inserting new subclause (nA) as follows:

(nA) taking into account the Largest Credible Load Contingency relative to the scheduled or dispatched quantity of Contingency Reserve Lower; and

2. Clause 7.13.1EA amended

2.1 Clause 7.13.1EA(a) is amended to delete the word 'that' before the words 'Trading Day' and replace it with the word 'the'.

2.2 Clause 7.13.1EA(c) is amended by inserting the following new subclauses at the end of the clause:

iii. the Largest Credible Supply Contingency;

iv. the Largest Credible Load Contingency;

v. all Facility Lower Risks for the Dispatch Interval; and

vi. for each Network Lower Contingency which is a Credible Contingency Event that is taken into account when setting the Contingency Reserve Lower requirement under clause 7.2.4 for the Dispatch Interval:

1. the Network Lower Risk associated with the Network Lower Contingency; and

2. the Network Facility Lower Risk of each CL Facility that contributes to the Network Lower Contingency in the Dispatch Interval;

3. Section 9.10 amended

3.1 Clause 9.10.11 is amended by deleting the clause and replacing it with the following:

9.10.11. The total cost of procuring Contingency Reserve Lower in Dispatch Interval DI is:

$$CL\_Payable(DI) = \sum_{f \in Facilities} CL\_Payable(f,DI) + FCESSUplift\_CL(f,DI)$$

where:

(a) CL_Payable(f,DI) is the Contingency Reserve Lower amount payable for Registered Facility f in Dispatch Interval DI as calculated in accordance with clause 9.10.10;

(b) FCESSUplift_CL(f,DI) is the share of the FCESS Uplift Payment for Registered Facility f in Dispatch Interval DI to be allocated to Contingency Reserve Lower, determined under clause 9.10.3L; and

(c) f∈Facilities denotes all Registered Facilities f.

3.2 Insert the following new clause 9.10.11A:

9.10.11A. The total cost of procuring Contingency Reserve Lower in Trading Interval t is:

$$CL\_Payable(t) = \sum_{DI \in t} CL\_Payable(DI)$$

where:

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

(b) CL_Payable(DI) is the total cost of procuring Contingency Reserve Lower in Dispatch Interval DI, determined under clause 9.10.11.

3.3 Clause 9.10.32 is amended by deleting the clause and replacing it with the following:

9.10.32. The Contingency Reserve Lower amount recoverable from Market Participant p for Trading Interval t is:

$$CL\_Recoverable(p,t) = CL\_Facility\_Recoverable(p,t) + CL\_GL\_Recoverable(p,t)$$

where:

(a) CL_Facility_Recoverable(p,t) is the Contingency Reserve Lower amount recoverable from Market Participant p for Trading Interval t in respect of its CL Facilities, calculated in accordance with clause 9.10.32A; and

(b) CL_GL_Recoverable(p,t) is the Contingency Reserve Lower amount recoverable from Market Participant p for Trading Interval t in respect of Market Participant p's share of Generic Load in Trading Interval t, calculated in accordance with clause 9.10.32B.

3.4 Insert the following new clause 9.10.32A:

9.10.32A. The Contingency Reserve Lower amount recoverable from Market Participant p for Trading Interval t in respect of its CL Facilities is:

$$CL\_Facility\_Recoverable(p,t) = \begin{cases} 0, \text{ if } \sum_{DI \in t} RTMSuspFlag(DI) > 0 \\ \sum_{DI \in t} CL\_Payable(DI) \times CL\_Cost\_Share(p,DI), \text{ otherwise} \end{cases}$$

where:

(a) RTMSuspFlag(DI) is the RTM Suspension Flag for Dispatch Interval DI;

(b) CL_Payable(DI) is the total cost of procuring Contingency Reserve Lower in Dispatch Interval DI calculated in accordance with clause 9.10.11;

(c) CL_Cost_Share(p,DI) is Market Participant p's share of the total cost of procuring Contingency Reserve Lower in Dispatch Interval DI in respect of its CL Facilities as calculated following the steps set out in Appendix 2E and as finally calculated in clause 5.6 of Appendix 2E; and

