

**~~ELECTRICITY INDUSTRY ACT~~**

**~~ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY  
MARKET) REGULATIONS 2004~~**

**~~WHOLESALE ELECTRICITY MARKET RULES~~**

**~~Power System Operation Procedure:  
Ancillary Services~~**

~~VERSION HISTORY~~ **POWER SYSTEM  
OPERATION PROCEDURE:  
ANCILLARY SERVICES**

1 April 2009

Balancing Market Commencement Day	Replacement of the Procedure resulting from Procedure Change Proposal PPCL0022
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## ~~2. —~~ **RELATIONSHIP WITH MARKET RULES**

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VERSION RELEASE HISTORY

<u>Version</u>	<u>Effective Date</u>	<u>Summary of Changes</u>
1	1 April 2009	Power System Operation Procedure (Market Procedure) for Ancillary Services
2	Balancing Market Commencement Day	Replacement of the Procedure resulting from Procedure Change Proposal PPCL0022
3	TBC 2019	Changes resulting from Procedure Change Proposal AEPC_2019_XX

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## 1. PROCEDURE OVERVIEW

### 1.1. Relationship with the Wholesale Electricity Market Rules

~~2.1.1.1.1.1.~~ This Power System Operation Procedure (PSOP): Ancillary Services (Procedure) has been developed in accordance with ~~clauses 3.11.14, 3.11.15 and should be read in conjunction with 7B.1.2~~ of the Wholesale Electricity Market Rules (~~MarketWEM~~ Rules).

~~2.1.2.1.1.2.~~ References to particular ~~MarketWEM~~ Rules within the Procedure in bold and square brackets [~~MRC~~Clause XX] are ~~current as of the Balancing Market Commencement Day. These references are included for convenience only, and are not part of this Procedure.~~

### 1.2. This Procedure is subservient to the Market Rules. Interpretation

~~1.2.1.~~ In the event of conflict between ~~this Procedure:~~

- ~~(a) terms that are capitalised, but not defined, have the meaning given in the WEM Rules;~~
- ~~(a)(b) to the extent that this Procedure and is inconsistent with the MarketWEM Rules or any other document, the order of precedence is as set out in the MarketWEM Rules [MR 1.5.2]; prevail to the extent of the inconsistency;~~
- ~~4. This Procedure may include explanatory text, including quotations from the Market Rules. Such explanatory text is for information only, does not form part of the Procedure, and is italicised and contained in a rectangular box.~~
- ~~4. A word or phrase defined in the Electricity Industry Act 2004, or in the Regulations or Market Rules made under that Act, has the same meaning when used in this Procedure.~~

## 1. RELATED DOCUMENTS

- ~~4. This Procedure is related to, and should be read in conjunction with, the following documents:~~
  - ~~g. SWIS Technical Rules and Operating Standards~~
  - ~~h. PSOP – Power System Security~~
  - ~~i. PSOP – Dispatch~~
  - ~~j. PSOP – Communications and Control Systems~~
  - ~~k. PSOP – System Restart Overview~~

## 1. COMMENCEMENT

- ~~4. This Procedure replacement has effect from the Balancing Market Commencement Day.~~

## 1 SCOPE

~~1. This Procedure has been developed in accordance with clauses 3.11.14, 3.11.15 and 7B.1.2 of the Market Rules and documents:~~

- ~~(c) the processes for determining a reference to the WEM Rules, or Market Procedures, includes any associated forms required or contemplated by the WEM Rules or Market Procedures; and~~
- ~~(d) words expressed in the singular include the plural and vice versa; and~~
- ~~(e) unless the context requires otherwise, references to AEMO include AEMO in its System Management capacity.~~

1.2.2. In addition, the defined terms in Table 1 have the meaning given.

**Table 1 Defined Terms**

<u>Term</u>	<u>Definition</u>
<u>Ancillary Service Standards</u>	<u>The standard for each Ancillary Service defined in clause 3.10 of the WEM Rules.</u>
<u>Automatic Generation Control or AGC</u>	<u>Equipment operated by AEMO, which sends signals to generating facilities participating in the AGC scheme to automatically adjust their output in order to maintain frequency or restore frequency to within the SWIS Operating Standard. In the WEM, AGC may also be utilised for dispatch.</u>
<u>Droop</u>	<u>A function of a governor that responds to frequency changes.</u>

## 1.3. Purpose and application of this Procedure

1.3.1. The purpose of this Procedure is to document and specify:

- ~~(a) the procedure to be followed by AEMO when:~~
  - ~~(i) Determining Ancillary Service Requirements; and [Clause 3.11.14(a)];~~
  - ~~(ii) the processes for entering Entering into Ancillary Service Contracts, including the process for conducting competitive tender processes utilised for the awarding of such contracts; and Ancillary Service Contracts [Clause 3.11.14(b)];~~
  - ~~(iii) the processes for providing The WEM Rules require Ancillary Services; and to be provided [Clause 3.11.15];~~

~~(b)~~ any technical and communication criteria that an LFAS Facility, or a type of LFAS facility Facility, must meet, including:

- ~~(i) Facility quantity parameters and limits in providing LFAS, including the Minimum LFAS Quantity; [Clause 7B.1.2(a)];~~
- ~~(ii) The manner and forms of communication to be used in providing LFAS, including how LFAS facilities Facilities which are Non-Scheduled Generators, are to be activated; [Clause 7B.1.2(b)]; and~~
- ~~(iii) The nature and type of any enablement and quantity restrictions that will apply. [Clause 7B.1.2(c)];~~



- (a) ~~The following the procedure to be followed by Market Participants, Ancillary Service Providers and Network Operators where the WEM Rules require Ancillary Services are covered by to be provided [Clause 3.11.15].~~

## 1.4. Associated documents

~~2.1.3.1.4.1.~~ 1.4.1. The following documents in Table 2 provide background information to this Procedure:

