



---

# STATUS REPORT

---

**1 October 2020 to 31 December 2020**

Prepared under clause 7.12 of the WEM Rules

---

# Contents

<b>1.</b>	<b>Introduction</b>	<b>3</b>
<b>2.</b>	<b>Issuance of Dispatch Instructions and Operating Instructions</b>	<b>4</b>
<b>3.</b>	<b>Non-Compliance with Dispatch Instructions and Operating Instructions</b>	<b>5</b>
<b>4.</b>	<b>Issuance of Dispatch Instruction to Balancing Facilities Out of Merit</b>	<b>6</b>
4.1	Instances of Out of Merit dispatch identified by AEMO	6
4.2	Other instances of Out of Merit dispatch	6
<b>5.</b>	<b>Transmission Constraints</b>	<b>6</b>
<b>6.</b>	<b>Operating States, Shortfalls in Ancillary Services and Involuntary Curtailment of Load</b>	<b>7</b>
6.1	High Risk Operating State	7
6.2	Emergency Operating State	9
6.3	Shortfalls in Ancillary Services	10
6.4	Involuntary curtailment of load	11
<b>7.</b>	<b>Selection and use of LFAS Facilities other than in accordance with LFAS Merit Order</b>	<b>12</b>

# 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.

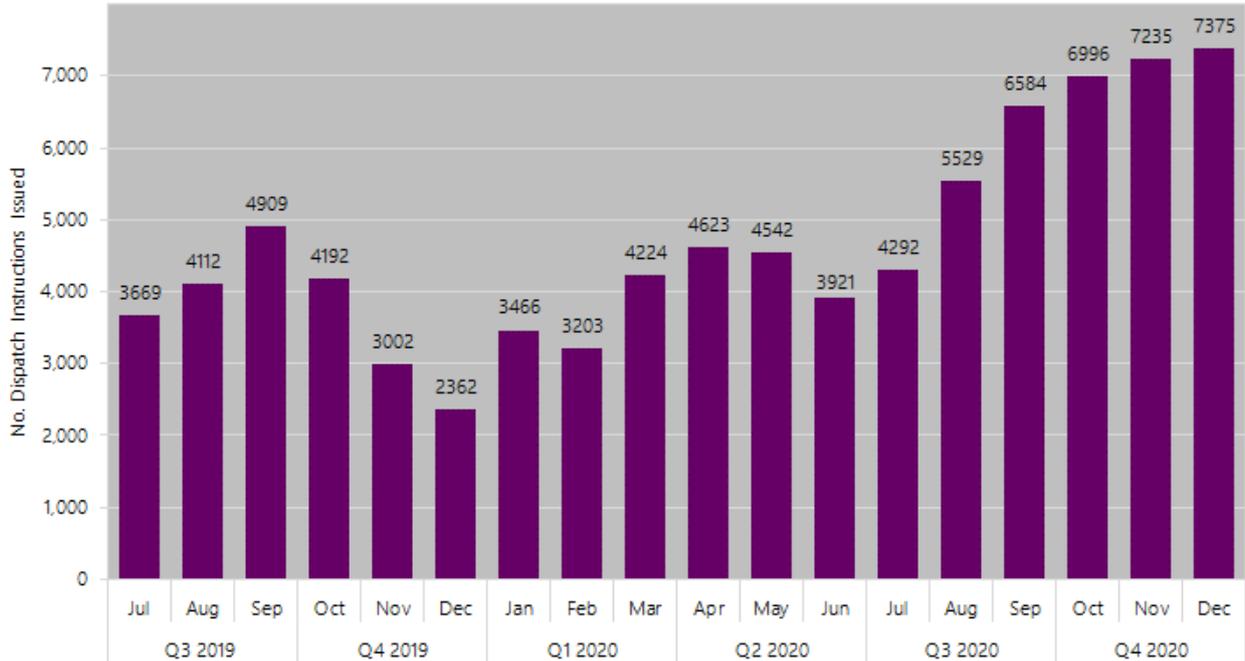
In this report:

- the reporting period is from 1 October 2020 to 31 December 2020;
- 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 21,606 Dispatch Instructions to Market Participants during the reporting period.