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

3.5 Insert the following new clause 9.10.32B:

9.10.32B. The Contingency Reserve Lower amount recoverable from Market Participant p in respect of Market Participant p's share of Generic Load in Trading Interval t is:

$$CL\_GL\_Recoverable(p,t) = CL\_GL\_Recoverable(t) \times CL\_GL\_Share(p,t)$$

where:

(a) CL_GL_Recoverable(t) is the total cost of procuring Contingency Reserve Lower allocated to Generic Load in Trading Interval t, calculated in accordance with clause 9.10.32C; and

(b) CL_GL_Share(p,t) is Market Participant p's share of the cost of procuring Contingency Reserve Lower allocated to Generic Load in Trading Interval t, calculated in accordance with clause 9.10.32D.

3.6 Insert the following new clause 9.10.32C:

9.10.32C. The total cost of procuring Contingency Reserve Lower allocated to Generic Load in Trading Interval t is:

$$CL\_GL\_Recoverable(t) = CL\_Payable(t) - \sum_{p \in P} CL\_Facility\_Recoverable(p,t)$$

where:

(a) CL_Payable(t) is the total cost of procuring Contingency Reserve Lower in Trading Interval t, calculated in accordance with clause 9.10.11A;

(b) CL_Facility_Recoverable(p,t) is the Contingency Reserve Lower amount recoverable from Market Participant p for Trading Interval t in respect of its CL Facilities, calculated in accordance with clause 9.10.32A; and

(c) p∈P denotes all Market Participants.

3.7 Insert the following new clause 9.10.32D:

9.10.32D. Market Participant p's share of the cost of procuring Contingency Reserve Lower allocated to Generic Load in Trading Interval t is:

$$CL\_GL\_Share(p,t) = \frac{CL\_GL\_Contributing\_Quantity(p,t)}{CL\_GL\_Total\_Contributing\_Quantity(t)}$$

where:

(a) CL_GL_Contributing_Quantity(p,t) is the quantity calculated for Market Participant p in Trading Interval t in accordance with clause 9.10.32E; and

(b) CL_GL_Total_Contributing_Quantity(t) is the quantity calculated for Trading Interval t in accordance with clause 9.10.32G.

3.8 Insert the following new clause 9.10.32E:

9.10.32E. Market Participant p's Contingency Reserve Lower Generic Load contributing quantity in Trading Interval t is:

$$CL\_GL\_Contributing\_Quantity(p,t) = |\min(0,NWM\_Metered\_Schedule(t))| + \sum_{f \in p} |\min(0,\max(CL\_Threshold\_MWh(t),Metered\_Schedule(f,t)))|$$

where:

(a) NWM_Metered_Schedule(t) is:

i. the Metered Schedule of the Notional Wholesale Meter, if Market Participant p is Synergy; and

ii. zero, otherwise;

(b) f∈p denotes all Scheduled Facilities, Semi-Scheduled Facilities, Non-Scheduled Facilities and Non-Dispatchable Loads (excluding Synergy's Notional Wholesale Meter) of Market Participant p in Trading Interval t;

(c) CL_Threshold_MWh(t) is the quantity calculated in accordance with clause 9.10.32F; and

(d) Metered_Schedule(f,t) is the Metered Schedule of Facility f in Trading Interval t.

3.9 Insert the following new clause 9.10.32F:

9.10.32F. The lower limit on Metered Schedule quantities in the calculation of Contingency Reserve Lower Generic Load contributing quantities for Trading Interval t is:

$$CL\_Threshold\_MWh(t) = \begin{cases} 0, \text{ if } \sum_{DI \in t} RTMSuspFlag(DI) > 0 \\ -1 \times CL\_Threshold \times 0.5, \text{ otherwise} \end{cases}$$

where:

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

(b) RTMSuspFlag(DI) is the RTM Suspension Flag for Dispatch Interval DI; and

(c) CL_Threshold is the CL Threshold.

