Non Market Ancillary Services (NMAS) report 2023-24

October 2024

An annual report for the National Electricity Market

Important notice

Purpose

The purpose of this publication is to provide information about the:

- Quantities and costs of system restart ancillary services (SRAS) and network support and control ancillary services (NSCAS) acquired by AEMO in the National Electricity Market (NEM) for the financial year 2023-24.
- Acquisition of SRAS to meet the system restart standard for each electrical sub-network in the NEM, and system restart test activities if conducted.

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Version control

Version	Release date	Changes
1	4 October 2024	Initial release

AEMO acknowledges the Traditional Owners of country throughout Australia and recognises their continuing connection to land, waters and culture. We pay respect to Elders past and present.

Abbreviations

Abbreviation	Expanded name
AEMO	Australian Energy Market Operator
NEM	National Electricity Market
MBAS	Market Benefits Ancillary Services
MT PASA	Medium Term Projected Assessment of System Adequacy
NMAS	Non-Market Ancillary Services
NSCAS	Network Support and Control Ancillary Services
NER or Rules	National Electricity Rules
PM test	Post-maintenance test
RSAS	Reliability and Security Ancillary Services
SN test	Short-notice test
SRAS	System Restart Ancillary Services
SRS	System Restart Standard
TNSP	Transmission Network Service Provider

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Tables

1 Introduction

Ancillary services support the management of power system security in the National Electricity Market (NEM).

AEMO acquires both market and non-market ancillary services under the National Electricity Rules (NER):

- Market ancillary services are acquired through central dispatch and the prices are determined using the dispatch algorithm.
- Non-market ancillary services (NMAS) are acquired under bilateral contracts. There are two types of NMAS that AEMO may acquire in its capacity as market and system operator:
  - System Restart Ancillary Services (SRAS), and
  - Network Support and Control Ancillary Services (NSCAS).

The remainder of this report provides information about the NMAS acquired by AEMO for the 2023-24 financial year, and an SRAS procurement undertaken during 2023-24.

1.1 System Restart Ancillary Services (SRAS)

SRAS can help restore electricity supply following a large-scale blackout of part or all of the power system. The Reliability Panel[1] is responsible for determining the system restart standard (SRS), which specifies the level of supply restoration for which AEMO is to procure system restart services.

AEMO must use its reasonable endeavours to acquire sufficient SRAS for each defined electrical sub-network to meet the requirements of the SRS. AEMO completed a system restart procurement process in 2024, resulting in six new contracts and one contract extension. From 1 July 2024 the SRS will be met in all regions except Queensland (due to changes on the possible restart pathway, refer to section 2.1.2 for more information).

For the SRAS in place during 2023-24, the relevant version of the SRS is the SRS that was determined in January 2021[2] and was applicable for SRAS acquired from 28 January 2021.

1.2 Network Support and Control Ancillary Services (NSCAS)

NSCAS may be procured by transmission network service providers (TNSPs) to maintain power system security and reliability, and to maintain or increase the power transfer capability of the transmission network to maximise net economic benefits[3]. Such TNSP-procured NSCAS is not the subject of this report.

[1] The Reliability Panel is established under the National Electricity Law by the Australian Energy Market Commission (AEMC), and comprises representatives from the AEMC, AEMO, registered participants, and consumers. The Panel's responsibilities are specified in section 38 of the National Electricity Law and NER 8.8.1.

[2] At https://www.aemc.gov.au/sites/default/files/2021-08/SRS%20Review%20-%20System%20Restart%20Standard%20-%20FOR%20PUBLICATION_0_0.pdf.

[3] For more information, see http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Security-and-reliability/Ancillary-services/Network-support-and-control-ancillary-services-procedures-and-guidelines.

AEMO, in its role as Market Operator, can also procure NSCAS as a last resort to prevent an adverse impact on power system security and reliability. NSCAS procured by AEMO as Market Operator is reported on in Section 3 of this report.

1.3 Non-market ancillary services (NMAS) reporting

AEMO is required, under NER 3.11.10 and NER 3.13.5, to report annually on specified matters relating to SRAS and NSCAS respectively.

