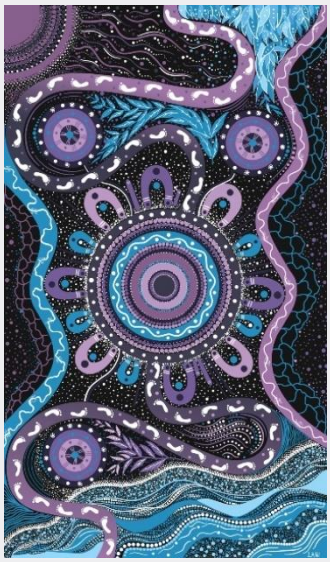
NEM Lack of Reserve Framework Report 1 October to 31 December 2024

January 2025

A report for the National Electricity Market on the operation of the Lack of Reserve Framework



We acknowledge the Traditional Custodians of the land, seas and waters across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace future generations.

We acknowledge that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands. We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country; and hope that our work can benefit both people and Country.

'Journey of unity: AEMO's Reconciliation Path' by Lani Balzan

AEMO Group is proud to have launched its first Reconciliation Action Plan in May 2024. 'Journey of unity: AEMO's Reconciliation Path' was created by Wiradjuri artist Lani Balzan to visually narrate our ongoing journey towards reconciliation - a collaborative endeavour that honours First Nations cultures, fosters mutual understanding, and paves the way for a brighter, more inclusive future.

Important notice

Purpose

AEMO has prepared this document under clause 4.8.4B of the National Electricity Rules to report on the operation of the NEM Lack of Reserve Framework for the period from 1 October to 31 December 2024. This report also includes analysis of Minimum System Load conditions.

Disclaimer

This document or the information in it may be subsequently updated or amended. This document does not constitute legal or business advice and should not be relied on as a substitute for obtaining detailed advice about the National Electricity Law, the National Electricity Rules, or any other applicable laws, procedures or policies. AEMO has made reasonable efforts to ensure the quality of the information in this report but cannot guarantee its accuracy or completeness.

Accordingly, to the maximum extent permitted by law, AEMO and its officers, employees and consultants involved in the preparation of this document:

- make no representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of the information in this document; and
- are not liable (whether by reason of negligence or otherwise) for any statements or representations in this document, or any omissions from it, or for any use or reliance on the information in it.

Copyright

Version control

Version	Release date	Changes
1	30/1/2025	Initial release

Executive summary

This report has been published in accordance with clause 4.8.4B of the National Electricity Rules (NER) and includes analysis of the Minimum System Load (MSL) conditions.

In the reporting period 1 October to 31 December 2024 (Quarter 4 2024), AEMO declared 144 individual Lack of Reserve (LOR) conditions in total in the National Electricity Market (NEM)[1]. Table 1 shows the number and type of LOR conditions declared in Quarter 4 2024 and Table 2 provides the summary by region. This is the highest number of LOR conditions declared since the NEM market suspension in Quarter 2 and Quarter 3 of 2022.

Table 1 Lack of Reserve conditions declared in Quarter 4 2024

LOR declarations		Total
LOR1	Actual	18
	Forecast	61
LOR2	Actual	2
	Forecast	54
LOR3	Actual	0
	Forecast	9
Total		**144**

This compares with 34 LOR conditions declared in the previous reporting period (Quarter 3 2024), and 54 LOR conditions declared in Quarter 4 2023.

Quarter 4 2024 covered the mid-to-late spring months and the first month of summer:

- The LOR conditions in New South Wales, Queensland, Tasmania, and Victoria were mainly driven by decreased generation availability, increased demand and NSW network outages.
- Many of the forecast LOR conditions did not eventuate into actual LOR conditions, mainly because additional generation was made available and/or changes were made to NSW network outages.
- There were no LOR conditions declared in South Australia.

[1] Forecast or actual LOR1, LOR2, or LOR3. LOR is described in clause 4.8.4 of the NER. AEMO's considerations and methodology, and the LOR levels, are outlined in AEMO's Reserve Level Declaration Guidelines, at https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Security-and-reliability/Power-system-operation.

Table 2 Summary of Lack of Reserve conditions during reporting period, 1 October to 31 December 2024

Region	LOR1		LOR2		LOR3	
	Actual	Forecast	Actual	Forecast	Actual	Forecast
NSW	14	36	2	31	0	9
QLD	4	22	0	20	0	0
SA	0	0	0	0	0	0
TAS	0	1	0	1	0	0
VIC	0	2	0	2	0	0
Total	**18**	**61**	**2**	**54**	**0**	**9**

Of the 144 LOR declarations in Quarter 4 2024:

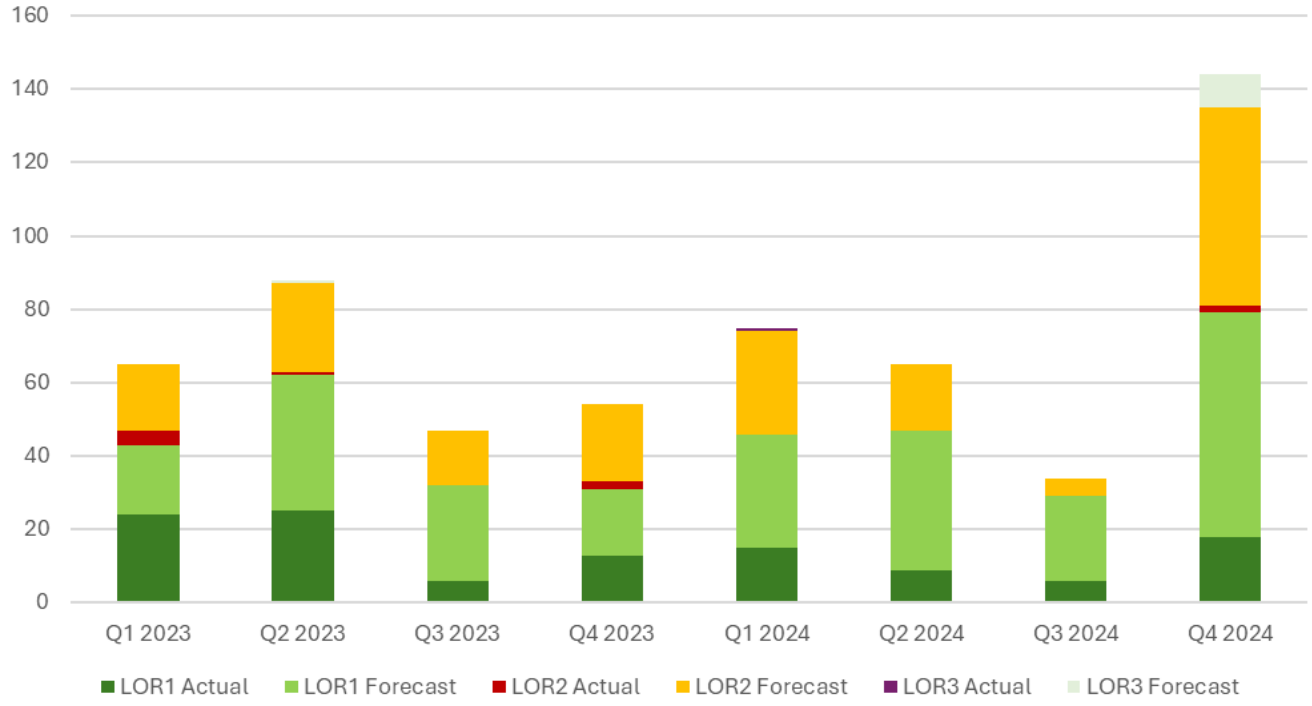
- For all 79 LOR1 declarations, the reserve requirement was set by the sum of the two largest credible risks (LCR2).
- There were eight LOR2 declarations where the reserve requirement was set by the largest credible risk (LCR).
- There were 48 LOR2 declarations where the reserve requirement was set by the Forecast Uncertainty Measure (FUM).
- There were nine LOR3 conditions declared.

This means 33% of LOR conditions were declared when the reserve requirement was set by the FUM. For comparison, in Quarter 3 2024, three of the 34 LOR declarations were set by the FUM (9%), and in Quarter 4 2023, 22 of the 54 LOR declarations were set by the FUM (41%).

Figure 1 below shows the historical trend of actual and forecast LOR conditions from Quarter 1 2023 to Quarter 4 2024, highlighting that, as noted above:

- The total number of LOR declarations in this reporting period increased compared to last quarter.
- Compared to the same period last year (Quarter 4 2023), the number of declarations and actual LOR conditions increased.

Figure 1 Quarterly comparison of actual and forecast Lack of Reserve conditions, Q1 2023 to Q4 2024



In the reporting period 1 October to 31 December 2024 (Quarter 4 2024), AEMO declared 15 individual Minimum System Load (MSL) conditions in total in the NEM[2].

Table 3 shows the number and type of MSL conditions declared in Quarter 4 2024.

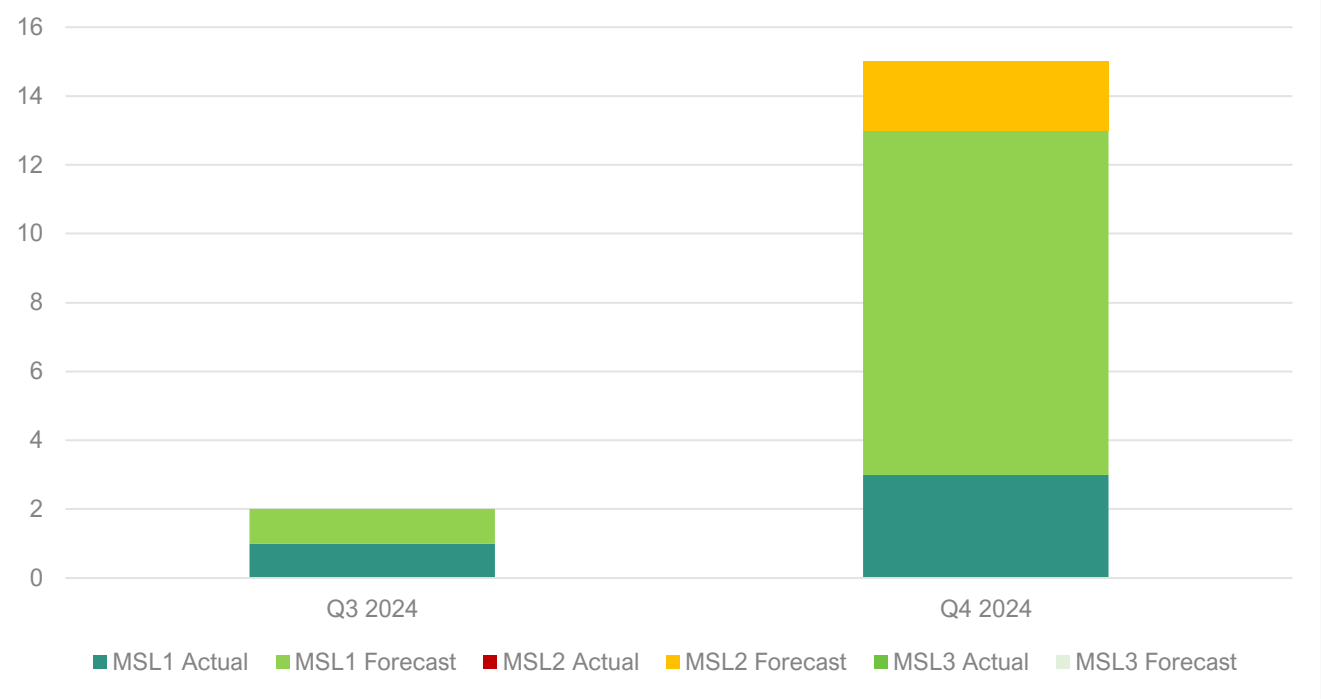
Table 3 Minimum System Load conditions declared in Quarter 4 2024

MSL declarations		Total
MSL1	**Actual**	3
	Forecast	10
MSL2	**Actual**	0
	Forecast	2
MSL3	**Actual**	0
	Forecast	0
Total		**15**

Figure 2 below shows the historical trend of actual and forecast MSL conditions from Quarter 3 2024 to Quarter 4 2024, highlighting that the number of actual and forecast MSL conditions increased compared to last quarter.

[2] See https://aemo.com.au/initiatives/major-programs/nem-distributed-energy-resources-der-program/managing-distributed-energy-resources-in-operations/managing-minimum-system-load.

Figure 2 Quarterly comparison of actual and forecast Minimum System Load conditions, Q3 2024 to Q4 2024



The next report on the NEM Lack of Reserve Framework, for the reporting period 1 January 2025 to 31 March 2025, will be published by 30 April 2025.

Contents

Tables

Figures

1 Introduction

This report has been published in accordance with clause 4.8.4B of the National Electricity Rules (NER), to provide a high-level analysis of how the Lack of Reserve (LOR) framework is operating. This report covers the period from 1 October 2024 to 31 December 2024 (Quarter 4 2024).

Unless otherwise noted, all times in this report are National Electricity Market (NEM) time (Australian Eastern Standard Time [AEST]).

The report is divided into three sections:

- **Reserve Level Declaration Guidelines** – a summary of changes to the Guidelines over the past quarter, and the retraining of the Forecast Uncertainty Measure (FUM) Model.
- **LOR conditions declared** – details of all LOR conditions declared or revised during the past quarter (based on market notices [MNs]). For each condition declared, the report indicates the required reserve level and whether the requirement was set by the FUM, or the largest credible risk/s (LCR) in the region. The reserve requirement can be set by the largest credible risk (LCR, for LOR2 conditions) or the sum of the two largest credible risks (LCR2, for LOR1 thresholds). The FUM value for each relevant period is also provided.
- **Review of performance** – a review of the performance of the LOR framework and any observed trends, providing an assessment of FUM values compared to previous quarters, determinants of reserve level requirements, number of LOR declarations, and leading factors or causes of LOR declarations.

This report also includes a high-level analysis of MSL conditions.

Please direct all LOR inquiries to www.aemo.com.au/Contact-us. In the inquiry form field '*What is your enquiry regarding?*', write "**LOR Framework Report**".

The next report on the NEM LOR Framework, for the reporting period 1 January 2025 to 31 March 2025, will be published by 30 April 2025.

2 Reserve level declaration guidelines

2.1 Changes in the reporting period

During the reporting period, there were no changes to the Guidelines[3].

2.2 Training of the Forecast Uncertainty Measure (FUM) Model

The FUM Model uses Quantile Regression (QR) algorithms to determine the FUM, which in turn can determine LOR levels. This process is summarised in the Guidelines. The intention of retraining the FUM Model is to update the model to include recent historical data since the last retraining. AEMO commenced the retraining in January 2025 to include data up to 31 December 2024. The retraining involves a three-stage process:

1. Extract-Transform-Load (ETL) stage, to extract historical data up to 31 December 2024, perform data validation and cleansing, and compile the data into the structured format required to incorporate into the model.
2. Analysis and modelling stage, which involves training and model validation using the most recent data.
3. Test and verification stage in the pre-production environment, to ensure the retrained model is suitable for production implementation.

AEMO is in the final stage of retraining and plans to implement the retrained FUM Model into production shortly, pending final verification and readiness checks in the pre-production environment.

2.2.1 Results from retraining

To verify the retraining, AEMO completed a backcast of all forecast intervals from October 2024 to December 2024 inclusive, using the existing FUM Model and the retrained FUM Model. The intention of the backcast is to provide an indication of the magnitude of changes to future FUM values.

