



MARKET WEM PROCEDURE: RESERVE CAPACITY TESTING

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5.0	30 November 2015	Changes resulting from the transfer of functions from the IMO to AEMO
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7.0	1 August 2020	Changes resulting from Procedure Change Proposal AEPC_2020_04
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1. INTRODUCTION

1.1. Purpose and scope

1.1.1. This Market-WEM Procedure: Reserve Capacity Testing (Procedure) is made in accordance with AEMO’s functions under clause 2.1A.2(h) of the Wholesale Electricity Market Rules (**WEM Rules**). This Procedure is also made under clause 4.25.14 of the WEM Rules.

1.1.2. The Electricity Industry Act 2004, 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 clauses 2.9.7, 2.9.7A, and 2.9.8 of the WEM Rules, as applicable.

1.1.2.1.1.4. The purpose of this Procedure is to describe the processes that:

- (a) AEMO must follow in:
 - (i) conducting Reserve Capacity Tests and Verification Tests;
 - (ii) determining the results of Reserve Capacity Tests and Verification Tests; and
 - (iii) publishing information about Reserve Capacity Tests; and
- (b) Market Participants must follow in complying with instructions for Reserve Capacity Tests and Verification Tests.

~~1.1.3.1.1. In this Procedure, where obligations are conferred on a Rule Participant, that Rule Participant must comply with the relevant obligations in accordance with clauses 2.9.7, 2.9.7A, and 2.9.8 of the WEM Rules, as applicable.~~

~~1.1.4.1.1.5.~~ Reference to particular WEM Rules within this Procedure in bold and square brackets [clause XX] are included for convenience only, and are not part of this Procedure. 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, the WEM Regulations and the WEM Rules have the same meanings in this Procedure unless the context requires otherwise.

~~1.2.1.2.2.~~ Terms defined in the WEM Rules have the same meanings in this Procedure unless otherwise specified in this clause. The words, phrases, and abbreviations in the table below have the meanings set out opposite them in the table when used in this Procedure. The following definitions apply in this Procedure unless the context requires otherwise.

Table 1 Definitions

Term	Meaning
Invalid Test	A test that is disregarded for Reserve Capacity Test purposes; but treated as a Reserve Capacity Test for settlement purposes.



Term	Meaning
Verification by Observation	Verification of a Facility, initiated by a Market Participant, by observing the Facility operating at a level equivalent to its Required Level, adjusted to the level of Capacity Credits currently held, for at least one Trading Interval and by one of the following methods: a) for a generation system, as part of normal market operations as determined from Meter Data Submissions [clause 4.25.2(a)(i)] ; or for a Demand Side Programme, in response to an activation of the Facility by the relevant Market Customer as measured in metered consumption [clause 4.25.2(b)(i)] .
Temperature Dependence Curve	A dataset showing how a generation system's (other than an Intermittent Generator) sent out generation in MW varies with temperature, measured in increments of 0.1 degrees Celsius, and provided for temperatures between 0 and 45 degrees Celsius. The data must be: a) supported by relevant technical specifications for the Facility, as provided by the original equipment manufacturer; or b) accompanied by an independent engineer's report, detailing how the data was determined or verified.
Temperature Measurement Consultant	A consultant or organisation appointed by AEMO to calibrate Temperature Measurement Systems.
Temperature Measurement Systems	The sensors, systems and data used to measure ambient temperature at a Facility where the information is provided to AEMO through the SCADA system.
Verification by Observation Temperature Dependence Curve	Verification of a generation system, initiated by a Market Participant, by observing the Facility operating at a level equivalent to its Required Level, adjusted to the quantity of Capacity Credits currently held, for at least one Trading Interval as part of normal market operations as determined from Meter Data Submissions, in accordance with clause 4.25.2(b)(i). A dataset showing how a generation system's (other than an Intermittent Generator) sent out generation in MW varies with temperature, measured in increments of 0.1 degrees Celsius, and provided for temperatures between 0 and 45 degrees Celsius. The data must be: a) supported by relevant technical specifications for the Facility, as provided by the original equipment manufacturer; or accompanied by a report from an independent engineering firm, detailing how the data was determined or verified.
Wholesale Electricity Market System or WEMS	An interface software system that AEMO uses to administer and operate the Wholesale Electricity Market.