This report includes:

- The number of SRAS acquired per NEM region and electrical sub-network in 2023-24 and for 2024-25.
- The total actual annual cost for provision of SRAS in 2023-24, broken down into charges for availability, testing and usage, for each electrical sub-network and each NEM region.
- The total estimated annual cost for provision of SRAS in 2024-25, broken down into charges for availability, testing, and usage, for each electrical sub-network and each NEM region.
- Whether SRAS were acquired to a level that meets the SRS for each electrical sub-network.
- Whether any system restart test activities were undertaken.
- The quantities and types of NSCAS covered under existing ancillary services agreements.
- The actual costs and quantities of each facility contracted to provide NSCAS under ancillary services agreements.

For more recent actual (weekly) cost data for NMAS, see the AEMO website[4].

[4] See the Ancillary Services (AS) Payments Summary file at http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Data/Ancillary-Services/Ancillary-Services-Payments-and-Recovery.

2 System restart ancillary services

2.1 SRAS Procurement

There were 11 contracted SRAS in place during the 2023-24 year, shown in Table 1 by region and electrical sub-network.

Table 1 Number of SRAS acquired per region and electrical sub-network – July 2021 to June 2024

Region	Electrical sub-network	Number of SRAS
Queensland	Queensland	3
New South Wales	New South Wales	2
Victoria	Victoria	2
South Australia	South Australia	2
Tasmania	Tasmania	2
Total		11

2.1.1 Meeting the SRS

For the 2023-24 year, there was sufficient contracted SRAS to meet the SRS for all electrical sub-networks. For completeness, AEMO notes that the actual availability of one service was less than the required availability for that service, for most of the year, as established by the terms of the relevant contract[5]. Although every SRAS has a contractual availability requirement of 90% or more, in 2023-24 that level was not achieved for one SRAS for South Australia.

2.1.2 The process for acquiring SRAS

Reporting year 2023-24

AEMO did not acquire any additional SRAS for the year 2023-24. The SRAS contracts procured in 2021-24 and which remained in place in 2023-24, applied until 30 June 2024.

Years 2024 and Beyond

During the 2023-24 year, AEMO undertook a procurement process to acquire SRAS contracts to apply from 1 July 2024.

AEMO procured SRAS for the period commencing 1 July 2024 in accordance with the revised SRS effective from 28 January 2021 and the SRAS Guideline published in February 2021[6].

A competitive tender process was followed for all electrical sub-networks other than Tasmania (where there is only one possible SRAS provider). The following procurement process was undertaken:

[5] SRAS are procured to meet a minimum availability, which in turn contribute to meeting the required aggregate reliability for each electrical sub-network as specified by the SRS

[6] In this version of the SRAS Guideline, Queensland is now one electrical sub-network. In the previous version, Queensland was divided into two electrical sub-networks: Queensland North and Queensland South

- In March 2023 AEMO advised the market that it would be starting an SRAS procurement. AEMO completed SRAS market engagement and sought feedback on the upcoming SRAS procurement; this feedback was provided during an online webinar, in writing and via one on one meetings.
- On 03 May 2023, AEMO issued an invitation to tender (ITT) for the provision of SRAS. Tenders were sought by 16 June 2023. Details of the tender were published on AEMO's website[7]. The ITT also included a request for expressions of interest to provide restart support services.
- AEMO received tenders for 16 SRAS services and two expressions of interest for restart support services.
- AEMO undertook detailed power system modelling and supplementary capability assessments of all the offered services, together with related transmission and distribution network elements, in accordance with the SRAS Guideline.
- The modelling and capability assessments enabled AEMO to identify the most appropriate combinations of offered services that would be capable of meeting the SRS for each electrical sub-network.
- From those identified combinations, AEMO used the tendered SRAS prices to select the services that would meet the SRS at the lowest cost (consistent with the SRAS Procurement Objective in NER 3.11.7) and notified relevant providers on March 2024.
- Following contract negotiations, six new contracts and one contract extension (for 12 SRAS services in total) were executed.
- Queensland services have been contracted until 30 June 2027 with no extension options. From 1 July 2024, the SRS is not fully met in Queensland due to changes on the possible restart pathway. The "north of Bundaberg" requirement outlined in section 5 of the SRS is not met outside of business hours. Outside of business hours the SRS requires 825MW within 4 hours, however only up to 705MW of generation and transmission capability can be restarted in 4 hours.
- In South Australia;
  - one service has been contracted to 30 June 2029,
  - another service has been extended to 30 June 2025 with an option to extend until 30 June 2026,
  - a third service provider has been contracted from 1 July 2025 to 30 June 2030, subject to successful site augmentation and testing.
- Victorian, New South Wales and Tasmanian services have been contracted from 1 July 2024 to 30 June 2027, with an option to extend by up to one year at AEMO's discretion, and up to a further year by agreement between AEMO and the service provider.

