



STATUS REPORT

1 October 2018 to 31 December 2018

Prepared under clause 7.12 of the WEM Rules

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1. Introduction

The Australian Energy Market Operator (AEMO) has prepared this report under clause 7.12 of the Wholesale Electricity Market Rules (WEM Rules).

Clause 7.12 of the WEM Rules requires AEMO to provide a report to the Economic Regulation Authority (ERA) once every three months on the performance of the market with respect to the dispatch process. The report must include details of:

- the incidence and extent of issuance of Operating Instructions and Dispatch Instructions;
- the incidence and extent of non-compliance with Operating Instructions and Dispatch Instructions;
- the incidence and reasons for the issuance of Dispatch Instructions to Balancing Facilities Out of Merit, including for the purposes of clause 7.12.1 of the WEM Rules, issuing Dispatch Orders to the Balancing Portfolio in accordance with clause 7.6.2 of the WEM Rules;
- the incidence and extent of transmission constraints;
- the incidence and extent of shortfalls in Ancillary Services, involuntary curtailment of load, High Risk Operating States and Emergency Operating States; and
- the incidence and reasons for the selection and use of LFAS Facilities under clause 7B.3.8 of the WEM Rules.

In this report:

- the reporting period is from 1 October 2018 to 31 December 2018;
- terms that are capitalised but not defined have the meaning given in the WEM Rules; and
- date references are to Trading Days, not calendar days, unless otherwise stated.

2. Issuance of Dispatch Instructions and Operating Instructions

AEMO issued 12,889 Dispatch Instructions to Market Participants during the reporting period.

Figure 1 shows the number of Dispatch Instructions issued during each Trading Month since 1 July 2017.

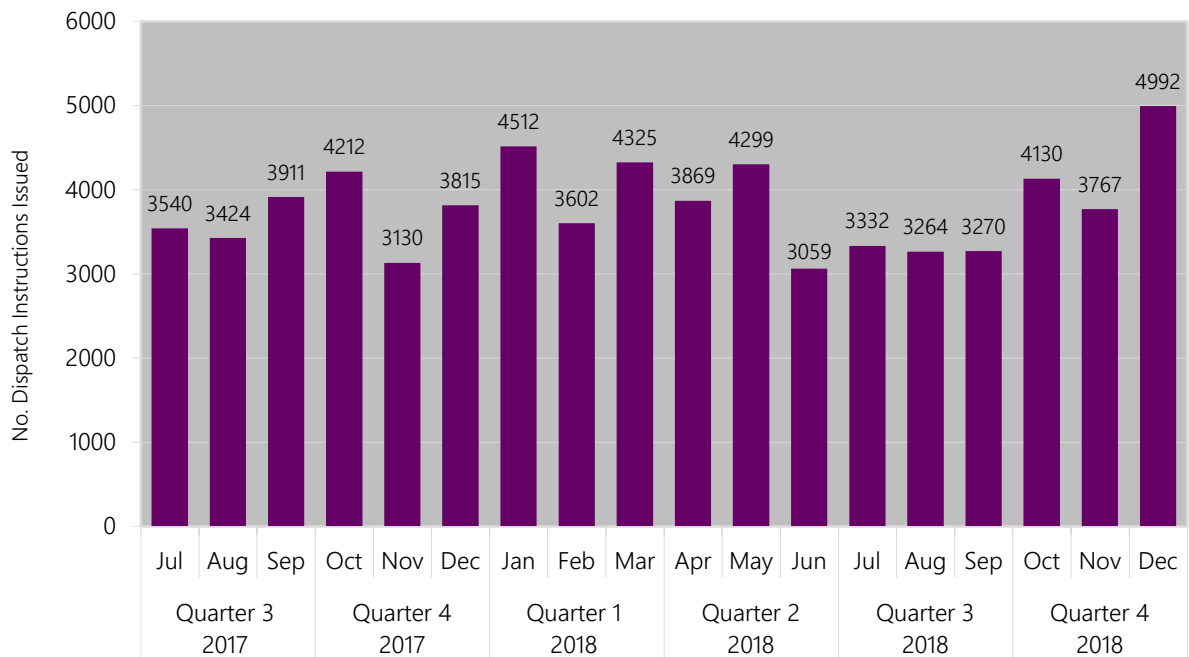


Figure 1: Dispatch Instructions per Trading Month

AEMO issued 63 Operating Instructions during the reporting period.