3.10 Insert the following new clause 9.10.32G:

9.10.32G. The total Contingency Reserve Lower Generic Load contributing quantity across all Market Participants in Trading Interval t is:

$$CL\_GL\_Total\_Contributing\_Quantity(t) = \sum_{p \in P} CL\_GL\_Contributing\_Quantity(p,t)$$

where:

(a) CL_GL_Contributing_Quantity(p,t) is the quantity calculated for Market Participant p in Trading Interval t in accordance with clause 9.10.32E; and

(b) p∈P denotes all Market Participants.

4. Chapter 11 (Glossary) amended

4.1 Insert each of the following new defined terms in Chapter 11 (Glossary) in the appropriate alphabetical order:

CL Facility: A Facility that is a:

(a) Scheduled Facility;

(b) Semi-Scheduled Facility;

(c) Non-Scheduled Facility monitored by AEMO's SCADA system; or

(d) Major Load.

CL Threshold: 120 MW.

Facility Lower Contingency: A Credible Contingency Event resulting in an increase in SWIS Frequency associated with the unexpected automatic or manual disconnection of, or the unplanned reduction in the Withdrawal of, a CL Facility.

Facility Lower Risk: The maximum estimated net MW change resulting in an increase in SWIS Frequency in a Dispatch Interval or Pre-Dispatch Interval due to a Facility Lower Contingency for a CL Facility, taking into account the output of the Dispatch Algorithm (and expressed as a non-negative number).

Generic Load: The share of load in respect of Facility Lower Risks and Network Lower Risks that is not allocated to Market Participants in respect of their CL Facilities in accordance with Appendix 2E for the purpose of allocating the costs of Contingency Reserve Lower to Market Participants.

Major Load: A Non-Dispatchable Load that is:

(a) individually monitored by AEMO's SCADA system;

(b) not included in the Notional Wholesale Meter; and

(c) in AEMO's reasonable opinion, capable of a level of Withdrawal greater than the CL Threshold.

Network Facility Lower Risk: The estimated MW contribution of a CL Facility to a Network Lower Risk for a Dispatch Interval or Pre-Dispatch Interval (as applicable) in respect of a Network Lower Contingency, taking into account the output of the Dispatch Algorithm for the Dispatch Interval or Pre-Dispatch Interval (as applicable).

Network Lower Contingency: A Credible Contingency Event resulting in an increase in SWIS Frequency associated with the unexpected disconnection of one or more major items of Network equipment, but excludes from that meaning a Credible Contingency Event resulting in a reduction in Withdrawal from a Facility arising from a failure of equipment at the Facility or the loss of the network connection point associated with the Facility.

Network Lower Risk: The estimated net MW change resulting in an increase in SWIS Frequency due to a Network Lower Contingency for a Dispatch Interval or Pre-Dispatch Interval (as applicable),

taking into account the output of the Dispatch Algorithm (and expressed as a non-negative number) for the Dispatch Interval or Pre-Dispatch Interval (as applicable).

4.2 The definition for 'Largest Credible Load Contingency' in Chapter 11 (Glossary) is deleted and replaced by the following:

Largest Credible Load Contingency: The highest magnitude possible MW change resulting in an increase in SWIS Frequency that could occur in a Dispatch Interval or Pre-Dispatch Interval due to a single Credible Contingency Event taking into account the output of the Dispatch Algorithm.

4.3 The definition for 'Largest Credible Supply Contingency' in Chapter 11 (Glossary) is deleted and replaced by the following:

Largest Credible Supply Contingency: The maximum possible net MW change resulting in a decrease in SWIS Frequency that could occur in a Dispatch Interval or Pre-Dispatch Interval due to a single Credible Contingency Event taking into account the output of the Dispatch Algorithm and accounting for any associated change in overall demand as a result of the same Credible Contingency Event.