- a. ~~Spinning Reserve;~~
- b. ~~Load Rejection;~~
- c. ~~Black Start;~~
- d. ~~Dispatch Support; and~~
- e. ~~LFAS, to the extent of outlining the Facility requirements only.~~

~~Procurement of Load Following Ancillary Service is covered by the Market Rules [Chapter 7B]. Forecasting requirements for Load Following Ancillary Service is covered in the Power System Operation Procedure, "Dispatch".~~

~~The definitions for each of the Ancillary Services are specified in the Market Rules~~

**Table 2 Associated Documents**

<u>Reference</u>	<u>Title</u>	<u>Location</u>
<u>SO OP WA 3803</u>	<u>PSOP: Dispatch</u>	<u>Market Web Site</u>
<u>SO OP WA 3808</u>	<u>PSOP: Power System Security</u>	<u>Market Web Site</u>
	<u>ABC and AGC Interface Requirements</u>	<u>Market Web Site</u>
	<u>Technical Rules</u>	<u>ERA Web Site</u>

## 3.2. FACILITY REQUIREMENTS FOR ANCILLARY –SERVICES

### 2.1. General

~~System Management requires that each generating unit operating in parallel with the SWIS must have its governor enabled and governor response set at 4% droop, and have governor frequency dead band of less than 0.05 Hz. Refer to clauses 3.3.4.4~~

~~(d) and (e) of the Technical Rules~~

~~The Power System Operation Procedure 'Dispatch' contains provisions to ensure that penalties are not imposed upon Market Generators acting to assist in the event of a system emergency.~~

~~The following steps outline the criteria that System Management will apply in certifying Market Generators for the provision of Ancillary Services, including both for Load Following in the LFAS market and for instances where System Management seeks to enter into a Ancillary Services Contract for the provision of Spinning Reserve and Load Rejection Ancillary Services. Details of the additional requirements for the provision of System Restart Ancillary Services and the establishment of criteria for Dispatch Support Ancillary Services are also outlined.~~

2.1.1. Synergy must make its capacity to provide Ancillary Services from its Facilities available to AEMO to a standard sufficient to enable AEMO to meet its obligations in accordance with the WEM Rules [Clause 3.11.7A].

### 3.1.2.2. Load Following -Ancillary Service

~~The following section documents the Facility Quantity Parameters in steps (e), (f), (g), (h) and (k) as appropriate and the communication (including enablement) requirements in steps (a), (b) and (j) as required by the Market Rules [MR 7B.1.2].~~

3.1.2.2.1. ~~All~~The LFAS Facility Requirements for all Scheduled Generators and Non-Scheduled Generators providing Load Following Ancillary Service must meet the following criteria:(LFAS):

- ~~a.~~ The Facility's control system must accept and respond to Automatic Generator Control (AGC) set point and handshake signals that control the output of the Facility by raising or lowering the Facility's output to a desired level set by the AGC at a desired ramp rate; and
- ~~b.~~ The Facility must be equipped and configured to send signals to the AGC at least once every four seconds for each of the following quantities:
  - ~~1.~~ generator output level in MW; and
  - ~~2.~~ dispatch point in MW; and
  - ~~3.~~ AGC enable/disable; and
  - ~~4.~~ high limit in MW; and
  - ~~5.~~ low limit in MW; and
- ~~c.~~ The time to commence ramping in response to a signal from the AGC that orders the Facility's output to be either raised or lowered must be five seconds or less; and
- ~~d.~~ The control of the Facility must be selectable between 'Local Control' and 'Remote Control'. Selection of 'Local Control' must enable local control and disable remote control and selection of 'Remote Control' must enable remote control and disable local control; and
- ~~e.~~ The unit control dead band tolerance must be less than 2% of unit capacity for the Facility and the actual tolerance must be confirmed by

~~System Management and recorded in the Operating Protocol under step 2.1.1(l); and~~

~~f. The Facility must be able to achieve a minimum raise ramp rate of at least (a) for the Facility quantity parameters and limits referred to in clause 7B.1.2(a) of the WEM Rules, are that the Facility must:~~

~~(i) have a minimum ramp rate of at least:~~

~~(A) 0.2 MW/min for each MW of offered potential Upwards LFAS Enablement; and~~

~~(B) The Facility must be able to achieve a minimum lower ramp rate of at least 0.2 MW/min for each MW of offered potential Downwards LFAS Enablement; and~~

- ~~g. For the range of output (the quantity in an LFAS Price-Quantity Pair plus the cumulative quantity in any lower priced Price-Quantity pairs) the Facility must be able to achieve continuously, the meet the minimum required ramp rates specified in step 2.1.1(f) and 2.1.1(g); and~~
- ~~(iv)(ii) The Facility, in System Managements opinion, must not have a Forced Outage rate that would compromise its ability to deliver the 2.2.1(a)(i) continuously for the full range of LFAS output; and~~
- ~~h. The Facility meets the requirements of System Management's AGC interface signal protocol; and~~
- ~~(b) The for manner and forms of communication referred to in clause 7B.1.2(b) of the WEM Rules, are that the Facility must accept and respond to Automatic Generation Control (AGC) signals and the requirements of ABC and AGC Interface Requirements document;~~
- ~~(a) for nature and type of any enablement and quantity in the lowest Price-Quantity Pair restrictions referred to in an Upward or Downward LFAS Submission for a clause 7B.1.2(c) of the WEM Rules, are that the Facility shall be the greater must:~~
- ~~(i) have a Minimum LFAS Quantity of 10 MW or ten times; and~~
- ~~(ii) commence ramping in five seconds or less following receipt of a signal from the AGC that orders the Facility's confirmed unit control dead band as recorded in the Operating Protocol in accordance with step 2.1.1(e); and output to be either raised or lowered.~~
- ~~i. An Operating Protocol with System Management with respect to For the relevant Facility must have been entered purposes of bidding into by the relevant LFAS Market Generator.~~