2.2 Costs of SRAS

2.2.1 General

The annual cost of SRAS is based on an aggregation of three types of payments to contracted providers:

1. Availability – $ per 30-minute interval.
   - The availability cost may vary, as it is paid only when the service is available. For example, it is not paid when plant used by the SRAS is out of service, or when the SRAS fails a test under the contract. For cost estimation purposes, however, AEMO takes a conservative approach, assuming the plant has full availability for the whole year.
2. Testing – fixed amount per successful test.

[7] AEMO. Invitation to Tender for System Restart Ancillary Services (SRAS) 2021: https://www.aemo.com.au/consultations/tenders/sras-procurement.

- The testing charge, per test, is fixed in SRAS contracts. There are currently two separate requirements for SRAS tests, which means that there may be more than one test per SRAS per year:
  - Post-maintenance (PM) test[8]: within 20 business days after a period of maintenance.
  - Short-notice (SN) test[9]: at a date and time nominated by AEMO with no less than five business days' notice.

3. Usage – fixed amount.
   - Paid only if the service is used following a black system event.

2.2.2 2023-24 SRAS costs

Table 2 shows a comparison of the estimated and actual costs for 2023-24. The difference between the estimated and actual SRAS costs for 2023-24 is attributable to the following:

- Availability costs were slightly lower in South Australia due to lower than estimated plant availability.
- Testing costs were lower than expected, as outage programs were amended during the year; some planned outages were cancelled and PM and SN SRAS tests were combined.
- No usage payments were made.

Table 2 Comparison of 2023-24 estimated and actual SRAS costs

Sub-network	Number of SRAS	Estimated availability ($)	Actual availability ($)	Estimated testing ($)	Actual testing ($)	Estimated usage ($)	Actual usage ($)	Estimated total ($)	Actual total ($)
QLD	3	$2,362,232	$2,362,193	$1,082,844	$541,422	$44,925	$0	$3,490,000	$2,903,615
NSW	2	$12,250,175	$12,250,166	$331,219	$331,219	$17,500	$0	$12,598,894	$12,581,385
VIC	2	$8,298,457	$8,298,420	$232,809	$185,010	$30,500	$0	$8,561,766	$8,483,431
SA	2	$4,668,622	$4,519,991	$282,295	$169,827	$20,060	$0	$4,970,978	$4,689,818
TAS	2	$6,598,981	$6,598,892	$636,235	$381,741	$1,000	$0	$7,236,216	$6,980,633
Total	**11**	**$34,178,467**	**$34,029,663**	**$2,565,402**	**$1,609,219**	**$113,985**	**$0**	**$36,857,854**	**$35,638,882**

[8] For more detail, see 4.3.2 (b) (i) in the SRAS Guideline, at https://www.aemo.com.au/-/media/files/electricity/nem/security_and_reliability/ancillary_services/sras/sras-guideline-2021.pdf?la=en.

[9] For more detail, see 4.3.2 (b) (ii) of the SRAS Guideline.

2.2.3 2024-25 estimates

Table 3 shows an estimated cost breakdown for the year 2024-25.

Table 3 Estimated SRAS costs for 2024-25

Sub-network	Number of SRAS	Estimated availability ($)	Estimated testing ($)	Estimated usage ($)	Total estimated ($)
QLD	3	$8,700,082	$1,750,000	$44,925	$10,495,007
NSW	2	$12,659,076	$343,209	$25,000	$13,027,285
VIC	2	$8,565,002	$202,649	$35,750	$8,803,401
SA	2	$4,214,261	$289,435	$14,810	$4,518,506
TAS	2	$6,902,880	$802,200	$1,000	$7,706,080
Total	**11**	**$41,041,301**	**$3,387,493**	**$121,485**	**$44,550,278**

For availability costs, the estimate assumes 100% availability for each service. This will likely result in a slight over-estimation of costs for each service, because some SRAS sources will have SRAS outages of some duration over a year.

