Australian Energy Market Commission

RULE CHANGE

RULE DETERMINATION

National Electricity Amendment (System Restart Ancillary Services) Rule 2015

Rule Proponent(s)

Proponent 1: AEMO
Proponent 2: National Generators Forum, AGL, Alinta Energy, Energy Brix, GDF Suez, Intergen, Origin Energy

2 April 2015

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About the AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

Executive Summary

The Australian Energy Market Commission (AEMC or Commission) has made a final rule (the final rule), which is a more preferable rule, to improve the frameworks for system restart ancillary services (SRAS, or restart services) in the National Electricity Market (NEM). This final rule has been made following two rule change proposals received from:

- a group of stakeholders including the National Generators Forum (NGF), AGL, Alinta Energy, Energy Brix, GDF Suez, Intergen and Origin Energy (the Group of Generators); and
- the Australian Energy Market Operator (AEMO).

The Group of Generators' rule change request sought to clarify the responsibilities of different organisations within the SRAS frameworks. This included requiring AEMO to procure SRAS on the basis of restoring the power system from a NEM-wide major supply disruption.

AEMO's rule change request sought to reduce the cost of SRAS by introducing an option for price arbitration in the SRAS procurement process. AEMO also sought to make SRAS prices more cost reflective by introducing regional cost recovery.

The Commission considers that the final rule is likely to contribute to the achievement of the national electricity objective (NEO). The Commission also considers that the final rule is likely to better contribute to the achievement of the NEO than the proposed rule changes, by promoting more efficient operation of and investment in electricity services, through:

1. clarifying the responsibilities and accountabilities of different bodies within the SRAS frameworks;
2. clarifying the nature of the event that SRAS is procured to mitigate;
3. promoting more competitive outcomes in SRAS markets; and
4. increasing the cost reflectivity of SRAS charges.

These changes will help to meet the long term interests of consumers by maintaining the ongoing reliability of electricity supply, at an efficient price.

The final rule

Restart services enable the restoration of electricity supply following a complete shut-down of all, or a substantial part of, the power system. These are extremely rare events that can create significant economic costs for consumers. To minimise these economic costs, it is necessary to procure in advance a number of restart services to enable the reliable restoration of the power system. However, as there are also costs associated with providing these restart services, it is important that only the required quantity of SRAS is procured, at an efficient price.

Within the current SRAS frameworks, the Reliability Panel is responsible for determining the System Restart Standard. The System Restart Standard contains several parameters for the restoration of the power system following a major supply

disruption,[1] including the maximum amount of time in which a given level of supply must be restored in each sub-network, and the level of reliability of restart services.[2] AEMO then procures a quantity of restart services that is required to meet these parameters, for each sub-network. AEMO assesses the ability of procured SRAS to meet the parameters of the System Restart Standard through detailed testing and power system modelling.

AEMO also has responsibility for developing a number of SRAS Guidelines that establish the technical and operational parameters of SRAS.

The Commission considers that to meet the NEO, the SRAS frameworks must deliver the required quantities of reliable restart services to enable the restoration of the power system, according to the parameters defined in the System Restart Standard. The final rule proposes a number of changes to the SRAS frameworks that are designed to meet this general principle, which can be grouped into the three following areas:

1. **Effective governance arrangements:** Good governance involves a clear definition of organisational roles and responsibilities, allowing different market bodies to exercise their functions efficiently, subject to clear accountability through transparent reporting.
2. **Efficient SRAS market outcomes:** Competitive markets are the best way to deliver required quantities of SRAS to maintain the reliable supply of energy, at an efficient cost.
3. **Efficient cost recovery:** The SRAS charges paid by participants should broadly reflect the benefits provided by that service.

These three areas, and the related changes made in the final rule, are discussed in further detail below.

Developing effective governance arrangements

In their rule change proposal, the Group of Generators argued that the current SRAS frameworks provide insufficient functional separation between AEMO and the Reliability Panel and do not adequately define the size of the major supply disruption event that SRAS is procured to mitigate.

The Commission has decided to make a final rule to address the issues raised by the Group of Generators.

The Commission considers that good governance arrangements will provide clear functional separation of the roles of different bodies within the SRAS frameworks, while providing these bodies with adequate flexibility to fulfil their responsibilities

1 A major supply disruption is currently defined in the NER as "The unplanned absence of *voltage* on a part of the *transmission system* affecting one or more *power stations*." Such events can cause the loss of supply of electricity to a large number of consumers, potentially affecting a region, multiple regions or the entire NEM. The definition of the size of such events - i.e., whether they affect a single region, multiple regions or the entire NEM - is a key issue addressed in this final determination.

2 The System Restart Standard also establishes a number of other parameters, including the strategic, geographic, technology and fuel diversity of SRAS, as well as the principles that AEMO must consider when developing the boundaries of electrical sub-networks.

efficiently. These different bodies must then be held accountable for how they fulfil their responsibilities through transparent reporting processes.

The two main market bodies with responsibilities within the SRAS frameworks are the Reliability Panel and AEMO. The final rule clarifies the functional separation of these two bodies by introducing separate objectives for the Reliability Panel and AEMO. These objectives clarify that:

1. the Reliability Panel's key function is to develop the System Restart Standard in order to meet the SRAS Objective. The SRAS Objective has been amended by the final rule. The SRAS Objective is now to minimise the expected costs of a major supply disruption to the extent appropriate, having regard to the national electricity objective (NEO); and
2. AEMO's key function is to use reasonable endeavours to acquire SRAS to meet the System Restart Standard at lowest cost.

The new SRAS Objective requires the Panel to have regard to the NEO. The Commission considers that this will involve consideration of various economic factors, including the trade-offs that exist between the cost of procuring restart services against the short term costs of a loss of supply and the longer term costs of economic disruption.

The final rule also clarifies that SRAS should be procured to mitigate the scenario of a NEM-wide major supply disruption, by requiring the Panel to include a restoration timeframe in the System Restart Standard for the independent restoration of each sub-network. This means that AEMO would be required to procure the required quantities of SRAS to enable each sub-network to be restored within the timeframes of the System Restart Standard, under the assumption that energy (other than energy provided by contracted restart services) was not available from a neighbouring, energised sub-network to assist in restoration.

The definition of major supply disruption has been amended to clarify that its key focus is on the loss of supply to consumers.

The final rule also requires the Reliability Panel to determine the aggregate reliability requirements of the restart services in each electrical sub-network.[3] AEMO will then procure SRAS on the basis of meeting these aggregate reliability requirements. This may expand the range of restart services that AEMO can choose from when procuring SRAS to meet the System Restart Standard.

To improve transparency and accountability regarding AEMO's processes, the final rule also includes a number of new reporting and consultation requirements. These changes require AEMO to report annually on:

- whether it has met the System Restart Standard in each sub-network and, if not, the reasons why the System Restart Standard was not met; and
- what processes it has followed to procure SRAS in each sub-network.

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3 Previously, the Panel was required to define the reliability level of primary and secondary restart services. These reliability levels applied to individual restart services. AEMO was then required to procure individual restart services that met these reliability levels.

The final rule requires AEMO to report annually on the total cost of SRAS in each sub-network, but not on the quantity of SRAS that has been procured for each sub-network. The Commission considers that this is necessary to reduce the potential for non-competitive outcomes in SRAS markets.[4]

The Commission also considers that network businesses possess substantial information and experience that could be utilised by AEMO during the procurement and assessment of restart services. The final rule therefore requires AEMO to consult with network businesses to resolve any issues relating to potential prospective restart services and requires network businesses to provide to AEMO any information necessary to assess the capability of prospective restart services to meet the SRS.

Efficient SRAS market outcomes

In its rule change proposal, AEMO argued that a lack of competition in SRAS markets has driven inefficient increases in SRAS prices. AEMO therefore proposed the introduction of a price arbitration option in the SRAS procurement process.

The Commission has decided not to introduce a price arbitration option into the SRAS procurement process. While SRAS markets may not be strongly competitive at present, this does not warrant the introduction of any form of price regulation, such as AEMO's proposed price arbitration option. The Commission's decision was based on the significant costs and risks associated with the introduction of a regulatory approach, particularly the potential for dampening signals for participants to invest in restart services as well as the risk that SRAS providers may withdraw from SRAS markets. There are also likely to be substantial regulatory costs associated with administering a price arbitration approach.

Instead, the Commission considers that competition in SRAS markets can be enhanced by increasing AEMO's flexibility to procure SRAS, changing the amount of information published by AEMO to reduce the probability of non-competitive outcomes and broadening the potential scope of services that AEMO may choose from when meeting its SRAS Procurement Objective.

1. **Enhancing AEMO's flexibility in SRAS procurement:** The final rule removes the current requirement on AEMO to procure SRAS only through a prescribed SRAS tender process. To promote transparency in its procurement processes, the final rule also requires AEMO to provide guidance on the factors that it must take into account when making a decision to follow a particular type of procurement process to acquire SRAS. AEMO will also report annually on what procurement processes it has used to acquire SRAS.
2. **Changing the amount of information published to reduce the probability of anti-competitive bidding:** The Commission considers that the current level of reporting on quantities of SRAS procured in each sub-network may reduce the extent of competitive pressure faced by SRAS providers. The final rule therefore

4 The Commission considers that in markets that already display some competitive characteristics, increasing the quantity of information made available is likely to further promote competitive outcomes. However, in markets where competition is relatively constrained, such as SRAS markets, more information may facilitate non-competitive outcomes. More information is provided in section 5.3.3.

removes the requirement on AEMO to publish the quantity of SRAS it has procured in each sub-network, in order to reduce the likelihood of non-competitive outcomes in SRAS markets.

3. **Broadening the scope of restart services:** The Commission has decided to remove the definitions of primary and secondary restart services. Removal of these definitions may help to expand the range of potential restart services, by allowing AEMO to select from a larger number of restart services with different levels of reliability in order to meet an aggregate reliability requirement. The Commission considers that this will help to drive more efficient outcomes in SRAS markets.

Efficient cost recovery

In its rule change proposal, AEMO argued that current SRAS cost recovery processes had caused non-cost reflective SRAS charges to be levied on participants in several regions, resulting in transfers between those regions. To address this, AEMO proposed that SRAS charges should reflect the regional benefits provided by specific restart services.

The Commission agrees that SRAS costs should be recovered on the basis of regional benefits. This will result in a better alignment of SRAS charges with the cost of providing restart services. The Commission considers that this alignment is particularly important if the cost of providing SRAS varies between regions.

Regional cost recovery may also create stronger incentives for participants to offer restart services. Given that generators bear half of the total cost of SRAS, higher regional SRAS charges may create incentives for generators to invest in SRAS facilities, and to offer SRAS at a competitive price. The Commission considers that this may help deliver more competitive outcomes in SRAS markets, particularly in those regions where SRAS charges may not currently reflect costs.

Differences between the draft rule and the final rule

There are several differences between the changes proposed in the final rule and those proposed in the more preferable draft rule (the draft rule). These are discussed in more detail throughout this final determination, but in brief include:

- A requirement for AEMO to provide guidance on the matters that it must consider when making a decision to follow a particular type of procurement process to acquire system restart ancillary services to meet the SRAS Procurement Objective.
- A requirement for AEMO, when developing the SRAS Guidelines, to consult with Registered Participants and other persons who in AEMO's reasonable opinion, have, or have identified themselves to AEMO as having, an interest in the SRAS Guidelines.
- A change to the definition of major supply disruption, to clarify that a major supply disruption refers to the loss of supply to one or more loads.
- Removal of the requirement for AEMO to report annually on the processes it has followed for testing and assessing the ability for SRAS to meet the System Restart Standard, which was originally introduced as part of the draft rule.

- Amendment of clause 3.1.4, which contains market design principles, to apply this clause solely to market ancillary services.
- Removal of clause 3.11.10, originally proposed as part of the draft rule, that relates to dispatch of SRAS.
- Amendment of clause 3.13.5, which refers to AEMO reporting on ancillary services costs, to apply this clause solely to market ancillary services and networks support and control ancillary services.

Transitional arrangements

The final rule commences on 1 July 2015. However, the Commission has provided for transitional arrangements to manage the implementation of a number of these changes and to allow time for AEMO and the Reliability Panel to meet the new requirements.

The final rule requires the Reliability Panel and AEMO to commence consultation on the System Restart Standard and various procedures respectively, as soon as practicable after the commencement date of the final rule. The transitional arrangements recognise that AEMO will be unable to commence consultation on its SRAS Guidelines until the Reliability Panel has determined and the AEMC has published the revised System Restart Standard. The final rule also allows both the Panel and AEMO to commence consultation prior to the commencement date, if they so choose.

The final rule also states that any reference in an existing SRAS contract to a document published by AEMO under old clause 3.11.4A is taken to be a reference to the relevant provision of that document as in effect immediately before the Commencement Date. The clause clarifies that where contracts for the provision of restart services have been negotiated on the basis of existing SRAS Guidelines documents, those old documents continue to apply to the contract, regardless of whether AEMO has developed the new SRAS Guidelines.

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1 The Group of Generators' and AEMO's rule change proposals

1.1 The Rule Change proposals

The AEMC received two rule change proposals related to the arrangements for System Restart Ancillary Services (SRAS or restart services).

The first rule change proposal was received from the National Generators Forum (NGF) and a number of individual generator/retailer businesses including AGL, Alinta Energy, Energy Brix, GDF Suez, Intergen and Origin Energy (the Group of Generators) on 11 November 2013. This rule change proposal included a number of changes to the SRAS governance frameworks regarding the organisational responsibilities and functions of the Reliability Panel and AEMO, the definition of major supply disruption and the ability of procured SRAS to meet the SRS.

The second rule change proposal was received from the Australian Energy Market Operator (AEMO) on 20 December 2013. This rule change proposal included the introduction of a regulatory option into the SRAS procurement process, the regionalisation of SRAS cost recovery and changes to the definition of SRAS.

Given that both of these rule change proposals relate to the SRAS frameworks, the Commission decided to consolidate them under section 93(1) of the National Electricity Law (NEL).

1.2 Current arrangements

This section provides a high level overview of SRAS arrangements in the NEM.

System restart ancillary services (SRAS or restart services) are procured by AEMO in order to mitigate the economic costs of a major supply disruption. SRAS provides the capability to restart the power system if there has been a major loss of power in the system, or if the system has collapsed to a "black system" condition.[5]

SRAS is provided by generators with the capability to start, or remain in service, without electricity being provided from the grid. These generators must be capable of delivering electricity to a connection point within specified timeframes and be able to control frequency and voltage.

SRAS is procured on the basis of the restoration of power in a specific electrical sub-network. Electrical sub-networks are defined by AEMO in accordance with the system restart standard (SRS).[6] Sub-network boundaries reflect factors including the concentration of load and generation as well as the structure of the network.

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5 A black system is defined in Chapter 10 as "the absence of *voltage* on all or a significant part of the *transmission system* or within a *region* during a *major supply disruption* affecting a significant number of *customers*."

6 The System Restart Standard is established by the Reliability Panel and defines a number of aspects of SRAS, including maximum timeframes for restoration, the reliability of restart services, guidance on boundaries of electrical sub-networks and the diversity requirements for SRAS. The SRS is described in further detail below.

The current regulatory frameworks for SRAS are established in the NER, the SRS and in AEMO's SRAS Guidelines documents.

National Electricity Rules

The current SRAS frameworks are established through a number of NER clauses.[7] At the highest level, the SRAS Objective sets out the purpose of SRAS. Currently, the SRAS Objective is:

> "the objective for *system restart ancillary services* is to minimise the expected economic costs to the *market* in the long term and in the short term, of a *major supply disruption*, taking into account the cost of supplying *system restart ancillary services*, consistent with the *national electricity objective* (**the *SRAS* Objective**)."

The SRAS Objective refers to a "major supply disruption" as the key event that SRAS is procured to mitigate. In Chapter 10 of the NER, major supply disruption is defined as:

> "the unplanned absence of *voltage* on a part of the *transmission system* affecting one or more *power stations*."

Importantly, this definition does not indicate the extent of the major supply disruption, such as whether it includes a regional, multi-regional or NEM-wide event.

The NER requires AEMO to develop a number of SRAS Guidelines that set out various operational and technical details of SRAS.[8] The NER describes the processes to be followed by AEMO when procuring SRAS, including a requirement for AEMO to procure SRAS through a defined tender process.[9]

System Restart Standard

The Reliability Panel's key responsibility within the SRAS frameworks is to review and determine the SRS. The SRS is the key document that guides AEMO's procurement of SRAS. NER clause 8.8.3(aa) sets out the matters that must be included in the SRS, which currently includes the maximum timeframes for restoration of a given level of supply in each sub-network, the reliability of restart services, and guidance on boundaries of electrical sub-networks and the diversity requirements for SRAS.

Given the requirements set out in clause 8.8.3(aa), the current SRS includes the following:

- **Restoration timeframes:** The SRS requires AEMO to procure SRAS sufficient to:
  - re-supply and energise the auxiliaries of power stations within 1.5 hours of a major supply disruption occurring to provide sufficient capacity to meet 40 per cent of peak demand in that sub-network; and
  - restore generation and transmission such that 40 per cent of peak demand in that sub-network could be supplied within four hours of a major supply disruption occurring.

7 Note that some of these NER clauses have been amended or deleted as part of the final rule.

8 NER clause 3.11.4A.

9 NER clause 3.11.5(b).

- **Reliability of services:** The SRS provides detail regarding the reliability standards that must be met by primary and secondary SRAS. Specifically, primary SRAS are defined as those services with a reliability of 90 per cent, while secondary services are defined as those services with a reliability of 60 per cent. Services may be considered in combination to deliver higher levels of reliability. AEMO is responsible for defining the manner in which reliability will be assessed and how services may be combined.[10]
- **Guidance for the determination of electrical sub-networks:** The SRS defines the matters that AEMO must consider when establishing electrical sub-networks, including the length and strength of transmission corridors between areas and generation centres as well as quantities of generation and load within an area.
- **Guidance for specifying diversity and strategic location of services:** The SRS defines the matters that AEMO must consider in order to maintain a degree of independence between the various restart services that it procures, including electrical, technological, geographical and fuel diversity in procured SRAS.

AEMO is required to procure SRAS and develop its SRAS Guidelines on the basis of meeting the requirements of the SRS and the NER.

AEMO's SRAS Guidelines, procurement processes, reporting and cost recovery

AEMO has a number of functions under the existing SRAS frameworks, including developing the SRAS Guidelines, procuring SRAS, reporting on SRAS costs and recovering the costs of SRAS from market participants.

SRAS Guidelines: Subject to the NER and the SRS, AEMO is responsible for developing the SRAS Guidelines. These Guidelines establish the operational detail of SRAS, including the technical descriptions of SRAS, testing and assessment requirements and how AEMO procures SRAS. AEMO is also required to publish guidelines that set out its processes for tendering for SRAS. AEMO may amend these SRAS Guidelines when it chooses, in accordance with the rules consultation procedures.

Development of sub-network boundaries: AEMO is required to determine the boundaries of electrical sub-networks, in accordance with the SRS. AEMO is required to consult on the establishment of these boundaries and to publish a report setting out how it has complied with the requirements of the SRS in accordance with the rules consultation procedures.

SRAS procurement: The NER currently requires AEMO to procure SRAS through a prescribed tender process, the details of which are currently set out in NER clause 3.11.5.[11] The most recent tender processes took place in 2008 and 2012, with the tender process for SRAS contracts to begin in July 2015 currently underway. The NER

10 AEMO is responsible for developing an approach for measuring the reliability of restart services. This approach is currently included in the SRAS Guidelines. For more information see: AEMO, *SRAS Guidelines*, September 2014, p.8.

11 Note that the final rule removes the requirement for AEMO to procure SRAS through a defined tender process.

explicitly excludes matters related to the price of SRAS from being referred to the Dispute Resolution Adviser, under chapter 8 of the NEL.

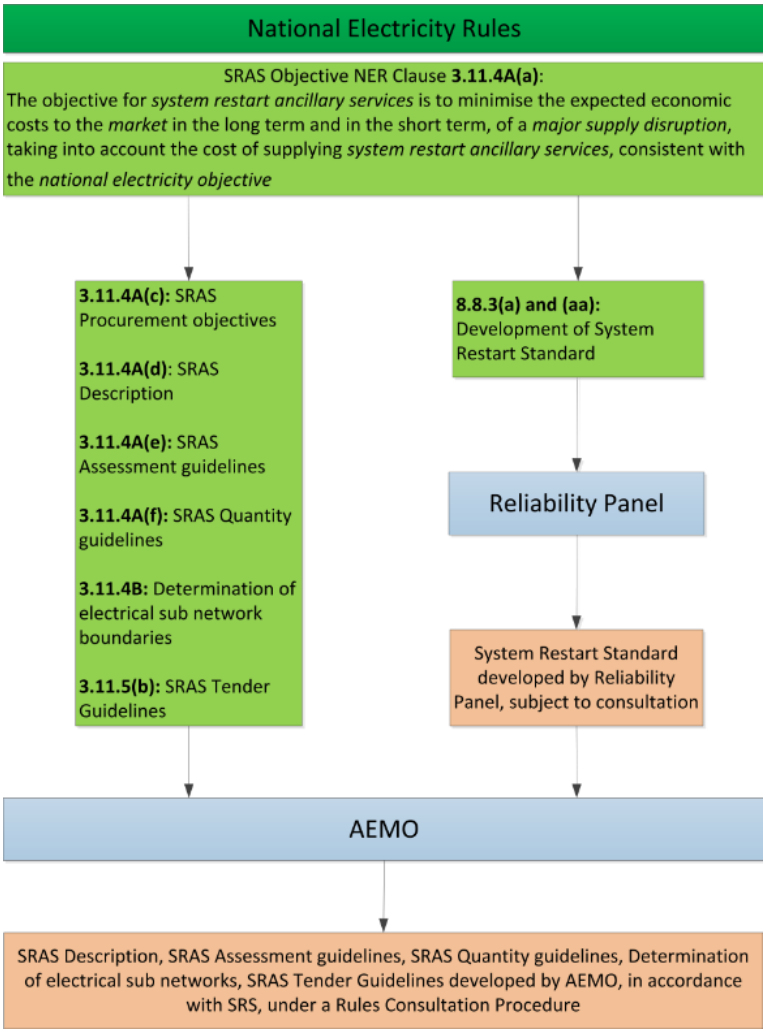
SRAS reporting requirements: At the conclusion of each SRAS tender, AEMO is required to publish information on the cost and quantities of SRAS procured in each sub-network area. This information includes:

- the total estimated annual SRAS costs, broken down into availability and usage charges, for each sub-network; and
- the number of SRAS acquired for each sub-network.

SRAS cost recovery: AEMO is responsible for the recovery of SRAS costs through the wholesale market settlements process. AEMO recovers the total, NEM-wide costs of SRAS equally from all regions of the NEM, on a 50/50 basis from generators and customers.[12] These charges reflect the respective energy generation or consumption of each participant.

A summary of the current SRAS regulatory arrangements is provided in Figure 1.1

Figure 1.1 Current regulatory arrangements



12 In full, the NER requires half of all SRAS costs to be recovered from market generators and small generation aggregators, and the other half from market customers.

1.3 Issues raised and solutions proposed in the rule change proposals

The two rule change proposals raised a number of issues with the current SRAS frameworks and proposed various changes to address these issues. A brief summary is provided below.

1.3.1 AEMO's rule change proposal

AEMO's rule change proposal identified the following key issues and proposed solutions.

SRAS procurement and competition in SRAS markets: AEMO argued that SRAS markets are currently non-competitive and that this lack of competition has resulted in substantial increases in the price of SRAS in recent years.

To address this perceived lack of competition, AEMO proposed the introduction of a price arbitration option in the SRAS procurement process. This would generally align the SRAS procurement process with the NSCAS (Network Support and Control Ancillary Services) procurement processes.

SRAS cost recovery processes: AEMO argued that the current approach to SRAS cost recovery results in non-cost reflective SRAS charges as well as transfers between regions.

AEMO proposed to recover SRAS costs on the basis of the regional benefit they provide. To allow regional benefit recovery, AEMO would develop regional benefit factors that allocate the costs of each restart service to different regions, based on the benefit provided by that service to each region.

Removal of the definitions of primary and secondary SRAS: AEMO argued that the current definitions of primary and secondary SRAS provide no benefit to any party and should be removed from the NER. The Group of Generators supported this proposed change to the NER.

Minor amendments: AEMO identified a number of apparent inconsistencies or referencing errors in the NER and proposed amendments to rectify these including:

- clarifying the definition of non-market ancillary services (NMAS);
- amending some apparent cross referencing errors; and
- removing "catch all" provisions that allow AEMO to consider "any other relevant matters".

1.3.2 The Group of Generators' rule change proposal

The Group of Generators rule change proposal identified the following key issues and proposed solutions.

Definition of major supply disruption, economic costs and SRAS costs in the NER: The Group of Generators argued that the current SRAS frameworks provide insufficient guidance regarding the nature of the event that SRAS is procured to mitigate, the economic costs of that event and the costs of procuring SRAS.

To address this, the Group of Generators proposed to redefine a major supply disruption event as a multi-region or NEM-wide event.[13] Other changes were proposed to the definition of economic costs and cost of supply, to guide how AEMO should interpret these terms.

Define the SRS as an operational standard and increase AEMO's reporting / consultation requirements: The Group of Generators argued that there is a lack of certainty in the market regarding the ability of procured SRAS to meet the restoration timeframes of the SRS.

To address this, the Group of Generators proposed that the SRS be changed from a target that guides AEMO's procurement of SRAS, to an operational standard that AEMO would be required to meet. The Group of Generators also proposed increased reporting and consultation requirements for AEMO to provide evidence to the market as to the ability of procured SRAS to restore the system within the timeframes of the SRS.

Define the role of the Reliability Panel: The Group of Generators argued that AEMO should be subject to an approval process when it seeks to make changes to its SRAS Guidelines. The Group of Generators therefore proposed that the Panel be required to approve any changes made by AEMO to several of the SRAS Guidelines documents, including the SRAS quantity guidelines, SRAS assessment guidelines, SRAS description and the boundaries of electrical sub-networks document.

The Group of Generators also argued that the Panel could benefit from increased guidance in the NER regarding its functions and consultative processes. The Group of Generators therefore proposed that the SRS would explicitly state that it remains current until amended by the Panel; as well as a requirement for the Panel to consult with multiple stakeholders in addition to AEMO when developing the SRS.[14]

1.4 The Commission's rule making process to date

On 27 March 2014 the Commission published both rule change proposals from AEMO and the Group of Generators, as well as a Consultation Paper.

On the same date, the Commission also published a notice under:

- section 93(1) of the NEL advising that it was consolidating the two rule change proposals;
- section 95 of the NEL advising that the rule change process had commenced; and
- section 107 of the NEL advising the extension of the date for making the draft determination to 28 August 2014.

Submissions on this first round of consultation closed on 8 May 2014. The Commission received 9 submissions which are available on the Commission's website.

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13 The Commission notes that the Group of Generators have actually proposed to change the term major supply disruption through proposed amendments to the SRAS Objective and SRS, rather than to the Chapter 10 definition of major supply disruption.

14 The Commission notes that the SRS is reviewed and determined by the Reliability Panel, separately to the rule change process. The Commission cannot make changes directly to the SRS.

On 28 August 2014, the Commission published a notice under section 107 of the NEL extending the time for making the draft determination to 18 December 2014.

On 18 December 2014, the Commission published a notice under section 99 of the NEL and a draft rule determination in relation to the rule change requests. The draft rule determination included a draft more preferable rule.

The Commission received 14 submissions on the draft rule determination and the draft rule. These submissions are available on the AEMC website.[15]

15 www.aemc.gov.au

2 Final rule determination

The Commission has made a final rule that is a more preferable rule. The final rule is attached to and published with this final rule determination. Having regard to the issues raised in the rule change requests and by stakeholders, the Commission is satisfied that the final rule will, or is likely to, better contribute to the achievement of the national electricity objective (NEO) than the proposed rules.

The final rule will improve the operation of the SRAS frameworks, including the distribution of roles and responsibilities of different bodies within the SRAS frameworks, and the nature of the major supply disruption that SRAS is procured to mitigate. The final rule also makes a number of changes to the SRAS cost recovery processes as well as AEMO's reporting and procurement processes.

The final rule incorporates some of the proposals made by AEMO and the Group of Generators. The Commission considers that its final rule will also address some of the other key issues raised by the proponents.

The final rule differs from the draft rule primarily in that a new requirement has been introduced for AEMO to provide guidance to Registered Participants on the factors that it must take into account when making a decision to follow a particular type of SRAS procurement process.

A number of other minor changes have been made to reflect issues raised in stakeholder submissions and identified by the Commission.

This Chapter provides an overview of how the final rule meets the NEO and the assessment framework used in developing this rule change. It provides an overview of how the Commission expects the new SRAS frameworks set out in its final rule will operate. It also provides an overview of transitional and implementation arrangements.

2.1 Rule making test

The Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the National Electricity Objective (NEO).[16]

The NEO states:[17]

> "The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system."

The Commission considers that this rule change is likely to contribute to more efficient investment and operation of electricity services, particularly with respect to the price of SRAS, as well as reliability of supply.

16 See section 88 of the NEL.

17 See section 7 of the NEL.

2.2 Assessment framework

The Commission considers that the new SRAS frameworks introduced by the final rule meet the following principles, and therefore contribute to the achievement of the NEO.

Maintaining reliable SRAS arrangements in the NEM

There are likely to be significant costs associated with a potential black system event. Given the extent of these costs, reliable restart services must be available to restore supply. The SRAS frameworks must therefore promote the reliability of existing restart services. They must also provide sufficient signals and incentives to drive investment in new restart services where they are needed.

