

Status Report

1 July 2022 to 30 September
2022

Prepared for the ERA 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:

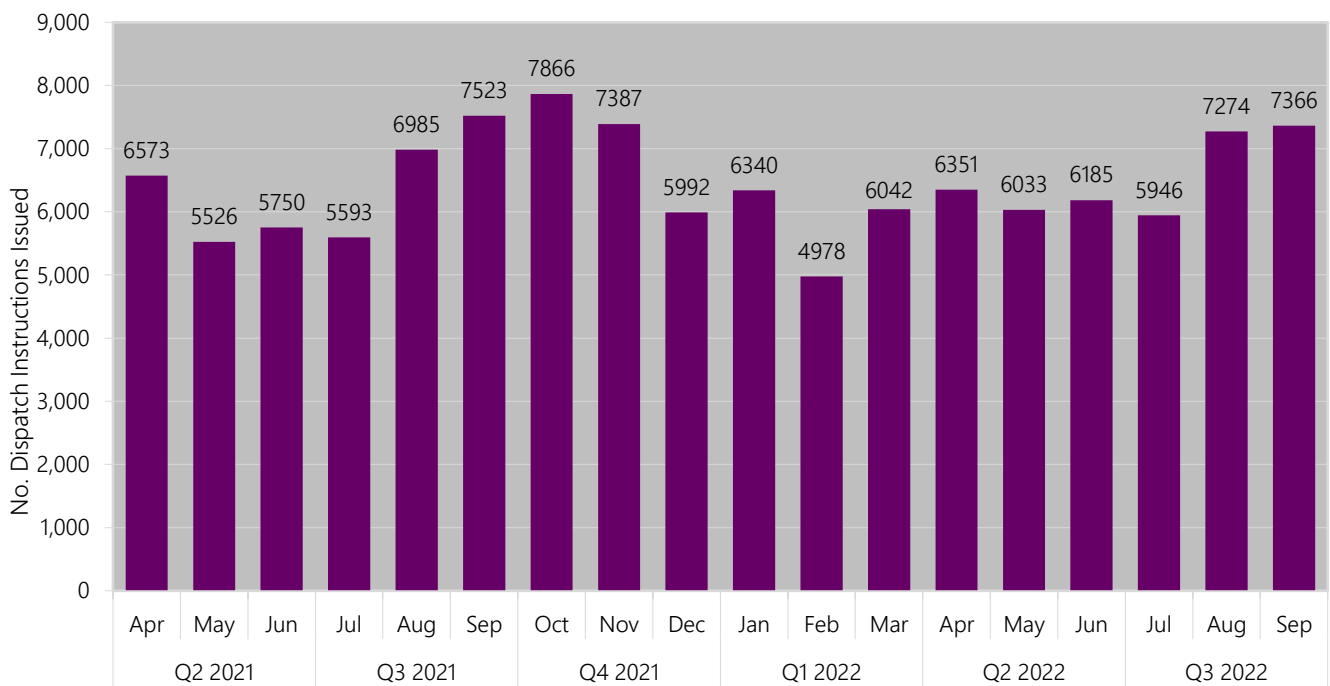
- the reporting period is from 1 July 2022 to 30 September 2022;
- terms that are capitalised but not defined have the meaning given in the WEM Rules; and
- date references are to Trading Days, not calendar days, unless otherwise stated.

2 Issuance of Dispatch Instructions and Operating Instructions

2.1 Dispatch Instructions

AEMO issued 20,586 Dispatch Instructions to Market Participants during the reporting period.

Figure 1 Dispatch Instructions issued during each Trading Month since 1 April 2021.

