

OPERATIONAL FORECASTING REVIEW: EXPOSURE DRAFT

PROPOSED ELECTRICITY SYSTEM AND MARKET (ESM) AMENDING RULES

Explanatory Note for Exposure Draft of the Operational Forecasting Review Proposed ESM Amending Rules:

This exposure draft contains proposed Amending Rules to implement Review Outcome 4 (Address the lack of incentive to produce accurate intermittent generation forecasts) and Review Outcome 5 (Publish operational forecast metrics) of the Coordinator of Energy's (Coordinator's) Review of Australian Energy Market Operator's (AEMO's) Operational Forecasting in the Wholesale Electricity Market (WEM)¹.

The proposed Amending Rules will improve forecasting accuracy in the SWIS by:

- making AEMO responsible for the determination of unconstrained Injection and Withdrawal forecasts for most Semi-Scheduled Facilities; and
- increasing transparency and accountability around forecasting performance by requiring AEMO to publish a report on the accuracy of Forecast Unscheduled Operational Demand and unconstrained intermittent generation forecasts each quarter.

To reduce the complexity and cost of the initial implementation:

- central forecasting will be limited to Semi-Scheduled Facilities with only wind and/or solar photovoltaic (PV) energy producing units and less than 1 MW of co-located Load ("Centrally Forecasted Facilities");
- there will be no additional SCADA requirements for Centrally Forecasted Facilities beyond what is already required under the ESM Rules and relevant WEM Procedures; and
- Market Participants will not be required to provide details of the expected availability of their Centrally Forecasted Facilities beyond what is already required in Real-Time Market Submissions for those Facilities.

The Coordinator will commence a formal review of the proposed intermittent generation forecasting arrangements 18 months after their commencement. The review will include consideration of whether the central forecasting arrangements should be extended to include additional Semi-Scheduled Facilities and/or Non-Scheduled Facilities.

The Amending Rules in this exposure draft are to commence on 1 August 2027.

Following industry consultation, the proposed Amending Rules in this exposure draft will be submitted to the Minister for Energy and Decarbonisation for making and gazettal.

The Department of Energy and Economic Diversification (DEED) is seeking stakeholder feedback on this exposure draft by **5:00 PM (WST) on 7 October 2026**. Feedback can be sent to energymarkets@deed.wa.gov.au.

Mark-up Colour guide:

Text in black	Text in black Rules assumed to be in force at the time the Amending Rules in the relevant schedule are proposed to commence (based on confirmed commencement dates for Amending Rules made by the Minister and the Amending Rules in prior schedules of this exposure draft)
Text in red - <u>underlined</u> and strikethrough	Amendments proposed in these Amending Rules

¹ Background on the Operational Forecasting Review can be found on the Operational Forecasting Review webpage of the Coordinator's Website at [Operational Forecasting Review](#).

Explanatory Note:

Section 1.74 introduces transitional provisions for the implementation of central forecasting for intermittent generation. The transitional provisions:

- ensure that AEMO has sufficient time to develop and publish the WEM Procedure that specifies the format and content requirements for an Energy Conversion Model;
- allow Market Participants two months from the publication of the WEM Procedure to develop Energy Conversion Models for their eligible Semi-Scheduled Facilities; and
- allow AEMO sufficient time to classify all of the Semi-Scheduled Facilities that will be eligible for classification as a Centrally Forecasted Facility on 1 January 2028.

1.74. Transitional Provisions for Central Forecasting of Intermittent Generation

1.74.1. Notwithstanding any other provisions of these ESM Rules:

- (a) AEMO is not required to publish the Procedure Change Report for the initial WEM Procedure developed by AEMO under clause 7.3A.5 until 1 November 2027;
- (b) the initial WEM Procedure developed under clause 7.3A.5 must commence at 8:00 AM on 1 January 2028;
- (c) a Market Participant is not required to provide to AEMO the Standing Data specified in:
 - i. Appendix 1(b)(iiA);
 - ii. Appendix 1(b)(viA);
 - iii. Appendix 1(c)(iiA);
 - iv. Appendix 1(c)(vE);
 - v. Appendix 1(c)(viA);
 - vi. Appendix 1(d)(iiA); and
 - vii. Appendix 1(d)(viA).before 8:00 AM on 1 January 2028;
- (d) AEMO is not required to classify a Semi-Scheduled Facility that was registered before 1 January 2028 as a Centrally Forecasted Facility until 1 June 2028; and
- (e) AEMO is not required to comply with clause 7.3A.1 in respect of any Market Schedules prepared by AEMO prior to 8:00 AM on 1 January 2028.

Explanatory Note:

The eligibility of a Semi-Scheduled Facility to be classified as a Centrally Forecasted Facility will be determined from its Standing Data. If a Semi-Scheduled Facility meets the criteria for classification, then the Market Participant will be required to include an Energy Conversion Model (ECM) for the Facility as part of its Standing Data. An ECM is a document that defines how the Facility's intermittent energy sources (wind and/or sunlight) are converted by the Facility into electrical output.