Delivering SRAS at an efficient price

Restart capability should be provided to consumers at an efficient price. These prices should reflect the costs of providing the service. They should also be recovered from participants on the basis of how each participant benefits from the provision of the service. Effectively competitive markets are the optimal way to deliver SRAS prices that reflect underlying costs, while cost reflective pricing recovers the costs of SRAS from those parties who benefit most.

Developing effective SRAS governance arrangements

Effective governance arrangements provide clear functional separation between different market bodies, while allowing each body sufficient scope to meet its obligations efficiently. This is enabled by providing each market body with clear objectives, which also helps to reduce the risk of overlap or duplication. Transparent reporting processes are necessary to maintain accountability and to provide the market with sufficient information to enable efficient decision making.

2.3 Commission's final rule determination

The Commission may make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the NEO.[18] The Commission may make a rule that is different from the proposed rule if it is satisfied that, having regard to the relevant issues raised in the proposed rule, the final rule will or is likely to better contribute to the NEO.[19]

Having regard to the issues raised by the proposed rules and other requirements under the NEL, the final rule is a more preferable rule. The Commission is satisfied that the final rule will, or is likely to, better contribute to the achievement of the NEO than the proposed rule.

This section explains how the final rule is likely to contribute to the achievement of the NEO, in accordance with the principles set out above.

Improved SRAS governance arrangements

The final rule provides clear functional separation within the SRAS frameworks. The final rule provides the Reliability Panel and AEMO with separate, clearly defined

18 See section 88 of the NEL.

19 See section 91A of the NEL.

objectives. These objectives identify that the Reliability Panel's key purpose is to develop the SRS in accordance with the SRAS Objective, while AEMO's is to focus on procuring SRAS to meet the SRS at lowest cost. The Commission considers that the provision of clear objectives for the Reliability Panel and for AEMO will reduce the prospect of duplication and overlap within the SRAS frameworks, while allowing each body to fulfil its role more efficiently.

The final rule also provides the Reliability Panel with improved guidance regarding the form of the SRS, including the form of the restoration timeframes and reliability requirements. The final rule also clarifies the conditions in which the Reliability Panel may vary the SRS between regions. This improved guidance will allow the Reliability Panel to fulfil its role more efficiently.

The final rule also requires AEMO to report annually on whether it has met the SRS in each sub-network, the total cost of SRAS in each sub-network, and the processes it followed to test, assess and procure SRAS. The Commission considers that these transparent reporting processes will provide the market with necessary information to inform investment decisions. They will also help to quickly identify any areas of the SRAS frameworks that may not be operating effectively.

More flexible SRAS procurement processes

The final rule provides AEMO with increased flexibility to fulfil its primary function of procuring SRAS at lowest cost. The final rule removes the obligation on AEMO to procure SRAS solely through a tender process prescribed in the NER. This will allow AEMO to procure SRAS more efficiently, by procuring SRAS whenever necessary, through whichever process it considers will enable it to meet the SRS at the lowest cost.

To promote transparency in AEMO's procurement, AEMO will be required to publish guidance on the factors that it must take into account when making a decision to follow a particular type of procurement process to acquire SRAS.

The final rule also simplifies AEMO's reporting of SRAS costs. The current requirement for AEMO to report on both the cost and quantity of SRAS has been removed, with AEMO required to report only on the cost of SRAS in each sub-network. This is designed to reduce the potential for non-competitive bidding by increasing the degree of competitive pressure in SRAS markets, driving more efficient SRAS cost outcomes for consumers.

Regional benefits SRAS cost recovery processes

The final rule introduces a regional benefits approach to the recovery of SRAS costs. This approach allocates the cost of each restart service on the basis of the benefit it provides to each region. This approach to cost recovery will increase the cost reflectivity of SRAS charges (prices) and will align the charges paid by participants for restart services with the benefit they receive from those services. This may drive more efficient operational and investment decisions, particularly for generators, who will now face SRAS charges that more accurately reflect the costs of providing SRAS in each region.

2.4 How the SRAS frameworks will operate

The final rule includes a number of changes to the SRAS frameworks. This section describes these changes, as well as providing an overview of the various roles, responsibilities and relationships that exist within the SRAS frameworks.

Figure 2.1 provides a visual representation of how the SRAS frameworks will now operate. The numbers of each operation of the SRAS frameworks described below correspond to the numbers included in Figure 2.1.

SRAS Procurement

1. **SRAS Objective:** The final rule clarifies the SRAS Objective in a new Chapter 10 definition. The Reliability Panel will be required to consider the SRAS Objective when determining the SRS. The new SRAS Objective is as follows:

   > "the objective for *system restart ancillary services* is to minimise the expected costs of a *major supply disruption* to the extent appropriate, having regard to the *national electricity objective*."

2. **Redefine major supply disruption:** The final rule clarifies the Chapter 10 definition of major supply disruption, to explicitly refer to loss of supply to one or more loads.

3. **Form of the SRS:** The final rule makes five main changes to NER clause 8.8.3(aa), which establishes the matters that the Reliability Panel must consider when developing the SRS:

   (a) Firstly, the Reliability Panel will be required to include in the SRS "standalone restoration timeframes" for each sub-network, being the maximum amount of time for restoration of power to a given level in each sub-network, under the assumption that supply is unavailable from any other sub-network (other than energy provided by contracted restart services) to assist in restoration. Specifically, the SRS must:

   > "identify the maximum amount of time within which *system restart ancillary services* are required to restore *supply* in an *electrical sub-network* to a specified level, under the assumption that *supply* (other than that provided under a *system restart ancillary services agreement* acquired by *AEMO* for that *electrical sub-network*) is not available from any neighbouring *electrical sub-network*."

   (b) Secondly, the Reliability Panel will also be required to include in the SRS an aggregate reliability requirement for each sub-network. This reliability requirement will allow AEMO to procure a range of different restart services with different levels of reliability, in order to meet a single reliability requirement for each sub-network. Specifically, the SRS must:

   > "include the aggregate required reliability of *system restart ancillary services* for each *electrical sub-network*."

(c) Thirdly, the final rule clarifies that the Reliability Panel may vary the SRS between sub-networks to reflect any specific technical issues or the specific economic circumstances of that sub-network. Specifically, the SRS will:

> "apply equally across all *regions*, unless the *Reliability Panel* varies the *system restart standard* between *electrical sub-networks* to the extent necessary:
>
> 1. to reflect any technical system limitations or requirements; or
> 2. to reflect any specific economic circumstances in an *electrical sub-network*, including but not limited to the existence of one or more *sensitive loads*."

(d) Fourth, the final rule requires the SRS to specify that a restart service can only be acquired by AEMO under an SRAS contract for one electrical sub-network at any one time.

(e) Finally, the final rule removes the definitions of primary and secondary restart services from the SRS.

4. **Reliability Panel determines the SRS:** Given the SRAS Objective **(1)** and the requirements established under NER clause 8.8.3(aa)(3), the Reliability Panel will determine the SRS, via a consultative process. The SRS provides the restoration timeframes and the reliability requirements that AEMO must aim to meet when procuring SRAS. The SRS also sets out other matters that AEMO must consider, including SRAS diversity requirements and guidance on the boundaries of electrical sub-networks.

5. **AEMO SRAS Procurement Objective :** The final rule establishes a new SRAS Procurement Objective for AEMO:

> "AEMO must use reasonable endeavours to acquire *system restart ancillary services* to meet the *system restart standard* at the lowest cost."

6. **AEMO / network business consultation:** The final rule requires AEMO to consult with network businesses when procuring SRAS, in order to identify and resolve issues in relation to the capability of any restart service to meet the SRS. Specifically, AEMO is required to:

> "consult with the relevant *Network Service Provider* to identify and resolve issues in relation to the capability of any *system restart ancillary service* proposed to be provided by an *SRAS Provider* in an *electrical sub-network* to meet the *system restart standard*."

7. **Network business provision of information to AEMO:** The final rule requires network businesses to provide any information to AEMO that is reasonably required for AEMO to assess the capability of a restart service to meet the SRS. Specifically, network businesses must:

> "provide any information to *AEMO* which *AEMO* reasonably requires in order for *AEMO* to assess the capability of a *system restart service* to meet the *system restart standard*."

8. **Network business engagement with SRAS providers:** The existing rules require network businesses to engage with SRAS providers to resolve any issues related to delivery of restart services and to participate in testing of prospective restart services.

9. **AEMO procures SRAS:** Following the requirements established in the SRS **(4)** and the AEMO SRAS Procurement Objective **(5)**, having consulted with network businesses **(6)** and sourced all necessary information to inform its assessment of restart services **(7)**, AEMO will undertake a procurement process, to acquire SRAS to meet the SRS.

AEMO Guidelines and reporting requirements

10. **AEMO is required to develop the SRAS Guidelines:** The final rule clarifies AEMO's processes for developing the SRAS Guidelines. The SRAS Guidelines must be designed to meet the SRS. Specifically, the Guidelines must include:

    1. a description of the technical and availability requirements of *system restart ancillary services*;
    2. a process for meeting the aggregate required reliability of *system restart ancillary services* for each *electrical sub-network* under clause 8.8.3(aa)(3);
    3. a process for the modelling, assessment and physical testing of *system restart ancillary services* proposed to be provided by an *SRAS Provider,* including any assumptions to be made by *AEMO* regarding the state of *transmission elements* during a *major supply disruption*;
    4. a process for determining the number and location of *system restart ancillary services* required to be procured for each *electrical sub-network* consistent with the *system restart standard*;
    5. guidance to *Registered Participants* on the factors that *AEMO* must take into account when making a decision to follow a particular type of procurement process to acquire *system restart ancillary services* to meet the *SRAS Procurement Objective*;
    6. a process for AEMO to follow for contacting a potential SRAS Provider to negotiate the provision of system restart ancillary services without a competitive tender process; and
    7. a process for a potential SRAS provider to contact AEMO to offer the provision of system restart ancillary services without a competitive tender process, which offer AEMO is in no way obliged to accept.

    As under the current arrangements, AEMO may amend the SRAS Guidelines in accordance with the rules consultation procedures. When developing the SRAS Guidelines under the rules consultation process, AEMO must consult with Registered Participants and such other persons who, in AEMO's reasonable opinion, have, or have identified themselves to AEMO as having, an interest in the SRAS Guidelines.

11. **AEMO required to report annually on SRAS:** The final rule requires AEMO to report annually on a number of matters including

1. the total estimated annual cost for the provision of *system restart ancillary services*, broken down to charges for availability and use, for each *electrical sub-network* and for each *region*;
2. any *electrical sub-network* where *system restart ancillary services* were not acquired by *AEMO* to a level satisfactory to meet the *system restart standard*, and the reasons why the *system restart standard* was not met; and
3. the process followed by *AEMO* to acquire *system restart ancillary services* for each *electrical sub-network*.

Development of sub-network boundaries

12. **AEMO required to establish sub-network boundaries:** The NER requires AEMO to determine the boundaries of electrical sub-networks, in accordance with the SRS.

SRAS cost recovery

13. **Regional benefit ancillary services procedures:** The final rule requires AEMO to develop regional benefit ancillary services procedures in accordance with the rules consultation procedures. Specifically:

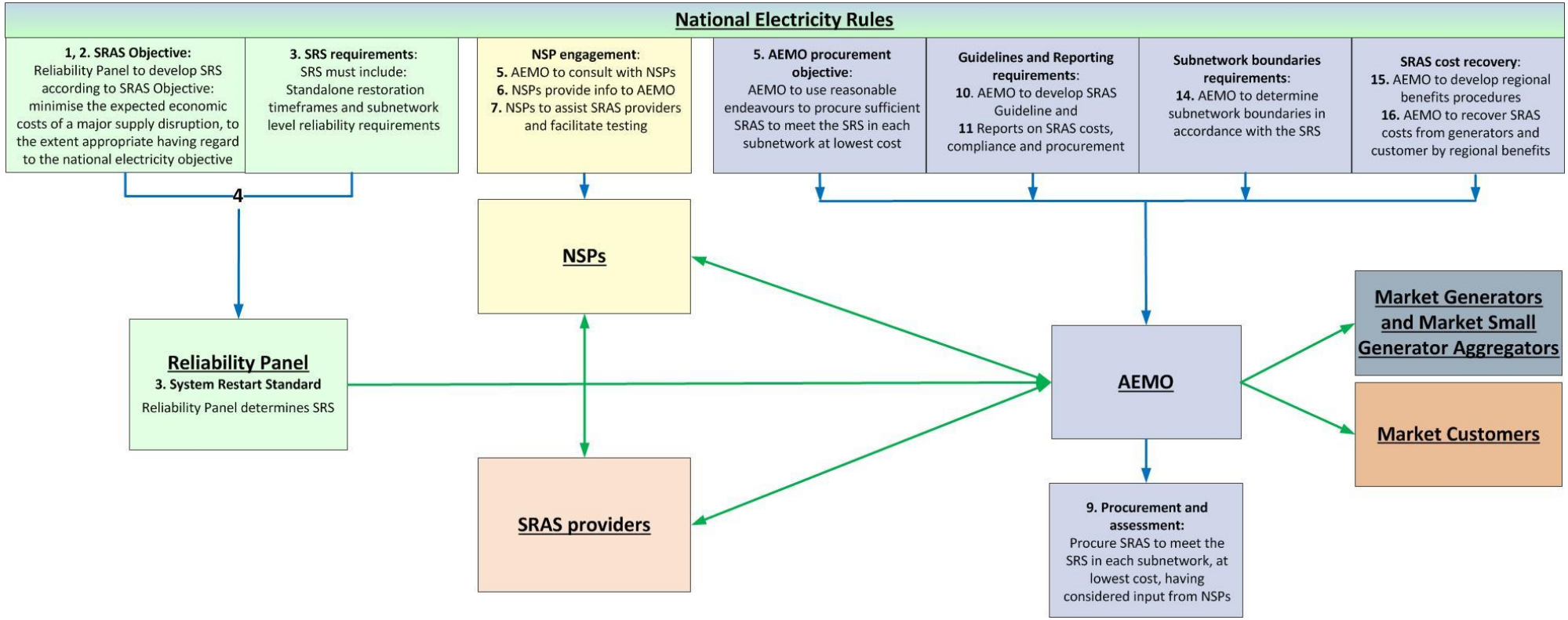
    > "AEMO must develop and *publish* the regional benefit ancillary services procedures in accordance with the *Rules consultation procedures*. Without limiting the matters to be included in the regional benefit ancillary services procedures, they must require *AEMO* to take into account:...
    >
    > 2. for a *system restart ancillary service*, that can be used to restart *generating units* in two or more *regions*, the relative benefit provided by that service to each *region*"

    AEMO will develop regional benefit factors for each restart service in accordance with these procedures.

14. **Cost recovery:** The existing rules require AEMO to recover half the costs of SRAS from market customers and the other half from market generators and market small generation aggregators, on the basis of the energy generation and consumption of each.

The operation of the SRAS frameworks is set out in Figure 2.1. Rules requirements are shown as blue arrows, while interactions between different market bodies and organisations are shown as green arrows.

Figure 2.1 New SRAS frameworks



3 Commission's assessment of AEMO's proposed rule change

The final rule incorporates some of AEMO's proposed rule. This section sets out the Commission's assessment of AEMO's proposed rule. The final rule is discussed in Chapter 5.

AEMO's rule change proposal included the following key proposals.

SRAS procurement and competition in SRAS markets: AEMO argued that SRAS markets are currently non-competitive and that this lack of competition has resulted in substantial increases in the price of SRAS in recent years. To address this perceived lack of competition, AEMO proposed the introduction of a price arbitration option in the SRAS procurement process.

The Commission does not consider that the introduction of price arbitration as part of the SRAS procurement process is appropriate. There would be significant costs and risks associated with introducing price arbitration in SRAS markets. Any weakness of competition in SRAS markets is better addressed through improving outcomes in the SRAS procurement process. The final rule, which includes proposed changes to improve outcomes in SRAS markets, is discussed in more detail in Chapter 5.

SRAS cost recovery processes: AEMO argued that the current approach to SRAS cost recovery results in non-cost reflective SRAS charges and transfers between regions. To address this situation, AEMO proposed the introduction of a process to recover SRAS costs on the basis of the regional benefit they provide.

The Commission has decided to incorporate AEMO's proposal for regional SRAS cost recovery in its final rule. Recovering the cost of SRAS on the basis of the regional benefits it provides is likely to result in more cost reflective SRAS charges, which may result in more efficient operational and investment decisions by generators.

Remove definition of primary and secondary SRAS: AEMO argued that the current definitions of primary and secondary SRAS provide no benefit to the market and should be removed from the NER. The Group of Generators supported this proposed change to the NER.

The final rule removes the definitions of primary and secondary SRAS from the NER. Removing these definitions may expand the range of potential restart services that AEMO can choose from when procuring SRAS to meet the System Restart Standard

Minor amendments: AEMO proposed a number of minor amendments to the NER, including:

- clarifying the definition of non-market ancillary services (NMAS);
- amending some apparent cross referencing errors in clause 3.11.4A(b) that requires AEMO to use reasonable endeavours to acquire SRAS; and
- removing "catch all" provisions that allow AEMO to consider "any other relevant matters".

The final rule incorporates some of AEMO's proposed minor amendments.

3.1 SRAS procurement and competition in SRAS markets

This section addresses AEMO's proposal to introduce a price arbitration option into the SRAS procurement process. The Commission considers that it would not be appropriate to introduce any form of regulation, including price arbitration, into the SRAS procurement process, as there are likely to be a number of substantial costs and risks associated with introduction of a regulatory approach.

3.1.1 Current arrangements and AEMO's proposed rule

AEMO argued that a lack of competition in SRAS markets resulted in large increases in SRAS costs between the 2008 and 2012 SRAS tenders. It suggested this outcome was due to the following factors:

- the relatively small size of the SRAS market;
- a lack of alternative SRAS providers; and
- information asymmetries between SRAS providers and AEMO.

AEMO argued that these factors have allowed SRAS providers to tender at prices well above long run marginal cost, with little risk of losing market share.

Currently, SRAS is procured via an open tender process. This process explicitly precludes the price of SRAS from arbitration under the Dispute Resolution provisions.[20] AEMO argued that these arrangements prevent it from "negotiat[ing] the price of services where they are deemed to not be providing cost/service balance and value". It therefore proposed the extension to SRAS of the procurement and arbitration processes that currently apply to network support control and ancillary services (NSCAS).

Under this proposed approach, AEMO would undertake an assessment of the competitiveness of each SRAS tender process. If it deemed a tender process to be non-competitive, the NER would require AEMO and the SRAS provider to negotiate in good faith, taking into account the need to meet the SRAS Objective.

If no agreement could be reached during this negotiation, either AEMO or the SRAS provider would then have the option to refer the tender to the Dispute Resolution Adviser for arbitration, under clause 8.2 of the NER.

3.1.2 Stakeholder views: Competition in SRAS markets

First round submissions

The NGF and Origin questioned whether an increase in the price of SRAS necessarily indicated a failure of competition.[21] Various other factors, such as the abolition of the Snowy region and the end of a long period of low SRAS prices, were highlighted as possible causes of an increase.[22]

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20 Clause 8.2 of the NER requires the AER to appoint a person, or persons, to perform the functions of a Dispute Resolution Advisor. It also sets out the matters that may be considered in a dispute resolution and the process for resolution.

21 NGF, 1st round submission, p.10; Origin, 1st round submission, p.2.

22 Ibid.

The NGF, GDF Suez and Macquarie Generation argued that the threat of new entry in SRAS markets acts as a significant constraint on the pricing strategies of SRAS providers.[23] The NGF suggested that low levels of new entry indicated SRAS prices were still below the cost of a new entrant.[24] However, AEMO suggested that there is insufficient experience in the NEM to draw any conclusions about whether the price of SRAS has driven new investment, or failed to do so. AEMO argued that the few new SRAS facilities installed since NEM start may also have been installed in the absence of an SRAS market.[25]

Macquarie Generation and Alinta suggested that a perception of regulatory uncertainty, principally in the form of AEMO making changes to its SRAS Guidelines, was a key factor limiting new entry in SRAS markets.[26] More flexible contract terms and longer lead times were supported, as was extending the lead time between contract execution and the commencement of service.[27]

Second round submissions

The MEU argued that SRAS markets are currently non-competitive and allow for SRAS providers to transfer excessive prices to consumers and other generators. The MEU also argued that relying on new SRAS providers to enter the market and develop new capacity imposed an unacceptable risk on consumers.[28]

3.1.3 Stakeholder views: Introduction of price arbitration

First round submissions

Several stakeholders were opposed to AEMO's proposal to introduce a negotiation / arbitration framework.

Origin, GDF Suez, Alinta and the NGF all argued that the introduction of an arbitration option would act as a deterrent to SRAS providers. They argued this may cause existing SRAS providers to fail to maintain relevant facilities or to not offer in future tenders, while potential new providers may be deterred from entering the market.[29]

AGL argued that there was a risk that, under an arbitration model, SRAS prices could be determined incorrectly.[30] Macquarie Generation argued that it would be difficult to identify what parts of a facility were actually used to provide SRAS, adding complexity to the process of estimating costs of SRAS under price arbitration.[31]

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23 NGF, 1st round submission, p.10.; GDF Suez, 1st round submission, p.4.; Macquarie generation, 1st round submission, p.4.

24 NGF, ibid.

25 AEMO, 1st round submission, p.6.

26 Macquarie generation, 1st round submission, p.5.; Alinta, 1st round submission, p.4.

27 Alinta, ibid.

28 MEU, 2nd round submission, pp.2-3.

29 NGF, 1st round submission, p.12.; GDF Suez, 1st round submission, p.5.; Alinta, 1st round submission, p.5.; origin, 1st round submission, p.6.

30 AGL, 1st round submission, p.2.

31 Macquarie generation, 1st round submission, p.5.

The NGF argued that the differences between NSCAS and SRAS mean that arbitration was only warranted in the procurement process for the former service, as NSCAS is typically highly localised while SRAS is a generally competitive service with multiple potential providers.[32]

Second round submissions

The MEU argued that the only feasible control on a continued increase in SRAS prices was to impose some form of price regulation, or to ensure that there was significant competition. More generally, the MEU argued that there was a need for some control to be imposed on what prices SRAS providers could charge.[33]

Origin Energy, Snowy Hydro, GDF Suez, Alinta and the ESAA all supported the AEMC's decision in the draft determination not to introduce price arbitration.[34]

3.1.4 Commission's assessment

The Commission does not consider that it is appropriate to introduce a price arbitration option into the SRAS procurement process. While SRAS markets may not be strongly competitive at present, this does not warrant the introduction of price regulation, including AEMO's proposed price arbitration option. The Commission's decision is based around the significant costs and risks associated with the introduction of regulation.

A key risk of regulation is the potential for the dampening of efficient investment signals. The presence of a price arbitration option may increase perceived downside risk for SRAS providers, potentially dissuading new entrants and encouraging the retirement of older SRAS units. The risk of regulatory error when determining costs could also dampen price signals, further weakening incentives for efficient levels of new investment.

The implementation of a price arbitration option will also create a number of costs. The actual determination of an arbitrated tender price would be a complex and challenging process, particularly the calculation of capital costs. It would most likely require the establishment of a suitably experienced expert panel, at significant cost. Undertaking multiple arbitrations for different tenders would further increase these costs.

The Commission also considers that to make a price arbitration option workable, it would be necessary to introduce a mechanism to prevent an SRAS provider from simply withdrawing a tender that was referred to the Dispute Resolution Adviser for arbitration.[35] The existence of such a provision would likely act as a strong disincentive to potential SRAS providers from tendering. The Commission notes AEMO's comment

32 NGF, 1st round submission, p.12.

33 MEU, 2nd round submission, pp.2-3.

34 Origin, 2nd round submission, p.3.;Snowy Hydro, 2nd round submission, p.1.; GDF Suez, 2nd round submission, p.3.; ESAA, 2nd round submission, p.1.

35 This was the general approach proposed by the National Energy Market Management Company (NEMMCO) in the 2006 SRAS rule change, where SRAS tenderers were prevented from withdrawing once AEMO had issued a particular notice.

that the price arbitration provisions have never been exercised in the NSCAS procurement processes.[36]

Given the extent of these costs and risks, the Commission considers that a regulatory approach to SRAS procurement is not warranted at this time.

However, the Commission also considers that there is some evidence of limited competition in SRAS markets. The Commission considers that this is best addressed by introducing several new arrangements designed to improve the SRAS procurement process and to encourage competition in SRAS markets more generally. These arrangements include:

- allowing AEMO to procure SRAS on the basis of meeting an aggregate reliability requirement for each sub-network, potentially increasing the range of restart services that AEMO may engage to meet the SRS;
- removing the requirement for AEMO to procure SRAS through a prescribed tender process, allowing AEMO to adopt alternative procurement arrangements and potentially expanding the range of potential SRAS providers;
- amending AEMO's reporting obligations to increase competitive pressure in SRAS markets; and
- changing cost recovery processes, to encourage new entry in SRAS markets and more competitive outcomes generally.

The final rule is described in more detail in Chapter 5. Further detail regarding the Commission's considerations of competition in SRAS markets and potential approaches to SRAS procurement is provided in Appendix C.

3.2 SRAS cost recovery processes

This section addresses AEMO's proposal to recover SRAS costs on the basis of the regional benefit they provide.

The final rule incorporates AEMO's proposal for regional cost recovery. The Commission considers that regional cost recovery is likely to promote the NEO by increasing the cost reflectivity of SRAS charges and enhancing competitive outcomes in SRAS markets.

3.2.1 Current arrangements

Currently, the total cost of SRAS is recovered equally from all regions of the NEM, on a 50/50 basis from generators and customers.[37] These charges reflect the respective energy generation or consumption of each participant.

The current arrangements can result in differences between the cost of SRAS and SRAS charges levied on participants in a region. In some cases, the cost of sourcing required quantities of SRAS to meet the SRS in a region may be markedly higher than the actual SRAS charges levied on participants in that region. As demonstrated in Figure 3.1, this

36 AEMO, 1st round submission, p.8.

37 In full, the NER requires half of all SRAS costs to be recovered from market generators and small generation aggregators, and the other half from market customers.

situation occurred in 2012/13, where the cost of sourcing SRAS in Tasmania was markedly higher than the SRAS charges levied on Tasmanian participants. The inverse occurred in Queensland, where SRAS charges were substantially higher than the costs of sourcing SRAS in that region.

Figure 3.1 SRAS charges recovered and payments made 2012/13

REGION	SRAS RECOVERED ($M, NOMINAL)	SRAS PAYMENT ($M, NOMINAL)	DIFFERENCE ($M, NOMINAL)
NSW	17.6	18.2	(0.6)
QLD	13.8	5.9	7.9
SA	3.5	3.1	0.4
TAS	3.2	10.2	(6.9)
VIC	13.1	13.8	(0.7)
Total	51.2	51.2	-

Source: AEMO, *Rule change proposal: System Restart Ancillary Services*, December 2013, p.11.

3.2.2 AEMO's proposed rule

AEMO argued that the current SRAS cost recovery arrangements may result in inefficient outcomes, as participants in some regions pay SRAS charges that do not reflect the cost of providing SRAS in that region. AEMO considered that this situation results in inefficient cross subsidisation between regions.

AEMO therefore proposed that the cost of SRAS should be recovered regionally, on the basis of the benefit provided by each service to each region. AEMO proposed that this regional cost recovery would better reflect the relative benefit that specific restart services provide to different regions.

AEMO's proposed rule requires AEMO to develop a regional benefit factor (RBF) to be applied to SRAS. This RBF would allocate the cost of each restart service to a region, according to the benefit that it provides to that region.[38] AEMO advised that the cost of updating its internal systems to introduce an RBF for SRAS would amount to around $70,000.[39]

Under the proposed rule, AEMO would be required to develop RBFs for SRAS cost recovery in accordance with a new clause 3.15.6A(c4)(2) of the NER.[40] This new clause would require AEMO to develop and publish Regional benefit ancillary services

38 AEMO has also advised that it intends to develop separate RBFs to apply to SRAS availability and usage charges for each restart service. The intention of developing separate RBFs is to allocate costs accurately in case a restart service is called upon to provide services to a sub-network other than the sub-network to which it was originally contracted.

39 AEMO, *Rule change proposal: System Restart Ancillary Services*, December 2013, p.15.

40 NER clause 3.15.6A(c4) currently requires AEMO to develop and publish Regional Benefit ancillary services procedures for NSCAS. This document establishes how AEMO will determine how different regions benefit from provision of NSCAS. AEMO proposed that the same procedural approach to the development of NSCAS RBF procedures be applied to SRAS.

procedures for SRAS that would determine the relative benefit provided by each restart service that could be used to restart generating units in two adjoining regions. This procedure would be developed by AEMO according to the rules consultation procedures and interested participants would have the opportunity to comment on their development.