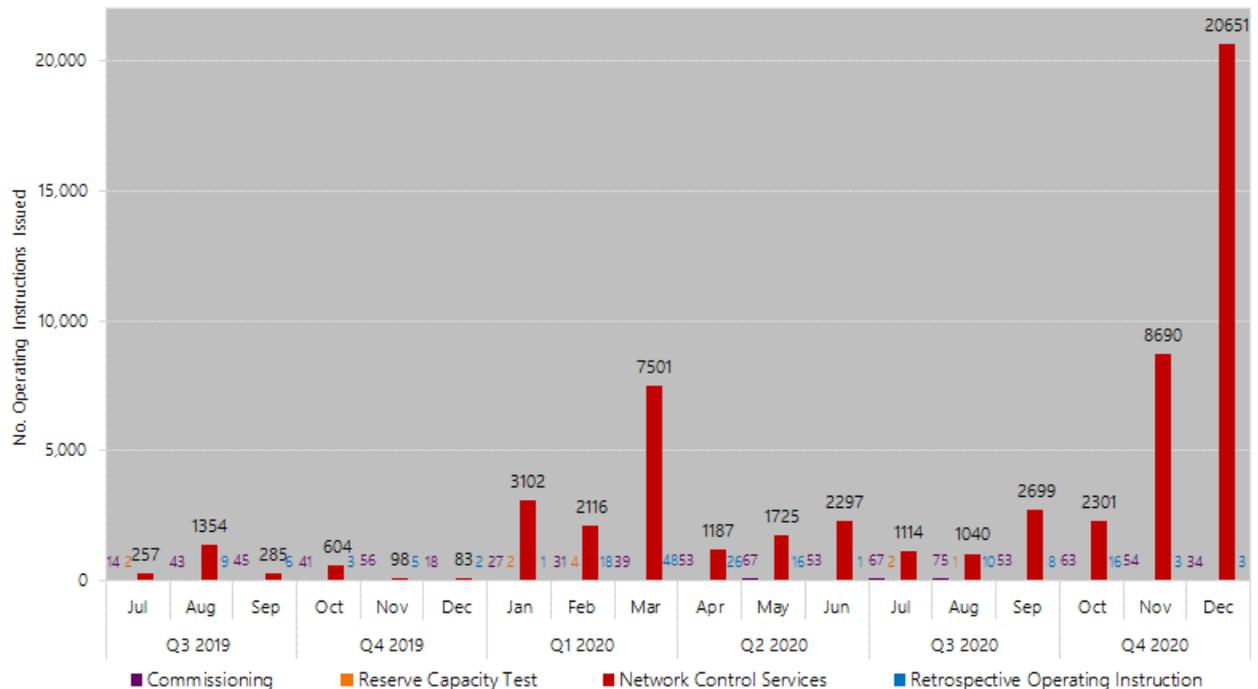
Figure 1: Dispatch Instructions issued during each Trading Month since 1 July 2019.



AEMO issued 31,815 Operating Instructions during the reporting period.

Four situations where AEMO may issue Operating Instructions under the WEM Rules are for Commissioning Tests, Reserve Capacity Tests, provision of services under the Network Control Service Contracts and issuance of retrospective Operating Instructions pursuant to clause 7.7.11.

Figure 2: Operating Instructions issued during each Trading Month since 1 July 2019.



### 3. Non-Compliance with Dispatch Instructions and Operating Instructions<sup>1</sup>

During the reporting period, AEMO issued the following one-minute non-compliance notifications to Market Participants; taking into account the Tolerance Range, and any Facility Tolerance Ranges, where applicable:

- 9,874 Dispatch Instruction non-compliance notifications, and
- 606 Operating Instructions non-compliance notifications.