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1.3. Interpretation

1.3.1. The following principles of interpretation apply to this Procedure, unless otherwise expressly indicated the context requires otherwise:

- (a) Clauses 1.3 to 1.5 apply to 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) to the extent that this Procedure is inconsistent with the WEM Rules, the WEM Rules prevail to the extent of the inconsistency;



- (d) ~~A~~ reference to the WEM Rules or ~~Market~~WEM Procedures includes any associated forms required or contemplated by the WEM Rules or ~~WEM~~Market Procedures;
- (e) ~~W~~Words expressed in the singular include the plural or vice versa; ~~and~~
- (f) ~~conventions specified in clauses 1.3 to 1.5 of the WEM Rules apply.~~Any reference to a paragraph refers to a paragraph of this Procedure.
- (g) Any reference to a clause refers to a clause of the WEM Rules.
- (h) 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) Text located in boxes and headed as **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.
- (f)(j) The body of the 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 following Market Procedures and Power System Operation Procedures (PSOPs) are associated with this Procedure:

- (a) Market Procedure: Capacity Credit Allocation;
- (b) Market Procedure: Certification of Reserve Capacity;
- (c) Market Procedure: Reserve Capacity Security;
- (d) Market Procedure: Reserve Capacity Performance Monitoring;
- (e) Market Procedure: Notices and Communications;
- (f) PSOP: Commissioning and Testing; and

1.4.1. PSOP: Facility Outages. The documents in Table 2 are associated with this Procedure.

Table 2 Related documents

Reference	Title	Location
WEM Procedure	Market Procedure: Capacity Credit Allocation	WEM Website
WEM Procedure	Market Procedure: Certification of Reserve Capacity	WEM Website
WEM Procedure	Market Procedure: Notices and Communications	WEM Website
WEM Procedure	Market Procedure: Reserve Capacity Performance Monitoring	WEM Website
WEM Procedure	Market Procedure: Reserve Capacity Security	WEM Website
WEM Procedure	Power System Operating Procedure: Commissioning and Testing	WEM Website
WEM Procedure	Power System Operating Procedure: Facility Outages	WEM Website

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2. TIMING AND GENERAL REQUIREMENTS

2.1.1. AEMO must take steps to verify, in accordance with clause 4.25.2 of the WEM Rules, that each Facility providing Capacity Credits can **[clause 4.25.1]**:

2.1.1. ~~(i)~~(a) in the case of a generation system, during the term the Reserve Capacity Obligations apply, operate at a level equivalent to its Required Level, adjusted to the level-quantity of Capacity Credits currently held, at least once during each of the following periods and such level of operation during those periods must be achieved on each type of fuel notified under clause 4.10.1(e)(v) of the WEM Rules:

- ~~(A)~~(i) 1 October to 31 March; and
- ~~(B)~~(ii) 1 April to 30 September; and

~~(ii)~~(b) in the case of a Demand Side Programme, during the term the Reserve Capacity Obligations apply, ~~and in the case of a Demand Side Programme during the period specified in clause 4.10.1(f)(vi) of the WEM Rules and during the period between 8:00 AM and 8:00 PM on a Business Day, other than a Trading Interval in which a Verification Test is conducted,~~ decrease its consumption to operate at a level equivalent to its Required Level, adjusted to the level-quantity of Capacity Credits currently held, at least once during the period between 1 October to 31 March.

2.1.2. Within 10 Business Days of the start of each testing period listed in paragraphstep 2.1.1-of-this Procedure, AEMO may determine and notify Market Participants of the date when AEMO will start scheduling Reserve Capacity Tests, which must allow sufficient time to complete all required Reserve Capacity Tests for each testing period.

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3. PREPARATORY STEPS

3.1. Temperature Dependence Curves

3.1.1. AEMO must use a Temperature Dependence Curve previously provided under clause 4.10.1(e)(iv) for the relevant Reserve Capacity Cycle for the purposes of Reserve Capacity testing, unless paragraph 3.1.2, 3.1.3, or 3.1.4 applies.

3.1.3.1.2. Unless previously provided under clause 4.10.1(e)(iv) of the WEM Rules for the relevant Reserve Capacity Cycle, a Market Participant with a Non-Intermittent Generating System who has not previously provided a Temperature Dependence Curve for that Facility under clause 4.10.1(e)(iv) for the relevant Reserve Capacity Cycle must submit a Temperature Dependence Curve and the accompanying independent engineer's report or original equipment manufacturer's technical specifications to AEMO at least 10 Business Days before the start of the testing period in ~~step~~paragraph 2.1.1(a)(A) of this Procedure.

