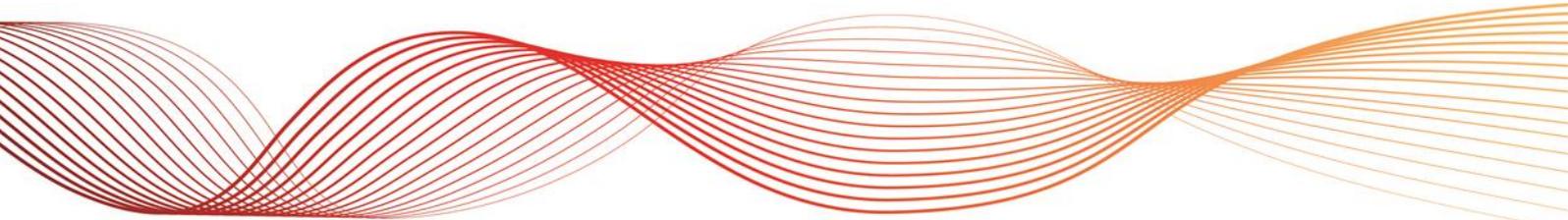




NON-MARKET ANCILLARY SERVICES COST AND QUANTITY REPORT 2015–16

AN ANNUAL REPORT REQUIRED BY THE NATIONAL
ELECTRICITY RULES FOR THE NATIONAL
ELECTRICITY MARKET

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IMPORTANT NOTICE

Purpose

The purpose of this publication is to provide information about Non-Market Ancillary Services acquired by the Australian Energy Market Operator (AEMO) in the National Electricity Market for the financial year 2015–16.

This document has been prepared by AEMO in accordance with National Electricity Rules (Rules) clauses 3.11.10 – for SRAS, and 3.13.5 (b) & (c) – for NSCAS, and has effect only for the purposes set out in the Rules.

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Abbreviations

Abbreviation	Expanded name
AEMO	Australian Energy Market Operator
NEM	National Electricity Market
NLAS	Network Loading Ancillary Service
NSCAS	Network Support and Control Ancillary Services
NER or Rules	National Electricity Rules
SRAS	System Restart Ancillary Services
TNSP	Transmission Network Service Provider
TOSAS	Transient and Oscillatory Stability Ancillary Service
VCAS	Voltage Control Ancillary Service



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1. INTRODUCTION

Ancillary services are essential to the management of power system security in the National Electricity Market (NEM) and to ensure quality of supply. AEMO acquires both market and non-market ancillary services. Market ancillary services are acquired through central dispatch and the prices are determined using the dispatch algorithm. There are two types of non-market ancillary services that AEMO may acquire: System Restart Ancillary Services (SRAS) and Network Support and Control Ancillary Services (NSCAS).

SRAS allow electricity supply to be restored following a large-scale blackout of the power system. The Reliability Panel¹ is responsible for determining the system restart standard, which specifies the level of supply restoration for which AEMO is to procure system restart services. AEMO procures an appropriate quantity of restart services for defined electrical sub-networks to meet the requirements of the system restart standard.

NSCAS may be procured by AEMO or 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.²

AEMO is required, under clauses 3.11.10 and 3.13.5 (b) & (c) of the National Electricity Rules (Rules), to publish at least annually the total estimated annual cost for SRAS, and publish annually the quantities and types of NSCAS covered under existing ancillary services agreements.

This report includes details of:

- The number of SRAS acquired per NEM region and electrical sub-network.
- The total actual annual cost for provision SRAS in 2015–16, broken down to charges for availability and use, for each electrical sub-network and each NEM region.
- The total estimated annual cost for provision SRAS in 2016–17, broken down to charges for availability and use, for each electrical sub-network and each NEM region.
- Whether sufficient SRAS has been acquired to meet the system restart standard for each electrical sub-network.
- 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 non-market ancillary services, see the AEMO website.³

2. SYSTEM RESTART ANCILLARY SERVICES

2.1 Meeting the system restart standard in 2015–16

The quantity of SRAS procured for the current term of SRAS agreements⁴ was determined by AEMO in accordance with the September 2014 version of its SRAS Guidelines, consistent with market rules and in consultation with relevant stakeholders.

¹ The Reliability Panel is a specialist body within AEMC and comprises industry and consumer representatives. It is responsible for monitoring, reviewing, and reporting on the reliability, security, and safety of the national electricity system and advising the AEMC in respect of such matters. The Panel's responsibilities are specified in section 38 of the National Electricity Law.

² See Network Support and Control Ancillary Services procedures and guidelines at <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Security-and-reliability/Ancillary-services/Network-support-and-control-ancillary-services-procedures-and-guidelines>

³ See the AS Payments Summary file at: <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Data/Ancillary-Services/Ancillary-Services-Payments-and-Recovery>

⁴ July 2015 to June 2018. There is an option in each contract that allows for 2 x 1 year extensions of these contracts – the second by mutual agreement.

Table 1 shows the number of SRAS per electrical sub-network contracted as at 30 June 2016.

Table 1 Number of SRAS acquired per region and electrical subnetwork

Region	Electrical sub-network	Number of SRAS
Queensland	Queensland North	2
	Queensland South	1
New South Wales	New South Wales	2
Victoria	Victoria	2
South Australia	South Australia	2
Tasmania	Tasmania	1
Total		10

For the 2015–16 year, AEMO acquired sufficient SRAS to meet the system restart standard for all electrical sub-networks.

2.2 Costs of SRAS

The annual cost of SRAS is based on an availability cost (\$ per 30-minute trading interval) and an annual test cost. A usage cost is paid to an SRAS provider if the service is used in the event of a blackout. To date, SRAS has not been used for a blackout event in the NEM.