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

- 129 instances of non-acknowledgement of Dispatch Instructions, and
- 603 instances of non-acknowledgement of Operating Instructions.

Figure 3: Dispatch Instruction non-compliance notifications since 1 July 2019.

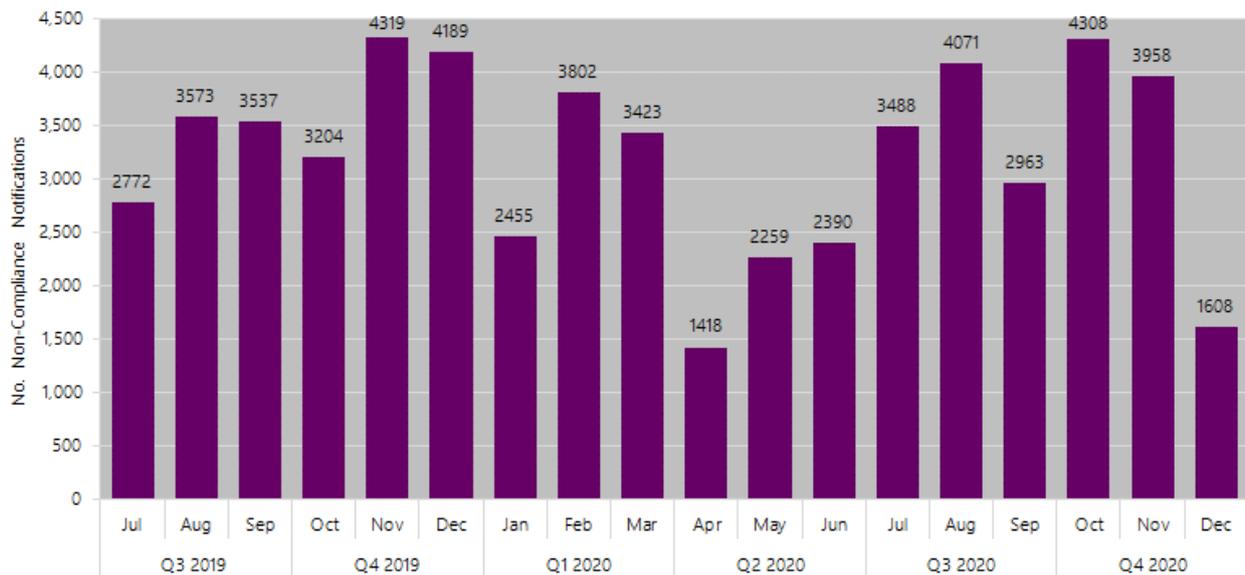
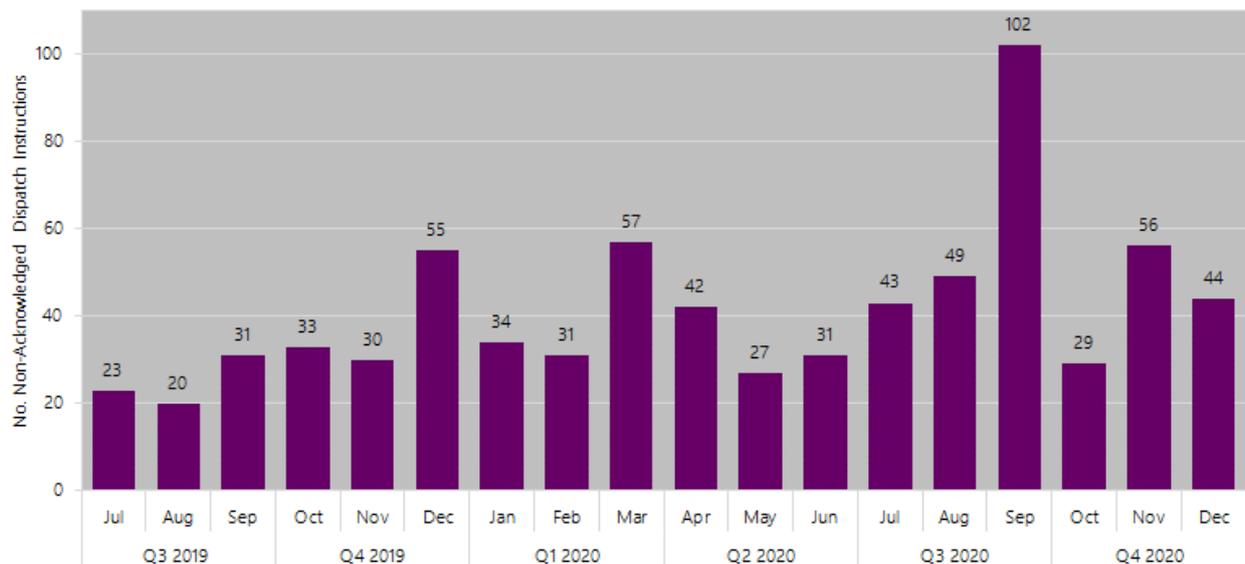


