



WEM Procedure: Undertaking the Long Term PASA

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Version Release History

Version	Effective Date	Summary of Changes
1.0	1 June 2010	New Market Procedure for undertaking the Long Term PASA and conducting a review of the Planning Criterion resulting from PC_2009_11
2.0	30 November 2015	Changes resulting from the transfer of functions from the IMO to AEMO
3.0	18 April 2017	Changes resulting from the transfer of System Management functions to AEMO
4.0	1 October 2017	Changes resulting from amendments to the Reserve Capacity Mechanism as per AEPC_2017_06
5.0	20 September 2022	Revised for amendments made in Wholesale Electricity Market Amendment (Governance) Rules 2021 and Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020
5.1		Revised for amendments made in Wholesale Electricity Market Amendment (Reserve Capacity Reform) Rules 2023.

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1. Introduction

1.1. Purpose and scope

- 1.1.1. This WEM Procedure: Undertaking the Long Term PASA (Procedure) is made in accordance with AEMO's functions under clause 2.1A.2(h) of the Wholesale Electricity Market Rules (WEM Rules).
- 1.1.2. The *Electricity Industry Act 2004 (WA)*, the WEM Regulations and the WEM Rules prevail over this Procedure to the extent of any inconsistency.
- 1.1.3. In this Procedure, where obligations are conferred on a Rule Participant, that Rule Participant must comply with the relevant obligations in accordance with clause 2.9.7A, 2.9.7D or 2.9.8 as applicable.
- 1.1.4. The purpose of this Procedure is for AEMO to describe-document the procedure AEMO-it follows in conducting the Long Term PASA [**Clause 4.5.14**].
- 1.1.5. Appendix A of this Procedure outlines the head of power clauses that this Procedure is made under, as well as other obligations in the WEM Rules covered by this Procedure.

1.2. Definitions

- 1.2.1. Terms defined in the *Electricity Industry Act 2004 (WA)*, the WEM Regulations and the WEM Rules have the same meanings in this Procedure unless the context requires otherwise.
- 1.2.2. The following definitions apply in this Procedure unless the context requires otherwise.

Table 1 Definitions

Term	Definition
<u>ESOO</u>	<u>Electricity Statement of Opportunities</u>
<u>ESOO Consumption</u>	<u>ESOO Consumption refers to ES00 Operational Consumption and ES00 Unscheduled Operational Consumption.</u>
<u>ESOO Demand</u>	<u>ES00 Demand refers to ES00 Operational Demand and ES00 Unscheduled Operational Demand.</u>
<u>Operational Consumption</u>	<u>Electricity consumption that is met by all utility-scale generation, including consumption from electric vehicles and excluding impacts of distributed PV and battery storage. Operational Consumption is measured in MWh.</u>
<u>Operational Demand</u>	<u>Electricity demand that is met by all utility-scale generation, including demand from electric vehicles and excluding impacts of distributed PV and battery storage. Operational Demand is measured in MW, averaged over a 30-minute period.</u>
<u>ESOO Operational Consumption</u>	<u>Electricity consumption (power used over a period of time) that is delivered by sent-out generation supplied by all market registered Energy Producing Systems, including distribution and transmission losses, as defined and reported in the ES00 Report. ES00 Operational Consumption is measured over a 30-minute period, conventionally reported as megawatt hours or gigawatt hours.</u>
<u>ESOO Operational Demand</u>	<u>Electricity demand (power used at a point of time) that is delivered by sent-out generation supplied by all market-registered Energy Producing Systems, including distribution and transmission losses, as defined and reported in the ES00 Report. ES00 Operateional Demand is averaged over a 30-minute period, conventionally reported as megawatts or gigawatts.</u>

Term	Definition
ESOO Unscheduled Operational Consumption	ESOO Operational Consumption which excludes any consumption associated with scheduled loads (such as utility-scale storage charging), as defined and reported in the ESOO Report.
ESOO Unscheduled Operational Demand	ESOO Operational Demand excludes any demand associated with scheduled loads (such as utility-scale storage charging), as defined and reported in the ESOO Report.
Expected Unserved Energy	The estimated percentage of forecast electricity consumption for a Capacity Year which cannot be met by the anticipated capacity of all Energy Producing Systems and Demand Side Programmes in that Capacity Year.
Wholesale Electricity Market System or WEMS	An interface software system that AEMO uses to administer and operate the Wholesale Electricity Market.

