

STATUS REPORT

Prepared under clause 7.12 of the WEM Rules

1 April 2018 to 30 June 2018











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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 April 2018 to 30 June 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.





Issuance of Dispatch Instructions and Operating Instructions

AEMO issued 11,227 Dispatch Instructions to Market Participants during the reporting period. *Figure 1* below shows the number of Dispatch Instructions issued during each Trading Month since 1 January 2017.

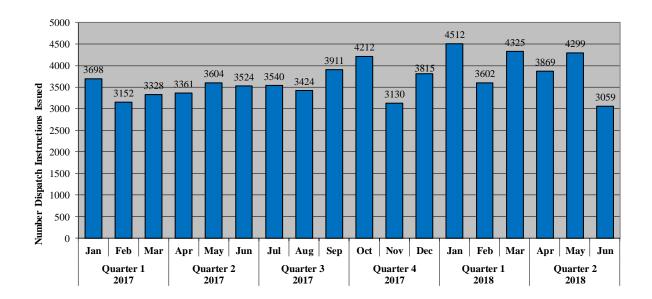


Figure 1: Dispatch Instructions per Trading Month

AEMO issued 17 Operating Instructions during the reporting period.

Two situations where AEMO may issue Operating Instructions under the WEM Rules are for Commissioning Tests and Reserve Capacity Tests.





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

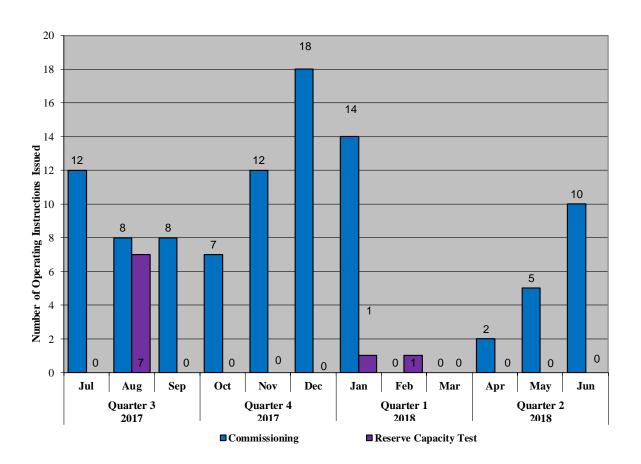


Figure 2: Operating Instructions per Trading Month





3. Non-Compliance with Dispatch Instructions and Operating Instructions

During the reporting period, AEMO issued 12,073 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 191 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 no 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 January 2017.



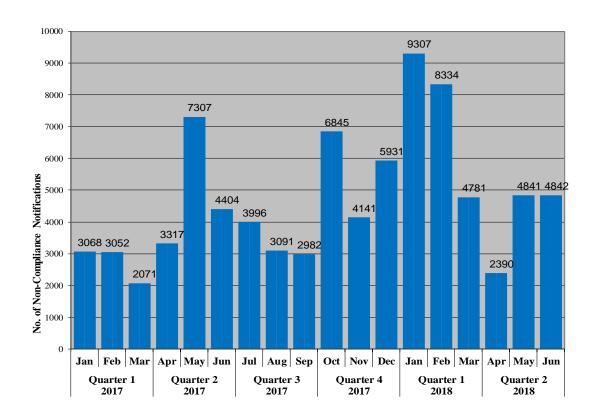






Figure 4 below provides historical non-acknowledgement data for Dispatch Instructions since 1 January 2017.