3.2.3 Stakeholder views

First round submissions

Macquarie Generation, the NGF and GDF Suez were opposed to the introduction of regional cost recovery. Macquarie Generation suggested that the costs of calculating a regional benefit factor and implementation would likely outweigh any benefits of regional cost recovery.[41] Similarly, GDF Suez argued that if inter-regional power supplies were going to be used to restore power systems, then SRAS costs should be spread across multiple regions.[42]

The NGF argued that SRAS provides system benefits and should be recovered accordingly.[43] The NGF also suggested that as market customers are the primary beneficiaries of SRAS, all of the costs of SRAS should be recovered from market customers, rather than the current 50/50 split between customers and generators.[44]

Alinta suggested that the issue of cost recovery should be considered in the context of whether SRAS is considered a localised or a NEM-wide service. If it is considered a NEM-wide service then benefits accrue to all customers regardless of location. In this case, Alinta suggested that any differences in SRAS charges and costs between regions is not a distortion but a representation of where services are located and the value of those services against the standard.[45]

AEMO and Origin supported the proposed recovery of SRAS on a regional basis. AEMO suggested that the existing process for the recovery of NSCAS costs that benefit more than one region could be applied to SRAS without causing any material complexity.[46] Origin stated that it supported regional cost recovery on the basis of addressing potential cross subsidisation between regions.[47]

Second round submissions

A number of generators including Origin Energy and GDF Suez supported regional benefits cost recovery in their submissions to the draft determination. Regional benefits cost recovery was also supported by the ESAA.[48] Stanwell stated that whilst it was not opposed to regional benefits cost recovery, it questioned whether this would simply

41 Macquarie Generation, 1st round submission, p.6.

42 GDF Suez, 1st round submission, p.5.

43 NGF, 1st round submission, p.13.

44 Ibid.

45 Alinta, 1st round submission, p.5.

46 AEMO, 1st round submission, p.8.

47 Origin, 1st round submission, p.6.

48 Origin Energy, 2nd round submission, p.4.; GDF Suez, 2nd round submission, p.2.; ESAA, 2nd round submission, p.1.

result in wealth transfers between parties in different states.[49] The Major Energy Users supported regional cost recovery, and suggested that increasing a generator's share of the costs of SRAS could reduce the incentive to over-price the provision of SRAS.[50]

A number of Tasmanian stakeholders were opposed to regional benefits cost recovery. Bell Bay Aluminium was opposed to the rule change as it argued that this would increase the cost of energy to Tasmanian consumers and would put Tasmanian customers at a disadvantage within the National Electricity Market.[51] The Tasmanian Minerals and Energy Council argued that the current arrangements provide an equitable approach to SRAS cost recovery and that structural issues in the Tasmanian market made regional cost recovery a significant issue.[52]

The Tasmanian Department of State Growth and Hydro Tasmania suggested that as SRAS must meet "standardised" requirements across the NEM, so the costs of these services should be recovered equally across the NEM. Hydro Tasmania also suggested that current arrangements are equitable, with all regions paying the same. [53]

Hydro Tasmania argued that the underlying philosophy of the NEM is for "one market", with participants paying equivalent charges across the NEM. In particular, Hydro Tasmania highlighted that market ancillary services, such as frequency raise and lower services, are recovered on a NEM-wide basis despite some regions having lower cost sources of these services. Hydro Tasmania suggested that recovering SRAS costs regionally was inconsistent with this general approach.[54]

Hydro Tasmania also argued that while Basslink is not currently capable of providing restart services to mainland regions, if another DC link were to be constructed in the future, it would be possible for this link to provide restart services to mainland regions. Hydro Tasmania therefore argued "it is important not to use technology arguments that may become out-dated in determining rule changes".[55]

The Tasmanian Department of State Growth and Hydro Tasmania both argued for staged implementation of the final rule. The Tasmanian Department of State Growth suggested that this could include extending the timeframe for commencement of the rule change, or introducing regional cost recovery in a staged manner.[56] Hydro Tasmania suggested that the new arrangements for regional cost recovery should not commence until the end of the term covered by the current SRAS tender process, so at the earliest in July 2018.[57]

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49 Stanwell, 2nd round submission, p.3.

50 Major Energy Users, 2nd round submission, pp.3-5.

51 Bell Bay Aluminium, 2nd round submission, p.1.

52 Tasmanian Minerals and Energy Council, 2nd round submission, p.1.

53 Tasmanian Department of State Growth, 2nd round submission, p.1.; Hydro Tasmania, 2nd round submission, pp.2-3.

54 Hydro Tasmania, 2nd round submission, p.2.

55 Hydro Tasmania, 2nd round submission, p.3.

56 Tasmanian Department of State Growth, 2nd round submission, p.2

57 Hydro Tasmania, 2nd round submission, p.4.

3.2.4 Commission's assessment

The final rule incorporates AEMO's proposal for the recovery of SRAS costs according to regional benefits. The Commission considers that the final rule will result in more cost reflective SRAS charges and promote more efficient operational and investment decisions.

The Commission has considered the following issues in assessing AEMO's proposed rule:

- whether the 50/50 recovery of SRAS costs from market customers and generators remains appropriate;
- the potential benefits associated with introducing a regional benefits approach to SRAS cost recovery, including improved cost reflectivity of SRAS charges and incentives for generators;
- the potential costs and complexities of implementing regional recovery of SRAS costs, including cost impacts for Tasmanian consumers;
- arguments raised in submissions for a NEM-wide approach to recovery; and
- implementation timeframes and the 2015 tender process.

Equal recovery of costs from market generators and customers

Under current arrangements, the cost of SRAS is recovered equally from market generators and market customers. The NGF proposed that this arrangement be changed to recover the costs of SRAS solely from market customers. The NGF argued that customers place a higher value on SRAS and therefore should bear the costs of providing this service.[58]

The Commission considers that both market customers and market generators benefit from the provision of SRAS. While market customers benefit from the restoration of energy, generators benefit through being able to meet contracted positions and avoiding other operational costs associated with a prolonged outage.

The Commission notes the Major Energy Users' comment that increasing a generator's share of the costs of SRAS could change incentives. While the Commission agrees that changing the relative share of the costs faced by different classes of participant may change incentives and participant behaviours, it would be very difficult to determine an efficient apportioning of these relative shares. Similar issues arise in regards to determining the relative benefits that flow to different classes of participant from the provision of SRAS.

For these reasons, the Commission considers that the current 50/50 split between market customers and generators remains a reasonable approach to the allocation of costs and has decided not to accept the NGF's suggested approach.

Benefits of introducing regional cost recovery

The Commission considers that there are two main benefits associated with the introduction of regional cost recovery:

58 NGF, 1st round submission, p.13.

- improved cost reflectivity of SRAS charges; and
- improved competitive outcomes in SRAS markets.

SRAS provides the capability to independently restore supply in each sub-network. This principle has informed the final rule regarding the function of the SRS, as discussed in section 5.2.1. The Commission considers that the benefit of a restart service primarily flows to participants in the sub-network to which that service is contracted.

The Commission considers that the approach to SRAS cost recovery should reflect this general principle. This is especially the case given that SRAS costs in each region may differ substantially, depending on factors such as technology and fuel type. The cost of providing the required quantities of SRAS to meet the SRS may also be higher in specific regions, if the Reliability Panel has varied the SRS to apply in sub-networks within that region.[59] Regional cost recovery should enhance the cost reflectivity of SRAS charges, by ensuring that the cost of meeting the SRAS in each sub-network is borne by participants in that region.

Given that the cost to provide SRAS may differ between regions, a regionalised approach may change the SRAS charges faced by participants. This reflects the increased cost reflectivity of SRAS charges under a regionalised approach. Such changes in SRAS charges are likely to be particularly relevant in terms of the incentives they create for generators.

Generators typically face two sets of incentives in SRAS markets. Firstly, the prospect of earning revenues may encourage them to offer SRAS and to invest in SRAS facilities. This incentive is signalled by the potential prices that SRAS providers can charge for their services in different sub-networks.

Secondly, generators also bear half of the total cost of SRAS through the SRAS charges they face as participants. This means that a portion of the total cost of providing SRAS is recovered from the same parties that created that cost in the first place.

As discussed above, introducing regional cost recovery will increase the cost reflectivity of SRAS charges in a region. This may create a number of specific incentives for generators in areas with high SRAS costs and charges. It will promote competitive outcomes in SRAS markets, as existing SRAS providers in these regions face the prospect of making large payments to their direct competitors if they lose a tender process. This could create stronger incentives for these SRAS providers to price their own offers competitively, in order to win the tender process. It will also help drive more efficient investment decisions, as other generators may face stronger incentives to enter SRAS markets by investing in SRAS facilities. More detail regarding this process, and the Commission's reasoning, is included in Appendix D.

While the Commission considers that there are clear benefits associated with regional cost recovery, there are also a number of complexities and potential costs associated with the introduction of this approach. These are discussed in further detail below. On balance, however, the Commission considers that these costs are outweighed by the benefits of regional cost recovery.

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59 Under current arrangements, the Reliability Panel has the ability to vary the SRS between sub-networks to reflect technological system limitations and economic factors.

Costs and complexities of regional cost recovery

Moving to regional cost recovery may change the total ancillary services charges faced by both market generators and market customers. The current magnitude of SRAS costs suggests that the impact of these changes should be relatively minor.[60]

The Commission notes concerns raised by Tasmanian stakeholders regarding the potential impacts on Tasmanian SRAS charges. However, there is no way to determine what future Tasmanian SRAS charges will be until the next round of SRAS contracts commence in July 2015. These charges will depend solely on the costs faced by Hydro Tasmania and the SRAS pricing strategies that it adopts.

The Commission also notes that the costs of changing AEMO's IT and settlement processes to allow for regional recovery will be around $70,000. The Commission considers that this cost is acceptable, given the likely benefits that will flow from regional cost recovery. The Commission also notes AEMO's comment that the existing procedure applicable to cost allocation for NSCAS that benefits more than one region could be applied to SRAS without adding any material complexity.[61]

The Commission also considered the possibility of sub-network level cost recovery. Although this approach would more closely reflect the general principle that SRAS provides benefits at the sub-network level, it is likely to be complex to implement. The Commission is satisfied that regional cost recovery represents a reasonable compromise between increasing the accuracy of SRAS cost allocation and associated implementation costs.

The Commission notes comments made by stakeholders regarding other potential complexities of implementing regional SRAS cost recovery. Several stakeholders suggested that regional cost recovery may be difficult where a sub-network spans a region boundary. The Commission notes that AEMO has advised that regional benefit factors will be capable of dealing with this outcome. These RBFs will allow for the allocation of the costs of individual restart services to the specific regions that benefit, regardless of the location of sub-network boundaries. In any case, participants will be able to provide input into the development of these RBFs when AEMO begins development of the Regional benefit ancillary services procedures in accordance with the rules consultation procedures.

The final rule includes changes to clause 3.15.6A of the NER that differs from those originally proposed by AEMO. Specifically, the Commission has proposed different formulae to be used in the settlement of SRAS costs. These new formulae better reflect the principle of allocating the costs of specific restart services to the regions that benefit most from the provision of those services. These new clauses have been developed in consultation with AEMO.

60 In 2012/13, total SRAS charges levied in each region ranged from $3 million to $8 million. While future SRAS charges will depend on future SRAS costs, the Commission expects that any changes in SRAS charges that flow from this rule change would likely sit somewhere within this range.

61 AEMO, 1st round submission, p.8.

NEM-wide approach to recovery of SRAS costs

The Commission notes comments made by a number of stakeholders in submissions to the draft determination regarding NEM-wide recovery of SRAS charges.

Under the final rule, the SRS must contain standalone restoration timeframes for each sub-network, while the Reliability Panel may vary the SRS between sub-networks. The Commission therefore considers that the SRS does not form a single standard across the NEM and that SRAS charges are more appropriately recovered on a regional basis.

The Commission also considers that other than where specific power system constraints are binding, frequency raise or lower services procured in one region will typically be capable of providing a NEM wide benefit. In contrast, SRAS procured to provide restart services will typically provide a strictly regional benefit. The Commission therefore considers that it is appropriate to recover SRAS costs on a regional basis, while frequency control market ancillary services are recovered on a NEM-wide basis.

The Commission also considers that if, the future, restart services located in Tasmania, or a future Tasmanian/mainland DC link, are able to provide restart services to the mainland, then the cost of those services should be recovered from mainland regions. The regional benefits factors that will be developed by AEMO are intended to allow such a cost allocation between regions. In this case, the costs of restart services located in Tasmania would be recovered from those mainland regions they benefit.

Implementation of regional cost recovery and the 2015 SRAS tender process

The final determination may be relevant to the tender process currently underway for SRAS contracts to begin in July 2015. Given that SRAS contracts for this period are not expected to be executed until late May or early June 2015,[62] the Commission considers that SRAS providers will have adequate time to factor in changed cost recovery processes into their tenders, if this is relevant.

Hydro Tasmania and the Tasmanian Department of State Growth suggested delaying the implementation of regional benefits cost recovery. However, the Commission considers that regional benefits cost recovery is likely to increase the efficiency of SRAS markets and will benefit consumers. These benefits should not be delayed; the new regional benefits cost recovery arrangements will therefore begin when the final rule commences on 1 July 2015.

The Commission also notes that AEMO has commenced consultation on the new regional benefit ancillary services procedures. AEMO has advised that it intends to publish its draft determination of this consultation in early May 2015.[63]

62 As per www.aemo.com.au, Procurement of System Restart Ancillary Services (SRAS) from 1 July 2015.

63 More information is available at http://www.aemo.com.au/Consultations/National-Electricity-Market/SRAS-Regional-Benefit-Ancillary-Services-Procedures-Consultation.

3.3 Definition of SRAS

This section addresses AEMO's proposal to remove the current definitions of primary and secondary SRAS from the NER.

The Commission's final rule incorporates AEMO's proposal to remove these definitions from the NER. The Commission considers that this may expand the range of potential restart services while maintaining satisfactory levels of reliability.

3.3.1 Current arrangements

Currently, the NER defines two types of SRAS: primary and secondary restart services. The NER requires the SRS to include guidelines on the required reliability of these primary and secondary restart services. AEMO is then required to establish the technical and availability requirements of each service in its SRAS description.

The SRS defines primary restart services as having a reliability of 90 per cent, and secondary services as having a reliability of 60 per cent. The current SRAS description provides further detail regarding the nature of what each service must be capable of doing, as well as timeframes, technical requirements and guidance on how reliability of services will be assessed.[64]

3.3.2 AEMO's proposed rule

AEMO argued that the separate definitions of primary and secondary services in the NER serve no particular benefit. AEMO considered that their removal would provide greater clarity for potential SRAS providers regarding what services are required. More generally, AEMO argued that application of a single set of reliability, availability and technical requirements should apply to all SRAS, with a focus on the outcomes required to achieve the SRS.

To achieve this, AEMO proposed the following amendments to the NER:

- Clause 3.11.4A: remove reference to primary and secondary services from the SRAS Procurement Objectives and the SRAS description.
- Clause 8.8.3(aa): remove references to primary and secondary services from the description of the SRS.
- Chapter 10 definitions: remove definition of primary and secondary SRAS.

Under AEMO's proposed rule, there would be no formal differentiation in terms of the reliability characteristics of SRAS. The Group of Generators supported AEMO's proposal to remove the definitions of primary and secondary SRAS. They considered that AEMO should be free "to select any combination and form of services on offer to meet the Standard at an efficient cost while allowing for adequate consideration of economic, commercial and technical considerations, consistent with the NEO."[65]

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64 For SRAS, AEMO measures compliance with the reliability requirements of the SRS as the ratio of total number of trading intervals each restart service is available, to the total number of trading intervals in the same period. For more information see: AEMO, *SRAS Guidelines*, September 2014, p.8.

65 Group of Generators' rule change proposal, p.7.

The Group of Generators proposed similar amendments to AEMO, to excise the definitions of primary and secondary SRAS from the NER. However, the Group of Generators also proposed amendments to the SRS,[66] to replace the current description of the reliability of primary and secondary services with a new clause: "Each type of system restart ancillary services shall have a reliability range referenced in the SRAS description unless AEMO, as procurer, determines that a lower reliability range provides an appropriate trade-off, consistent with the SRAS Objective, or a greater standard of reliability is required given the characteristics of the specified electrical sub-network."[67]

The Group of Generators' proposed approach to the definition of services relates to the consideration of the function of the SRS and AEMO's role within the SRAS frameworks. This is addressed in Chapter 5.

3.3.3 Stakeholder views

First round submissions

Stakeholders generally supported AEMO's proposal to remove the definitions of primary and secondary SRAS from the NER.

The NGF considered that the current definitions of SRAS may be redundant, on the proviso that a single definition of reliability standard can be used to procure the required quantity of SRAS in each electrical sub-network to meet the SRAS Objective. The NGF argued that documentation should be developed by AEMO to prove this will be the case.[68] Macquarie Generation cautioned against any changes to the SRAS frameworks that would reduce the field of potential tenderers in SRAS rounds. It argued that AEMO "should give itself the scope to make decisions where it can award one or more contracts based on a trade-off between cost and the level of restart service offered."[69]

Second round submissions

Alinta and AEMO both expressed support for removal of the definitions of primary and secondary SRAS in their submissions to the draft determination.[70]

3.3.4 Commission's assessment

The final rule incorporates AEMO's proposal to remove the definitions of primary and secondary restart services. The Commission considers that removal of these definitions from the NER will:

- lower potential barriers to entry for new SRAS providers; and

66 The Commission notes that the SRS is determined by the Reliability Panel and cannot be changed by the AEMC directly.

67 Ibid., p.17.

68 NGF, 1st round submission, p.9.

69 Macquarie Generation, 1st round submission, p.3.

70 Alinta, 2nd round submission, p.4.; AEMO, 2nd round submission, p.3.

- expand the range of potential restart services while maintaining adequate levels of reliability.

Lowering potential barriers to new entry

The Commission considers that the existence of different classes of restart service could have two effects on potential SRAS providers.

Qualifying as a primary restart service may serve as a way of differentiating a restart service from its competitors. As discussed in the AEMC's 2006 *System Restart Ancillary Services and pricing under market suspension rule change* (the 2006 SRAS rule change), this could provide an economic incentive to participants,[71] by bestowing preferential treatment on those restart services that qualify as a primary service.[72]

The existence of such qualifying standards could also dissuade new entrants from offering services that may be close to, but do not necessarily meet, the requirements of a primary service. Potential providers may consider that the additional costs of increasing the reliability of a service to meet these requirements outweigh the potential benefits associated with winning a tender or SRAS contract.

On balance, the Commission considers that any potential benefit of service differentiation provided by these definitions is minimal. Their removal may encourage a wider range of potential SRAS providers to offer restart services. In conjunction with measures that will allow AEMO to procure a wider range of services, the Commission considers that removal of these definitions may encourage new entrants and expand the range of potential restart services. This also addresses the concerns raised by Macquarie Generation that removing the SRAS definitions would reduce the field of potential SRAS tenderers.

Maintaining reliability levels while expanding the range of potential restart services

Generally, the Commission considers that AEMO should have the capability to procure a range of restart services to meet the requirements of the SRS.

As discussed in section 5.2.2, the final rule will allow AEMO to procure SRAS on the basis of meeting a sub-network level aggregate reliability requirement. Under this approach, AEMO may choose to procure a mix of lower reliability restart services to provide the same aggregate level of reliability as would be achieved by procuring one higher reliability restart service.

The Commission considers that removal of the definitions of primary and secondary restart services is necessary to enable AEMO to effectively procure SRAS in this manner. Removing the definitions of primary and secondary services will allow AEMO adequate flexibility to determine the optimal mix of restart facilities that will allow it to meet the requirements of the SRS at lowest possible cost.

The SRAS frameworks require procured SRAS to be capable of reliably restoring each sub-network within the timeframes of the SRS. The Commission has considered

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71 AEMC, *System Restart Ancillary Services and pricing under market suspension - Final Determination*, 20 April 2006, p.17.

72 Under NER clause 3.11.4A(c)(3), AEMO is currently required to focus its procurement on the acquisition of primary services.

whether removing these definitions of primary or secondary SRAS will have any impact on the reliability of system restoration. Given that under the final rule AEMO will be required to meet a sub-network level aggregate reliability requirement defined in the SRS, removing these terms should not have any negative consequences on the reliability of system restoration.

Implementation of removal of the definitions of primary and secondary SRAS and its effect on the 2015 SRAS tender process

The Commission notes that the final rule removal of the definition of primary and secondary restart services will require amendment of the SRS and AEMO's SRAS Guidelines document. Transitional rules have been included to reflect this.

Given that the current 2015 SRAS tender is already underway, with tender offers based around the existing SRS and SRAS Guidelines, the Commission does not consider that the final rule will affect the 2015 tender process.

3.4 Minor amendments

This section addresses AEMO's proposal to make a number of minor amendments to the NER. These amendments are designed to clarify some apparent cross referencing errors and to remove ambiguities.

The final rule incorporates AEMO's proposed changes to clarify the definition of NMAS and to remove various "catch all" provisions. These changes are likely to improve the function of the SRAS frameworks.

3.4.1 AEMO's proposed rule

AEMO identified three minor changes.

NMAS definition

The current Chapter 10 definition of NMAS incorrectly suggests that SRAS is acquired by Transmission Network Service Providers (TNSPs) under connection agreements or network support agreements. The Commission considers that this is incorrect, as SRAS is procured solely by AEMO. The current description also suggests that there are services other than NSCAS procured by TNSPs. The Commission also considers that this is incorrect, as TNSPs are only responsible for procuring NSCAS.

To address this, AEMO proposed amendments to the Chapter 10 definition of NMAS to clarify that NMAS includes:

- NSCAS and other services acquired by TNSPs under connection agreements or network support agreements to meet the service standards linked to the technical requirements of schedule 5.1 or in applicable regulatory instruments; and
- SRAS and NSCAS acquired by AEMO under ancillary service agreements.

Reference to tender guidelines

AEMO stated that clause 3.11.4A(b) currently contains an incorrect reference that requires AEMO to use reasonable endeavours to procure SRAS in accordance with the relevant provisions of clause 3.11.4A. AEMO stated that this is incorrect, as AEMO's processes for procuring SRAS are established in NER clause 3.11.5.

AEMO proposed to amend clause 3.11.4A(b) to refer to clause 3.11.5.

Catchall provisions

AEMO also proposed the removal of provisions in clauses 3.11.4A(d)(3) and 3.15.6A(c4) that allow it to consider "any other matters considered relevant by AEMO".

AEMO argued that these provisions are not needed as the relevant rules do not preclude the inclusion of other matters.

AEMO proposed to amend clauses 3.11.4A(d)(3) and 3.15.6A(c4) to remove these "catch all" provisions.

3.4.2 Stakeholder views

Grid Australia supported AEMO's proposed amendment to the Chapter 10 definition of NMAS as this would remove any ambiguity regarding TNSPs' ability to procure NSCAS.

3.4.3 Commission's considerations

The final rule incorporates AEMO's proposal to change the definition of NMAS, as the current definitions are incorrect.

The final rule also reflects AEMO's proposal to remove "catch all" provisions. The final rule includes an amendment to clause 3.15.6A(c4) to remove reference to remove the terms "any other relevant factors.

The amendment to clause 3.11.4A(b) has not been made because the final rule removes the obligation for AEMO to procure SRAS through a prescribed tender process, and therefore AEMO's proposed change is unnecessary. Furthermore, as discussed in section 5.1.3, the final rule provides AEMO with a new SRAS Procurement Objective.

4 Commission's assessment of the Group of Generators' proposed rule change

This Chapter sets out the Commission's assessment of the Group of Generators' proposed rule changes. In several cases, the Commission has agreed with the underlying issues raised by the Group of Generators, but considers that the NEO can be better met through a more preferable rule. The final rule is discussed in more detail in Chapter 5.

The Group of Generators' rule change proposal includes the following proposals.

Redefine major supply disruption, economic costs and SRAS costs in the NER: The Group of Generators argued that the current SRAS frameworks provide insufficient guidance regarding the nature of the event that SRAS is procured to mitigate, the economic costs of that event and the costs of procuring SRAS.

To address this, the Group of Generators proposed to redefine a major supply disruption event as a multi-region or NEM-wide event.[73] Other changes were proposed to the definition of economic costs and cost of supply, to guide how these terms should be interpreted by the Reliability Panel when developing the SRS.

Define the SRS as an operational standard and increase AEMO's reporting / consultation requirements: The Group of Generators argued that there is a lack of certainty in the market regarding the ability of procured SRAS to meet the restoration timeframes of the SRS.

To address this, the Group of Generators proposed that the SRS should be changed from a target that guides AEMO's procurement of SRAS, to an operational standard that AEMO would be required to meet in the event of a major supply disruption. The Group of Generators also proposed increased reporting and consultation requirements for AEMO to provide evidence to the market as to the ability of procured SRAS to restore the system within the timeframes of the SRS.

Define the role of the Reliability Panel: The Group of Generators argued that AEMO should be subject to an approval process when it seeks to make changes to its SRAS Guidelines. The Group of Generators therefore proposed that the Panel be required to approve any changes made by AEMO to the SRAS Guidelines.

The Group of Generators also argued that the Panel could benefit from increased guidance in the NER regarding its functions and consultative processes. The Group of Generators therefore proposed that the Panel be required to consult with multiple stakeholders in addition to AEMO when developing the SRS. The Group of Generators also proposed that the SRS explicitly state that it remains current until amended by the Panel.[74]

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73 The Commission notes that the Group of Generators have actually proposed to "redefine" the term major supply disruption through proposed amendments to the SRAS Objective and SRS, rather than to the Chapter 10 definition.

74 The Commission notes that the SRS is reviewed and determined by the Reliability Panel, separately to the rule change process. The Commission cannot make changes directly to the SRS.

4.1 Redefine major supply disruption, economic costs and SRAS costs in the NER

The Group of Generators proposed several amendments to the SRAS Objective and the SRS. These changes were intended to provide increased guidance regarding the nature of a major supply disruption event and the costs associated with that event.

The Commission considers that these issues are best addressed by providing the Reliability Panel with improved guidance regarding the function of the SRS. Clause 8.8.3(aa) of the NER sets out the matters that must be included in the SRS. As the SRS is determined by the Reliability Panel, the Commission cannot change it directly, however changes to clause 8.8.3(aa) will clarify what must be considered by the Panel when determining the SRS.

The final rule therefore provides additional guidance to the Reliability Panel regarding the determination of the SRS, through a number of changes to clause 8.8.3(aa). These changes are in keeping with the Commission's general assessment framework set out in Chapter 2, which considers that different market bodies within the SRAS frameworks should be provided with clear guidance regarding their roles and responsibilities, and allowed adequate scope to fulfil their functions effectively and efficiently.

This section sets out the analysis of the Group of Generators' proposed rule. The Commission's final rule is discussed in Chapter 5.

4.1.1 Current arrangements

Current NER and SRS definitions

The current SRAS Objective states that:

> "The objective for *system restart ancillary services* is to minimise the expected economic costs to the *market* in the long term and in the short term, of a *major supply disruption*, taking into account the cost of supplying *system restart ancillary services*, consistent with the *national electricity objective*."

The term major supply disruption is in turn defined in Chapter 10 of the NER as:

> "The unplanned absence of *voltage* on a part of the *transmission system* affecting one or more *power stations*."

There is no further information provided in the NER regarding the size of an event that would qualify as a major supply disruption. In particular, the NER does not indicate whether this event should be defined as an unplanned loss of voltage affecting a single sub-network, a single region, multiple sub-networks/regions or the entire NEM. The NER also provides no further explanation regarding the definition of the economic costs of a major supply disruption, or of the costs of supplying SRAS.

AEMO's 2013/14 review of SRAS arrangements

During 2013/14, AEMO undertook a review of SRAS arrangements in the NEM (the 2013/14 SRAS review). One of the key issues addressed in that review was how AEMO should interpret the term major supply disruption. In particular, AEMO questioned

whether it should assume that this event refers to a NEM-wide black system, or a more limited, region-wide black system.[75]

This interpretation is highly relevant to the operation of SRAS, as in the past it has shaped AEMO's decisions regarding the minimum quantity of SRAS it considered it must procure in each sub-network. This relationship between the assumed size of a major supply disruption and SRAS quantity procured is discussed in Box 4.1.

Box 4.1 Nature of the major supply disruption assumed and number of SRAS procured by AEMO

The size of a major supply disruption event may affect the number of restart services that are needed to restore power in that sub-network within the timeframes of the SRS:

- Under the conditions of a regional black system event, supply may be available from neighbouring energised sub-networks to assist in restoration. This may mean that a smaller number of restart services are needed to restore that sub-network within a given restoration timeframe.
- Under the conditions of a NEM wide black system event, no supply would initially be available from neighbouring sub-networks. This may mean that a larger number of restart services are needed to restore that sub-network within a given restoration timeframe.

Prior to its 2013/14 SRAS review, AEMO had assumed that the major supply disruption it was procuring SRAS to mitigate was a NEM wide black system event. To address this event, it procured a minimum of two SRAS per sub-network.

As part of its 2013/14 SRAS review, AEMO argued that this assumption was no longer valid and proposed that a region-level black system event formed a more appropriate basis for procurement.[76] Accordingly, AEMO proposed reducing its minimum procurement to one SRAS per sub-network, arguing that supply from neighbouring sub-networks could be used to help in a region-wide system restoration.

AEMO has since moved away from this approach of interpreting the nature of a major supply disruption, and now procures SRAS according to meeting the SRS independently in each sub-network.[77]

75 AEMO, *System Restart Ancillary Services - Draft report*, May 2013, p.25. The term "black system" is defined in Chapter 10 as "The absence of voltage on all or a significant part of the transmission system or within a region during a major supply disruption affecting a significant number of customers." A major supply disruption may therefore consist of different kinds of black system events, such as a region wide black system event, or a NEM-wide black system event.

76 AEMO's recommendation was informed by analysis provided by DNV KEMA, as discussed in Box 4.3.

77 AEMO, *SRAS Documents consultation*, September 2014, p.2.

AEMO's initial proposal to move away from a procurement assumption of a NEM-wide black system was opposed by a number of generator stakeholders.[78] A number of these stakeholders stated that AEMO's interpretation was incorrect, suggesting that the probability of a NEM-wide black system was non-negligible. It was also suggested that by changing its interpretation of major supply disruption and potentially reducing the quantity of SRAS it procured, AEMO would:

- fail to procure the quantity of SRAS required to meet its obligations under the SRS; and
- be amending aspects of the SRAS frameworks that were more appropriately dealt with by the Reliability Panel.

These issues were a key input into the Group of Generators' rule change proposal.

4.1.2 The Group of Generators' proposed rule

The Group of Generators argued that the NER provides insufficient guidance regarding the nature of the event that SRAS is procured to mitigate, as well as the costs associated with that event. They argued that this lack of guidance has resulted in AEMO making an inappropriate interpretation of major supply disruption, potentially resulting in AEMO procuring too few restart services to effectively meet the requirements of the SRS.