Under proposed new section 2.34D, AEMO is required to:

- classify new, eligible Semi-Scheduled Facilities as Centrally Forecasted Facilities from the time the registration takes effect;
- monitor the Standing Data of Semi-Scheduled Facilities to identify any change to the eligibility of those Facilities for classification as Centrally Forecasted Facilities;
- classify existing Semi-Scheduled Facilities that become eligible for classification within 50 days of the relevant Standing Data changes taking effect;
- revoke the classification of a Semi-Scheduled Facility as a Centrally Forecasted Facility if it ceases to meet the eligibility requirements (e.g. because of an increase in the Load within the Facility); and
- publish a register of Centrally Forecasted Facilities on the WEM Website.

2.34D. Centrally Forecasted Facilities

2.34D.1. A Semi-Scheduled Facility is eligible for classification as a Centrally Forecasted Facility if, according to the Standing Data held by AEMO for the Semi-Scheduled Facility:

- (a) the Semi-Scheduled Facility only contains wind or solar photovoltaic powered energy producing units and Load; and
- (b) the maximum consumption of the Load in the Semi-Scheduled Facility is less than 1 MW.

2.34D.2. AEMO must monitor changes to the Standing Data of each Semi-Scheduled Facility to determine any change to the eligibility of the Semi-Scheduled Facility for classification as a Centrally Forecasted Facility.

2.34D.3. If AEMO accepts an application for registration of a Semi-Scheduled Facility that is eligible for classification as a Centrally Forecasted Facility under clause 2.34D.1, AEMO must classify the Semi-Scheduled Facility as a Centrally Forecasted Facility effective from the date and time specified under clause 2.31.11(c).

2.34D.4. If AEMO approves changes to the Standing Data of a Semi-Scheduled Facility that result in the Semi-Scheduled Facility becoming eligible for classification as a Centrally Forecasted Facility, AEMO must:

- (a) as soon as practicable, determine and notify the responsible Market Participant of the date and time from which the Semi-Scheduled Facility will be classified as a Centrally Forecasted Facility, which must be the start of a Trading Day no more than 50 days after the Trading Day from which the relevant Standing Data changes take effect; and

- (b) classify the Semi-Scheduled Facility as a Centrally Forecasted Facility effective from the date and time determined under clause 2.34D.4(a).

2.34D.5. If AEMO approves changes to the Standing Data of a Semi-Scheduled Facility that result in the Semi-Scheduled Facility no longer being eligible for classification as a Centrally Forecasted Facility under clause 2.34D.1, then AEMO must, as soon as practicable:

- (a) revoke the classification of the Semi-Scheduled Facility as a Centrally Forecasted Facility, effective from the later of:
 - i. the following Trading Day; and
 - ii. the Trading Day from which the relevant Standing Data changes take effect; and
- (b) notify the relevant Market Participant of the revocation of the classification of the Semi-Scheduled Facility as a Centrally Forecasted Facility.

2.34D.6. AEMO must maintain and publish on the WEM Website a register of AEMO's classifications of Semi-Scheduled Facilities as Centrally Forecasted Facilities.

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7.2. Central Dispatch Process

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Explanatory Note:

Clauses 7.2.4 and 7.2.4A are amended to require AEMO to use the unconstrained Injection and Withdrawal forecasts that it produces for Centrally Forecasted Facilities under new section 7.3A in the Dispatch Algorithm.

- 7.2.4. Subject to clause 7.11D.5, the Dispatch Algorithm must seek to maximise the value of Real-Time Market trading by maximising:
- (a) the value of dispatched Load based on Real-Time Market Bids; less
 - (b) the cost of dispatched energy and Frequency Co-optimised Essential System Services based on Real-Time Market Offers,
- subject to:
- (c) respecting the quantities, Ramp Rate Limits and other limits specified in Real-Time Market Submissions;
 - (cA) for Semi-Scheduled Facilities that are not Centrally Forecasted Facilities and Non-Scheduled Facilities, the Unconstrained Injection Forecasts and Unconstrained Withdrawal Forecasts specified in Real-Time Market Submissions, or any alternative forecast quantities determined by AEMO under clause 7.2.4A;

(cB) for Centrally Forecasted Facilities, the CFF Unconstrained Injection Forecasts and CFF Unconstrained Withdrawal Forecasts determined by AEMO under section 7.3A;

