



Draft National Electricity Amendment (System Restart Ancillary Services) Rule 2015

under the National Electricity Law to the extent applied by:

- (a) the National Electricity (South Australia) Act 1996 of South Australia;
- (b) the Electricity (National Scheme) Act 1997 of the Australian Capital Territory;
- (c) the Electricity - National Scheme (Queensland) Act 1997 of Queensland;
- (d) the Electricity - National Scheme (Tasmania) Act 1999 of Tasmania;
- (e) the National Electricity (New South Wales) Act 1997 of New South Wales;
- (f) the National Electricity (Victoria) Act 2005 of Victoria; and
- (g) the Australian Energy Market Act 2004 of the Commonwealth.

The Australian Energy Market Commission makes the following Rule under the National Electricity Law.

John Pierce
Chairman
Australian Energy Market Commission

Draft National Electricity Amendment (System Restart Ancillary Services) Rule 2015

1 Title of Rule

This Rule is the *Draft National Electricity Amendment (System Restart Ancillary Services) Rule 2015*.

2 Commencement

This Rule commences operation on [COMMENCEMENT_DATE].

3 Amendment of the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 1.

4 Savings and Transitional Amendments to the National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 2.

Schedule 1 Amendment to the National Electricity Rules

(Clause3)

[1] Clause 3.9.2 Determination of spot prices

In clause 3.9.2(k), omit "clause 3.11.7" and substitute "clause 3.11.2".

[2] Clause 3.9.2A Determination of ancillary services prices

In clause 3.9.2A(d), omit "clause 3.11.7" and substitute "clause 3.11.2".

[3] Clause 3.11 Ancillary Services

Omit clause 3.11 in its entirety and the heading, and substitute:

3.11 Ancillary Services

3.11.1 Introduction

- (a) *Ancillary services* are services that are essential to the management of *power system security*, facilitate orderly trading in electricity and ensure that electricity supplies are of acceptable quality.
- (b) *Market ancillary services* are *ancillary services* acquired by AEMO as part of the *spot market* in accordance with this Chapter 3. The prices for *market ancillary services* are determined using the *dispatch algorithm*.
- (c) *Non-market ancillary services* are *ancillary services* not acquired by AEMO as part of the spot market, but acquired:
 - (1) in the case of SRAS, by AEMO under *ancillary services agreements*, with the prices for SRAS being determined in accordance with the relevant *ancillary services agreements*; and
 - (2) in the case of NSCAS:
 - (i) by *Transmission Network Service Providers* under *connection agreements* or *network support agreements* to meet an NSCAS need; and
 - (ii) in the circumstances contemplated in clause 3.11.3(c), by AEMO under *ancillary services agreements* entered into following a call for offers made in accordance with rule 3.11.5 to meet a NSCAS gap only for *power system security* and reliability of *supply* of the *transmission network* in accordance with the *power system security and reliability standards*,

with the prices for *NSCAS* being determined in accordance with the relevant agreements;

- (3) in the case of *NMAS* other than *SRAS* and *NSCAS*, by *Transmission Network Service Providers* under *connection agreements* or *network support agreements* to meet the service standards in accordance with the technical requirements of schedule 5.1 or in *applicable regulatory instruments*, with the prices for those services being determined in accordance with the relevant agreements.
- (d) *AEMO* may instruct a person to provide a *non-market ancillary service* under an *ancillary services agreement* or otherwise in accordance with the relevant *performance standards*, and any person so instructed must use reasonable endeavours to comply with that instruction.
- (e) *AEMO* is not responsible for payment to a person for *non-market ancillary services* provided by that person under a *connection agreement* or a *network support agreement*.

3.11.2 Market ancillary services

- (a) The *market ancillary services* are:
 - (1) the *fast raise service*;
 - (2) the *fast lower service*;
 - (3) the *slow raise service*;
 - (4) the *slow lower service*;
 - (5) the *regulating raise service*;
 - (6) the *regulating lower service*;
 - (7) the *delayed raise service*; and
 - (8) the *delayed lower service*.
- (b) *AEMO* must make and *publish* a *market ancillary service specification* containing:
 - (1) a detailed description of each kind of *market ancillary service*; and
 - (2) the performance parameters and requirements which must be satisfied in order for a service to qualify as the relevant *market ancillary service* and also when a *Market Participant* provides the relevant kind of *market ancillary service*.