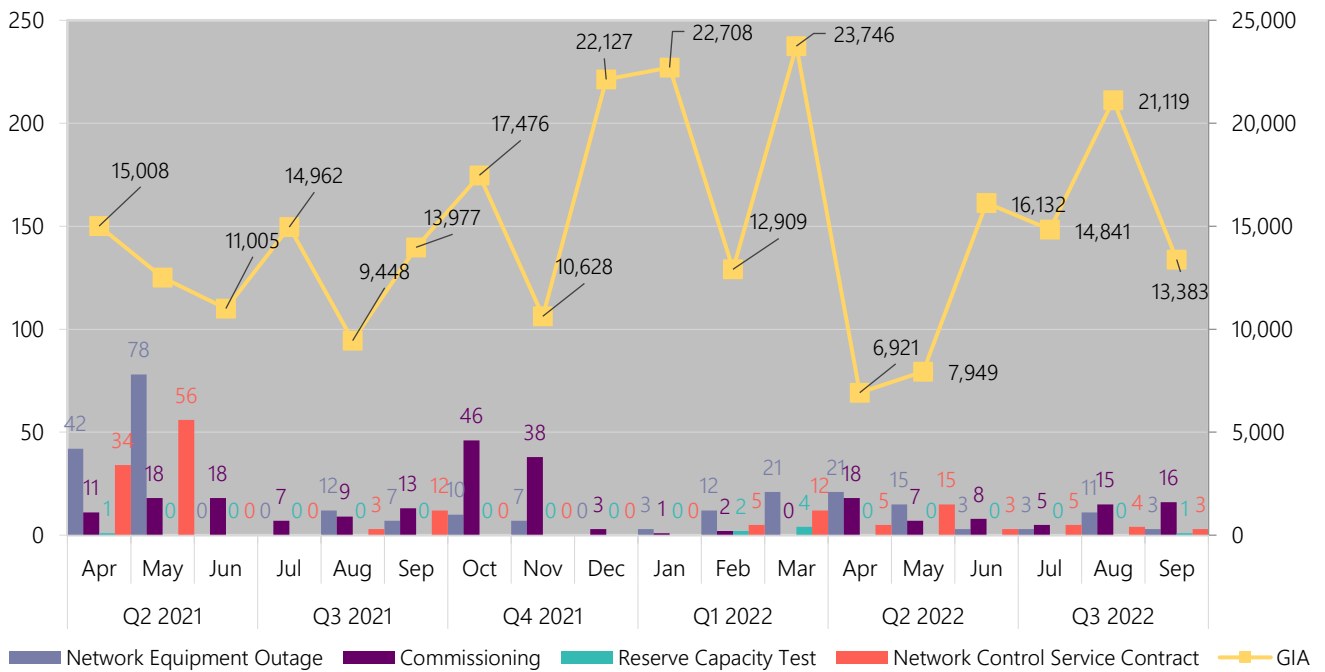


2.2 Operating Instructions

AEMO issued 49,409 Operating Instructions during the reporting period.

Situations where AEMO may issue Operating Instructions under the WEM Rules are for Commissioning Tests, Reserve Capacity Tests, Network Equipment Outages (pursuant to clause 7.7.11.) and provision of services under the Network Control Service Contracts and Generator Interim Access (GIA) Operating Instructions.

Figure 2 Operating Instructions¹ issued during each Trading Month since 1 April 2021.



¹ Generator Interim Access (GIA) Operating Instructions are a sub-set of Network Control Service (NCS) Operating Instructions. Figure 2 separates GIA from NCS for clarity.