Changes in 90th, 50th (median) and 10th percentiles FUM values between the existing and retrained FUM Model backcasts are listed below. Minor changes were identified for some other forecast horizons and distribution statistics but are not listed here. Maximum, mean, and minimum values are included in the graphs of the actual FUM values in Section 5.1 of this report. By region:

- New South Wales – the 10th percentile FUM values decreased by 76 megawatts (MW) for the 2 hours ahead forecast horizon. The median FUM values decreased by 53 MW for the 2 hours ahead forecast horizon. The 90th, median, and 10th percentile FUM values for all other forecast horizons remained relatively unchanged.
- Queensland – the 10th percentile FUM values decreased by 21 MW for the 24 hours ahead forecast horizon and increased by up to 35 MW for the 2 and 60 hours ahead forecast horizons. The median FUM values increased by 46 MW for the 2 hours ahead forecast horizon. The 90th percentile FUM values increased by 73 MW for the 2 hours ahead forecast horizon. The 90th, median and 10th percentile FUM values for all other forecast horizons remained relatively unchanged.

[3] The Guidelines are at http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Security-and-reliability/Power-system-operation.

- South Australia – the 10th percentile FUM values increased by up to 22 MW for the 2, 6 and 12 hours ahead forecast horizons. The median and 90th percentile FUM values for the 2 hours ahead forecast horizon increased by up to 35 MW and decreased by up to 42 MW at the 24 hours ahead forecast horizon. The 90th, median and 10th percentile FUM values for all other forecast horizons remained relatively unchanged.
- Tasmania – the median FUM values increased by 11 MW at the 2 hours ahead forecast horizon. The 90th percentile FUM values increased across all forecast horizons by up to 31 MW. The median and 10th percentile FUM values for all other forecast horizons remained relatively unchanged.
- Victoria – the 10th percentile FUM values increased by 48 MW for the 12 hours ahead forecast horizon. The 90th percentile FUM values for the 2 hours ahead forecast horizon increased by 57 MW. The 90th, median and 10th percentile FUM values for all other forecast horizons remained relatively unchanged.

3 Lack of Reserve conditions declared

Table 4 provides a high-level summary of the counts of forecast and actual LOR conditions for the reporting period (Quarter 4 2024) based on the declaration count principles.

Declaration count principles

For the reporting period, AEMO determined the total count for LOR conditions based on the following principles:

- All MNs making the initial declaration of a forecast or actual LOR condition with an effective date during the reporting period were counted.
- Any MNs which updated previously issued forecast or actual LORs at the same level for a given effective date (in relation to the reserve requirement, reserve capacity available, or effective period) were not counted, to prevent double-counting of a continuing condition.
- In cases where forecast LORs were cancelled but subsequently re-issued with approximately the same effective period, re-issues were not counted, to prevent double-counting of effective periods.
- Updates to existing LOR conditions where the LOR level changed were counted as separate LOR conditions.
- Any forecast LORs which were subsequently declared as actual LORs at the same LOR level were counted once. In Table 3, these are shown as actual conditions only. For example:
  - Where a forecast LOR1 was issued and later an actual LOR1 was declared for a similar period, only the actual LOR1 was counted.
  - If the initial forecast was for a forecast LOR2 condition and this was later declared as an actual LOR1, this would be counted as two LOR conditions, due to the differing LOR levels.
- Continuous LOR conditions which spanned multiple periods throughout a day were counted as individual LOR declarations for each period covered. For this purpose, a NEM trading day was split into four 6-hour periods: morning peak covers 0400 hrs to 1000 hrs, mid-day covers 1000 hrs to 1600 hrs, evening peak covers 1600 hrs to 2200 hrs, and overnight covers 2200 hrs to 0400 hrs on the next day[4]. The maximum count allocated to each trading day was four.

[4] This is due to trading day rather than calendar day to prevent double-counting of a continuous condition.

Table 4 Summary of forecast and actual Lack of Reserve conditions, with causing factors

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
9/10/2024	NSW		1					A forecast LOR1 condition was declared with effective period 18:00 - 18:30 (nine hours lead time) due to decreased generation availability (MN 118694). The forecast LOR1 condition was cancelled due to increased generation availability (MN 118698).
16/10/2024	NSW		4		1			**Morning Peak:** A forecast LOR1 condition was declared with effective period ranging 5:30 - 9:00 (38 hours lead time) due to decreased generation availability (MN 118878). The forecast LOR1 condition was cancelled due to decreased demand (MN 118816). **Mid-day and Evening Peak**: A forecast LOR2 condition was declared with effective period ranging 17:30 - 19:30 (two days lead time) due to decreased generation availability (MN 118869). The forecast LOR2 condition was cancelled due to increased net imports (MN 118873). A forecast LOR1 condition was declared with effective period 15:30 - 23:59 (two days lead time) due to decreased generation availability (MN 118878). The forecast LOR1 condition was cancelled due to increased generation availability (MN 118916). **Overnight:** A forecast LOR1 was declared with effective period ranging 0:00 - 01:30 (three days lead time) due to decreased generation availability and increased demand (MN 118879). The forecast LOR1 condition was cancelled due to increased generation availability (MN 118915).
24/10/2024	NSW		3		3			**Morning Peak:** A forecast LOR1 condition was declared with effective period ranging 4:30 - 6:30 (three days lead time) due to decreased generation availability (MN 119154). The condition worsened and a forecast LOR2 condition was declared and updated with effective period ranging 5:00 - 6:30 (three days lead time) due to increased FUM level (MN 119182). The forecast LOR2 condition was cancelled due to increased generation availability (MN 119171). The condition was updated to a forecast LOR1 with effective period 5:00 - 6:30 (38 hours lead time) due to decreased FUM level (MN 119191). The forecast LOR1 conditions improved due to increased generation availability. **Evening Peak and Overnight:** A forecast LOR1 condition was declared with effective period 17:00 - 23:59 (three days lead time) due to decreased generation availability (MN 119154). The condition worsened and a forecast LOR2 condition was declared and updated with effective period ranging 17:00 - 23:00 (two days lead time) due to decreased generation availability (MN 119165, MN 119166, MN 119180). The forecast LOR2 condition was cancelled due to increased generation availability (MN 119181). A forecast LOR1 was redeclared with effective period ranging

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								18:00 - 19:30 (29 hours lead time) due to decreased generation availability (MN 119211). The forecast LOR1 condition was cancelled due to increased generation availability (MN 119229). A forecast LOR1 condition was declared with effective period 0:00 - 4:00 (three days lead time) due to decreased generation availability (MN 119162). The forecast LOR1 condition was cancelled due to increased generation availability (MN 119229).
6/11/2024	NSW		1		1			A forecast LOR1 condition was declared and updated multiple times with effective period ranging 18:00 - 18:30 (three days lead time) due to decreased generation availability and increased demand (MN 119830, MN 119869, MN 119911, MN 119927, MN 119935). The forecast LOR1 condition was cancelled due to decreased demand and increased net import (MN 119962). A forecast LOR2 condition was declared and updated multiple times with effective period ranging 18:00 - 19:00 (67 hours lead time) due to increased FUM level and decreased generation availability (MN 119838, MN 119843, MN 119846, MN 119884, MN 119888, MN 119894, MN 119912). The forecast LOR2 condition was cancelled after rescheduling a planned outage of Yass – Marulan 5 330 kilovolt (kV) line, on request from AEMO, which led to increased net import (MN 119925).
7/11/2024	NSW	1	1		2			**Mid-day:** A forecast LOR1 was declared and updated once with effective period ranging 12:30 - 13:00 (69 hours lead time) due to decreased generation availability (MN 119870, MN 119917). The forecast LOR1 conditions improved due to increased generation availability. **Evening Peak:** A forecast LOR1 was declared with effective period ranging 16:30 - 19:00 (seven days lead time) due to decreased generation availability (MN 119703). The forecast LOR1 condition was cancelled, redeclared and updated multiple times due to changing generation availability (MN 119747, MN 119789, MN 119829, MN 119839, MN 119870, MN 119917, MN 120045, MN 120053, MN 120055, MN 120057, MN 120104, MN 120105). A forecast LOR2 was declared with effective period ranging 18:00 - 19:00 (seven days lead time) due to decreased generation availability (MN119715). The forecast LOR2 condition was cancelled, redeclared and updated multiple times with effective period ranging 12:30 – 20:00 (six days lead time) due to changing generation availability and decreased operational demand (MN 119738, MN 119750, MN 119751, MN 119755, MN 119762, MN 119790, MN 119828, MN 119837, MN 119843, MN 119849, MN 119860, MN 119872, MN 119885, MN 119889, MN 119891, MN 119895, MN 119902, MN 119910, MN 119930, MN 119936, MN 119937). The forecast LOR2 condition was cancelled after rescheduling a planned outage of Yass – Marulan 5 330 kV line, on request from AEMO, which led to increased generation availability and increased net import (MN 119941). An actual LOR1 was declared with effective period 17:30 - 19:30 due to decreased net import (MN 120113). The actual LOR1 was cancelled when the effective period elapsed (MN 120115).
8/11/2024	NSW		1					A forecast LOR1 condition was declared and updated multiple times with effective period ranging 17:30 - 19:30 (four days lead time) due to decreased generation availability and decreased net import (MN 119871, MN

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								119918, MN 120080, MN 120122, MN 120128, MN 120134, MN 120138). The forecast LOR1 condition was cancelled due to increased generation availability (MN 120149).
13/11/2024	NSW		1					A forecast LOR1 condition was declared with effective period 18:00 - 19:00 (10 hours lead time) due to decreased generation availability and decreased net import (MN 120335). The forecast LOR1 condition was cancelled due to increased generation availability (MN 120341).
17/11/2024	NSW		2		1			**Mid-day and Evening Peak:** A forecast LOR2 condition was declared with effective period 16:30 - 17:00 (three days lead time) due to decreased generation availability (MN 120465). The forecast LOR2 condition was cancelled due to increased generation availability (MN 120469). A forecast LOR1 condition was declared and updated multiple times with effective period 15:30 - 18:00 (two days lead time) due to decreased generation availability (MN 120502, MN 120525, MN 120535, MN 120541, MN 120544). The forecast LOR1 condition was cancelled due to increased generation availability (MN 120551).
18/11/2024	NSW		1		1			A forecast LOR2 condition was declared, cancelled and redeclared with effective period 17:30 - 19:30 (28 hours lead time) due to decreased net import (MN 120546, 120572, MN120575). The forecast LOR2 condition was cancelled due to increased generation availability (MN 120579). A forecast LOR1 condition was declared, cancelled, redeclared and updated several times with effective period ranging 18:00 - 20:00 (25 hours lead time) due to decreased net import (MN 120547, MN 120574, MN 120578, MN 120587, MN 120591, MN 120593, MN 120608, MN 120618, MN 120637). The forecast LOR1 condition was cancelled due to increased generation availability (MN 120637).
22/11/2024	NSW	1						An actual LOR1 condition was declared with effective period 18:00 - 18:30 due to increased demand (MN 120833). The actual LOR1 condition was cancelled when the effective period elapsed (MN 120835).
24/11/2024	NSW	1			1			A forecast LOR1 condition was declared and updated with effective period ranging 17:30 - 19:00 (five days lead time) due to increased demand (MN 120673, MN 120752). The condition worsened and a forecast LOR2 condition was declared and updated with effective period 17:30 - 18:00 due to increased FUM level (MN 120775, MN 120839). The condition improved and a forecast LOR1 condition was declared and updated with effective period ranging 17:30 - 19:00 (28 hours lead time) due to increased generation availability and decreased FUM level (MN 120858, MN 120888). An actual LOR1 condition was declared with effective period 18:00 -18:30 (MN 120889). The actual LOR1 condition was cancelled when the effective period elapsed (MN 120890).
25/11/2024	NSW		2		2			**Mid-day:** A forecast LOR2 condition was declared with effective period ranging 15:30 - 19:30 (six days lead time) due to increased demand (MN 120652). The LOR condition was updated many times with effective period ranging 13:00 - 18:00 (six days lead time) changing between a forecast LOR1 and LOR2 condition due to varying demand and generation availability (MN 120676, MN 120699, MN 120704, MN 120711, MN 120717, MN 120740, MN 120751, MN 120848, MN 120859, MN 120865). The forecast LOR2 condition was cancelled after recalling ongoing outage of Yass – Marulan 5 330 kV line and Sydney South – Dapto 11 330 kV line and rescheduling planned outage of

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								Avon – Macarthur 17 330 kV line, on request from AEMO, which led to increased generation availability (MN 120785). This improved forecast LOR2 conditions during the mid-day and evening peak periods on 25/11/2024. **Evening Peak:** A forecast LOR1 condition was declared with effective period 16:30 - 19:30 (seven days lead time) due to decreased generation availability (MN 120614). The condition worsened and a forecast LOR2 condition was declared and updated multiple times with effective period ranging 15:30 - 19:30 (seven days lead time) due to increased demand (MN 120638, MN 120652, MN 120677). The condition improved and varied between a forecast LOR1 and LOR2 condition multiple times with effective period ranging 15:30 - 21:00 (six days lead time) due to varying generation availability and varying FUM level (MN 120676, MN 120699, MN 120704, MN 120711, MN 120717, MN 120740, MN 120751, MN 120820, MN 120840, MN 120848, MN 120854, MN 120859, MN 120865, MN 120878, MN 120942). The forecast LOR2 and LOR1 conditions were cancelled due to increased generation availability (MN 120875).
26/11/2024	NSW	1	2		3		2	**Mid-day:** A forecast LOR1 condition was declared and with effective period 12:30 - 14:30 (seven days lead time) due to decreased generation availability (MN 120764). The condition worsened and a forecast LOR2 condition was declared and updated multiple times with effective period ranging 13:00 - 16:00 (seven days lead time) due to decreased generation availability and increased demand (MN 120672, MN 120700, MN 120703, MN 120726, MN 120739). The condition improved and a forecast LOR1 condition was declared and updated multiple times with effective period ranging 11:30 - 16:30 (five days lead time) due to decreased demand. The forecast LOR1 conditions improved due to increased generation availability. **Evening Peak and Overnight:** A forecast LOR3 condition was declared and updated multiple times with effective period ranging 15:30 - 19:00 (seven days lead time) due to decreased generation availability (MN 120671, MN 120698, MN 120702, MN 120725, MN 120738). The condition improved and a forecast LOR2 condition was declared and updated multiple times with effective period ranging 13:30 - 23:30 (seven days lead time) after recalling outage of Sydney South – Dapto 11 330 kV line and rescheduling planned outage of Avon – Macarthur 17 330 kV line, on request from AEMO, which led to increased generation availability (MN 120672, MN 120700, MN 120703, MN 120712, MN 120726, MN 120734, MN 120739, MN 120749, MN 120846, MN 120849, MN 120855, MN 120866, MN 120873, MN 120881, MN 120901, MN 120905, MN 120911, MN 120941, MN 120944, MN 120959, MN 120967, MN 120980, MN 120984). A forecast LOR1 condition was declared and updated multiple times with effective period ranging 13:00 - 27/11/2024 00:30 (seven days lead time) due to changing generation availability (MN 120674, MN 120718, MN 120753, MN 120821, MN 120860, MN 120882, MN 120910, MN 120954, MN 120981, MN 121006). An actual LOR1 condition was declared with effective period 16:30 - 19:30 due to decreased generation availability (MN 121009). The actual LOR1 condition was cancelled when the effective period elapsed (MN 121011).
27/11/2024	NSW	2	2	2	2		2	**Morning Peak:**

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								A forecast LOR1 condition was declared and updated multiple times with effective period ranging 5:30 - 23:00 (seven days lead time) due to decreased generation availability (MN 120719, MN 120822, MN 120833). A forecast LOR2 condition was declared and updated multiple times with effective period ranging 7:30 - 13:00 (three days lead time) due to increased FUM level (MN 120874, MN 120880, MN 120892). The forecast LOR2 conditions improved due to increased generation availability. **Mid-day, Evening Peak and Overnight:** A forecast LOR1 condition was declared and updated effective period ranging 05:00 - 23:00 (seven days lead time) due to decreased generation availability (MN 120719, MN 120754). The condition worsened and a forecast LOR2 condition was declared and updated multiple times with effective period ranging 13:30 - 20:00 (five days lead time) due to increased demand (MN 120791, MN 120793, MN 120811, MN 120814, MN 120818, MN 120826). The LOR condition further worsened and a forecast LOR3 condition was declared and updated multiple times with effective period ranging 11:30 - 20:00 (five days lead time) due to increased demand and decreased generation availability (MN 120828, MN 120841, MN 120851, MN 120852, MN 120864, MN 120876, MN 120879, MN 120894, MN 120902, MN 120904, MN 121021, MN 121040). The condition improved and a forecast LOR2 condition was declared and updated multiple times with effective period ranging 13:00 - 23:30 (four days lead time) after recalling outage of Sydney South – Dapto 11 330 kV line, Dumaresq 330 kV Static VAr Compensator (SVC) and Woolooga – Palmwoods 810 275 kV line (QLD outage), and rescheduling planned outage of Avon – Macarthur 17 330 kV line, on request from AEMO, which led to increased generation availability and increased net imports (MN 120829, MN 120838, MN 120850, MN 120856, MN 120867, MN 120874, MN 120880, MN 120892, MN 120899, MN 120906, MN 120915, MN 120946, MN 120956, MN 120974, MN 121022, MN 121049, MN 121057, MN 121084). AEMO also instructed TransGrid to open Cowra – Forbes 998 132 kV line which led to increased generation availability. An actual LOR1 condition was declared and updated with effective period ranging 14:30 - 19:00 (MN 121089, MN 121106). The actual LOR1 condition was cancelled when the effective period elapsed (MN 121128). An actual LOR2 condition was declared with effective period 15:30 - 17:00 due to decreased generation availability (MN 121101). Reliability Emergency Reserve Trader (RERT) services were activated[5]. The actual LOR2 condition was cancelled when the effective period elapsed (MN 121105).
28/11/2024	NSW		4		4		1	**Morning Peak:** A forecast LOR2 condition was declared and updated multiple times with effective period ranging 5:00 - 23:00 (69 hours lead time) due to decreased generation availability (MN 120900, MN 120907, MN 120916, MN 120947, MN 120961, MN 120963, MN 120969, MN 120988). The condition improved and a forecast LOR1 condition was declared with effective period 5:00 - 6:00 (37 hours lead time) due to increased net imports (MN 120993). The forecast LOR1 conditions improved due to increased generation availability. **Mid-day:**

[5] RERT reporting is at https://aemo.com.au/energy-systems/electricity/emergency-management/reliability-and-emergency-reserve-trader-rert/rert-reporting.

