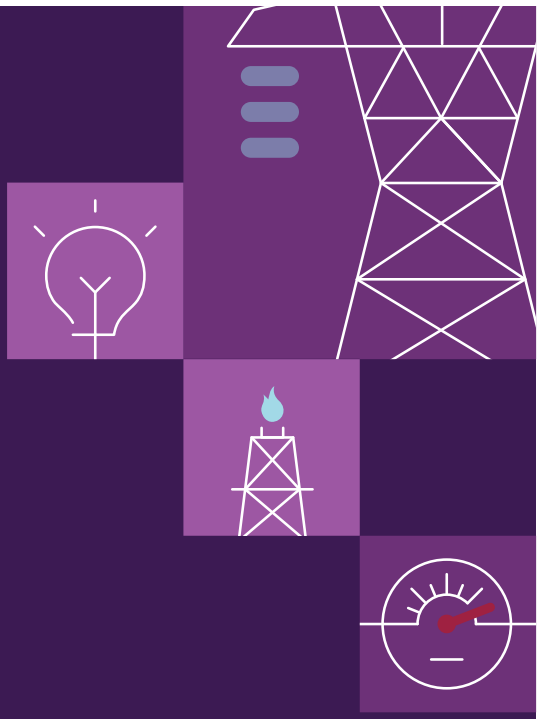
Regional Benefit Ancillary Services Procedures



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Current version release details

Version	Effective date	Summary of changes
5.0	1 July 2015	Regional benefit factors for SRAS added
6.0	1 December 2024	Updated for Improving Security Frameworks for the energy transition Rule 2024 No. 9

Note: There is a full version history at the end of this document.

1. Introduction

1.1. Purpose and scope

These Regional Benefit Ancillary Services Procedures (**Procedures**) are made in accordance with clause 3.15.6A(c4) of the *National Electricity Rules* (**NER**).

AEMO may make minor and administrative amendments to these Procedures from time to time without complying with the *Rules consultation procedures*.

These Procedures detail AEMO's method of determining the regional benefit factors (**RBFs**) to be allocated to each *region* whenever AEMO acquires *non-market ancillary services* (**NMAS**) under an *ancillary services agreement*. NMAS include *network support and control ancillary services* (**NSCAS**), and *system restart ancillary services* (**SRAS**) and *transitional services*.

1.2. Legal and regulatory framework

AEMO is required by clause 3.15.6A(c4) of the NER to develop and *publish* these Procedures in accordance with the *Rules consultation procedures*.

1.3. Definitions and interpretation

1.3.1. Glossary

Terms defined in the National Electricity Law and the NER have the same meanings in these Procedures unless otherwise specified in this clause.

Terms defined in the NER are intended to be identified in these Procedures by italicising them, but failure to italicise a defined term does not affect its meaning.

In addition, the words, phrases and abbreviations in the table below have the meanings set out opposite them when used in these Procedures.

Term	Definition
AEMO	Australian Energy Market Operator
NEL	National Electricity Law
NER	National Electricity Rules
NMAS	*non market ancillary services*
NSCAS	*network support and control ancillary services*
NTNDP	*National Transmission Network Development Plan*
Procedures	Regional Benefit Ancillary Services Procedures
RBFs	Regional benefit factors
SRAS	*system restart ancillary services*

1.3.2. Interpretation

These Procedures are subject to the principles of interpretation set out in Schedule 2 of the National Electricity Law.

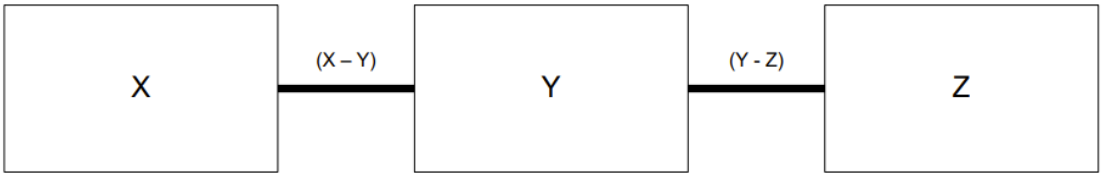
2. General principles

1. The sum of the RBFs over all *regions* for a particular trading interval and individual NMAS will always equal 1.
2. The costs for an NMAS will be recovered from the *region(s)* that AEMO determines to benefit from the NMAS. AEMO allocates RBFs to enable this recovery.

3. Illustration of determination of Regional Benefit Factors (RBF)

Consider the simple *power system* shown in Figure 1. *Regions* X, Y and Z are *interconnected* as shown by Interconnectors (X-Y) and (Y-Z).

Figure 1 Interconnected system



3.1. Power system security management

When an NMAS (NSCAS or SRAS or transitional services) is *dispatched*, the *region(s)* that benefit from the service will be allocated a non-zero RBF. The RBF will be determined as follows:

$$RBF_i = \frac{1}{R}$$

where:

i = the benefitting *region*

R = the total number of *regions* that benefit.

For example:

If NSCAS or transitional service was *dispatched* to manage a voltage issue in Region X only:

$RBF_X = 1$ $RBF_Y = 0$ $RBF_Z = 0$

If NSCAS or transitional service was *dispatched* to manage a voltage issue in Region X and Y only:

$RBF_X = 0.5$ $RBF_Y = 0.5$ $RBF_Z = 0$.