- (d) dispatching sufficient energy to meet the Forecast Unscheduled Operational Demand, Unconstrained Withdrawal Forecast quantities for Non Scheduled Facilities and scheduled Withdrawal quantities for Scheduled Facilities and Semi-Scheduled Facilities;
- (e) respecting Network Constraints, as reflected in the Constraint Equations developed by AEMO in accordance with section 2.27A;
- (f) meeting Power System Security and Power System Reliability requirements as reflected in Constraint Equations developed by AEMO having regard to the WEM Procedures referred to in clauses 3.2.7 and 3.3.2, including any limits on maximum ramp rates;
- (g) Transmission Loss Factors and Distribution Loss Factors;
- (h) current levels of Injection and Withdrawal;
- (i) meeting the Essential System Service Standards as reflected in the Essential System Service requirements determined by AEMO in accordance with the WEM Procedure referred to in clause 3.11.7 and in Constraint Equations developed by AEMO having regard to that WEM Procedure;
- (iA) implementing the terms of NCESS Contracts as reflected in Constraint Equations formulated by AEMO under clause 5.7.3;
- (j) energy Injection and Withdrawal capabilities as they vary by Charge Level;
- (k) respecting Oscillation Control Constraint Equations;
- (l) accounting for all relevant Contingency Lower Offsets, Contingency Raise Offsets and Facility Performance Factors in determining scheduled and dispatched quantities of Contingency Reserve;
- (m) accounting for all Facilities that are Inflexible;
- (n) taking into account the Largest Credible Supply Contingency relative to the scheduled or dispatched quantity of Contingency Reserve Raise;
- (nA) taking into account the Largest Credible Load Contingency relative to the scheduled or dispatched quantity of Contingency Reserve Lower; and
- (o) arrangements for dispatch of tied Real-Time Market Bids and tied Real-Time Market Offers.

7.2.4A. AEMO may determine and use as an input to the Dispatch Algorithm alternative forecast quantities to the Unconstrained Injection Forecast and Unconstrained Withdrawal Forecast provided in a Real-Time Market Submission for a Semi-Scheduled Facility that is not a Centrally Forecasted Facility or a Non-Scheduled Facility if AEMO reasonably considers that the alternative forecast quantities are likely to be more accurate.

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Explanatory Note:

New section 7.3A requires AEMO to determine unconstrained Injection and Withdrawal forecasts for Centrally Forecasted Facilities for use in the Dispatch Algorithm across the Week-Ahead, Pre-Dispatch and Dispatch Schedule Horizons. The forecasts are referred to as “CFF Unconstrained Injection Forecasts” and “CFF Unconstrained Withdrawal Forecasts” to distinguish them from the Unconstrained Injection Forecasts and Unconstrained Withdrawal Forecasts provided by Market Participants in Real-Time Market Submissions for other Semi-Scheduled Facilities and for Non-Scheduled Facilities.

AEMO has been assigned responsibility for CFF Unconstrained Withdrawal Forecasts both for simplicity (to ensure the same party is responsible for both forecast values) and for future proofing (because central forecasting may be extended in future to include Semi-Scheduled Facilities with larger co-located Loads or Electric Storage Resources). It is expected that AEMO will set the CFF Unconstrained Withdrawal Forecast values for the initial CFFs to zero, as they will have only negligible levels of Withdrawal.

New clause 7.3A.4 requires AEMO to maintain records of the intermittent energy source forecasts (e.g. wind speed or solar irradiance) that it uses to produce CFF Unconstrained Injection and Withdrawal Forecasts. This information will be used in the analyses of forecast accuracy required under new section 7.3B.

New clause 7.3A.5 requires AEMO to document in a WEM Procedure:

- the format and content requirements for an ECM; and
- details of how AEMO will determine CFF Unconstrained Injection and Withdrawal Forecasts.

7.3A. Determination of Forecasts for Centrally Forecasted Facilities

7.3A.1. AEMO must determine and record a CFF Unconstrained Injection Forecast and CFF Unconstrained Withdrawal Forecast for each Centrally Forecasted Facility for:

- (a) each Pre-Dispatch Interval within each Week-Ahead Schedule Horizon;
- and
- (b) each Dispatch Interval within each Dispatch Schedule Horizon.

7.3A.2. Each CFF Unconstrained Injection Forecast prepared by AEMO must represent AEMO's best estimate of the expected MW level of Injection for the Centrally Forecasted Facility at the end of the Dispatch Interval or Pre-Dispatch Interval (as applicable), assuming that the Facility will not be subject to a Dispatch Instruction or direction from AEMO that limits its Injection, and allowing for expected conditions, the quantity of In-Service Capacity for Injection specified in the relevant Real-Time Market Submission for the Facility, and any other relevant information available to AEMO.

7.3A.3. Each CFF Unconstrained Withdrawal Forecast prepared by AEMO must represent AEMO's best estimate of the expected MW level of Withdrawal for the Centrally Forecasted Facility at the end of the Dispatch Interval or Pre-Dispatch Interval (as applicable), assuming that the Facility will not be subject to a Dispatch Instruction or direction from AEMO that limits its Withdrawal, and allowing for expected

conditions, the quantity of In-Service Capacity for Withdrawal specified in the relevant Real-Time Market Submission for the Facility, and any other relevant information available to AEMO.

7.3A.4. AEMO must keep a record of:

- (a) the forecast intermittent energy source quantities AEMO uses to determine CFF Unconstrained Injection Forecasts; and
- (b) real-time measurements of those energy source quantities, if available.

7.3A.5. AEMO must document in a WEM Procedure:

- (a) the format and content requirements for an Energy Conversion Model; and
- (b) the methods and processes to be followed by AEMO in determining CFF Unconstrained Injection Forecasts and CFF Unconstrained Withdrawal Forecasts for each Centrally Forecasted Facility under this section 7.3A, including:
 - i. the inputs to the forecasting process and how AEMO uses those inputs to determine the forecasts;
 - ii. how the methods and processes vary across the Week-Ahead Horizon, Pre-Dispatch Horizon and Dispatch Horizon; and
 - iii. how AEMO determines the forecast and real-time measurements of the intermittent energy source quantities used in the determination of CFF Unconstrained Injection Forecasts.