Three situations where AEMO may issue Operating Instructions under the WEM Rules are for Commissioning Tests, Reserve Capacity Tests and provision of services under the Network Control Service Contracts.

Figure 2 shows the number of Operating Instructions issued during each Trading Month since 1 July 2017.

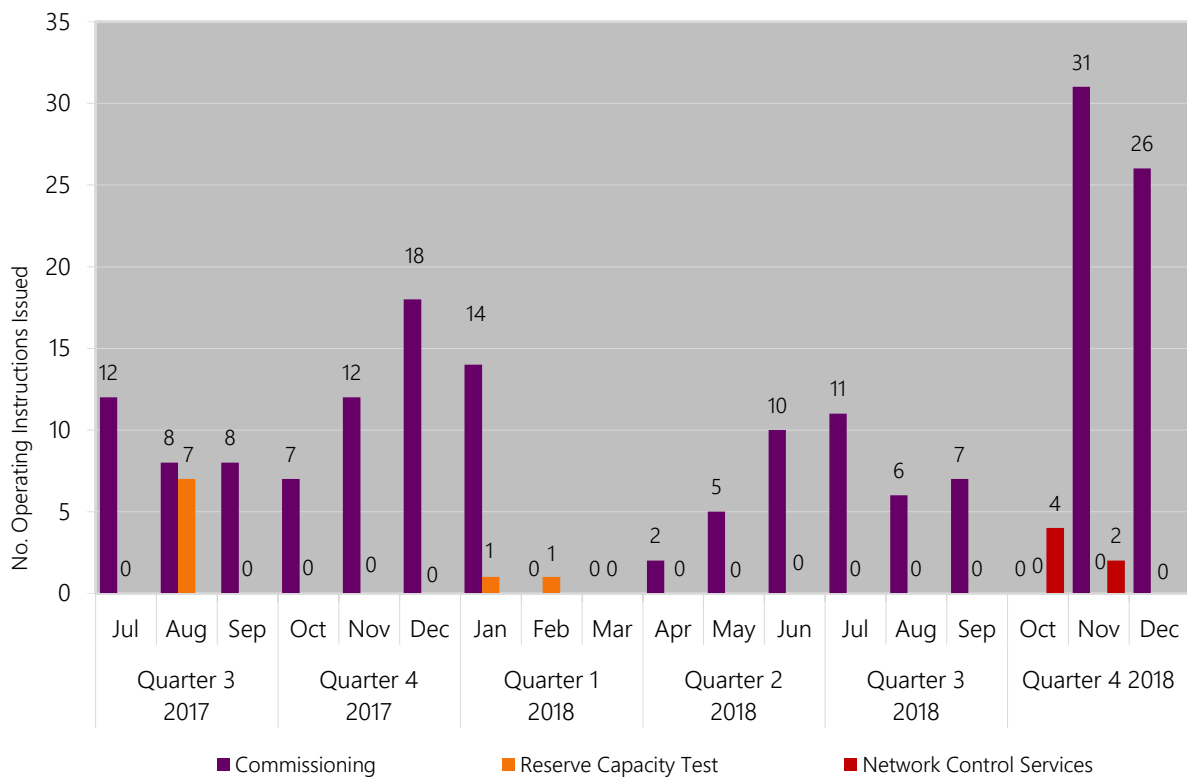


Figure 2: Operating Instructions per Trading Month

3. Non-Compliance with Dispatch Instructions and Operating Instructions¹

During the reporting period, AEMO issued 14,497 one-minute non-compliance notifications to Market Participants for non-compliance with Dispatch Instructions, taking into account the Tolerance Range, and any Facility Tolerance Ranges, where applicable.

During the reporting period, there were 82 instances where a Market Participant did not confirm receipt of a Dispatch Instruction when required to do so under the WEM Rules and the Dispatch Power System Operation Procedure.

During the reporting period, there were 16 instances where a Market Participant did not confirm receipt of an Operating Instruction when required to do so under the WEM Rules and the Dispatch Power System Operation Procedure.

Figure 3 below provides historical non-compliance data since 1 July 2017.