~~3.1.2.2.2. System Management must document, that is, by way of a LFAS Submission meeting the methodology it will implement for ensuring Load Following facilities are used in reasonable proportion to the quantities selected under the Market Rules [MR 7B.3.4(b) & (c)] to meet the LFAS requirements during the Trading Interval and must publish the document on the Market Web Site [MR 7B.3.6] of clause 7B.2.7(a) of the WEM Rules:~~

- ~~(a) the Minimum LFAS Quantity must equal the value set in step 2.2.1(c)(i); and~~
- ~~(b) the Ramp Rate must at least equal the values specified in step 2.2.1(a)(i).~~

### 3.2.2.3. Spinning Reserve - Ancillary Service

~~2. System Management must ensure that the Facilities scheduled may be awarded a contract to provide Spinning Reserve are collectively capable of meeting the Spinning Reserve standard for a specified quantity up to the~~

~~Clause 3.9.3 states that "Spinning Reserve response is measured over three time periods following a contingency event. A provider of Spinning Reserve Service must be able to ensure the relevant Facility can:~~

~~(a) respond appropriately within 6 seconds and sustain or exceed the required response for at least 60 seconds; or~~

~~(b) respond appropriately within 60 seconds and sustain or exceed the required response for at least 6 minutes; or~~

~~(c) respond appropriately within 6 minutes and sustain or exceed the required response for at least 15 minutes,~~

~~for any individual contingency event."~~

~~amount the Facility can increase generation, or decrease consumption over all the time periods defined in the Market Rules [MR 3.9.3].~~

3.2.2.3.1. System Management will certify Scheduled Generator, Interruptible Load and Dispatchable Load Facilities to provide Spinning Reserve in one or more classes, designated Class A, Class B and Class C, corresponding to the time periods specified in the Market Rules of the following timeframes [Clause 3.9.3]:

~~Units meeting the capability requirements may be certified to provide more than one class of Spinning Reserve.~~

- (a) ~~Facilities can be certified for Class A Spinning Reserve for the amount that they can increase their output within 6 seconds, and sustain or exceed where the response must be sustained or exceeded for at least 60 seconds, with a maximum acceptable decay thereafter to a level not below the initial output plus 10%.~~
- (b) ~~Facilities can be certified for Class B Spinning Reserve for the amount that they can increase their output within 60 seconds, and sustain or exceed where the response must be sustained or exceeded for at least 6 minutes, with a maximum acceptable decay thereafter to a level not below the initial output plus 10%; or~~
- (c) ~~Facilities can be certified for Class C Spinning Reserve for the amount that they can increase their output within 6 minutes, and sustain or exceed where the response must be sustained or exceeded for at least 15 minutes, with a maximum acceptable decay thereafter to a level not below the initial output plus 10%.~~

~~3. Facilities certified for Class A Spinning Reserve must provide their Class A response by way of:~~

2.3.2. The response for:

- (a) step 2.3.1(a) must be automatic, such as:
  - (i) ~~Droop governor response~~, in the case of Scheduled Generators; or
  - (ii) ~~Automated under-frequency relays~~, in the case of Interruptible Load Facilities.

~~4. Facilities certified for Class B Spinning Reserve must provide their Class B response through one or more of the following:~~

- a. ~~Droop governor response; or~~
- b. ~~AGC response where appropriate (with signaling requirements as per System Management's AGC interface signal protocol); or~~
- c. ~~Local operator action to increase power output of the Scheduled Generator.~~

~~5. Facilities certified for Class C Spinning Reserve must provide their Class C response through one or more of the following:~~

- a. ~~Droop governor response; or~~
- b. ~~AGC response where appropriate (with signaling requirements as per System Management's AGC interface signal protocol); or~~
- c. ~~Local operator action to increase power output of the Scheduled Generator.~~

~~6. System Management may set upper limits on ramp-up rate for specific Scheduled Generators certified to provide Spinning Reserve, which the operators of those units must observe when acting in accordance with their~~

*Units capable of very high ramp rates may cause frequency to overshoot and cause over speed trips of slower responding steam units. System Management will set requirements under step 2.2.9 above based on a maximum allowable system-wide ramp-up rate.*



~~Spinning Reserve obligations:~~

- ~~7. System Management may set additional requirements for automatic control over Facilities that are not manned continuously, as a condition of certifying these Facilities to provide Spinning Reserve.~~

- (a) ~~System Management will evaluate steps 2.3.1(b) or 2.3.1(c) can be automatic.~~

~~3.2.2.2.3.3. AEMO must assess the quantity of Spinning Reserve that a Facility can be certified to provide in each class of the classes in step 2.3.1 using one or more of the following methods, in order of preference:~~

- (a) ~~By assessing the Facilities Facility's response to actual system events, based on data held by, or provided to System Management, AEMO; or~~

~~a. By assessing the Facilities Facility's Standing Data, control system settings or under frequency relay system settings, and other relevant information.~~

- ~~8. System Management may define, evaluate and apply other parameters describing a Facilities ability to provide Spinning Reserve and use those parameters in scheduling Facilities to provide Spinning Reserve if required.~~

*It is anticipated that scheduling Spinning Reserve will take account of the operating range over which the unit can provide reserve, the impact of ramping on Spinning Reserve response, auxiliary plant status and potentially other factors.*

- ~~9. System Management may revise from time to time the quantity of Spinning Reserve that a Scheduled Generator, Dispatchable Load or Interruptible Load is certified to provide based on the Facilities response to actual system events and, or changes to standing data or control system settings.~~

## ~~2.2 LOAD REJECTION ANCILLARY SERVICE~~

- ~~1. System Management must ensure that the Facilities scheduled to provide Load Rejection are collectively capable of meeting the Load Rejection standard over all the time periods defined in the Market Rules [MR 3.9.3].~~