Explanatory Note:

New section 7.3B requires AEMO to publish reports on the accuracy of Forecast Unscheduled Operational Demand and unconstrained intermittent generation forecasts every quarter. The reports will provide transparency around the forecasting performance over different forecast horizons of:

- AEMO, in respect of its Forecast Unscheduled Operational Demand and unconstrained intermittent Injection forecasts;
- Market Participants, in respect of the Unconstrained Injection Forecasts provided in Real-Time Market Submissions and the real-time unconstrained Injection estimates provided via Facility SCADA; and
- the weather forecast providers used by AEMO to determine its CFF Unconstrained Injection Forecasts.

AEMO will be required to identify and exclude from its analyses any intervals/Facilities for which a comparison of forecast vs actual values would not be valid, e.g. where SCADA failures mean an actual value is not available, or where a Facility has been constrained down by WEMDE in an interval. Any exclusions will be documented, because in some cases high levels of exclusions may be indicative of broader issues affecting forecast accuracy (e.g. SCADA data quality).

The prescribed analyses are intended to monitor forecast performance over time and identify any problem areas that might warrant more detailed investigation and remedial action. AEMO may also include in the reports any additional analysis it considers relevant.

7.3B. Forecasting Accuracy Reporting

7.3B.1. In this section 7.3B:

- (a) “Reporting Period” means a period of three Trading Months starting at 8:00 AM on 1 January, 1 April, 1 July or 1 October, with the first Reporting Period starting on 1 October 2027; and
- (b) “Unconstrained Intermittent Generation Forecast” means:
 - i. for a Semi-Scheduled Facility that is a Centrally Forecasted Facility, a CFF Unconstrained Injection Forecast determined by AEMO under clause 7.3A.1; and
 - ii. for a Semi-Scheduled Facility that is not a Centrally Forecasted Facility, or a Non-Scheduled Facility, an Unconstrained Injection Forecast, as may be replaced by AEMO under clause 7.2.4A.

7.3B.2. AEMO must, as soon as practicable after the end of each Reporting Period, prepare and publish on the WEM Website a report on the accuracy of Forecast Unscheduled Operational Demand and Unconstrained Intermittent Generation Forecasts over the Reporting Period.

7.3B.3. When preparing a report under clause 7.3B.2, AEMO must:

- (a) identify and exclude from its analyses of Forecast Unscheduled Operational Demand accuracy and Unconstrained Intermittent Generation Forecast accuracy:
 - i. Dispatch Intervals in the Reporting Period during which the Real-Time Market was suspended by AEMO under clause 7.11D.1;

- ii. Affected Dispatch Intervals; and
- iii. Dispatch Intervals for which AEMO failed to run the Dispatch Algorithm for the purposes of the Central Dispatch Process;
- (b) identify and exclude from its analyses of Forecast Unscheduled Operational Demand accuracy any Dispatch Intervals for which AEMO reasonably considers the Unscheduled Operational Demand measurements are unreliable due to SCADA issues;
- (c) identify and exclude from its analyses of Unconstrained Intermittent Generation Forecast accuracy:
 - i. for each Semi-Scheduled Facility or Non-Scheduled Facility, any Dispatch Intervals for which AEMO reasonably considers the EOI Quantity measurement is unreliable due to SCADA issues;
 - ii. for each Semi-Scheduled Facility, any Dispatch Intervals for which the Facility received a Dispatch Instruction with a Dispatch Target or Dispatch Cap that was less than its Unconstrained Intermittent Generation Forecast; and
 - iii. for each Semi-Scheduled Facility, any Dispatch Intervals or Pre-Dispatch Intervals (as applicable) for which the Facility's Dispatch Forecast was less than its Unconstrained Intermittent Generation Forecast in the Market Schedule for the relevant forecast horizon; and
- (d) when conducting analyses of Forecast Unscheduled Operational Demand accuracy, adjust each Forecast Unscheduled Operational Demand value used in the analyses to account for any material reductions arising from:
 - i. involuntary load shedding (manual and automatic);
 - ii. the provision of Contingency Reserve Raise by Interruptible Loads;
 - iii. the dispatch of Demand Side Programmes;
 - iv. the provision of Eligible Services under Supplementary Capacity Contracts; and
 - v. the provision of services under an NCESS Contract,that were not expected by AEMO at the time the Forecast Unscheduled Operational Demand value was determined.