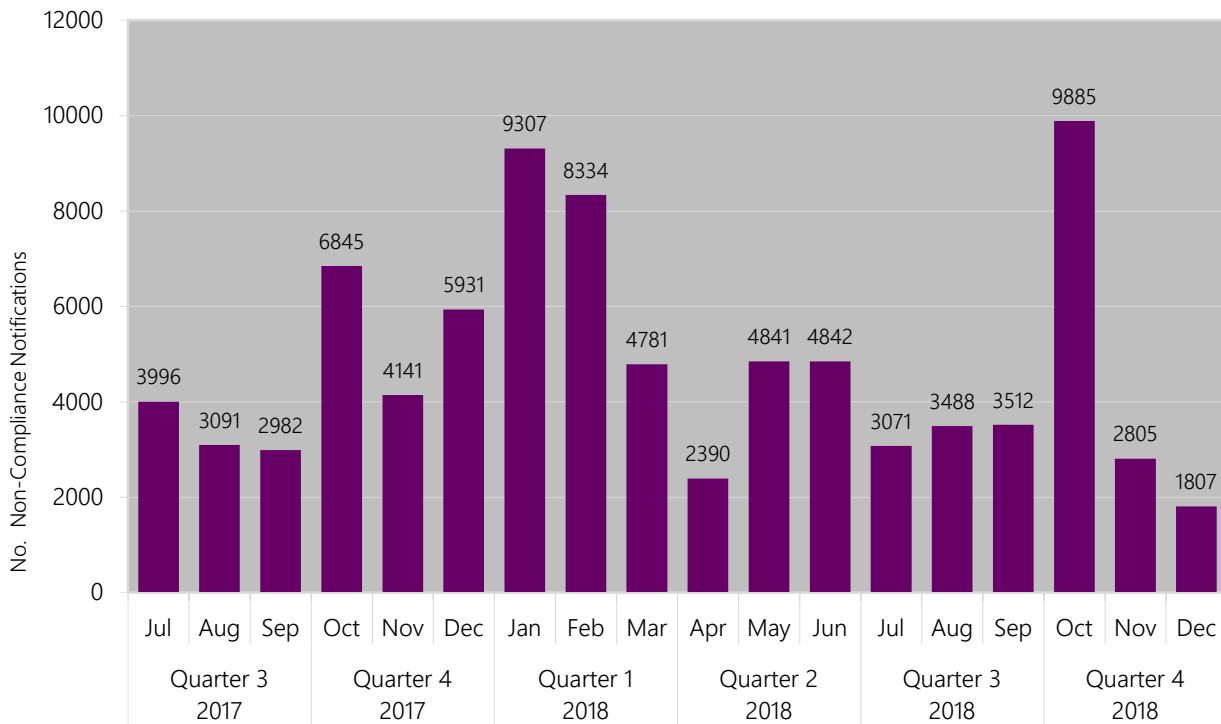


Figure 3: Dispatch Instruction non-compliance notifications

Figure 4 provides historical data for non-acknowledgement of Dispatch Instructions since 1 July 2017.

¹ Instances of non-compliance are calculated using information AEMO has at hand at the time of creation of the 7.12 report. Actual instances may differ once reviewed and determined by the ERA.