*The Market Rules state that "Load Rejection Reserve response is measured over two time periods following a contingency event. A provider of Load Rejection Reserve Service must be able to ensure that the relevant Facility can:*

*(a) respond appropriately within 6 seconds and sustain or exceed the required response for at least 6 minutes; or*

*(b) respond appropriately within 60 seconds and sustain or exceed the required response for at least 60 minutes;*

*for any individual contingency event" IMR 3.9.71*

- ~~2. System Management will certify Facilities to provide Load Rejection Reserve in one or more of the time periods specified in the Market Rules, designated Class A and Class B.~~

- ~~3. Facilities can be certified for Class A Load Rejection Reserve for the amount that they can alter their output within 6 seconds, and sustain or exceed that change for at least 6 minutes.~~

- ~~4. Facilities can be certified for Class B Load Rejection Reserve for the amount~~





~~that they alter their output within 60 seconds, and sustain or exceed that change for at least 60 minutes.~~

- ~~5. Facilities certified for Class A Load Rejection Reserve must provide their Class A response through one or more of the following:~~

- a. ~~Droop governor response; or~~
  - b. ~~AGC response where appropriate (with signaling requirements as per System Management's AGC interface signal protocol); or~~
  - c. ~~Local operator action to reduce power output of the Scheduled Generator, including by tripping the unit if required.~~
6. ~~Facilities certified for Class B Load Rejection Reserve must provide their Class B response through one or more of the following:~~
- a. ~~Droop governor response; or~~
  - b. ~~AGC response where appropriate (with signaling requirements as per System Management's AGC interface signal protocol); or~~
  - c. ~~Local operator action to reduce power output of the Scheduled Generator, including by tripping the unit if required.~~
7. ~~System Management may set additional requirements for automatic control over Facilities that are not manned continuously, as a condition of certifying these Facilities to provide Load Rejection Reserve.~~
8. ~~System Management will evaluate the quantity of Load Rejection Reserve that a Facility can be certified to provide in each class using one or more of the following methods, in order of preference:~~
- a. ~~By assessing the unit's response to actual system events based on data held by or provided to System Management, or~~
  - (b) ~~By assessing the unit's Standing Data, control system settings, test results and other relevant information.~~
9. ~~System Management~~AEMO ~~may define, evaluate and apply other parameters describing a Facility's ability~~specific to provide Load Rejection Reserve and use these parameters in scheduling Facility's to provide load

*~~It is anticipated that scheduling Load Rejection Reserve will take account of the operating range over which the Facility can provide reserve, the impact of ramping on load rejection response, and potentially other factors.~~*

~~rejection if required.~~

~~3.2.3.2.3.4. System Management may revise from time to time the quantity of Load Rejection reserve that an individual Facility is certified to provide based on the Facility's response to actual system events for the provision of Spinning Reserve, including:~~

## ~~2.3~~ **SYSTEM RESTART ANCILLARY SERVICE**

~~Clause 3.9.8 states that Black Start or “System Restart Service is the ability of a Registered Facility which is a generation system to start without requiring energy to be supplied from a Network to assist in the re-energisation of the SWIS in the event of system shut-down”.~~

~~For the purpose of System Restart the SWIS is divided into the following sub-networks: north metropolitan; south metropolitan, south country, north country and eastern goldfields. Presently the only sub networks from which it is possible to~~

~~restore the SWIS are the north metropolitan, the south metropolitan and the north country.~~

- ~~4. In addition to the requirements outlined in the Market Rules [MR 3.9.8] System Management requires that a System Restart Facility must:~~
- ~~a. be capable of closing its generator output circuit breaker onto a de-energised or dead bus; and~~
  - ~~b. be able to re-energise a restart path or section of the Network nominated by System Management; and~~
  - ~~c. be capable of dead load pick-up of at least 15% of its maximum output; and~~
  - ~~d. be capable of operating in isochronous governor mode to set and control at 50 Hz the frequency of the power system it is being used to restore; and~~
  - ~~e. be capable of operating in droop governor mode according to the requirements of clause 3.3.4.4 of the Technical Rules when no longer required by System Management to be the generator setting system frequency but still required to support system restoration.~~
- (a) ~~For System Restart for automatic response for Facilities that are not manned/staffed continuously, System Management may require a degree of automatic control over the Facility. The required level of control will be determined on a case by case basis and will be formalized between the service provider and System Management in a legally binding agreement.; and~~

~~System Management normally establishes a set of testing procedures to be employed to prove the Facility's capability of providing the service required. Such requirements are particular to the type of Facility and are detailed in the agreement along with any applicable penalties for non-performance.~~

- (b) ~~Dispatch Support limits on ramp-up rates for generators and ramp-down rates for Interruptible Load.~~

### 3.3.2.4. Load Rejection Ancillary Service

2.4.1. System Management will establish facility-Facilities may be awarded a contract to provide Load Rejection Reserve for a specified quantity up to the amount the Facility can reduce generation or increase consumption over one or more of the following timeframes [Clause 3.9.7]:

*The Market Rules [MR 3.9.9] state that “Dispatch Support Service is any other Ancillary Service that is needed to maintain Power System Security and Power System Reliability that are not covered by the other Ancillary Service categories. Dispatch Support Service is to include the service of controlling voltage levels in the SWIS, where that service is not already provided under any Arrangement for Access or Network Control Service Contract.”*

- (a) within 6 seconds, where the response must be sustained or exceeded for at least 6 minutes; or
- (b) within 60 seconds, where the response must be sustained or exceeded for at least 60 minutes.

2.4.2. Facilities certified for Load Rejection Reserve may provide a response using Droop.

2.4.3. AEMO must assess the quantity of Load Rejection Reserve that a Facility can provide in each of the timeframes in step 2.4.1 using one or more of the following methods:

- (a) by assessing the Facility’s response to actual system events based on data held by, or provided to, AEMO, or
- (b) by assessing the Facility’s Standing Data, control system settings, test results and other relevant information.