3.1.3. A Market Participant may update the Temperature Dependence Curve for a Facility by submitting a new Temperature Dependence Curve and the accompanying independent ~~engineering firm's~~engineer's report or original equipment manufacturer's technical specifications to AEMO at least 10 Business Days before the start of ~~either of the testing periods~~the relevant testing period listed in ~~paragraph~~step 2.1.1 of this Procedure.

3.1.4. A Market Participant may, at least 10 Business Days before the start of the relevant testing period listed in paragraph 2.1.1, request AEMO to use a Temperature Dependence Curve accurately provided in Standing Data where:

(a) the Temperature Dependence Curve is accompanied by an independent engineer's report or original equipment manufacturer's technical specifications; and

~~3.1.2.(b)~~ AEMO accepts the Temperature Dependence Curve under paragraph 3.1.6 after completing its review and assessment under paragraph 3.1.5.

~~3.1.3.3.1.5.~~ AEMO must review and assess the information provided in ~~paragraph~~step 3.1.2, 3.1.3, or 3.1.4 or ~~step 3.1.2, as applicable, before the start of the relevant testing period listed in paragraph 2.1.1, of this Procedure~~ and may request additional information from the Market Participant, where necessary. AEMO's review will focus on manifest errors (for example, the Temperature Dependence Curve is for the incorrect Facility, exceeds the Facility's maximum capacity, or does not cover the full temperature range required) and may include, but is not limited to:

- (a) comparing the Temperature Dependence Curves of similar Facilities, if available;
- (b) confirming that the Facility's characteristics are reflected in the Temperature Dependence Curve; and
- (c) any other factors that AEMO considers relevant.

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~~3.1.4.3.1.6.~~ AEMO must accept a Temperature Dependence Curve provided under ~~step paragraph 3.1.4.2, 3.1.3, or 3.1.4, as applicable, or step 3.1.2 of this Procedure~~ unless, after the review in ~~step 3.1.3 of this Procedure paragraph 3.1.5, it has identified-identifies~~ manifest errors in the Temperature Dependence Curve. If AEMO rejects a Temperature Dependence Curve, it must inform the Market Participant as soon as practicable and provide reasons for the rejection.

~~3.1.5.3.1.7.~~ If AEMO rejects a Temperature Dependence Curve under ~~paragraph step 3.1.4.6 of this Procedure~~, the Market Participant may provide an updated Temperature Dependence Curve, supported by an independent ~~engineering firm's engineer's~~ report or original equipment manufacturer's technical specifications, that addresses AEMO's feedback to AEMO's reasonable satisfaction, subject to the timing ~~considerations-requirements in step paragraph 3.1.4.2, 3.1.3, or 3.1.4, as applicable, or step 3.1.2 of this Procedure.~~

~~3.1.6.3.1.8.~~ Where AEMO accepts a Temperature Dependence Curve provided under ~~step 3.1.1, step 3.1.2, or step 3.1.5 of this Procedure paragraph 3.1.2, 3.1.3, 3.1.4, or 3.1.7, as applicable~~, AEMO must upload the Temperature Dependence Curve to WEMS to be used when assessing the results of a Facility's Verification by Observation or Reserve Capacity Test.

~~3.1.7.3.1.9.~~ If ~~the quantity of~~ Capacity Credits ~~assigned to~~ a Facility changes during a Capacity Year, AEMO must consult with the relevant Market Participant to determine whether:

- (a) to continue to use the previously accepted Temperature Dependence Curve; or
- (b) ~~to update to a new Temperature Dependence Curve, required to be supplied by the Market Participant, that has been determined by an independent engineering firm, subject to the assessment in steps 3.1.3 and 3.1.4 of this Procedure~~ the Market Participant provides a new Temperature Dependence Curve that is determined or verified by an independent engineer, ~~subject to the assessment in paragraphs 3.1.5 and 3.1.6.~~