Figure 4: Non-acknowledgement of Dispatch Instructions since 1 July 2019.



<sup>1</sup> 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.

## 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, no instances were identified where Dispatch Instructions were issued to Balancing Facilities Out of Merit<sup>2</sup>.

### 4.2 Other instances of Out of Merit dispatch

Section 5 of this report includes 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 9:1 to Trading Interval 12:1 on 8 Oct 2020, a network outage on the WWF806.0 Circuit Breaker resulted in the need to constrain the ALINTA\_WWF Facility (Dispatch Advisory 207406).
- From Trading Interval 16:2 to Trading Interval 19:1 on 22 Oct 2020, a trip on the KW-NT91 330kV line resulted in the need to constrain the NEWGEN\_KWINANA\_CCG1 Facility (Dispatch Advisory 207461).
- From Trading Interval 7:2 to Trading Interval 17:1 on 23 Nov 2020, a trip on the TS-MGA81 line resulted in the need to constrain the MWF\_MUMBIDA\_WF1 Facility (Dispatch Advisory 207561).
- From Trading Interval 7:2 to Trading Interval 17:1 on 23 Nov 2020, a trip on the TS-MGA81 line resulted in the need to constrain the ALINTA\_WWF Facility (Dispatch Advisory 207561).
- From Trading Interval 10:1 to Trading Interval 14:2 on 12 Dec 2020, a network outage on the MGA-TS81 line resulted in the need to constrain the MWF\_MUMBIDA\_WF1 Facility (Dispatch Advisory 207641).
- From Trading Interval 10:1 to Trading Interval 14:2 on 12 Dec 2020, a network outage on the MGA-TS81 line resulted in the need to constrain the ALINTA\_WWF Facility (Dispatch Advisory 207641).
- From Trading Interval 17:2 to Trading Interval 20:2 on 30 Dec 2020, a contingency analysis violation in the Pinjarra area resulted in the need to constrain the ALINTA\_PNJ\_U1 Facility (Dispatch Advisory 207683).