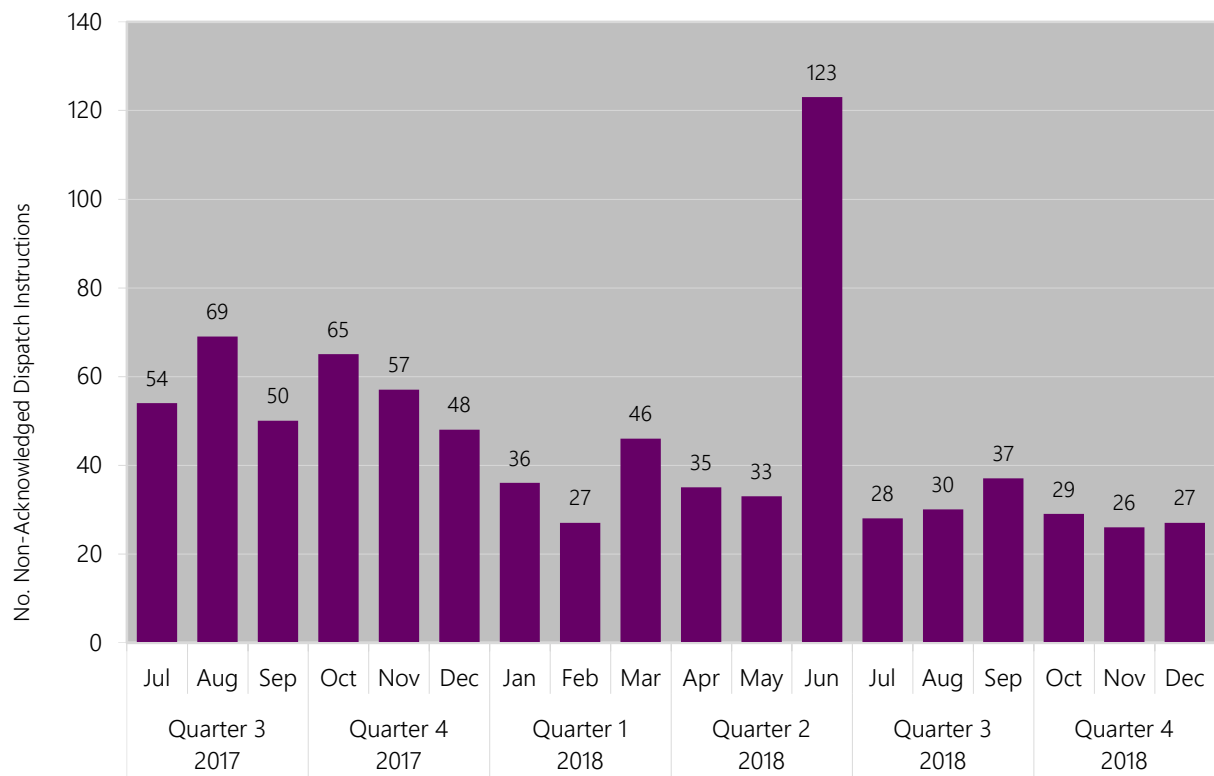


Figure 4: Non-acknowledged Dispatch Instructions

4. Issuance of Dispatch Instruction to Balancing Facilities Out of Merit

4.1 Instances of Out of Merit dispatch identified by AEMO

During the reporting period, there was one instance where Dispatch Instructions were issued to Balancing Facilities Out of Merit².

Date/Interval/s	31 October 2018 / Trading Interval 15:2 to Trading Interval 16:2
Details	At 15:00, a reduction in forecast daytime load resulted in a shortfall of Ancillary Services that could not be reduced by Dispatch of Load Rejection Reserve, due to generator limitations.
AEMO action	AEMO was required to constrain scheduled generation to meet to the requirements of the Load Rejection Reserve, resulting in Out of Merit Dispatch.

4.2 Other instances of Out of Merit dispatch

Section 5 of this report provides information regarding instances of Out of Merit dispatch due to transmission network constraints. AEMO Issues Dispatch Advisories when these situations occur.

Section 6 of this report describes occasions of High Risk and Emergency Operating States that occurred during the reporting period. During elevated Operating States, there may be a need to dispatch Facilities Out of Merit to enable the SWIS to be returned to a Normal Operating State.

² 7.6.1D of the WEM Rules provides for Out of Merit dispatch to avoid a High Risk Operating State or an Emergency Operating State or, if the SWIS is in a High Risk Operating State or an Emergency Operating State, to enable the SWIS to be returned to a Normal Operating State.

5. Transmission Constraints

A “transmission constraint” refers to the configuration of the transmission network that has an effect or potential effect of constraining or otherwise varying the output of a generation Facility. As a result of the transmission constraint, the generation Facility is required to increase or decrease output, depending on the relevant circumstances.

AEMO has identified the following transmission constraints during the reporting period:

- From Trading Interval 6:1 to Trading Interval 6:2 on 5 October 2018, a trip on the 220kV line in the Eastern Goldfields region, resulted in the need to constrain the STHRNCRS_EG Facility (Dispatch Advisory 18208).
 - The STHRNCRS_EG Facility was constrained to 0MW for 2 Trading Intervals.
- From Trading Interval 9:1 to Trading Interval 10:2 on 8 October 2018, an emergency repair on the MGA-WWF 132kV line, resulted in the need to constrain the ALINTA_WWF Facility (Dispatch Advisory 18228).
 - The ALINTA_WWF Facility was constrained to 0MW for 4 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 21:2 on 17 October 2018, a planned network outage on the 220kV Transmission line between Muja and West Kalgoorlie required the PRK_AH Facility to be constrained on to provide base load support in the region (Dispatch Advisory 18249).
 - The PRK_AG Facility was constrained on, between 5MW and 20MW for 34 Trading Intervals.
- From Trading Interval 10:2 to Trading Interval 21:2 on 17 October 2018, a planned network outage on the 220kV Transmission line between Muja and West Kalgoorlie required the STHRNCRS_EG Facility to be constrained on to provide base load support in the region (Dispatch Advisory 18250).
 - The STHRNCRS_EG Facility was constrained on, between 10MW and 22MW for 23 Trading Intervals.
- From Trading Interval 10:1 to Trading Interval 19:1 on 22 October 2018, anti-islanding issues resulted in the need to constrain the ALCOA_WGP Facility (Dispatch Advisory 18268).
 - The ALCOA_WGP Facility was constrained to 0MW for 19 Trading Intervals.
- From Trading Interval 8:1 to Trading Interval 11:2 on 24 October 2018, a planned outage on the WGP T1 and SNR-WGP/APJ lines, resulted in the need to constrain the ALCOA_WGP Facility (Dispatch Advisory 18270).
 - The ALCOA_WGP Facility was constrained to 0MW for 8 Trading Intervals.
- From Trading Interval 14:2 to Trading Interval 15:2 on 28 October 2018, anti-islanding issues resulted in the need to constrain the ALCOA_WGP Facility (Dispatch Advisory 18277).
 - The ALCOA_WGP Facility was constrained to 0MW 3 Trading Intervals.
- From Trading Interval 20:1 to Trading interval 21:1 on 7 November 2018, issues with the 220kV transmission line, resulted in the need to constrain the PRK_AG Facility to maintain normal operating frequency in the Eastern Goldfields region (Dispatch Advisory 18288)
 - The PRK_AG Facility was constrained to 53MW for 3 Trading Intervals.
- From Trading Interval 12:2 to Trading Interval 14:2 on 29 November, a planned outage on the GTN-CPN81 line and unexpected increase in winds, resulted in the need to constrain the ALINTA_WWF Facility (Dispatch Advisory 18328).
 - The ALINTA_WWF Facility was constrained to 75MW for 4 Trading Intervals.
- From Trading Interval 18:2 to Trading Interval 19:2 on 3 December 2018, issues on the WKT CGT/YLN line, resulted in the need to constrain the PRK_AG Facility to maintain normal operating frequency (No Dispatch Advisory was issued).
 - The PRK_AG Facility was constrained to 30MW and 42MW for 3 Trading Intervals.

- From Trading Interval 13:2 to Trading Interval 18:2 on 27 December 2018, a network Forced Outage on the WGP T1 line, resulted in the need to constrain the ALCOA_WGP Facility (Dispatch Advisory 18390).
 - The ALCOA_WGP Facility was constrained to 0MW for 11 Trading Intervals.

6. Operating States, Shortfalls in Ancillary Services and Involuntary Curtailment of Load

6.1 High Risk Operating State

There were five instances of a High Risk Operating State during the reporting period.

Figure 5 provides historical data for High Risk Operating States that have occurred since 1 July 2017.