4.4 The definition for 'Network Contingency' in Chapter 11 (Glossary) is deleted and replaced by the following:

Network Contingency: A Credible Contingency Event associated with the unexpected disconnection of one or more major items of Network equipment, but excludes from that meaning a Credible Contingency Event resulting in the loss of Injection or Withdrawal from a Facility arising as a result of failure of equipment at the Facility or the loss of the network connection point associated with the Facility.

5. Appendix 2E added

5.1 Insert new Appendix 2E: Contingency Reserve Lower Cost Share Calculation Method as follows:

Appendix 2E: Contingency Reserve Lower Cost Share Calculation Method

1. Interpretation

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

1.2 AEMO must calculate a Market Participant p's total share of the cost of procuring Contingency Reserve Lower in Dispatch Interval DI in respect of its CL Facilities by following each of the steps set out in the rest of this Appendix 2E.

1.3 In this Appendix 2E:

(a) "CL Facility Name" means:

i. for a CL Facility that is a Scheduled Facility, Semi-Scheduled Facility or Non-Scheduled Facility, the name of the Facility recorded by AEMO in accordance with clause 2.34B.1(e); and

ii. for a CL Facility that is a Major Load, a unique identifier assigned by AEMO to the Major Load.

2. Define CL Facility Sets and determine Facility Lower Risks

2.1 Determine CLFacilities(DI) as the set of all CL Facilities in Dispatch Interval DI.

2.2 For each member f of CLFacilities(DI), determine FacilityLowerRisk(f,DI) as the Facility Lower Risk for CL Facility f in Dispatch Interval DI as published under clause 7.13.1EA(c)(v).

2.3 Determine ApplicableCLFacilities(DI) as the set which comprises those members f of CLFacilities(DI) for which:

$$FacilityLowerRisk(f,DI) > CLThreshold$$

where:

(a) FacilityLowerRisk(f,DI) is the quantity determined for CL Facility f in Dispatch Interval DI in clause 2.2 of this Appendix 2E; and

(b) CLThreshold is the CL Threshold.

3. Determine Facility Shares

3.1 If the number of CL Facilities in ApplicableCLFacilities(DI) is zero:

(a) set FacilityComponentMW(DI) equal to the CL Threshold; and

(b) go to clause 4.1 of this Appendix 2E.

3.2 Rank the CL Facilities in the set ApplicableCLFacilities(DI) in ascending order of the value of FacilityLowerRisk(f,DI) as determined in clause 2.3 of this Appendix 2E. If two or more CL Facilities in that set have the same FacilityLowerRisk(f,DI) value, AEMO must rank those CL_Facilities, as between each other, in ascending alphanumeric order of CL Facility Name. The CL Facility with the lowest FacilityLowerRisk(f,DI) value will have rank(f,DI) =1, and the CL Facility with the highest FacilityLowerRisk(f,DI) value will have rank(f,DI) = n, where n is the number of CL Facilities in the set ApplicableCLFacilities(DI).

3.3 Calculate FacilityComponentMW(DI), which is the FacilityLowerRisk(f,DI) of the CL Facility which has the rank(f,DI) = n as determined in clause 3.2 of this Appendix 2E.

3.4 Determine for each member f of ApplicableCLFacilities(DI), its individual runway share of the Facility component of procuring Contingency Reserve Lower in Dispatch Interval DI as follows:

$$\text{CLRunwayShare}(f,DI) = \sum_{i=1}^{\text{rank}(f,DI)} \frac{\text{FacilityMW}(i,DI) - \text{FacilityMW}(i-1,DI)}{\text{FacilityMW}(n,DI) \times (n+1-i)}$$

where:

(a) FacilityMW(i,DI) is the FacilityLowerRisk(x,DI) value of Facility x with rank(x,DI) = i in Dispatch Interval DI, where FacilityMW(0,DI) = the CL Threshold, and x∈ApplicableCLFacilities(DI);

(b) rank(f,DI) is the rank of CL Facility f in Dispatch Interval DI as determined in clause 3.2 of this Appendix 2E; and

(c) n is the number of CL Facilities in the set ApplicableCLFacilities(DI) in Dispatch Interval DI.