---

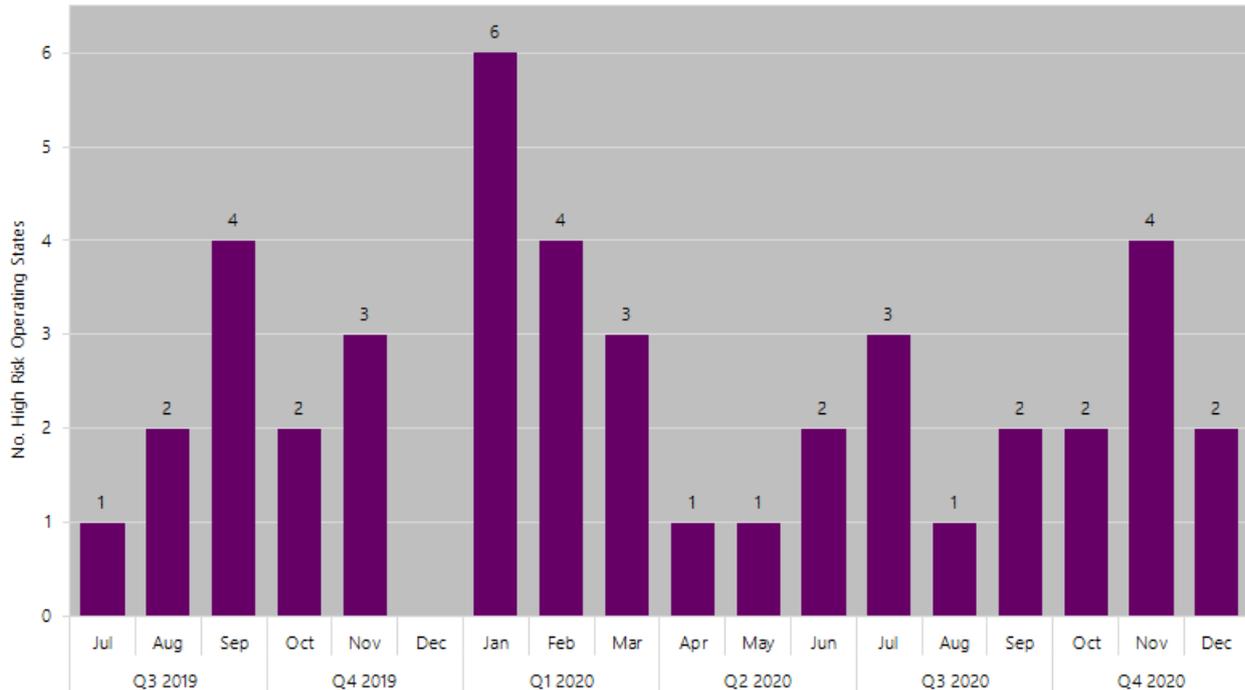
<sup>2</sup> 7.6.1D of the WEM Rules provides for Out of Merit dispatch to avoid a High Risk Operating State or an Emergency Operating State or, if the SWIS is in a High Risk Operating State or an Emergency Operating State, to enable the SWIS to be returned to a Normal Operating State.

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

### 6.1 High Risk Operating State

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

Figure 5: High Risk Operating States that have occurred since 1 July 2019.



Date/Interval/s	13 Oct 2020 / Trading Interval 8:1 to Trading Interval 9:1
Dispatch Advisory #	207422
Details	AEMO experienced degradation of its IT systems
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

Date/Interval/s	22 Oct 2020 / Trading Interval 16:1 to Trading Interval 17:2
Dispatch Advisory #	207461
Details	At 16:25 the NEWGEN_KWINANA_CCG1 Facility tripped, resulting in a loss of approximately 231MW and a frequency deviation to 49.46Hz. Frequency returned to a normal operating level within 188 seconds of the Facility tripping.
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

## STATUS REPORT

Date/Interval/s	4 Nov 2020 / Trading Interval 0:1
Dispatch Advisory #	207501
Details	At 00:12 the YANDIN_WF1 Facility tripped, resulting in a loss of approximately 160MW and a frequency deviation to 49.67Hz. Frequency returned to a normal operating level within 30 seconds of the Facility tripping.
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

Date/Interval/s	4 Nov 2020 / Trading Interval 19:2 to Trading Interval 23:1
Dispatch Advisory #	207503
Details	At 19:59 the YANDIN_WF1 Facility tripped, resulting in a loss of approximately 155MW and a frequency deviation to 49.315Hz. Frequency returned to a normal operating level within 30 seconds of the Facility tripping.
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