To address this uncertainty, the Group of Generators proposed that the SRAS Objective, currently set out in NER clause 3.11.4A(a), be redefined to specify that the term major supply disruption "include[s] but is not limited to a NEM-wide or multiple region event".[79]

In support of this rule change proposal, the Group of Generators provided a report from ROAM Consulting that examined the probability of multi region or NEM-wide black system events in the NEM, and associated costs. The ROAM report found that the statistical probability of a multi-region black system event in the NEM was not negligible, and argued that AEMO should therefore procure more SRAS than it had proposed in its 2013/14 SRAS review. A summary of the ROAM report is included in Box 4.2.

The Group of Generators also proposed amendments to NER clause 8.8.3(aa), which sets out the matters that must be included in the SRS. The Group of Generators proposed that this clause be amended to require the SRS to include specific definitions of key terms from the SRAS Objective.

78 More information on AEMO's 2013/14 SRAS review is available at: http://www.aemo.com.au/Consultations/National-Electricity-Market/Open/System-Restart-Ancillary-Services-2013-Consultation

79 The Commission notes that the term major supply disruption is already defined in Chapter 10 of the NER as "the unplanned absence of voltage on a part of the transmission system affecting one or more power stations". The Group of Generators did not propose any changes to this Chapter 10 definition.

Specifically, the Group of Generators proposed that the terms economic cost, major supply disruption and cost of supply from the SRAS Objective be defined in the SRS as follows:

- economic cost requires consideration of the total opportunity costs, financial, social and non-financial, to energy users and the market, generally and to specific sensitive loads;
- major supply disruption refers to the unplanned absence of voltage on a part of the transmission system affecting one or more power stations, including a NEM-wide or multiple region event; and
- cost of supply refers to the offer price of competing options to meet the SRAS Objective.

The Group of Generators argued that these amendments were necessary as the current lack of guidance in the NER has created uncertainty in the market. They considered that the nature of major supply disruption "goes to the intent of the Standard and even the SRAS Objective itself". The Group of Generators therefore argued that this term should not be defined by AEMO, but should instead be clarified as part of the framework under which AEMO makes its operational decisions.

The Group of Generators also proposed that the SRS should be amended to provide a "clarification of the form of assessment of economic costs ... to ensure a simple assessment based on offer prices by SRAS providers or potential SRAS providers is not used as the sole determinant of a successful bidder". The intention of the Group of Generators' proposed change to the definition of costs in the SRS is "to require AEMO to consider all of the economic costs and benefits, as well as the prices offered by competing bids, as part of the competitive tender process."[80]

Box 4.2 ROAM Consulting: Review of SRAS requirements

ROAM Consulting was engaged by the Group of Generators to:

- examine the probability of different kinds of black system events in the NEM, and;
- evaluate the economic value of procuring SRAS, comparing the existing procurement processes with AEMO's proposal to reduce the minimum number of SRAS procured in each sub-network from two to one.

ROAM reviewed various studies that examined historical data regarding blackouts in a number of power systems around the world. ROAM advised that "there is consensus across the literature that the distribution of large blackouts follows a “power-law distribution", where there is a clear relationship between the size of a blackout and the probability of that sized blackout occurring.”[81] ROAM applied this analysis to the NEM, to estimate the probability of different sized black system events. ROAM's analysis found that there was a non-negligible probability associated with several multi-region black system events in the NEM.

80 Group of Generators, rule change proposal, p.8.

81 ROAM Consulting, *Review of SRAS in the NEM*, May 2014, p. 12.

4.1.3 Stakeholder views

First round submissions

A number of stakeholders commented on the Group of Generators' proposal to specify the nature of the major supply disruption.

The NGF disagreed with AEMO's assessment regarding the probability of a NEM-wide black system event, as part of its 2013/14 SRAS review. The NGF stated that the prospect of a multi-region or NEM-wide black system event was not negligible.[82] The NGF also suggested that if a region wide black system event formed the basis for SRAS procurement, there was an increased risk that the SRAS Objective would not be met.[83]

AGL supported the proposed clarification of the terms major supply disruption and economic costs. AGL also argued against the use of any assumptions regarding inter-regional supply to inform the quantity of SRAS that should be procured.[84]

Alinta suggested that SRAS should be procured to mitigate the worst case scenario of a NEM wide black system event.[85]

Tomago Aluminium stated that it was opposed to any changes that would dilute the robustness of SRAS, and urged caution before moving to any arrangements that could result in insufficient SRAS providers being available to restart the network in the event that a NEM-wide or multi-region event did occur.[86]

In its submission, AEMO agreed that there was a need for more clarity in the SRAS frameworks, both in terms of the SRAS Objective and the principles for procuring SRAS. As such, AEMO supported a review of the SRS to clarify the nature of the event that SRAS is procured to mitigate.[87] AEMO also stated that when determining how much SRAS should be procured, a probabilistic analysis is necessary to reflect the remoteness of the relevant risk and the cost of SRAS to address that risk.[88]

Second round submissions

The Major Energy Users argued that the SRS assumption of a major supply disruption should be relaxed, to reflect the low probability of a NEM-wide black system event, particularly with reference to the value consumers have placed on reliability.[89]

82 NGF, 1st round submission, p.2.

83 Ibid. p.4.

84 AGL, 1st round submission, pp.1-2.

85 Alinta, 1st round submission, p.2.

86 Tomago Aluminium, 1st round submission, p.2.

87 AEMO, 1st round submission, p.1.

88 Ibid.

89 Major Energy Users, 2nd round submission, p.5.

4.1.4 Commission's assessment

The Commission considers that defining the nature of a major supply disruption is important, as the scale of this event informs how the Reliability Panel determines the SRS and is ultimately relevant to the quantity of restart services that AEMO must procure.

The Commission considers that SRAS should be capable of restoring each sub-network following various major supply disruption events, including a multi-region or NEM-wide event.

The final rule will therefore require the SRS to include restoration timeframes for the standalone restoration of each sub-network. This will provide better guidance for the Reliability Panel by clearly specifying the matters the SRS must include. It will also provide better guidance to AEMO regarding how it should procure SRAS to meet the SRS.

This section sets out the analysis of the Group of Generators' proposal. The final rule is discussed in Chapter 5.

Major supply disruption definition

The NER does not explicitly specify the scale of the major supply disruption event that is referred to in the SRAS Objective.[90]

As discussed above, the Group of Generators argue this has resulted in AEMO having to make its own interpretation of the size of a major supply disruption, in order to determine:

(a) whether supply would be available from a neighbouring sub-network; and

(b) how many restart services it must therefore procure in each sub-network to meet the restoration timeframes.

As discussed in section 4.1.2, the Group of Generators argued that AEMO's proposal to interpret major supply disruption as a regional black system event could result in an under-procurement of SRAS. They considered that the definition of major supply disruption should be explicitly defined in the NER as a NEM-wide or a multiple region event. The Group of Generators suggested that while the probability of such an event may be low, AEMO should still procure on the basis of meeting the worst case scenario.

The Commission agrees that restart services should be procured on the basis of restoring supply following all kinds of major supply disruptions, including a multi-region or NEM-wide black system event. This is because, given the difficulty of determining the probability of such an event and the extent of associated costs for consumers, it would not be appropriate to procure SRAS on the basis of a regional black system event only. This could lead to an inadequate level of SRAS being procured.

The Commission acknowledges that the likelihood of a NEM-wide black system event is probably very low. This was examined in detail by DNV KEMA, as part of the

90 While major supply disruption event is defined in Chapter 10 of the NER, this definition does not indicate whether the event is at the level of an individual sub-network, region, multiple regions or NEM-wide.

analysis provided to AEMO to inform its 2013/14 SRAS review. This report is summarised in Box 4.3.

The Commission considers that DNV KEMA's work provides a useful qualitative review of the possible triggers and spread of a NEM wide black system event. However, it provides no power system modelling to determine the way in which a cascading power failure might actually propagate in the NEM. It also does not consider other, less severe but more probable events, such as a two region or multi region black system.[91]

Box 4.3 DNV KEMA assessment of likelihood of a NEM-wide black system event

DNV KEMA was asked by AEMO to comment on the relative likelihood of a NEM-wide versus a region-wide black system event, and the appropriateness of the proposal to procure SRAS on this basis.[93]

DNV KEMA considered a number of issues in its assessment. Firstly, it undertook a qualitative review of possible events that could trigger a cascading power failure, concluding that there was no such event that could cause a NEM wide failure.[94]

DNV KEMA also reviewed the NEM transmission network topology and concluded that there was a high probability that a cascading power failure would be contained by transmission network break points at region boundaries. This would reduce the probability of a cascading power failure spreading beyond a single NEM region.

Given these factors, DNV KEMA found that there was no credible event that could cause a NEM-wide black system event and that AEMO's proposal to use region-wide black system events as the basis for future SRAS requirements was appropriate.[95]

The Commission also notes ROAM Consulting's statistical analysis, which suggested that the probability of a multi-region event in the NEM was non-negligible. Given the relative shortness of the NEM's history, ROAM's work was based on historic information from international power systems. As with DNV KEMA's work, ROAM's analysis did not involve any detailed power system analysis.[96] Comments received

91 DNV KEMA, *AEMO responsibilities to procure SRAS*, 30 December 2013.

93 DNV KEMA, *AEMO responsibilities to procure SRAS*, 30 December 2013.

94 A cascading power failure occurs when an unexpected event, such as a generator tripping or the failure of a major transmission network element, triggers an abrupt excursion in frequency and/or voltage. Normally such events will be contained because the components of the power system are designed to withstand these abrupt excursions of frequency and/or voltage. However, if a subsequent generating unit trips, or a protection system does not operate correctly during the excursion, this can make the excursion worse. This may result in further generating units tripping, which may in turn worsen the excursion, causing still further units to trip. This cascading effect will propagate until it reaches points in the power system where the transmission network is naturally weaker. In the case of the NEM, these points typically occur at the borders of electrical sub-networks.

95 Ibid. pp.73-75.

96 ROAM Consulting, *Review of SRAS in the NEM*, May 2014.

from various generators in submissions to the draft determination regarding ROAM's analysis are addressed below.

Despite the analysis included in these two reports, the Commission considers the probability of a NEM-wide black system event cannot be determined with any certainty. Similarly, it is not possible to determine the probability of other kinds of major supply disruptions, such as a two region or a multi-region black system event. However, it is clear that each of these kinds of events would cause severe economic disruption and would have major consequences for consumers generally.

Given the uncertainty surrounding the probability of these events and the scale of their potential impacts, the Commission considers that it is prudent and necessary that restart services are procured to meet any kind of major supply disruption, including a NEM-wide black system event. SRAS should therefore be procured on the basis of restarting the system from the "worst case" condition of a NEM-wide black system event.[97]

Although the Commission considers that restart services should be procured to address the potential for a NEM-wide black system event, the Group of Generators' proposed changes to the SRAS Objective are not considered to be the optimal approach to reflecting this in the NER. The Group of Generators' proposed rule change provides insufficient guidance regarding how the definition of major supply disruption event should drive actual decisions by the Reliability Panel and AEMO. In particular, it is not clear how the Reliability Panel would interpret this definition when it develops the SRS restoration timeframes, which is one of the key factors that drives AEMO's procurement processes.

Instead, the Commission's final rule amends NER clause 8.8.3, which defines the matters that must be included in the SRS, to reflect the worst case scenario of a NEM-wide black system event, or multiple region events. The final rule described in Chapter 5 will require the Reliability Panel to include restoration timeframes in the SRS based on the independent restoration of each sub-network, under the assumption that energy supply from neighbouring sub-networks (other than energy provided under a contracted restart service) cannot be used to assist in the restoration of that sub-network. These are the conditions that would be expected under a NEM-wide or potentially a multi-region black system event.

Economic cost and SRAS cost definition

The Group of Generators proposed that specific definitions of economic costs and costs of procuring SRAS should be included in the SRS, via amendments to NER clause 8.8.3(aa).

Inclusion of these terms in the SRS is intended to guide AEMO's interpretation of the SRAS Objective, by specifying the kinds of costs that AEMO must consider when developing its SRAS Guidelines and when procuring SRAS. As discussed in Chapter 5, the Commission considers that the SRAS Objective should no longer apply directly to AEMO when developing its SRAS Guidelines and when procuring SRAS. Instead, AEMO will have its own SRAS Procurement Objective. As such, the Group of

97 The Commission notes that this "worst case" black system event reflects a scenario where the transmission network is fully de-energised but remains intact, with all lines available for service.

Generators' proposed inclusion of these cost definitions would not provide AEMO with any increased guidance regarding its procurement of SRAS.

The Reliability Panel should also have an appropriate degree of flexibility when determining the SRS, subject to meeting the SRAS Objective. The Commission considers that placing overly detailed requirements in the NER would reduce this flexibility and could impede the Panel's ability to consider or exclude whatever issues it considers relevant.

For these reasons, the final rule does not require specific definitions of economic costs and costs of supplying SRAS to be included in the SRS

4.2 Define the SRS as an operational standard and increase AEMO's reporting obligations

The Group of Generators proposed that the SRS should be redefined as an operational standard. Defining the SRS as an operational standard would create an obligation for AEMO to be able to meet the requirements of the SRS in the event of a major supply disruption. AEMO would be required to provide proof that it has met or was capable of meeting the SRS following a major supply disruption.

The Commission considers that defining the SRS as an operational standard could result in AEMO procuring more restart services, resulting in increased costs for consumers. However, given the number of factors external to SRAS and that cannot be controlled by AEMO that will affect actual system restoration times, procuring more restart services may not actually increase the likelihood of restoring the system within specific timeframes.

4.2.1 Current arrangements

Currently, the NER does not indicate whether the SRS represents an operational standard or whether it is a procurement target to inform AEMO's procurement of SRAS.

The SRS itself currently defines the restoration timeframes as a procurement target, rather than an operational standard:

> "The restoration timeframe represents the 'target timeframe' to be used by AEMO in the procurement process. It is not a specification of any operational requirement that should be achieved in the event of a black system condition."

In its 2012 determination of the SRS, the Reliability Panel clarified that it considered the SRS to be a procurement target and not an operational standard, noting that:[98]

> "as with other criteria set out in the standard, this restoration timeframe benchmark is to assist AEMO with the procurement process. It does not directly determine the actual time that would be required to restart the system following a black system event. This approach is consistent with the provision in other markets where generally there are no specific time limits set for the restoration of the system following a black system event."

98 Reliability Panel, *Draft Determination - System Restart Standard*, February 2012, p.13.

In its final report, the Panel acknowledged that actual system restoration would be affected by many factors:[99]

> "the Panel considers that given the number of factors that could affect the time to restore the system if a black system event did occur, it would not be practical to specify a definite time in which the system should be restored. In addition, the purpose of the standard is to set a standard to guide the procurement of SRAS and not to set any specific operational requirements."

4.2.2 The Group of Generators' proposed rule

The Group of Generators argued that the restoration timeframes within the SRS should form an operational standard that AEMO must meet, rather than providing a target to guide AEMO's procurement of SRAS.

There are two key components to the Group of Generators' proposed rule change:

- redefining the SRS as an operational standard; and
- increasing AEMO's reporting requirements.

The Commission has considered each of these components separately. While the Commission considers that redefining the SRS as an operational standard is not practically achievable in application, there is merit in clarifying AEMO's reporting obligations.

Redefining the SRS as an operational standard

The Group of Generators have proposed that the SRS should be explicitly defined as an operational standard. The intention of this change is that AEMO would be required to meet the requirements of the SRS, particularly the restoration timeframes, during an actual system restoration following a major supply disruption.

To define the SRS as an operational standard, the Group of Generators propose that the SRS be amended to clarify that the restoration timeframes of the SRS should be able to be met where procured SRAS meet the requirements of the SRAS description and the SRAS quantity guidelines.[100]

Increasing AEMO's reporting requirements.

The Group of Generators also propose a number of new reporting obligations on AEMO. The intention of these changes is to require AEMO to demonstrate how procured SRAS will actually be capable of meeting an operational SRS.

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99 Reliability Panel, *Final Determination - System Restart Standard,* April 2012, p.13.

100 The Group of Generators have proposed some changes to the SRS through NER clause 8.8.3(aa), which sets out the matters that must be included in the SRS and which can be amended by the Commission via the rule change process. However, for this particular change, the Group of Generators have also proposed that the SRS itself be changed directly. Given that the SRS is determined by the Reliability Panel through its own processes, the Commission is not able to make changes directly to the SRS.

These proposed new reporting requirements include:

- Expanding the range of matters that AEMO must identify in the SRAS description[101] to include:
  - the maximum amount of time within which each type of system restart ancillary service will restore power in accordance with its specified service; and
  - the manner in which each type of system restart ancillary service will be relied upon to energise neighbouring electrical sub-networks.
- Expand the range of matters that AEMO must identify in the SRAS quantity guidelines[102] to include:
  - the maximum amount of time within which power is expected to be restored within each electrical sub-network; and
  - with a reasonable degree of certainty demonstrate the extent to which each electrical sub-network can be energised from an adjacent or other electrical sub-network.
- A requirement on AEMO to report to jurisdictions when it has been unable to meet the SRS.
- A requirement on AEMO, prior to conducting a procurement process, to publish a methodology for assessing restoration under NEM-wide system black conditions, and multiple region outages, under a number of scenarios.
- Additional consultation with network businesses and the Reliability Panel, including requiring AEMO to:
  - consult with network businesses regarding the assumptions used in any relevant analysis and any modelling for the purpose of determining technical arrangements across the network; and
  - advise the Reliability Panel of any technical issues identified by a relevant network business that may reduce the likelihood that at the time of an event the restoration timeframe will not be met.
- A requirement on AEMO, prior to the release of the Reliability Panel's Annual Market Performance Review (AMPR), to:
  - provide the Reliability Panel with an overview and relevant analysis for any and all system restart tests conducted since the last AMPR;
  - advise the Reliability Panel whether AEMO is of the view that an alternative combination of restart services could meet the SRAS Objective at lower costs; and

101 AEMO is required to develop the SRAS description under NER clause 3.11.4A(d). The current version is included in AEMO's SRAS Guidelines. See: AEMO, *SRAS Guidelines*, September 2014.

102 AEMO is required to develop the SRAS quantity Guidelines under NER clause 3.11.4A(f). The current version is included in AEMO's SRAS Guidelines. See: AEMO, SRAS Guidelines, September 2014.

— identify issues or concerns that may reduce the ability of procured restart services to meet the SRS.

4.2.3 Stakeholder views: SRS as an operational standard

First round submissions

A number of generators and other stakeholders argued that the SRS should be redefined as an operational standard.

The NGF and Alinta considered that while actual restoration of the system is dependent on a number of factors, there should be a reasonable expectation that the restoration timeframes could be met.[103]Alinta suggested that an operational SRS would act as a benchmark against which AEMO must justify its procurement of restart services as well as any proposed changes to the SRAS frameworks.

Tomago Aluminium stated that as a business that would be severely impacted by a prolonged black out, it favoured any change that made restoration timeframes firmer.[104]

AEMO suggested that if the SRS were defined as an operational standard, it would face an incentive to over-acquire services to reduce the risk of not meeting the SRS. AEMO argued that it would have no option but to require SRAS providers to guarantee their capability to meet their specified energising timeframes. AEMO suggested that this would increase the cost of providing SRAS.[105]

Grid Australia considered that turning the SRS into an operational standard could create new testing and modelling requirements for TNSPs. This would create additional costs for network service providers for which they may not be currently funded or sufficiently resourced.[106]

AEMO argued that under black system conditions, it must restore the system in an orderly manner to meet system security requirements. AEMO also argued that it must have flexibility to restore the system under changing conditions and should not be required to meet any specific standard or set of requirements that might inhibit its operational abilities.[107]

Second round submissions

Origin Energy stated that the SRS should provide confidence that the restoration timeframe can be met to minimise the expected economic cost of a major supply disruption.[108]

AEMO proposed that the rules, rather than the SRS, should state that the restoration timeframes are a procurement standard, given the potential for alternative interpretations.[109]

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103 NGF, 1st round submission, p.8.; Alinta, 1st round submission, p.4.

104 Tomago Aluminium, 1st round submission, p.1.

105 AEMO, 1st round submission, p.2.

106 Grid Australia, 1st round submission, p.2.

107 AEMO, 1st round submission, p.2.

108 Origin Energy, 2nd round submission, p.3.

4.2.4 Stakeholder views: Reporting and consultation requirements

First round submissions

GDF Suez supported a requirement on AEMO to report on whether it had been unsuccessful in meeting the SRS in each sub-network, suggesting that this may encourage new entrants. GDF Suez also suggested that AEMO could be required to treat the SRS as a planning standard, and to provide planning studies and probabilistic analysis to demonstrate how procured SRAS could meet the SRS under a number of black system scenarios.[110]

Origin agreed with the proposal that AEMO should be required to consult with TNSPs when assessing procured SRAS.[111]

AEMO advised that it supports transparency in relation to the procurement of SRAS, subject to considerations of commercial confidentiality and the costs and benefits of making information available.[112]

Second round submissions

Origin Energy stated that without breaching confidentiality or security, it is important that the results of AEMO's modelling and testing of restart services are provided to the market to promote transparency and provide confidence in AEMO's ability to restart the grid following a major supply disruption.[113]

4.2.5 Commission's assessment

The Commission has decided not to define the SRS as an operational standard. Converting the SRS to an operational standard is unlikely to be practically achievable in application, given the many variables outside of AEMO's control that will affect the actual restoration of the power system following a major supply disruption. The Commission also considers that requiring AEMO to meet an operational standard may result in increased costs that provide no real benefit to consumers.

The Commission considers that there is benefit in requiring AEMO to provide additional reporting. The final rule requires AEMO to publish additional information on its procurement and assessment processes, as well as reporting on whether it has met the SRS in each sub-network and, if not, why this occurred.

The final rule will require AEMO to engage with network businesses when assessing potential restart services, while requiring network businesses to provide all information necessary to inform AEMO's assessment of potential restart services. These new reporting and consultation requirements are discussed in further detail in Chapter 5.

Given issues of commercial sensitivity and system security, the Commission considers that it would not be appropriate to publish detailed information on system restoration

109 AEMO, 2nd round submission, p.3..

110 GDF Suez, 1st round submission, p.5.

111 Origin, 1st round submission, p.2.

112 AEMO, 1st round submission, p.2.

113 Origin Energy, 2nd round submission, p.4.

capability. Requiring AEMO to report to the Reliability Panel is also unlikely to improve current arrangements.

In assessing the Group of Generators' proposed rule for an operational SRS, two key issues were considered:

- the effects of converting the SRS into an operational standard; and
- the potential value of increasing AEMO's reporting and consultation obligations.

Further discussion of these two issues is provided below.

Converting the SRS into an operational standard

The restoration of the power system after a major supply disruption involves many processes. Typically, these processes will follow a sequence that broadly resembles the following:

- restart services are activated and begin the re-energisation of the auxillaries of larger generating units;
- larger generating units are gradually brought online and connection infrastructure / transmission bus-bars are re-energised;
- major transmission pathways are re-energised, with tranches of load gradually reconnected;
- separate parts of the power system are re-synchronised and rejoined; and
- finally, distribution level networks are gradually brought online to restore supply to major load centres.

Each of these stages requires careful management and specific actions to be executed by a number of different participants. Those generators who have system restart capability will bring generating units online and reconnect to the power system gradually, a process that must be carefully controlled to avoid generator units tripping and having to be restarted. TNSPs will re-energise load blocks to stabilise generators and maintain voltage and frequency stability on major transmission pathways. Different network businesses will follow directives from AEMO to manage the re-synchronisation of separated parts of the power system when required. Distribution network service providers (DNSPs) will reconnect low voltage load blocks to restore supply to residential and commercial consumers. Throughout this process, AEMO manages and co-ordinates the actions of the different participants, according to the regional system restart plan and local black start plans.

SRAS itself plays an important but limited role in this process. While reliable restart services are necessary to begin a system restoration, the actual process of restoring supply to end use consumers within a given timeframe will require the cooperation and effective management of many different participants. The speed of restoration will also be affected by any damage to the power system, including damage to transmission and distribution network infrastructure.

Given the number of factors other than SRAS that will affect the time to restore the power system, the Commission considers it is not practically achievable in application to consider the SRS to be an operational standard. Actually meeting the restoration timeframes in the SRS will be dependent on many factors that AEMO cannot control,

nor reasonably account for in its assessment and modelling of procured SRAS. Requiring AEMO to provide evidence that procured SRAS will restore the system within a given timeframe is therefore not practically achievable.

The Commission also considers that requiring AEMO to meet an operational standard could result in a substantial increase in SRAS costs, without a commensurate improvement in certainty of meeting the restoration timeframes. AEMO has suggested that if it were required to meet an operational standard, it may procure more restart services and require increased levels of reliability/speed from those services, to try and provide some increased certainty that it could meet its requirements. However, given the number of factors outside of AEMO's control described above, this would likely increase SRAS costs while providing little increased certainty regarding the speed of system restoration.

The Commission considers that the current arrangements, where the SRS acts as a target that guides AEMO in its procurement of SRAS, remains appropriate. All of AEMO's SRAS functions, including procurement, guideline development and establishing sub-network boundaries, are guided by the SRS. The Commission considers that this arrangement will continue to deliver adequate and efficient restart capability in the NEM.

Regarding AEMO's proposal that the NER should explicitly state that the SRS is a procurement target, rather than an operational standard, the Commission considers that current arrangements provide sufficient guidance to the Panel regarding the appropriate form of the SRS. Introducing new definitions into the NER is therefore unnecessary.

Increasing AEMO's reporting and consultation obligations

The Group of Generators proposed that AEMO should be required to undertake additional analysis, reporting and consultation to provide evidence that procured SRAS is capable of meeting the SRS. This section sets out the assessment of each of the Group of Generators' proposed reporting requirements.

AEMO reporting on restart service capability: The Group of Generators proposed that AEMO should provide detailed reporting of how restart services would restore each sub-network, and how fast each sub-network could be restored, in its SRAS Guidelines.

The Commission considers that this information is likely to be highly sensitive, both in terms of its commercial value to SRAS providers, as well as in regards to the security and safety of the system restoration process itself.[114] The level of detail in this information, such as how individual units will contribute to the process of system restoration, is more appropriately contained in AEMO's system restart plan.[115] The system restart plan is defined in the NER as confidential and it is not published by AEMO.

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114 Note that in this context, security refers to the physical safety and security of the facilities that provide restart services, and, more generally, the physical safety and security of the capability to restart the power system.

115 The system restart plan, which sets out how AEMO and market participants will restore the power system during a major supply disruption, is described in NER clause 4.8.12.

Given the sensitivity of this information, the Commission has decided not to incorporate the Group of Generators' proposed changes to the SRAS description and quantity guidelines in its final rule.

AEMO power system modelling methodology: The Commission notes the Group of Generators' proposal that AEMO should be required to develop and publish a methodology and modelling approach to assess the ability of procured SRAS to meet the SRS.

The Commission understands that AEMO has already developed static and transient power system modelling approaches to assess the ability of procured restart services to meet the SRS. This approach is established in AEMO's current SRAS assessment guidelines.[116]

The final rule will continue to require AEMO to develop a process for the assessment and physical testing of restart services, as part of its SRAS Guidelines.

AEMO annual reporting to the Reliability Panel: The Commission considers that the Group of Generators' proposal for AEMO to report annually to the Reliability Panel is largely unnecessary and could lead to duplication. Under NER clause 8.8.3(b), the Panel is required to report on market performance generally, including SRAS, on an annual basis. The Panel also has the ability to seek information and advice from AEMO as it sees fit under NER clause 8.8.3(h) to inform this reporting. These requirements are sufficient so that AEMO provides the Panel with all the information it requires to review the performance of SRAS.

AEMO and network business engagement: The Commission considers that there is merit in requiring AEMO and network businesses to actively consult and engage as part of the assessment of potential restart services. AEMO has advised the Commission that it already actively seeks engagement and input from TNSPs, but has received mixed responses from different businesses.

The Commission considers that the expertise and experience of network businesses is central to an effective assessment of potential restart services. The final rule therefore:

- requires AEMO to establish a process for engaging with network businesses; and
- requires network businesses to provide AEMO with all necessary information to inform its assessment of potential restart services.

AEMO annual reporting: The Commission considers that the Group of Generators' proposal for AEMO to report wherever it has been unable to meet the SRS in any sub-network is likely to benefit the market. AEMO should also be required to provide general advice to the market explaining why it has been unable to meet the SRS in any sub-network, as well as more general information related to its procurement processes.

The final rule requires AEMO to publish an annual report that:

- identifies any sub-networks where AEMO has failed to meet the SRS and provides a general explanation of why this has occurred;

116 For more information, see: http://www.aemo.com.au/Consultations/National-Electricity-Market/Open/2014-System-Restart-Ancillary-Services-Consultations.

- describes the procurement processes followed by AEMO to attempt to source the required quantity of SRAS to meet the SRS in each sub-network; and
- identifies the total cost of meeting the SRS in each sub-network and region, broken down into availability and usage charges.

These new reporting requirements will increase AEMO's accountability regarding how it has met its responsibilities within the SRAS frameworks. This is consistent with the NEO as it will increase transparency, providing more information to participants and facilitating more efficient decision making. These new reporting arrangements are described in further detail in Chapter 5.

4.3 Define the role of the Reliability Panel

The Group of Generators have proposed several changes to the Reliability Panel's processes.

The Commission considers that the Group of Generators proposed changes to the Reliability Panel's functions are not likely to meet the NEO, as they may reduce the flexibility of the Reliability Panel and AEMO to carry out their respective responsibilities within the SRAS frameworks.

4.3.1 The Group of Generators' proposed rule

The Group of Generators proposed a number of changes related to AEMO's development of its SRAS Guidelines, as well as the Reliability Panel's consultation process.