1.3. Interpretation

1.3.1. The following principles of interpretation apply in this Procedure unless the context requires otherwise.

- (a) Clauses 1.3 to 1.5 of the WEM Rules apply in this Procedure.
- (b) References to time are references to Australian Western Standard Time.
- (c) Terms that are capitalised, but not defined in this Procedure, have the meaning given in the WEM Rules.
- (d) A reference to the WEM Rules or WEM Procedures includes any associated forms required or contemplated by the WEM Rules or WEM Procedures.
- (e) Words expressed in the singular include the plural and vice versa.
- (f) A reference to a paragraph refers to a paragraph of this Procedure.
- ~~(g)~~ (g) [A reference to an appendix refers to an appendix of this Procedure.](#)
- ~~(g)~~(h) A reference to a clause refers to a clause or section of the WEM Rules.
- ~~(h)~~(i) References to WEM Rules in this Procedure in bold and square brackets **[Clause XXX]** are included for convenience only, and do not form part of this Procedure.
- ~~(i)~~(j) Text located in boxes and headed as **E[explanatory Note X]** in this Procedure is included by way of explanation only and does not form part of this Procedure. The Procedure prevails to the extent of any inconsistency with the explanatory notes contained within it.
- ~~(j)~~(k) The body of this Procedure prevails to the extent of any inconsistency with the figures, diagrams, appendices, schedules, annexures or attachments contained within this document.

1.4. Related documents

1.4.1. The documents in Table 2 are associated with this Procedure.

Table 2 Related documents

Reference	Title	Location
WEM Rules	WEM Rules	Energy Policy WA Website

Reference	Title	Location
Electricity Statement of Opportunities Report	WEM Electricity Statement of Opportunities Report	AEMO Website
WEM Procedure	WEM Procedure: Certification of Reserve Capacity	WEM Website
WEM Procedure	WEM Procedure: Electric Storage Resource Obligation Intervals (ESRO)	WEMAEMO Website
WEM Procedure	WEM Procedure: Rule Participant Registration Processes	WEM Website

1.5. Communications and provision of information

1.5.1. All communications and provision of information by a Rule Participant to AEMO under this Procedure must be conducted via email, unless otherwise specified in this Procedure.

1.5.2. All communications and provision of information by AEMO to a Rule Participant under this Procedure will be conducted via email, unless otherwise specified in this Procedure.

2. Information requirements

2.1. Rule Participant information requests

- 2.1.1. Clauses 4.5.3; ~~to 4.5.3A~~; 4.5.4 ~~and~~; ~~clauses~~ 4.5.6; ~~4.5.7~~; ~~and to~~ 4.5.8 apply with respect to AEMO's right to seek information from Rule Participants, as well as applying to, and the process of provision of information by, ~~those~~ Rule Participants.
- 2.1.2. Notices to Rule Participants under clause 4.5.3, will be sent ~~by email~~ to that Rule Participant's main contact user's nominated email address registered in the Wholesale Electricity Market System as provided under the WEM Procedure:⁴ Rule Participant Registration Processes.
- 2.1.3. AEMO may provide a template to assist Rule Participants in responding to a notice issued under clause 4.5.3.
- 2.1.4. If AEMO provides a template under paragraph 2.1.3, Rule Participants must use that template when responding to the notice under clause 4.5.3, unless AEMO ~~in its absolute discretion~~ agrees otherwise in writing.
- 2.1.5. AEMO will review the data and information provided by a Rule Participant under clause 4.5.4 and may also consider:
- (a) data and information previously submitted by that Rule Participant as part of an application for certification of Reserve Capacity for the same Facility;
 - (b) data and information provided by the Rule Participant as part of its most recently submitted Expression of Interest;
 - (c) the characteristics of the Rule Participant's Facility or project and any similar Facilities or projects; and
 - (d) any other relevant information that is available to AEMO at the time of the review.
- 2.1.6. AEMO may seek clarification of information provided by a Rule Participant under clause 4.5.6; ~~by emailing~~ issuing a further request to that Registered Participant's main contact user's nominated email address registered in the Wholesale Electricity Market System, specifying the further clarification required and a time and date for provision of a response by the Registered Rule Participant.
- 2.1.7. A Rule Participant must respond to a request for clarification from AEMO under paragraph 2.1.6 by the time and date specified by AEMO.