3 Non-Compliance with Dispatch Instructions and Operating Instructions²

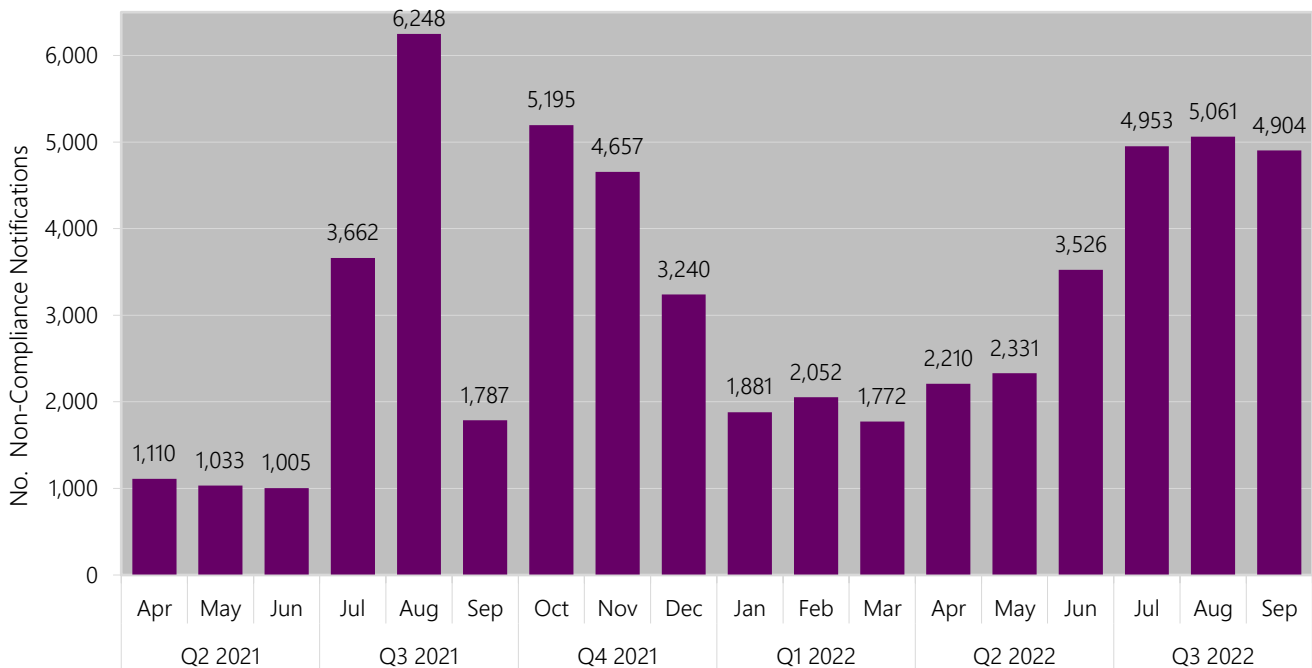
During the reporting period, AEMO issued the following one-minute non-compliance notifications to Market Participants, considering the Tolerance Range and any Facility Tolerance Ranges, where applicable:

- 14,918 Dispatch Instruction non-compliance notifications, and
- 296 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 the WEM Rules:

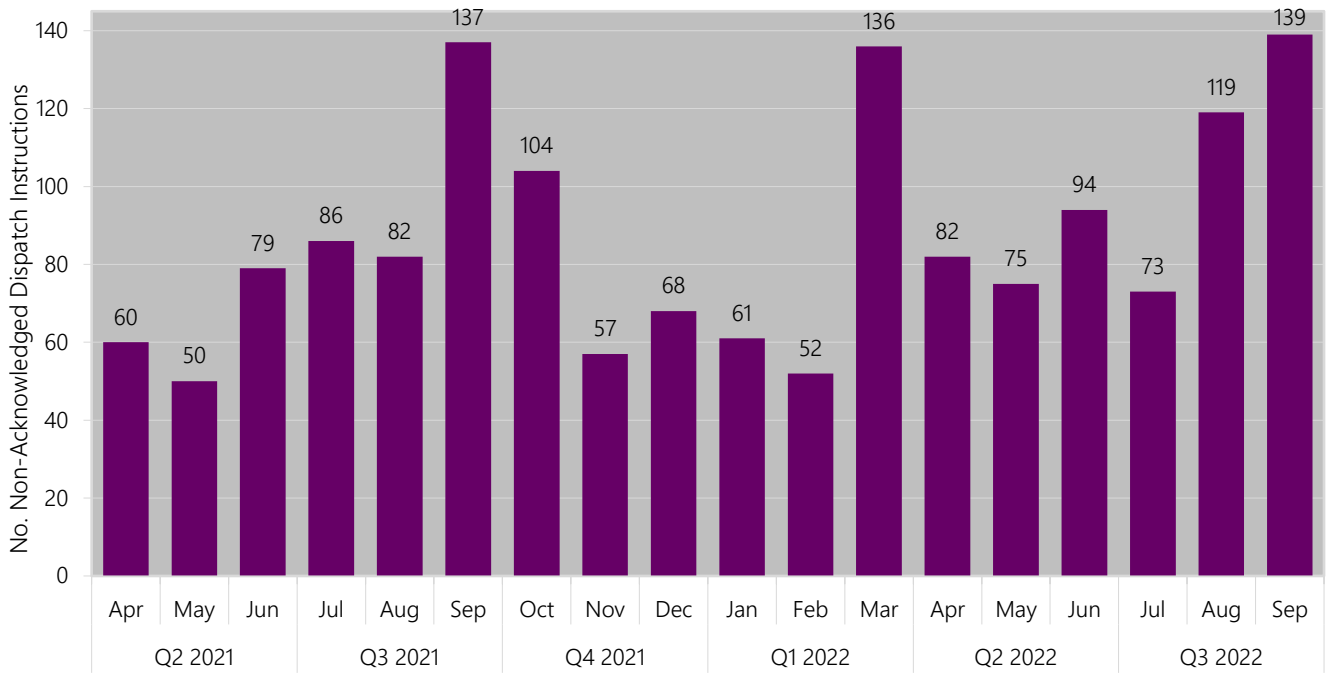
- 331 instances of non-acknowledgement of Dispatch Instructions, and
- 720 instances of non-acknowledgement of Operating Instructions.

Figure 3 Dispatch Instruction non-compliance notifications since 1 April 2021.



² 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-acknowledgement of Dispatch Instructions since 1 April 2021.



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, one instance was identified where Dispatch Instructions were issued to Balancing Facilities Out of Merit.

Date/Interval/s	18 Sep 2022 / Trading Interval 18:1
Dispatch Advisory #	209189
Details	Due to forced outages and to avoid a shortfall in Ancillary Service Requirements, AEMO constrained on the ALINTA_WGP_GT Facility.
AEMO Action	AEMO dispatched Out of Merit to maintain Power System Security and Reliability.

4.2 Other instances of Out of Merit dispatch³

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. Note that 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.

³ 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:

Date/Interval/s	12 Jul 2022 / Trading Interval 17:1
Dispatch Advisory #	209075
Details	A Forced Western Power Network Outage on the ALB-MBR81 transmission line resulted in the need to constrain the ALBANY_WF1 Facility.
Date/Interval/s	Trading Interval 17:1 on 15 Jul 2022 to Trading Interval 14:1 on 16 Jul 2022
Dispatch Advisory #	209077
Details	A Forced Western Power RTU outage resulted in the need to constrain the MWF_MUMBIDA_WF1 Facility.
Date/Interval/s	Trading Interval 16:1 on 2 Aug 2022 to Trading Interval 14:2 on 3 Aug 2022
Dispatch Advisory #	209124
Details	An unplanned Western Power Network Outage on the SNR-APJ-WGP81 line resulted in the need to constrain the ALCOA_WGP Facility.
Date/Interval/s	14 Aug 2022 / Trading Interval 8:1 to Trading Interval 9:2
Dispatch Advisory #	209138
Details	A Western Power Outage at Albany substation resulted in the need to constrain the ALBANY_WF1 Facility.
Date/Interval/s	14 Aug 2022 / Trading Interval 8:1 to Trading Interval 9:2
Dispatch Advisory #	209138
Details	A Western Power Outage at Albany substation resulted in the need to constrain the GRASMERE_WF1 Facility.
Date/Interval/s	14 Aug 2022 / Trading Interval 16:2 to Trading Interval 17:1
Dispatch Advisory #	209140
Details	A Western Power Outage at Albany substation resulted in the need to constrain the ALBANY_WF1 Facility.