7.3B.4. Each report prepared under clause 7.3B.2:

- (a) must specify any exclusions under clause 7.3B.3(a), 7.3B.3(b) or 7.3B.3(c), and the reasons for the exclusions;
- (b) must specify any adjustments made to Forecast Unscheduled Operational Demand values under clause 7.3B.3(d), and the reasons for the adjustments;

- (c) must include the analyses of forecast accuracy specified in clause 7.3B.5 over the Reporting Period for the following forecast horizons:
 - i. 5 minutes, 30 minutes, 1 hour and 2 hours after the start of the Dispatch Schedule Horizon;
 - ii. 4 hours, 8 hours, 12 hours and 24 hours after the start of the Pre-Dispatch Horizon;
 - iii. the forecasts produced for the third Trading Day of the Week-Ahead Schedule Horizon; and
 - iv. the forecasts produced for the seventh Trading Day of the Week-Ahead Schedule Horizon;
- (d) must compare the results of the analyses specified in clause 7.3B.4(c) with the corresponding results for the Reporting Periods commencing 3 months and 12 months earlier (if available); and
- (e) may, at AEMO's discretion, include:
 - i. additional analyses to those specified in clause 7.3B.5;
 - ii. assessments for additional forecasting horizons to those specified in clause 7.3B.4(c); and
 - iii. assessments for subsets of Dispatch Intervals in the Reporting Period that reflect factors AEMO considers likely to influence forecasting accuracy.

7.3B.5. Each report prepared under clause 7.3B.2 must contain analyses of the forecast accuracy of:

- (a) Forecast Unscheduled Operational Demand against Unscheduled Operational Demand;
 - (b) total Unconstrained Intermittent Generation Forecast against the sum of EOI Quantities for each of the following Facility groups:
 - i. Centrally Forecasted Facilities;
 - ii. Semi-Scheduled Facilities that are not Centrally Forecasted Facilities; and
 - iii. Non-Scheduled Facilities;
 - (c) Unconstrained Intermittent Generation Forecasts against EOI Quantities for each Semi-Scheduled Facility and Non-Scheduled Facility; and
 - (d) representative forecast intermittent energy source quantities for each Centrally Forecasted Facility against the corresponding real-time measurements,
- over the forecasting horizons specified in clause 7.3B.4(c), including:
- (e) normalised mean absolute errors;

- (f) the boundaries of each quartile of the sets of forecast errors for the Reporting Period; and
- (g) for Forecast Unscheduled Operational Demand, the number of over-forecasts and under-forecasts by hour of the day.

Explanatory Note:

New section 7.3C requires the Coordinator to commence a review of intermittent generation forecasting arrangements in the WEM 18 months after the commencement of central forecasting for Centrally Forecasted Facilities.

The purpose of the review is to assess AEMO's central forecasting performance and determine what if any next steps are required. These could include:

- extension of central forecasting to additional Semi-Scheduled Facilities and/or Non-Scheduled Facilities;
- changes to the forecasting accuracy reporting requirements in section 7.3B;
- other changes to the ESM Rules and/or WEM Procedures; and
- requirements for future reviews of intermittent generation forecasting.

The review will be conducted in consultation with AEMO and include public consultation on a draft report and the publication of a final report. The Coordinator will be required to include any recommended changes to the ESM Rules in the final report.

7.3C. Review of AEMO Intermittent Generation Forecasting

7.3C.1. The Coordinator must, in consultation with AEMO, commence a review of intermittent generation forecasting in the WEM by 1 December 2029.

7.3C.2. The review under clause 7.3C.1 must consider:

- (a) the performance of AEMO's central forecasting for Centrally Forecasted Facilities against:
 - i. the previous forecasting performance of Market Participants for those Facilities, where historical information is available;
 - ii. the performance of Market Participants' forecasting for Non-Scheduled Facilities and Semi-Scheduled Facilities that are not Centrally Forecasted Facilities; and
 - iii. the performance of central forecasters in other jurisdictions, including the National Electricity Market;
- (b) the relative contributions of:
 - i. weather forecast uncertainty;
 - ii. Facility availability uncertainty; and
 - iii. modelling errors and limitations,to forecast inaccuracy over a range of forecasting horizons;

- (c) whether the criteria for classification as a Centrally Forecasted Facility should be amended to include additional Semi-Scheduled Facilities or Non-Scheduled Facilities;
- (d) whether any changes should be made to the forecast accuracy reporting requirements set out in section 7.3B;
- (e) whether any other changes to the ESM Rules or WEM Procedures are required to improve the accuracy of intermittent generation forecasting in the WEM;
- (f) the scope and timing of any future reviews of intermittent generation forecasting in the WEM; and
- (g) any other matters the Coordinator considers relevant to the review.

7.3C.3. In conducting a review under clause 7.3C.1, the Coordinator must publish:

- (a) a draft report containing the Coordinator's draft findings and recommendations on the matters listed in clause 7.3C.2;
- (b) a request for submissions on the draft report; and
- (c) the closing date for submissions, which must be at least 20 Business Days after the date of publication of the draft report.

7.3C.4. The Coordinator must publish any submissions received in response to the draft report published under clause 7.3C.3 and take those submissions into account when preparing the final report under clause 7.3C.5.

7.3C.5. Following the closing date for submissions on the draft report published under clause 7.3C.3, the Coordinator must publish a final report containing:

- (a) details of the Coordinator's findings and recommendations on the matters listed in clause 7.3C.2;
- (b) a summary of submissions received by the Coordinator on the draft report;
- (c) the Coordinator's response to the issues raised in submissions; and
- (d) details of any other matters the Coordinator considers relevant to the review.

