STATUS REPORT

Prepared under clause 7.12 of the WEM Rules

1 July 2018 to 30 September 2018

AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

CONTENTS

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 July 2018 to 30 September 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 9,866 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 April 2017.

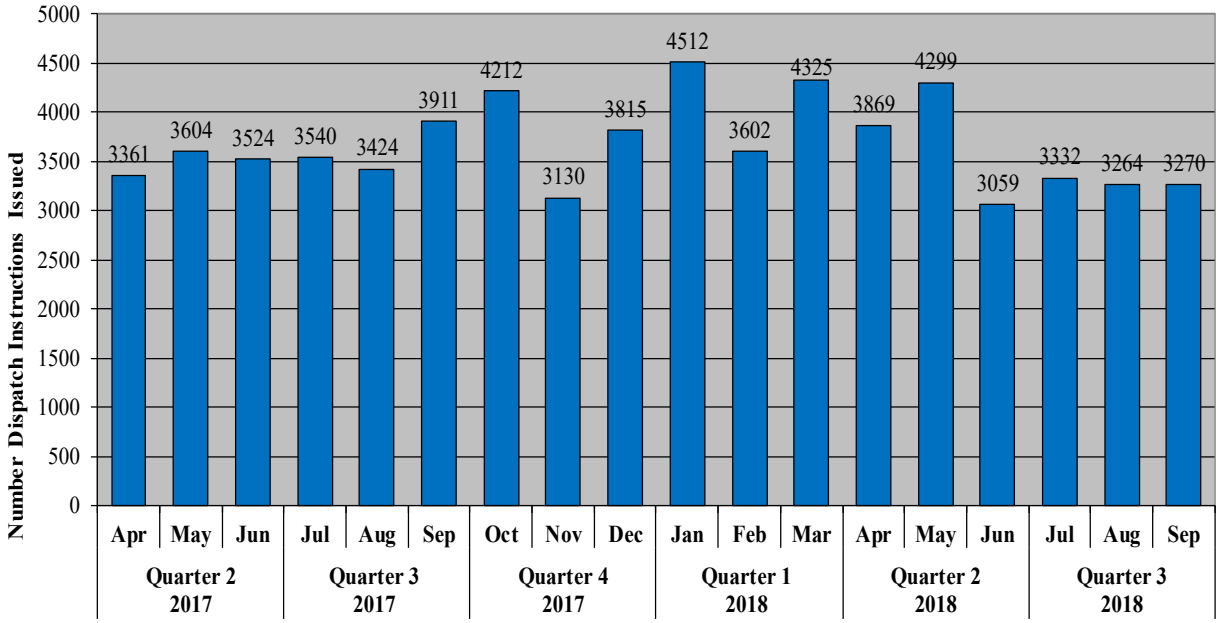

***Figure 1*: Dispatch Instructions per Trading Month**

AEMO issued 24 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 April 2017.