Under current arrangements, AEMO may amend the SRAS Guidelines under the rules consultation procedures. The Group of Generators considered that in its recent 2013/14 SRAS review and in its changes to the SRAS Guidelines, AEMO has operated outside of its organisational remit and has made inappropriate interpretations of the SRAS Objective and the SRS. The Group of Generators therefore proposed that the Reliability Panel should have responsibility for reviewing and approving any changes proposed by AEMO to its SRAS Guidelines, including the SRAS quantity guidelines, SRAS description, SRAS assessment guidelines and the boundaries of electrical sub-networks document.

The Group of Generators also considered that there has been some confusion in the market regarding who has responsibility for amending the SRS. The Group of Generators therefore proposed that the SRS should explicitly state that the Reliability Panel alone has responsibility for administering and amending the SRS.

The Group of Generators also considered that the Reliability Panel should be required to consult with a range of stakeholders specified in the NER when developing the SRS. The Group of Generators therefore proposed that the NER be amended to specify that the Reliability Panel must consult with a defined range of market participants and other key stakeholders when developing the SRS.

4.3.2 Stakeholder views

First round submissions

A number of generators argued that there was insufficient oversight of AEMO in the current SRAS frameworks and that the Reliability Panel should be the primary custodian of the SRS, rather than AEMO.

The NGF suggested that the SRS is currently worded in a "general" way, so that the SRAS Guidelines, administered by AEMO, become the main domain whereby key market parameters are defined. To address this outcome, the NGF considered that clearer oversight of the development of these guidelines by the Reliability Panel was necessary.[117] This proposal was supported by Grid Australia, Alinta, Origin and AGL.

GDF Suez stated that AEMO should be able to procure SRAS to meet the SRS in the most cost effective manner, and should be free to perform this function with little or no direct oversight from other bodies. However, GDF Suez also considered that AEMO should not have the authority to unilaterally amend the level of service or make any other interpretation of the SRS. GDF also stated that it did not support a periodic review of the SRS by the Reliability Panel.[118]

AEMO stated that the current arrangements include an adequate separation of responsibilities. AEMO argued that its own governance structure, not-for-profit status and statutory responsibilities mean that it has no obligation or incentive to act other than independently in accordance with the NEO, SRS and SRAS objective. AEMO suggested that a periodic review of the SRS was warranted, given the extent of changes in generating technologies, increasing distributed generation and demand side participation.[119]

Second round submissions

The main focus of comments from stakeholders related to AEMO's ability to amend the boundaries of electrical sub-networks document. ERM argued that AEMO should not have sole discretion in the development of sub-network boundaries and that NER should allow for a more formal consideration of the role of the jurisdictional transmission network service providers in determining the electrical sub-network boundaries.[120] Snowy Hydro suggested that AEMO should not have the discretion to alter sub-network boundaries unless it has approval from the Reliability Panel.[121]

4.3.3 Commission's assessment

In its assessment of the Group of Generators' proposed rule, the Commission has considered the following two key areas:

- Reliability Panel approval of changes by AEMO to the SRAS Guidelines; and
- Reliability Panel's processes in determining the SRS.

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117 NGF, 1st round submission, p.4.

118 GDF Suez, 1st round submission, p.2.

119 AEMO, 1st round submission, p.2.

120 ERM Power, 2nd round submission, p.2.

121 Snowy Hydro, 2nd round submission, p.2.

The Commission has considered the potential for a periodic review of the SRS by the Reliability Panel in section 5.1.5.

Reliability Panel approval of changes by AEMO to the SRAS Guidelines

As discussed in Chapter 2, the Commission considers that effective SRAS governance arrangements establish clear roles and responsibilities within the SRAS frameworks, allowing each body adequate scope and flexibility to fulfil these responsibilities effectively. Each body is then held accountable for how it has met its responsibilities, through transparent reporting processes.

The Commission considers that the Group of Generators' proposal for the Reliability Panel to approve any changes made by AEMO to its SRAS Guidelines is unlikely to be effective. Firstly, the Commission considers that such an arrangement could reduce AEMO's flexibility in making necessary adjustments to the SRAS Guidelines. Secondly, it is not clear how this process would work and what would happen if the Panel did not approve a proposed change by AEMO. Finally, this additional regulatory oversight could increase costs for both the Reliability Panel and AEMO.

Regarding AEMO's determination of the boundaries of electrical sub-networks, the Commission considers that as the SRS provides very clear guidance to AEMO, there is no need to require AEMO to seek Reliability Panel approval of changes to individual boundaries.

The Commission notes there are interactions between the establishment of the SRS and electrical sub-network boundaries. This is discussed in further detail in section 5.2.1 below.

The final rule clarifies AEMO's role within the SRAS frameworks. It requires AEMO to report annually on how it has met its responsibilities, as well as requiring AEMO to develop effective operational documents in a transparent and consultative manner. The Commission therefore considers that oversight by the Reliability Panel is not necessary.

Reliability Panel's processes

The Group of Generators proposed that the Reliability Panel should be required to consult with a specific range of stakeholders when developing the SRS.

As discussed above, the Commission considers that each body must have adequate scope and flexibility to fulfil its responsibilities within the SRAS frameworks. It is not the function of the NER to determine how the Reliability Panel consults with stakeholders when developing the SRS.

The Commission acknowledges that there is a wide range of stakeholders that may provide valuable input into the SRS. The Reliability Panel amends the SRS under an open and transparent process that allows all interested parties to provide comment. The Reliability Panel will also draw upon expertise and seek comment from relevant stakeholders as it considers necessary.

The Group of Generators have also proposed that the SRS should be amended to specifically state that it remains current until such time as amended by the Panel.

Given that NER clause 8.8.1 clearly states that the Panel is responsible for determining the SRS, the Commission sees no benefit in requiring the SRS to include the Group of Generators' proposed drafting.[122]

122 The Commission also notes that the SRS itself is determined by the Reliability Panel. The Commission therefore has no power to include or exclude any terms directly in the SRS.

5 The Commission's more preferable final rule

The final rule incorporates AEMO's proposed approach to SRAS cost recovery and the definition of restart services, as discussed in Chapter 3. The final rule also addresses many of the key issues raised by AEMO and the Group of Generators.

This Chapter sets out the key issues considered by the Commission in developing the final rule.

The Commission considers that the NER need to provide further guidance regarding the governance of the SRAS frameworks. In particular, additional guidance is needed regarding the distribution of roles and responsibilities of both the Reliability Panel and AEMO.

As discussed in Chapter 2, the Commission has considered three key principles when assessing the appropriate distribution of roles and responsibilities of different market bodies within the SRAS frameworks:

- Firstly, clear functional separation is central to the effectiveness of the SRAS frameworks. Each body should have a clearly defined role and function.
- Secondly, within its clearly defined role and function, each body should have adequate scope and operational flexibility to fulfil its objective.
- Finally, each body should be clearly accountable for the decisions it makes. This accountability is best provided through transparent reporting processes.

These principles have been designed in accordance with the NEO. Clear functional separation helps to avoid overlap or duplication of roles and responsibilities. Flexibility to operate within defined objectives allows each body the ability to fulfil these objectives as efficiently as possible. Clear reporting requirements maintains transparency and creates incentives on each body to fulfil its role efficiently and effectively. These arrangements will provide the market with more certainty and better information regarding the function of the SRAS frameworks, allowing participants to make more efficient operational and investment decisions.

The final rule improves the SRAS frameworks to reflect these principles. It defines the roles of the Panel and AEMO, improves operational flexibility and increases reporting obligations for AEMO.

The final rule also changes the NER to enhance the competitiveness of SRAS markets, including changes to AEMO's processes for SRAS procurement and reporting on the costs of SRAS. The Commission considers that these changes will contribute to the achievement of the NEO as they will help maintain competitive pressure within SRAS markets. This is in the long term interests of consumers, as it will support more efficient operational and investment decisions.

For this final determination, each of the final rules is set out below, grouped according to the key benefits that the Commission expects they will provide to the market, including:

- better guidance regarding roles and responsibilities;
- better guidance regarding the function of the SRS; and

- more efficient consultation, reporting and procurement processes.

5.1 Better guidance regarding roles and responsibilities

In line with the principles identified above, the final rule provides better guidance regarding the distribution of the roles and responsibilities of the Reliability Panel and AEMO.

The Commission considers that the Reliability Panel's responsibility is to develop the SRS, taking into account the SRAS Objective and any other matters it considers relevant. AEMO's role is to procure SRAS to meet the SRS, at the lowest cost. AEMO also has operational functions such as developing the SRAS Guidelines and establishing the boundaries of electrical sub-networks.

The final rule introduces four key changes to the NER to clarify this division of responsibilities:

- clarifying the SRAS Objective, to provide the Panel with improved guidance regarding the development of the SRS;
- removing the obligation for AEMO to consider the SRAS Objective;
- introducing a new SRAS Procurement Objective, requiring AEMO to use reasonable endeavours to acquire SRAS to meet the SRS at lowest cost; and
- clarifying that a major supply disruption applies to loss of supply to one or more connection points.

In its Consultation Paper, the Commission also raised the concept of requiring the Reliability Panel to undertake a periodic review of the SRS. The Commission has decided that the current arrangements, where the Reliability Panel reviews the SRS at the direction of the Commission, remain broadly appropriate.

A number of stakeholders commented on these proposed changes in submissions to the draft determination, particularly in relation to the SRAS Objective and the SRAS Procurement Objective. These comments are addressed in the relevant sections below.

5.1.1 Clarifying the SRAS Objective

The current SRAS Objective is included in clause 3.11.4A(a) of the NER:

> "The objective for *system restart ancillary services* is to minimise the expected economic costs to the *market* in the long term and in the short term, of a *major supply disruption*, taking into account the cost of supplying *system restart ancillary services*, consistent with the *national electricity objective* (**the *SRAS* Objective**)"

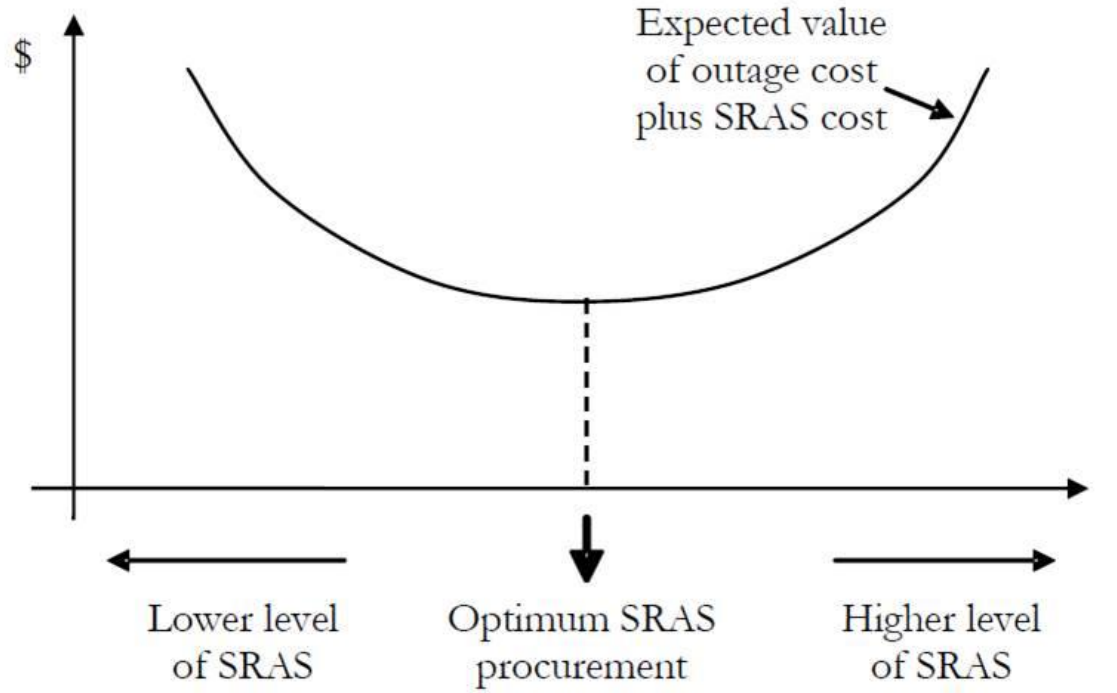
The SRAS Objective forms the basis of the Reliability Panel's development of the SRS. As it is currently defined, the SRAS Objective implies a trade-off between the cost of a major supply disruption event against the costs of procuring additional SRAS to mitigate that event. In theory, such an approach would involve minimising the sum of:

- the total cost of procured restart services; and

- the cost of the major supply disruption that those restart services were procured to mitigate.

This concept is illustrated in Figure 5.1.

Figure 5.1 Optimal SRAS procurement



Source: Firecone, *Review for AEMC of the Proposed NEMMCO Rule for System Restart Ancillary Services*, December 2005.

The possibility of determining the restoration timeframes according to such an approach has been considered a number of times over the last decade. In each case, no workable approach was identified that could be used to determine the optimal quantity of SRAS to procure. These previous considerations are summarised in Box 5.1.

Box 5.1 Previous assessments of the practical application of a cost benefit analysis

A number of parties have considered the practicability of undertaking a cost / benefit type assessment to determine the appropriate restoration timeframes of the SRS:

- In 2004, NEMMCO identified a number of difficulties with adopting such an approach, including the complexities of identifying the probability of different kinds of black system events, the volume of load that would be lost and the actual cost of lost load to different parties. NEMMCO concluded that "it is impossible to arrive at an absolutely correct assessment of 'best value' ... Sensible guidelines and principles should nevertheless yield an answer that is 'approximately right'. The alternative approach of attempting to 'accurately' determine the appropriate value for every measurable parameter seems most likely to yield an answer that is 'precisely wrong'."[123]

123 NEMMCO, *Review of system restart ancillary service arrangements – Final report*, July 2004, p.12.

- In 2005, Firecone discussed the concept of identifying the correct balance between the costs of a major supply disruption and the cost of SRAS. Firecone suggested that the optimal situation would be where "the marginal cost of a change in the level of SRAS ... bought is equal to the change in the expected value of outage costs resulting from that change in SRAS procurement."[124] However, Firecone provided no practical approach as to how this marginal benefit / cost trade-off could be calculated.
- Finally, in 2012, the Reliability Panel considered how it could develop the SRS to be consistent with the SRAS Objective. The Panel considered that the "economic cost of a black start event could be difficult to estimate, although it could potentially be very significant".[125]

  Given this difficulty, the Panel decided not to adopt a cost/benefit approach in developing the SRS. Instead, it considered whether the existing SRS was likely to inhibit the standard economic criteria of static, allocative and dynamic efficiency.

The Commission considers that the current SRAS Objective does not provide the Reliability Panel with effective guidance regarding how it should go about determining the SRS. In particular, it is not appropriate to require the Reliability Panel to undertake a full cost benefit type assessment when developing the SRS.

Undertaking a full cost benefit analysis requires the quantification of key variables, including the probability of certain events occurring, and the costs associated with those events. However, the Commission considers that it is not possible to estimate accurate values for these variables with regard to a potential major supply disruption.

The probability of a major supply disruption occurring is inherently uncertain. There is a very large number of unpredictable variables involved in the triggering and propagation of a cascading failure. The extent of these unpredictable variables makes any kind of meaningful risk assessment impossible, given the number of simplifying assumptions that would be needed. This means that it is very difficult, and possibly misleading, to assign a probability to a region wide, multi-region or a NEM-wide black system event, for the purposes of undertaking a cost benefit analysis.[126]

Furthermore, the costs associated with a large scale major supply disruption are also extremely difficult to quantify. These costs are not likely to be limited to the immediate

124 Firecone, *Review for AEMC of the Proposed NEMMCO Rule for System Restart Ancillary Services*, December 2005, p.6.

125 Reliability Panel, *System Restart Standard - Final Determination*, April 2012, p.8.

126 The Commission notes the varying comments received from stakeholders on the merits, or otherwise, of undertaking some form of probabilistic analysis. For example, while GDF Suez suggested there was merit in "carrying out some analysis, to at least establish whether the probability and/or impact is so small that it can be ignored, or whether there is a level of likelihood that warrants mitigation measures", Alinta suggested that there was no need for "detailed economic and technical analysis ... to develop the rules in this area". See: Alinta, 1st round submission, p.1.; GDF Suez, 1st round submission, p.2.

interruption of economic capacity, but are likely to have prolonged consequential effects. These costs will also vary substantially between different users, as well as across time.

Various generators commented on the analysis prepared by ROAM regarding the probability of occurrence and the costs associated with a major supply disruption.[127] Both Stanwell and Snowy Hydro argued that the ROAM report provided an effective basis for a cost benefit analysis, and were therefore opposed to the proposed changes to the SRAS Objective. Stanwell also suggested that measures such as the Value of Customer Reliability (VCR) could be used to inform such an assessment.[128]

The Commission considers that the work done by ROAM is informative and may be of use to the Reliability Panel in determining the SRS. However, as discussed above, this was based on an analysis of international power systems and does not necessarily reflect the specifics of the NEM power system. More broadly, the Commission considers that the Panel should have adequate scope to use whatever analytical frameworks that it considers to be most appropriate. While the Panel may choose to use a measure similar to that developed by ROAM, it should not be required to do so.

The Major Energy Users also commented on the probability of different kinds of black system events, suggesting that the probability of a black start being required without interconnector assistance is extremely remote. The Major Energy Users therefore suggested that the SRS should be restated in terms of what is possible with regard to setting a cap on SRAS costs based on the VCR.[129]

The Commission agrees that measures such as VCR may be of use to the Panel when developing the SRS and the Panel should be free to use this measure as it sees fit. However, the Commission does not consider it appropriate to introduce any kind of "cap" on costs based on VCR, as suggested by the Major Energy Users.

Given the difficulty of quantifying the probability of occurrence of a major supply disruption event and associated economic costs, the Commission considers that a degree of judgement is implicit in developing an effective SRS. The experience and expertise of the Reliability Panel makes it the appropriate body to undertake the necessary analysis to make this judgement. The Panel will be guided by the proposed revised SRAS Objective, which involves a consideration of the NEO. The Panel will therefore be required to base its judgement on a consideration of whether the parameters it includes in the SRS will be in the long term interests of consumers.

The Commission therefore considers that the SRAS Objective should be clarified to provide the Reliability Panel with better guidance. These changes would remove the current requirement for the Panel to undertake a cost benefit analysis of economic costs against the costs of procuring SRAS. The revised SRAS Objective will meet the NEO by allowing the Reliability Panel to make more effective judgements, which will enhance certainty and confidence in the market, facilitating more efficient participant decision making.

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127 ROAM Consulting, *Review of SRAS in the NEM*, May 2014.

128 Stanwell, 2nd round submission, p.2.; Snowy Hydro, 2nd round submission, p.4.

129 Major Energy Users, 2nd round submission, p.5.

The final rule sets out a new, revised SRAS Objective:

> "The objective for *system restart ancillary services* is to minimise the expected costs of a *major supply disruption* to the extent appropriate, having regard to the *national electricity objective*."

The final rule then requires the Reliability Panel to develop the SRS to be consistent with SRAS Objective. Specifically, the SRS must:

> "be reviewed and determined by the *Reliability Panel* in accordance with the *SRAS Objective*."

The revised SRAS Objective includes two key changes from the current arrangements.

Firstly, the revised SRAS Objective is now defined as a term in Chapter 10 of the NER. This Chapter 10 definition firstly states that the SRAS Objective is to "minimise the costs of a major supply disruption". The Commission considers that this change will help guide the Panel by defining that the Panel's key focus in setting the parameters of the SRS is to manage the consequences of a major supply disruption for consumers. As discussed below, the term "economic" costs has also been removed from the SRAS Objective, as having regard to the NEO already requires consideration of economic efficiencies.

By explicitly requiring the Panel to minimise this impact "to the extent appropriate having regard to the NEO", the Panel will also be guided by considerations of overall efficiency. The Commission considers that this will guide the Panel's interpretation of the requirement to minimise costs. For example, while the Reliability Panel could set the parameters of the SRS in order to completely minimise or remove all of the potential costs of a major supply disruption, this is unlikely to be in keeping with the efficiency requirements of the NEO.[130] Instead, the Commission considers that in meeting this SRAS Objective, the Panel would consider how it could most efficiently manage and minimise the extent of these costs, in order to meet the long term interests of consumers.

Secondly, the final rule removes the costs of supplying SRAS from the SRAS Objective. As discussed above, the Commission considers that it is not appropriate for the Panel to be required to undertake a full cost benefit analysis when determining the SRS. Removing references to SRAS costs is in keeping with removing the obligation on the Panel to undertake this full cost benefit analysis.

The Commission notes comments from Origin Energy regarding the desirability of assessing the costs of procuring SRAS against the costs of a major supply disruption event. Origin stated that while it acknowledged the difficulty in determining the cost of a major supply disruption, it did not consider that this precluded a qualitative

130 Under the hypothetical situation where the Panel's sole objective was to completely minimise the costs of a major supply disruption, the Panel could set the parameters of the SRS such that AEMO would be required to procure sufficient SRAS to facilitate the fastest physically possible recovery of the power system. Taken to extremes, this could necessitate the building of SRAS capability for every generation unit. While this would potentially minimise the costs of a major supply disruption, it would also be a highly inefficient outcome that would not be in keeping with the NEO.

assessment of the trade-off between minimising the costs of a major supply disruption and the cost of procuring SRAS.[131]

The Commission considers that by redefining the SRAS Objective to focus on the NEO, the Panel will be required to consider all matters relevant to meeting the long term interests of consumers. The Commission considers that this will involve consideration of various economic factors, including the trade-offs that exist between the cost of procuring restart services against the short term costs of a loss of supply and the longer term costs of economic disruption. The Commission also notes comments from AEMO suggesting that the proposed drafting of the SRAS objective should be amended by moving the position of a comma, to clarify that the words 'to the extent appropriate' refers to consideration of the need to minimise the costs of a major supply disruption. The Commission agrees with AEMO and has amended the drafting of the final rule accordingly.

The revised SRAS Objective would apply only to the Reliability Panel.

In conjunction with the changes discussed in the next section, the Commission considers that these changes will provide the Reliability Panel with improved guidance regarding how to develop the SRS.

5.1.2 Removing the obligation for AEMO to directly consider the SRAS Objective

Under current arrangements, both the Reliability Panel and AEMO are required to consider the SRAS Objective when undertaking their respective roles in the SRAS frameworks:

- Clause 8.8.3(aa)(1) of the NER requires the Reliability Panel to develop the SRS to be consistent with SRAS Objective.
- Clause 3.11.4A(c)(1) of the NER requires AEMO to develop each of its SRAS Guidelines, and any other related SRAS documents, to be consistent with the SRAS Objective.

The Commission considers that a single body should be directly responsible for meeting the SRAS Objective. The final rule therefore provides that the revised SRAS Objective will only apply directly to the Reliability Panel, to guide its development of the SRS. As discussed in section 5.1.3 below, AEMO is then required to procure SRAS to meet the SRAS Procurement Objective, which is to procure SRAS to meet the SRS at the lowest cost. The SRAS Objective will therefore apply indirectly to AEMO, through its obligation to meet the SRS.

In developing the final rule, the Commission has applied a set of principles it considers will guide the allocation of governance roles and responsibilities that will contribute to the NEO. These principles are set out below.

131 Origin Energy, 2nd round submission, p.3.

Organisational fit

Requiring AEMO to directly consider wider questions of economic cost and making trade-offs between those different costs does not sit well with AEMO's primary function of procuring, assessing and testing SRAS.

Definition of responsibilities

Currently, AEMO is required to meet both the SRAS Objective and the SRS. The Commission considers that the current arrangements provide inadequate guidance to AEMO regarding its actual role and responsibilities within the SRAS frameworks.

For example, under the current arrangements, it is not clear whether AEMO should simply procure SRAS and develop its guidelines to meet the SRS, or whether it should be undertaking more wide ranging reviews and assessments of the SRAS frameworks in order to meet the SRAS Objective. Requiring AEMO to meet both the SRS and the SRAS Objective directly makes it unclear as to what approach AEMO should adopt and its proper function within the SRAS frameworks.

This was identified as an issue by the Group of Generators and a number of stakeholders, who considered that current arrangements require AEMO to hold a degree of risk and responsibility that is beyond its appropriate remit.

Avoiding duplication and promoting accountability

Under current arrangements, there may be a risk of duplication in terms of the decision making of AEMO and the Reliability Panel. In particular, the Commission considers that there is a risk that both bodies may seek to undertake an assessment of economic costs and benefits, as implied by of the SRAS Objective. The Commission considers that such duplication would be inefficient and creates a risk that the relative accountabilities of the Reliability Panel and AEMO are not clear.

Given these factors, the final rule removes the current requirement for AEMO to consider the SRAS Objective directly when developing its guidelines and when procuring SRAS. The SRAS Objective will now apply to AEMO only indirectly, through its requirement to acquire SRAS to meet the SRS at the lowest cost. This will address any confusion regarding the division of responsibility between AEMO and the Reliability Panel in the SRAS frameworks.

5.1.3 New AEMO SRAS Procurement Objective

In line with the other changes discussed above, the Commission considers that AEMO's primary function within the SRAS frameworks needs to be clarified.

The final rule therefore introduces a separate SRAS Procurement Objective into the NER:

> "AEMO must use reasonable endeavours to acquire *system restart ancillary services* to meet the *system restart standard* at the lowest cost."

In developing this SRAS Procurement Objective, the Commission has considered the following issues.

Clarification of purpose

The new SRAS Procurement Objective is based on the existing rules, which require AEMO to use reasonable endeavours to acquire SRAS. The Commission considers that a general obligation should remain on AEMO to use reasonable endeavours to procure SRAS.

AEMO will be required to demonstrate what reasonable steps it has taken to meeting this requirement as part of its annual reporting obligations, discussed in section 5.3.

Focus on cost of SRAS

The new SRAS Procurement Objective contains a clear focus on sourcing SRAS at the lowest cost. The Commission notes that the Group of Generators and a number of other stakeholders suggested that AEMO should not focus only on the cost of SRAS when procuring, but rather should also consider a range of costs.[132]

The Commission considers that the broader assessment of economic costs is better undertaken by the Reliability Panel when it develops the SRS. Given that these issues will be adequately considered by the Panel, AEMO's focus should be solely on procuring SRAS that matches the requirements of the SRS, at the lowest cost possible. This distribution of responsibilities between the Panel and AEMO is designed to deliver an efficient quantity of SRAS, at an efficient cost.

Organisational fit

Given its operational knowledge and previous experience in procuring SRAS, AEMO is best equipped to source the required quantities of SRAS to meet the SRS. As discussed in section 5.3.1, the final rule removes the requirement for AEMO to procure SRAS only through a prescribed tender process. This will further enhance AEMO's opportunities to procure SRAS at lowest cost.

AEMO is also responsible for the physical testing of procured services, as well as the development of the boundaries of electrical sub-networks, in accordance with the requirements of the SRS. The new SRAS Procurement Objective would not apply to AEMO's fulfilment of these roles, where it will continue to be required to meet the SRS.

In its submission to the draft determination, AEMO proposed that the procurement processes should include a jurisdictional "oversight" mechanism of its procurement of SRAS.[133] The Commission's assessment of this proposal is provided below.

Consideration of net benefit

A number of generator stakeholders expressed opposition to the SRAS Procurement Objective in submissions to the draft determination. Stanwell, ERM, Origin Energy and Snowy Hydro all suggested that the new Procurement Objective was inflexible, in that it would not allow AEMO to procure SRAS on the basis of maximising net benefit.[134] In

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132 The Group of Generators suggested that these costs should include the total opportunity costs, financial, social and non-financial, to energy users and the market, generally and to specific sensitive loads. See: Group of Generators rule change proposal, p.15.

133 AEMO, 2nd round submission, p.2.

134 Stanwell, 2nd round submission, p.1.; ERM, 2nd round submission, p2.; Origin Energy, 2nd round submission, p.3.; Snowy Hydro, 2nd round submission, p.2.

particular, it was argued that the new SRAS Procurement Objective may prevent AEMO from procuring additional low cost services beyond the requirements of the SRS, even if there was a net benefit associated with that additional procurement.

Stakeholders argued that there was a need for mechanisms to allow for consideration of maximisation of net benefit, such as by requiring AEMO to report to the Reliability Panel regarding all SRAS offers received and how its proposed procurement decision would maximise benefit to the NEM.[135] Other stakeholders suggested amending the wording of the SRAS Procurement Objective to replace the words "lowest cost" with "efficient cost", or "greatest net benefit".[136]

The Commission considers that effective SRAS frameworks must provide a clear separation of organisational roles and responsibilities. It is the sole responsibility of the Reliability Panel to consider all relevant economic factors, including the benefits of SRAS and the cost of sourcing those services, in order to determine the efficient level of restart service for each sub-network. The Commission considers that AEMO's focus should be procuring the required quantities of SRAS to meet the SRS, as defined by the Panel. AEMO should not be procuring any more SRAS, or any less, than is required to meet the SRS.

AEMO proposal for inclusion of technical requirements in SRAS Procurement Objective

In its submission to the draft determination, AEMO suggested that the SRAS Procurement Objective should expressly recognise the technical requirements that are included in the SRAS Guidelines. AEMO argued that this was necessary to ensure that it procured restart services that met the requirements of the SRAS Guidelines, not just those services which were the cheapest.

The Commission considers that AEMO's key focus should be on meeting its rule obligations, as set out in the SRAS Procurement Objective, to meet the SRS at the lowest cost. The Commission considers that while the SRAS Guidelines have an important function of providing technical information to the market, meeting the SRAS Procurement Objective should remain AEMO's primary focus. This will also help to clarify AEMO's key function within the SRAS frameworks and reduce the risk of any conflict between meeting multiple obligations.

The Commission therefore considers that the SRAS Procurement Objective should remain focussed on the procurement of SRAS at lowest cost.

5.1.4 Clarification of the definition of major supply disruption

Currently, the term major supply disruption is defined in Chapter 10 of the NER as:

> "The unplanned absence of *voltage* on a part of the *transmission system* affecting one or more *power stations*."