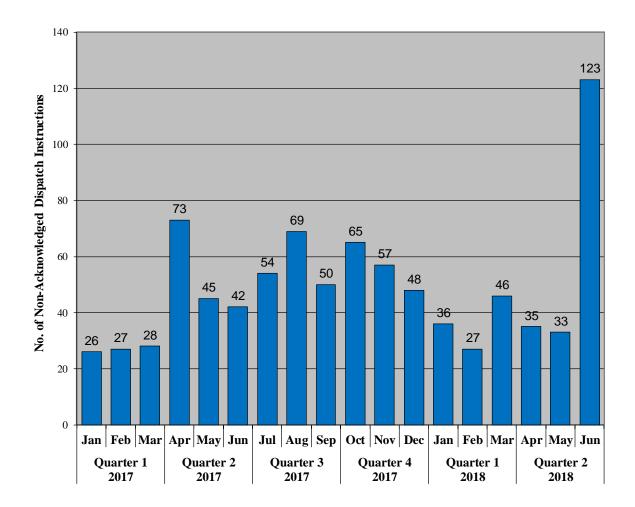


Figure 4: Non-acknowledged Dispatch Instructions





Issuance of Dispatch Instructions to Balancing Facilities Out of Merit

4.1 Instances of Out of Merit dispatch identified by AEMO

During the reporting period, there were no instances where Dispatch Instructions were issued to Balancing Facilities Out of Merit.¹

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.

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 15:2 to Trading Interval 17:2 on 2 April 2018, due to storm activity in the Eastern Goldfields region, multiple transmissions lines tripped, resulting in the need to constraint INVESTEC_COLLGAR_WF1, PRK_AG and STHRNCRS_EG Facilities (Dispatch Advisory 17701).
 - o The PRK AG Facility was constrained to 0MW for 2 Trading Intervals.
 - The STHRNCRS EG Facility was constrained to 0MW for 2 Trading Intervals.
 - o The INVESTEC COLLGAR WF1 Facility was constrained to 0MW for 3 Trading Intervals.
 - The INVESTEC_COLLGAR_WF1 Facility was constrained to a maximum of 100MW for 2 Trading Intervals.
- From Trading Interval 6:2 to Trading Interval 7:2 on 3 April 2018, due to communications issues
 following storm activities in the Eastern Goldfields region on 2 April 2018, the APLD scheme was
 not fully available, requiring the STHRNCRS_EG Facility to be constrained (Dispatch Advisory
 17703).
 - o The STHRNCRS_EG Facility was constrained to a maximum of 10MW for 2 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 3 April 2018, Western Power's TS-MGA81 transmission line was on a Planned Outage, which required the MWF_MUMBIDA_WF1 and ALINTA WWF Facilities to be constrained (Dispatch Advisory 17702).

Clause 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.





- The MWF_MUMBIDA_WF1 Facility was constrained to between 0MW and 20MW for 6 Trading Intervals.
- The ALINTA_WWF Facility was constrained to between 0MW and 20MW for 6 Trading Intervals.
- From Trading Interval 6:1 to Trading Interval 16:1 on 4 April 2018, Western Power's TS-MGA81 transmission line was on a Planned Outage, which required the MWF_MUMBIDA_WF1 and ALINTA_WWF Facilities to be constrained (Dispatch Advisory 17704).
 - The MWF_MUMBIDA_WF1 Facility was constrained to between 0MW and 12MW for 22 Trading Intervals.
 - o The ALINTA_WWF Facility was constrained to 0MW for 22 Trading Intervals.
- From Trading Interval 6:1 to Trading Interval 16:1 on 5 April 2018, Western Power's TS-MGA81 transmission line was on a Planned Outage, which required the MWF_MUMBIDA_WF1 and ALINTA_WWF to be constrained (Dispatch Advisory 17706).
 - The MWF_MUMBIDA_WF1 Facility was constrained to between 0MW and 10MW for 23 Trading Intervals.
 - The ALINTA_WWF Facility was constrained to between 0MW and 20MW for 22 Trading Intervals.
- From Trading Interval 6:1 to Trading Interval 16:1 on 6 April 2018, Western Power's TS-MGA81 transmission line was on a Planned Outage, which required the MWF_MUMBIDA_WF1 and ALINTA_WWF Facilities to be constrained (Dispatch Advisory 17707).
 - The MWF MUMBIDA WF1 Facility was constrained to 0MW for 23MWTrading Intervals.
 - o The ALINTA_WWF Facility was constrained to 0MW for 22 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 8 April 2018, Western Power's MGA_TS81 and MGA-GTN81 transmission lines were on Planned Outages, which required the MWF MUMBIDA WF1 and ALINTA WWF Facilities to be constrained (Dispatch Advisory 17721).
 - The MWF_MUMBIDA_WF1 Facility was constrained to 0MW for 21 Trading Intervals.
 - o The ALINTA_WWF Facility was constrained to 0MW for 20 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 9 April 2018, Western Power's MGA-TS81 and MGA-GTN81 transmission lines were on Planned Outages, which required the MWF_MUMBIDA_WF1 and ALINTA_WWF Facilities to be constrained (Dispatch Advisory 17723).
 - o The MWF_MUMBIDA_WF1 Facility was constrained to 0MW for 21 Trading Intervals.
 - The ALINTA_WWF Facility was constrained to 0MW for 5 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 10 April 2018, Western Power's MGA-TS81 and MGA-GTN81 transmission lines were on Planned Outages, which required the MWF_MUMBIDA_WF1, ALINTA_WWF and GREENOUGH_RIVER_PV1 Facilities to be constrained (Dispatch Advisory 17724).
 - o The MWF MUMBIDA WF1 Facility was constrained to 0MW for 21 Trading Intervals.





