



NEM Event – Directions Report 1 February 2022

February 2022

Important notice

PURPOSE

Where the Australian Energy Market Operator (AEMO) intervenes in the National Electricity Market (NEM) through the use of directions, AEMO must publish a report in accordance with National Electricity Rules (NER) clauses 4.8.9(f) and 3.13.6A(a). This report satisfies those NER obligations and is based on information available to AEMO as at 8 February 2022.

Unless otherwise indicated, terms in this report have the same meanings as those defined in the NER.

All references to time in this report are based on Australian Eastern Standard Time (AEST).

DISCLAIMER

AEMO has made every reasonable effort to ensure the quality of the information in this report but cannot guarantee its accuracy or completeness. Any views expressed in this report are those of AEMO unless otherwise stated and may be based on information given to AEMO by other persons.

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ABBREVIATIONS

Abbreviation	Expanded name
AEMO	Australian Energy Market Operator
CPTPL	Callide Power Trading Pty Limited
MN	Market Notice
MW	megawatt/megawatts
NEM	National Electricity Market
NER	National Electricity Rules
RERT	Reliability and Emergency Reserve Trader
SCL	Stanwell Corporation Limited
TI	Trading Interval

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1. Summary

Clause 4.8.9 of the National Electricity Rules (NER) allows AEMO to intervene in the market by issuing directions or clause 4.8.9 instructions, if AEMO is satisfied that it is necessary to maintain or re-establish the power system to a secure, satisfactory, or reliable operating state. Section 116 of the National Electricity Law allows AEMO to issue directions to take certain action if AEMO considers that it is necessary to maintain power system security or for reasons of public safety.

After it issues a direction, AEMO is required to publish a report outlining the matters specified in clause 3.13.6A of the NER.

On 1 February 2022, AEMO issued three directions relating to the same event to Queensland Market Participants to maintain the power system in a reliable operating state. These directions are summarised in Table 1.

Table 1 Summary of the Queensland directions on 1 February 2022

Directed plant	Directed Participant	Event No.	Issue time	Direction	Cancellation time
Stanwell Power Station	Stanwell Corporation Ltd (SCL)	1	1645 hrs, 1 February 2022	Follow dispatch instructions subject to the temporary release limits as specified in Schedule 3 - Table 3 Queensland Environmental Authority EPPR00708913 ¹	2000 hrs, 1 February 2022
Tarong Power Station	SCL	1	1645 hrs, 1 February 2022	Follow dispatch instructions subject to the temporary release limits as specified in Condition A9 Table 3, Queensland Environmental Authority EPPR00971913 ²	2000 hrs, 1 February 2022
Callide Power Station C Unit 3	Callide Power Trading Pty Ltd (CPTPL)	1	1715 hrs, 1 February 2022	Follow dispatch instructions subject to the temporary release limits as specified in Schedule 2B Table 3, Queensland Environmental Authority EPPR00707213 ³	2000 hrs, 1 February 2022

2. Intervention assessment

2.1 The need for intervention

On 1 February 2022, Queensland experienced high temperatures, extreme humidity and high operational demands. These conditions, coupled with outages of four large generating units in Queensland and limits on northerly flows on the QLD-NSW interconnector (QNI), resulted in consistent forecasts of low afternoon reserves in Queensland. Insufficient market response was provided to alleviate forecast reserve shortfalls.

Further, three Queensland coal-fired power stations, despite bidding their maximum available capacity, were expecting their output to be limited by authorised release limits set in their Environmental Authorities issued

¹ Environmental authority EPPR00708913, Queensland Government, 7 May 2020

² Environmental authority EPPR00971913, Queensland Government, 15 December 2021

³ Environmental authority EPPR00707213, Queensland Government, 11 September 2018

under Queensland environmental regulations. At two of those power stations, any output reductions necessary to remain within the release limits are carried out through an automated process.