2.4.4. AEMO may define parameters specific to an individual Facility for the provision of Load Rejection Reserve, including:

- (a) requirements for providers of Dispatch Support automatic response for Facilities that are not staffed continuously; and
- (b) limits on ramp-down rate for a generator or ramp-up rate for a load.

### 2.5. System Restart Ancillary Service on a case-by-case basis. The

2.5.1. System Restart Service is the ability of a Registered Facility which is a generation system to start without requiring energy to be supplied from a Network to assist in the re-energisation of the SWIS in the event of system shut-down, provided under an Ancillary Service Contract [Clause 3.9.8].

2.5.2. A System Restart Facility must be capable of:

- (a) closing the generation circuit breaker onto a de-energised or dead bus;
- (b) re-energising a restart path or section of the Network nominated by AEMO;
- (c) operating in isochronous governor mode to set and control the frequency of the power system it is restoring to 50 Hz; and



(d) operating in Droop, as required by AEMO; and

~~(a)(e)~~ other requirements will be specified in any applicable Expression of Interest and/or Tender documentation and in any contract established with the Service Provider, as specified by AEMO.

*~~Dispatch support includes the use of out of merit generation, the use of location specific generation in sub-networks, and the use of generation for system voltage support; in general Ancillary Services not covered elsewhere.~~*

### ~~3 — ANCILLARY SERVICES PLANNING AND REPORTING~~

~~1. System Management must [MR 3.11.11] produce an annual Ancillary Services Report for submission to the IMO. The report must:~~

~~2.5.3. Cover all AEMO may define parameters specific to an individual Facility for the provision of System Restart Reserve, including requirements for remote control by AEMO for Facilities that are not staffed continuously.~~

~~2.5.4. AEMO must assess whether a Facility can provide System Restart Reserve via a set of tests for the Facility that may be location-specific.~~

### ~~4.3. CERTIFICATION OF FACILITIES FOR ANCILLARY SERVICES, AND~~

#### ~~3.1. Provide, as appropriate, General~~

~~3.1.1. AEMO must determine and document the total quantity and/or a frequency distribution of procedure to be followed where the scheduled quantity, of each WEM Rules require Ancillary Service Services to be provided in and AEMO and Rule Participants must comply with that process [Clause 3.11.15].~~

~~a. The process for the preceding year; and~~

~~4.1.1.3.1.2. Provide an assessment of the adequacy of the provision of Ancillary Services provided in the preceding year; and is:~~

~~(a) Detail the costs (with estimates for the remainder of the year if required) of providing each bilaterally procured AEMO must certify that a Facility can provide an Ancillary~~

*~~“Bilaterally procured” Ancillary Services excludes those services procured through a central market, such as Load Following Ancillary Service, since the IMO is better placed to specify the applicable costs from the market outcomes.~~*

~~Service; and~~

~~b. Provide the total estimated quantity required of each Ancillary Service in the coming year; and~~

~~c. Provide details of any forecasting methodologies to be used in scheduling Ancillary Services; and~~

~~d. State the policies and any applicable assumptions and special circumstances that were relevant to System Management’s determination of quantities; and~~

~~e. Provide the total estimated cost of each bilaterally procured Ancillary~~

Service; and

- f. ~~Specify how each Ancillary Service is to be procured.~~
- 2. ~~The report will cover the financial year commencing on 1 July and finishing on 30 June of the year following.~~
- 3. ~~Where System Management is required to amend the Ancillary Services Requirements as defined in the Market Rules [MR 3.11.3], this should be carried out as soon as practical and resubmitted to the IMO.~~
- (b) ~~In requiring System Management to amend the Market Participant, including Synergy, or Network Operator:~~
  - (i) ~~may only provide an Ancillary Service from a Facility to the degree that the Facility is certified for that Ancillary Service in accordance with step 3.1.2(a);~~

~~The requirements that must be followed by the IMO and System Management when auditing the Ancillary Service Requirements are defined in the Market Rules [MR 3.11.6].~~

- (ii) ~~providing an Ancillary Service, must do so in accordance with the certification in step 3.1.2(a).~~

3.1.3. ~~AEMO's certification in step 3.1.2(a):~~

- (a) ~~applies only for the duration that:~~
  - (i) ~~for LFAS, other than for Synergy, the agreement in step 3.2.2(a) exists;~~
  - (ii) ~~for Ancillary Services provided under an Ancillary Service Contract, the duration of that contract; or~~
  - ~~(iii) for Synergy, other than for Ancillary Services Requirements as defined in the Market Rules, or any other part of the provided under an Ancillary Service Report, the IMO must recognise and have due regard to System Management's contract commitments. Contract, is detailed by AEMO; and~~



## ~~4 DETERMINATION OF ANCILLARY SERVICE REQUIREMENTS~~

~~System Management must determine the Ancillary Service Requirements in order to meet particular standards and requirements in accordance with the Market Rules [MR 3.11.1].~~

- (a) ~~shall apply from a Trading Interval determined by AEMO and may apply for a specified duration;~~

### ~~4.2.1.1. must require that each Facility intended to provide an~~ **General**

- (a) ~~In its analysis of Ancillary Service meets the relevant requirements in step 2;~~
- (b) ~~must determine the level of the relevant Ancillary Service that can be provided by that Facility; and~~
- (c) ~~must include any parameters determined by AEMO in step 2.~~

## 3.2. Application for certification

3.2.1. A Market Participant, Network Operator or Ancillary Service Provider may apply to AEMO to provide Ancillary Services.

3.2.2. Other than Synergy, a Rule Participant providing an Ancillary Service may only provide:

- (a) LFAS, once an operating agreement exists between AEMO and the relevant Market Participant; and
- (b) any other Ancillary Service, once an Ancillary Service Contract for the provision of the relevant Ancillary Service exists, as detailed in step 5.