- The ALINTA_WWF Facility was constrained to between 0MW and 18 MW for 21 Trading Intervals.
- The GREENOUGH_RIVER_PV1 Facility was constrained to a maximum of 1MW for 9 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 11 April 2018, Western Power's MGA-TS81 and MGA-GTN81 transmission lines were on Planned Outages, which required the MWF_MUMBIDA_WF1, ALINTA_WWF and GREENOUGH_RIVER_PV1 Facilities to be constrained (Dispatch Advisory 17725).
 - The MWF MUMBIDA WF1 Facility was constrained to 0MW for 22 Trading Intervals.
 - o The ALINTA_WWF Facility was constrained to 0MW for 22 Trading Intervals.
 - The GREENOUGH RIVER PV1 Facility was constrained to 0MW for 12 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 12 April 2018, Western Power's MGA-TS81 and MGA-GTN81 transmission lines were on Planned Outages, which required the MWF_MUMBIDA_WF1, ALINTA_WWF and GREENOUGH_RIVER_PV1 Facilities to be constrained (Dispatch Advisory 17726).
 - The MWF_MUMBIDA_WF1 Facility was constrained to 0MW for 22 Trading Intervals.
 - The ALINTA_WWF Facility was constrained to between 0MW and 15MW for 22 Trading Intervals.
 - The GREENOUGH_RIVER_PV1 Facility was constrained to 0MW for 22 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 13 April 2018, Western Power's MGA-TS81 and MGA-GTN81 transmission lines were on Planned Outages, which required the MWF_MUMBIDA_WF1, ALINTA_WWF and GREENOUGH_RIVER_PV1 Facilities to be constrained (Dispatch Advisory 17727).
 - o The MWF MUMBIDA WF1 Facility was constrained to 0MW for 23 Trading Intervals.
 - o The ALINTA WWF Facility was constrained to 0MW for 23 Trading Intervals.
 - o The GREENOUGH_RIVER_PV1 Facility was constrained to 0MW for 23 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 14 April 2018, Western Power's MGA-TS81 and MGA-GTN81 transmission lines were on Planned Outages, which required the MWF_MUMBIDA_WF1, ALINTA_WWF and GREENOUGH_RIVER_PV1 Facilities to be constrained (Dispatch Advisory 17728).
 - The MWF_MUMBIDA_WF1 Facility was constrained to 0MW for 22 Trading Intervals.
 - o The ALINTA_WWF Facility was constrained to 0MW for 21 Trading Intervals.
 - The GREENOUGH_RIVER_PV1 Facility was constrained to 0MW for 22 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 16:1 on 15 April 2018, Western Power's MGA-TS81 and MGA-GTN81 transmission lines were on Planned Outages, which required the MWF_MUMBIDA_WF1, ALINTA_WWF and GREENOUGH_RIVER_PV1 Facilities to be constrained (Dispatch Advisory 17729).
 - The MWF MUMBIDA WF1 Facility was constrained to 0MW for 6 Trading Intervals.
 - o The ALINTA_WWF Facility was constrained to 0MW for 6 Trading Intervals.