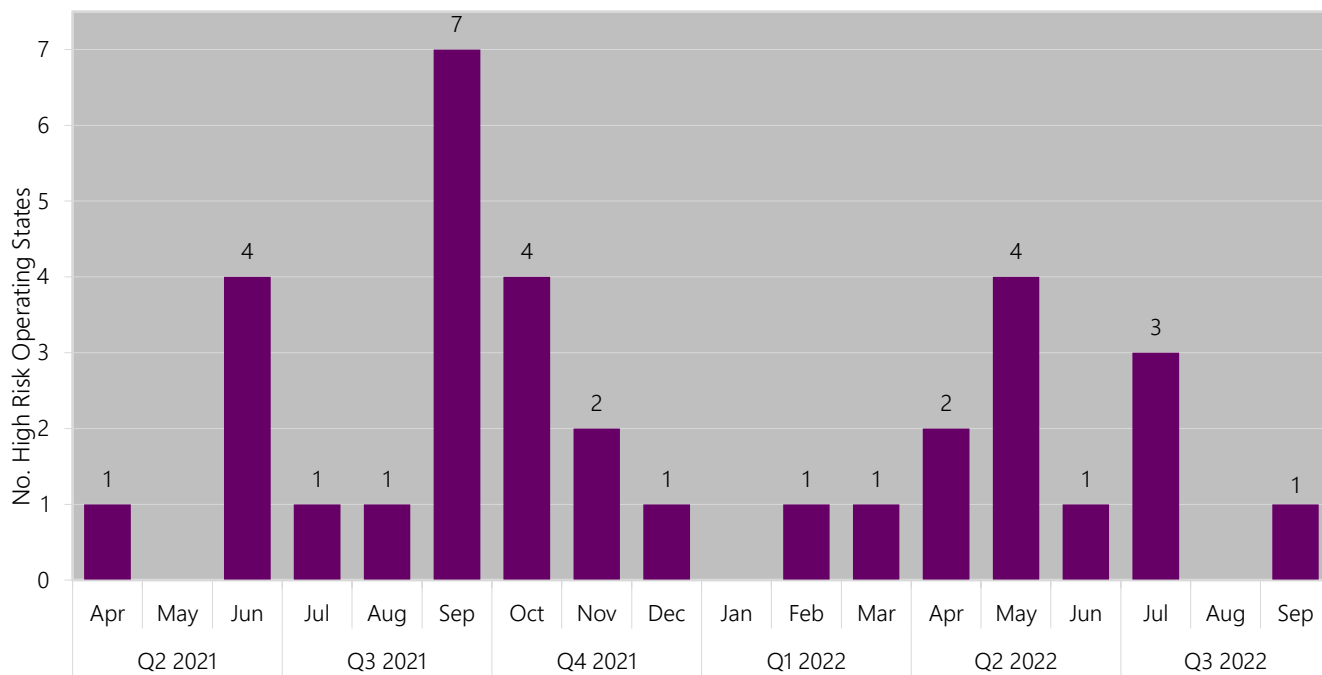
Date/Interval/s	14 Aug 2022 / Trading Interval 16:2 to Trading Interval 17:1
Dispatch Advisory #	209140
Details	A Western Power Outage at Albany substation resulted in the need to constrain the GRASMERE_WF1 Facility.
Date/Interval/s	17 Aug 2022 / Trading Interval 13:1 to Trading Interval 16:1
Dispatch Advisory #	209143
Details	A forced Western Power Network outage on the TST-TS81 line resulted in the need to constrain the BADGINGARRA_WF1 Facility.
Date/Interval/s	25 Aug 2022 / Trading Interval 8:1 to Trading Interval 9:2
Dispatch Advisory #	209153
Details	A planned Western Power Network Outage on the TS BB8X and TSBB8Y busbars resulted in the need to constrain the ALINTA_WWF Facility.
Date/Interval/s	26 Aug 2022 / Trading Interval 8:1 to Trading Interval 13:1
Dispatch Advisory #	209156
Details	A planned Western Power Network Outage on the TS BB8X and TSBB8Y busbars resulted in the need to constrain the ALINTA_WWF Facility.
Date/Interval/s	30 Aug 2022 / Trading Interval 16:1 to Trading Interval 18:2
Dispatch Advisory #	209165
Details	A Forced Western Power Outage on the MGA-MGS line resulted in the need to constrain the GREENOUGH_RIVER_PV1 Facility.
Date/Interval/s	8 Sep 2022 / Trading Interval 9:2 to Trading Interval 10:2
Dispatch Advisory #	209174
Details	A planned Western Power RTU Outage resulted in the need to constrain the ALBANY_WF1 Facility.
Date/Interval/s	8 Sep 2022 / Trading Interval 9:2 to Trading Interval 10:2
Dispatch Advisory #	209174
Details	A planned Western Power RTU Outage resulted in the need to constrain the GRASMERE_WF1 Facility.
Date/Interval/s	13 Sep 2022 / Trading Interval 11:2 to Trading Interval 13:1
Dispatch Advisory #	209182
Details	A planned Western Power RTU Outage resulted in the need to constrain the ALBANY_WF1 Facility.