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								A forecast LOR1 condition was declared with effective period 14:00 - 14:30 (five days lead time) due to decreased generation availability (MN 120862). The condition worsened and a forecast LOR2 condition was declared and updated multiple times with effective period ranging 13:30 - 17:00 (three days lead time) due to increased demand (MN 120893, MN 120907, MN 120916). The condition worsened further and a forecast LOR3 condition was declared and updated with effective period ranging 14:00 - 15:00 (71 hours lead time) due to decreased generation availability (MN 120914, MN 120965). The condition improved and was updated multiple times to a forecast LOR2 condition with effective period ranging 5:00 - 23:00 after recalling ongoing outage of Sydney South – Dapto 11 330 kV line and Dumaresq 330kV SVC, and rescheduling planned outage of Avon – Macarthur 17 330 kV line and Kerang – Wemen 220 kV line (VIC outage), on request from AEMO, which led to increased generation availability (MN 120893, MN 120907, MN 120916, MN 120947, MN 120961, MN 120963, MN 120969, MN 120988, MN 121014, MN 121060, MN 121066). This improved forecast LOR2 conditions during the mid-day, evening, and overnight periods on 28/11/2024. The condition improved and a forecast LOR1 condition was declared and updated with effective period ranging 14:00 - 19:30 due to increased generation availability (MN 120884, MN 120925, MN 121069). The forecast LOR1 condition improved due to decreased demand. **Evening Peak and Overnight:** A forecast LOR2 condition was declared and updated multiple times with effective period ranging 05:00 - 23:00 (four days lead time) due to decreased generation availability (MN 120893, MN 120961, MN 120969, MN 120988, MN 121014, MN 121060, MN 121066). The condition improved and a forecast LOR1 condition was declared and updated multiple times with effective period ranging 14:30 - 29/11/2024 00:30 (three days lead time) due to increased generation availability (MN 120922, MN 120925, MN 120933, MN 121069, MN 121104). The forecast LOR1 conditions improved due to increased generation availability and decreased demand. A forecast LOR1 condition was declared with effective period 29/11/2024 00:00 - 00:30 (56 hours lead time) due to decreased generation availability (MN 120995). Conditions improved and the forecast LOR1 was cancelled due to increased generation availability.
29/11/2024	NSW	1	2		3			**Morning Peak:** A forecast LOR1 condition was declared with effective period ranging 05:00 - 20:30 (four days lead time) due to decreased generation availability (MN 120923). The condition worsened and a forecast LOR2 condition was declared and updated with effective period ranging 05:30 - 10:00 (three days lead time) due to further decreased generation availability (MN 120957, MN 120964, MN 120966, MN 120971, MN 120978, MN 120989, MN 121015, MN 121146). The condition was than marginal and several forecast LOR1 and LOR2 conditions were declared and updated with effective period 06:00 - 10:00 (17 hours lead time) due to varying generation availability (MN 121150, MN 121151, MN 121170, MN 121171). A forecast LOR1 condition was declared and updated with effective period ranging 08:00 - 09:30 (16 hours lead time) due to increased generation availability (MN 121173, MN 121216). The forecast LOR1 was cancelled due to increased generation availability (MN 121217). **Mid-Day:**

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								A forecast LOR1 condition was declared with effective period ranging 05:00 - 20:30 (four days lead time) due to decreased generation availability (MN 120923). The condition worsened and a forecast LOR2 condition was declared and updated with effective period ranging 10:00 - 13:30 (68 hours lead time) due to decreased generation availability (MN 120966, MN 120971, MN 120978). Several LOR1 and LOR2 conditions were declared and updated with effective period ranging 10:00 - 16:00 (68 hours lead time) due to varying generation availability and FUM level (MN 120995, MN 120989, MN 121015, MN 121024, MN 121139, MN 121146, MN 121150, MN 121151, MN 121170). Conditions improved and a forecast LOR1 condition was declared and updated with effective period ranging 14:30 - 16:00 (16 hours lead time) after rescheduling planned outage of Liddell – Muswellbrook 83 330 kV line, on request from AEMO, which led to increased generation availability (MN 121215, MN 121216, MN 121217). This improved forecast LOR2 conditions during the mid-day and evening peak periods on 29/11/2024. Conditions further improved due to increased generation availability and the forecast LOR1 was cancelled (MN 121218). **Evening Peak:** A forecast LOR1 condition was declared with effective period ranging 05:00 - 20:30 (four days lead time) due to decreased generator availability (MN 120923). The conditions worsened and a forecast LOR2 condition was declared and updated with effective period ranging 16:00 - 19:00 (60 hours lead time) due to increased demand and increased FUM level (MN 120995, MN 121015, MN 121024, MN 121139, MN 121146). Conditions improved and a forecast LOR1 condition was declared and updated with effective period ranging 16:00 - 17:30 (28 hours lead time) due to increased generation availability (MN 121150, MN 121216, MN 121258). This forecast LOR1 turned into an actual LOR1 with effective period 16:30 - 18:00 due to increased demand. The actual LOR1 was cancelled when the effective period elapsed (MN 121263).
2/12/2024	NSW	1	1		1			**Mid-day and Evening Peak:** A forecast LOR1 condition was declared and updated with effective period ranging 16:00 - 17:30 (47 hours lead time) due to a decrease in generation availability and increase in demand (MN 121296). Conditions worsened and a forecast LOR2 condition was declared and updated with effective period ranging from 16:00 - 19:00 (44 hours lead time) due to a further decrease in generation availability and an increase in FUM (MN 121302, MN 121306, MN 121309). Conditions improve and a forecast LOR1 condition was declared with effective period ranging 17:30 - 18:30 (28 hours lead time) due to an increase in net imports (MN 121316). A forecast LOR2 conditions was declared with effective period ranging 18:00 - 18:30 (16 hours lead time) due to a decrease in generation availability and net imports (MN 121349). Conditions then improved and a forecast LOR1 was declared with effective period ranging 15:30 - 19:00 (14 hours lead time) due to increased generation availability (MN 121350, MN 121353, MN 121359, MN 121382). An actual LOR1 condition was declared with effective period ranging 17:00 - 19:00 and was cancelled at 19:20 due to a decrease in demand (MN 121387).
3/12/2024	NSW		2		1			**Mid-day:** A forecast LOR1 condition was declared with effective period ranging 15:30 - 19:00 (six days lead time) due to a decrease in generation availability (MN 121088). The forecast LOR1 condition was updated with effective period ranging 12:00 - 15:00 (12 hours lead time) due to a decrease in generation (MN 121392, MN 121405). Conditions

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								worsened and a forecast LOR2 was declared and updated with effective period ranging 13:30 - 15:00 (five hours lead time) due to a decrease in generation availability (MN 121407, MN 121410). Conditions improved and a forecast LOR1 condition was declared with effective period ranging 13:30 - 16:00 (two hours lead time) due to an increase in generation availability (MN 121414). The forecast LOR1 condition was cancelled due to an increase in generation availability (MN 121424). **Evening Peak:** A forecast LOR1 condition was declared with effective period ranging 15:30 - 19:00 (six days lead time) due to a decrease in generation availability (MN 121088). The forecast LOR1 condition was updated with effective period ranging 18:00 - 19:30 (four days lead time) due to an increase in demand (MN 121241, MN 121438). The forecast LOR1 condition was cancelled due to an increase in generation and decrease in demand (MN 121424).
6/12/2024	NSW	1	1					**Mid-day and Evening Peak:** A suspect LOR3 condition was declared with effective period ranging 16:30 - 17:00 (six days lead time) due to input errors (MN 121292). This forecast LOR3 condition was considered invalid (MN 121295). A forecast LOR1 condition was declared with effective period ranging 17:30 - 18:30 (four hours lead time) due to an increase in demand (MN 121504). This turned into an actual LOR1 with effective period ranging 14:30 - 16:00 due to a decrease in net imports (MN 121520). The actual LOR1 condition was cancelled due to a decrease in demand and increase in available generation (MN 121526). A forecast LOR1 condition was declared with effective period ranging 16:30 - 18:00 (one hour lead time) due to decrease in net imports (MN 121527, MN 121529). The forecast LOR1 was cancelled at 16:45 due to a decrease in demand and increase in net imports (MN 121530).
7/12/2024	NSW		1					A forecast LOR1 condition was declared and updated with effective period ranging 16:00 - 19:00 (18 hours lead time) due to a decrease in net imports (MN 121550, MN 121558, MN 121563, MN 121585). The forecast LOR1 condition was cancelled due to a decrease in demand (MN 121589).
10/12/2024	NSW		1					A forecast LOR1 condition was declared with effective period ranging 18:30 - 19:00 (two hours lead time) due to a decrease in generation availability (MN 121698). The forecast LOR1 condition was cancelled due to an increase in net imports (MN 121701). A forecast LOR1 condition was declared with effective period ranging 18:30 - 19:00 (zero hours lead time) due to a decrease in available generation (MN 121702). The forecast LOR1 condition was cancelled due to an increase in net imports (MN 121704).
12/12/2024	NSW	1						A forecast LOR1 condition was declared and updated with effective period ranging 17:30 - 19:30 (14 hours lead time) due to a decrease in generation availability (MN 121752, MN 121756, MN 121761). An actual LOR1 condition was declared with effective period ranging 18:30 - 19:30 (MN 121803). The actual LOR1 was cancelled when the effective period elapsed (MN 121804).
13/12/2024	NSW	1			1			A forecast LOR1 condition was declared with effective period ranging 16:30 - 19:00 (49 hours lead time) due to an increase in demand (MN 121717). The condition worsened and a forecast LOR2 was declared and updated with effective period ranging 16:30 - 19:00 (31 hours lead time) due to increased FUM (MN 121764, MN 121781).

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								The conditions were marginal and several forecast LOR1 and LOR2 were declared with effective period ranging 16:30 - 19:00 due to varying FUM (MN 121782, MN 121788, MN 121799). Conditions improved and a forecast LOR1 condition was declared with effective period ranging 16:00 - 18:00 and 19:00 - 19:30 (23 and 26 hours lead time respectively) due to increased generation availability (MN 121800). An actual LOR1 condition was declared with effective period 18:00 - 18:30 (MN 121872). The actual LOR1 condition was cancelled at 19:15 due to a decrease in demand (MN 121874).
15/12/2024	NSW		1					A forecast LOR1 condition was declared with effective period ranging 17:00 - 18:30 (three days lead time) due to a decrease in generation availability and increase in demand (MN 121793). The LOR1 condition was cancelled due to increased net imports (MN 121847).
16/12/2024	NSW	1	1		2		2	**Mid-day:** A forecast LOR1 was declared and updated with effective period ranging 15:00 - 16:00 (six days lead time) due to an increase in demand (MN 121692, MN 121719). Conditions worsened and a forecast LOR2 was declared and updated with effective period ranging 14:00 - 16:00 (five days lead time) due to increased demand (MN 121723, MN 121735, MN 121762, MN 121780, MN 121789, MN 121819). Conditions worsened further and a forecast LOR3 was declared and updated with effective period ranging 15:00 - 16:00 (five days lead time) due to decreased generation availability and increased demand (MN 121734, MN 121760). Conditions improved after rescheduling planned outage of Avon – Macarthur 17 330 kV line, on AEMO request, which led to increased generation availability and the forecast LOR3 was cancelled (MN 121775). This improved forecast LOR3 conditions during the mid-day and evening peak periods on 16/12/2024. Conditions further improved and the forecast LOR2 was cancelled due to increased generation availability (MN 121834). A forecast LOR1 condition was declared and updated with effective period ranging 12:30 - 16:00 (four days lead time) due to a decrease in net imports (MN 121791, MN 121849, MN 121898). Conditions improved and the forecast LOR1 was cancelled due to increased generation availability and net imports (MN 122009). **Evening Peak:** A forecast LOR2 was declared and updated with effective period ranging 16:00 - 19:30 (seven days lead time) due to an increase in demand (MN 121683, MN 121686, MN 121687, MN 121694, MN 121735). Conditions worsened and a forecast LOR3 was declared and updated with effective period 16:00 - 19:30 (five days lead time) due to reduced generation availability (MN 121734, MN 121760, MN 121827). Conditions improved and a forecast LOR2 was declared with effective period ranging 16:00 - 21:00 (67 hours lead time) due to increased generation availability (MN 121876, MN 121889, MN 121892, MN 121927). Conditions improved and the forecast LOR2 was cancelled due to increased generation availability (MN 121939). A forecast LOR1 was declared and updated with effective period ranging 15:30 - 22:00 (six days lead time) due to increased demand and decreased net imports (MN 121692, MN 121719, MN 121791, MN 121849, MN 121898, MN 121949, MN 121992, MN 122002). The forecast LOR1 was cancelled due to an increase in generation availability (MN 122009). An actual LOR1 was declared with effective period ranging 17:00 - 18:00 due to an increase in forecasted demand and decrease in generation availability (MN 122029). The actual LOR1 was cancelled due to a decrease in demand (MN 122049).