- (c) *AEMO* may amend the *market ancillary service specification*, from time to time.
- (d) *AEMO* must comply with the *Rules consultation procedures* when making or amending the *market ancillary service specification*.
- (e) An amendment to the *market ancillary service specification* must not take effect until at least 30 days after the amendment has been *published*.
- (f) In addition to the requirements under rule 4.15, a *Market Participant* which has classified a *generating unit* as an *ancillary service generating unit* or a *market load* as an *ancillary service load* must install and maintain in accordance with the standards referred to in clause 3.11.2(g) monitoring equipment to monitor and record the response of the *ancillary service generating unit* or *ancillary service load* to changes in the *frequency* of the *power system*.

Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (g) *AEMO* must develop, and may amend from time to time, standards which must be met by *Market Participants* in installing and maintaining the equipment referred to in clause 3.11.2(f).
- (h) *AEMO* may request a *Market Participant* with an *ancillary service generating unit* or an *ancillary service load* to provide to *AEMO* a report detailing how the relevant facility responded to a particular change or particular changes in the *frequency* of the *power system*. A *Market Participant* must provide a report requested under this clause 3.11.2(h) promptly but, in any event, in no more than 20 *business days* after notice to do so.
- (i) *AEMO* may from time to time require a *Registered Participant* which provides a *market ancillary service* under the *Rules* to demonstrate the relevant *plant's* capability to provide the *market ancillary service* to the satisfaction of *AEMO* according to standard test procedures. A *Registered Participant* must promptly comply with a request by *AEMO* under this clause.

3.11.3 Acquisition of Network Support and Control Ancillary Service

- (a) Where an *NTNDP* identifies an *NSCAS gap*, *AEMO* may request the relevant *Transmission Network Service Provider* to advise when the *Transmission Network Service Provider* will have arrangements in place to meet that *NSCAS gap*, or provide reasons why the *NSCAS gap* will not be met.

- (b) Within 30 days of *AEMO's* request under paragraph (a), the *Transmission Network Service Provider* must provide a response to *AEMO*. If the *Transmission Network Service Provider* proposes to put in place arrangements to meet the relevant *NSCAS gap*, it must include in its response full details of those arrangements.
- (c) If, after considering any response made under paragraph (b), *AEMO*:
 - (1) considers that the relevant *NSCAS gap* will remain; and
 - (2) considers it is necessary to acquire *NSCAS* to meet the relevant *NSCAS gap* to prevent an adverse impact on *power system security* and reliability of *supply* of the *transmission network* in accordance with the *power system security* and *reliability standards*,

AEMO:

 - (3) must *publish* details of why it considers that the relevant *NSCAS gap* will remain; and
 - (4) must use reasonable endeavours to acquire *NSCAS* to meet the relevant *NSCAS gap* in accordance with clause 3.11.5.

3.11.4 Guidelines and objectives for acquisition of network support and control ancillary services

- (a) In this clause:
 - NSCAS description** means a detailed description of each type of *network support and control ancillary service*.
 - NSCAS quantity procedure** means a procedure that determines the location and quantity of each type of *network support and control ancillary service* required.
- (a1) *AEMO* must develop and *publish* the *NSCAS description* in accordance with the *Rules consultation procedures*.
- (b) *AEMO* must develop and *publish* the *NSCAS quantity procedure* in accordance with the *Rules consultation procedures*.
- (c) *AEMO* may amend the *NSCAS description* and the *NSCAS quantity procedure*.
- (d) *AEMO* must comply with the *Rules consultation procedures* when making or amending the *NSCAS description* or the *NSCAS quantity procedure*.
- (e) *AEMO* may make minor and administrative amendments to the *NSCAS description* or the *NSCAS quantity procedure* without complying with the *Rules consultation procedures*.

3.11.5 Tender process for network support and control ancillary services

- (a) In this clause 3.11.5:

NSCAS tender guidelines means the guidelines developed and *published* by *AEMO* in accordance with clause 3.11.5(b) as in force from time to time, and includes amendments made in accordance with clauses 3.11.5(c) and 3.11.5(d).