Date/Interval/s	17 Nov 2020 / Trading Interval 10:2
Dispatch Advisory #	207542
Details	At 10:52 the ALINTA_WGP_GT Facility tripped, resulting in a loss of approximately 113MW and a frequency deviation to 49.65Hz. Frequency returned to a normal operating level within 10 seconds of the Facility tripping.
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

Date/Interval/s	24 Nov 2020 / Trading Interval 13:1
Dispatch Advisory #	207562
Details	At 13:09 the ALINTA_WGP_U2 Facility tripped, resulting in a loss of approximately 173MW and a frequency deviation to 49.47Hz. Frequency returned to a normal operating level within 72 seconds of the Facility tripping.
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

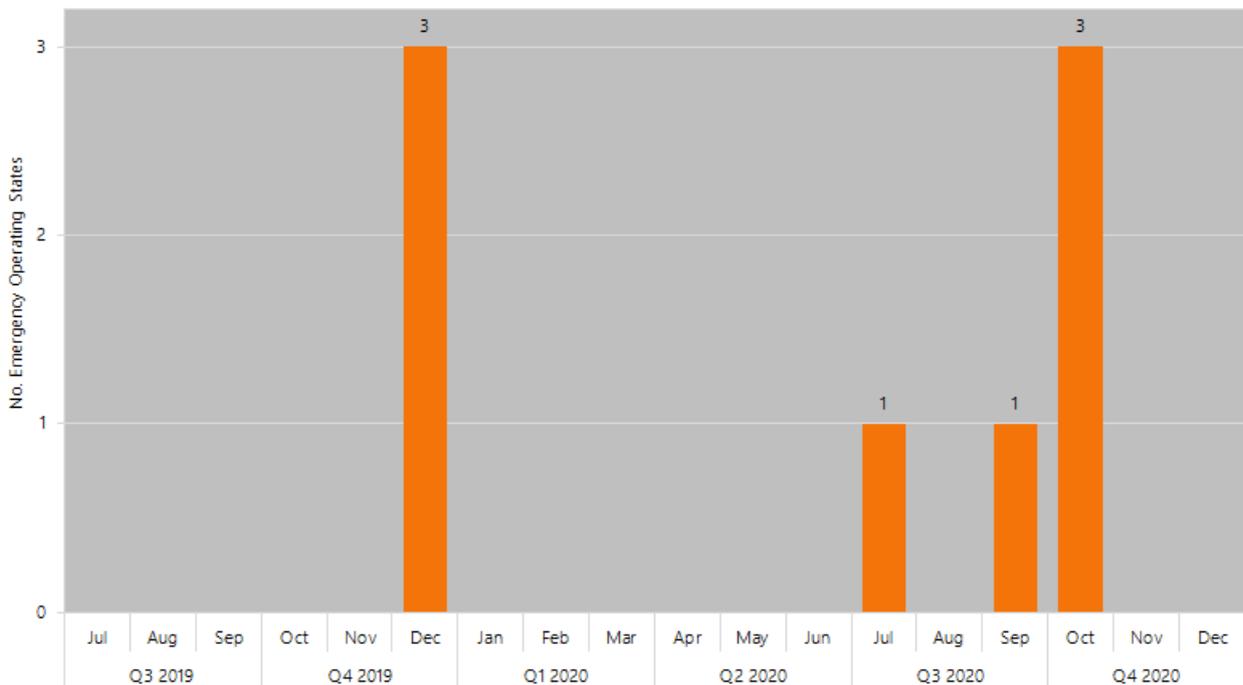
Date/Interval/s	26 Nov 2020 / Trading Interval 10:2
Dispatch Advisory #	207662
Details	At 10:49 the BW2_BLUEWATERS_G1 Facility tripped, resulting in a loss of approximately 140MW and a frequency deviation to 49.66Hz. Frequency returned to a normal operating level within 8 seconds of the Facility tripping.
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

Date/Interval/s	30 Dec 2020 / Trading Interval 1:1 to Trading Interval 3:1
Dispatch Advisory #	207681
Details	AEMO experienced IT issues affecting the operation of the Real Time Dispatch Engine (RTDE).
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

## 6.2 Emergency Operating State

There were three instances of an Emergency Operating State during the reporting period.