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
17/12/2024	NSW	2	1		2		2	**Mid-day, Evening Peak and Overnight:** A forecast LOR1 condition was declared with effective period 17:00 - 18:30 (seven days lead time) due to a decrease in generation availability (MN 121693). Conditions worsened and a forecast LOR2 was declared with effective period ranging 14:00 - 20:00 (five days lead time) due to an increase in demand and a decrease in generation availability (MN 121765). Conditions worsened further and a forecast LOR3 was declared with effective period ranging 15:30 - 16:00 (five days lead time) due to a further increase in demand and decreased generation availability (MN 121768). Several LOR1, LOR2 and LOR3 conditions were declared and updated with effective periods ranging 12:00 - 23:00 due to varying generation availability, demand and FUM level (MN 121769, MN 121776, MN 121785, MN 121786, MN 121792, MN 121818, MN 121820, MN 121839, MN 121850, MN 121888, MN 121893, MN 121899, MN 121926, MN 121937, MN 121960, MN 121961, MN 121995, MN 121999, MN 122000, MN 122005, MN 122007, MN 122070 MN 122071, MN 122093, MN 122096, MN 122100). Conditions improved after rescheduling planned outage of Avon – Macarthur 17 330 kV line, on AEMO request, which led to increased generation availability. An actual LOR1 condition was declared with effective period 15:30 - 18:00 (MN 122113). The actual LOR1 condition was cancelled at 17:45 due to decreased demand (MN 122117).
7/10/2024	QLD		1					A forecast LOR1 condition was declared with effective period 17:30 - 19:30 (29 hours lead time) due to decreased generation availability (MN 118629). The forecast LOR1 condition was cancelled due to increased generation availability (MN 118630).
8/10/2024	QLD		1		2			**Mid-day:** A forecast LOR2 condition was declared and updated with effective period 15:30 - 16:00 (29 hours lead time) due to decreased generation availability (MN 118637, MN 118644). The forecast LOR2 condition was cancelled after rescheduling planned outage of Tamworth – Armidale 86 330 kV line (NSW outage) and Tamworth 1 330 kV bus (NSW outage) which led to increased generation availability and increased net imports (MN 118647). This improved forecast LOR2 conditions during the mid-day and evening peak periods on 8/10/2024. **Evening Peak:** A forecast LOR1 condition was declared and updated multiple times with effective period ranging 17:30 - 20:30 and 21:00 - 22:00 (seven days lead time) due to decreased generation availability (MN 118548, MN 118562, MN 118596). The condition worsened and a forecast LOR2 condition was declared and updated multiple times with effective period ranging 17:00 - 20:00 (70 hours lead time) due to increased FUM level and decreased generation availability (MN 118625, MN 118628, MN 118636, MN 118637, MN 118639, MN 118644). The condition improved and a forecast LOR1 condition was declared with effective period ranging 17:00 - 22:00 (28 hours lead time) due to increased generation availability and increased net imports (MN 118642, MN 118648, MN 118664, MN 118665). The forecast LOR1 condition was cancelled due to increased generation availability (MN 118666).
9/10/2024	QLD		1					A forecast LOR1 condition was declared with effective period 17:30 - 19:30 (28 hours lead time) due to decreased generation availability (MN 118671). The forecast LOR1 condition was cancelled due to increased generation availability (MN 118691).

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
17/10/2024	QLD	1						An actual LOR1 condition was declared with effective period 18:00 - 19:00 due to increased demand and decreased generation availability (MN 118993). The actual LOR1 condition was cancelled when the effective period elapsed (MN 118995).
18/10/2024	QLD		1					A forecast LOR1 condition was declared with effective period ranging 17:30 - 18:30 (six hours lead time) due to increased net import (MN 119019). The forecast LOR1 condition was cancelled due to decreased net import (119028).
19/10/2024	QLD		1					A forecast LOR1 condition was declared with effective period ranging 17:30 - 18:30 (one day lead time) due to decreased generation availability (MN 119023). The forecast LOR1 condition was cancelled due to increased generation availability and increased net import (MN 119055).
24/10/2024	QLD		1		1			A forecast LOR1 condition was declared with effective period ranging 17:30 - 19:00 (three days lead time) due to decreased generation availability (MN 119153). A forecast LOR2 condition was declared with effective period ranging 17:30 - 19:30 (56 hours lead time) due to decreased generation availability (MN 119182). The forecast LOR2 condition was cancelled due to increased generation availability (MN 119184). The LOR1 condition was updated due to changing generation availability (MN 119193, MN 119213, MN 119263). The forecast LOR1 condition was cancelled due to increased generation availability and decreased demand (MN 119348).
28/10/2024	QLD		1		1			A forecast LOR2 condition was declared with effective period ranging 18:00 - 19:00 (four days lead time) due to decreased generation availability and net import (MN 119306). The forecast LOR2 condition was cancelled due to increased generation availability (MN 119383). A forecast LOR1 was declared and updated multiple times with effective period ranging 17:30 - 18:00 (four days lead time) due to changing generation availability (MN 119318, MN 119411, MN 119493, MN 119533, MN 119535, MN 119564, MN 119569). The forecast LOR1 condition was cancelled due to increased generation availability (MN 119601).
29/10/2024	QLD		1		1			A forecast LOR1 condition was declared and updated multiple times with effective period ranging 18:00 - 19:00 (five days lead time) due to decreased generation availability (MN 119319, MN 119565, MN 119597, MN 119607). The forecast LOR1 condition was cancelled due to increased generation availability (MN 119628). A forecast LOR2 condition was declared, cancelled and redeclared with effective period ranging 18:00 - 18:30 (66 hours lead time) due to decreased generation availability and increased FUM level (MN 119460, MN 119461, MN 119566). The forecast LOR2 condition was cancelled due to increased generation availability (MN 119584).
30/10/2024	QLD		1					A forecast LOR1 condition was declared with effective period ranging 18:30 - 19:00 (six days lead time) due to decreased generation availability (MN119321). The forecast LOR1 condition was cancelled due to increased generation availability (MN119410).
31/10/2024	QLD	1						A forecast LOR1 condition was declared and updated multiple times with effective period ranging 18:30 - 19:00 (10 hours lead time) due to decreased generation availability (MN 119692, MN 119693, MN 119709). The forecast LOR1 condition was cancelled due to increased generation availability (MN 119712).

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								An actual LOR1 condition was declared with effective period 18:30 - 19:00 due to decreased generation availability (MN 119713). The actual LOR1 condition was cancelled when the effective period elapsed (MN 119714).
4/11/2024	QLD	1			1			A forecast LOR1 condition was declared and updated multiple times with effective period ranging 17:30 - 20:00 (seven days lead time) due to decreased generation availability (MN 119572, MN 119746, MN 19800, MN 119824, MN 119834, MN 119853). A forecast LOR2 condition was declared, cancelled and redeclared with effective period 18:00 - 18:30 (four days lead time) due to decreased generation availability (MN 119716, MN 119719, MN 119753). The forecast LOR2 condition was cancelled due to increased generation availability and decreased demand (MN 119757). An actual LOR1 condition was declared with effective period 18:00 - 19:30 due to decreased generation availability (MN 119882). The actual LOR1 was cancelled at 19:00 due to increased generation availability (MN 119883).
6/11/2024	QLD		1		1			A forecast LOR2 was declared and updated multiple times with effective period ranging 17:30 - 19:00 (58 hours lead time) due to decreased net import (MN 119842, MN 119850, MN 119896, MN 119903). The forecast LOR2 condition was cancelled after rescheduling a planned outage of Yass – Marulan 5 330 kV line (NSW outage), on request from AEMO, which led to increased net import (MN 119907). A forecast LOR1 was declared, cancelled and redeclared with effective period ranging 18:00 - 18:30 (29 hours lead time) due to decreased generation availability (MN 119913, MN 119926, MN 119940). The forecast LOR1 condition was cancelled due to increased net import (MN 119950).
7/11/2024	QLD	1			1			A forecast LOR2 was declared with effective period 18:00 - 18:30 (seven days lead time) due to decreased generation availability (MN 119717). The forecast LOR2 condition was cancelled, redeclared and updated multiple times due to changing net import (MN 119720, MN 119737, MN 119752, MN 119754, MN 119791, MN 119842, MN 119851, MN 11961, MN 119877, MN 119890, MN 119897, MN 119904, MN 119932, MN 119939, MN 120044, MN 120047). The forecast LOR2 condition was cancelled after rescheduling a planned outage of Yass – Marulan 5 330 kV line (NSW outage), on request from AEMO, which led to increased generation availability (MN 120051). A forecast LOR1 was declared and updated multiple times with effective period ranging 17:30 - 18:00 (six days lead time) due to decreased net import (MN119744, MN119792, MN119827, MN119868, MN119919, MN119967). An actual LOR1 was declared with effective period 17:30 - 19:30 (MN 120112). The actual LOR1 was cancelled when the effective period elapsed (MN 120117).
8/11/2024	QLD		1		2			**Mid-day:** A forecast LOR2 condition was declared, cancelled and redeclared with effective period 15:30 - 16:00 (28 hours lead time) due to changing FUM level and decreased generation availability (MN 120059, MN 120075, MN 120084). The forecast LOR2 condition was cancelled after rescheduling a planned outage of Yass – Marulan 5

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								330 kV line (NSW outage), on request from AEMO, which led to increased generation availability (MN 120093). This improved the forecast LOR2 conditions during the mid-day and evening peak periods on 8/11/2024. **Evening Peak:** A forecast LOR1 condition was declared and updated multiple times with effective period ranging 17:30 - 19:30 (29 hours lead time) due to decreased generation availability and increased demand (MN 120083, MN 120121, MN 120127, MN 120133, MN 120135, MN 120139). The forecast LOR1 condition was cancelled due to increased generation availability (MN 120148). A forecast LOR2 condition was declared with effective period 18:00 - 19:00 (21 hours lead time) due to increased demand and decreased generation availability (MN 120120). The forecast LOR2 condition was due to increased generation availability (MN 120126).
18/11/2024	QLD		1		1			A forecast LOR2 condition was declared with effective period 18:00 - 19:00 (28 hours lead time) due to decreased generation availability (MN 120548). The forecast LOR2 condition was cancelled due to increased generation availability (MN 120556). A forecast LOR1 was declared with effective period ranging 17:30 - 18:00 (27 hours lead time) due to decreased generation availability (MN 120549). The forecast LOR1 condition was cancelled, redeclared and updated multiple times due to changing generation availability (MN 120573, MN 120576, MN 120580, MN 120595, MN 120610, MN 120611). The forecast LOR1 condition was cancelled due to increased generation availability (MN 120634).
25/11/2024	QLD		1					A forecast LOR1 condition was declared with effective period 18:00 - 18:30 (four days lead time) due to decreased generation availability (MN 120755). The forecast LOR1 condition was cancelled due to increased net import (MN 120824).
26/11/2024	QLD		1		1			A forecast LOR1 condition was declared with effective period 17:30 - 20:00 (seven days lead time) due to decreased net import (MN 120765). The condition worsened and a forecast LOR2 condition was declared and updated with effective period ranging 17:30 - 19:00 due to decreased generation availability (MN 120705, MN 120741, MN 120779). The forecast LOR2 condition was cancelled after recalling ongoing outages of Sydney South – Dapto 11 330 kV line (NSW outage), Dumaresq SVC (NSW outage) and Mt England 1 275 kV bus and rescheduling planned outage of Avon – Macarthur 17 330 kV line (NSW outage), on request from AEMO, which led to increased net import (MN 120780).
27/11/2024	QLD		3		3			**Mid-day:** A forecast LOR2 condition was declared with effective period ranging 15:00 - 21:00 (four days lead time) due to decreased net import (MN 120587). The condition improved and a forecast LOR1 condition was declared and updated with effective period ranging 15:00 - 16:30 (three days lead time) due to increased net import (MN 120863, MN 120887). The condition worsened and a forecast LOR2 condition was declared and updated with effective period ranging 14:30 - 15:30 (two days lead time) due to increased FUM level (MN 120895, MN 120898,

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
								MN 120908, MN 120945). The forecast LOR2 condition was cancelled due to increased generation availability and increased net import (MN 120960). **Evening Peak:** A forecast LOR1 condition was declared and updated multiple time with effective period ranging 17:30 - 23:00 (six days lead time) due to decreased generation availability (MN 120756, MN 120863, MN 120887, MN 120924. MN 120973, MN 121029, MN 121053). The condition worsened and a forecast LOR2 condition was declared and update multiple times due to decreased net import (MN 120790, MN 120810, MN 120815, MN 120819, MN 120827, MN 120830, MN 120868, MN 120886, MN 120895, MN 120898, MN 120908, MN 120917. MN 120945). The LOR2 condition was cancelled due to increased net import (MN 120960). **Overnight:** A forecast LOR1 condition was declared and updated with effective period ranging 21:30 - 23:00 (four days lead time) due to decreased net import (MN 120863, MN 120887). The condition worsened and an LOR2 condition was declared with effective period ranging 22:00 - 22:30 (two days lead time) due to decreased net import. The forecast LOR2 condition improved due to increased net import.
28/11/2024	QLD		2		2			**Mid-day:** A forecast LOR2 condition was declared and updated with effective period ranging 15:00 - 16:00 (two days lead time) due to decreased net import (MN 120958, MN 120972). The condition improved and a forecast LOR1 condition was declared with effective period 15:00 - 15:30 (two days lead time) due to increased net import (MN 120991). The forecast LOR1 condition improved due to increased net import and increased generation availability. **Evening Peak:** A forecast LOR2 condition was declared and updated multiple times with effective period ranging 16:00 - 19:30 (three days lead time) due to decreased net import (MN 120918, MN 120927, MN 120958, MN 121013, MN 121062). The condition improved and a forecast LOR1 condition was declared and updated multiple times with effective period ranging 16:30 - 20:30 (two days lead time) due to increased net import (MN 120991, MN 121064, MN 121087). The forecast LOR1 condition was cancelled due to increased net import and increased generation availability (MN 121113).
3/12/2024	QLD		1					A forecast LOR1 condition was declared with effective period ranging 18:00 - 19:30 (23 hours lead time) due to a decrease in generation availability (MN 121386, MN 121406). The forecast LOR1 condition was cancelled due to an increase in generator availability (MN 121416).
8/12/2024	QLD		1					A forecast LOR1 condition was declared and updated with effective period ranging 18:30 - 19:30 (29 hours lead time) due to a decrease in generation availability (MN 121588, MN 121608). The forecast LOR1 condition was cancelled due to an increase in generation availability (MN 121611). A forecast LOR1 condition was declared with effective period ranging 18:30 - 19:30 (zero hours lead time) due to a decrease in generator availability and an increase in demand (MN 121634). The forecast LOR1 condition improved due to decreased demand.

Effective date[A]	Region	LOR1		LOR2		LOR3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
10/12/2024	QLD				1			A forecast LOR2 condition was declared with effective period ranging 14:30 - 15:00 (41 hours lead time) due to an increase in FUM (MN 121647). The forecast LOR2 condition was cancelled due to an increase in generation availability (MN 121648). A forecast LOR2 condition was declared with effective period 14:30 - 15:00 (31 hours lead time) due to an increase in FUM (MN 121651). The forecast LOR2 condition was cancelled due to an increase in generation availability (MN 121653).
17/12/2024	QLD		1		2			**Mid-day and Evening Peak:** A forecast LOR1 condition was declared with effective period ranging 18:00 - 19:00 (five days lead time) due to a decrease in net imports (MN 121794). The condition worsened and a forecast LOR2 condition was declared with effective period ranging 14:30 - 19:30 (five days lead time) due to a decrease in net imports (MN 121808). Conditions improved due to an increase in net imports and the forecast LOR2 and LOR1 conditions were cancelled (MN 121846, MN 12182).
16/12/2024	TAS		1		1			A forecast LOR1 condition was declared with effective period ranging 17:30 - 18:30 (four days lead time) due to a decrease in net imports (MN 121796). Conditions worsened and a forecast LOR2 was declared with effective period ranging 18:00 - 18:30 (four days lead time) due to a decrease in net imports and decrease in generation availability (MN 121823). Conditions improved and the forecast LOR2 condition was cancelled due to an increase in generation availability (MN 121824). Conditions further improved and the forecast LOR1 was cancelled due to an increase in net imports (MN 121845).
16/12/2024	VIC		2		2			**Mid-day and Evening Peak:** A forecast LOR2 condition was declared and updated with effective period ranging 14:30 - 18:30 (five days lead time) due to a decrease in net imports (MN 121736, MN 121767, MN 121770, MN 121777, MN 121787, MN 121790, MN 121821). A forecast LOR1 was declared and updated with effective period ranging 15:30 - 17:30 (four days lead time) due to decreased generation availability (MN 121795, MN 121848). Conditions improved and the forecast LOR2 condition was cancelled due to increased net imports (MN 121836). The forecast LOR1 condition was cancelled due to increased net imports and generation availability (MN 121890).
Total		**18**	**61**	**2**	**54**	**0**	**9**	

A. Effective date is the date on which the condition occurred or was expected to occur and may differ from the date on which a market notice advising of the forecast or actual condition was issued.