- The GREENOUGH_RIVER_PV1 Facility was constrained to 0MW for 6 Trading Intervals.
- From Trading Interval 12:1 to Trading Interval 19:2 on 6 May 2018, due to an unplanned Western Power Network fault, caused by storm activity in the South Country area, the ALBANY_WF1 and GRASMERE_WF1 Facilities were constrained (Dispatch Advisory 17784).
 - o The ALBANY WF1 was constrained to 0MW for 7 Trading Intervals.
 - o The GRASMERE_WF1 was constrained to 0MW for 7 Trading Intervals.
- From Trading Interval 3:1 on 13 May 2018 to Trading Interval 13:2 on 13 May 2018, due to an unplanned Western Power Network Outage, the ALCOA_WGP facility was constrained (Dispatch Advisory 17801).
 - The ALCOA_WGP Facility was constrained to 0MW for 21 Trading Intervals.
- From Trading Interval 14:2 to Trading Interval 18:1 on 26 May 2018, Western Power's TS-MGA81 transmission line was on a Planned Outage, which required the MWF_MUMBIDA_WF1, ALINTA_WWF and GREENOUGH_RIVER_PV1 Facilities to be constrained (Dispatch Advisory 17810).
 - The MWF_MUMBIDA_WF1 Facility was constrained to a maximum of 14MW for 8 Trading Intervals.
 - o The ALINTA_WWF Facility was constrained to 0MW for 8 Trading Intervals.
 - The GREENOUGH_RIVER_PV1 Facility was constrained to 0MW for 8 Trading Intervals.
- From Trading Interval 7:1 to Trading Interval 12:2 on 28 May 2018, Western Power's TS-MBA81 transmission line was on a Planned Outage, which required the MWF_MUMBIDA_WF1, ALINTA_WWF and GREENOUGH_RIVER_PV1 Facilities to be constrained (Dispatch Advisory 17811).
 - o The MWF_MUMBIDA_WF1 Facility was constrained to 0MW for 11 Trading Intervals.
 - o The ALINTA WWF Facility was constrained to 0MW for 11 Trading Intervals.
 - o The GREENOUGH_RIVER_PV1 Facility was constrained to 0MW for 11 Trading Intervals.
- From Trading Interval 5:1 to Trading Interval 17:2 on 21 June 2018, Western Power's MRT-CGT-YGN/WKT 220kV line was on a Planned Outage, which required the INVESTEC_COLLGAR_WF1, STHRNCRS_EG and PRK_AG Facilities to be constrained (Dispatch Advisory 17848).
 - The PRK_AG Facility was constrained on and required to generate between 1MW and 27 MW for 28 Trading Intervals.
 - The STHRNCRS_EG Facility was constrained on and required to generate 23MW for 28 Trading Intervals.
 - The INVESTEC_COLLGAR_WF1 Facility was constrained to 0MW for 27 Trading Intervals.





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

6.1 High Risk Operating State

There were 10 instances of a High Risk Operating State during the reporting period.

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

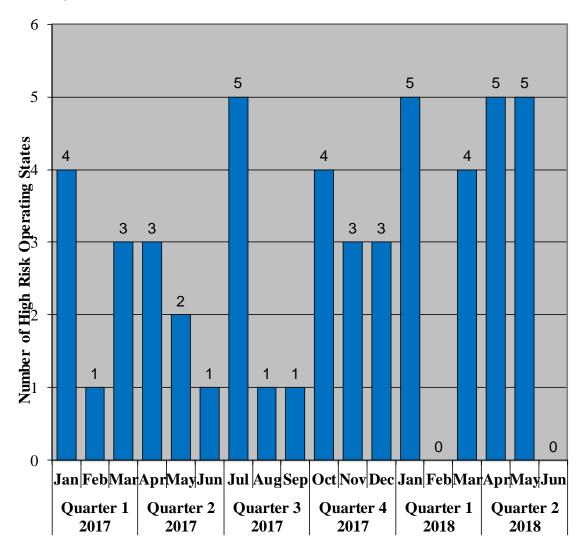


Figure 5: Number of High Risk Operating States





Date/Interval/s	2 April 2018 / Trading Interval 15:2 to Trading Interval 17:2
Dispatch Advisory Number	17701
Details	Storm activity in the Eastern Goldfields region resulted in multiple transmission lines tripping.
System Management action	AEMO was required to constrain INVESTEC_COLLGAR_WF1, PRK_AG and STHRNCRS_EG to 0MW.