7.4. Real-Time Market Submissions

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Explanatory Note:

Clauses 7.4.2(b)(iii) and 7.4.40(i) are amended to remove the requirement for Market Participants to provide Unconstrained Injection Forecasts and Unconstrained Withdrawal Forecasts for their Centrally Forecasted Facilities.

7.4.2. Subject to clause 7.4.37, a Market Participant must make reasonable endeavours to ensure that its Real-Time Market Submission for each of its Scheduled

Facilities, Semi-Scheduled Facilities and Interruptible Loads for each Dispatch Interval accurately reflects:

- (a) for Dispatch Intervals in the Week-Ahead Schedule Horizon:
 - i. the Market Participant's reasonable expectation of the capability of its Registered Facility to be dispatched in the Real-Time Market;
 - ii. any applicable tests required under these ESM Rules, including tests for Reserve Capacity under section 4.25;
 - iii. any Outage Plans applicable to the Dispatch Interval that have not been rejected, withdrawn or subjected to an Outage Recall Direction that affects the Dispatch Interval; and
 - iv. any applicable Forced Outages applying to the Dispatch Interval;
- (b) for Dispatch Intervals in the Pre-Dispatch Schedule Horizon, all information reasonably available to the Market Participant, including:
 - i. the Market Participant's intentions for commitment, control and decommitment;
 - ii. the Market Participant's intentions for providing Frequency Co-optimised Essential System Services; and
 - iii. in the case of a Semi-Scheduled Facility that is not a Centrally Forecasted Facility, any changes to the Market Participant's Unconstrained Injection Forecast or Unconstrained Withdrawal Forecast that exceed the Tolerance Range or Facility Tolerance Range applicable to the Semi-Scheduled Facility; and
- (c) the prices at which the Market Participant intends the Registered Facility will participate in the Real-Time Market for:
 - i. Injections;
 - ii. Withdrawals; and
 - iii. providing a Frequency Co-optimised Essential System Service for which the Registered Facility is accredited,

as applicable.

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7.4.40. A Real-Time Market Submission for energy must, in addition to the matters listed in clause 7.4.39, specify, as applicable:

- (a) the In-Service Capacity for Injection in MW;
- (b) the Available Capacity for Injection in MW;
- (c) the In-Service Capacity for Withdrawal in MW;
- (d) the Available Capacity for Withdrawal in MW;
- (e) the Maximum Upwards Ramp Rate in MW per minute;

- (f) the Maximum Downwards Ramp Rate in MW per minute;
- (g) up to the number of Price-Quantity Pairs specified in the WEM Procedure referred to in clause 7.4.38, where:
 - i. for each Price-Quantity Pair:
 - 1. the price is to be stated in dollars and whole cents per MWh;
 - 2. the quantity is to be identified as either Available Capacity or In-Service Capacity; and
 - 3. if the quantity is classified as Available Capacity, the Start Decision Cutoff for the quantity is to be provided in minutes;
 - ii. the sum of all positive MW quantities is to equal the total of Available Capacity and In-Service Capacity for Injection; and
 - iii. the sum of all negative MW quantities is to equal the total of Available Capacity and In-Service Capacity for Withdrawal;
- (h) if the Registered Facility is Inflexible; and
- (i) for a Semi-Scheduled Facility that is not a Centrally Forecasted Facility or Non-Scheduled Facility:
 - i. the Unconstrained Injection Forecast; and
 - ii. the Unconstrained Withdrawal Forecast.

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7.13. Settlement and Monitoring Data

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Explanatory Note:

Clause 7.13.1EA(d) is amended to remove the requirement to publish Unconstrained Injection Forecasts and Unconstrained Withdrawal Forecasts for Centrally Forecasted Facilities.

Clause 7.13.1EA(dA) is inserted to require publication of the corresponding CFF Unconstrained Injection Forecasts and CFF Unconstrained Withdrawal Forecasts for those Facilities.

7.13.1EA. Subject to clause 7.11D.5, AEMO must prepare and publish on the WEM Website the following data for a Trading Day by noon on the first Business Day following the day on which the Trading Day ends:

- (a) details of each Real-Time Market Submission used as an input to the Dispatch Algorithm for the purposes of the Central Dispatch Process, or revised in accordance with clauses 7.11B.1A(b) or 7.11C.2(c), for Dispatch Intervals in the Trading Day, including, as applicable:
 - i. the Registered Facility ID;
 - iA. the Market Service;