Figure 6: Emergency Operating States that have occurred since 1 July 2019.



Date/Interval/s	10 Oct 2020 / Trading Interval 2:1
Dispatch Advisory #	207407
Details	AEMO was required to evacuate the primary operational facility as a result of an activation of building fire alarm systems.
AEMO Action	AEMO was required to hand over frequency control.
Date/Interval/s	13 Oct 2020 / Trading Interval 7:1 to Trading Interval 8:2
Dispatch Advisory #	207421 – 22 to HR
Details	AEMO experienced degradation of its IT systems
AEMO Action	AEMO was required to hand over frequency control.
Date/Interval/s	17 Oct 2020 / Trading Interval 14:2 to Trading Interval 14:2
Dispatch Advisory #	207441
Details	Due to a trip of the NBT-YDT91, YDT-ENT91 and NT-NDT91 330kV lines, at 14:51 the WARRADARGE_WF1, YANDIN_WF1 and MERSOLAR_PV1 Facilities tripped, resulting in a loss of approximately 170MW and a frequency deviation to 49.196Hz. Frequency returned to a normal operating level within 106 seconds of the Facility tripping.
AEMO Action	AEMO was required to dispatch according to the latest available Balancing Merit Order to maintain Power System Security and Power System Reliability. There was no Out of Merit generation required.

### 6.3 Shortfalls in Ancillary Services

During the reporting period there were 98 instances of a shortfall in Ancillary Services. A shortfall occurs when the Ancillary Service Requirements are not met within a Trading Interval.

#### 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 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.

During the reporting period 94 instances related shortfall were reported related to shortfalls of Load Rejection Reserve Service<sup>3</sup>. The majority of shortfalls occurred during periods of high volatility of wind and 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.

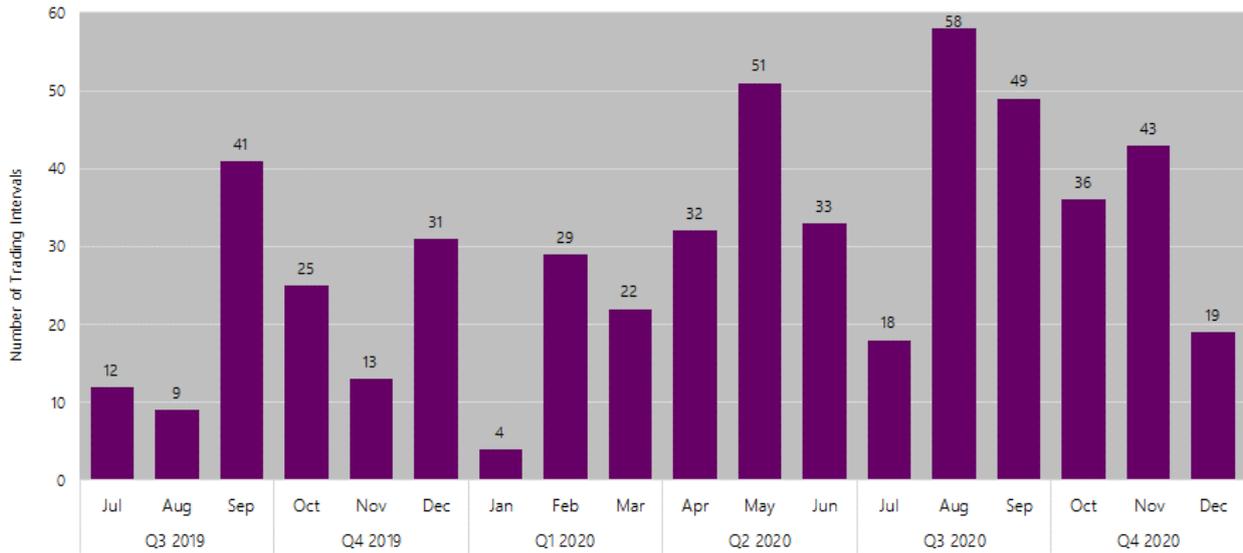
<sup>3</sup> As outlined in [AEMO's Ancillary Services Report for the WEM 2020](#), AEMO has been conducting a Load Rejection Reserve (LRR) trial using a dynamic requirement in real time. The dynamic formulation incorporates physical aspects of the power system, including setting the upper limit of the LRR requirement based on the largest credible contingency in real time. Data is based on the number of Trading Intervals where Load Rejection Reserve was less than the dynamic requirement, calculated using five-minute averages within a Trading Interval.