In these circumstances, AEMO managed the reserve shortfalls by taking the following steps:

- From TI ending 1705 hrs to TI ending 2130 hrs on 1 February 2022, AEMO activated Reliability and Emergency Reserve Trader (RERT) contracts in Queensland. The RERT activation affected dispatch quantities for intervention pricing purposes (advised by market notice MN94370 issued at 1357 hrs).
- AEMO issued two directions to SCL effective from TI ending 1650 hrs to TI ending 2000 hrs on 1 February. The directions required SCL to follow dispatch instructions at Tarong and Stanwell power stations, subject to the temporary release limits specified in the respective Environmental Authorities.
- AEMO issued a direction to CPTPL effective from TI ending 1715 hrs to TI ending 2000 hrs on 1 February. The direction required CPTPL to follow dispatch instructions on Callide C Unit 3, subject to the temporary release limits specified in CS Energy’s Environmental Authority for Callide C. CPTPL was subsequently able to increase the maximum capacity bid into the market for Callide C3.

Under the Environmental Authorities, temporary release limits relating to particulate emissions, nitrogen oxides, or release of process waters apply during a direction by AEMO.

The need for the directions was to permit the application of the temporary release limits for the relevant power stations, minimising any reductions in their generation capacity, to maintain a reliable operating state in Queensland during actual and forecast lack of reserve (LOR) conditions. A reduction in generator output would have resulted in a deterioration of the LOR conditions in Queensland.

This report is limited to the directions to CPTPL and SCL (second and third bullet points above). Information about the RERT contract activation is provided in a separate report.⁴

2.2 Assessment of market response and latest time to intervene

Under NER clause 4.8.5A(a) and (c), AEMO must notify the market of any foreseeable circumstances that may require intervention (through direction or RERT activation), and the latest time for market response before AEMO would need to intervene.

AEMO issued several market notices relating to the LOR conditions in Queensland on 1 February 2022. LOR2 conditions for the early evening of that day were consistently forecast from 30 January 2022 (market notice MN 94198 issued at 0038 hrs), and regularly updated. LOR3 conditions were also forecast on two occasions.

For these conditions, the latest time to intervene was based on lead times to activate RERT contracts, and estimated as 1400 hrs on 1 February 2022. No separate time to intervene was determined in respect of the directions given to SCL and CPTPL, as those directions became necessary when the environmental limits relating to specific power stations threatened to reduce their capacity. The market notices relating to conditions on 1 February 2022 (issued from 30 January) are listed in Table 2.

Table 2 Relevant market notices issued from 30 January 2022

Notice issued	Summary
MN 94198 30 Jan 2022 at 0038 hrs	Forecast LOR2 declared for 1 Feb 2022 from 1800 to 1900 hrs
MN 94201 30 Jan 2022 at 0532 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1700 to 1900 hrs
MN 94202 30 Jan 2022 at 0538 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1800 to 1900 hrs
MN 94204 30 Jan 2022 at 0841 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1530 to 1600 & 1630 to 1930 hrs

⁴ AEMO, RERT Reporting, <https://aemo.com.au/energy-systems/electricity/emergency-management/reliability-and-emergency-reserve-trader-rert/rert-reporting>

Notice issued	Summary
MN 94205 30 Jan 2022 at 0856 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1730 to 1900 hrs
MN 94208 30 Jan 2022 at 1035 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1530 to 1930 hrs
MN 94219 30 Jan 2022 at 1508 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1730 to 1930 hrs
MN 94242 30 Jan 2022 at 2329 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1700 to 1930 hrs
MN 94246 31 Jan 2022 at 0452 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1700 to 1930 hrs
MN 94254 31 Jan 2022 at 1332 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1630 to 2130 hrs
MN94315 31 Jan 2022 at 2000hrs	Updated forecast LOR2 for 1 Feb 2022 from 1630 to 1800 & 1900 to 2100 hrs Estimated latest time to intervene 1400 hrs on 1 Feb 2022
MN 94316 31 Jan 2022 at 1959 hrs	Forecast LOR3 for 1 Feb 2022 from 1800 to 1900 hrs (cancelled at 2130 hrs)
MN94323 31 Jan 2022 at 2131 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1700 to 2000 hrs Estimated latest time to intervene 1400 hrs on 1 Feb 2022
MN94326 31 Jan 2022 at 2151 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1630 to 2100 hrs Estimated latest time to intervene 1400 hrs on 1 Feb 2022
MN 94329 1 Feb 2022 at 0054 hrs	Forecast LOR3 for 1 Feb 2022 from 1800 to 1900 hrs (updated at 0245, then cancelled at 1030 hrs)
MN94330 1 Feb 2022 at 0055 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1700 to 1800, 1900 to 2000 & 2030 to 2100 hrs Estimated latest time to intervene 1400 hrs on 1 Feb 2022
MN94335 1 Feb 2022 at 0300 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1700 to 1800 & 1900 to 2130 hrs Estimated latest time to intervene 1400 hrs on 1 Feb 2022
MN94343 1 Feb 2022 at 1049 hrs	Updated forecast LOR2 for 1 Feb 2022 from 1700 to 2130 hrs Estimated latest time to intervene 1400 hrs on 1 Feb 2022
MN94395 1 Feb 2022 at 1738 hrs	Actual LOR2 declared in Qld region from 1700, seeking immediate market response