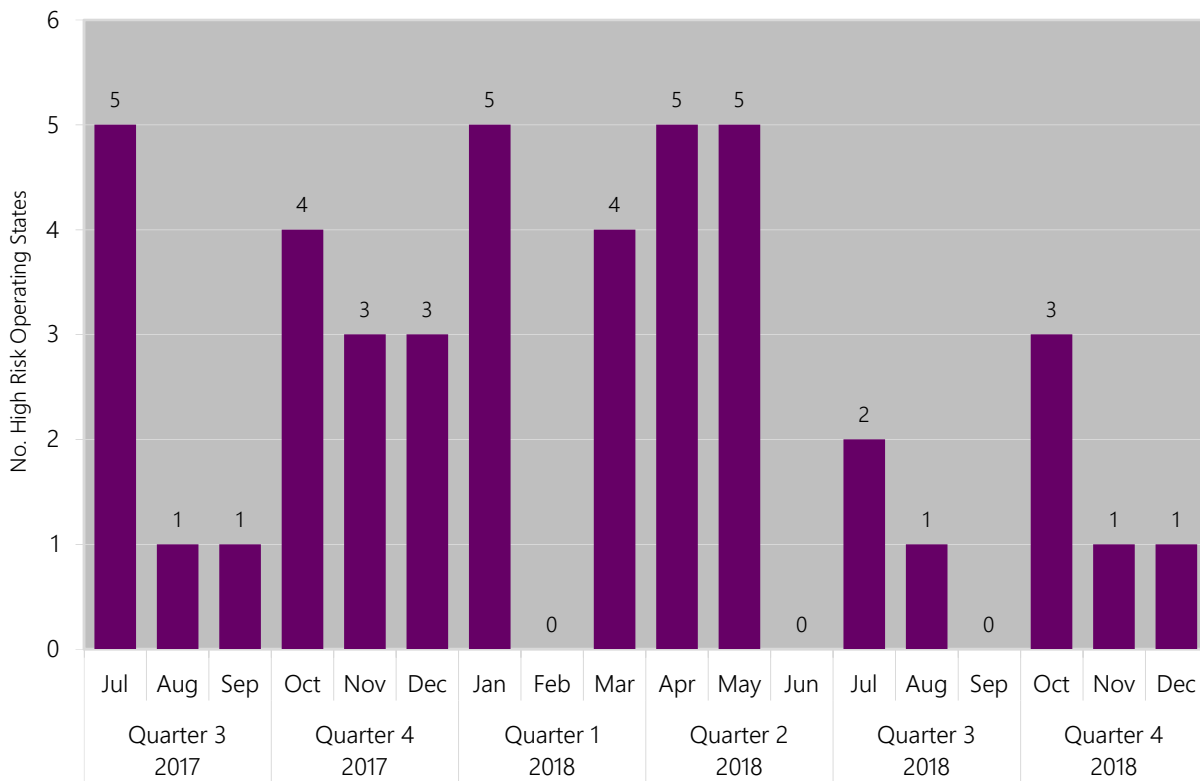


Figure 5: High Risk Operating States

Date/Interval/s	18 October 2018 / Trading Interval 11:2 to 12:1
Dispatch Advisory Number	18251
Details	From 11:30, AEMO were required to utilise Load Following Services, due to high volatility of Wind and PV generation.
AEMO action	AEMO was required to activate additional Load Following Services from the Back-up provider.

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Date/Interval/s	19 October 2018 / Trading Interval 16:1
Dispatch Advisory Number	18253
Details	At 16:22, the ALINTA_WGP_U2 Facility tripped, resulting in a loss of approximately 197MW and a frequency deviation to 49.49Hz. Frequency returned to a Normal Operating State within 62 seconds of the Facility tripping.
AEMO action	AEMO was required to Dispatch according to the latest Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.
Date/Interval/s	25 October 2018 / Trading Interval 18:1
Dispatch Advisory Number	18275
Details	At 18:21, the ALINTA_WGP_U2 Facility tripped, resulting in a loss of approximately 200MW and a frequency deviation to 49.416Hz. Frequency returned to a Normal Operating State within 60 seconds of the Facility tripping.
AEMO action	AEMO was required to Dispatch according to the latest Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.
Date/Interval/s	21 November 2018 / Trading Interval 18:1
Dispatch Advisory Number	18310
Details	At 18:17, the ALINTA_WGP_U1 and ALINTA_WGP_U2 Facilities tripped, resulting in a loss of approximately 340MW and a frequency deviation to 49.024Hz. Frequency returned to a Normal Operating State within 8 minutes of the Facilities tripping.
AEMO action	AEMO was required to Dispatch according to the latest Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.
Date/Interval/s	23 December 2018 / Trading Interval 0:1
Dispatch Advisory Number	17421
Details	At 00:30, AEMO experienced technical issues with its systems.
AEMO action	AEMO was required to assume frequency control at the back up facility to maintain Power System Security and Power System Reliability.

6.2 Emergency Operating State

There was one instance of an Emergency Operating State during the reporting period.

Figure 6 provides historical data for Emergency Operating States that have occurred since 1 July 2017.