3.2. Temperature measurement sources

- 3.2.1. AEMO must refer to the temperature measurement source, specified by the Market Participant under clause 4.10.1(e)(iv) ~~(1) of the WEM Rules~~, when determining the ambient temperature at the site of a generation Facility. Where no temperature source is specified under clause 4.10.1(e)(iv) ~~(1) of the WEM Rules~~, the Market Participant must notify AEMO of an appropriate temperature measurement source for the Facility's geographical location before the start of the Capacity Year.
- 3.2.2. AEMO may appoint a Temperature Measurement Consultant at any time each year to calibrate the Temperature Measurement Systems associated with each generation ~~Facility-system~~ that nominates to use SCADA as the temperature measurement source under clause 4.10.1(e)(iv) ~~(2) of the WEM Rules~~.
- 3.2.3. If AEMO requires calibration of a Facility's Temperature Measurement System, AEMO must contact the relevant Market Participant in writing with the:
 - (a) date, time and location of the proposed calibration;
 - (b) details of the Temperature Measurement Consultant who will conduct the calibration; and
 - (c) the ~~estimated~~ Temperature Measurement Consultant's costs associated with the proposed calibration.



- 3.2.4. Within five Business Days of receiving AEMO’s notification under [step paragraph 3.2.3 of this Procedure](#), the Market Participant must contact AEMO to ~~either~~:
 - (a) accept the proposed time; or
 - (b) ~~subject to step 3.2.5 of this Procedure~~, propose another date and time, which must be within 10 Business Days of the original request date.
- 3.2.5. The Market Participant must ~~accept-comply with~~ AEMO’s calibration requirement, at AEMO’s proposed date and time or an alternative date and time agreed with AEMO, and must pay the ~~associated costs associated with the proposed calibration proposed under step 3.2.3 of this Procedure, unless the Market Participant believes calibration at the time proposed may endanger persons or equipment~~.
- 3.2.6. AEMO must provide the results of the temperature calibration to the Market Participant within five Business Days of receiving the results from the Temperature Measurement Consultant.

3.3. Required Level calculation

- 3.3.1. The Required Level for a Scheduled Generator in Trading Interval t ~~will be~~ determined as:

$$CC(t) \times \frac{TDC(Temp(t))}{TDC(41^{\circ}C)}$$

where:

Variable	Units	Definition
$CC(t)$	MW	Number-Quantity of Capacity Credits held for Trading Interval t .
$Temp(t)$	°C	Temperature during Trading Interval t , measured according to the method specified in WEMS and contained in WEMS.
$TDC(Temp(t))$	MW	The Facility output indicated in the Temperature Dependence Curve at temperature $Temp(t)$.
$TDC(41^{\circ}C)$	MW	The Facility output indicated in the Temperature Dependence Curve at a temperature of 41°C.

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- 3.3.2. The Required Level for a Demand Side Programme in Trading Interval t on Trading Day d ~~will be~~ determined as:

$$RD(d) - CC(t)$$

where:

Variable	Units	Definition
$RD(d)$	MW	The Relevant Demand for the Trading Day d , as determined in accordance with clause 4.26.2CA of the WEM Rules .
$CC(t)$	MW	The number-quantity of Capacity Credits held by the Market Participant for that Facility for Trading Interval t .

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4. VERIFICATION BY OBSERVATION FOR GENERATION SYSTEMS

4.1. General requirements

- 4.1.1. The verification referred to in ~~step paragraph 2.1.1 of this Procedure~~ may be achieved by a Facility generation system successfully demonstrating Verification by Observation in at least one Trading Interval during a testing period at any point within a testing period listed in ~~step paragraph 2.1.1 of this Procedure~~, until AEMO conducts a Reserve Capacity Test for the Facility generation system under ~~section paragraph 5 of this Procedure~~.
- 4.1.2. AEMO must use the most recent Meter Data Submissions available to it ~~to determine the when determining whether a generation system has successfully demonstrated~~ Verification by Observation results until the time AEMO conducts a Reserve Capacity Test for the Facility generation system under ~~section paragraph 5 of this Procedure~~.
- ~~4.1.3. AEMO must compile and maintain a list of Facilities that have successfully completed Verification by Observation and their results. This list may be maintained in WEMSAEMO may conduct a Verification by Observation assessment through an automated process in WEMS.~~
- 4.1.4. AEMO will determine that a generation system has demonstrated Verification by Observation if the output of the Facility, adjusted to 41°C using the Temperature Dependence Curve, was:
- (a) at or above the Required Level calculated in accordance with ~~step paragraph 3.3.1 of this Procedure~~ for at least one Trading Interval; or
 - (b) at or above the output required at the highest quantity of net power in MW shown on the Temperature Dependence Curve, where the ambient temperature measured at the site exceeds 45°C during the Trading Interval.