3.1.1. Additional benefit of increasing power transfer

There may be cases where the *dispatch* of NSCAS for *power system security* reasons will increase the *interconnector* flow between two regions. The RBF is calculated based on the number of *regions* that benefit from the NSCAS to manage *power system security* issues.

$$RBF_i = \frac{1}{R}$$

where:

i = the benefitting *region*

R = the number of *regions* that benefit.

3.2. Inter-region power transfer increase

The *dispatch* of NSCAS to increase power flow between *regions* is deemed to benefit the receiving *region* only. Assuming that the utilisation of NSCAS increases the *interconnector* flow from Region X to Region Y, the RBF will be calculated as follows:

$RBF_X = 0$ $RBF_Y = 1$ $RBF_Z = 0$.

3.3. SRAS usage

When SRAS is *dispatched* to restart an *electrical sub-network*, the *region* where the *major supply disruption* occurs is deemed to have benefitted. The RBF will be determined as follows:

$$RBF_i = \frac{1}{R}$$

where:

i = the benefitting *region*

R = the total number of *regions* that benefit.

For example:

If an SRAS was *dispatched* to restart Region X only:

$RBF_X = 1$ $RBF_Y = 0$ $RBF_Z = 0$

If an SRAS was *dispatched* to restart Region X and Y:

$RBF_X = 0.5$ $RBF_Y = 0.5$ $RBF_Z = 0$

If an SRAS in Region X was *dispatched* to restart Region Y

$RBF_X = 0$ $RBF_Y = 1$ $RBF_Z = 0$.

4. NMAS costs

RBFs are used to allocate NMAS costs to benefitting *regions*. There are two types of costs applicable for the use of NMAS: fixed costs and variable costs. The RBFs for an NMAS may be different for fixed and variable costs.

4.1. Fixed costs

These costs will be recovered from the *region* that AEMO determines to require the NMAS[1]. Examples of fixed NMAS costs include, but are not limited to, availability and testing charges.

For example, applying Principle 2 to Figure 1:

If an NSCAS or transitional service is contracted to increase *interconnector* flow from Region X to Region Y only, the RBF will allocate fixed costs as follows:

$RBF_X = 0$ $RBF_Y = 1$ $RBF_Z = 0$

If an NSCAS or transitional service is capable and contracted to increase *interconnector* flow from Region X to Region Y or Region Y to Region X, the RBF will allocate fixed costs as follows:

$RBF_X = 0.5$ $RBF_Y = 0.5$ $RBF_Z = 0$

If an SRAS is contracted to provide SRAS to restart an *electrical sub-network* in Region X the RBF will allocate fixed costs as follows:

$RBF_X = 1$, $RBF_Y = 0$ $RBF_Z = 0$

If an SRAS is contracted to provide SRAS to restart an *electrical sub-network* that spans Region X and Region Y the RBFs will allocate fixed costs as follows:

$RBF_X = 0.5$ $RBF_Y = 0.5$ $RBF_Z = 0$

4.2. Variable costs

4.2.1. NSCAS and transitional Service variable payments

These payments will vary based on the duration that the contracted NSCAS or Transitional Service is utilised. Triggers for the start and end time are important inputs to the calculation of the payments. Examples of variable payments include, but are not limited to, enabling charges and compensation payments.

Assuming that there is a *power system security* issue in Region X of Figure 1 and all available zero-cost NSCAS options have been *dispatched* to try and alleviate the issue. AEMO would then consider enabling NSCAS to resolve the issue. An instruction to *dispatch* the contracted NSCAS would be issued by AEMO to the appropriate NSCAS or Transitional Service provider. The instruction would contain the type of NSCAS or Transitional Service, required amount and duration of *dispatch*. These triggers would then be used to determine the NSCAS or Transitional Service variable payment. In this scenario, the RBF is allocated to the benefitting region as follows:

$RBF_X = 1$ $RBF_Y = 0$ $RBF_Z = 0$

[1] The region(s) that require NSCAS are determined based on load-flow studies conducted annually in the *Integrated Systems Plan (ISP)*.

4.2.2. SRAS usage payments

The benefiting *region(s)* will be allocated SRAS usage costs as set out in Section 3.3.

Appendix A. Examples of RBF allocation

1. An NSCAS or transitional service that is *dispatched* to manage *a power system security* issue in one or more *regions* will be considered to benefit the *region(s)* that experienced the *power system security* issue. The RBF for this service will be allocated equally to each *region* with the *power system security* issue while ensuring that principle 1 applies[2].
2. An NSCAS or transitional service that is *dispatched* to increase the power that can flow from one *region* to another will be considered to benefit the receiving *region* only.
3. An NSCAS or transitional service that is *dispatched* to manage a *power system security* issue, but also increases *power system* transfer between *regions* will be assumed to be *dispatched* for *power system security* only, and the RBF for this service will be allocated to the *regions* benefitting from the improvement in *power system security*.
4. An SRAS acquired or used to restart an *electrical sub-network* will benefit the *region* or *regions* in which that *electrical sub-network* is located (not necessarily the *region* in which the service is located). The RBF for this service will be allocated to the benefitting *region(s)*.

[2] The allocation in accordance with principle 1 is as follows: one region, RBF = 1; two regions, each RBF = ½; three regions, each RBF = 1/3; and so on.

Version release history

Version	Effective date	Summary of changes
5.0	1 July 2015	Regional benefit factors for SRAS added
4.0	9 Feb 2015	Approved for First Round of Consultation
3.0	5 Dec 2011	Approved for Final Determination
2.0	4 Nov 2011	Approved for Second Round of Consultation
1.0	1 Sep 2011	Approved for First Round of Consultation