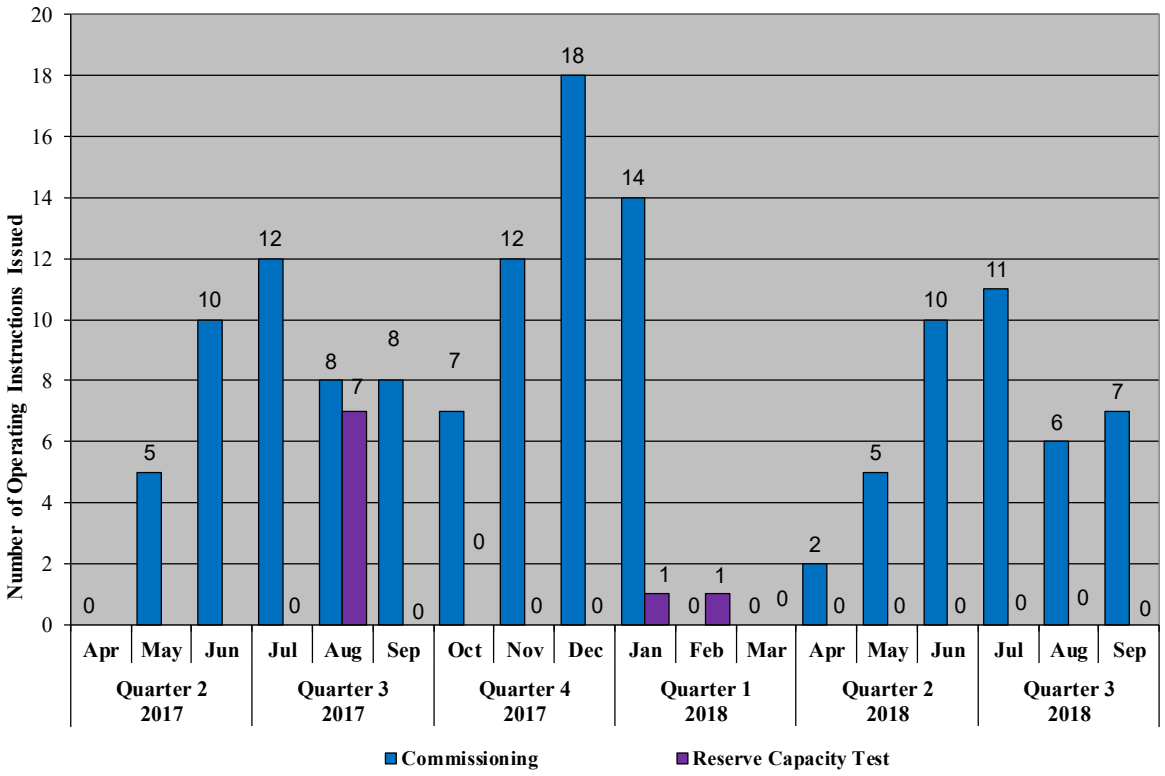

***Figure 2*: Operating Instructions per Trading Month**

3. Non-Compliance with Dispatch Instructions and Operating Instructions

During the reporting period, AEMO issued 10,071 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 95 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 April 2017.

Figure 3: **Dispatch Instruction non-compliance notifications**

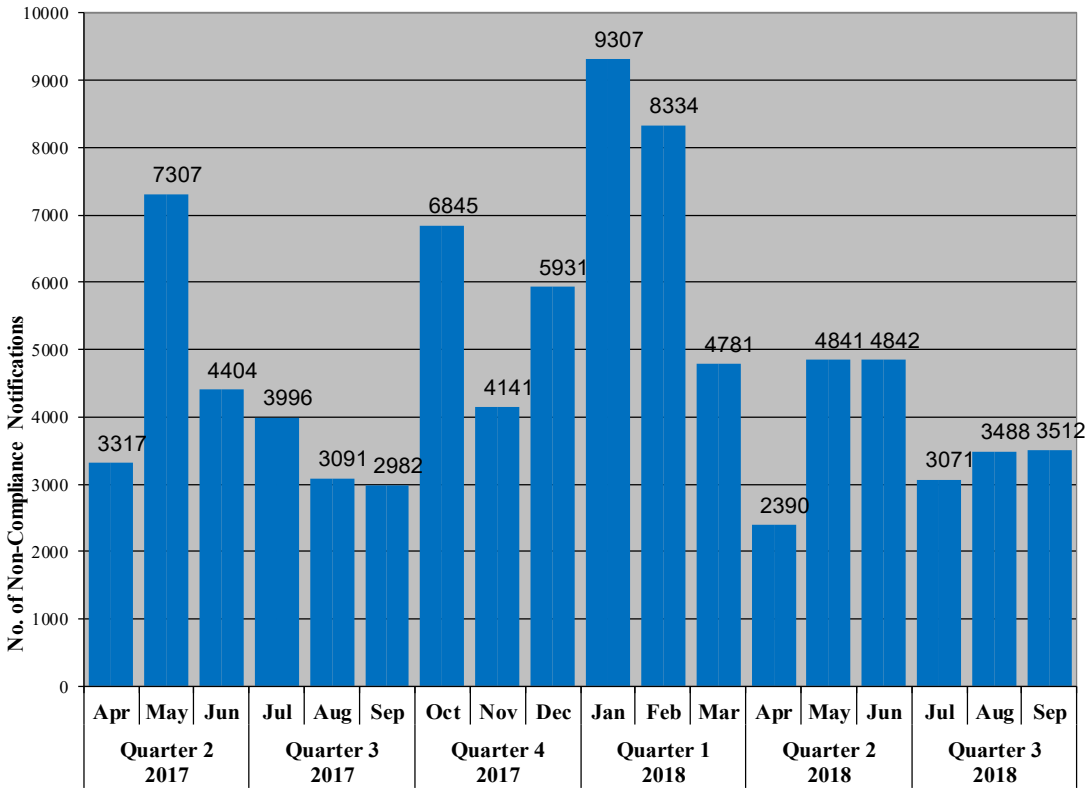

Figure 4 below provides historical non-acknowledgement data for Dispatch Instructions since 1 April 2017.