3.2.3. AEMO will certify a Facility for a relevant Ancillary Service in step 3.1.2(a):

- (a) for Synergy, as part of registering the relevant Facility in accordance with clause 2.29 of the WEM Rules or as requested by Synergy;
- (b) for all other Rule Participants, as part of establishing the agreement or Ancillary Services Contract in step 3.2.2.

## 3.3. Reassessment of certification

3.3.1. At any time, a Rule Participant may apply to AEMO for re-assessment of the certification in step 3.1.2(a), and AEMO must complete that re-assessment within a reasonable timeframe.

3.3.2. At any time AEMO, may, acting reasonably, determine to suspend or modify the certification in step 3.1.2(a), for reasons which may include:

- (a) a Forced Outage rate that would compromise the Facility's ability to deliver the Ancillary Service;
- (b) non-conformance with AGC signals;
- (c) failure to meet testing requirements for the relevant Ancillary Service; or

(d) non-provision of the Ancillary Service.

3.3.3. Following the determination in step 3.3.2, AEMO must:

- (a) Provide the relevant Rule Participant with 5 business days' notice that AEMO intends to vary the certification, detailing the reasons for the variation;
- (b) Determine a reasonable period for the Rule Participant to rectify any issues that led to the proposed variation in certification; and
- (c) Consider any evidence provided by a Rule Participant prior to enacting the variation in certification.

3.3.4. AEMO may withdraw the certification in step 3.1.2(a) for any Facility following a suspension that remains in place for 30 business days or more.

## 4. ANCILLARY SERVICE REQUIREMENTS AND OPERATION

### 4.1. Ancillary Services Requirements, ~~System Management~~

4.1.1. AEMO must determine the Ancillary Service Requirements for each Ancillary Service:

- (a) in accordance with the SWIS Operating Standards and the Ancillary Service Standards [Clause 3.11.1];
- (b) to meet the greater of the:
  - (i) relevant SWIS Operating Standard; and
  - (ii) the relevant Ancillary Service Standard; and
- (c) having regard to the relevant conditions identified in step 4.1.3;
- (d) in accordance with step 4.1.4; and
- (e) using the information identified in step 4.1.5.

4.1.2. The relevant Ancillary Service Standard in step 4.1.1 must be considered in line with the frequency that AEMO re-dispatches Facilities within a Trading Interval.

~~4.2.4.1.3.~~ In determining Ancillary Service Requirements in step 4.1.1, AEMO must have regard to the conditions and situations applying during the year, including one or more of the following which may include:

- (a) the commissioning or decommissioning of Facilities; ~~and~~
- (b) the performance of Facilities that give rise to the need for additional Ancillary Services; ~~and~~
- (c) the risk associated with non-performance of Ancillary Service ~~sources; and~~ providers;
- (d) the variability of demand on the SWIS; and
- (e) any other factor ~~System Management~~ AEMO reasonably considers necessary.

~~*Other factors that System Management must have in regard to Ancillary Service Requirements are defined in the Market Rules [MR 3.11.5].*~~

~~4. System Management may use the following information in its determination of Ancillary Service Requirements:~~

- ~~a. Medium Term PASA studies; and~~
- ~~b. Equipment Limits and Security Limit information received by System Management from the IMO or Market Participants; and~~
- ~~c. Any other information that System Management considers relevant to the determination.~~

~~4.1.4. System Management~~The Ancillary Services Requirements for:

- ~~(a) Spinning Reserve must include capacity utilised to meet the Upwards LFAS Quantity, so that the capacity provided to meet the Load Following requirement is counted as providing part of the Spinning Reserve Ancillary Service Requirement [Clause 3.10.2(b)], but only to the degree that the Facility is able to provide for, or is certified for, both LFAS and Spinning Reserve;~~
- ~~(b) Load Rejection Reserve may include capacity utilised to meet the Load Following Service Downwards LFAS Quantity, so that the capacity provided to meet the Load Following requirement is counted as providing part of the Load Rejection Reserve Service Ancillary Service Requirement but only to the degree that the Facility is able to provide for, or is certified for, both LFAS and Load Rejection Reserve.~~

~~4.2.2.4.1.5. AEMO may seek further information from Market Participants and, Ancillary Service Providers and Network Operators in order to complete its determination of Ancillary Service Requirements where this information is relevant to the assessment.~~

~~4.2.3.4.1.6. Market Participants and, Ancillary Service Providers and Network Operators must make every reasonable endeavour to provide any information requested by System Management AEMO under step 4.1.3 to System Management 4.1.5 in the form requested and as soon as practicable.~~

## ~~4.2. For the avoidance of doubt System Management may, if necessary Ancillary Services Operation and Planning~~

*~~System Management's short-term assessment of Ancillary Services requirements, particularly with respect to Load Following, will not in general be exactly aligned with the longer-term assessment contained in the Ancillary Services Requirements. Any discrepancy sustained over an extended period would be considered in determining~~*

~~4.2.1. When seeking to meet the Dispatch Criteria, schedule quantities of Ancillary Services greater than or less than those contemplated AEMO must ensure that:~~

- ~~(a) for Spinning Reserve, the enabled Facilities can collectively meet the Spinning Reserve Requirement at each time frame indicated in step 2.3.1;~~
- ~~(b) for Load Rejection Reserve, the enabled Facilities can collectively meet the Load Rejection Reserve Requirement at each time frame indicated in the Ancillary Services Requirements step 2.4.1.~~

*whether to reassess the Ancillary Services Requirements pursuant to [MR 3.11.3] and Section 4.2 below.*