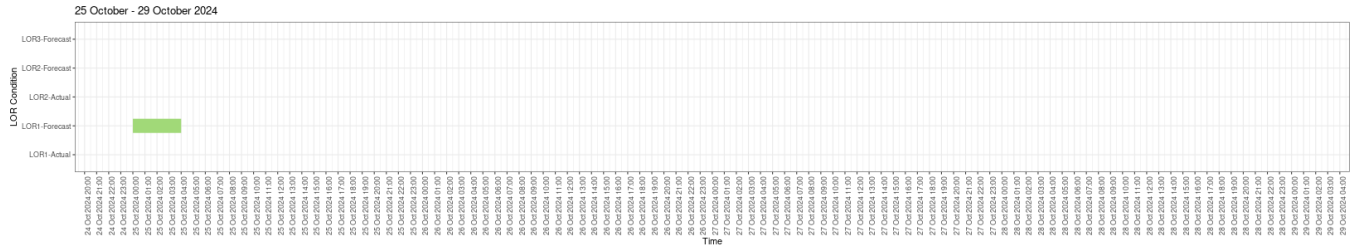
3.1 Lack of Reserve declarations during the reporting period – Gantt chart

This section shows the LOR declarations during the reporting period 1 October to 31 December 2024 for each region using Gantt charts. Each Gantt chart covers a four-day period. Periods with no LOR declarations were omitted and not graphed.

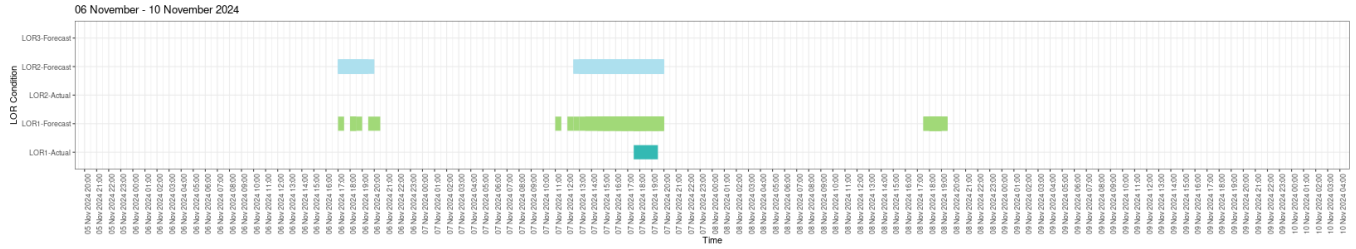
Forecast and actual LOR1, LOR2 and LOR3 conditions including updates are shaded according to the legend at the bottom of each page for the corresponding effective periods based on the market notices.

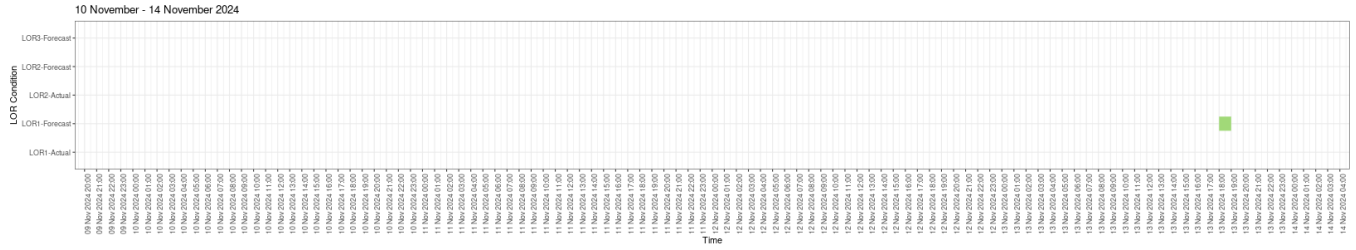
3.1.1 New South Wales

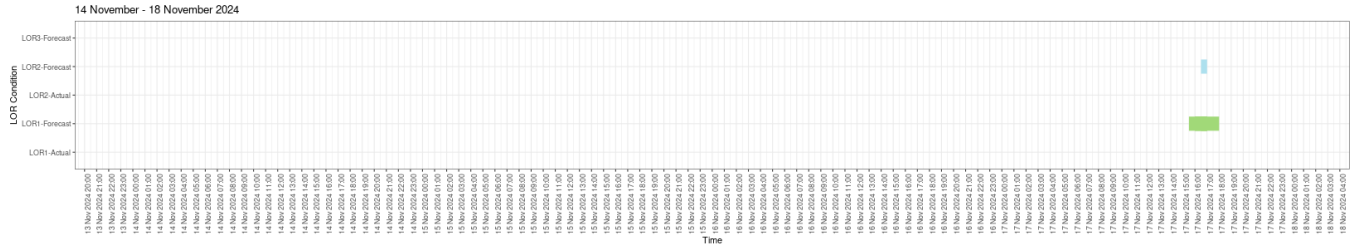
There were no LOR declarations in the period from 1 October to 9 October 2024.

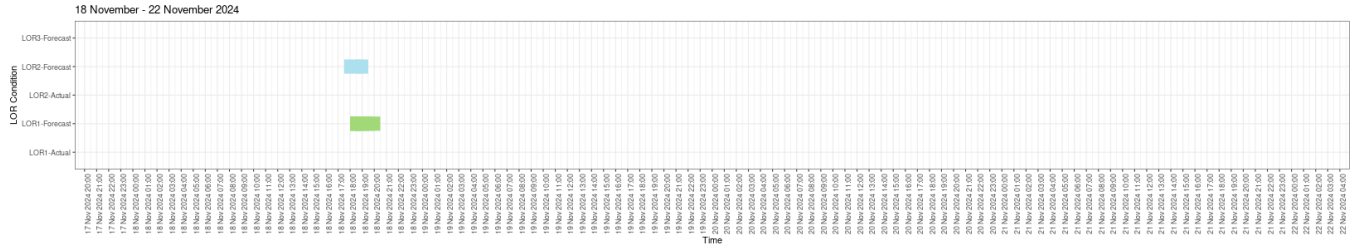


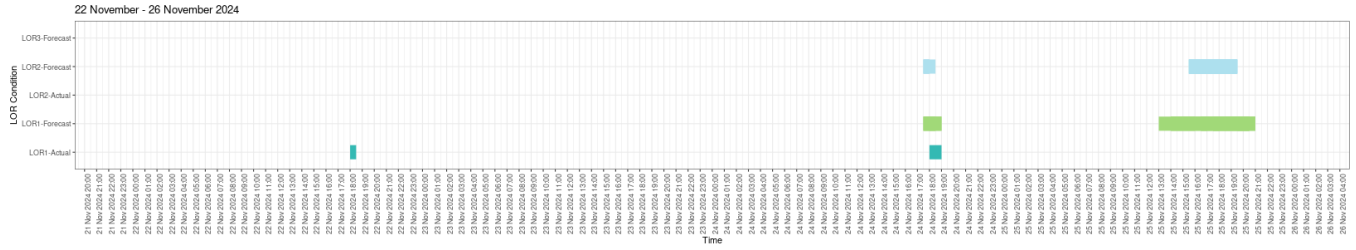
There were no LOR declarations in the period from 29 October to 6 November 2024.

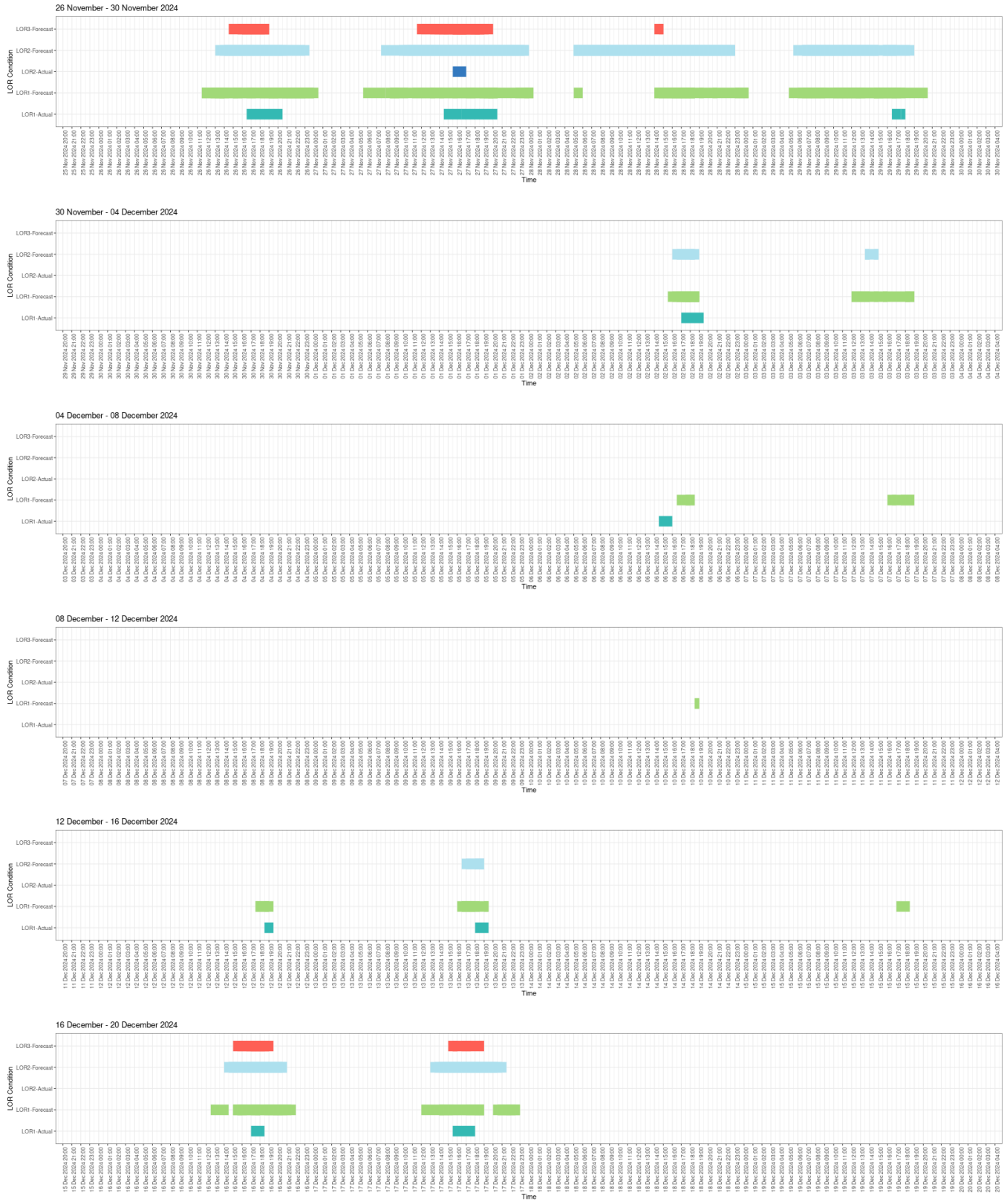










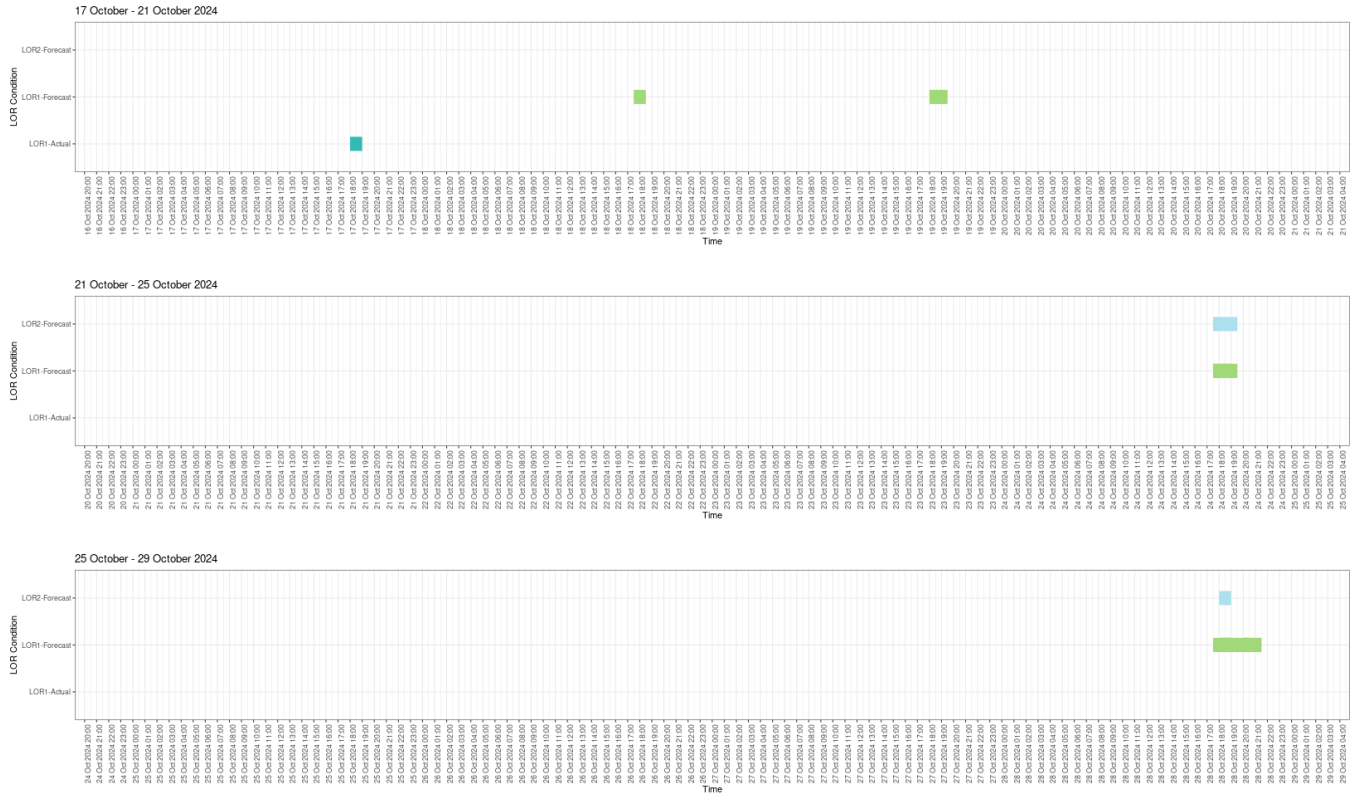


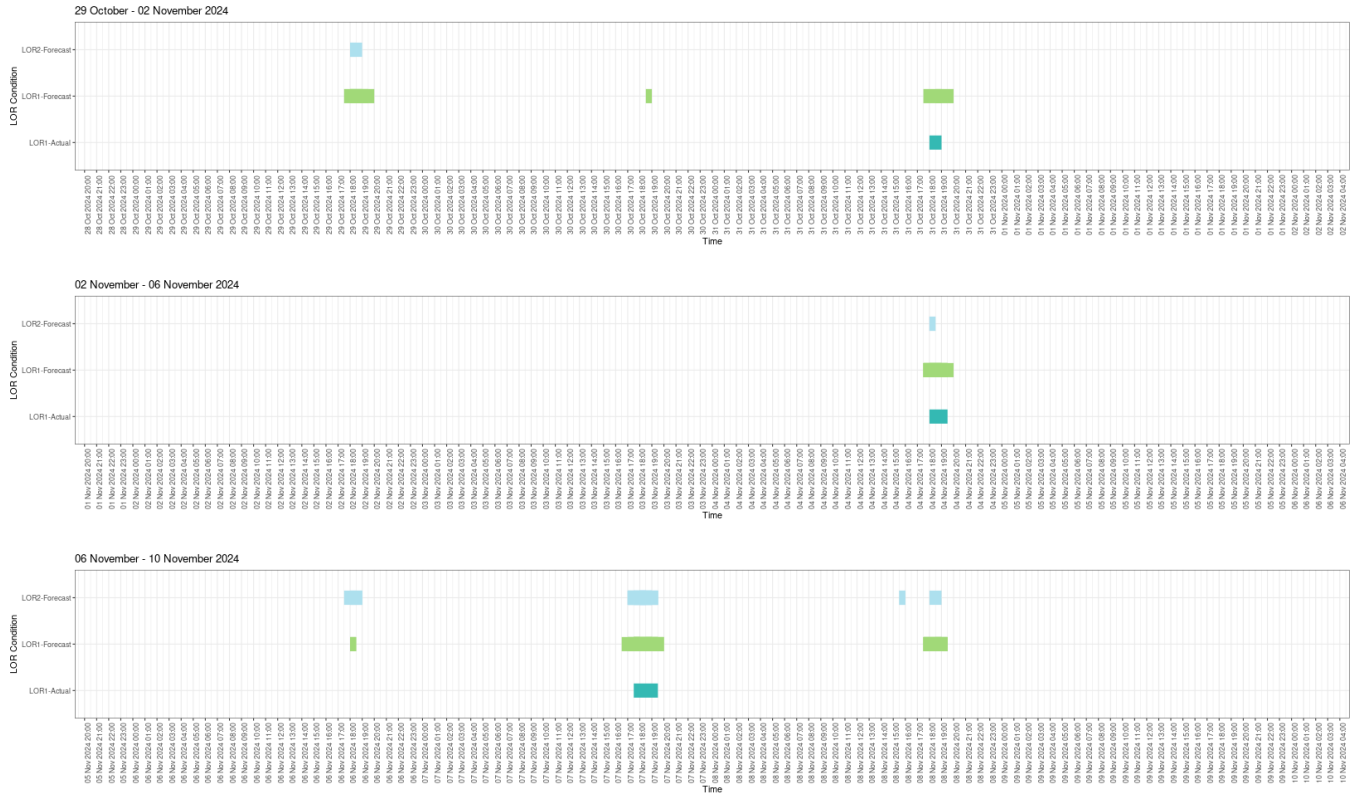
There were no LOR declarations in the period from 20 December to 31 December 2024.