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

6.1 High Risk Operating State

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

Figure 5 High Risk Operating States that have occurred since 1 April 2021.



Date/Interval/s	7 Jul 2022 / Trading Interval 12:2
Dispatch Advisory #	209057
Details	System Management experienced IT issues affecting the operation of the Real Time Dispatch Engine (RTDE).
AEMO Action	AEMO dispatched according to the latest BMO received to maintain Power System Security and Power System Reliability. IT Support have resolved the issue.

Date/Interval/s	7 Jul 2022 / Trading Interval 14:1 to Trading Interval 20:2
Dispatch Advisory #	209058
Details	At 14:18, NEWGEN_KWINANA_CCG1 tripped resulting in a loss of approximately 238MW. Frequency dropped below 49.68Hz for 30 seconds.
AEMO Action	AEMO dispatched according to the latest BMO received to maintain Power System Security and Power System Reliability.

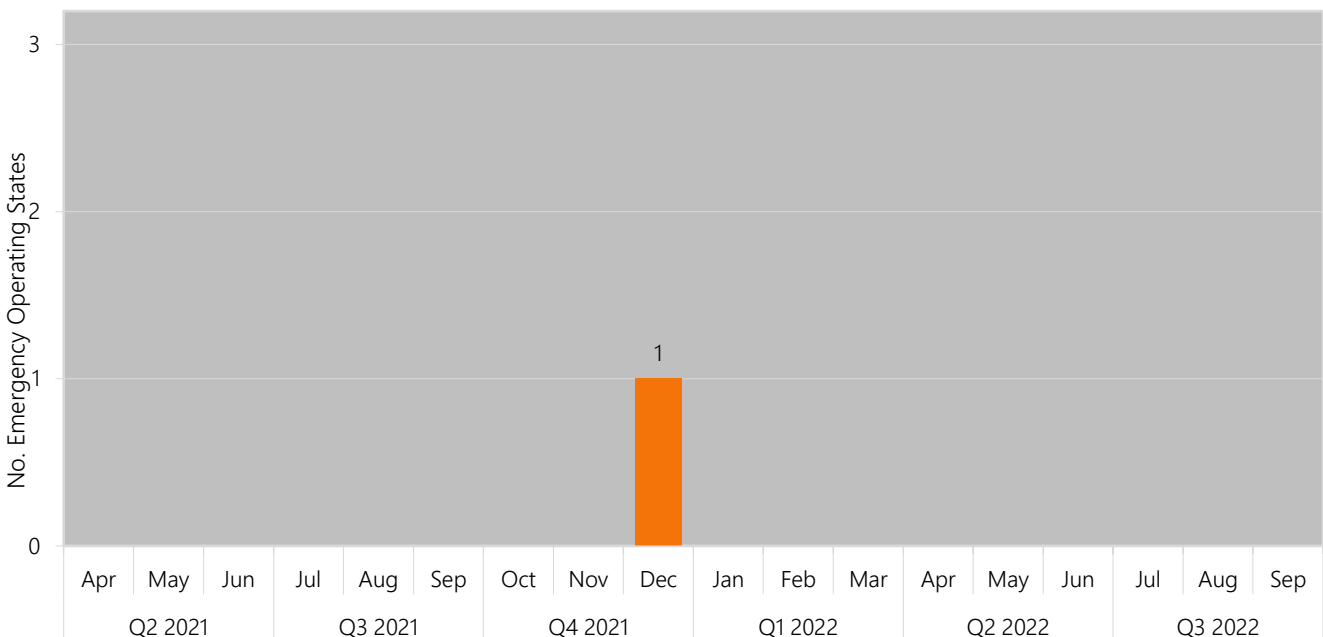
Date/Interval/s	27 Jul 2022 / Trading Interval 7:2
Dispatch Advisory #	209115
Details	At 07:48, COLLIE_G1 tripped resulting in a loss of approximately 315MW. Frequency dropped below 49.68Hz for approximately 5 minutes.
AEMO Action	AEMO dispatched according to the latest BMO received to maintain Power System Security and Power System Reliability.