## ~~4.2 REASSESSMENT OF ANCILLARY SERVICE REQUIREMENTS~~

### ~~5. DURING THE PERIOD OVER WHICH THE PROCUREMENT OF ANCILLARY SERVICES~~

#### ~~5.1. General~~

- ~~1. Ancillary Service Requirements will apply, System Management must monitor the conditions giving rise to its original determination.~~
- ~~2. Clause 3.11.3 of the Market Rules provides details of the circumstances in which System Management may reassess the level of Ancillary Service Requirements during the year.~~
- ~~3. Where System Management considers that significant changes to the circumstances outlined in clause 3.11.3 of the Market Rules arise and in System Management's view may give rise to adverse effects on Power System Security or Power System Reliability, System Management must prepare a report to the IMO setting out details of the specific circumstances and making a recommendation to revise the Ancillary Service Requirements.~~
- ~~4. System Management may recommend to the IMO one or more actions to improve the situation described in step 4.2.3 above of this Procedure, examples of which include one or more of the following:
 
  - ~~a. contracting or arranging additional Ancillary Services; or~~
  - ~~b. operating with reduced security levels; or~~
  - ~~c. restricting the actions of a Market Participant or its Facility that might be giving rise to the increased need for Ancillary Services.~~~~
- ~~5. System Management must undertake the agreed course of action as soon as practicable after it is approved by the IMO.~~

## ~~5 PROCUREMENT OF ANCILLARY SERVICES~~

~~5.1.1. AEMO may enter into an Ancillary Service Contract with a Rule Participant other than Synergy for Spinning Reserve Ancillary Services in specified circumstances. AEMO may also enter into an Ancillary Service Contract with a Rule Participant for the provision of a Load Rejection Reserve Service, System Restart Service or Dispatch Support Service [Clauses 3.11.8 and 3.11.8A].~~

5.1.2. AEMO may only enter into an Ancillary Service Contract for:

(a) Spinning Reserve Services, if it considers that:

#### 4.3.1.1. General

1. ~~System Management must procure Ancillary Services in accordance with the approved Ancillary Services Report.~~

*~~“Procurement” refers to all acquisition of paid-for Ancillary Services, whether by means of contract or through a central market.~~*

2. ~~System Management must obtain Ancillary Services via bilateral contract where it considers that:~~

- (i) ~~cannot meet the Ancillary Service Requirements through utilising Verve Energy facilities and currently contracted facilities; or with Synergy’s Registered Facilities; or~~
- (ii) ~~can obtain the Ancillary Service Contract will provide~~ a less expensive alternative to Ancillary Services provided by ~~Verve Energy, Synergy’s Registered Facilities~~[Clause 3.11.8]; and

~~Verve Energy is effectively the “provider of last resort” for Spinning Reserve, Load Rejection Reserve and Load Following Ancillary Service, and has obligations under the Market Rules to ensure the Standards for those services can be maintained.~~

- (a) ~~Each year, System Management must consider whether step 5.2(b) above of this Procedure applies and include its views within the Dispatch Support Ancillary Services Report, prepared pursuant to, if it has obtained the approval of the Market Rules [MR Economic Regulation Authority [Clause 3.11.8B].~~

~~4.3.4.5.1.3.~~ Where AEMO intends to enter into an Ancillary Service Contract, AEMO must ~~[Clause 3.11]-[9]~~.

- (a) ~~System Management must seek to minimise the cost of meeting its obligations to schedule and dispatch facilities (or cause them to be scheduled and dispatched) to meet the Ancillary Service Requirements in each Trading Interval in accordance with Chapter 7 of the WEM Rules; and~~
- (a) ~~give consideration to using a competitive tender process for the procurement, if, unless System Management considers that doing so this would minimise the cost of meeting the Ancillary Service Requirements, not meet the requirements of 5.1.3(a).~~
- ~~3. Where System Management determines to use a competitive tender process, the following phases will apply:~~
- ~~a. the issuing of an Expression of Interest; and~~
  - ~~b. the calling of competitive tenders (if required); and~~
  - ~~c. the assessment of tenders according to the criteria in the Market Rules and as published during the procurement process; and~~
  - ~~d. the formalising of the necessary contracts and agreements.~~
- ~~4. System Management may vary or otherwise not proceed with any of the phases of the competitive tender process where System Management considers that adherence to the phases of the competitive tender process would not seek to minimise the cost of meeting the Ancillary Service Requirements.~~

## ~~5.2~~ EXPRESSION OF INTEREST

- ~~1. Where System Management AEMO determines to use a competitive tender process, it must first issue a request for an Expression of Interest for the supply of the relevant Ancillary Service.~~

~~4.3.2.5.1.4.~~ The request must be published by System Management in a form and location that System Management reasonably considers will be seen by the maximum ~~AEMO must use all reasonable efforts to maximise the~~ number of potential providers of the relevant Ancillary Service, ~~including but are not limited to, seeking:~~

- (a) ~~System Management must expressions of interest; and~~

~~(b) proposals to provide the necessary consultation and assistance where requested by respondents relevant Ancillary Service.~~

~~5.1.5. Any documents issued by AEMO seeking proposals under step 5.1.4(b) must specify the:~~

~~(a) criteria that AEMO will use to assess the capability of their facilities to meet proposals to provide the technical specification relevant Ancillary Service; and~~

~~2. System Management must determine from the responses to the request for Expression of Interest whether there is sufficient interest to proceed with a competitive tender. In making this determination, System Management must give due weight to:~~

~~(b) the likelihood process by which a Facility must be certified, as detailed in step 3.1.2.~~

~~5.1.6. AEMO must assess all proposals received from the process undertaken in accordance with step 5.1.4(b) using the criteria specified in the documents referred to in step 5.1.5.~~

~~5.1.7. AEMO will determine whether enter into an Ancillary Service contract as a result of the assessment in step 5.1.6 having regard to:~~

~~(a) the extent to which the Facility is certified, or is expected to be certified, as per step 3.1.2(a); and~~

~~(b) any other factor consistent with the Wholesale Electricity Market Objectives.~~

~~4.3.3.5.1.8. respondents meeting the technical requirements Where AEMO enters into an Ancillary Service Contract as a result of the procurement process in step 5.1.3 for Spinning Reserve Services, the scope of the Ancillary Services; and Service Contract must:~~