4. Determine Network Shares

4.1 Calculate NetworkComponentMW(DI) as follows:

NetworkComponentMW(DI) =
max(0,LargestContingencyMW(DI) − FacilityComponentMW(DI))

where:

(a) LargestContingencyMW(DI) is the Largest Credible Load Contingency in Dispatch Interval DI; and

(b) FacilityComponentMW(DI) is the quantity determined in clauses 3.1 or 3.3 (as applicable) of this Appendix 2E.

4.2 If NetworkComponentMW(DI) is equal to zero then go to clause 5.1 of this Appendix 2E.

4.3 Determine NetworkContingencies(DI), which is the set of Network Lower Contingencies that are taken into account when setting the Contingency Reserve Lower requirement under clause 7.2.4 in Dispatch Interval DI.

4.4 For each member in NetworkContingencies(DI), nc, calculate NetworkRisk(nc,DI) in Dispatch Interval DI as follows:

(a) NetworkRisk(nc,DI) is the Network Lower Risk for Network Lower Contingency nc in Dispatch Interval DI as published by AEMO under clause 7.13.1EA(c)(vi)(1), if nc sets the Largest Credible Load Contingency in Dispatch Interval DI; and

(b) NetworkRisk(nc,DI) is zero otherwise.

4.5 Determine ApplicableNetworkContingencies(DI), which comprises those members nc of NetworkContingencies(DI) for which:

NetworkRisk(nc,DI) > 0 MW

4.6 Calculate m(DI) as the number of members of ApplicableNetworkContingencies(DI).

4.7 For each member of ApplicableNetworkContingencies(DI), nc, perform the following steps:

(a) from the information published under clause 7.13.1EA(c)(vi)(2), determine MaterialCausers(nc,DI), which is the set of CL Facilities f for which:

NCFacilityLowerRisk(f,nc,DI) > CLThreshold

where:

i. NCFacilityLowerRisk(f,nc,DI) is the Network Facility Lower Risk for CL Facility f and Network Lower Contingency nc in Dispatch Interval DI as published under clause 7.13.1EA(c)(vi)(2); and

ii. CLThreshold is the CL Threshold;

(b) determine NCTotalApplicableRisk(nc,DI) as follows:

$$NCTotalApplicableRisk(nc,DI) = \max(NetworkRisk(nc,DI), \sum_{f \in MaterialCausers(nc,DI)} NCFacilityLowerRisk(f,nc,DI))$$

where:

i. NetworkRisk(nc,DI) is the quantity determined for Network Lower Contingency nc in Dispatch Interval DI in clause 4.4 of this Appendix 2E;

ii. NCFacilityLowerRisk(f,nc,DI) is the Network Facility Lower Risk for CL Facility f and Network Lower Contingency nc in Dispatch Interval DI as published under clause 7.13.1EA(c)(vi)(2); and

iii. f∈MaterialCausers(nc,DI) denotes all CL Facilities f in MaterialCausers(nc,DI); and

(c) for each member of MaterialCausers(nc,DI), f, calculate its share of the network component of procuring Contingency Reserve Lower in Dispatch Interval DI attributable to its contribution to Network Lower Contingency nc as:

$$NCContribution(f,nc,DI) = \frac{1}{m(DI)} \times \frac{NCFacilityLowerRisk(f,nc,DI)}{NCTotalApplicableRisk(nc,DI)}$$

where:

i. m(DI) is the number of members of ApplicableNetworkContingencies(DI) determined in clause 4.6 of this Appendix 2E;

ii. NCFacilityLowerRisk(f,nc,DI) is the Network Facility Lower Risk for CL Facility f and Network Lower Contingency nc in Dispatch Interval DI as published under clause 7.13.1EA(c)(vi)(2); and

iii. NCTotalApplicableRisk(nc,DI) is the quantity determined for Network Lower Contingency nc in Dispatch Interval DI in clause 4.7(b) of this Appendix 2E.