- (a1) If *AEMO* proposes to acquire a *network support and control ancillary service*, *AEMO* must call for offers from persons who are in a position to provide the *network support and control ancillary service* in accordance with the NSCAS tender guidelines.
- (b) *AEMO* must determine and *publish* the NSCAS tender guidelines. The NSCAS tender guidelines must contain the following:
- (1) a requirement for *AEMO* to call for NSCAS expressions of interest before issuing an NSCAS invitation to tender in relation to any required *network support and control ancillary services*;
 - (2) a requirement that a person who is to provide *network support and control ancillary services* under an *ancillary services agreement* has the *facility* tested in accordance with the NSCAS tender guidelines;
 - (3) a requirement for a *Network Service Provider* or other *Registered Participant* to assist a prospective tenderer in identifying and, if possible, resolving issues that would prevent the delivery of effective *network support and control ancillary services* proposed by a prospective tenderer;
 - (4) the timeframes over which *AEMO's* assessment of NSCAS expressions of interest, NSCAS tenders and physical testing of selected *network support and control ancillary services* will occur;
 - (5) a requirement for a tenderer to provide data, models and parameters of relevant *plant*, sufficient to facilitate a thorough assessment of the *network impacts* and *power station impacts* of the use of the relevant *network support and control ancillary service*;
 - (6) the terms and conditions of the *ancillary services agreement* that a successful tenderer would be expected to enter into with *AEMO*;
 - (7) the principles *AEMO* will apply in assessing NSCAS expressions of interest and NSCAS tenders; and

- (8) any other matter considered appropriate by *AEMO*.
- (c) *AEMO* may amend the NSCAS tender guidelines, and must comply with the *Rules consultation procedures* when making or amending the NSCAS tender guidelines.
- (d) *AEMO* may make minor and administrative amendments to the NSCAS tender guidelines without complying with the *Rules consultation procedures*.
- (e) *AEMO* is not under any obligation to accept the lowest priced NSCAS tender or any NSCAS tender in response to an NSCAS invitation to tender.
- (f) A *Network Service Provider* must:
- (1) negotiate in good faith with a prospective tenderer in respect of issues the NSCAS tender guidelines require a prospective tenderer to discuss and, if possible, resolve with a *Network Service Provider*; and
 - (2) participate in, or facilitate, testing of a *network support and control ancillary service* required by the NSCAS tender guidelines where it is reasonable and practicable to do so, and when participating in or facilitating such activities, the *Network Service Provider* will be entitled to recover from the relevant prospective tenderer all reasonable costs incurred by the *Network Service Provider* and for such purposes the activities of the *Network Service Provider* will be treated as *negotiable services*.
- (g) Where a person submits an NSCAS tender in response to an NSCAS invitation to tender and *AEMO* wishes to negotiate an aspect of that NSCAS tender, *AEMO* and that person must negotiate in good faith concerning that aspect.
- (h) In assessing any tenders submitted to meet a particular *NSCAS gap*, *AEMO* must first determine whether those tenders are competitive. The tenders submitted to meet a particular *NSCAS gap* will be deemed to be competitive if the quantity of NSCAS that *AEMO* is seeking can be supplied from the conforming tenders received by *AEMO* with any one conforming tender discarded or all conforming tenders from any one party discarded. If the tenders submitted to meet a particular *NSCAS gap* are not deemed to be competitive, *AEMO* and *NSCAS preferred tenderers*, must negotiate in good faith to agree reasonable terms and conditions for the supply of the relevant type of NSCAS, taking into account the need to:
- (1) subject to subparagraph (h)(2), so far as practicable minimise the overall cost of supply of that service; and

- (2) appropriately remunerate the providers of the relevant *NSCAS* for that service.
- (i) If *AEMO* and a *NSCAS preferred tenderer* cannot agree on the terms and conditions for the supply of a *NSCAS* after 21 *business days* from delivery to the preferred tenderer of a written notice from *AEMO* to negotiate, either *AEMO* or the preferred tenderer may refer the matter to the *Adviser* for the determination of a dispute as to those terms and conditions in accordance with rule 8.2.
- (j) If *AEMO* calls for offers under paragraph (a1), *AEMO* must give a notice to *Registered Participants* and *NSCAS providers* when the tender process is complete.
- (k) Within 5 *business days* of *AEMO* giving a notice under paragraph (i), *AEMO* must *publish* the total estimated annual costs and quantities of each type of *NSCAS* acquired by *AEMO* under *ancillary services agreements* in respect of each *region* and in total and provide a breakdown of those costs and quantities relating to each *facility* contracted under those agreements.
- (l) An *NSCAS provider* must comply with an *ancillary services agreement* under which they provide one or more *network support and control ancillary services*.

Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (m) *AEMO* may from time to time require an *NSCAS Provider* which provides a *network support and control ancillary service* under an *ancillary services agreement* to demonstrate the relevant *plant's* capability to provide the *network support and control ancillary service* to the satisfaction of *AEMO* according to standard test procedures. An *NSCAS Provider* must promptly comply with a request by *AEMO* under this clause.

3.11.6 Dispatch of network support and control ancillary services by AEMO

- (a) For the avoidance of doubt, *AEMO* may *dispatch NSCAS* to:
 - (1) maintain *power system security* and reliability of *supply* of the *transmission network* in accordance with the *power system security and reliability standards*; and
 - (2) maintain or increase the *power transfer capability* of that *transmission network* so as to maximise the present value of net economic benefit to all those who produce, consume or transport electricity in the *market*,

but *AEMO* may only call for offers to acquire *NSCAS* to maintain *power system security* and reliability of *supply* of the *transmission network* in accordance with the *power system security and reliability standards*.

- (a1) *AEMO* must develop procedures for:
 - (1) *dispatching NCAS*; and
 - (2) reporting to *Registered Participants* and *NSCAS providers*, on a periodic basis, on the effectiveness of the *dispatch* of *network support and control ancillary services* using criteria related to the performance of the *power system* specified in the procedures developed under subparagraph (a1)(1).
- (b) *AEMO* must *publish* the procedures developed under this clause 3.11.6.
- (c) *AEMO* may amend a procedure developed under this clause 3.11.6, from time to time.
- (d) *AEMO* must develop and *publish* guidelines for the *dispatch* of *NSCAS* to support the relevant procedure developed under subparagraph (a1)(1).
- (e) *AEMO* must comply with the *Rules consultation procedures* when making or amending the guidelines in paragraph (d).
- (f) *AEMO* may make minor and administrative amendments to the guidelines in paragraph (d) without complying with the *Rules consultation procedures*.

3.11.7 Guidelines and objectives for acquisition of system restart ancillary services by AEMO

- (a) *AEMO* must use reasonable endeavours to acquire *system restart ancillary services* to meet *the system restart standard* at the lowest cost (**the SRAS Procurement Objective**).
- (b) *AEMO* must 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*.
- (c) *AEMO* must develop and *publish* the *SRAS Guideline*. The *SRAS Guideline* must be designed to ensure that the *system restart standard* is met at least cost.
- (d) The *SRAS Guideline* 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*; and
 - (4) a process for determining the number, type and location of *system restart ancillary services* required to be procured for each *electrical sub-network* consistent with the *system restart standard*.
- (e) *AEMO* may amend the *SRAS Guideline* from time to time.
 - (f) *AEMO* must comply with the *Rules consultation procedures* when making or amending the *SRAS Guideline*.
 - (g) *AEMO* may make minor and administrative amendments to the *SRAS Guideline* without complying with the *Rules consultation procedures*.

3.11.8 Determination of electrical sub-network boundaries

- (a) For the purpose of acquiring *system restart ancillary services* and determining and implementing the *system restart plan*, the *power system* is to be divided into *electrical sub-networks*.
- (b) *AEMO* must determine the boundaries of the *electrical sub-networks* in accordance with the guidelines determined by the *Reliability Panel* under clause 8.8.3(aa)(5), and must *publish* a report setting out how it has complied with these guidelines.
- (c) *AEMO* must comply with the *Rules consultation procedures* in determining the boundaries of the *electrical sub-networks*.