2.2. Information from persons who are not Rule Participants

- 2.2.1. For the purpose of identifying persons who may hold information that is relevant to undertaking the Long Term PASA, AEMO may consider:
- (a) persons who have previously submitted an Expression of Interest for new capacity in the SWIS for the current or previous Reserve Capacity Cycles;

⁴ ~~It is a Market Participant's responsibility to ensure contact details in WEMS are up to date.~~

- (b) publicly available information about new capacity that may enter the SWIS during the Long Term PASA Study Horizon, which may include, but is not limited to, media releases and news articles; and
- (c) any other information that can be used to identify potential proponents of new capacity in the SWIS.

2.2.2. If AEMO determines that a person who is not a Rule Participant may hold relevant information, then AEMO may request information from that person under clause 4.5.5. AEMO's request must be in writing and may include a template to assist the person to respond to the request.

~~2.2.3. If AEMO requests information from a person under paragraph 2.2.2, then that person may must provide the data requested by AEMO within 15 Business Days of receiving that request.~~

3. Preparation of ~~ESOO~~Operational Consumption and ~~ESOO~~Operational Demand Forecasts

- 3.1.1. AEMO ~~will~~must prepare ~~ESOO~~Operational Demand forecasts for each of the scenarios specified in clause 4.5.10(a).
- 3.1.2. AEMO may prepare ~~ESOO~~Operational Demand forecasts for additional scenarios that are not specified in clause 4.5.10(a).
- 3.1.3. AEMO ~~must~~will prepare ~~ESOO~~Operational Consumption forecasts for each of the scenarios specified in clause 4.5.10(a).
- 3.1.4. In preparing forecasts under paragraphs 3.1.1, 3.1.2 ~~and~~ 3.1.3, AEMO may take into account any factors that AEMO considers are likely to affect electricity demand over the Long Term PASA Study Horizon. These factors may include, but are not limited to:
 - (a) air-conditioning penetration and saturation rates;
 - (b) the temperature sensitivity of electricity demand;
 - (c) uptake of distributed energy resources (including, but not limited to, electric vehicles, distributed photovoltaic and distributed battery storage);
 - (d) economic growth;
 - (e) population growth;
 - (f) energy efficiency;
 - (g) fuel switching (for example, between electricity and natural gas); ~~and~~
 - ~~(h)~~ building approvals and new home starts;
 - ~~(i)~~ hydrogen production; and
 - ~~(h)(j)~~ business and residential electrification.

3.1.5. In preparing the forecasts under paragraphs 3.1.1, 3.1.2, ~~and or~~ 3.1.3, AEMO may, ~~but is not obliged to,~~ consult with Rule Participants through existing forums or working groups, or through meetings with individual Rule Participants regarding:

- (a) assumptions made in relation to the factors listed in paragraph 3.1.4;
- (b) the methodology used to prepare the forecasts;
- (c) draft forecasts; or
- ~~(d)~~—any other matters deemed relevant by AEMO.
- (d) _____

3.1.6. AEMO will consider feedback provided through any consultation conducted under paragraph 3.1.5 and may ~~in its absolute discretion~~ amend the factors, draft forecasts, forecasting methodologies or assumptions, such that AEMO's final forecasts prepared under clause 4.5.10 are reflective of SWIS electricity demand over the Long Term PASA Study Horizon.

~~3.1.7. Clauses 4.5.11 and 4.5.13 apply with respect to publishing information developed under paragraph 3.1.1 in the Statement of Opportunities Report.~~

~~3.1.8.3.1.7.~~ AEMO may publish forecasts made under paragraphs 3.1.2 and 3.1.3 in the Statement of Opportunities Report for the relevant Reserve Capacity Cycle or on the WEM Website.

~~3.1.9.3.1.8.~~ AEMO may will publish a summary of the methodology used by it in preparing forecasts under paragraphs 3.1.2 or 3.1.3 in the Statement of Opportunities Report for the relevant Reserve Capacity Cycle or on the WEM Website.

4. Reserve Capacity Target assessment

4.1.1. For each Capacity Year during the Long Term Study Horizon, AEMO will must forecast the Reserve Capacity Target in accordance with clause 4.5.10(b).