The Commission considers that ultimately, the purpose of procuring restart services is to maintain the reliable supply of electricity services to consumers. This is in accordance

135 ERM Power, 2nd round submission, p.2.

136 Snowy Hydro, 2nd round submission, p.2.; Alinta, 2nd round submission, p.2.

with the NEO, which requires the Commission to consider the long term interests of consumers, with respect to the reliability of supply of electricity services.

In the draft determination, it was proposed that the definition of major supply disruption should refer to the loss of supply to one or more connection points. However, the Commission now considers that this definition should actually refer to supply to one or more loads. This is in keeping with the focus on restoration of supply to electricity consumers.

The final rule therefore defines major supply disruption as follows:

> "The unplanned absence of *voltage* on a part of the *transmission system* affecting one or more *power stations* and which leads to a loss of *supply* to one or more *loads*."

5.1.5 Periodic review of the SRS by the Reliability Panel

Under current arrangements, there is no standing requirement for the Reliability Panel to review the SRS on a regular basis. The Reliability Panel may review and amend the SRS following receipt of terms of reference from the Commission.

In its 2012 determination of the SRS, the Reliability Panel raised the prospect of it undertaking a periodic review of the SRS. The Panel suggested that a periodic review may be necessary to reflect changing market conditions, including changes in generation technology, or the distribution of generation and load centres.[137] In their first round submissions to this rule change, AEMO and Macquarie Generation supported a periodic review of the SRS by the Reliability Panel, while GDF Suez and Alinta did not.[138] The National Generators Forum considered that the SRS should only be reviewed by the Reliability Panel where there was a clear failure in current arrangements.[139]

The Commission considers that existing arrangements remain broadly appropriate. Should significant changes in the market necessitate a review of the SRS, the Panel may advise the Commission when and if such a review is necessary. The Commission may then issue a terms of reference as needed. The Commission considers that these arrangements will help to reduce the extent of any regulatory costs associated with reviewing the SRS, and will also reduce the risk of any regulatory uncertainty amongst participants that might arise due to the prospect of periodic changes to the SRS.

137 Reliability Panel, *System Restart Standard - Final Report*, April 2012, p.23.

138 AEMO, 1st round submission, p.2.; Macquarie generation, 1st round submission, p.4.; GDF Suez, 1st round submission, p.3.; Alinta, 1st round submission, p.3.

139 NGF, 1st round submission, p.8.

5.2 Increased guidance regarding the function of the System Restart Standard

The matters that the Reliability Panel must include in the SRS are established in clause 8.8.3(aa) of the NER. Amongst other matters, this clause requires the Reliability Panel to develop the SRS to:[140]

- identify the maximum amount of time within which system restart ancillary services are required to restore supply to a specified level;
- include guidelines on the required reliability of primary restart services and secondary restart services; and
- apply equally across all regions, unless the Reliability Panel varies the SRS between electrical sub-networks to the extent necessary:
  - to reflect any technical system limitations or requirements; or
  - if the benefits of adopting the SRS would be outweighed by the costs of implementing such a standard.

Based on these requirements in the NER, the Reliability Panel currently determines the restoration timeframes and reliability requirements, which themselves contain three key variables that guide AEMO's procurement of SRAS. These three variables are set out below.

	Variables
Restoration timeframes	**Timeframe:** Maximum time in which restoration must occur. Currently expressed by the Reliability Panel as time to restore plant auxiliaries, and time to restore a fraction of peak load in each sub-network.
	Quantity: The specified level to which the sub-network must be restored within the above timeframe. Currently expressed by the Reliability Panel as a fraction of peak load within each sub-network.
Reliability Requirements	**Reliability:** Level of reliability of the restart services that enable the restoration.

To provide additional guidance to the Reliability Panel, the final rule requires the Reliability Panel to determine a standalone restoration timeframe for each sub-network, which will include the maximum time in which restoration must occur and the quantity of load to be restored, under the assumption that supply is unavailable from any neighbouring sub-network.

140 These other matters include the development of sub-network boundaries and diversity requirements of SRAS. The SRS requires AEMO to develop sub-network boundaries based on consideration of the structure of power system, including the location of generation and load, as well as network topology. The SRS also requires AEMO to procure SRAS on the basis of electrical, geographic, technological and fuel diversity.

The final rule also requires the Reliability Panel to establish an "aggregate" reliability requirement for each sub-network. As discussed in section 3.3, the final rule also removes the definitions of primary and secondary restart services from the NER.

The Commission considers that these changes will promote the NEO by providing improved clarity and certainty regarding the proper function of the SRS. This will allow for better decision making by both the Reliability Panel and AEMO, supporting more efficient operational and investment decisions by market participants.

The final rule introduces four key changes to NER clause 8.8.3, which defines the matters that must be included in the SRS:

- **Standalone restoration timeframes:** Requiring the SRS to specify the maximum amount of time in which each sub-network should be restored to a specified level, under the assumptions that each sub-network must be restored on an independent basis.
- **Sub-network level reliability requirements:** Requiring the SRS to contain an aggregate reliability requirement for each sub-network that AEMO must meet when procuring SRAS.
- **Ability of the Panel to vary the SRS between sub-networks:** Clarifying that the Panel may vary the SRS between sub-networks, to reflect technical or economic specifics of that sub-network.
- Removing references to primary and secondary restart services.

5.2.1 Standalone restoration timeframes

As discussed in section 4.1, the Commission considers it is prudent and necessary to procure SRAS on the basis of meeting a range of possible major supply disruption events, including a NEM-wide or multi region black system event. This reflects the fact that it is not possible to determine with any degree of accuracy the probability that a major supply disruption will involve a NEM-wide, multi-region or single region black system event. Given the significant costs to consumers associated with such events, the Commission considers it necessary that a minimum level of SRAS is procured to insure against even the worst case scenario of a NEM-wide black system event.

The key consequence of a NEM-wide black system event is that each sub-network within the NEM would be in a black system condition. This means that each sub-network would be unable to rely on a neighbouring energised sub-network to supply energy that could provide assistance in system restoration.[141]

The SRS is the key document that guides AEMO in its procurement of SRAS. The Commission therefore considers that the SRS should include a set of "standalone restoration timeframes", being the timeframes for the independent restoration of each

141 The Commission acknowledges that, in practice, the most probable kind of black system event is likely to be at the level of the sub-network or region. In this case, AEMO would make use of any and all resources at its disposal to restore the system to a secure and safe operating state, including using energy supplied from neighbouring sub-networks/regions. However, this operational reality is separate to the contingency planning that should inform the process of SRAS procurement.

sub-network to a specified level. The Reliability Panel will also determine a reliability requirement for each sub-network, as described in further detail in section 5.2.2.

The Commission also considers that the SRS should specify that each restart service can only be contracted by AEMO to provide restart services to a single sub-network at any one time. This is to further clarify that restart services must be procured by AEMO on the basis of restoring each sub-network on a standalone basis. As explained below, this does not preclude AEMO from procuring SRAS located in one sub-network to provide restart services in another. However, AEMO may only contract that SRAS to provide restart services to the one sub-network at any given time.

Under the final rule, AEMO is required to base its procurement around meeting these target standalone restoration timeframes for each sub-network, under the pre-defined assumption that each sub-network must be restored on an independent basis. This means that when procuring SRAS to enable the restoration of a given sub-network, AEMO cannot assume that energy supply was available from a neighbouring energised sub-network to assist in restoration.[142] AEMO would also be required to enter into contracts with each restart service to provide restart services to only one sub-network at any given time. Finally, AEMO would also be required to procure SRAS in accordance with meeting the sub-network level reliability requirements defined by the Reliability Panel.

Under the final rule, AEMO could procure SRAS located in one sub-network for the purposes of providing restart services to a different sub-network, provided that the restart service is contracted to that sub-network. This is not the same as relying on energy supply from a neighbouring sub-network to assist in a restoration. This distinction is explained in Box 5.2.

Given the points discussed above, the final rule requires the SRS to include a standalone restoration timeframe for each sub-network. The final rule also clarifies that SRAS may be sourced in one sub-network to supply restart services to another sub-network, provided it has been contracted to provide restart services to that sub-network.

Stanwell queried whether an SRAS facility contracted to a sub-network other than its home sub-network would still be available to provide additional support functions such as block loading and voltage control in its home sub-network.[143]

The Commission has determined that SRAS should be procured to provide restart services to one sub-network at a time, meaning that the first priority of a procured SRAS must be to provide restart services to the sub-network to which it has been contracted. The Commission considers that if AEMO has determined that an SRAS facility has fulfilled the system restart function it was contracted to provide, then AEMO should be free to utilise that facility as it sees fit in the process of system restoration. The specifics of how individual units may be dispatched and what services they may provide during a system restoration will be determined by AEMO and included in the system restart plan.

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142 In this context, an energised sub-network refers to a sub-network that has not collapsed to a black system condition.

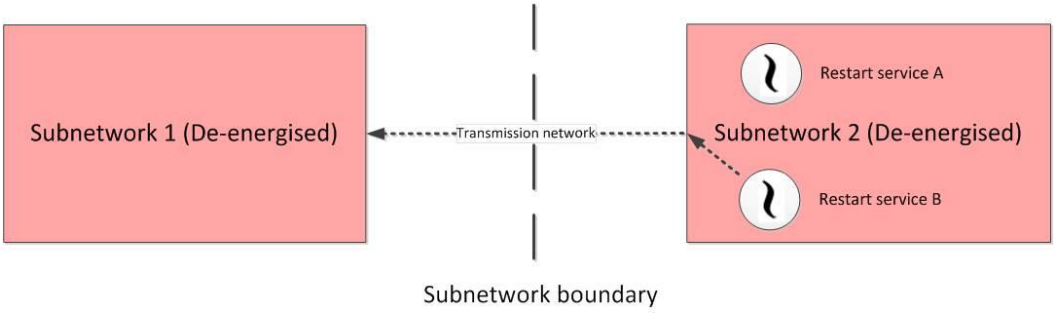
143 Stanwell, 2nd round submission, p.2.

Box 5.2 Use of SRAS in neighbouring sub-networks

Given the restoration timeframe requirements of the SRS, SRAS facilities are likely to be located in the same sub-network, or at least the same region, as the sub-network to which they are contracted to provide restart services. Exceptions to this may exist, typically where an SRAS facility is located close to a sub-network border and can easily provide restart services to a neighbouring sub-network.[144]

Under the assumption that the transmission power system is intact,[145] the transmission lines that connect the two sub-networks could be used to provide a restart service across the sub-network boundary. Such an arrangement is illustrated in Figure 5.2.

Figure 5.2 SRAS used to restore a neighbouring sub-network



In this scenario, both sub-network 1 and 2 are in a black system condition, and both restart services A and B are located in sub-network 2. Restart service A has been contracted to provide restart services to sub-network 2. Restart service B has been contracted to provide restart services to sub-network 1.

Energy from restart service B is transported across the transmission lines that connect the two sub-networks to assist in the restoration of sub-network 1. In this example, both sub-networks are restored independently.

The Commission's final rule amends NER clause 8.8.3(aa) as follows to state that the SRS must:

> "identify the maximum amount of time within which *system restart ancillary services* are required to restore *supply* in an *electrical sub-network* to a specified level, under the assumption that *supply* (other than that provided under a *system restart ancillary services agreement* acquired by *AEMO* for that *electrical sub-network*) is not available from any neighbouring *electrical sub-network*."

144 Note that these services would still need to meet the restoration timeframe requirements of the SRS in the given sub-network, which currently refer to the restoration of station auxillaries within 90 minutes, and restoration of a volume of peak load within 4 hours. AEMO would also be guided by the strategic diversity requirements of the SRS when procuring SRAS, which require it to consider electrical, fuel, technological and geographical diversity.

145 Being the assumption that is currently applied by AEMO when assessing the capacity of procured SRAS to restore each sub-network.

The final rule also amends NER clause 8.8.3(aa) to state that the SRS must:

> "specify that a *system restart ancillary service* can only be acquired by *AEMO* under a *system restart ancillary services agreement* for one *electrical sub-network* at any one time."

These amended clauses, and the requirement that they place on the Reliability Panel, are in keeping with the assessment framework set out in Chapter 2. The NER establishes the basic requirements of what SRAS must be capable of doing - in this case, restoring each sub-network on a standalone basis. The Reliability Panel then has the ability to meet this requirement by considering whatever matters it sees fit in developing the SRS. The Panel will be accountable for how it has met this requirement though its determinations on the SRS.

In developing this approach, the Commission has considered two key issues:

- different standalone restoration timeframes for each sub-network; and
- interactions with AEMO's development of sub-network boundaries.

Different standalone restoration timeframes for each sub-network

The Commission considers that the final rule will help to clarify the Panel's ability to vary the SRS to reflect the specific conditions of each sub-network.

Under existing arrangements, the Reliability Panel is able to vary the SRS across different sub-networks.[147] The Panel may therefore choose to establish different standalone restoration timeframes for each sub-network. It may also establish different reliability requirements for each sub-network.

When deciding whether to vary the SRS between sub-networks, the Panel is able to consider the different economic and technical aspects of each sub-network. This may involve consideration of whether there are specific sensitive loads within each sub-network, and whether this may warrant the establishment of different standalone restoration timeframes.

As discussed in section 3.2, the Commission considers that the proposal to recover SRAS costs on the basis of regional benefits will mean that any differences in SRAS costs caused by varying the SRS to include a different standalone restoration timeframe will be borne by participants in the region that receives a portion of the subsequent benefit of the different standalone restoration timeframe.[148]

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147 The Panel's ability to amend the SRS in this way is clarified in section 5.2.3 below.

148 As the SRS will require SRAS to be procured on the basis of restoring each sub-network independently, regional benefit cost recovery would imply that the cost of an individual restart service must always be recovered from the same region in which that sub-network is located. However, as discussed in section 3.2.4, AEMO's regional benefit factors allow for the allocation of the cost of an individual service across two or more regions, which may appear to conflict with this principle. The Commission understands that, in practice, the cost of a restart service is only likely to be allocated across multiple regions where a restart service has been procured in a sub-network that crosses a region boundary, or where a restart service is actually used to assist in the restoration of a region other than the region which it was originally procured to service (in this case regional benefit factors for usage charges will apply, other than regional benefit factors for availability charges).

Interactions with AEMO's development of sub-network boundaries

The Commission considers there is a possibility of an interaction between the establishment of standalone restoration timeframes by the Panel, and changes made by AEMO to the boundaries of electrical sub-networks.

Under the final rule, the Reliability Panel may choose to vary the SRS between sub-networks, potentially developing different standalone restoration timeframes for each sub-network. If the Panel were to take such an approach, it may determine these standalone restoration timeframes based on the characteristics of each sub-network, including the existing sub-network boundaries.

AEMO has the ability to amend the boundaries of these electrical sub-networks. Such changes to sub-network boundaries are necessary from time to time in order to reflect changes in the location of load and generation centres, or changes in transmission network topography.

There is a possibility that if AEMO were to amend a sub-network boundary, this may affect its ability to continue to meet the standalone restoration timeframes established for that sub-network. Equally, the standalone restoration timeframes the Panel had established for that sub-network may no longer be valid, if the boundaries of that sub-network have been changed markedly.

This issue was identified by Snowy Hydro in its submission to the draft determination. Snowy Hydro suggested that to address this issue, AEMO should be required to undertake modelling to assess whether the SRS will continue to be met under the new boundaries.

The Commission acknowledges the possibility of such an interaction and notes that it is already possible under existing arrangements. In any case, any such interactions are manageable through existing processes. When AEMO amends the boundaries of electrical sub-networks, it must do so under the rules consultation procedures. This will provide adequate opportunity to explore any interactions with established restoration timeframes.

Furthermore, as part of its annual reporting requirements, AEMO will be required to identify whether it has met the SRS in each sub-network. The Commission understands that in order to deliver this reporting, AEMO will be likely to undertake power system modelling. The Commission is satisfied that this will be sufficient to identify whether changes to sub-network boundaries will affect the ability of AEMO to meet the SRS.

5.2.2 Sub-network level reliability requirement

Under current arrangements, clause 8.8.3(aa) of the NER requires the SRS to include:

> "guidelines on the required reliability of primary restart services and secondary restart services."

The SRS currently defines the reliability of primary and secondary restart services as:[149]

> "Primary restart services shall have a reliability of 90 per cent.
>
> Secondary restart services shall have a reliability of 60 per cent.
>
> Services may be considered in combination to meet a higher level of reliability than the individual service.
>
> AEMO will determine the manner in which reliability will be assessed, and clarify the provisions for combining services, in accordance with the requirements under the Rules."

Under existing arrangements, AEMO complies with the requirements of the SRS by measuring the reliability of each restart service, according to its SRAS assessment guidelines. AEMO is required under the NER to focus on the procurement of primary services, which have a reliability level of 90%.[150]

The final rule amends the reliability requirements to allow AEMO to procure SRAS on the basis of meeting an aggregate, sub-network level reliability requirement. This would align the approach to developing reliability requirements with that taken to restoration timeframes, and may also expand the range of restart services that AEMO could utilise to meet the SRS.

Under the final rule, the Panel will be required to establish an aggregate reliability requirement for each sub-network in the SRS. AEMO will then describe how it will meet these requirements in the new SRAS Guidelines document (see section 5.3.1 below).

While the detailed operational approach taken by AEMO to meeting this new sub-network level reliability requirement will be developed at its discretion, Box 5.3 provides a simplified example of how this new requirement might be satisfied.

149 As discussed in section 3.3 above, the Commission has proposed the removal of the definitions of primary and secondary restart services. The Reliability Panel will be required to amend the SRS accordingly.

150 For more information see: AEMO, SRAS Guidelines, September 2014, p.8.

Box 5.3 Example: meeting a sub-network level reliability requirement

In this example, AEMO is required to meet a given restoration timeframe, with a sub-network reliability requirement of 90%.

AEMO has four potential restart services from which to choose. AEMO has determined that each of these services is capable of meeting the given restoration timeframe for the sub-network on its own. However, each service has a different level of reliability.

Service	Reliability Level
A	90%
B	70%
C	60%
D	50%

The reliability of these services may be measured in terms of how often they would be expected *not* to start. For example, if the 90% reliability service was started 10 times, it would be expected not to start once.

Using this approach, AEMO can meet its sub-network level reliability requirement of 90% in two ways:

- Procure service A: Probability of no start of service A = 10%. Reliability = 90%
- Procure service B, C and D: Probability of no start of service B, C or D = 30% * 40% * 50% = 6%. Reliability = 94%.

AEMO will also consider factors including cost, temporal availability, geographical location and diversity requirements.

5.2.3 Ability of the Panel to vary the SRS between sub-networks

Under clause 8.8.3(aa)(2) of the NER, the Reliability Panel is able to vary the SRS between different sub-networks. This allows the Reliability Panel to vary the SRS where it considers there is a strong technical or economic reason for it to do so.

This clause has been amended to clarify its purpose, particularly as this relates to allowing the Panel to vary the SRS on the basis of economic conditions in a given sub-network. The Commission considers that this may occur where a sub-network contains specific sensitive loads, or consumers with usage profiles that would substantially increase the economic cost of a black system event occurring in that sub-network.[151]

151 Sensitive loads is a term defined in Chapter 10 of the NER as "*Loads* defined as sensitive for each *participating jurisdiction* by the *Jurisdictional System Security Coordinator* for that *participating jurisdiction*.

As discussed in section 3.2, regional SRAS cost recovery will mean that increases in SRAS costs to meet a higher level of service would be recovered from the participants in the region that receives a portion of the benefits from that higher level of service.

Accordingly, the final rule amends clause 8.8.3 of the NER to specify that the SRS must:

> "apply equally across all *regions*, unless the *Reliability Panel* varies the *system restart standard* between *electrical sub-networks* to the extent necessary:
>
> - to reflect any technical system limitations or requirements; or
> - to reflect any specific economic circumstances in an *electrical sub-network*, including but not limited to the existence of one or more *sensitive loads*."

5.3 More efficient procurement, consultation and reporting processes

As discussed in Chapter 2, the Commission considers that the Reliability Panel and AEMO should have sufficient scope to meet their defined responsibilities within the SRAS frameworks. It is better for these bodies to be held accountable for how they fulfil their obligations through transparent reporting processes, instead of adding further prescription in the NER to determine how each body is to meet its responsibilities.

The Commission considers that the Reliability Panel's existing reporting obligations provide sufficient accountability.

The final rule changes AEMO's reporting requirements to enhance accountability in the SRAS frameworks. These changes contribute to the achievement of the NEO by increasing the transparency of AEMO's processes and will provide participants with better information to inform efficient decision making.

Several stakeholders commented on AEMO's procurement processes in submissions to the draft determination. These stakeholders argued that the draft rule failed to provide the market with sufficient transparency regarding AEMO 's approach to the procurement of SRAS. The Commission agrees that further strengthening the transparency arrangements already included in the draft rule may result in more efficient procurement processes. The final rule therefore requires AEMO to provide guidance to Registered Participants on the factors that it must take into account when making a decision to follow a particular type of procurement process to acquire system restart ancillary services to meet the SRAS Procurement Objective.

AEMO also commented on the new reporting requirements established in the draft rule, with some suggestions regarding the content and timing of that reporting. The Commission has made some of AEMO's proposed changes, but generally considers that annual reporting is necessary to deliver sufficient transparency regarding current outcomes in SRAS markets. This is discussed in more detail in section 5.3.3.

The final rule contains a number of changes related to AEMO's procurement, reporting and consultation processes. These include:

- **Improved procurement processes:** removing the current requirement for AEMO to procure SRAS through a tender process as prescribed in the NER.

- **Improved SRAS Guidelines**:
  - AEMO is required to provide guidance to Registered Participants on the factors that it must take into account when making a decision to follow a particular type of procurement process to acquire system restart ancillary services to meet the SRAS Procurement Objective;
  - AEMO is required to consult with Registered Participants and such other persons who, in AEMO's reasonable opinion, have, or have identified themselves to AEMO as having, an interest in the SRAS Guideline; and
  - simplifying the requirements for AEMO to develop the SRAS Guidelines.
- **Improved AEMO reporting.** Requiring AEMO to report annually on:
  - the total cost of procuring SRAS in each sub-network and region, broken down into availability and usage charges;
  - whether AEMO has been unable to procure quantities of SRAS required to meet the SRS in any sub-network, including the reasons why the SRS was not met; and
  - the processes followed by AEMO to acquire SRAS for each electrical sub-network.
- **Improved network business consultation and information provision.** Recognising the important role of network businesses in the SRAS procurement and assessment process, the final rules requires:
  - AEMO to consult with relevant network businesses to identify and resolve any issues relating to the capability of any proposed restart service to meet the SRS; and
  - network businesses to provide information requested by AEMO to assess the capability of a restart service to meet the SRS.

5.3.1 Improved procurement processes

This section sets out the Commission's reasoning in regards to AEMO's processes for SRAS procurement, including:

- Allowing AEMO adequate flexibility to meet the SRAS Procurement Objective;
- Transparency in AEMO's procurement processes; and
- Jurisdictional oversight of AEMO's procurement.

Allowing AEMO adequate flexibility to meet the SRAS Procurement Objective

Under current arrangements, AEMO is required to procure SRAS solely through a tender process in NER clause 3.11.5. AEMO is required to set out this tender process in published tender guidelines.

This tender process requires AEMO to:

- call for expressions of interest before issuing invitations to tender for SRAS;
- define the timeframes over which AEMO will assess these expressions of interest;

- provide the terms and conditions of the ancillary services agreement that a successful tenderer would be expected to enter into with AEMO; and
- set out the principles AEMO will apply in assessing expressions of interest and tenders.

The Commission considers that these requirements are overly restrictive. By requiring AEMO to only procure SRAS through a highly prescriptive tender process, there is a risk of excluding more efficient means of sourcing SRAS. This would have negative impacts for consumers, particularly if it impedes competition in SRAS markets.

AEMO should have adequate flexibility and scope to fulfil its defined responsibilities within the SRAS frameworks. The final rule therefore removes the requirement for AEMO to procure SRAS solely through a prescribed tender process. Removal of this requirement will allow AEMO to procure SRAS through other processes, subject to meeting the requirements of the SRS, as well as the various guideline and reporting requirements discussed in further detail below.

Under this arrangement, AEMO may choose to continue procuring SRAS through an open tender process. In doing so, it may choose to alter the form of that tender process.[152]

Alternatively, AEMO may choose to procure SRAS through other processes. The Commission notes that in several other jurisdictions, including the United Kingdom, restart services are primarily procured on the basis of directly negotiated contracts. In the United Kingdom, the procurer, National Grid, is required to provide guidance and reporting on the processes it has followed in procuring restart services. This process is described in Box 5.4.

The Commission considers that AEMO should be able to select from different procurement methods if it considers that this will allow it to better meet the SRAS Procurement Objective, while satisfying its own internal requirements for good corporate governance. In doing so, AEMO will determine what information it will need to provide to prospective SRAS providers to inform the SRAS procurement process.

Box 5.4 Directly negotiated contracts for SRAS in the UK

National Grid is the network service provider in the United Kingdom. It has responsibility for procuring a number of ancillary services, or balancing services, which include frequency control, network support and restart services.

National Grid must adhere to a set of standard license conditions determined by Ofgem. These conditions include a requirement for National Grid to "prepare a statement setting out the kinds of balancing services which it may be interested in purchasing … and the mechanisms by which it would envisage purchasing them."[153] This statement must be published annually.

152 The Commission considers that if it chooses to procure SRAS through a tender process, AEMO need not follow the current tender requirements included in the NER.

153 Ofgem, *Transmission license standard conditions*, p.246.

National Grid has accordingly developed Procurement Guidelines that apply to the procurement of all balancing services.[154] These Guidelines set out the general principles that National Grid expects to follow when procuring balancing services.

These Procurement Guidelines firstly set out National Grid's general principles for procurement. In particular, the document provides a general statement as to whether National Grid will adopt a competitive approach or a direct negotiation approach to procurement:

- Where National Grid considers there is, or is likely to be, sufficient competition in the provision of a Balancing Service it will seek to procure that service via an appropriate competitive process / market mechanism.
- Where National Grid considers that there is insufficient competition in the provision of a Balancing Service (e.g. where there is some form of local monopoly) National Grid shall contract for such provision on a negotiated bilateral basis.

The Procurement Guidelines then provide further details of the market mechanisms or direct negotiation processes that National Grid may use for procurement of balancing services.

For a market mechanism approach, National Grid states that it will:

- publish a statement of the service requirements;
- issue invitations to tender, providing sufficient information to allow the provision of a service offer to be made, including standard contract terms and conditions;
- establish arrangements for governance of the process;
- publish a statement of principles and criteria that will be considered when evaluating the awarding of contracts; and
- report information on previous tenders.

For a direct negotiation approach, National Grid states that bilateral contracts may be required where limited competition exists in the supply of a service (taking into account locational factors where necessary). This may be due to special technical requirements of the desired service, where some form of monopoly exists or the unique characteristics of certain individual providers.

National Grid also states that where it considers there to be a limited degree of competition, it will contact those service providers capable of providing the required service, or who have expressed an interest in providing the service. National Grid will offer non-discriminatory terms for the acquisition of the service.

154 National Grid, *Procurement Principles*, 1 April 2014.

Transparency in AEMO's procurement processes

In submissions to the draft determination, a number of stakeholders argued that the prescribed SRAS tender process should be retained. Stanwell, AGL, Origin Energy and Snowy Hydro suggested that removing the prescribed tender process could reduce transparency in the SRAS procurement process.[155] It was suggested that this may cause uncertainty and weaken competition in SRAS markets.[156]

While the Commission notes that the existing prescribed tender process is transparent, this must be balanced against the need to provide AEMO with sufficient flexibility to effectively fulfil the SRAS Procurement Objective. The Commission considers that the existing prescribed tender process could limit AEMO's capability to seek out the lowest cost SRAS to meet the SRS, weakening competitive pressure in SRAS markets. The Commission therefore considers that removing the prescribed tender process from the NER remains the best approach to improving outcomes in SRAS markets.

Other stakeholders suggested a number of mechanisms to require AEMO to publish additional information, or to otherwise restrict AEMO's ability to select different procurement processes. AGL suggested that specific requirements could be introduced that would only allow AEMO to use direct negotiation by exception.[157] Snowy Hydro stated that it only supported the approach to SRAS procurement established in the draft rule if it was accompanied by a requirement for AEMO to adopt transparent processes to compare a "closed" procurement process to an open one, in order to compare value under each approach.[158]

The Commission considered similar kinds of reporting processes in the draft determination, such as requiring AEMO to publish high level information of any directly negotiated SRAS contracts entered into. The Commission ultimately decided against such an approach, on the basis that it would potentially result in the publication of sensitive information, with implications for the maintenance of the safety and physical security of the power system.[159] The Commission considered that maintaining the confidentiality of this information was in keeping with the Critical Infrastructure and Resilience strategy established under the Trusted Information Sharing Network (TISN).[160] In particular, the Commission noted guidance from TISN regarding the need

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155 Stanwell, 2nd round submission, p.3; Origin, 2nd round submission, p.3; AGL, 2nd round submission, p.2; Snowy Hydro, 2nd round submission, p.3.

156 Ibid.

157 AGL, 2nd round submission, p.2.

158 Snowy Hydro, 2nd round submission, p.3.

159 In this instance, "security" refers to the physical protection of the facilities that provide restart services and the capability to restart the system itself, rather than the more specialised use of the term power system security, which refers to the maintenance of voltage and frequency.

160 The Trusted Information Sharing Network (TISN) is established and managed by the Australian Government Attorney General's Department. TISN establishes a framework for businesses and government to share information on security issues relevant to the protection of critical infrastructure and the continuity of essential services in the face of all hazards. More information is available here: http://www.tisn.gov.au/Pages/default.aspx

to protect sensitive information related to critical infrastructure such as the power system.[161]

The Commission considers that the mechanisms proposed by AGL and Snowy Hydro could result in similar issues relating to the release of sensitive information. These approaches could also impact on AEMO's flexibility in the procurement process, reducing its capability to effectively meet the SRAS Procurement Objective.