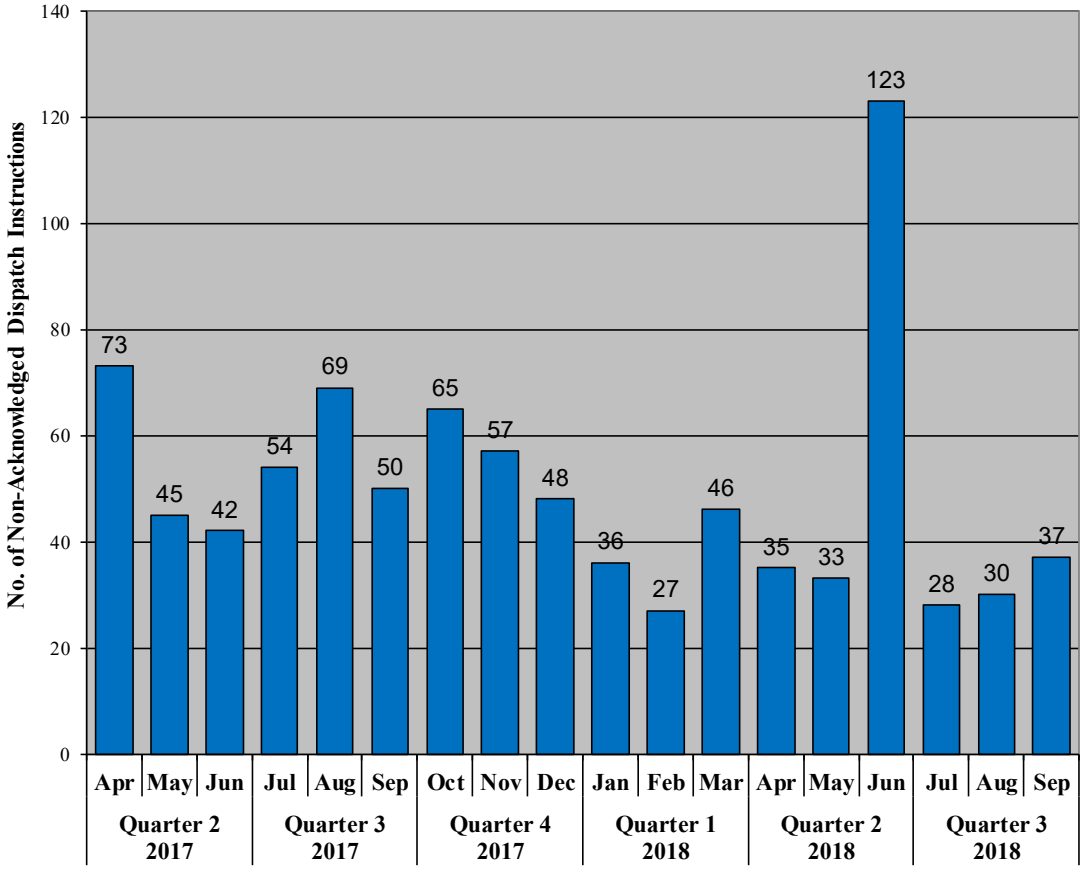

Figure 4: **Non-acknowledged Dispatch Instructions**

4. 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]

There was an instance where a Dispatch Instruction was issued to a Balancing Facility Out of Merit, that occurred in the previous reporting period. This has been included in this report as it was not captured in the previous report.

[1] 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.

Date/Interval/s	31 May 2018[2] / Trading Interval 9:2 to Trading Interval 12:1
Details	A Facility updated their Balancing Submissions to reflect full unavailability. AEMO partially constrained on the Facility resulting in a Dispatch Instruction that was greater than the Facility's Balancing Submission available quantity. The Facility later updated their Balancing Submissions with partial availability and AEMO removed the constraint.
AEMO action	AEMO constrained on the Facility to when the Facility's Balancing submissisons were at 0MW.