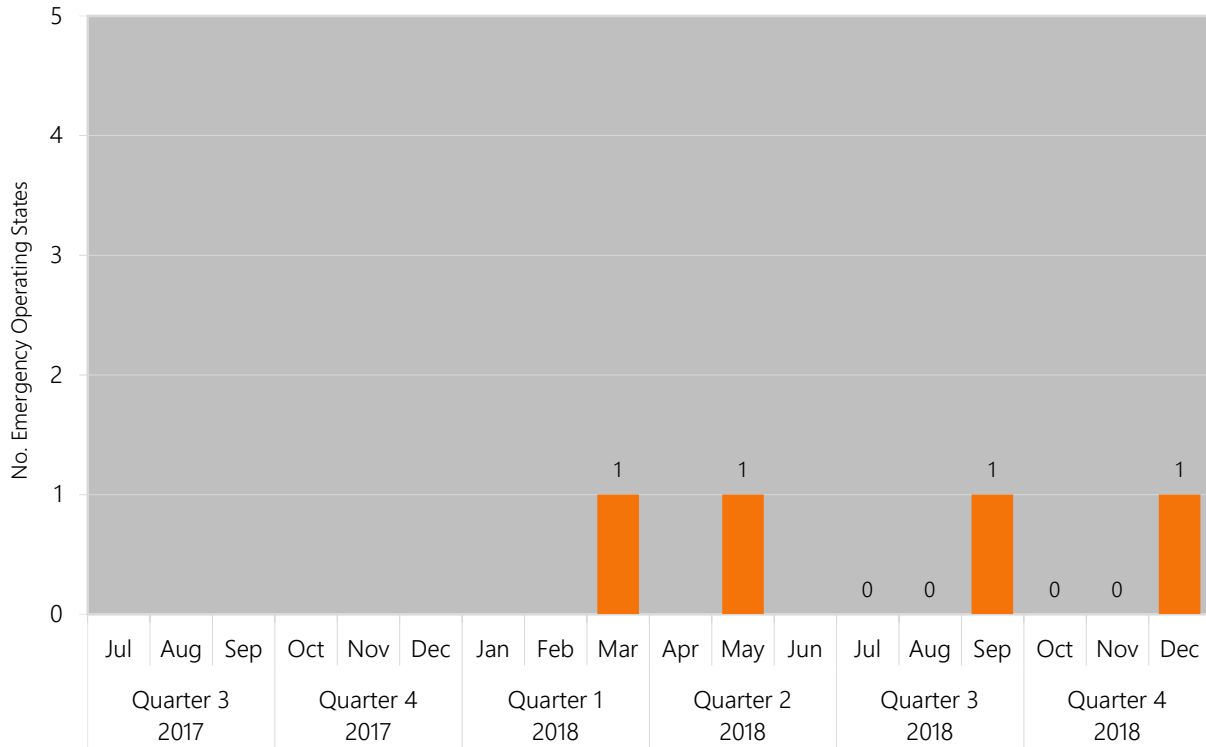


Figure 6: Emergency Operating States

Date/Interval/s	22 December 2018 / Trading Interval 23:2
Dispatch Advisory Number	17404
Details	At 23:32, AEMO experienced technical issues with its systems. AEMO was required to evacuate to the back-up facility.
AEMO action	AEMO was required to evacuate to the back-up Facility and hand over frequency control to Western Power for approximately 30 minutes, as per AEMO’s business continuity arrangements. There was no operational impact to the SWIS or market.

6.3 Shortfalls in Ancillary Services

There were 474 instances of a shortfall in Ancillary Services during the reporting period.

Figure 7 below provides data for shortfalls in Ancillary Services that have occurred since 1 October 2017.