Transparency regarding AEMO's procurement can be more effectively provided through the SRAS Guidelines and reporting requirements described in further detail in section 5.3.2 below. In combination, the Commission considers that these mechanisms strike the correct balance between providing the market with sufficient information regarding AEMO's procurement processes, while providing AEMO with sufficient flexibility to meet the SRAS Procurement Objective effectively.

Potential jurisdictional oversight of AEMO's procurement of SRAS

AEMO was generally supportive of the new procurement arrangements in its submission to the draft determination. However, it raised concerns that a potential lack of competition in SRAS markets may affect its ability to efficiently acquire SRAS to meet the SRS. AEMO therefore proposed that protections were needed to reduce the risk of consumers and generators paying for SRAS at non-competitive prices.[162]

AEMO proposed that it should have the discretion to not procure SRAS, if it considered that SRAS prices had been set at a non-competitive level. This discretion would only be exercised in consultation with the relevant jurisdiction.[163]

The Commission considers that a clear separation of organisational roles and responsibilities is central to the effective operation of the SRAS frameworks. The final rule clearly identifies that the role of the Reliability Panel is to determine the SRS, while AEMO's role is to procure SRAS to meet the SRS, at the lowest cost. AEMO's proposal would be contrary to this clear separation of roles, potentially resulting in the kinds of inefficiencies identified in section 5.1 above.

The Commission agrees that jurisdictions should have opportunity to provide input regarding the level of SRAS to be procured in each sub-network. However, this should occur during the Reliability Panel's determination of the SRS, when the restoration timeframes and reliability requirements are established for each jurisdiction.

Given these factors, the Commission has decided not to adopt AEMO's proposal.

161 Trusted Information Sharing Network, *Infrastructure Information in the public domain*, 2006, pp.2-4.

162 AEMO, 2nd round submission, p.3

163 Ibid.

5.3.2 Improved SRAS Guidelines

The Commission has made the following changes to the rules governing the SRAS Guidelines:

- introducing a requirement for AEMO to provide guidance to Registered Participants on the factors that it must take into account when making a decision to follow a particular type of procurement process to acquire SRAS to meet the SRAS Procurement Objective;
- introducing a requirement for AEMO, when developing the SRAS Guidelines, to consult with Registered Participants and other persons who in AEMO's reasonable opinion, have, or have identified themselves to AEMO as having, an interest in the SRAS Guidelines; and
- minor changes to the structure of the SRAS Guidelines.

In addition, the Commission considers that there is the potential for review by the Market Auditor of AEMO's compliance with the requirement to provide guidance on the factors that it must take into account when making a decision to follow a particular type of procurement process to acquire SRAS.

Guidance on factors AEMO's must consider when selecting an SRAS procurement process

Transparent processes help maintain accountability and provide the market with information to enable efficient decision making.

The Commission considers that AEMO should be required to provide clear guidance on how it will choose a procurement process to acquire SRAS. Clear guiding principles will help reduce uncertainty amongst market participants and will also help AEMO determine the optimal approach to procuring SRAS.

The final rule requires AEMO to include in its SRAS Guidelines:

> "guidance to *Registered Participants* on the factors that *AEMO* must take into account when making a decision to follow a particular type of procurement process to acquire *system restart ancillary services* to meet the *SRAS Procurement Objective*."

As discussed in box 5.4, this approach is consistent with that adopted in the United Kingdom, where the transmission network service provider National Grid is required to provide guidance to the market on the processes it will follow to procure restart services.[164] In selecting a procurement approach, National Grid currently considers a range of factors, including market structure, technical factors and locational requirements.[165]

164 Ofgem, *Transmission license standard conditions*, p.246.

165 National Grid, *Procurement Principles*, 1 April 2014.

The Commission also considers that clearly established processes are necessary to facilitate contact between AEMO and potential SRAS providers. The final rule therefore requires AEMO to include in its SRAS Guidelines:

> "a process for AEMO to follow for contacting a potential SRAS Provider to negotiate the provision of system restart ancillary services without a competitive tender process; and
>
> a process for a potential SRAS provider to contact AEMO to offer the provision of system restart ancillary services without a competitive tender process, which offer AEMO is in no way obliged to accept."

AEMO to consult with all interested stakeholders when developing the SRAS Guidelines

AEMO may amend the SRAS Guideline in accordance with the rules consultation procedures.

The Commission considers it is important that all interested stakeholders are consulted with when AEMO develops the SRAS Guidelines. Effective policy outcomes are more likely when all affected parties are consulted and decisions are made in a transparent manner.

Accordingly, the final rule introduces a requirement for AEMO, when developing the SRAS Guidelines in accordance with the rules consultation procedures, to consult with Registered Participants and such other persons who, in AEMO's reasonable opinion, have, or have identified themselves to AEMO as having, an interest in the SRAS Guideline.

Potential market auditor review of AEMO compliance with SRAS Guidelines requirements

Currently, clause 3.13.10 of the NER requires AEMO to appoint one or more market auditor(s) to carry out reviews of such matters as AEMO considers appropriate. The NER establishes a number of matters that must be included in the audit report. AEMO also has scope to include additional matters to be considered by the market auditor.

The Commission considers that AEMO may include the following in these additional matters to be considered by the market auditor:

1. AEMO's compliance with the NER requirement for AEMO to include in the SRAS Guidelines the factors it must take into account when selecting a particular SRAS procurement process; and
2. whether AEMO has followed its own SRAS Guidelines processes in selecting a procurement process to acquire SRAS.

Market participants may also suggest that AEMO include such matters in the market audit report, if this is considered beneficial.

Minor changes to the SRAS Guidelines

Currently, the NER requires AEMO to develop a number of guidelines that set out various operational aspects of SRAS in the NEM, including:

- **the SRAS description:** which establishes the technical and availability requirements of each type of system restart ancillary service;
- **the SRAS assessment guidelines:** which establish AEMO's approach to modelling and assessment of proposed restart services, as well as the processes for physical testing of restart services; and
- **the SRAS quantity guidelines:** which establish the procedure for determining the number, type and location of system restart ancillary services required to be procured for each electrical sub-network.

The Commission considers that these guidelines provide the market with necessary information. As discussed in the draft determination, the Commission considers these guidelines may be improved through several minor changes to the NER, including:

1. a general simplification of the wording of the relevant clauses;
2. clarifying that AEMO may prepare these guidelines as a single document, the SRAS Guidelines; and
3. including in the SRAS Guidelines a new requirement for AEMO to explain how it will meet the new aggregate sub-network level reliability requirement.

In its submission to the draft determination, AEMO suggested a change to the NER to incorporate the determination of boundaries of electrical sub-networks into the SRAS Guidelines. AEMO suggested that this would be in accordance with its established practice of determining or reviewing the boundaries as part of the package of guidelines for SRAS.[166]

The Commission considers that the current structure of the NER remains generally appropriate and does not prevent AEMO from determining the boundaries of electrical sub-networks as part of the SRAS Guidelines. The Commission has therefore decided not to make AEMO's proposed change to the SRAS Guidelines.

5.3.3 Improved AEMO reporting

The Commission considers that AEMO should be required to report annually on how it has discharged its obligations within the SRAS frameworks.

Transparent reporting maintains the accountability of bodies within the SRAS frameworks. It provides the market with confidence that each body has satisfactorily fulfilled its obligations and helps to highlight any areas of the current frameworks that may not be functioning optimally. The final rule is therefore consistent with the NEO as it will increase transparency regarding AEMO's processes, providing the market with better information to allow participants to make more efficient decisions.

166 AEMO, 2nd round submission, p.3.

In determining what information should be included by AEMO in this annual reporting, the Commission has considered the following factors:

- **Usefulness of the information:** There are administrative costs associated with undertaking annual reporting. Information should only be published where it is likely to provide a clear net benefit to the market generally.
- **Sensitivity of the information:** Much of the information relating to the type, location and specific capabilities of procured restart services is highly sensitive, both in terms of commercial and system security.
- **Effect of the information on competitiveness of SRAS markets:** Information is used by market participants to inform investment and operational decisions. It is necessary to consider how this information may affect the level of competition in current SRAS markets.

Given these considerations, the final rule requires AEMO's annual reporting to include the following:

- **Cost information reporting:** the total cost of procuring SRAS in each sub-network and region, broken down into availability and usage charges.
- **SRS compliance reporting:** whether AEMO has been unable to procure the required quantities of SRAS to meet the SRS in any sub-network, including the reasons why the SRS was not met.
- **Procurement reporting:** information on the processes followed by AEMO for procuring SRAS for each electrical sub-network.

In its submission to the draft determination, AEMO suggested that SRS compliance and procurement reporting should not take place on an annual basis. AEMO suggested that this reporting should instead only occur where its SRAS contracted positions have changed.[167] The Commission acknowledges AEMO's comment, but considers that annual reporting is necessary to deliver transparent and up to date information to the market. The costs associated with delivering this reporting annually are also unlikely to be substantial.

Cost information reporting

AEMO is currently required to publish information on the cost and quantities of SRAS procured in each sub-network area, at the conclusion of each tender. This information includes:

- the total estimated annual SRAS costs, broken down into availability and usage charges, for each sub-network; and
- the number of restart services acquired for each sub-network.

The final rule lessens the requirement on AEMO to publish information on the cost and quantities of SRAS procured in each sub-network. While AEMO will report annually on the cost of procured SRAS in each sub-network, this reporting will not include the quantity of SRAS procured in each sub-network. The Commission considers that this will increase the degree of competitive pressure in SRAS markets.

167 AEMO, 2nd round submission, p.4.

Information on the prices and quantities of SRAS can be used by SRAS providers to inform investment decisions. Higher prices in a sub-network provide a signal that new SRAS investment may be needed in that sub-network. New SRAS providers may also make use of this information when determining the "price to beat" to win market share.

Pricing and quantity information can also be used by SRAS providers when developing tendering strategies. In particular, this information may be used by SRAS providers to develop a better estimate of their competitors' offers. This may encourage an SRAS provider to "price up" toward its estimate of its next competitor's price. Such an outcome is more likely to occur where competition in SRAS markets is limited.

The Commission therefore considers that a trade-off must be made between these two potential uses of information. This trade-off is influenced by the degree of competition in a given market. As discussed in Appendix C, current SRAS markets do not appear to be strongly competitive. The Commission therefore considers that the amount of information published regarding SRAS prices and quantities should be reduced.

The final rule requires AEMO to report only the total cost of SRAS in each sub-network and region. This will continue to provide sufficient information to inform efficient investment decisions, while reducing the potential for non-competitive outcomes in SRAS markets. AEMO will no longer be required to report on the total quantity of SRAS procured in each sub-network. As AEMO will now have the ability to procure SRAS outside of a defined tender timeframe, it will be required to report annually on the total cost of SRAS in each sub-network

A number of stakeholders commented on this change in submissions to the draft determination.

AGL, Snowy Hydro and GDF Suez were opposed to removing the requirement for AEMO to report on quantities of SRAS procured in each sub-network.[168] AGL suggested that other measures introduced in the draft rule would be sufficient to encourage competition and would limit opportunities for strategic bidding. AGL and Snowy Hydro also suggested that limiting information may dissuade new entry into SRAS markets.[169]

The Commission acknowledges that reducing the amount of information published by AEMO could influence investment decisions in SRAS markets. However, AEMO will still be required to report annually on the total cost of SRAS in each sub-network. The Commission considers that this information will be sufficient to provide an indication to the market regarding the need for new investment in SRAS in specific sub-networks.

The Commission also notes AGL's comments regarding the impact of the other changes in the final rule and their impacts on strategic bidding. While the Commission agrees that these other measures should have a positive impact on levels of competition, changes to SRAS quantity reporting are central to driving increased competitive pressures in SRAS markets.

168 AGL, 2nd round submission, p.3; Snowy Hydro, 2nd round submission, p.1; GDF Suez, 2nd round submission, p.2.

169 AGL, ibid.; Snowy Hydro, ibid.

SRS compliance reporting

The Commission considers that AEMO should be required to report annually on whether it has met the SRS in each sub-network. This reporting will provide the market with information regarding AEMO's ability to discharge its key requirement within the SRAS frameworks.

The final rule requires AEMO to report on:

- any electrical sub-network where system restart ancillary services were not acquired by AEMO to a level satisfactory to meet the SRS, and
- the reasons why the SRS was not met.

The Commission considers that this reporting will help provide the market with confidence that AEMO has used reasonable endeavours to procure the required quantities of SRAS to meet the SRS. It will also help to identify any areas of the NEM where the SRS has not been met, and the key reasons for this. This information is likely to be of particular interest to stakeholders in relevant jurisdictions. It may also inform the Reliability Panel's annual reporting on SRAS, which forms part of its existing annual market performance review.

In publishing this report, AEMO will need to consider the sensitivity of the relevant information that it publishes. For any sub-networks where AEMO has been unable to procure the required quantities of SRAS to meet the SRS, AEMO will consider matters of commercial and security sensitivity when reporting on the reasons why this has occurred.

Procurement reporting

As discussed in section 5.3.1, the final rule removes the requirement for AEMO to procure SRAS through a prescribed tender process. AEMO will be required to publish guidance on the factors that it must take into account when making a decision to follow a particular type of SRAS procurement process. This guidance will be provided as part of the SRAS Guidelines.

In conjunction with this requirement, the final rule also requires AEMO to publish an annual report on the processes that it has used to procure SRAS in each sub-network. This reporting will focus on the processes followed by AEMO, rather than reporting on which SRAS providers have been engaged to provide restart services.

The draft rule also required AEMO to report annually on the processes it had followed for testing and assessing the ability of any procured restart services to meet the system restart standard, including any assumptions in meeting these requirements, including any power system studies undertaken to assess the ability of procured SRAS to meet the SRS. In its submission to the draft determination, AEMO noted that as these processes and related assumptions are already set out in the SRAS Guidelines, it was unclear as to what additional information should be included in the annual reporting.[170]

The Commission agrees that this may result in some unnecessary duplication. The final rule therefore removes this requirement from AEMO's annual reporting.

170 AEMO, 2nd round submission, p.4.

5.3.4 Improved network business consultation and information gathering processes

In its rule change proposal, the Group of Generators highlighted the key role that network businesses play in the assessment of individual SRAS facilities and in AEMO's general assessment of the ability of procured services to meet the SRS.

The Commission agrees that network businesses play a central role in the procurement and the assessment of SRAS. The current rules already require network businesses to engage with SRAS providers to facilitate testing and resolve any issues related to the delivery of restart services. However, the existing rules provide no guidance regarding how AEMO and network businesses should engage during the SRAS procurement and assessment process, nor what information should be provided by network businesses to AEMO.

The final rule therefore imposes two new requirements for AEMO and network businesses:

- AEMO must consult with relevant network businesses to identify and resolve issues in relation to the capability of any proposed restart service.
- Network businesses must provide any information reasonably required by AEMO to assess the capability of a restart service to meet the SRS.

AEMO to consult with network businesses

Under the existing NER, there is no explicit requirement for AEMO to consult with network businesses during the SRAS procurement process.

The Commission considers that AEMO should actively consult with any relevant TNSPs and DNSPs when procuring and assessing the ability of any particular SRAS to meet the SRS. Both TNSPs and DNSPs have detailed operational knowledge of their own networks, practical information that should be considered by AEMO when undertaking the power system studies that will help it determine the ability of each service to meet the requirements of the SRS.

The Commission understands that AEMO already actively engages with several network businesses when procuring and assessing SRAS. Formalising this process in the NER will provide the market with better guidance regarding the central role of network businesses in the development of restart capability.

Origin Energy expressed support for the requirement for AEMO to consult with network service providers in its submission to the draft determination.[171]

Network businesses to provide AEMO with requested information

Under the existing NER, there is no requirement for network businesses to provide information to AEMO for the purposes of procuring and assessing restart services. The Commission understands that AEMO has requested information from various network businesses to inform its power system studies, and has met with mixed responses from different businesses.

171 Origin Energy, 2nd round submission, p.4.

The Commission considers that network businesses should provide AEMO with all information reasonably required by AEMO for the purposes of assessing whether procured SRAS is capable of meeting the SRS. This is necessary so that AEMO's assessment of restart services is as accurate and effective as possible.

The final rule therefore requires network businesses to provide any information that AEMO reasonably requires in order to assess the capability of a system restart service to meet the SRS. While there may be some costs for network businesses associated with meeting this requirement, these are unlikely to be substantial. In any case, the Commission considers that developing and providing this information to AEMO falls within the general responsibilities of network businesses as network operators.

5.4 Other changes

During its assessment of submissions and development of the final rule, a number of other minor changes to the NER were identified. These relate to:

- Existing clause 3.1.4 of the NER, that establishes market design principles;
- Existing clause 3.13.5 of the NER, that requires reporting of ancillary services costs; and
- Draft clause 3.11.10 included in the draft rule, that set out processes for dispatch of SRAS.

5.4.1 Existing clause 3.1.4: Market Design Principles

Currently, clause 3.1.4 of the NER establishes a number of market design principles, including that:

> "*ancillary services* should, to the extent that it is efficient, be acquired through competitive market arrangements and as far as practicable determined on a dynamic basis. Where dynamic determination is not practicable, competitive commercial contracts between *AEMO* and service providers should be used in preference to bilaterally negotiated arrangements"

The Commission considers that this clause should be amended to refer to *market* ancillary services, for the following reasons:

- Market ancillary services such as frequency raise or lower services are procured on a dynamic basis, as the need for these services reflects changing conditions in the power system. In contrast, non-market ancillary services such as SRAS and NSCAS are procured ahead of time to deliver a single, well defined service, such as restarting the power system, or increasing power transfer capability on a particular part of the power system.
- As discussed in section 5.3.1, the final rule seeks to provide AEMO with increased flexibility in SRAS procurement. It follows that AEMO should not be restricted in the NER to follow a specific process when procuring SRAS.

5.4.2 Existing clause 3.13.5: Reporting of ancillary services costs

Currently, clause 3.13.5 of the NER requires AEMO to report on the costs and quantities of ancillary services. Specifically, clause 3.13.5(b) states that:

> "*AEMO* must *publish* annually the quantities and types of *non-market ancillary services* covered under existing *ancillary services agreements*."

Clause 3.13.5(c)(1) then states that this information must include:

> "the actual costs and quantities associated with each type of *ancillary service* acquired over the preceding 12 months in respect of each *region*."

As discussed in section 5.3.3, the final rule removes the requirement for AEMO to publish information on the quantities of SRAS procured in each sub-network. This is necessary to maintain competitive pressure in SRAS markets.

In order to avoid a conflict with these new arrangements, the final rule amends clause 3.13.5(b) and 3.13.5(c)(1) to refer only to market ancillary services.

5.4.3 Draft clause 3.11.10: Processes for the dispatch of SRAS

In the draft rule, the Commission separated out a number of clauses that had previously referred to non-market ancillary services, into separate clauses for network support and control ancillary services and SRAS. This resulted in the creation of proposed clause 3.11.10, which referred to the dispatch of SRAS by AEMO.[172]

In its submission to the draft determination, AEMO identified that the matters addressed in proposed clause 3.11.10 are comprehensively covered in clauses 4.8.12 and 4.8.15 of the NER. AEMO stated that these requirements should only apply to network support and control ancillary services and other non-market ancillary services excluding SRAS.[173] Given that the procedures for dispatching SRAS will include confidential information, they are more appropriately included in the system restart plan established in clause 4.8.12 of the NER.

The Commission agrees with AEMO and the final rule deletes proposed draft clause 3.11.10.

5.5 2015 SRAS tender process

AEMO has commenced a process to procure SRAS for the period to commence on 1 July 2015. AEMO is procuring these contracts under existing clause 3.11.4A of the NER.

A number of generator stakeholders argued that there was some confusion in the market regarding the Commission's SRAS rule change and this tender process. A number of submissions to the draft determination proposed a delay in either the tender process or the implementation date of the final rule.

Stanwell commented that AEMO will not be considering a NEM-wide black system event in this round of procurement, as the revised SRS will not come into effect until

172 An equivalent clause, 3.11.6, was created for the dispatch of NSCAS.

173 AEMO, 2nmd round submission, p.3.

after it concludes.[174] ERM suggested that the AEMC should request that AEMO take note of the proposed changes to the NER and to the SRS when undertaking its current procurement, in particular, the NEM wide versus single sub region system event.[175]

The Commission acknowledges AEMO must procure SRAS to meet its obligations under the current NER. This means that AEMO must meet the current NER, which in turn requires it to meet the current SRS. The AEMC cannot direct AEMO to take account of rules that have not yet come into effect, or a System Restart Standard that does not yet exist.

AGL, Snowy Hydro and Alinta suggested that current SRAS contracts should be extended until such time as the new SRAS frameworks can be implemented.[176] The Commission understands that AEMO has already used all extension options built into the SRAS contracts that were procured in the last tender round. AEMO is therefore unable to extend these contracts on a bespoke basis, as this would put it in breach of the current NER requirement for it to procure SRAS through an open tender process.

Hydro Tasmania suggested that the AEMC delay implementation of all components of the final rule until the SRAS contracts that AEMO is currently procuring expire. At a minimum, Hydro Tasmania suggested 2018 as an appropriate date.[177] The Commission considers that an implementation date of 2018 would delay the benefits of the rule change to consumers. The Commission does not consider that this is justified by the issues raised by Hydro Tasmania.

174 Stanwell, 2nd round submission, p.2.

175 ERM, 2nd round submission, p.2

176 Snowy Hydro, 2nd round submission, p.3.; Alinta, 2nd round submission, p.4.; AGL, 2nd round submission, p.3.

177 Hydro Tasmania, 2nd round submission, p.4.

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
MCE	Ministerial Council on Energy
NEL	National Electricity Law
NEO	National Electricity Objective
NMAS	Non-market Ancillary Services
NSCAS	Network Support and Control Ancillary Services
SRAS	System Restart Ancillary Services

A Summary of issues raised in submissions

The Commission has addressed most of the issues raised in stakeholder submissions in the final determination. This section addresses some of the issues raised in submissions to the consultation paper and to the draft determination that were not directly addressed in the determination.

Stakeholder	Issue	AEMC response
GDF Suez (Consultation paper submission)	The Reliability Panel should be required to consult on development of the SRS in accordance with the standard rules consultation procedures.	The Commission considers that the Reliability Panel's existing processes provide adequate transparency and accountability in the development of the SRS.
GDF Suez (Consultation paper submission)	GDFSAE supports the removal of primary and secondary restart definitions, although it might lead to some existing (cheaper) SRAS sources no longer qualifying. This could potentially result in higher SRAS costs...Clear guidelines are necessary to provide potential SRAS providers with guidance regarding what factors will be taken into account when assessing potential SRAS sources.	The Commission considers that the removal of the definitions of primary and secondary services should not reduce the likelihood of lower reliability or cheaper sources of SRAS qualifying to provide restart services. If anything, the Commission considers that relaxation of the current definitions should expand the potential range of restart services.
Grid Australia (Consultation paper submission)	AEMO's proposed use of dynamic system modelling would provide some additional certainty regarding the ability of procured SRAS to restore the system. However, AEMO's proposal may be limited to specific SRAS and may not extend to modelling the system and assessment of critical loads and other circumstances.	The Commission considers that the form of AEMO's power system modelling can be addressed as part of the development of the SRAS Guidelines. Under the Commission's draft more preferable rule, the SRAS Guidelines will be developed by AEMO in accordance with the rules consultation procedures and stakeholders will be able to provide commentary on the appropriate form of power system modelling of SRAS through that process.
Macquarie generation (Consultation paper submission)	SRAS competition could be facilitated by publication of tender results at the sub-region level. This would provide more effective price signals.	The Commission considers that publication of cost and quantity data at this level of detail may further reduce the effectiveness of competition in those sub-networks where competition is already

Stakeholder	Issue	AEMC response
		relatively weak. This is discussed in more detail in Appendix C. The Commission also considers that the publication of tender results at the sub-network level could result in the release of confidential and sensitive information.
Macquarie generation (Consultation paper submission)	Reliance on directions power would be a mistake - in the absence of SRAS tenders, SRAS providers may decommission or mothball SRAS units.	The Commission considers that while AEMO has access to the use of directions powers in regards to SRAS, it is not likely that AEMO would rely on this power to meet its obligations under the SRS.
Macquarie Generation (Consultation paper submission)	There is currently some uncertainty regarding when AEMO would restore spot market function. Macquarie Generation argue that there is some risk that AEMO would prematurely restore the spot market to send price signals to encourage restoration of generators, rather than utilising SRAS. Macquarie Generation therefore calls for the introduction of a specific trigger in the NER which would define exactly when AEMO may resume spot market operations after a market suspension.	The Commission considers that issues relating to the suspension of the spot market are out of scope of this rule change.
Origin Energy (Draft determination submission)	The current Rules provide an opportunity for other persons, either businesses or jurisdictional bodies, to procure a restart service independently of AEMO. As businesses and jurisdictions would be ultimately accountable for the consequences of a major supply disruption they should, in principle, be afforded the opportunity to procure a restart service if they consider the number of procured SRAS as inadequate to minimise the costs of a major supply disruption and meet community expectations.	The NER make no reference to the procurement of SRAS by any party other than AEMO. The Commission considers that the current NER does not preclude any individual participant from acquiring any service if it wishes to do so. If a participant chose to do so, this would occur outside of the SRAS framework established in the NER.

B Legal requirements under the NER

This appendix sets out the relevant legal requirements under the National Electricity Law (NEL) for the AEMC in making this final rule determination.

B.1 Final Determination

In accordance with section 102 and 103 of the NEL, the Commission has made this final rule and associated final rule determination in relation to the rules proposed by:

- AEMO; and
- The National Generators Forum, AGL, Alinta Energy, Energy Brix, GDF Suez, Intergen and Origin Energy.

B.2 Consolidation of the rule change proposals

Under section 93 of the NEL, the Commission may treat two or more rule change proposals as one proposal, if it considers that it is necessary or desirable to do so.

The Commission decided to consolidate these two rule changes proposals as both relate to the same subject matter and deal with related aspects of the SRAS frameworks. There is also some overlap in terms of the issues considered.

B.3 Power to make the rule

The Commission is satisfied that the final rule falls within the subject matter about which the Commission may make rules.

The final rule falls within section 34 of the NEL because it relates to:

- the operation of the NEM (section 34(1)(a)(i));
- the operation of the national electricity system for the purposes of the safety, security and reliability of that system (section 34(1)(a)(ii)); and
- the activities of persons (including Registered participants) participating in the NEM or involved in the operation of the national electricity system (section 34(1)(a)(iii)).

B.4 Commission's considerations

In assessing the rule change proposals, the Commission considered:

- the Commission's powers under the NEL to make the rule;
- the rule change proposals;
- the fact that there is no relevant Ministerial Council on Energy (MCE) Statement of Policy Principles;[178]

178 Under section 99(2)(a)(iv) of the NEL, the AEMC must have regard to any relevant MCE statement of policy principles in making a rule. The MCE is referenced in the AEMC's governing legislation and is a legally enduring body comprising the Federal, State and Territory Ministers responsible for

- submissions received during the first and second rounds of consultation; and
- the Commission's analysis as to the ways in which the final rule will or is likely to, contribute to the NEO.

B.5 Power to make a more preferable rule

Under section 91A of the NEL the Commission may make a rule that is different (including materially different) from a market initiated proposed rule, if the Commission is satisfied that, having regard to the issues or issues that were raised by the market initiated proposed rule, the final rule will or is likely to better contribute to the achievement of the NEO.

As discussed in Chapters 5, the Commission has determined to make a more preferable final rule. The reasons for the Commission's decision are set out in Chapter 5.

B.6 Civil Penalty Provision

The final rule amends the current clauses 3.11.5(o) and 3.11.7(a) of the NER, now numbered as clauses 3.11.2(f) and 3.11.5(l). These NER clauses are currently classified as civil penalty provisions under clause b(1) and Schedule 1 of the National Electricity (South Australia) Regulations (Regulations). The Commission's final rule also introduces new clause 3.11.9(d).

The Commission may recommend that these clauses be retained and classified as civil penalty provisions but must notify the COAG Energy Council of the policy rationale for this course of action.

The Commission considers that clause 3.11.9(d) ought to be classified as a civil penalty provision because this clause is equivalent to the obligation currently imposed on NMAS Providers, and classification of this provision as a civil penalty provision would encourage compliance by relevant parties.

The Commission notes that until any amendments to the Regulations are made and come into effect, the above provisions will have no civil penalty consequences.

B.7 Others

Under section 91(8) of the NEL, the Commission may only make a rule that has effect with respect to an adoptive jurisdiction if satisfied that the proposed rule is compatible with the proper performance of AEMO's declared network functions. The Commission considers that the final rule is compatible with AEMO's declared network functions because it does not affect AEMO's performance of those functions.

Energy. On 1 July 2011 the MCE was amalgamated with the Ministerial Council on Mineral and Petroleum Resources. The amalgamated Council is now called the COAG Energy Council.

C SRAS procurement: Commission's considerations

This appendix sets out the detail of the Commission's analysis of current arrangements and key issues in SRAS procurement.

C.1 Current arrangements for SRAS procurement

Non market ancillary services (NMAS) are procured by AEMO. NMAS includes SRAS as well as network support control ancillary services (NSCAS).[179]

The process for procurement of NSCAS and SRAS is set out in clause 3.11.5 of the NER. AEMO is required to procure both services via an open tender process. AEMO must develop tender Guideliness that set out how it will call for expressions of interest for potential NSCAS and SRAS providers and issue invitations to tender. AEMO is also required to publish information on the annual cost of NSCAS and SRAS.