5. Determine Cost Shares

5.1 Calculate the cost share associated with the Network Lower Contingency component of procuring Contingency Reserve Lower in Dispatch Interval DI as follows:

$$NetworkComponent(DI) = \frac{NetworkComponentMW(DI)}{LargestContingencyMW(DI)}$$

where:

(a) NetworkComponentMW(DI) is the quantity determined in clause 4.1 of this Appendix 2E; and

(b) LargestContingencyMW(DI) is the Largest Credible Load Contingency in Dispatch Interval DI.

5.2 Calculate the cost share associated with the Facility Lower Contingency component of procuring Contingency Reserve Lower in Dispatch Interval DI as follows:

$$FacilityComponent(DI) = 1 - NetworkComponent(DI)$$

where:

(a) NetworkComponent(DI) is the quantity determined in clause 5.1 of this Appendix 2E.

5.3 Calculate for each member of CLFacilities(DI), f, its share of the Facility Lower Contingency component of the cost of procuring Contingency Reserve Lower in Dispatch Interval DI as:

$$CLFacilityCostShare(f,DI) = \begin{cases} FacilityComponent(DI) \times CLRunwayShare(f,DI), & \text{if } f \in ApplicableCLFacilities(DI) \\ 0, & \text{otherwise} \end{cases}$$

where:

(a) FacilityComponent(DI) is the quantity determined for Dispatch Interval DI in clause 5.2 of this Appendix 2E; and

(b) CLRunwayShare(f,DI) is the quantity determined for CL Facility f in Dispatch Interval DI in clause 3.4 of this Appendix 2E; and

(c) ApplicableCLFacilities(DI) is the set determined for Dispatch Interval DI in clause 2.3 of this Appendix 2E.

5.4 Calculate for each member of CLFacilities(DI), f, its share of the Network Lower Contingency component of the cost of procuring Contingency Reserve Lower in Dispatch Interval DI as:

$$CLNetworkCostShare(f,DI) = \begin{cases} 0, & \text{if } NetworkComponent(DI) = 0 \\ NetworkComponent(DI) \times \sum_{nc \in FacilityNC(f,DI)} NCContribution(f,nc,DI), & \text{otherwise} \end{cases}$$

where:

(a) NetworkComponent(DI) is the quantity determined for Dispatch Interval DI in clause 5.1 of this Appendix 2E; and

(b) $nc \in FacilityNC(f,DI)$ denotes all Network Lower Contingencies nc in ApplicableNetworkContingencies(DI) for which CL Facility f is a member of MaterialCausers(nc,DI); and

(c) NCContribution(f,nc,DI) is the quantity determined for CL Facility f and Network Lower Contingency nc in Dispatch Interval DI in clause 4.7(b) of this Appendix 2E.

5.5 Calculate for each member of CLFacilities(DI), f, its share of the cost of procuring Contingency Reserve Lower in Dispatch Interval DI as:

$$CLCostShare(f,DI)=CLFacilityCostShare(f,DI)+CLNetworkCostShare(f,DI)$$

where:

(a) CLFacilityCostShare(f,DI) is the quantity determined for CL Facility f in Dispatch Interval DI in clause 5.3 of this Appendix 2E; and

(b) CLNetworkCostShare(f,DI) is the quantity determined for CL Facility f in Dispatch Interval DI in clause 5.4 of this Appendix 2E.

5.6 Calculate Market Participant p's total share of the cost of procuring Contingency Reserve Lower in respect of its CL Facilities in Dispatch Interval DI as:

$$CL\_Cost\_Share(p,DI)=\sum_{f\in CLFacilities(p,DI)} CLCostShare(f,DI)$$

where:

(a) f∈CLFacilities(p,DI) denotes each CL Facility f in CLFacilities(DI) that belongs to Market Participant p in Dispatch Interval DI; and

(b) CLCostShare(f,DI) is the quantity determined for CL Facility f in Dispatch Interval DI in clause 5.5 of this Appendix 2E.