3.11.9 Acquisition of system restart ancillary services by AEMO

- (a) If *AEMO* proposes to acquire a *system restart ancillary service*, *AEMO* must enter into an *ancillary services agreement* with a prospective *SRAS Provider* following the completion of any procurement process to acquire *system restart ancillary services* which *AEMO* is satisfied will enable it to meet the *SRAS Procurement Objective*.
- (b) Subject to paragraph (c), *AEMO* must only acquire *system restart ancillary services* from a person who is a *Registered Participant*.

- (c) *AEMO* may enter into an agreement to acquire *system restart ancillary services* with a person who is not a *Registered Participant* if that agreement includes a condition for the benefit of *AEMO* that no *system restart ancillary services* will be provided under the agreement until that person becomes a *Registered Participant*.
- (d) An *SRAS Provider* must comply with an *ancillary services agreement* under which they provide one or more *system restart ancillary services*

Note

The Commission will be recommending that this clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations.

- (e) A dispute concerning any aspect, (other than the aspect of price), of a *system restart ancillary services* agreement or a call for offers conducted by *AEMO* for the acquisition of *system restart ancillary services*, must be dealt with in accordance with rule 8.2.
- (f) *AEMO* may from time to time require an *SRAS Provider* which provides a *system restart ancillary service* under an *ancillary services agreement* to demonstrate the relevant *plant's* capability to provide the *system restart ancillary service* to the satisfaction of *AEMO* according to standard test procedures. An *SRAS Provider* must promptly comply with a request by *AEMO* under this clause.
- (g) A prospective *SRAS Provider* must provide to *AEMO* data, models and parameters of relevant *plant*, sufficient to facilitate a thorough assessment of the *network* impacts and *power station* impacts of the use of the relevant *system restart ancillary service*.
- (h) If *AEMO* seeks to enter into an *ancillary services agreement* with a prospective *SRAS Provider*, *AEMO* and that *SRAS Provider* must negotiate in good faith as to the terms and conditions of the *ancillary services agreement*.
- (i) A *Network Service Provider* must:
 - (1) 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*;
 - (2) negotiate in good faith with a prospective *SRAS Provider* in respect of identifying and, if possible, resolving issues that would prevent the delivery of effective *system restart ancillary services* proposed by a prospective *SRAS Provider*; and
 - (3) participate in, or facilitate, testing of a *system restart ancillary service* proposed to be provided by a prospective *SRAS Provider* where it is reasonable and practicable to do so, and

when participating in or facilitating such activities, the *Network Service Provider* will be entitled to recover from the prospective *SRAS Provider* all reasonable costs incurred by the *Network Service Provider* and for such purposes the activities of the *Network Service Provider* will be treated as *negotiable services*.

3.11.10 Dispatch of system restart ancillary services by AEMO

- (a) *AEMO* must develop procedures for:
 - (1) *dispatching system restart ancillary services*; and
 - (2) reporting to *Registered Participants* and *SRAS Providers*, on a periodic basis, on the effectiveness of the *dispatch of system restart ancillary services* using criteria related to the performance of the *power system* specified in the procedures developed under subparagraph (a)(1).
- (b) *AEMO* must *publish* the procedures developed under this clause 3.11.10.
- (c) *AEMO* may amend a procedure developed under this clause 3.11.10, from time to time.

3.11.11 Reporting

- (a) At least once each year, *AEMO* must prepare and *publish* a report detailing 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*.
- (b) At least once each year, *AEMO* must *publish* a report on:
 - (1) 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 reasons why the *system restart standard* was not met;
 - (2) the processes followed by *AEMO* for testing and assessing the ability of any *system restart ancillary services* acquired by *AEMO* under clause 3.11.9 to meet the *system restart standard*, including any assumptions made by *AEMO* in its testing and assessment processes regarding the state of the transmission network during a *major supply disruption*; and
 - (3) the process followed by *AEMO* to acquire *system restart ancillary services* for each *electrical sub-network*.

[4] Clause 3.15.6A Ancillary service transactions

Omit clauses 3.15.6A(b1), 3.15.6A(c) to 3.15.6A(c10), 3.15.6A(d), and 3.15.6A(e) and substitute:

(b1) Where an amount payable by *AEMO* under paragraph (b) is not determined on a *trading interval basis*, that amount is recovered in accordance with the relevant paragraphs (c8), (c9), (d) and (e), except that a reference to *trading interval* in the calculation of RBF, AGE, AAGE, TGE, ATGE, TCE, ATCE is to be read as "the relevant period", and any other reference to *trading interval* in those paragraphs is to be read as the "relevant *billing period*".