The NSCAS procurement process includes an option for arbitration. This includes an assessment by AEMO of the competitiveness of NSCAS tenders. If this tender process is deemed to be non-competitive, the NER requires AEMO and NSCAS suppliers to negotiate tenders in good faith, according to set principles. If agreement cannot be reached, AEMO or the NSCAS provider may refer the tender to the Dispute Resolution Adviser for arbitration, under NER clause 8.2.[180]

For the procurement of SRAS, NER clause 3.11.5(p) states that disputes regarding SRAS are to be dealt with under the clause 8.2 provisions but provides no further detail. This clause also explicitly excludes consideration of the price of SRAS from arbitration.

C.2 Increases in SRAS costs

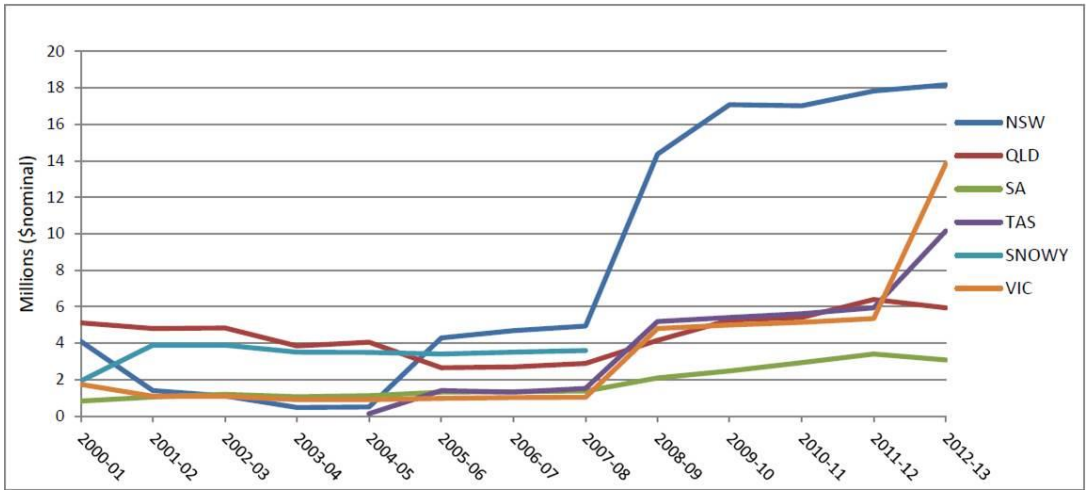
In its rule change proposal, AEMO highlighted that the total cost of procuring SRAS has increased in recent years.[181] Over the last two SRAS tenders, total SRAS costs have increased from approximately $30.6 million in 2008/09 to $51.2 million in 2012/13 (nominal), with the largest increases occurring in New South Wales, Tasmania and Victoria.

179 NSCAS are procured to maintain or increase power flows on networks. They are normally procured by TNSPs, with AEMO only procuring NSCAS when it has identified a "NSCAS gap" in the quantities of NSCAS procured by TNSPs.

180 NER clause 8.2 requires the AER to appoint a person, or persons, to perform the functions of a Dispute Resolution Advisor. It also sets out the matters that may be considered in a dispute resolution and the process for resolution.

181 In this instance, the "cost" of SRAS refers to the aggregate cost of all of the services procured by AEMO to meet the SRS. These costs are the sum of the availability, testing and usage charges paid by AEMO to SRAS providers.

Figure C.1 Regional SRAS costs



Between the 2008 and 2012 tenders, the total quantity of SRAS procured in the NEM increased by one. These changes are highlighted in figure C.2, reproduced from AEMO's 2012 report on the cost and quantities of SRAS procured in the 2012 tender.[182]

Figure C.2 Changes in regional SRAS costs and quantities

Electrical Sub Network	No. of services (2008-2012)	No. of services (2012-2014)	Change in no. of services	2011-2012 ($M)	2012-2013 ($M)	% Change in cost
Queensland - North	2	1	-1	2.1	1.3	-36.3%
Queensland - Central	2	3	1	3.0	3.4	14.2%
Queensland - South	2	2	0	1.4	2.3	66.6%
New South Wales - North	3	3	0	10.2	11.5	12.2%
New South Wales - South	3	2	-1	11.5	10.7	-7.3%
Victoria - Latrobe Valley	1	2	1	1.8	6.1	245.8%
Victoria - North and West	0	1	1	0.0	3.9	
South Australia	3	3	0	3.4	3.6	5.7%
Tasmania - North	2	2	0	4.1	6.3	55.1%
Tasmania - South	1	1	0	1.9	3.1	57.1%
National Electricity Market	19	20	1	39.4	52.2	32.4%

Note:

1. The availability cost for 2012-2013 is estimated on the basis of the contracted level of performance for *SRAS* availability.
2. The testing cost for 2012-2013 assumes one successful test per annum.
3. The costs for 2013-2014 would approximate the 2012-2013 costs adjusted for consumer price index.

Taking into account the changes in total quantities and costs between the two tender rounds, the NEM-wide average unit cost of SRAS increased from around $1.61 million

182 Note that the table includes only availability and testing charges. For more information, see: AEMO, System Restart Ancillary Service tender process 2012: Report and notice in accordance with NER 3.11.5(l) and 3.13.5, July 2012.

in 2008/09 to $2.56 million in 2012/13. This represents an almost 60% increase in average unit cost between the two periods.

It should be noted that factors other than increases in SRAS quantities may have influenced price changes. For example, as suggested by the NGF, the abolition of the Snowy region in July 2008 and the end of a long period of lower SRAS prices may have contributed to the increase in SRAS prices. Other factors, such as the introduction of the carbon pricing mechanism in 2012 and the effects of the global financial crisis, may also have placed upward pressure on underlying SRAS costs.

C.3 Assessment of competition in SRAS markets

In assessing AEMO's proposal for the introduction of an arbitration option in SRAS procurement, the Commission has considered the degree of competition in SRAS markets and whether this was likely to result in any marked inefficiencies for consumers.

While significant, an increase in the cost of SRAS is not itself an automatic indication that SRAS markets are non-competitive. Given particular market conditions, SRAS providers may be able to earn temporary profits by winning tenders at prices that are above costs.[183] These profits create incentives for new SRAS providers to enter the market, increasing competition. Over time, an effectively competitive SRAS market will include trade-offs between higher prices and new investment, with prices over time tending to converge toward the long run marginal cost of providing SRAS.

Various market characteristics may influence the function and effectiveness of this process:

- **Market concentration and rivalry:** Competitive pressure can exist between existing SRAS providers, or may come from the threat of entry from potential competitors. This effect may be weakened if there is only a small number of existing providers in the first place. It may also be weakened if new competitors are either prevented from entering or are clearly unlikely to enter the market.
- **Choice:** AEMO, as the sole buyer of SRAS, should be able to exercise choice between different SRAS providers, or have the freedom to choose not to buy.
- **Information**: AEMO should have access and be able to use information to inform its choices when procuring SRAS.

There is evidence that current SRAS markets may not strongly display all of these characteristics.

C.3.1 Market concentration

The effectiveness of competition will be influenced by the number of competitors that are active in a market. While concentrated markets may display some competitive characteristics, an increase in the number of active competitors will generally increase the degree of competitive pressure faced by each SRAS provider.

183 In this context "cost" refers to the fixed and variable costs of individual SRAS providers. This should not be confused with the definition of the total SRAS costs faced by AEMO, being the aggregate cost of all of the services procured by AEMO to meet the SRS

AEMO have suggested that there are a limited number of providers in current SRAS markets. To assess the degree of concentration in SRAS markets, AEMO considered whether it would have been able to meet its SRAS obligations in each sub-network, with any one tender discarded. Where this was not possible, AEMO considered the tender process for the sub-network to be non-competitive. Using this assessment framework, AEMO found that no sub-networks were competitive in the 2008 tender, while only the Latrobe Valley sub-network was found to be competitive in 2012.[184]

AEMO also indicated that due to a shortage of acceptable offers received in the 2012 SRAS tender, it was unable to meet all of its SRAS obligations in seven of the ten sub-networks.[185] In each case, this was due to the fact that AEMO did not receive enough tenders to successfully meet all of the requirements set out in the SRS and its own SRAS Guidelines.

The Commission considered whether other measures might give an indication of the concentration of SRAS markets. One such approach is the Herfindahl-Hirschman Index (HHI), which measures the number and size of firms relative to a market.

Box C.1 Herfindahl-Hirschman Index

The HHI is calculated as the sum of the squares of each SRAS provider's market share (expressed as a percentage). It returns values ranging from zero to 10,000, which reflect market types that range from a large number of unique providers to a single dominant provider.

The HHI is generally used as a high level indicator of the likely degree of competition between the firms in a market. As a guide, the Australian Competition and Consumer Commission uses HHI values above 2000 as an indicator of potential impacts on competition when assessing mergers.[186]

To develop an HHI for SRAS markets, the AEMC identified all the unique providers who tendered for SRAS in each region in 2012, including both successful and unsuccessful tenderers. Market share was determined as the number of unique SRAS facilities owned by each firm in each region, expressed as a percentage of the total number of SRAS facilities in the region.[187] As shown in Table C.1 below, in all cases the HHI is above 2000, and is markedly higher in Queensland and Tasmania.

184 This assessment approach is also used by AEMO in assessing whether NSCAS tenders are competitive. See: AEMO, *SRAS Rule change proposal*, p.8; and AEMO, *System Restart Ancillary Services - Draft Report*, May 2013, p.17.

185 AEMO, S*ystem Restart Ancillary Service tender process 2012: Report and notice in accordance with NER 3.11.5(l) and 3.13.5*, July 2012. Note that AEMO has since revised the total number of sub-networks down to six.

186 ACCC, *Merger Guidelines*, November 2008, p. 37.

187 A regional approach, rather than sub-network, was taken in order to simplify analysis. A sub-network approach would return higher HHI values

SRAS HHI measure

Region	HHI
New South Wales	2,777
Queensland	5,000
South Australia	3,750
Victoria	2,222
Tasmania	10,000

The Commission considers that AEMO's evidence and these HHI results indicate that current SRAS markets may be relatively concentrated, although the degree of this concentration varies between regions. This may not be conducive to strong rivalry between firms currently active in SRAS markets.

C.3.2 Threat of new entry

The threat of new entry will also affect the degree of competitive pressure in a market.

Several stakeholders suggested that this threat is a significant constraint on existing SRAS providers' pricing strategies, as the relatively low price of investing in new SRAS facilities means that new entry remains a credible threat. Stakeholders advised the Commission that the total cost associated with investing in a new fast start diesel generator (a typical facility capable of providing SRAS) is around $1 million per MW of capacity provided. Given that the capacity of such SRAS units may be as small as 10MW - 15MW, this is a relatively small cost outlay when compared to the typical cost of investment in generation units.

AEMO has also identified a number of publicly announced new gas turbine generation projects, several of which have progressed to the stage where a development site has been acquired.[188] All of these facilities could potentially be adapted to provide SRAS in the future. In addition, a review of the list of the existing generation fleet shows that there are many existing units that may fit the general requirements of potential SRAS facilities, following relatively low cost adaptations.

A review of the two most recent SRAS tender processes indicates that two new restart services were provided between 2008 and 2012. This is discussed in Box C.2.

188 More information can be found at: http://www.aemo.com.au/Electricity/Planning/Related-Information/Generation-Information

Box C.2 New entry in SRAS markets: 2008-2012

The SRAS tender process is confidential and detailed information on the results of each tender are not published. This includes the individual units contracted and the price of individual services. However, stakeholders have advised the Commission and provided confidential information regarding levels of new entry in SRAS markets between the 2008 and 2012 tenders.

Two new unique SRAS facilities were offered in 2012. The services provided by these facilities were not accepted by AEMO, on the basis that they were not required to meet the SRS in that particular sub-network.

There were several other "new" services offered between the two tender periods. These new services were in fact changes to the definition of existing services, such as changing from a secondary to a primary service, changing the number of larger units to be restored, or changes to ownership of existing facilities.

The Commission acknowledges that there appears to have been some limited new entry in SRAS markets and that the threat of further new entry remains theoretically possible.

Despite this, current market conditions may reduce the extent and probability of this threat. This may have the effect of reducing the competitive constraints faced by current SRAS providers, at least in the short to medium term.

Outcomes in energy markets are particularly likely to influence the probability of new entry in SRAS markets. Factors such as low demand, a relative surplus of generation capacity and uncertainty over future environmental policies have all reduced the need for new investment in energy markets. This in turn reduces the likelihood of new entry in SRAS markets, as SRAS facilities are typically built as an add-on to much larger units designed to supply the energy market.

The likelihood of new entry may also be reduced by the presence of regulatory requirements. Current arrangements in the NER, the SRS and AEMO's SRAS Guidelines place a number of specific regulatory requirements on AEMO and on SRAS providers.[189] For example, the SRS currently includes specific facility level reliability requirements that SRAS providers must meet, while the NER explicitly requires AEMO to focus on the procurement of primary services. Meeting these requirements may add to the costs of entering SRAS markets.

The Commission has made a final rule to reduce the specificity of what facilities may provide SRAS. This may expand the range of potential services that can be used by AEMO to provide SRAS. Further detail of these recommendations is provided in Chapter 5.

Various stakeholders have also suggested that AEMO's current approach to SRAS contracting may deter new entry in SRAS markets. Stakeholders suggested that in previous SRAS tenders, AEMO has finalised and executed SRAS contracts only a short time before service is due to commence. Relatively short contract periods may also

189 The Commission notes that AEMO has now completed a review of its Guidelines which resulted in a number of simplifications and improvements to these documents.

provide insufficient certainty regarding the ability to recover costs, potentially increasing prices.

The Commission has made a final rule that will expand the range of options available to AEMO to procure SRAS. The Commission considers that AEMO could make use of this capability to enter into contracts with longer lead times or longer terms. Further detail of these recommendations is provided in Chapter 5.

Given these factors, the Commission considers there is some evidence that current SRAS markets may be reasonably concentrated and that the threat of new entry may be subdued, at least in the short term. However, the Commission also considers that there is no evidence to suggest that these barriers to entry are likely to be permanent. As such, new entry in SRAS markets remains a viable threat, in the medium to longer term.

C.3.3 Choice

In effectively competitive markets, buyers are able to exercise choice and select from a range of products offered by different firms. Buyers are also free to choose not to buy, if their estimation of the value of the products on offer is less than the price. The ability for buyers to exercise choice is therefore a central driver of effective competition.

AEMO is the sole buyer of SRAS. AEMO's capability to exercise choice in its role is constrained by a number of regulatory obligations established in the NER, the SRS and in its own SRAS Guidelines.

Under current NER arrangements, AEMO is required to use "reasonable endeavours" to source SRAS, to meet both the SRAS Objective and the SRS and to focus its procurement on sourcing primary SRAS. The SRS then requires AEMO to procure SRAS that meets specific restoration timeframes, reliability levels and particular strategic and geographic diversity requirements.

Historically, AEMO's own guidelines also established a number of specific requirements that constrained its choice when procuring SRAS. Most notably, the SRAS description has historically included a detailed set of functional criteria for primary and secondary SRAS, while the SRAS quantity guidelines required AEMO to procure a minimum of two SRAS in each sub-network.[190]

These requirements may constrain AEMO's capability to exercise choice when procuring SRAS. This reduces the extent of AEMO's countervailing power, which may further weaken the competitive pressures faced by SRAS providers.

The Commission's final rule allows AEMO to procure SRAS on the basis of meeting a sub-network level reliability requirement. The final rule also removes the definitions of primary and secondary restart services. This may help to expand the range of potential services available to AEMO. Further detail of these recommendations is provided in Chapter 5.

190 The Commission notes that AEMO's recent changes to its SRAS Guidelines have simplified these documents, focussing AEMO's procurement on meeting the SRS and removing a number of the more detailed requirements.

C.3.4 Information

Information is used by both buyers and sellers in a transaction. Information asymmetries, where one party has access to more or better quality information, may provide that party with an advantage in the transaction. Systemic information asymmetries between different market participants may reduce the general effectiveness of competition in a market.

As discussed above, AEMO faces a number of regulatory obligations in terms of its procurement of SRAS. These obligations are included in public documents such as the NER, SRS and the SRAS Guidelines.

AEMO is required to publish the total estimated cost of SRAS for each sub-network, as well as the number of SRAS procured for each sub-network.[191] SRAS providers may make use of this information when structuring their tenders and pricing strategies.

In contrast, the only information available to AEMO is that provided by SRAS tenderers in their tender documents. AEMO has access to very little other definitive information that it might use to inform its negotiations with SRAS providers, such as information regarding the costs to provide each service.

These information asymmetries may weaken AEMO's negotiating position and countervailing power in SRAS markets, reducing the extent of competitive pressure faced by SRAS providers.

The Commission's final rule reduces the granularity of the information on SRAS costs and quantities that AEMO is required to publish. Further detail of these recommendations is provided in Chapter 5.

C.3.5 Summary of assessment of competition in SRAS markets

There is some evidence that SRAS markets may not be strongly competitive at present.

SRAS markets appear to be reasonably concentrated, with a small number of providers in each sub-network. The threat of new entry also appears to be subdued at present, primarily reflecting conditions in energy markets. However, there is no evidence to suggest that these barriers to new entry are permanent. The Commission's final rule also makes a number of changes that may expand the scope of potential sources of SRAS.

Limited choice and information asymmetries may reduce AEMO's countervailing power in SRAS markets, reducing the degree of competitive pressure faced by SRAS providers. The final rule increases the options available to AEMO when procuring SRAS and increases the degree of competitive pressure by reducing the probability of non-competitive bidding in SRAS markets.

191 NER cl. 3.11.5(n).

C.4 Assessment of AEMO's proposed arbitration model for SRAS procurement

In assessing AEMO's proposed rule, the Commission has weighed the costs and inefficiencies associated with any SRAS market competition issues against the costs and risks of introducing a price arbitration option into SRAS procurement.

C.4.1 Magnitude of impact of any weakness in the competitiveness of SRAS markets

In its rule change proposal, AEMO identified a lack of competition in SRAS markets as being a key driver of increases in SRAS costs. While it is true that SRAS costs increased sharply between the 2008 and 2012 tenders, they continue to make up a very small portion of the end use charges faced by consumers.

In 2012/13, total SRAS costs were $51.2 million. Given the total volume of energy traded in the NEM in that year, this amounted to an average charge of $0.28/MWh.

Expressed another way, while the total value of NEM wholesale energy traded in 2012/13 was $11.4 billion, the total cost of SRAS in 2012/13 represented around 0.45% of this value.

Given the small scale of SRAS costs, any potential dis-benefit to consumers is likely to be outweighed by the costs related to the introduction of AEMO's price arbitration option. These costs and risks are discussed below.

C.4.2 AEMO's proposed price arbitration model

AEMO's proposed SRAS arbitration option would involve extending the current NSCAS procurement processes to SRAS. The current NSCAS procurement processes allow for arbitration by the Dispute Resolution Adviser on all aspects of an NSCAS tender, including price. The current arrangements for NSCAS are summarised in Box C.3.

Under AEMO's proposed arbitration model, AEMO would determine whether SRAS tenders received in a sub-network were competitive. AEMO and tenderers would then be required to negotiate in good faith, taking into account the SRAS Objective. If AEMO and tenderers could not reach agreement on terms and conditions, AEMO or the tenderer could then refer the tender to the Dispute Resolution Adviser for arbitration.

This model reflects the arbitration option that exists in the NSCAS procurement process. The Commission understands that, to date, this arbitration option has not been applied. It is therefore unclear as to how an SRAS arbitration would actually operate. The Commission understands that under this model, the Dispute Resolution Adviser would appoint an expert panel to assess the tender, in a similar vein to the assessment of claims for compensation under NER clause 3.14.6.[192] This expert panel would then

192 These provisions allow parties affected by the application of the administered price cap to claim for compensation for foregone operating costs. They have been used once in the history of the NEM, where the Dispute Resolution Adviser appointed a three member expert panel to assess a claim for compensation from Synergen Power. The costs of appointing the expert panel involved were a substantial portion of the total compensation finally awarded to Synergen Power. More information

determine whether the price of SRAS in a given tender was "reasonable", potentially setting an alternative tender price.

Box C.3 Network Support and Control Ancillary Services

Network Support and Control Ancillary Services (NSCAS) are procured by TNSPs or AEMO to maintain power system security, reliability and the power transfer capability of the transmission network.

NSCAS consists of three main services: voltage control, network loading and stability control.

Various pieces of equipment can be installed, or equipment operating regimes implemented, to provide these services. This can be done by a range of participants, including NSPs, generators or market customers.

Typically, TNSPs will install equipment or procure services to deliver necessary levels of NSCAS. As part of its National Transmission Network Development Plan, AEMO is also required to consider whether there any "gaps" in the quantity of NSCAS procured by TNSPs. Where such a gap has been identified and TNSPs have failed to procure the required quantity of NSCAS, AEMO may act as NSCAS procurer.

To date, AEMO has acted as NSCAS procurer on one occasion, procuring NSCAS from Snowy Hydro and Transgrid to provide voltage control services.[193] The NSCAS procurement arbitration option was not exercised in the procurement of these services.

The Commission considers that there are several risks associated with this model. It is also likely to be difficult and costly to implement.

The very presence of an arbitration option in SRAS procurement may create substantial downside risk for SRAS providers. This may discourage new providers from entering, or existing suppliers from re-offering. Furthermore, the arbitration process itself would likely require the assessment of detailed and complex cost information. There is a real probability of errors being made during the assessment of such claims, potentially resulting in the determination of lower than efficient prices. This may further discourage efficient levels of new entry, or encourage existing SRAS providers to exit the market.

The Commission also considers that to make a price arbitration option workable, it would be necessary to introduce a mechanism to prevent an SRAS provider from simply withdrawing a tender that was referred to the Dispute Resolution Adviser for arbitration.[194] Such a provision could be included as part of the tender process itself and could require the tenderer to keep their offer available for a defined time. The

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can be found here: http://www.aemc.gov.au/Markets-Reviews-Advice/Compensation-claim-from-Synergen-Power

193 Australian Energy Market Operator, *2013 National Transmission Network Development Plan*, AEMO, 2013, Appendix B.4.

194 This was the general approach proposed by NEMMCO in the 2006 SRAS rule change, where SRAS tenderers were prevented from withdrawing once AEMO had issued a particular notice.

Commission considers that the existence of a provision of this type would likely act as a further disincentive to potential SRAS providers from tendering.

The actual process of arbitrating a price is also likely to be costly. The Commission considers that there are likely to be substantial costs associated with convening a suitably experienced expert panel to advise each arbitration. AEMO and tenderers are also likely to face substantial legal costs due to participating in the arbitration. These costs would then be multiplied by the number of SRAS tenders referred to arbitration. In aggregate, these costs could substantially erode any savings benefits otherwise achieved through an arbitration process.

Given these factors, the Commission has decided not to include a price arbitration option in the final rule. As discussed above, the costs and risks of introducing this option outweigh any potential consequences of the problem they are intended to address.

D SRAS cost recovery: Commission's considerations

D.1 Current arrangements

In the NEM, SRAS cost recovery occurs on a smeared, NEM wide basis. This means that the total, NEM-wide costs of SRAS are recovered equally from all regions.

These costs are also recovered on a 50/50 basis from market generators (including market small generation aggregators) and market customers. This recovery is conducted on a pro-rated basis according to respective energy generation or consumption.

This approach to cost recovery may result in differences between the cost of procuring SRAS, and the SRAS charges recovered from participants in that region.

Figure D.1 shows how quantities of generation and consumption can determine the SRAS charges recovered from participants in a region, and how this may differ from the cost of actually sourcing SRAS to meet the SRS in that region.

In this example, the total cost of procuring SRAS is $10 million, with $3M, $5M and $2M of that total attributable to providing restart services for regions A, B and C respectively. Total energy generation and consumption is 1000MWh across all three regions, with 150MWh, 650MWh and 200 MWh generated and consumed in each region respectively.

While the cost of providing SRAS to meet the SRS in region A is $3 million, generators and consumers in that region generate and consume only 15% of the total energy. Accordingly, the SRAS charges recovered from participants in that region are only $1.5 million. In contrast, while the cost of providing SRAS in region B is $5 million, the SRAS charges recovered from participants in that region total $6.5 million.

Figure D.1 SRAS cost recovery

D.2 Regional benefits recovery and generator incentives

Moving from the current, smeared approach to a regional benefits cost recovery may either increase or decrease the SRAS charges faced by participants in a region. This largely depends on the current degree of divergence between regional SRAS charges and the cost of procuring SRAS to meet the SRS in that region.

In those regions where SRAS charges are currently higher than the cost of SRAS, moving to regional benefits approach to cost recovery may lower SRAS charges.

Although participants in these regions will benefit from lower SRAS production costs, this is unlikely to markedly change incentives. As the quantity of SRAS demanded is determined by the SRS, any change in the price of SRAS is unlikely to have a significant effect on the quantity demanded. A change in price is therefore unlikely to drive any particular allocative efficiency gains.[195] Similarly, a reduction in the price of SRAS is unlikely to have any substantial impact on generator operational or investment decisions.

In those regions where SRAS charges are currently lower than the cost of procuring SRAS, moving to a regional benefits cost recovery approach may increase SRAS charges. This may change the incentives faced by generators.

Generators typically face two sets of related incentives in SRAS markets. Firstly, the prospect of earning revenues may encourage generators to offer SRAS and to invest in SRAS facilities. Secondly, as generators also bear half of the total cost of SRAS through the SRAS charges they pay, increases in these charges may encourage generators to offer and invest in SRAS, in order to manage their exposure to SRAS charges.

This second incentive operates by recovering a portion of the total cost of SRAS from the same parties that created that cost in the first place. This effect, and its consequences for generator incentives, is described in Box D.1 below.

Under the current, NEM-wide approach to cost recovery, the effect described in box D.1 may be weakened. Smearing the costs of SRAS across the NEM may mean that generators in a region do not necessarily face the cost consequences of their own bidding strategies.

In contrast, moving to a regional benefits cost recovery approach will sharpen this effect, at least in those regions where SRAS charges do not currently reflect costs. This may drive a number of beneficial outcomes for consumers. Firstly, competition in SRAS markets may be enhanced, with SRAS providers facing stronger incentives to price competitively in order to win the tender process. Secondly, potential SRAS providers may face stronger incentives to enter the market, driving efficient levels of investment in SRAS over the long term.

195 Allocative efficiency is more likely to be achieved where the price of a good or service is equal to the marginal cost of producing another unit of that good or service. Aligning the price of a good with the marginal cost of production will result in an optimal quantity of the good or service demanded/consumed.

Box D.1 SRAS cost recovery - a three generator example

Consider a region in which there are three potential SRAS providers: generators A, B and C.

Two system restart services are required in the region, and all of the three generators are tendering for the service.

Generators A and B may profit if they are able to win the tender process and charge a high price. Given that both market customers and generators face SRAS charges, these profits will translate into payments from market customers to generators A and B, as well as from generator C to generators A and B.

Generator C may therefore face incentives to win the tender, in order to avoid making payments to its direct competitors. To do so, it offers SRAS at a more competitive price, in order to win the tender and to reduce the potential for its competitors to earn significant profits if it loses. As competitors to generator C, generators A and B will face similar incentives that will influence their tendering strategies.

Other generators who are not currently SRAS providers may also face incentives to avoid making payments to their competitors. To do so, these generators may choose to enter the market by investing in SRAS facilities.

The key consequence of this effect is that SRAS providers are exposed to the consequences of their own tendering strategies. While winning higher prices in an SRAS tender may result in increased revenue for an SRAS provider, those revenues will also be eroded through the subsequent increase in SRAS charges faced by that generator.

D.3 Previous consultations

In April 2006 the Commission published the final determination of the System restart ancillary service arrangements and pricing under market suspension rule change. In that determination, the Commission decided that a NEM-wide approach to regional cost recovery was appropriate.

This section provides an overview of the issues considered in the 2006 determination and an explanation of why the Commission has decided to introduce a different approach to cost recovery in this final determination.

In its rule change proposal, the National Energy Market Management Company (NEMMCO, now AEMO) had proposed a regional approach to SRAS cost recovery. NEMMCO argued that a regional approach to cost recovery was justified because:

- the rules allow for the variation of the SRS between regions, with the possibility of a more onerous standard being applied in some regions. Any subsequent increase in the cost of SRAS in a region should then be recovered from participants in that region;
- limited prospects that SRAS in one region would be used to provide restart services in another region; and

- regional characteristics may result in material differences in SRAS costs.

In the final determination of the 2006 SRAS rule change, the AEMC decided to reject NEMMCO's proposal for regional cost recovery.

In that final determination, the AEMC considered that the simplicity of a smeared approach would reduce regulatory costs for AEMO and therefore the market as a whole. AEMO have now advised that the total costs of implementing regional cost recovery will amount to around $70,000. The Commission considers that this cost is likely to be outweighed by the benefits of regional cost recovery, such as increasing the degree of competition in SRAS markets and driving efficient investment in SRAS provision.

In 2006, the AEMC also considered that the potential for sub-network boundaries to cross regional boundaries could create problems for regional recovery. The Commission understands that AEMO's proposed regional benefit factors will now allow for SRAS costs to be allocated to regions by determining the extent to which each individual restart facility has actually benefited a region. This should mean that total SRAS costs can be allocated to different regions, regardless of the location of sub-network boundaries.

Finally, in 2006 the AEMC considered that an SRAS located in one sub-network could be used to restore a neighbouring sub-network. The AEMC therefore considered that the shared benefit provided by such an SRAS facility would be better reflected through a smeared cost recovery approach. The Commission considers that the development of RBFs by AEMO is intended to accurately allocate the costs of an SRAS to the region that it benefits. In particular, AEMO have advised that separate RBFs will be calculated for the allocation of the availability and usage charges of specific restart services. This means that if an SRAS located in one region is actually called upon to provide a restart service that benefits another region, the usage charges of that service will be allocated to the benefiting region.