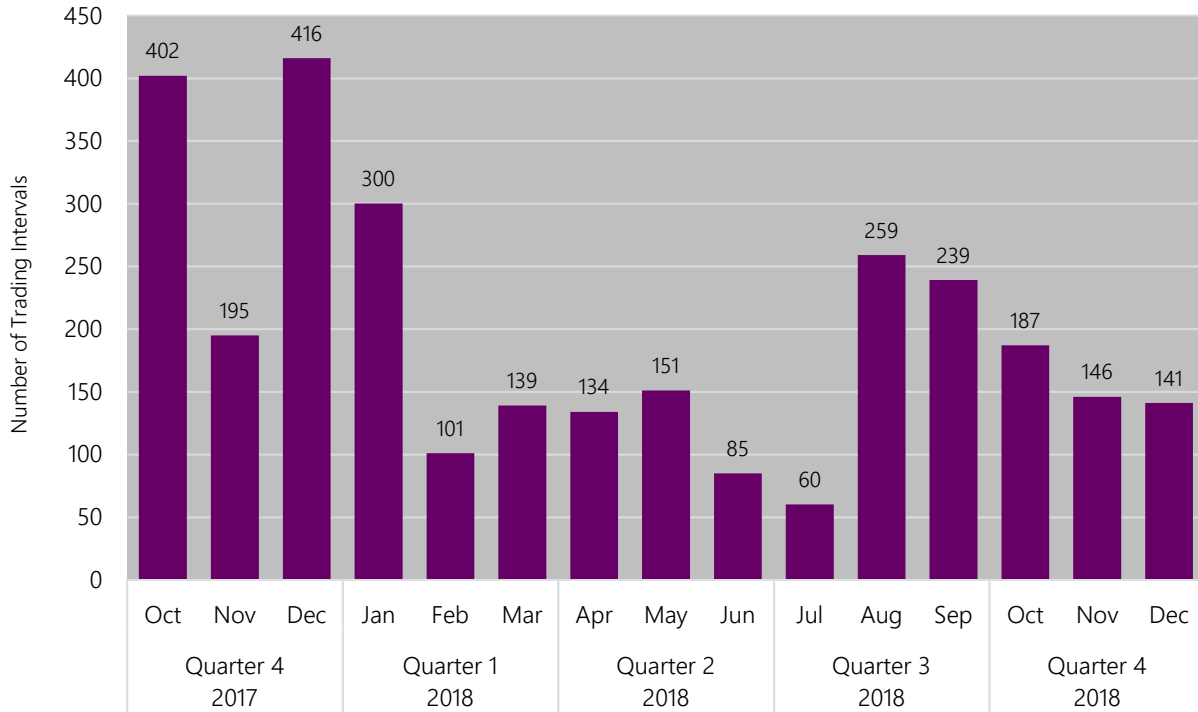


Figure 7: Number of Shortfalls in Ancillary Services

The 474 instances related to the Load Rejection Reserve Service³. AEMO’s primary function as the system operator in the SWIS is to ensure the SWIS operates in a secure and reliable manner (clause 2.2.1 of the WEM Rules). The Load Rejection Reserve Service is (relevantly) the service of holding capacity associated with a Scheduled Generator in reserve so that the Scheduled Generator can reduce output rapidly in response to a sudden decrease in SWIS load.

A shortfall occurs when the Ancillary Service Requirements are not met within a Trading Interval. AEMO does not consider that any of the shortfalls threatened Power System Security or Power System Reliability or placed the SWIS in a High Risk Operating State or an Emergency Operating State.

During the reporting period there was one instance where Load Following Services were called upon to help maintain Load Rejection Reserve due to volatility in both rooftop PV and wind generation. Similar to last quarter, a large number of shortfalls within the period occurred during periods of high volatility of rooftop PV systems. In these situations, maintaining the required level of Load Rejection Reserve is difficult and maintaining Power System Security and Power System Reliability while minimising costs to the Wholesale Electricity Market often means no action is the best response.

6.4 Involuntary curtailment of load

There were no instances of involuntary curtailment of load during the reporting period.

³ Data is based on the number of Trading Intervals where Load Rejection Reserve of less than 90MW occurred, calculated using five-minute averages.

7. Selection and use of LFAS Facilities other than in accordance with LFAS Merit Order

During the reporting period, there were two instances where AEMO was required to use LFAS Facilities outside of the LFAS Merit Order to operate the SWIS in a reliable and safe manner under clause 7B.3.8 of the WEM Rules.

Date/Interval/s	18 October 2018 / Trading Interval 11:1 to 14:2
Dispatch Advisory Number	18251
Details	At 11:30, AEMO required additional Load Following Ancillary Services due to high volatility of wind and PV generation.
AEMO action	AEMO was required to activate back up Load Following Ancillary Services to maintain Power System Security and Power System Reliability.

Date/Interval/s	26 December 2018 / Trading Interval 1:1 to 8:2
Dispatch Advisory Number	18389
Details	At 00:58, AEMO required additional Load Following Ancillary Services due to high volatility of wind generation.
AEMO action	AEMO was required to activate back up Load Following Ancillary Services to maintain Power System Security and Power System Reliability.