Date/Interval/s	5 April 2018 / Trading Interval 15:1
Dispatch Advisory Number	17708
Details	The BW2_BLUEWATERS_G1 Facility tripped at 3:09pm, resulting in a loss of approximately 198MW and a frequency deviation to 49.52Hz. The system frequency returned to a normal operating level within 30 seconds.
System Management action	AEMO issued Dispatch Instructions based on the Balancing Merit Order.

Date/Interval/s	6 April 2018 / Trading Interval 11:1 to Trading Interval 12:1
Dispatch Advisory Number	17710
Details	Western Power carried out a scheduled outage of its IT systems. The scheduled outage affected the functionality of the Real-Time Dispatch Engine and the SOCCUI. It also prevented AEMO from importing the latest Balancing Merit Order and Load Forecast information. As a result of the scheduled outage, AEMO was unable to issue Dispatch Instructions electronically, and was unable to issue Dispatch Instructions based on the most recent Balancing Merit Order.
System Management action	AEMO issued verbal Dispatch Instructions based on the most recent Load Forecast and Balancing Merit Order available and issued retrospective Dispatch Instructions via the SOCCUI after the scheduled outage.





Date/Interval/s	7 April 2018 / Trading Interval 20:1
Dispatch Advisory Number	17722
Details	The facility ALINTA_PNJ_U2 tripped at 8:01pm, resulting in a loss of approximately 139MW and a frequency deviation to 49.67Hz. The system frequency returned to a normal operating level within 30 seconds.
System Management action	AEMO issued Dispatch Instructions based on the Balancing Merit Order.

Date/Interval/s	21 April 2018 / Trading Interval 15:2
Dispatch Advisory Number	17761
Details	Western Power's 132 kV PIC-BSN/PNJ/KEM 81 transmission lines tripped at 3:33pm, resulting in the loss of approximately 112MW in the South West region and a frequency deviation to 50.228Hz. The system frequency returned to a normal operating level within 4 seconds.
System Management action	AEMO issued Dispatch Instructions based on the Balancing Merit Order.

Date/Interval/s	5 May 2018 / Trading Interval 18:2
Dispatch Advisory Number	17783
Details	The KEMERTON_GT11 Facility tripped at 6:32pm, resulting in a loss of approximately 140MW and a frequency deviation to 49.62Hz. The system frequency returned to a normal operating level within 20 seconds.
System Management action	AEMO issued Dispatch Instructions based on the Balancing Merit Order.

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Date/Interval/s	9 May 2018 / Trading Interval 11:2
Dispatch Advisory Number	17685
Details	The INVESTEC_COLLGAR_WF1 Facility tripped at 11:32am, resulting in a loss of approximately 114MW and a frequency deviation to 49.646Hz. The system frequency returned to a normal operating level within 10 seconds.
System Management action	AEMO issued Dispatch Instructions based on the Balancing Merit Order.

Date/Interval/s	14 May 2018 / Trading Interval 20:2 to 15 May 2018 / Trading Interval 00:2
Dispatch Advisory Number	17803
Details	An unscheduled Western Power IT issue affected the SOCCUI and other automated systems. As a result, AEMO relocated to the backup control centre. An Emergency Operating State was declared for Trading Intervals 19:1 to 20:1 (see DA 17806).
System Management action	AEMO issued Dispatch Instructions based on the Balancing Merit Order.

Date/Interval/s	30 May 2018 / Trading Interval 1:2 to Trading Interval 6:2
Dispatch Advisory Number	17816 and a manual Dispatch Advisory issued at 3:11am
Details	AEMO experienced IT issues, which affected the SOCCUI and other automated systems. There was potential for the IT issues to prevent AEMO from issuing Dispatch Instructions to Market Participants electronically.
System Management action	AEMO relocated some of its control functions to the backup control centre. A manual Dispatch Advisory was issued at 3:11am. AEMO issued Dispatch Instructions based on the Balancing Merit Order.





Date/Interval/s	30 May 2018 / Trading Interval 8:2 to Trading Interval 11:1
Dispatch Advisory Number	17817 and a manual Dispatch Advisory was issued at 9:11am.
Details	AEMO experienced IT issues, which affected the SOCCUI and other automated systems. There was potential for the IT issues to prevent AEMO from issuing Dispatch Instructions to Market Participants electronically.
System Management action	AEMO relocated some of its control functions to the backup control centre. AEMO issued Dispatch Instructions based on the most recent Balancing Merit Order available.