(c) **[Deleted]**

(c1) In this clause:

Regional benefit ancillary services procedures means the procedures to determine the relative benefit that each *region* is estimated to receive from the provision of *NMAS*.

Regional benefit factors means the factors to allocate, between *regions*, the costs associated with the provision of *NMAS* under each *ancillary services agreement* in accordance with the regional benefit ancillary services procedures.

(c2) *AEMO* must recover its liabilities under *ancillary services agreements* for the provision of:

(1) *NSCAS* from *Market Customers* in each *region* in accordance with paragraphs (c8) and (c9), subject to paragraph (b1); and

(2) *system restart ancillary services*, from:

(i) *Market Generators* and *Market Small Generation Aggregators* in each *region* in accordance with paragraph (d), subject to paragraph (b1); and

(ii) *Market Customers* in each *region* in accordance with paragraph (e), subject to paragraph (b1).

(c3) In the statements to be provided under clauses 3.15.14 and 3.15.15 to a *Market Customer*, *AEMO* must separately identify the portion of the total amount payable by *AEMO* in respect of the relevant *billing period* under *ancillary services agreements* for the provision of *NSCAS* that:

(1) benefits specific *regions* in which there is a *connection point* for which the *Market Customer* is *financially responsible* (being the *regional* amounts given by the first summated term in the paragraph (c8) formula); and

- (2) does not benefit specific *regions* (being the amount TNSCAS_p in the paragraph (c9) formula).
- (c4) 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:
 - (1) for an NSCAS, the estimated increase for each *region* of the gross economic benefit from increased *power transfer capability*; and
 - (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*.
- (c5) Subject to paragraph (c6), AEMO may amend the regional benefit ancillary services procedures from time to time in accordance with the *Rules consultation procedures*.
- (c6) AEMO may make minor and administrative amendments to the regional benefit ancillary services procedures without complying with the *Rules consultation procedures*.
- (c7) From time to time, AEMO must determine the regional benefit factors.
- (c8) In each *trading interval*, in relation to each *Market Customer* for each *region*, an *ancillary services* transaction occurs, which results in a *trading amount* for the *Market Customer* determined in accordance with the following formula:

$$TA_{p,s} = \left(\sum_{\text{for all 's'}} (TNSCAS_{s,p} \times RBF_{r,s}) \right) \times \frac{AGE_{p,r}}{AAGE_{p,r}} - 1$$

Where:

Subscript 'P' is the relevant period;

Subscript 'R' is the relevant *region*;

Subscript 'S' is the relevant NSCAS;

$T_{Ap,r}$ (in \$) = the *trading amount* payable by the *Market Customer* in respect of the relevant *region* and *trading interval*;

$TNSCAS_{s,p}$ the total amount payable by *AEMO* for the provision of the relevant *NSCAS* under an *ancillary services agreement* in respect of the relevant *trading interval*;

$RBF_{s,p,r}$ (number) = the latest regional benefit factor assigned to the provision of the relevant *NSCAS* under an *ancillary services agreement* in respect of the relevant *region* and *trading interval*, as determined by *AEMO* under paragraph (c7);

$AGE_{p,r}$ (in MWh) = the sum of the *adjusted gross energy* figures in respect of the *Market Customer's* relevant *connection points* located in the *region* for the relevant *trading interval*; and

$AAGE_{p,r}$ (in MWh) = the aggregate $AGE_{p,r}$ figures for all *Market Customers* in respect of the relevant *region* and *trading interval*.

- (c9) In each *trading interval*, in relation to each *Market Customer*, an *ancillary services* transaction occurs, which results in a *trading amount* for the *Market Customer* determined in accordance with the following formula:

$$T_{Ap} = TNSCAS_p \times \frac{AGE_p}{AAGE_p} \times -1$$

Where:

Subscript 'P' is the relevant period;

T_{Ap} (in \$) = the *trading amount* payable by the *Market Customer* in respect of the relevant *trading interval*;

$TNSCAS_p$ (in \$) = the sum of all amounts payable by *AEMO* for the provision of *NSCAS* under *ancillary services agreements* in respect of the relevant *trading interval* minus the sum of the *trading amounts* calculated for all *Market Customers* in respect of all of the relevant *trading interval* under paragraph (c8);

AGE_p (in MWh) = the sum of the *adjusted gross energy* figures in respect of all the *Market Customer's* relevant *connection points* for the relevant *trading interval*; and

$AAGE_p$ (in MWh) = the aggregate AGE_p figures for all *Market Customers* in respect of the relevant *trading interval*.