- ii. Price-Quantity Pairs (as adjusted by AEMO under clauses 7.4.51 or 7.4.51A, if applicable);
 - iii. In-Service Capacity for Injection;
 - iv. Available Capacity for Injection;
 - v. In-Service Capacity for Withdrawal;
 - vi. Available Capacity for Withdrawal;
 - vii. the Maximum Upwards Ramp Rate;
 - viii. the Maximum Downwards Ramp Rate;
 - ix. Enablement Minimums;
 - x. Enablement Maximums;
 - xi. Low Breakpoints;
 - xii. High Breakpoints;
 - xiii. Dispatch Inflexibility Profiles;
 - xiv. any reasons for revisions in accordance with clauses 7.4.26(a) or 7.4.27(a);
 - xv. if the Registered Facility is Inflexible;
 - xvi. the Unconstrained Injection Forecast; and
 - xvii. the Unconstrained Withdrawal Forecast;
- (b) where applicable, for each Scheduled Facility or Semi-Scheduled Facility and each Dispatch Interval of the Trading Day, the Congestion Rental, generated by the Dispatch Algorithm for the purposes of the Central Dispatch Process, or revised in accordance with clauses 7.11B.1A(b) or 7.11C.2(c), calculated under clause 7.14.1;
- (c) for each Dispatch Interval of the Trading Day, information used in the Dispatch Algorithm for the purposes of the Central Dispatch Process, or revised in accordance with clauses 7.11B.1A(b) or 7.11C.2(c):
- i. for each CR Facility, the Single Facility Raise Risk for the Dispatch Interval;
 - ii. for each Facility Raise Contingency which is a Credible Contingency Event that is taken into account when setting the Contingency Reserve Raise requirement under clause 7.2.4 in the Dispatch Interval, the Facility Raise Contingency Risk associated with the Dispatch Interval;
 - iiA. for each Network Raise Contingency which is a Credible Contingency Event that is taken into account when setting the Contingency Reserve Raise requirement under clause 7.2.4 in the Dispatch Interval:

1. the Network Raise Risk associated with the Network Supply Contingency; and
 2. the Network Facility Raise Risk of each CR Facility that contributes to the Network Raise Contingency in the Dispatch Interval;
 - 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;
- (d) for each Dispatch Interval of the Trading Day, for each Semi-Scheduled Facility that is not a Centrally Forecasted Facility and Non-Scheduled Facility, any alternative forecast quantities to the Unconstrained Injection Forecast and Unconstrained Withdrawal Forecast provided by the Market Participant in its Real-Time Market Submission that were determined and used by AEMO as an input to the Dispatch Algorithm for the purposes of the Central Dispatch Process under clause 7.2.4A, or revised in accordance with clauses 7.11B.1A(b) or 7.11C.2(c); ~~and~~
- (dA) for each Dispatch Interval of the Trading Day, for each Centrally Forecasted Facility, the CFF Unconstrained Injection Forecast and CFF Unconstrained Withdrawal Forecast that were determined and used by AEMO as an input to the Dispatch Algorithm for the purposes of the Central Dispatch Process under clause 7.3A.1, or revised in accordance with clauses 7.11B.1A(b) or 7.11C.2(c); and
- (e) where applicable, for each Scheduled Facility or Semi-Scheduled Facility and each Dispatch Interval, the Energy Uplift Price and the Uplift Payment Mispricing Trigger as determined by the Dispatch Algorithm, or revised in accordance with clauses 7.11B.1A(b) or 7.11C.2(c).

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11. Glossary

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Centrally Forecasted Facility: A Semi-Scheduled Facility that meets the criteria specified in clause 2.34D.1 and has been classified by AEMO as a Centrally Forecasted Facility in respect of the relevant Dispatch Interval or Pre-Dispatch Interval.

...

CFF Unconstrained Injection Forecast: For a Centrally Forecasted Facility, for a Dispatch Interval or Pre-Dispatch Interval, AEMO's estimate, determined in accordance with section 7.3A, of the expected MW level of Injection for the Facility at the end of the Dispatch Interval or Pre-Dispatch Interval, assuming that the Facility will not be subject to a Dispatch Instruction or direction from AEMO that limits its Injection, and allowing for expected conditions and the quantity of In-Service Capacity for Injection specified in the relevant Real-Time Market Submission.

CFF Unconstrained Withdrawal Forecast: For a Centrally Forecasted Facility, for a Dispatch Interval or Pre-Dispatch Interval, AEMO's estimate, determined in accordance with section 7.3A, of the expected MW level of Withdrawal for the Facility at the end of the Dispatch Interval or Pre-Dispatch Interval, assuming that the Facility will not be subject to a Dispatch Instruction or direction from AEMO that limits its Withdrawal, and allowing for expected conditions and the quantity of In-Service Capacity for Withdrawal specified in the relevant Real-Time Market Submission.

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Explanatory Note:

The definition of Dispatch Forecast is amended to account for the introduction of Centrally Forecasted Facilities.