For testing costs, the estimate assumes 13 SN tests[10] and 6 PM tests. The number of PM tests is based on a combination of outage forecasts provided as part of the tender process, and the Medium-Term Projected Assessment of System Adequacy (MT PASA).

For usage costs, the estimate assumes a black system event once every 20 years. Therefore a cost probability of 5% has been applied, based on contracted usage charges.

2.2.4 Historical comparison of SRAS costs

Table 4 shows an historical comparison of SRAS costs over recent years.

The cost differences between the 2018-21 period and the 2021-24 period are due to:

- a change in the structure of SRAS regions, effective from 1 July 2021, and
- a new set of contracts, effective from 1 July 2021, with a different commercial outcome.

The 2024-25 cost estimate is based on another new set of contracts effective from 1 July 2024 (see details in 2.2.3). It can be observed in table 4 a significant increase in total SRAS cost in the QLD region. This is due to a substantial increase in the Estimated Availability charge as shown in table 3. This increase can be attributed to increased cost of maintaining and providing SRAS from QLD plant.

[10] One for each of the 11 SRAS, plus one for an SRAS that includes a back-up power station, which also requires a test.

Table 4 Comparison of SRAS costs from 2018 through to 2024 against estimated costs for 2024-25

Sub-network	Actual 2018-19 ($)	Actual 2019-20 ($)	Actual 2020-21 ($)	Actual 2021-22 ($)	Actual 2022-23 ($)	Actual 2023-24 ($)	Estimate 2024-25 ($)
QLD				$2,979,832	$2,707,112	$2,903,615	$10,495,007
QLD North	$1,328,421	$1,369,942	$1,397,532	QLD Region Merged			
QLD South	$5,106,349	$4,566,122	$5,222,151				
NSW	$10,511,180	$10,589,575	$10,786,405	$11,138,612	$11,724,643	$12,581,385	$13,027,285
VIC	$6,944,780	$7,125,455	$7,230,430	$7,516,218	$7,950,337	$8,483,431	$8,803,401
SA	$5,772,405	$5,923,901	$6,061,588	$3,672,238	$4,502,874	$4,689,818	$4,518,506
TAS	$6,029,789	$6,235,475	$6,243,855	$6,591,011	$6,506,137	$6,980,633	$7,706,080
Totals	**$35,692,923**	**$35,810,471**	**$36,941,962**	**$31,897,911**	**$33,391,102**	**$35,638,882**	**44,550,278**

2.3 System restart testing

Clause 3.11.10(b) of the NER requires AEMO to report annually on any system restart tests that were conducted (or planned but not conducted) in any electrical sub-network.

Three such system restart tests were conducted in 2023-24. These were extended network energisation tests, which were planned and successfully conducted in the following regions:

- SA Region in November 2023;
- NSW Region in April 2024; and
- VIC Region in May 2024.

These tests were conducted successfully. In particular:

- the results of each system restart test were consistent in achieving the SRS and AEMO's power system security responsibilities,
- AEMO satisfied its obligations to consult with the appropriate Test Participants in the affected region in relation to any system restart test, and
- AEMO analysed system conditions and provided relevant information to Test Participants on the most appropriate time to conduct system restart tests in order to minimise operational and market impacts.

3 Network support and control ancillary services (NSCAS)

3.1 Types, quantity, and cost of NSCAS

AEMO's NSCAS Description[11] specifies two categories of NSCAS:

1. Reliability and Security Ancillary Service (RSAS); and
2. Market Benefit Ancillary Service (MBAS).

In its 'last resort' procurement role, AEMO can only acquire NSCAS in the reliability and security category.

AEMO did not acquire any NSCAS for the financial year 2023-24.

[11] At https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2020/ncas/2020-nscas-description-and-quantity-procedure.pdf?la=en.