3.1.2 Queensland

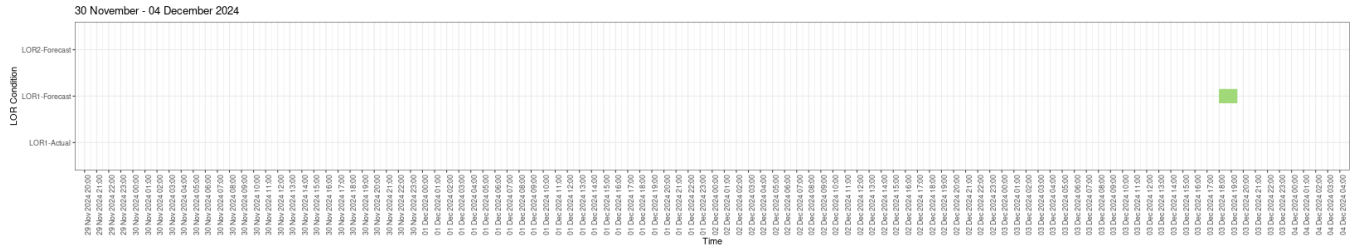
There were no LOR declarations in the period from 1 October to 5 October 2024.

There were no LOR declarations in the period from 13 October to 17 October 2024.

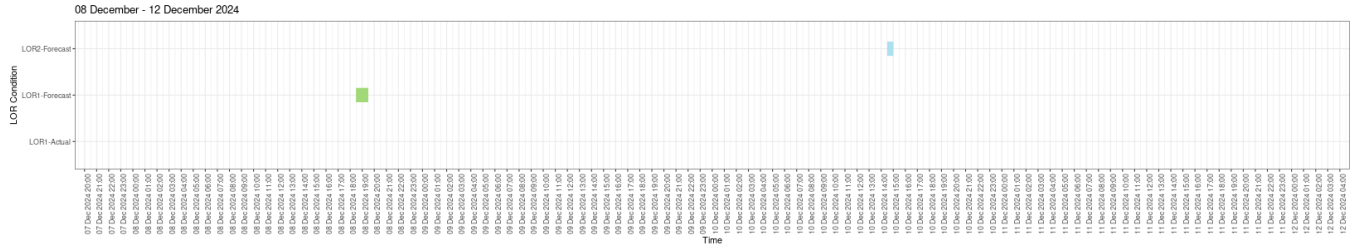




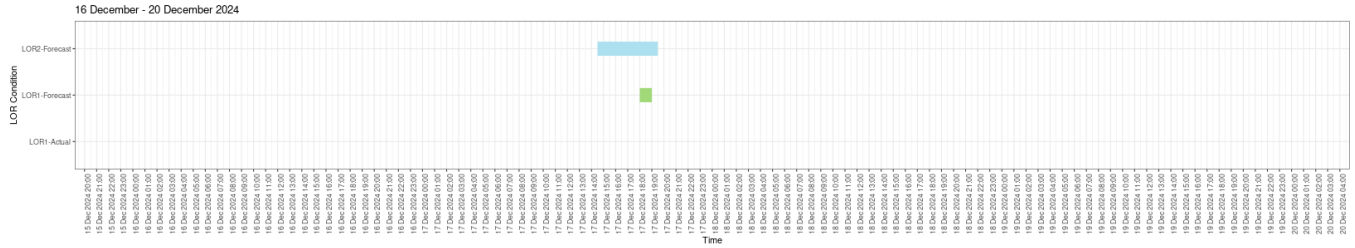
There were no LOR declarations in the period from 10 November to 18 November 2024.



There were no LOR declarations in the period from 4 December to 8 December 2024.



There were no LOR declarations in the period from 12 December to 16 December 2024.



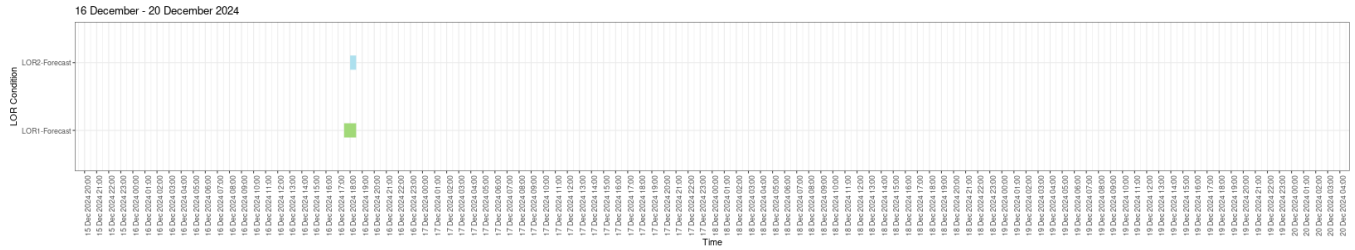
There were no LOR declarations in the period from 20 December to 31 December 2024.

3.1.3 South Australia

There were no LOR declarations in the period from 1 October to 31 December 2024.

3.1.4 Tasmania

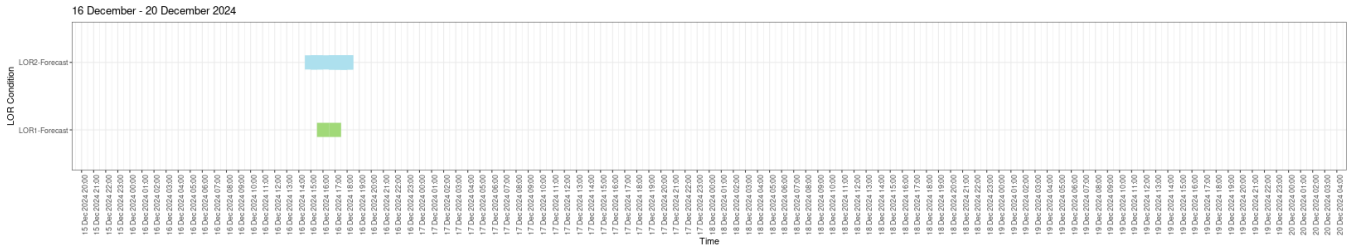
There were no LOR declarations in the period from 1 October to 16 December 2024



There were no LOR declarations in the period from 20 December to 31 December 2024.

3.1.5 Victoria

There were no LOR declarations in the period from 1 October to 16 December 2024.



There were no LOR declarations in the period from 20 December to 31 December 2024.

4 Minimum System Load conditions declared

Table 5 provides a high-level summary of the counts of forecast and actual MSL conditions for the reporting period (Quarter 4 2024) based on the following declaration count principles.

Declaration count principles

For the reporting period, AEMO determined the total count for MSL conditions based on the principle that all MNs making the initial declaration of a forecast or actual MSL condition with an effective date during the reporting period were counted. Reporting principles will continue to evolve as AEMO continues to review MSL conditions in the future.

Table 5 Summary of forecast and actual Minimum System Load conditions, with causing factors

Effective date[A]	Region	MSL1		MSL2		MSL3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
12/10/2024	VIC		1					MSL conditions are forecast when Victoria regional demand[6] falls below the MSL1, MSL2 or MSL3 threshold. Forecast MSL1 condition was declared on 07/10/2024 for 12/10/2024 with effective period 12:00 - 14:00 [MN 118646] and cancelled on 11/10/2024 [MN 118775]. Forecast MSL1 condition was redeclared on 12/10/2024 [MN 118803] and cancelled at 12:50 on 12/10/2024 [MN 118817]. Several non-scheduled generators reduced output to zero in response to low spot prices helping improve MSL condition.
13/10/2024	VIC		1					Forecast MSL1 condition market notice was issued on 07/10/2024 for 13/10/2024 with effective period 11:00 - 14:00 [MN 118645]. Forecast MSL1 condition was cancelled on 09/10/2024 [MN 118721]. Forecast MSL1 condition was redeclared and updated several times [MN 118749, MN 118809, MN 118834, MN 118836]. Forecast MSL1 condition was cancelled at 13:00 on 13/10/2024 [MN 118851]. Several non-scheduled generators reduced output to zero in response to low spot prices helping improve MSL condition.
26/10/2024	VIC	1						Forecast MSL1 condition market notice was issued on 22/10/2024 for 26/10/2024 with effective period 12:30 - 13:00 [MN 119194] and updated twice [MN 119236, MN 119423]. Actual MSL1 condition existed for the period 12:30 - 13:15 [MN 119439]. Several non-scheduled generators reduced output to zero in response to low spot prices helping improve MSL condition.
27/10/2024	VIC		1					Forecast MSL1 condition market notice was issued on 24/10/2024 for 27/11/2024 with effective period 11:30 - 14:00 [MN 119315] and updated on 25/11/2024 [MN 119412]. Forecast MSL1 condition was cancelled on 26/11/2024 [MN 119459].
02/11/2024	VIC		1					Forecast MSL1 condition market notice was issued on 28/10/2024 for 02/11/2024 with effective period 11:00 - 13:30 [MN 119571] and updated twice [MN 119644, MN 119742]. Forecast MSL1 condition was cancelled at 12:00 on 02/11/2024 [MN 119774]. Several non-scheduled generators reduced output to zero in response to low spot prices helping improve MSL condition.
03/11/2024	VIC	1						Forecast MSL1 condition market notice was issued on 27/10/2024 for 03/11/2024 with effective period 12:00 - 13:00 [MN 119497] and cancelled on 28/11/2024 [MN 119578]. Forecast MSL1 condition was redeclared on 01/11/2024 [MN 119741] and resulted into actual MSL1 condition for the period 11:50 - 13:30 [MN 119760, MN 119822].
05/11/2024	VIC		1					Forecast MSL1 condition market notice was issued on 04/11/2024 for 05/11/2024 with effective period 12:00 - 13:30 [MN 119863] and cancelled at 12:00 on 05/11/2024 [MN119905]. Several non-scheduled generators reduced output to zero in response to low spot prices helping improve MSL condition.

[6] Forecast regional demand (DEMAND50) is published in Short Term and Pre-Dispatch PASA region solution reports available on Market Data NEMWEB: https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/data-nem/market-data-nemweb.

Effective date[A]	Region	MSL1		MSL2		MSL3		Cause and resolution
		Actual	Forecast	Actual	Forecast	Actual	Forecast	
09/11/2024	VIC		1					Forecast MSL1 condition market notice was issued on 04/11/2024 for 09/11/2024 with effective period 11:00 – 14:00 [MN 119497] and cancelled on 06/11/2024 [MN 119995].
10/11/2024	VIC		1		1			Forecast MSL2 condition was declared on 04/11/2024 for 10/11/2024 with effective period 12:30 - 13:00 [MN 119852] and forecast MSL1 conditions were also declared for the same day for the following periods 09:30 - 12:30 and 13:00 - 15:00 [MN 119867]. Forecast MSL2 condition was cancelled on 05/11/2024 [MN 119892]. Forecast MSL1 condition was updated [MN 119920, MN 119996] and cancelled on 07/11/2024 [MN 120099].
08/12/2024	VIC		1					Forecast MSL1 condition market notice was issued on 06/12/2024 for 08/12/2024 with effective period 12:00 - 13:30 [MN 121508] and updated on 08/12/2024 [MN 121617]. Forecast MSL1 condition was cancelled at 12:30 on 08/12/2024 [MN 121618]. Several non-scheduled generators reduced output to zero in response to low spot prices helping improve MSL condition.
21/12/2024	VIC		1					Forecast MSL1 condition market notice was issued on 17/12/2024 for 21/12/2024 with effective period 11:30 - 13:30 [MN 122109] and cancelled at 09:00 on 21/12/2024 [MN 122344].
22/12/2024	VIC	1			1			Forecast MSL1 condition market notice was issued on 18/12/2024 for 22/12/2024 with effective period 11:30 - 14:00 [MN 122195] and updated on 19/12/2024 and 21/12/2024 [MN 122271, MN 122377]. Forecast MSL2 condition was declared on several occasions leading to 22/12/2024 and finally cancelled at 10:15 on 22/12/2024 [MN 122275, MN 122289, MN 122305, MN 122308, MN 122341, MN 122369, MN 122378, MN 122385, MN 122395]. Actual MSL1 condition existed for the period 11:15 - 14:30 [MN 122399, MN 122405]. Several non-scheduled generators reduced output to zero in response to low spot prices helping improve MSL condition
29/12/2024	VIC		1					Forecast MSL1 condition market notice was issued on 23/12/2024 for 29/12/2024 with effective period 10:00 - 14:00 [MN 122437] and cancelled at 14:00 on 24/12/2024 [MN 122454].
Total		**3**	**10**	**0**	**2**	**0**	**0**	

5 Review of performance

5.1 Forecast Uncertainty Measure values

As in Section 2.1, this section will compare the 10th, 50th (median) and 90th percentile FUM values for this reporting period to those for each quarter from Quarter 2 2024 to Quarter 4 2024. FUM values decreasing is indicative of the distribution tightening with decreasing forecast uncertainty.

The most material changes in FUM values between Quarter 3 2024 and Quarter 4 2024 are summarised in this section. For forecast horizons not mentioned in this section, the changes from Quarter 3 2024 were minor:

- **New South Wales** – the 10th, median, and 90th percentile FUM values increased across all forecast horizons.
- **Queensland** – the 10th, median, and 90th FUM values increased across all forecast horizons.
- **South Australia** – The 10th percentile FUM values decreased at the 48 and 60 hours ahead forecast horizons. The median, and 90th percentile FUM values decreased for the 48 and 60 hours ahead forecast horizons.
- **Tasmania** – the 10th percentile FUM values increased in all forecast horizons. The median FUM values decreased in all forecast horizons. Whilst the range increased significantly at the 48 and 60 hours ahead forecast horizons this has been assessed as reasonable given the 10th, median and 90th percentile FUM values did not change significantly compared to last quarter.
- **Victoria** – the 10th percentile FUM values increased at the 2, 24 and 60 hours ahead forecast horizons. The median and 90th percentile FUM values increased across all forecast horizons.