Date/Interval/s	13 Sep 2022 / Trading Interval 11:2 to Trading Interval 12:1
Dispatch Advisory #	209183
Details	Due to prevailing conditions impacting the Real Time Dispatch Engine forecast, Frequency was volatile between 11:53 to 12:01 with a low of 49.05 Hz being reached at 11:58.
AEMO Action	AEMO dispatched according to the latest BMO received to maintain Power System Security and Power System Reliability.

6.2 Emergency Operating State

There were no instances of an Emergency Operating State during the reporting period.

Figure 6 Emergency Operating States that have occurred since 1 April 2021.



6.3 Shortfalls in Ancillary Services

During the reporting period there were 80 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 (LRRS)

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 LRRS 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, 78 instances related to shortfalls of LRRS⁴. 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 WEM often means no action is the best response. This is because by the time any action is taken to resolve the shortfall, Power System conditions are likely to have changed and the issue no longer exists. Further, the dynamic LRR includes safety factors which limits risks to the Power System for the duration.

Load Following Ancillary Services (LFAS)

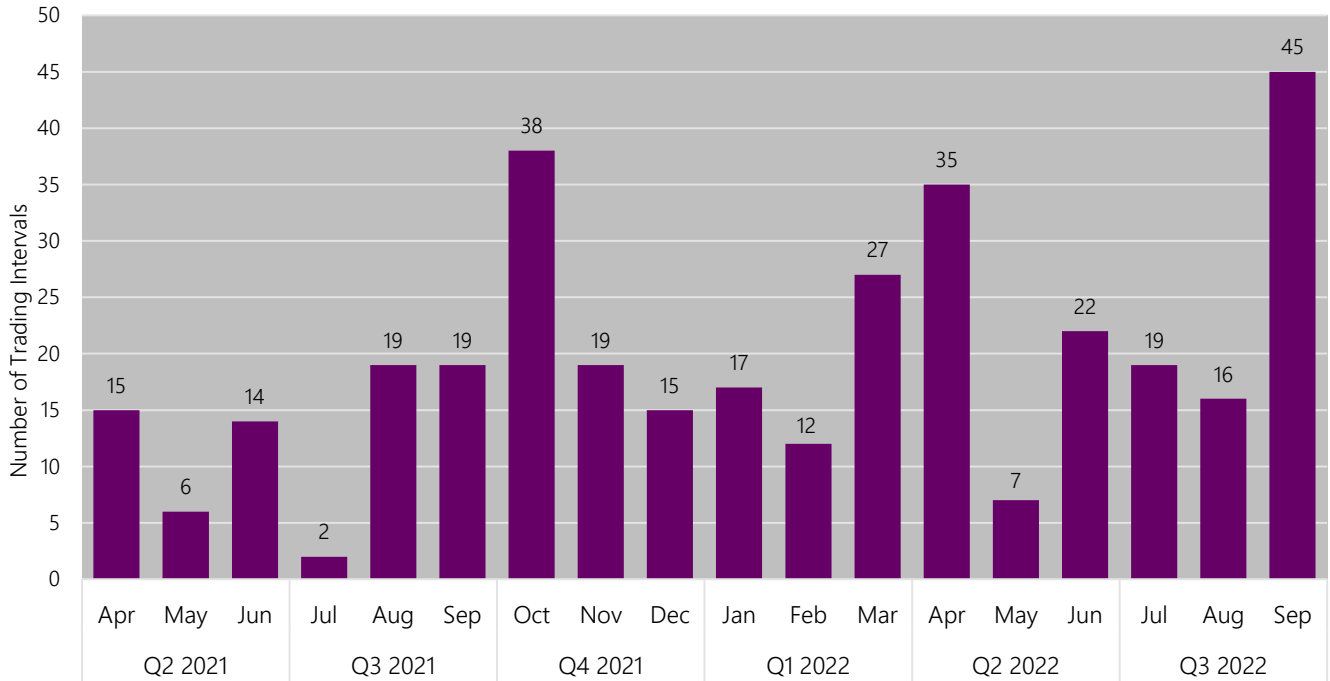
For every Trading Interval, AEMO must activate each LFAS Facility for its full upward and downward LFAS Enablement to satisfy the LFAS Enablement Schedule. During the reporting period, 2 instances of LFAS Enablement shortfall (greater than 1 interval) were reported.

Spinning Reserve Ancillary Services (SRAS)

Spinning Reserve Service is the service of holding capacity associated with a synchronised Scheduled Generator or Interruptible Load in reserve, so that the relevant Facility is able to respond appropriately in situations outlined in clause 3.9.2 of the WEM Rules. During the reporting period, there were no instances relating to SRAS shortfall.