~~(a) the need to minimise not include components for the payment of energy [Clause 3.11.8E]; and~~

~~a. only include the cost of procuring the necessary Ancillary Service Requirements and meet the commercial criteria which the tendered services will be subject to; and~~

- ~~b. whether sufficient Ancillary Services will be available from Verve Energy and other contracted sources.~~
- ~~3. System Management must complete its evaluation availability of the responses to the Expression of Interest within a reasonable period of time.~~
- ~~4. System Management will prepare a short list of parties to be invited to compete in the subsequent competitive tender, service based on responses received in the Expression of Interest process.~~
- ~~5. System Management may publish a notice advising of its conclusion on whether to proceed with a competitive tender process following the completion of its evaluations.~~

### ~~5.3 — COMPETITIVE TENDERS~~

- ~~1. If a decision is made to continue with a competitive tender process, System Management must issue a request for tenders at the earliest practical date following the evaluation of responses received in the Expression of Interest process.~~
- ~~(b) The request a proportion of values determined for tenders for the supply of one or more Ancillary Services should be provided by letter and electronic form to parties who have been short-listed during the Expression of Interest process Margin Peak and Margin Off-Peak [Clause 3.11.8E];~~
- ~~2. The request for tenders must be accompanied by:~~
  - ~~a. a template contract covering the Ancillary Services for which tenders are sought; and~~
  - ~~c. amust not include components for the payment of any Upwards LFAS Enablement for a specific Trading Interval.~~

#### ~~5.1.9. Ancillary Service Contracts should specify as a minimum:~~

- ~~(a) a technical description of the tender assessment criteria; relevant Ancillary Service;~~
- ~~3. System Management shall establish and review from time to time internal processes governing the competitive tender process and may revise the processes if necessary~~

### ~~5.4 — ASSESSMENT CRITERIA~~

- ~~1. Where System Management receives a tender for a Facility to supply one or more Ancillary Services, System Management must certify that the Facility meets the relevant criteria outlined in section 2 of this Procedure.~~
- ~~2. In addition to the requirements in step 5.4.1, to be acceptable the minimum requirements of a proposal are that it should meet the technical requirements set out in the standard form Ancillary Service Supply Contract and the requirements specified in the Market Rules [~~MR 3.11.8~~ and ~~MR 3.11.8A~~].~~





- ~~(a) The factors listed in step 5.4.2 above are not exclusive, and System Management may take into account any other factor consistent with the Wholesale Electricity Market Objectives.~~
- ~~3. System Management must document the results of its evaluations, including the reasons for accepting or rejecting each contract proposal.~~

## ~~6—ANCILLARY SERVICES CONTRACTS~~

### ~~6.1—CONTRACTS FOR THE SUPPLY OF ANCILLARY SERVICES~~

- ~~1. System Management must prepare standard form contracts to be used for situations where System Management contracts to purchase Ancillary Services.~~
- ~~2. The contract should set out the following, as a minimum:~~
  - ~~a. a technical description of the applicable Ancillary Service; and~~
  - (b) the performance requirements of the relevant Ancillary Service; ~~and~~
  - (c) testing requirements to determine performance and compliance of the service; ~~and relevant Ancillary Service;~~
  - (d) the ~~facilities~~Facilities from which ~~each service~~the relevant Ancillary Service will be provided; ~~and~~
  - (e) the process by which the relevant Ancillary ~~Services~~Service will be made available; ~~and~~
  - ~~b. the process by which Ancillary Services will be dispatched; and~~
  - (f) ~~the post-event~~the information following an activation of the relevant Ancillary Service that both parties must provide; ~~and~~
  - (g) the prices and payment structure; ~~and~~
  - (h) information disclosure;~~and requirements;~~
  - (i) commercial terms and conditions;
  - ~~(j)~~(j) applicable penalties for non-performance; ~~and~~
  - ~~(k)~~(k) a mechanism for resolution of disputes.

### ~~6.2—CONTRACTS FOR THE SUPPLY OF SPINNING RESERVE AND LOAD REJECTION RESERVE ANCILLARY SERVICES~~

- ~~1. In addition to the requirements in the Market Rules, Ancillary Service Providers other than Verve Energy who wish to provide Spinning Reserve and/or Load Rejection Reserve Ancillary Services must enter into a contract with System Management covering these services. The contract will cover all commercial and technical matters relevant to the supply, and be consistent with the Market Rules and this Procedure.~~
- ~~2. The requirements that System Management must follow where an Ancillary Service Contract has been entered into are specified in the Market Rules [MR 3.11.10].~~

### ~~6.3—PROVISION OF ANCILLARY SERVICES WITHOUT A CONTRACT~~

- ~~1. Under a Normal Operating State or a High Risk Operating State all Ancillary Services required by the SWIS will be provided either by the LFAS market, by~~



~~Verve Energy Facilities as an obligation under the Market Rules, or by other Facilities (including System Interruptible Loads) under a separate contract.~~

~~2. Under an Emergency Operating State as defined within the Market Rules [MR 3.4 and MR 3.5] and in the Power System Operation Procedure – Power~~

~~System Security, System Management may direct a Market Generator to provide Ancillary Services to the extent necessary to return to a High Risk Operating State or Normal Operating State where that facility is physically capable of providing such services, regardless of whether that Facility has an Ancillary Service Contract.~~

#### ~~6.4 SETTLEMENT DATA~~

- ~~1. When System Management has entered into an Ancillary Service Contract with a Rule Participant, System Management must as soon as practicable and not less than 20 Business Days prior to the Ancillary Service Contract taking effect, provide the IMO with the information specified in the Market Rules [MR 3.22.2].~~

~~The information to be provided by System Management to the IMO for each Rule Participant holding an Ancillary Service Contract for a Trading Month and the date by which is to be provided is specified in the Market Rules [MR 3.22.2 & MR 9.16.2(a)].~~