Load Following Ancillary Services (LFAS)

For every Trading Interval, System Management must activate each LFAS Facility for its full upward and downward LFAS Enablement to satisfy the LFAS Enablement Schedule. During the reporting period 4 instances of LFAS Enablement shortfall were reported.

None of the shortfalls placed the SWIS in a High Risk Operating State or an Emergency Operating State as defined under WEM Rule 3.4.1.

Figure 7: Shortfalls in Ancillary Services that have occurred since 1 July 2019.



Note. Six additional LFAS Enablement shortfalls were reported for September 2020 after that quarter's end.

### 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 five instances where AEMO was required to use Load Following Ancillary Services (LFAS) Facilities outside of the LFAS Enablement Schedule to operate the SWIS in a reliable and safe manner under clause 7B.3.8 of the WEM Rules.

Date/Interval/s	6 Oct 2020 / Trading Interval 13:2 to Trading Interval 14:1
Dispatch Advisory #	207403
Details	AEMO required additional LFAS due to the ALINTA_PNJ_U2 Facility being unable to provide LFAS as per the LFAS Merit Order.
AEMO Action	AEMO was required to activate LFAS from the Backup LFAS Provider to maintain Power System Security and Power System Reliability.

Date/Interval/s	22 Oct 2020 / Trading Interval 16:1 to Trading Interval 20:2
Dispatch Advisory #	207462
Details	AEMO required additional LFAS due to the NEWGEN_KWINANA_CCG1 Facility being unable to provide LFAS as per the LFAS Merit Order.
AEMO Action	AEMO was required to activate LFAS from the Backup LFAS Provider to maintain Power System Security and Power System Reliability.

Date/Interval/s	4 Nov 2020 / Trading Interval 10:2 to Trading Interval 19:2
Dispatch Advisory #	207502
Details	AEMO required additional LFAS due to the ALINTA_PNJ_U1 Facility being unable to provide LFAS as per the LFAS Merit Order.
AEMO Action	AEMO was required to activate LFAS from the Backup LFAS Provider to maintain Power System Security and Power System Reliability.

Date/Interval/s	26 Dec 2020 / Trading Interval 8:2 to Trading Interval 11:1
Dispatch Advisory #	207661
Details	AEMO required additional LFAS due to fluctuations in frequency as a result of PV volatility.
AEMO Action	AEMO was required to activate LFAS from the Backup LFAS Provider to maintain Power System Security and Power System Reliability.

Date/Interval/s	27 Dec 2020 / Trading Interval 9:1 to Trading Interval 9:2
Dispatch Advisory #	207663
Details	AEMO required additional LFAS due to the NEWGEN_KWINANA_CCG1 Facility being unable to provide LFAS as per the LFAS Merit Order.
AEMO Action	AEMO was required to activate LFAS from the Backup LFAS Provider to maintain Power System Security and Power System Reliability.