3. Intervention process

AEMO considers that it followed all applicable processes under NER rule 4.8 for the management of the directions on 1 February 2022⁵.

3.1 Adequacy of responses to AEMO inquiries

NER clause 4.8.5A(d) permits AEMO to request information from Scheduled Network Service Providers, Scheduled Generators, Semi-Scheduled Generators, and Market Customers. AEMO is satisfied with the timeliness, adequacy, and effectiveness of all responses to its requests for information prior to issuing the directions on 1 February 2022.

⁵ AEMO. Power system operating procedure SO_OP 3707, "Procedures For Issue Of Directions And Clause 4.8.9 Instructions", 06 September 2019, available at https://aemo.com.au/-/media/files/electricity/nem/security_and_reliability/power_system_ops/procedures/so_op_3707-procedures-for-issue-of-directions-and-clause-4-8-9-instructions.pdf?la=en.

3.2 Participant ability to comply with the intervention

NER clause 4.8.9(d) requires that a Registered Participant must immediately notify AEMO of its inability to comply, or intention not to comply, with a direction or clause 4.8.9 instruction. None of the directed participants listed in Table 1 notified AEMO of an inability to comply with a relevant direction, and AEMO is not aware of any failure to comply.

4. Dispatch and pricing outcomes

4.1 Changes to dispatch and pricing outcomes due to the directions

The directions resulted in available generation at Callide C3 increasing by up to about 30 MW, compared with the levels that would otherwise have been available had the temporary environmental limits not applied. AEMO has been advised that releases at Tarong and Stanwell power stations did not exceed the standing authorised limits, meaning the direction did not result in a change to dispatch at these stations.

In the circumstances, AEMO determined not to apply intervention pricing in relation to the directions. The application of clause 3.9.3 of the NER in this case was not straightforward, given the direction did allow for the bidding and dispatch of some additional energy from Callide C3. However, the purpose of the direction was to enable the temporary relaxation of restrictions under an external regulatory framework, where the application of those restrictions could have contributed to the power system in Queensland not being in a reliable operating state. AEMO notes that:

- The directions were necessary to trigger the application of the temporary release limits under the Environmental Authorities, a matter that was not within the control of the directed participants.
- The application of the temporary release limits enabled CPTPL to increase its energy market bid for Callide C3 without direction.
- It would not have been possible to determine an additional quantity of energy that could have been directed at Tarong and Stanwell without actually reducing generation to estimate the impact on the standing authorised release limits. Both Stanwell and Tarong were bid into the market at their maximum available capacity in any event.
- The intervention pricing framework in the National Electricity Rules does not contemplate these circumstances. AEMO notes that processes to trigger equivalent temporary limits in some other jurisdictions are linked to reserve declarations rather than AEMO directions.

4.2 Direction costs

No compensation is payable as a result of this direction.

5. Conclusions and further actions

On 1 February 2022, AEMO issued three directions to Queensland Market Participants to maintain the power system in a reliable operating state, in response to consistent forecasts of low reserves in the region.

AEMO is satisfied that all applicable procedures and processes were followed in assessing the need for intervention, determining the latest time to intervene, enacting and managing the intervention and seeking market response from all generators capable of meeting the system strength requirements. The market was informed after each direction was issued.

AEMO is also satisfied with the timeliness and adequacy of participant responses and communication throughout.

AEMO did not apply intervention pricing or compensate participants for the reasons discussed in section 4.1.

AEMO proposes to engage with the Queensland jurisdiction with a view to exploring potential alternative mechanisms to enable temporary authorised limits under environmental regulations, where necessary to reduce reliability risks.