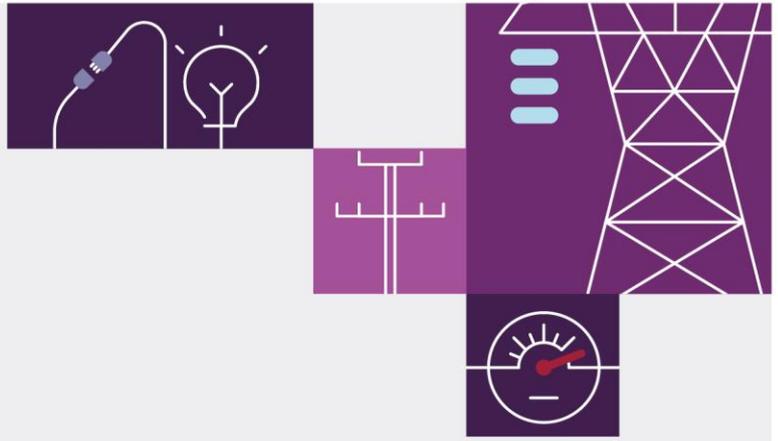


Non Market Ancillary Services (NMAS) report 2022-23

October 2023

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 2022-23.
- 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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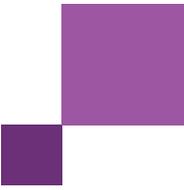
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Version control

Version	Release date	Changes
1	13 October 2023	Initial release

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
RSAS	Reliability and Security Ancillary Services
SRAS	System Restart Ancillary Services
SRS	System Restart Standard
TNSP	Transmission Network Service Provider



Contents

1	Introduction	5
1.1	System Restart Ancillary Services (SRAS)	5
1.2	Network Support and Control Ancillary Services (NSCAS)	6
1.3	Non-market ancillary services (NMAS) reporting	6
2	System restart ancillary services	7
2.1	SRAS Procurement	7
2.2	Costs of SRAS	7
2.3	System restart testing	10
3	Network support and control ancillary services (NSCAS)	11
3.1	Types, quantity, and cost of NSCAS	11

Tables

Table 1	Number of SRAS acquired per region and electrical sub-network – July 2021 to current	7
Table 2	Comparison of 2022-23 estimated and actual SRAS costs	8
Table 3	Estimated SRAS costs for 2023-24	9
Table 4	Comparison of SRAS costs from 2016-17 through to estimated costs for 2023-24	10

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 2022-23 financial year, and an SRAS procurement undertaken during 2022-23.

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 Panel¹ 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.

For the SRAS in place during 2022-23, the relevant version of the SRS is the SRS that was determined in January 2021² and was applicable for SRAS acquired from 28 January 2021.

For historical data in this report up to and including the 2020-21 financial year – provided for comparative purposes – the relevant versions of the SRS are:

- the SRS that was determined in August 2013³ and remained in effect until 30 June 2018, and
- the SRS that was determined in December 2016⁴ and was effective from 1 July 2018 until 30 June 2021.

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 At <https://www.aemc.gov.au/sites/default/files/content/System-Restart-Standard-Reliability-Panel.PDF>.

⁴ At <https://www.aemc.gov.au/sites/default/files/2018-08/REL0057%20-%20Review%20of%20the%20System%20Restart%20Standard%20-%20Final%20Standard.pdf>.

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 benefits⁵. Such TNSP-procured NSCAS is not the subject of this report.

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 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 2022-23 and for 2023-24.
- The total actual annual cost for provision of SRAS in 2022-23, broken down to 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 2023-24, broken down to 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 website⁶.

⁵ 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>.

⁶ 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 2022-23 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 current

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 period 2022-23

For the 2022-23 year, there was sufficient contracted SRAS to meet the SRS for all electrical sub-networks. For completeness, AEMO notes that the actual availability of all SRAS was above the requirement established by the terms of the relevant contract⁷.

2.1.2 The process for acquiring SRAS

AEMO did not acquire any additional SRAS for the year 2022-23. The SRAS services procured in 2020-21 remained in place for 2022-23 without augmentation or curtailment.

During the 2021-22 year, AEMO also undertook a procurement process to acquire one SRAS for Queensland:

- In July 2021, a new suite of SRAS contracts commenced with starting dates of either 1 July or 31 July 2021. All these contracts, except one, will expire on 30 June 2024.
- One contract in Queensland had a duration of 11 months and expired on 30 June 2022.

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.

⁷ 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

- 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.

- 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 test⁸: within 20 business days after a period of maintenance.
 - Short-notice test⁹: 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 in the event of a black system event.