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 for maintenance.

The test cost is fixed, as each SRAS is tested annually at pre-determined cost.

The following tables show:

1. Table 2: A comparison of the estimated and actual costs for 2015–16.
2. Table 3: An estimated cost breakdown for the forthcoming year 2016–17.
3. Table 4: An historical comparison of cost for the past three years.

Table 2 Comparison of 2015–16 estimated and actual SRAS costs

Sub-network	Number of SRAS	Estimated total cost	Actual total cost
Queensland North	2	\$3,053,662	\$3,054,940
Queensland South	1	\$867,825	\$888,240
New South Wales	2	\$7,175,335	\$7,303,799
Victoria	2	\$4,878,821	\$5,320,851
South Australia	2	\$2,350,238	\$2,173,957
Tasmania	1	\$3,001,848	\$3,336,148
Total	10	\$21,327,731	\$22,077,936

The difference between the estimated and actual SRAS costs for 2015–16 is due to actual availability being higher than estimated.

Table 3 Estimated cost of SRAS for 2016–17

Sub-network	Number of SRAS	Estimated availability ⁵ cost	Estimated testing cost	Estimated usage cost ⁶	Total estimated cost
Queensland North	2	\$2,477,678	\$788,056	\$ 42,367	\$3,308,101
Queensland South	1	\$667,162	\$230,846	\$ 14,506	\$912,514
New South Wales	2	\$7,601,227	\$157,032	\$ 53,188	\$7,811,447
Victoria	2	\$4,902,446	\$491,864	\$ 38,701	\$5,433,011
South Australia	2	\$1,775,126	\$103,428	\$ 8,226	\$1,886,781
Tasmania	1	\$3,301,469	\$69,398	\$ 507	\$3,371,373
Total	10	\$20,725,109	\$1,840,624	\$ 157,495	\$22,723,228

Table 4 Comparison of SRAS costs from 2013–14 through to estimated cost for 2016–17

Sub-network	Actual Costs 2013–14	Actual Costs 2014–15	Actual Costs 2015–16	Estimated Cost 2016–17
Queensland North	\$1,353,428	\$0	\$3,054,940	\$3,308,101
Queensland Central	\$2,670,050	\$2,505,494	Qld North and Central regions merged	
Queensland South	\$2,417,756	\$2,508,566	\$888,240	\$912,514
New South Wales North	\$12,019,875	\$11,848,415	New South Wales regions merged	
New South Wales South	\$7,364,417	\$7,580,205		
New South Wales			\$7,303,799	\$7,811,447
Victoria North	\$7,489,905	\$8,215,237	Victorian regions merged	
Victoria Latrobe Valley	\$6,600,562	\$6,771,223		
Victoria			\$5,320,851	\$5,433,011
South Australia	\$3,233,916	\$3,470,570	\$2,173,957	\$1,886,781
Tasmania North	\$7,025,706	\$7,232,666	Tasmanian regions merged	
Tasmania South	\$3,358,736	\$3,468,402		
Tasmania			\$3,336,148	\$3,371,373
Total	\$53,534,351	\$53,600,778	\$22,077,936	\$22,723,228

SRAS costs for the current contract term (July 2015 to June 2018) are expected to continue in the range of \$22 to \$24m.

2.3 The process for acquiring an SRAS in 2015–16

During the 2015–16 year one SRAS provider in South Australia terminated its SRAS agreement with AEMO. To replace this service AEMO negotiated a replacement agreement.

The process of seeking a replacement agreement was as follows:

- On 3 February 2016 AEMO received notice of termination of the SRAS contract with effect from 3 May 2016.
- Based on network modelling replacement SRAS providers were identified.
- Technical studies identified two generators capable of providing SRAS for the South Australian electrical sub-network.
- AEMO invited both generators to tender for SRAS.

⁵ Assume 100% availability for each service (this is conservative – likely to be less due to outages)

⁶ Usage charges are only incurred if the SRAS is actually required to provide black start capability following a major supply disruption. This estimated usage is based on the assumption of one event every 20 years (1/20th of the contracted usage charges).

- AEMO entered into an agreement with the winning tender for services commencing on 3 May 2016.

3. NETWORK SUPPORT AND CONTROL ANCILLARY SERVICES

3.1 Types, quantity and cost of NSCAS

There are three types of Network Support and Control Ancillary Services (NSCAS) that AEMO may procure:

1. Network Loading Ancillary Services (NLAS).
2. Transient and Oscillatory Stability Ancillary Services (TOSAS).
3. Voltage Control Ancillary Services (VCAS).

AEMO did not procure NLAS or TOSAS for the 2015–16 financial year.

AEMO procured two VCAS, for the financial year 2015–16. Table 5 summarises the quantities and costs of the services for 2015-16 and historical costs for the past three financial years.

Table 5 Quantities and Cost of VCAS over the past four years

Facility	Benefitting Region	NSCAS Service	Quantity	Cost 2012–13	Cost 2013–14	Cost 2014–15	Cost 2015–16
Combined Murray and Yass substations	NSW	VCAS	800 Mvar ⁷	Not procured	\$3,195,62	\$9,896,698	\$10,055,572
Combined Murray and Tumut power stations	NSW	VCAS	700 Mvar ⁸	\$23,772,200	\$41,301,706	\$134,494	\$171,797
Total				\$23,772,200	\$44,497,327	\$10,031,191	\$10,227,368

The VCAS at Murray and Yass substations is based on a fixed quantity and cost per month.

The VCAS from Murray and Tumut Power Stations is based on an enabling charge per generating unit that is payable for each trading interval when the service is enabled.

⁷ The maximum capacity available from this service.

⁸ The maximum capacity used at any one time over 2015–16.