4.1.2. AEMO will use the forecasts prepared under paragraph 3.1.1 and 3.1.3 when determining the Reserve Capacity Target and making any assessment for the purposes of clause 4.5.9.

4.1.3. AEMO will determine the Expected Unserved Energy for each Capacity Year in the Long Term PASA Study Horizon for the purposes of meeting the requirement of the Planning Criterion outlined in clause 4.5.9(b).

4.1.4. AEMO must assess the extent to which the anticipated installed capacity of the Energy Producing Systems and Demand Side Programmes is capable of satisfying the Planning Criterion (taking into account network congestion) in accordance with clause 4.5.10(aA).

4.1.5. In its assessment under paragraph 4.1.4, AEMO, and must will identifying any shortfalls in Peak Capacity for the Relevant each Capacity Year in the Long Term PASA Study Horizon for the and scenario as specified under clause 4.5.10(a)(iv)2 (aA).

4.1.6. AEMO will must identify and assess any potential capacity shortfalls isolated to a sub-region of the SWIS in accordance with resulting from expected restrictions on transmission capability or other factors and which cannot be addressed by additional Peak Capacity outside that sub-region required under clause 4.5.102(c).

4.1.3.4.1.7. AEMO will must identify any potential transmission, generation, storage, or demand side capacity augmentation options to alleviate identified any identified capacity shortfalls as per in accordance with clause 4.5.120(d).

4.1.4.4.1.8. A summary of the methodology used by AEMO to determine Expected Unserved Energy under paragraph 4.1.3 and associated assessments under paragraphs 4.1.4, 4.1.5, and to 4.1.7.4.16 will may be made available published by AEMO in either the Statement of Opportunities Report or on the WEM Website.

5. Availability Curves

- 5.1.1. AEMO ~~will~~**must** develop Availability Curves for each of the second and third Capacity Years of the Long Term PASA Study Horizon In accordance with clause 4.5.10(~~ie~~).
- 5.1.2. A summary of the methodology used by AEMO under paragraph 5.1.1, will be made available by AEMO in either the Statement of Opportunities Report or on the WEM Website.

6. ~~Availability~~ Capability Classes

- 6.1.1. AEMO ~~will~~**must** determine minimum capacity requirements for specific Capability Classes ~~Availability Classes~~ in accordance with clause ~~4.5.12(i) s 4.5.12(b) and 4.5.12(c)~~.
- 6.1.2. A summary of the methodology used to determine capacity requirements under paragraph 6.1.1 ~~will~~**may** be ~~made available~~**published** by AEMO in either the Statement of Opportunities Report on the WEM Website.

7. Availability Duration Gap Load Scenario and Avaibility Duration Gap

- ~~7.1.1. AEMO must~~**will** determine the Availability Duration Gap Load Scenario for the third Capacity Year of the Long Term PASA Study Horizon in accordance with clause 4.5.12(a) and (ea).
- ~~7.1.2. A summary of the methodology used by AEMO to determine paragraph 7.1.1 will~~**may** be ~~made available~~**published** by AEMO in either the Statement of Opportunities or on the WEM Website.

Availability Duration Gap

- ~~7.1.3. AEMO must~~**will** determine the Availability Duration Gap Load Scenario; Availability Duration Gap ; and the ESR Duration Requirement in accordance with clause 4.5.12(c) and (d).
- ~~7.1.4. AEMO must determine all other relevant information as required by for the third Capacity Year~~**arr** of the Long Term PASA Study Horizon ~~with clause 4.5.12(c), (d), and (e) and (d)~~.
- ~~7.1.5. A summary of the methodology used by AEMO to determine paragraph 7.1.3 and 7.1.4~~**1** ~~will~~**may** be ~~made available~~**published** by AEMO in either the Statement of Opportunities or on the WEM Website.

Appendix A. Relevant clauses of the WEM Rules

Table 3 details:

- (a) the head of power clauses in the WEM Rules under which the Procedure has been developed; and
- (b) each clause in the WEM Rules requiring an obligation, process or requirement be documented in a WEM Procedure, where the obligation, process or requirement has been documented in this Procedure.

Table 3 Relevant clauses of the WEM Rules

Clause
4.5.14