2.2.2 2022-23 SRAS costs

Table 2 shows a comparison of the estimated and actual costs for 2022-23. The difference between the estimated and actual SRAS costs for 2022-23 is attributable to the following:

- Availability cost 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, other forced outages were added.
- No usage payments were made.

Table 2 Comparison of 2022-23 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	\$2,201,213	\$2,201,213	\$1,011,797	\$505,899	\$44,925	\$0	\$3,257,935	\$2,707,112
NSW	2	\$11,415,156	\$11,415,156	\$309,487	\$309,487	\$17,500	\$0	\$11,742,143	\$11,724,643
VIC	2	\$7,732,802	\$7,732,802	\$262,197	\$217,534	\$30,500	\$0	\$8,025,500	\$7,950,337
SA	2	\$4,350,391	\$4,239,100	\$263,774	\$263,774	\$20,060	\$0	\$4,634,225	\$4,502,874
TAS	2	\$6,149,170	\$6,149,170	\$475,957	\$356,968	\$1,000	\$0	\$6,626,126	\$6,506,137
Total	11	\$31,848,732	\$31,737,441	\$2,323,212	\$1,653,661	\$113,985	\$0	\$34,285,929	\$33,391,102

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 2023-24 estimates

Table 3 shows an estimated cost breakdown for the forthcoming year 2023-24.

Table 3 Estimated SRAS costs for 2023-24

Sub-network	Number of SRAS	Estimated availability (\$)	Estimated testing (\$)	Estimated usage (\$)	Total estimated (\$)
QLD	3	\$2,362,232	\$1,082,844	\$44,925	\$3,490,000
NSW	2	\$12,250,175	\$331,219	\$17,500	\$12,598,894
VIC	2	\$8,298,457	\$232,809	\$30,500	\$8,561,766
SA	2	\$4,668,622	\$282,295	\$20,060	\$4,970,978
TAS	2	\$6,598,981	\$636,235	\$1,000	\$7,236,216
Total	11	\$34,178,467	\$2,565,402	\$113,985	\$36,857,854

For the availability cost, the forecast assumed 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 during a year.

For the testing cost, the forecast assumed 12 short notice tests¹⁰ and six post-maintenance tests. The post maintenance- test count was 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 the usage cost, the forecast assumed an 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 difference between the 2015-18 and 2018-21 periods is due to:

- a new SRS effective from 1 July 2018, and
- a new set of contracts, effective from 1 July 2018, with a different commercial outcome.

The cost difference between the 2018-21 period and the 2021-23 year is 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.

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 2016-17 through to estimated costs for 2023-24

Sub-network	Actual 2016-17 (\$)	Actual 2017-18 (\$)	Actual 2018-19 (\$)	Actual 2019-20 (\$)	Actual 2020-21 (\$)	Actual 2021-22 (\$)	Actual 2022-23 (\$)	Estimate 2023-24 (\$)
QLD						\$2,979,832	\$2,707,112	\$3,490,000
QLD North	\$3,240,209	\$3,330,788	\$1,328,421	\$1,369,942	\$1,397,532	Qld regions merged		
QLD South	\$898,008	\$917,106	\$5,106,349	\$4,566,122	\$5,222,151			
NSW	\$6,894,906	\$6,353,899	\$10,511,180	\$10,589,575	\$10,786,405	\$11,138,612	\$11,724,643	\$12,598,894
VIC	\$5,392,461	\$5,509,010	\$6,944,780	\$7,125,455	\$7,230,430	\$7,516,218	\$7,950,337	\$8,561,766
SA	\$1,589,134	\$1,764,049	\$5,772,405	\$5,923,901	\$6,061,588	\$3,672,238	\$4,502,874	\$4,970,978
TAS	\$3,370,867	\$3,442,597	\$6,029,789	\$6,235,475	\$6,243,855	\$6,591,011	\$6,506,137	\$7,236,216
Totals	\$21,385,585	\$21,317,449	\$35,692,923	\$35,810,471	\$36,941,962	\$31,897,911	\$33,391,102	\$36,857,854

2.3 System restart testing

In 2020, the NER were amended¹¹ to include a framework for testing of system restart paths in certain circumstances, beyond the regular testing of SRAS energisation to their contracted delivery points on the network. The NER require AEMO to report annually on any system restart tests that were conducted or planned in any electrical sub-network.

No system restart tests were planned or conducted in 2022-23 under the new NER framework.

¹¹ National Electricity (System restart services, standards and testing) Rule 2020 No. 6, at <https://www.aemc.gov.au/rule-changes/system-restart-services-standards-and-testing>.

3 Network support and control ancillary services (NSCAS)

3.1 Types, quantity, and cost of NSCAS

AEMO's NSCAS Description¹² 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 2022-23.

¹² At https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2020/ncas/2020-nscas-description-and-quantity-procedure.pdf?la=en.