- (c10) AEMO must *publish* the regional benefit factors determined under paragraph (c7);
- (d) In each *trading interval*, in relation to each *Market Generator* and each *Market Small Generation Aggregator* for each *region*, an ancillary services transaction occurs, which results in a *trading amount* for the *Market Generator* or the *Market Small Generation Aggregator* determined in accordance with the following formula:

$$TA = \sum \left(\left(\frac{SRP_i \times RBF_{Ri}}{2} \right) \times \left(\frac{TGE_R + TSGE_R}{ATGE_R + ATSGE_R} \right) \right) \times -1$$

Where:

TA (in \$) = the *trading amount* to be determined in respect of the relevant region and *trading interval* (which is a negative number);

SRP_i (in \$) = the amount payable by AEMO in respect of the *trading interval* under an individual *ancillary services agreement* in respect of the provision of a specific *system restart ancillary service*;

RBF_{Ri} (number) = the latest regional benefit factor assigned to the provision of the relevant *system restart ancillary service* under an individual *ancillary services agreement* in respect of the relevant *region* and *trading interval*, as determined by AEMO under paragraph (c7);

TGE_R (in MWh) = the *generator energy* for the *Market Generator* for the *trading interval* in that *region*;

TSGE_R (in MWh) = the *small generator energy* for the *Market Small Generator Aggregator* for the *trading interval* in that *region*;

ATGE_R (in MWh) = the aggregate of the *generator energy* figures for all *Market Generators* for the *trading interval* in that *region*; and

ATSGE_R (in MWh) = the aggregate of the *small generator energy* figures for all *Market Small Generator Aggregators* for the *trading interval* in that *region*.

- (e) In each *trading interval*, in relation to each *Market Customer*, for each *region*, an ancillary services transaction occurs, which results in a *trading amount* for the *Market Customer* determined in accordance with the following formula:

$$TA = \sum \left(\left(\frac{SRP_i \times RBF_{Ri}}{2} \right) \times \frac{TCE_R}{ATCE_R} \right) \times -1$$

Where:

TA (in \$) = the *trading amount* to be determined in respect of the relevant *region* and *trading interval* (which is a negative number);

SRP_i (in \$) = has the meaning given in clause 3.15.6A(d);

RBF_{Ri} (number) = the latest regional benefit factor assigned to the provision of the relevant *system restart ancillary service* under an individual *ancillary services agreement* in respect of the relevant *region* and *trading interval*, as determined by AEMO under paragraph (c7);

TCE_R (in MWh) = the *customer energy* for the *Market Customer* for the *trading interval* in that *region*; and

ATCE_R (in MWh) = the aggregate of the *customer energy* figures for all *Market Customers* for the *trading interval* in that *region*.

[5] Clause 4.3.1 Responsibility of AEMO for power system security

In clause 4.3.1(p), omit "clause 3.11.4A" and substitute "clause 3.11.9".

[6] Clause 8.2.1 Application and guiding principles

In clause 8.2.1(h)(12), omit "clause 3.11.5" and substitute "clause 3.11.9".

[7] Clause 8.8 Reliability Panel

Omit clause 8.8.3(aa) and substitute:

- (aa) The system restart standard must:
 - (1) be reviewed and determined by the *Reliability Panel* in accordance with the *SRAS Objective*;
 - (2) 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*;
 - (3) include the aggregate required reliability of *system restart ancillary services* for each *electrical sub-network*;
 - (4) apply equally across all *regions*, unless the *Reliability Panel* varies the *system restart standard* between *electrical sub-networks* to the extent necessary:
 - (A) to reflect any technical system limitations or requirements; or

- (B) 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) 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;
- (6) include guidelines to be followed by AEMO in determining *electrical sub-networks*, including the determination of the appropriate number of *electrical sub-networks* and the characteristics required within an *electrical sub-network* (such as the amount of *generation* or *load*, or electrical distance between *generation centres*, within an *electrical sub-network*); and
- (7) include guidelines specifying the diversity and strategic locations required of *system restart ancillary services*.