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.

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 13:2 to Trading Interval 14:2 on 24 July 2018, an issue with the Anti-Islanding scheme on the Eastern Goldfields supply, resulted in the need to constrain the STHRNCRS_EG Facility (Dispatch Advisory 17948).
  - The STHRNCRS_EG Facility was constrained to 15MW for 3 Trading Intervals.

- From Trading Interval 5:1 to Trading Interval 17:2 on 22 August 2018, the Eastern Goldfields region was islanded, due to a Planned Network Outage, resulting in the need to constrain on the PRK_AG Facility (Dispatch Advisory 18049).
  - The PRK_AG Facility was constrained on, between 1MW and 35MW for 26 Trading Intervals

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

6.1 High Risk Operating State

There were 3 instances of a High Risk Operating State during the reporting period.

[2] This date falls outside of the reporting period, however, was not captured in the previous report.

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

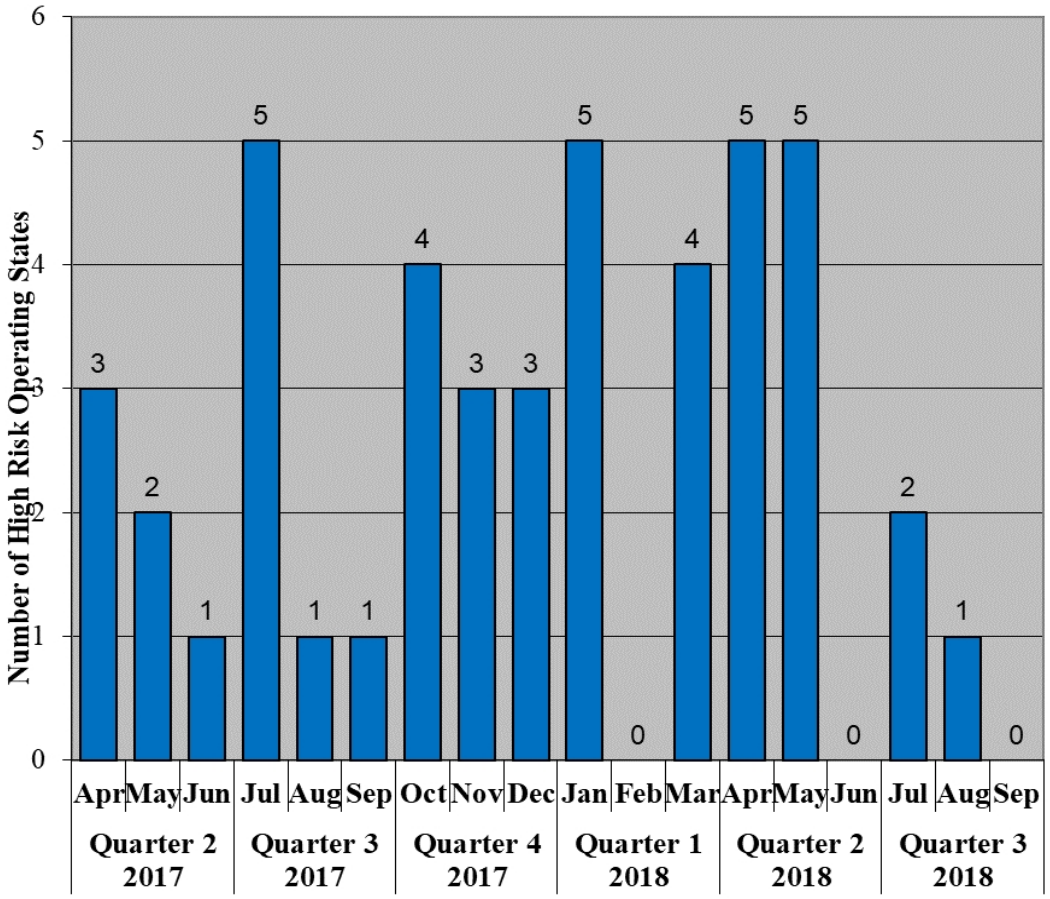

Figure 5: **Number of High Risk Operating States**

Date/Interval/s	29 July 2018 / Trading Interval 6:1
Dispatch Advisory Number	17968
Details	At 06:00 BW1_BLUEWATERS_G2 tripped, resulting in the loss of approximately 158MW and a frequency deviation to 49.36Hz. Frequency returned to a Normal Operating level within one minute of the unit 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.