Figure 3 New South Wales region: Forecast Uncertainty Measure values for the reporting period, and compared to previous two quarters

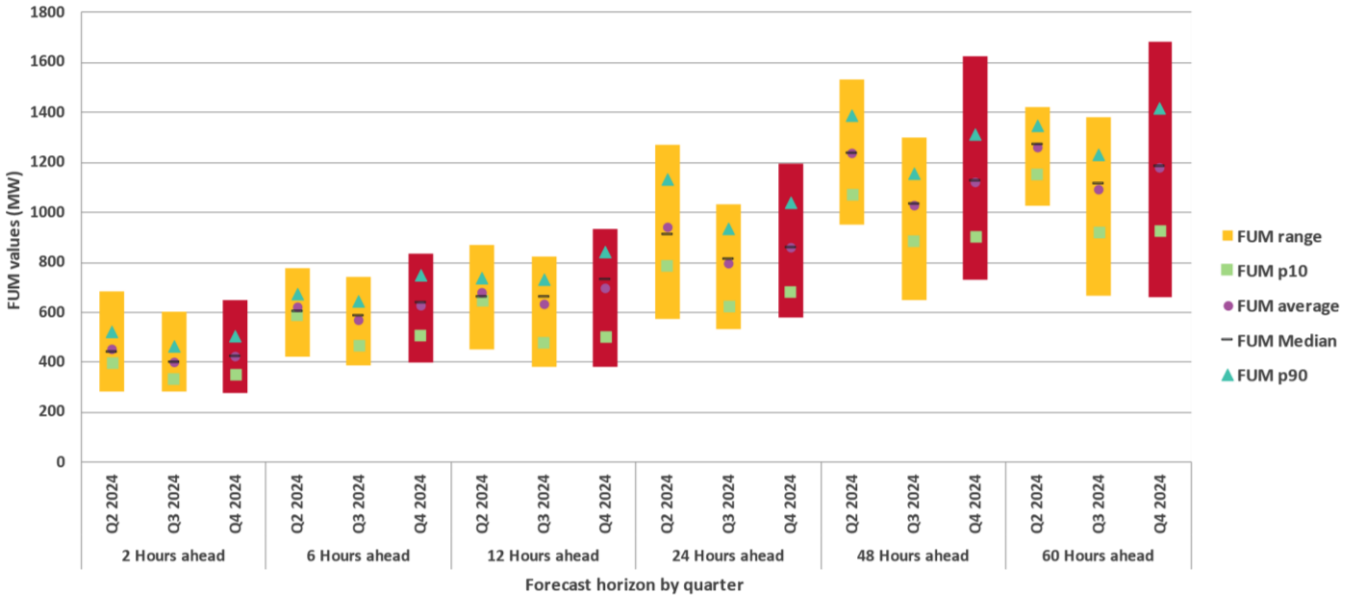


Figure 4 Queensland region: Forecast Uncertainty Measure values for the reporting period, and compared to two previous quarters

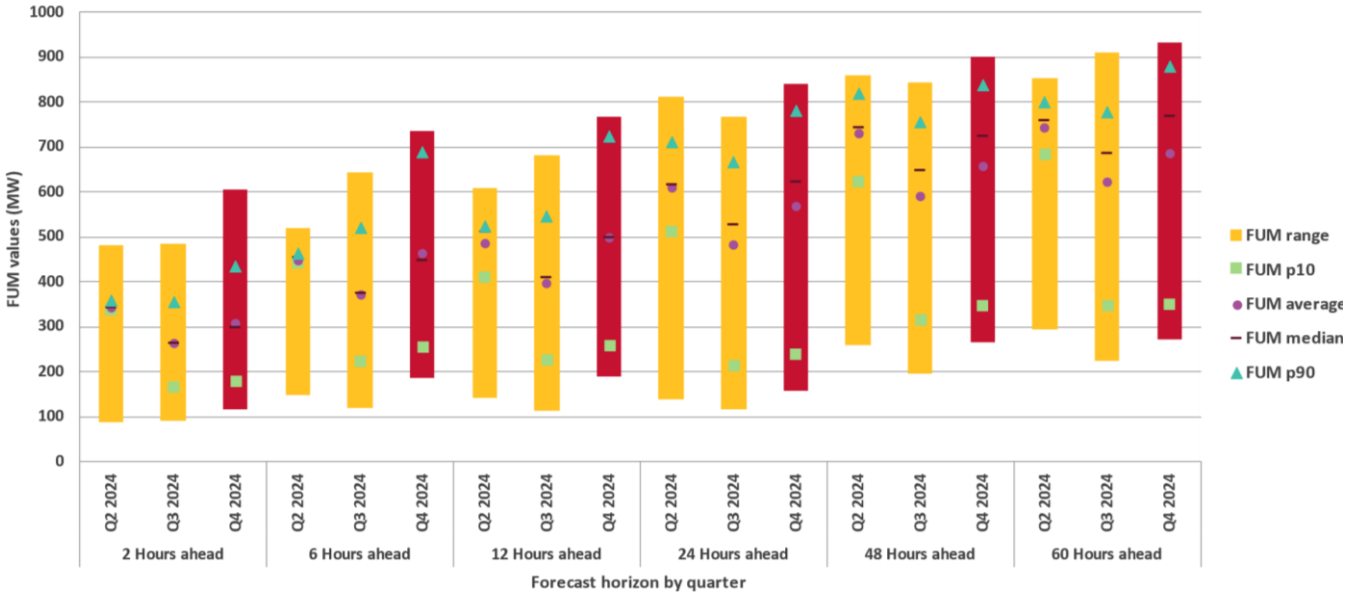


Figure 5 South Australia region: Forecast Uncertainty Measure values for the reporting period, and compared to two previous quarters

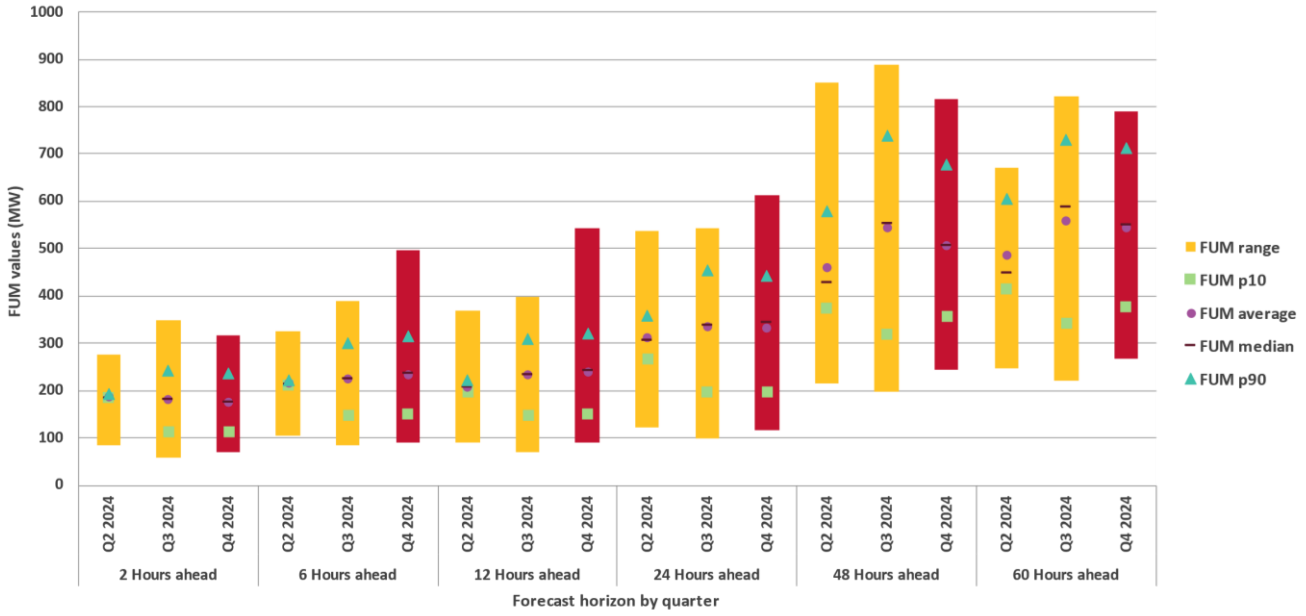


Figure 6 Tasmania region: Forecast Uncertainty Measure values for the reporting period, and compared to two previous quarters

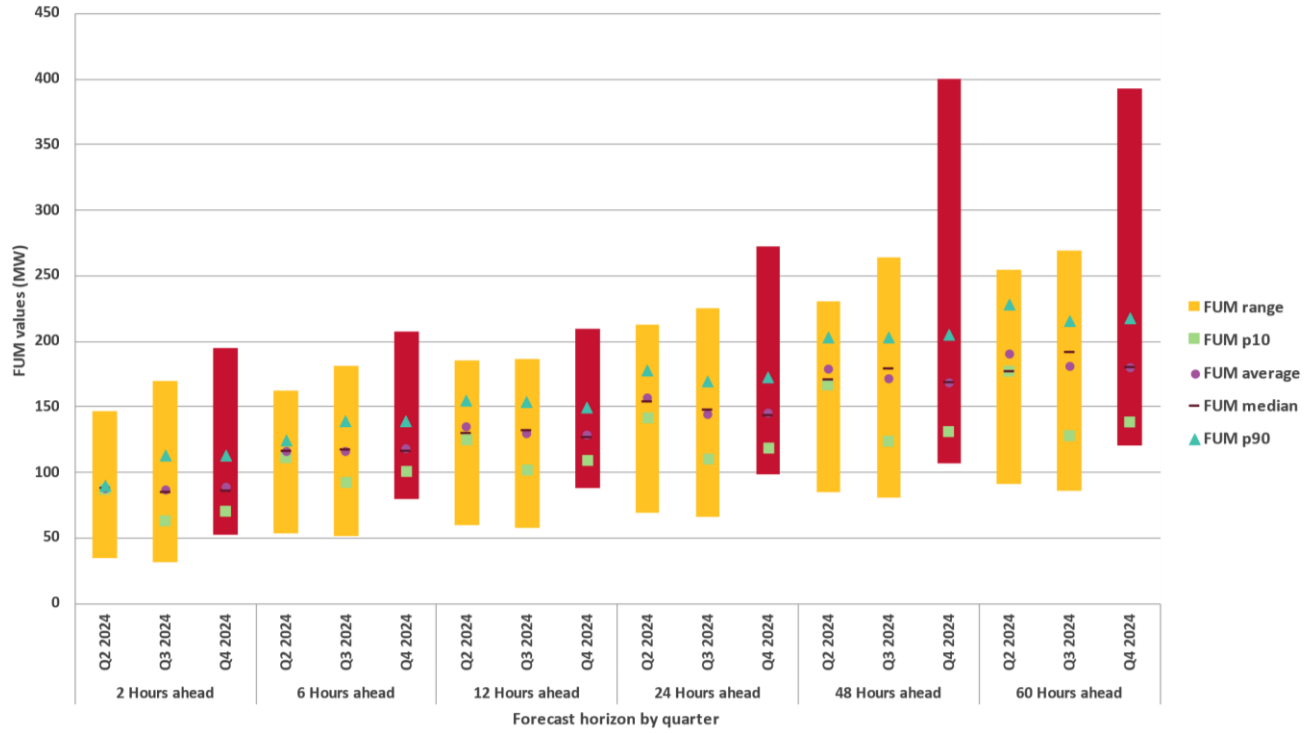
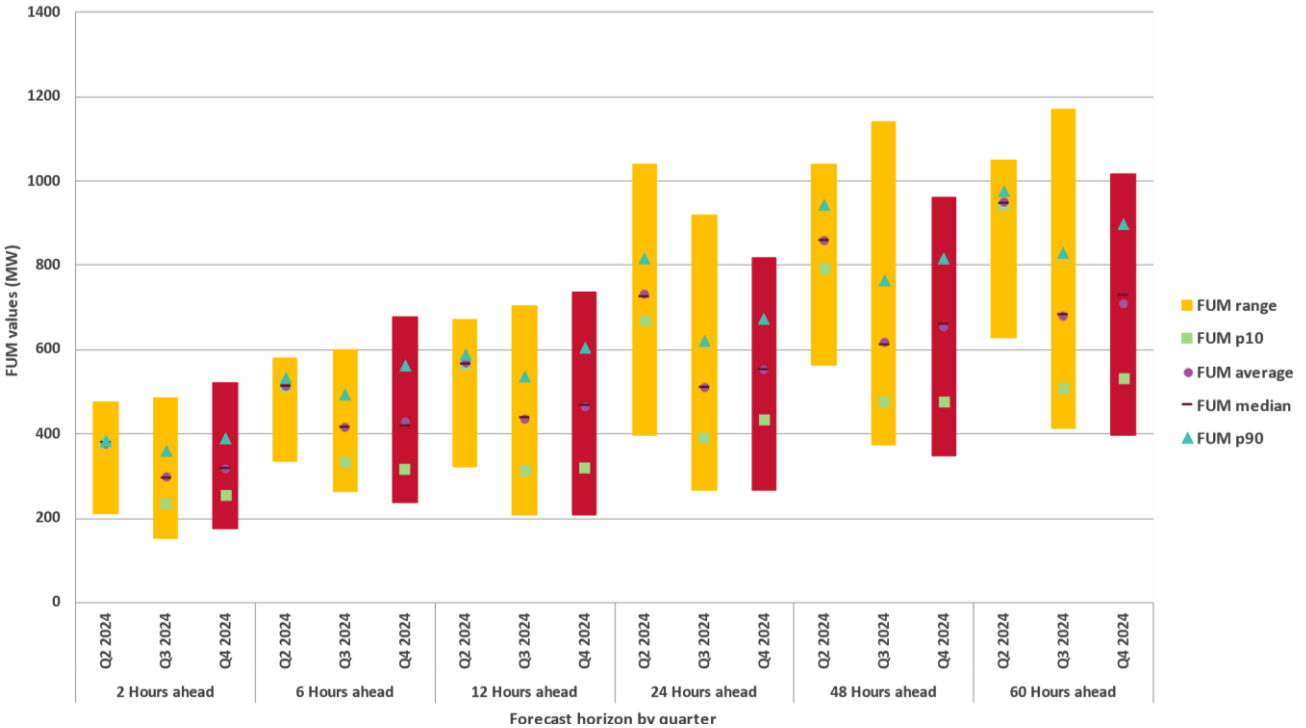


Figure 7 Victoria region: Forecast Uncertainty Measure values for the reporting period, and compared to two previous quarters



5.2 Forecast and actual Lack of Reserve declarations

A summary of the count and causes of declared forecast and actual LOR conditions can be found in Table 4 in Section 3 of this report.

Of the 144 LOR declarations in the reporting period, 124 were for forecast LOR conditions:

- 61 forecast LOR1 conditions were declared.
- 54 forecast LOR2 conditions were declared.
- Nine forecast LOR3 conditions were declared.
- 46 forecast LOR2 conditions were set by the FUM.

A total of 18 actual LOR1 conditions were declared. 16 of these were observed as forecast LOR1 prior to being declared as an actual, therefore were not counted as forecast declarations based on the declaration count principles outlined in Section 3. Two were declared as an actual LOR1 condition without prior forecast.

There were two actual LOR2 conditions declared.

There was one suspect LOR3 condition issued for New South Wales 6/12/2024. The investigation found that the suspect LOR3 condition was invalid due to input errors.