[8] Chapter 10 New Definitions

In chapter 10, insert the following definitions in alphabetical order:

NSCAS Provider

A person who agrees to provide one or more *network support and control ancillary services* to AEMO under an *ancillary services agreement*.

SRAS Guideline

The guideline developed and *published* by AEMO in accordance with clause 3.11.7(c) as in force from time to time and includes amendments made in accordance with clauses 3.11.7(f) and 3.11.7(g).

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*.

SRAS Provider

A person who agrees to provide one or more *system restart ancillary services* to AEMO under an *ancillary services agreement*.

SRAS Procurement Objective

Has the meaning given in clause 3.11.7(a).

[9] Chapter 10 Substituted definitions

In chapter 10, substitute the following definitions:

electrical sub-network

A part of the *national grid* determined by *AEMO* in accordance with clause 3.11.8.

major supply disruption

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 *connection points*.

Non-market ancillary service or NMAS

Any of the following services:

- (a) *network support and control ancillary services* and other services acquired by *Transmission Network Service Providers* 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
- (b) *system restart ancillary services* and *network support and control ancillary services* acquired by *AEMO* under *ancillary services agreements*.

NSCAS preferred tenderers

Persons that submitted tenders for *NSCAS* that are deemed to be non-competitive as selected by *AEMO* in accordance with clause 3.11.5(g).

[10] Chapter 10 Omitted definitions

In chapter 10, omit the following definitions:

primary restart service

A *system restart ancillary service* that meets the technical and availability requirements of a *primary restart service* specified by *AEMO* under clause 3.11.4A(d).

secondary restart service

A *system restart ancillary service* that meets the technical and availability requirements of a *secondary restart service* specified by *AEMO* under clause 3.11.4A(d).

Schedule 2 Savings and Transitional Amendments to the National Electricity Rules

(Clause4)

[1] Chapter 11 Savings and Transitional Amendments to the National Electricity Rules

After rule 11.76 insert:

Part ZZE System Restart Ancillary Services

11.77 Rules consequential on the making of the National Electricity Amendment (System Restart Ancillary Services) Rule 2015

11.77.1 Definitions

For the purposes of this rule 11.77:

Amending Rule means the National Electricity Amendment (System Restart Ancillary Services) Rule 2015.

Commencement Date means the date of commencement of the Amending Rule.

existing SRAS contract means an *ancillary services agreement* between *AEMO* and another person for the provision of *system restart ancillary services* entered into prior to the Commencement Date.

11.77.2 System restart standard

As soon as practicable after the Commencement Date, the *Reliability Panel* must revise the *system restart standard* to take into account the Amending Rule and provide the revised standard to the *AEMC*.

11.77.3 SRAS Guideline

As soon as practicable after the Commencement Date, *AEMO* must develop and *publish* the first SRAS Guideline and NSCAS tender guidelines.

11.77.4 Regional Benefit Ancillary Services Procedures

As soon as practicable after the Commencement Date, *AEMO* must amend and *publish* the Regional Benefit Ancillary Services Procedures referred to in clause 3.15.6A to take into account the Amending Rule.

11.77.5 Consultation prior to the Commencement Date

If, prior to the Commencement Date, and for the purposes of developing or amending the standards, guidelines and procedures referred to in clauses 11.77.2 to 11.77.4, either *AEMO* or the *Reliability Panel* undertook a consultation, step decision or action equivalent to that consultation, step decision or action as required under:

- (a) in the case of *AEMO*, the *Rules consultation procedures*; or
- (b) in the case of the *Reliability Panel*, the requirements of clause 8.8.3(d) to (j), then that consultation, step decision or action is taken to satisfy the relevant requirement for the equivalent consultation, step decision or action.

11.77.6 Existing SRAS Contract

AEMO may continue to acquire *system restart ancillary services* under an existing *SRAS* contract and may extend the period of an existing *SRAS* contract for such period as *AEMO* and that person reasonably determine.