Date/Interval/s	31 July 2018 / Trading Interval 7:1 to 17:1
Dispatch Advisory Number	17971

Details	An unplanned Western Power IT network outage resulted in AEMO experiencing IT issues affecting the Balancing Merit Order, Market Participant Interface Functionality and other file transfers systems.
AEMO action	AEMO issued Dispatch according to the latest accessible Balancing Merit Order to maintain Power System Security and Power System Reliability.

Date/Interval/s	1 August 2018 / Trading Interval 19:2
Dispatch Advisory Number	17987
Details	At 19:40 the BW1_BLUEWATERS_G2 Facility tripped resulting in the loss of approximately 207MW and a frequency deviation to 49.53 Hz. Frequency returned to a Normal Operating level within one minute of the unit 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.

6.2 Emergency Operating State

There was 1 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 April 2017.

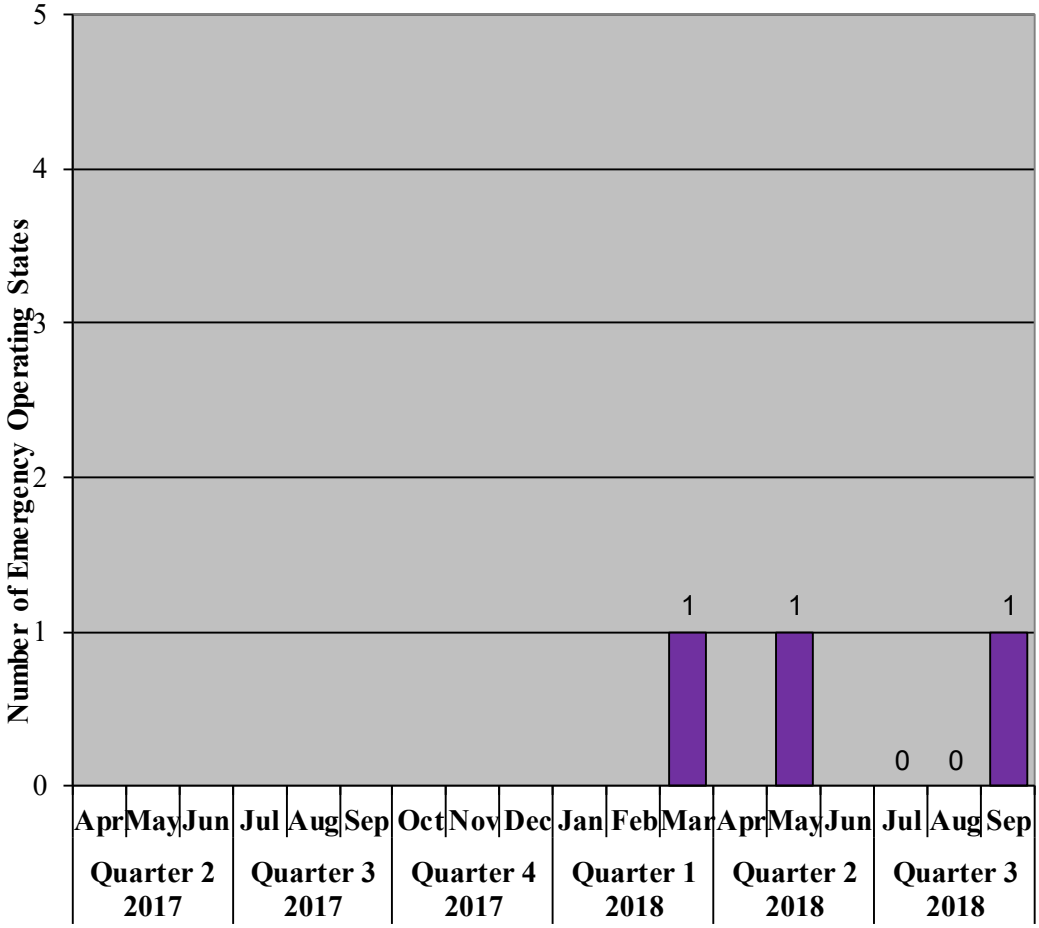

Figure 6: **Number of Emergency Operating States**

Date/Interval/s	17 September 2018 / Trading Interval 18:1
Dispatch Advisory Number	18148
Details	At 18:11 NEWGEN_KWINANA_CCG1 tripped, resulting in a loss of approximately 330MW and a frequency deviation to approximately 49.01Hz. Frequency was returned to Normal Operating Level by 18:20.