Table 6 Summary of Lack of Reserve conditions during reporting period, 1 October to 31 December 2024

Region	LOR1		LOR2		LOR3	
	Actual	Forecast	Actual	Forecast	Actual	Forecast
NSW	14	36	2	31	0	9
QLD	4	22	0	20	0	0
SA	0	0	0	0	0	0
TAS	0	1	0	1	0	0
VIC	0	2	0	2	0	0
Total	**18**	**61**	**2**	**54**	**0**	**9**

Reliability and Emergency Reserve Trader (RERT) activations

During the reporting period, RERT services were activated on 27 November (New South Wales)[7].

Table 7 Lack of Reserve conditions declared during the reporting period by trigger (Forecast Uncertainty Measure or Largest Credible Risk)

Effective period	LOR1	LOR2	LOR3
New South Wales (NSW)			
9/10/2024	Forecast		
16/10/2024	Forecast		

[7] RERT reporting is at https://aemo.com.au/energy-systems/electricity/emergency-management/reliability-and-emergency-reserve-trader-rert/rert-reporting.

Effective period	LOR1	LOR2	LOR3
	Forecast		
	Forecast	Forecast	
	Forecast		
24/10/2024	Forecast	Forecast	
	Forecast	Forecast	
	Forecast	Forecast	
6/11/2024	Forecast	Forecast	
7/11/2024	Forecast	Forecast	
	Forecast then Actual	Forecast	
8/11/2024	Forecast		
13/11/2024	Forecast		
17/11/2024	Forecast		
	Forecast	Forecast	
18/11/2024	Forecast	Forecast	
22/11/2024	Actual		
24/11/2024	Forecast then Actual	Forecast	
25/11/2024	Forecast	Forecast	
	Forecast	Forecast	
26/11/2024	Forecast	Forecast	Forecast
	Forecast then Actual	Forecast	Forecast
	Forecast	Forecast	
27/11/2024	Forecast	Forecast	
	Forecast then Actual	Forecast then Actual	Forecast
	Forecast then Actual	Forecast then Actual	Forecast
	Forecast	Forecast	
28/11/2024	Forecast	Forecast	
	Forecast	Forecast	Forecast
	Forecast	Forecast	
	Forecast	Forecast	
29/11/2024	Forecast	Forecast	
	Forecast	Forecast	
	Forecast then Actual	Forecast	
2/12/2024	Forecast		
	Forecast then Actual	Forecast	
3/12/2024	Forecast	Forecast	
	Forecast		
6/12/2024	Forecast then Actual		
	Forecast		
7/12/2024	Forecast		
10/12/2024	Forecast		

Effective period	LOR1	LOR2	LOR3
12/12/2024	Forecast then Actual		
13/12/2024	Forecast then Actual	Forecast	
16/12/2024	Forecast	Forecast	Forecast
	Forecast then Actual	Forecast	Forecast
17/12/2024	Forecast then Actual		
	Forecast then Actual	Forecast	Forecast
	Forecast	Forecast	Forecast
Queensland (QLD)			
7/10/2024	Forecast		
8/10/2024		Forecast	
	Forecast	Forecast	
9/10/2024	Forecast		
17/10/2024	Actual		
18/10/2024	Forecast		
19/10/2024	Forecast		
24/10/2024	Forecast	Forecast	
28/10/2024	Forecast	Forecast	
29/10/2024	Forecast	Forecast	
30/10/2024	Forecast		
31/10/2024	Forecast then Actual		
4/11/2024	Forecast then Actual	Forecast	
6/11/2024	Forecast	Forecast	
7/11/2024	Forecast then Actual	Forecast	
8/11/2024	Forecast	Forecast	
	Forecast	Forecast	
18/11/2024	Forecast	Forecast	
25/11/2024	Forecast		
26/11/2024	Forecast	Forecast	
27/11/2024	Forecast	Forecast	
	Forecast	Forecast	
	Forecast	Forecast	
28/11/2024	Forecast	Forecast	
	Forecast	Forecast	
3/12/2024	Forecast		
8/12/2024	Forecast		
10/12/2024		Forecast	
17/12/2024		Forecast	
	Forecast	Forecast	
South Australia (SA)			
NIL			

Effective period	LOR1	LOR2	LOR3
Tasmania (TAS)			
16/12/2024	Forecast	Forecast	
Victoria (VIC)			
16/12/2024	Forecast	Forecast	
	Forecast	Forecast	

Note. Yellow shading indicates the requirement was set by the LCR or LCR2, and orange indicates the requirement was set by the FUM.

5.3 Causes of Lack of Reserve declarations

As summarised in Table 4 (in Section 3), a total of 144 LOR conditions were declared during the reporting period: 124 forecast and 20 actual LOR conditions.

Based on Table 4:

- Of the 77 forecast LOR1 conditions declared, 18 resulted in actual LOR1 conditions. These were counted as actual LOR1 conditions based on the declaration count principles outlined in Section 3.
- Of the 56 forecast LOR2 conditions declared, two resulted in an actual LOR2 condition.
- Of the nine forecast LOR3 conditions declared, none resulted in an actual LOR3 condition.
- There were 61 forecast LOR1 conditions that did not develop into actual LOR1 conditions, 54 forecast LOR2 conditions that did not develop into actual LOR2 conditions, and nine forecast LOR3 conditions that did not develop into actual LOR3 conditions. The reasons were either a market response following the issue of the forecast market notice, changes to the net import, changes in forecast demand or changes to network outages. The market response generally took the form of increased available generation. On several occasions AEMO recalled or rescheduled planned transmission outages to help improve LOR2 or LOR3 conditions.
- As Table 7 above shows, during the reporting period there were two instances where an actual LOR1 condition occurred with no prior forecast.
- There were nine LOR3 conditions declared.
- The LOR conditions in New South Wales, Queensland, Tasmania, and Victoria were mainly driven by decreased generation availability, increased demand and/or NSW network outages.
- There were no LOR conditions declared in South Australia.

5.4 Number of Lack of Reserve declarations compared to previous quarters

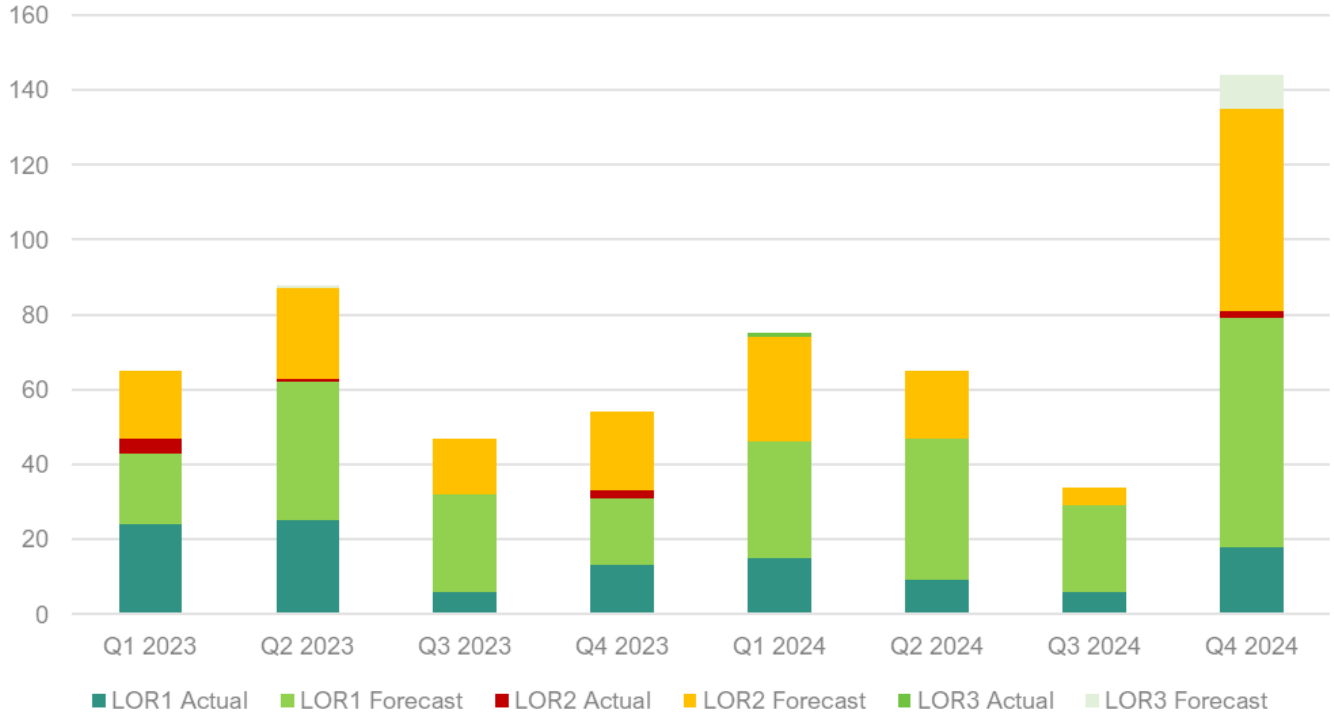
Quarter 4 2024 covered the mid to late spring months and the first month of summer.

A total of 144 LOR conditions were declared during Quarter 4 2024 – 124 forecast and 20 actual LOR conditions. This is higher than the 34 LOR declarations recorded in the previous reporting period (1 July to 30 September 2024), and higher than the 54 LOR conditions declared for the same period last year (Quarter 4 2023). Compared

to the same period last year (Quarter 4 2023) the number of actual LOR conditions is higher. This is the highest number of LOR conditions declared since the NEM market suspension in Quarter 2 and Quarter 3 of 2022.

Figure 8 shows the historical trend of actual and forecast LOR conditions in past quarters from Quarter 1 2023 compared to Quarter 4 2024.

Figure 8 Quarterly comparison of actual and forecast Lack of Reserve conditions, Q1 2023 to Q4 2024



5.5 Review of Minimum System Load declarations

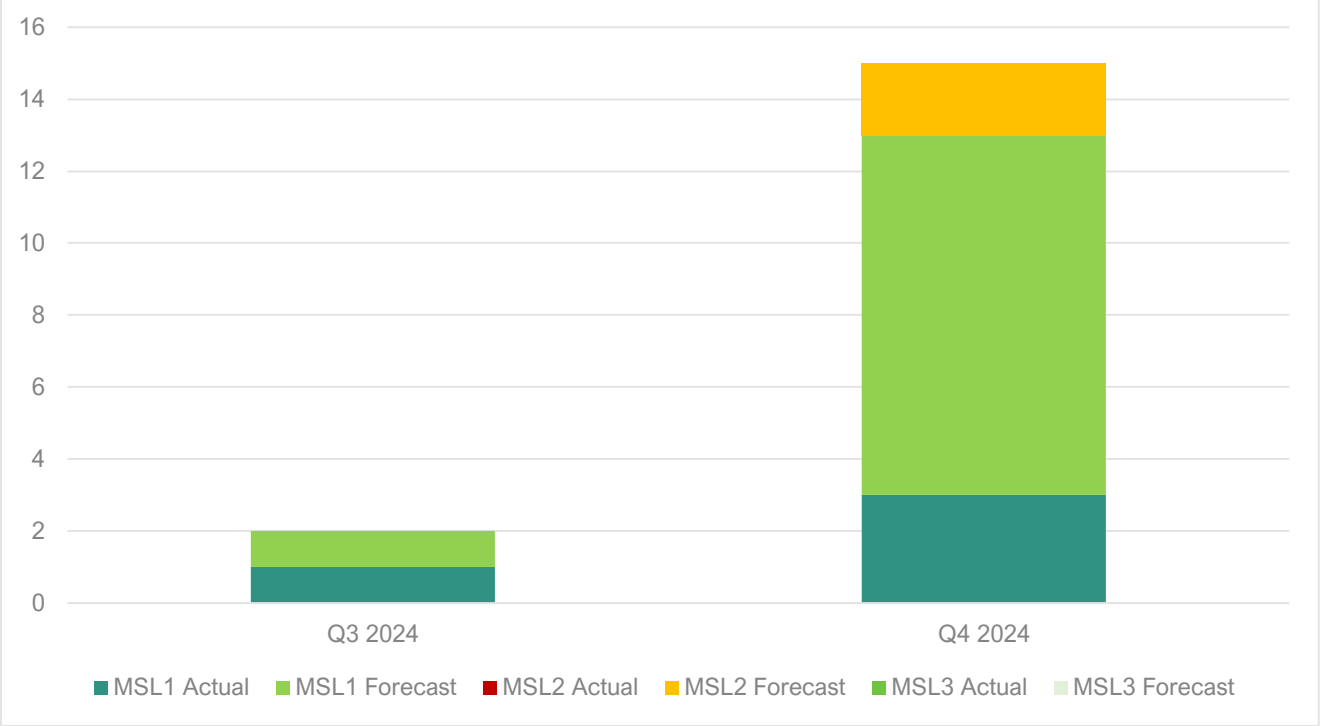
Quarter 4 2024 covered the mid to late spring months and the first month of summer.

MSL conditions are more likely to arise during spring and summer months due to more favourable weather conditions resulting in increased generation from distributed photovoltaic (PV) systems.

AEMO declared 10 forecast MSL1 conditions in Victoria region during Quarter 4 2024 and three actual MSL1 conditions.

AEMO declared two forecast MSL2 conditions in Victoria region during Quarter 4 2024, and there were no actual MSL2 conditions. Figure 9 below shows the historical trend of actual and forecast MSL conditions from Quarter 3 2024 to Quarter 4 2024, highlighting that the number of actual and forecast MSL conditions increased compared to last quarter.

Figure 9 Quarterly comparison of actual and forecast Minimum System Load conditions, Q3 2024 to Q4 2024



Glossary

This document uses many terms that have meanings defined in the NER. The NER meanings are adopted unless otherwise specified.

For each of the terms below, refer to the Reserve Level Declaration Guidelines[8] for further information.

Term	Definition
AEST	Australian Eastern Standard Time
BBN	Bayesian Belief Network[A]
ETL	Extract-Transform-Load
FUM	Forecast Uncertainty Measure (the number of MW representing the level of forecasting uncertainty)
Guidelines	The Reserve Level Declaration Guidelines published by AEMO under clause 4.8.4A of the NER
LCR	Largest Credible Risk – the single largest credible risk in the region
LCR2	Largest Credible Risk 2 – the sum of the two largest credible risks in the region
LOR1	Lack of Reserve level 1. The threshold for an LOR1 is determined by the larger value of either the FUM or the sum of the two largest credible risks in the region (LCR2).
LOR2	Lack of Reserve level 2. The threshold for an LOR2 is determined by the larger value of either the FUM or the largest credible risk in the region (LCR).
LOR3	Lack of Reserve level 3. The threshold for an LOR3 condition is when the forecast reserve for a region is at or below zero.
MSL1[B]	Minimum System Load level 1. The threshold for an MSL1 condition implies that regional demand is two credible load contingencies away from MSL3.
MSL2[B]	Minimum System Load level 2. The threshold for an MSL2 condition implies that regional demand is one credible load contingency away from MSL3.
MSL3[B]	Minimum System Load level 3. The threshold for an MSL3 condition is determined when the forecast regional demand is insufficient to maintain a secure operating state.
PASA	Projected Assessment of System Adequacy[C]
RERT	Reliability and Emergency Reserve Trader[D]
TNSP	Transmission network service provider

A. More detail regarding Bayesian Belief Networks is available in the Appendix of AEMO's reserve level declaration guidelines document, at https://www.aemo.com.au/-/media/files/electricity/nem/security_and_reliability/power_system_ops/reserve-level-declaration-guidelines.pdf.
B. MSL thresholds with three levels of warning currently apply for system normal conditions in the Victoria region only. System normal MSL risks and relevant procedures for other NEM regions are under development.
C. See AEMO's Projected Assessment of System Adequacy (PASA) principles, at https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-reliability/projected-assessment-of-system-adequacy.
D. See AEMO's RERT guidelines, at https://aemo.com.au/en/energy-systems/electricity/emergency-management/reliability-and-emergency-reserve-trader-rert.

[8] See AEMO's reserve level declaration guidelines, at https://www.aemo.com.au/-/media/files/electricity/nem/security_and_reliability/power_system_ops/reserve-level-declaration-guidelines.pdf.