⁴ As outlined in [AEMO's Ancillary Services Report for the WEM 2022](#), AEMO's dynamic LRR, including setting the upper limit of the LRR requirement, is 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, averaged over a Trading Interval.

Figure 7 Shortfalls in Ancillary Services that have occurred since 1 April 2021



AEMO does not consider that any 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.

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	4 Jul 2022 / Trading Interval 9:1
Dispatch Advisory #	209054
Details	AEMO required backup LFAS due to ALINTA_PNJ_U2 being unavailable to provide their cleared LFAS quantity 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	7 Jul 2022 / Trading Interval 14:1 to Trading Interval 16:2, Trading Interval 17:2, Trading Interval 20:1, Trading Interval 22-1 to Trading Interval 23-2
Dispatch Advisory #	209058, 209063
Details	AEMO required backup LFAS due to NEWGEN_KWINANA_CCG1 being unavailable to provide their cleared LFAS quantity 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	29 Jul 2022 / Trading Interval 13:2 to Trading Interval 15:1
Dispatch Advisory #	209120
Details	AEMO required backup LFAS due to ALINTA_PNJ_U2 being unavailable to provide their cleared LFAS quantity 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	1 Aug 2022 / Trading Interval 12:2 to Trading Interval 14:2
Dispatch Advisory #	209121
Details	AEMO required backup LFAS due to the prevailing weather conditions.
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	3 Aug 2022 / Trading Interval 1:1 to Trading Interval 6:2
Dispatch Advisory #	209126, 209127
Details	AEMO required backup LFAS due to ALINTA_PNJ_U1 being unavailable to provide their cleared LFAS quantity 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.