Dispatch Forecast: The total MW level of Injection or Withdrawal expected to be reached by a Semi-Scheduled Facility or Non-Scheduled Facility at the end of the Dispatch Interval which is:

- (a) for a Non-Scheduled Facility, the Market Participant's Unconstrained Injection Forecast or Unconstrained Withdrawal Forecast, as applicable, for the Non-Scheduled Facility for the Dispatch Interval, as may be replaced by AEMO under clause 7.2.4A; ~~and~~
- (b) for a Semi-Scheduled Facility that is not a Centrally Forecasted Facility:
 - i. if AEMO has specified a Dispatch Target for the Semi-Scheduled Facility for the Dispatch Interval, that Dispatch Target;
 - ii. otherwise, if the Semi-Scheduled Facility is expected to be Injecting at the end of the Dispatch Interval, the lesser of:
 - 1. the Dispatch Cap for the Semi-Scheduled Facility for the Dispatch Interval; and
 - 2. the Market Participant's Unconstrained Injection Forecast for the Semi-Scheduled Facility for the Dispatch Interval, as may be replaced by AEMO under clause 7.2.4A; and

- iii. otherwise, the greater of:
 - 1. the Dispatch Cap for the Semi-Scheduled Facility for the Dispatch Interval; and
 - 2. the Market Participant's Unconstrained Withdrawal Forecast for the Semi-Scheduled Facility for the Dispatch Interval, as may be replaced by AEMO under clause 7.2.4A-; and

(c) for a Semi-Scheduled Facility that is a Centrally Forecasted Facility:

- i. if AEMO has specified a Dispatch Target for the Semi-Scheduled Facility for the Dispatch Interval, that Dispatch Target;
- ii. otherwise, if the Semi-Scheduled Facility is expected to be Injecting at the end of the Dispatch Interval, the lesser of:
 - 1. the Dispatch Cap for the Semi-Scheduled Facility for the Dispatch Interval; and
 - 2. the CFF Unconstrained Injection Forecast for the Semi-Scheduled Facility for the Dispatch Interval, as determined by AEMO under clause 7.3A.1; and
- iii. otherwise, the greater of:
 - 1. the Dispatch Cap for the Semi-Scheduled Facility for the Dispatch Interval; and
 - 2. the CFF Unconstrained Withdrawal Forecast for the Semi-Scheduled Facility for the Dispatch Interval, as determined by AEMO under clause 7.3A.1.

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Energy Conversion Model: A document that defines how the Intermittent Generating System in a Semi-Scheduled Facility converts its intermittent energy source (i.e. wind or sunlight) into electrical output. An Energy Conversion Model must comply with the requirements specified in the WEM Procedure referred to in clause 7.3A.5.

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Unscheduled Operational Demand: The sum of Operational Demand and Operational Withdrawal.

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Explanatory Note:

Appendix 1 is amended to create new Standing Data items for:

- the information needed to determine a Semi-Scheduled Facility's eligibility for classification as a Centrally Forecasted Facility; and
- an ECM for Semi-Scheduled Facilities that meet the eligibility criteria.

The new Standing Data items used to determine whether a Semi-Scheduled Facility should be a Centrally Forecasted Facility (i.e. Appendix 1(c)(iiA) and 1(c)(viA)) have also been included for Scheduled Facilities and Non-Scheduled Facilities. This is because the information is also useful for more general analysis and reporting purposes (e.g. more granular reporting by fuel source).

Appendix 1: Standing Data

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(b) For a Scheduled Facility:

- i. the total nameplate capacity of the Facility's Energy Producing System, expressed in MW;
- ii. the nameplate capacity of each Facility Technology Type in the Facility, excluding Loads;
- iiA. for each fuel source used by an Intermittent Generating System or Non-Intermittent Generating System in the Facility, the total nameplate capacity of the energy producing units in the Facility that can use the fuel source, expressed in MW;
- iii. the System Size;
- ...
- vi. the maximum Withdrawal capacity of the Facility under optimal conditions, expressed in MW;
- viA. the maximum total consumption of Load in the Facility, expressed in MW;
- vii. the dependence of sent out capacity on temperature at the location of the Facility;

...

(c) For a Semi-Scheduled Facility:

- i. the total nameplate capacity of the Facility's Energy Producing System, expressed in MW;
- ii. the nameplate capacity of each Facility Technology Type in the Facility, excluding Loads;
- iiA. for each fuel source used by an Intermittent Generating System or Non-Intermittent Generating System in the Facility, the total

nameplate capacity of the energy producing units in the Facility that can use the fuel source, expressed in MW;

iii. the System Size;

...

vD. the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply across the Electric Storage Resource Obligation Duration to the relevant Network from Electric Storage Resources in the Facility under optimal conditions, expressed in MW;

vE. an Energy Conversion Model, if the Facility is eligible for classification as a Centrally Forecasted Facility under clause 2.34D.1;

vi. the maximum Withdrawal capacity of the Facility under optimal conditions, expressed in MW;

viA. the maximum total consumption of Load in the Facility, expressed in MW;

vii. the dependence of sent out capacity on temperature at the location of the Facility, if applicable;

...

(d) for a Non-Scheduled Facility:

i. the total nameplate capacity of the Facility's Energy Producing System, expressed in MW;

ii. the nameplate capacity of each Facility Technology Type in the Facility, excluding Loads;

iiA. for each fuel source used by an Intermittent Generating System or Non-Intermittent Generating System in the Facility, the total nameplate capacity of the energy producing units in the Facility that can use the fuel source, expressed in MW;

iii. the System Size;

...

vi. the maximum Withdrawal capacity of the Facility under optimal conditions, expressed in MW;

viA. the maximum total consumption of Load in the Facility, expressed in MW;

vii. the dependence of sent out capacity on temperature at the location of the Facility, if applicable;

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