6.2 Emergency Operating State

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

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

Date/Interval/s	14 May 2018 / Trading Interval 19:1 to Trading Interval 20:1
Dispatch Advisory Number	17806
Details	An unscheduled Western Power IT network outage affected the normal operation of the SOCCUI and other automated systems. The AEMO controller was required to relocate to the backup control centre to manage frequency control.
System Management action	AEMO issued a manual Dispatch Advisory at 7:46pm, advising Market Participants to contact the AEMO control room if they received any unexpected Dispatch Instructions. AEMO continued to dispatch based on the most recent Balancing Merit Order available. DA17805, issued at 12:39am on 15 May 2018, advised Market Participants that the AEMO controllers had relocated back to the primary control centre.





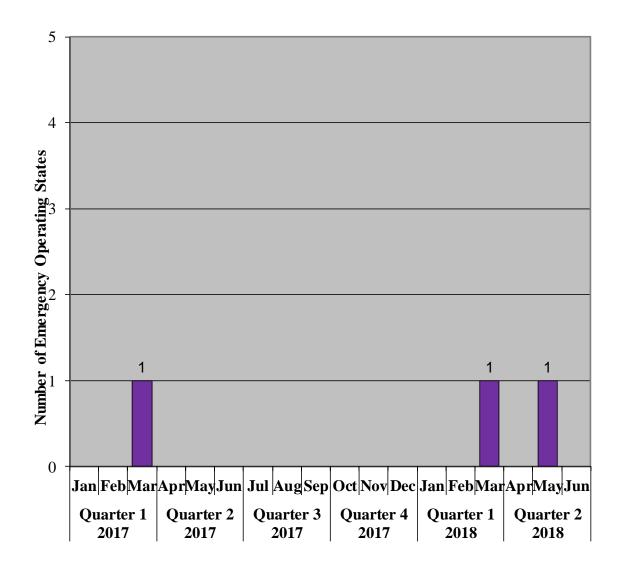


Figure 6: Number of Emergency Operating States

6.3 Shortfalls in Ancillary Services

There were 369 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.





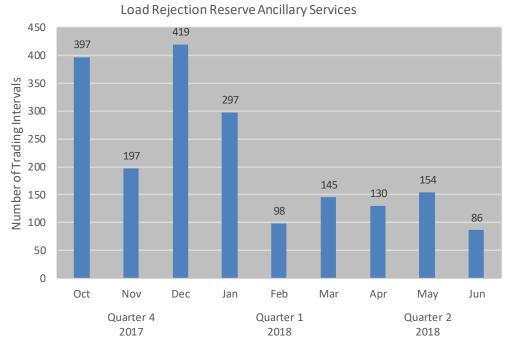


Figure 7: Number of Shortfalls in Ancillary Services²

The 370 instances related to the Load Rejection Reserve Service. 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.

Figure 7 above indicates the number of Trading Intervals during the reporting period where there was a shortfall in Ancillary Services. 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.

The primary cause of these shortfalls is the steadily decreasing daytime system load. While the daily peak remains largely unchanged, the increase in rooftop PV and other factors has reduced the daily minimum load to unprecedented levels. In these situations, maintaining the required level of Load Rejection Reserve is difficult and, to maintain Power System Security and Power System Reliability and minimise costs to the Wholesale Electricity Market, no action is often the best response.

AEMO has modified its processes to dispatch the Balancing Portfolio to meet the Load Rejection Reserve requirements where possible. AEMO is also re-considering the Load Rejection Reserve Requirement and investigating possible alternatives for the provision of Load Rejection Reserve. The current Ancillary Services Requirement has set a minimum requirement of 120MW for Load Rejection Reserve and allows that amount to be relaxed by 25% to 90MW in situations where AEMO considers that the probability of transmission faults is low.

² Data is based on the number of Trading Intervals where Load Rejection Reserve of less than 90MW occurred, calculated using five-minute averages.





6.4 Involuntary curtailment of load

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

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

During the reporting period, there were no 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.