System Management action	AEMO was required to Dispatch according to the latest Balancing Merit Order to maintain Power System Security and Power System Reliability. No Out of Merit generation was required.

6.3 Shortfalls in Ancillary Services

There were 558 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 January 2018.[3]

3 AEMO have identified some instrances where Shortfalls in Ancillary Services were potentially duplicated. Formulas for the graphical representation in Figure 7 have been amended, with duplications in previous quarters now rectified.

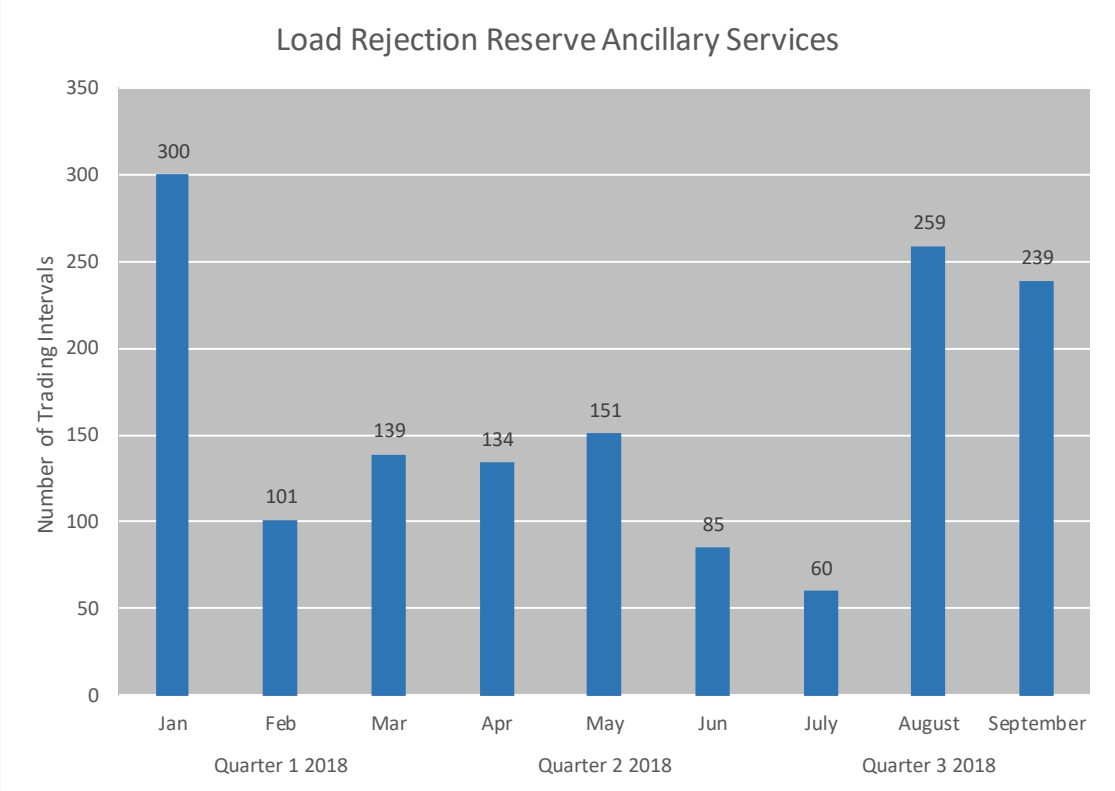

Figure 7: **Number of Shortfalls in Ancillary Services**[4]

The 558 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 increased number of instances of low Load Rejection Reserve during August and September can be attributed to multiple factors. A large number of shortfalls within the period occurred during times when the there was a discrepancy in forecasting. Instances often occurred overnight, when load was low and where less units were available to contribute to the Load Rejection Reserve, or during the day where there were 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.

[4] 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 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.