4.1.3. — ~~AEMO must compile and maintain a list of generation systems that have successfully completed Verification by Observation and their results. This list may be maintained in WEMS.~~

~~4.1.5.~~

~~4.1.4.4.1.6.~~ AEMO may request a Reserve Capacity Test ~~for a generation system under paragraph 6, under section 5 of this Procedure~~, if AEMO is unable to determine, ~~in accordance with this Procedure~~, that the Facility ~~was able to operate at a level equivalent to its Required Level, adjusted to the level of Capacity Credits currently held, during Verification by Observation~~ ~~has demonstrated Verification by Observation under paragraph 4.1.4.~~

~~4.1.5.4.1.7.~~ If AEMO requests a Reserve Capacity Test ~~for a generation system~~ in accordance with ~~step paragraph 4.1.64 of this Procedure~~, AEMO must provide the Market Participant with a summary of ~~AEMO's Verification by Observation assessments results obtained for the Facility in the relevant testing period, in step 4.2.1 or step 4.3.2 of this Procedure~~. This summary may be provided through WEMS.

4.2. — Specific requirements for generation systems

4.2.1. — ~~AEMO must assess the results of Verification by Observation to determine if the generation system has operated at a level equivalent to its Required Level, adjusted to the level of Capacity Credits currently held. This assessment may be automated in WEMS.~~

4.2.2. — ~~AEMO will determine that a generation system has demonstrated Verification by Observation if the output of the Facility, adjusted to 41°C using the Temperature Dependence Curve, was:~~

- ~~(a) — at or above the Required Level calculated in accordance with step 3.3.1 of this Procedure for at least one Trading Interval; or~~
- ~~(b) — at or above the output required at the highest quantity of net power in MW shown on the Temperature Dependence Curve, where the ambient temperature measured at the site exceeds 45°C during the Trading Interval.~~

4.3. — Specific requirements for Demand Side Programmes

4.3.1. — ~~A Market Customer who wishes to perform Verification by Observation for a Demand Side Programme must notify AEMO no later than two Business Days prior to the commencement of the Trading Day during which the test will take place, advising:~~

- ~~(c) — the identity of the Demand Side Programme that will undertake Verification by Observation;~~
- ~~(d) — the Trading Interval(s) during which the Verification by Observation will be conducted; and~~
- ~~(e) — the expected reduction in Demand Side Programme Load from the Relevant Demand.~~



- 4.3.2.—AEMO must assess the Verification by Observation results, for which notification was provided in accordance with step 4.3.1 of this Procedure, by using Meter Data Submissions contained in WEMS only.
- 4.3.3.—AEMO will consider that a Demand Side Programme has demonstrated Verification by Observation if the consumption of the Facility was at, or below, the Required Level, calculated in accordance with step 3.3.2 of this Procedure, for at least one Trading Interval.



5. VERIFICATION TESTS FOR DEMAND SIDE PROGRAMMES

- 5.1.1. ~~In each Capacity Year, a Market Customer must undertake a Verification Test for each of its registered Demand Side Programmes during the period specified in clause 4.10.1(f)(vi) of the WEM Rules for each Demand Side Programme registered to the Market Customer. Each test must be conducted in accordance with this Procedure and carried out [clause 4.25A.1]:~~
 - ~~(a) within 20 Business Days of registration, as notified by AEMO under clause 2.31.6 of the WEM Rules, of the Demand Side Programme, if applicable; or~~
 - ~~(b) between 1 October and 30 November.~~

- 5.1.2. ~~A Market Customer must notify AEMO no later at least than two Business Days prior to the commencement of the Trading Day during which it intends to conduct a Verification Test, advising:~~
 - ~~(a) the identity of the Demand Side Programme that will be tested; and~~
 - ~~(b) the Trading Interval(s) in which the Verification Test will be conducted; and~~
 - ~~the expected reduction in Demand Side Programme Load from the Relevant Demand.~~

~~If AEMO does not receive notification in accordance with this step paragraph 5.1.2, the test is deemed not to be conducted in accordance with this Procedure and the results of the Verification Test will not be considered by AEMO.~~

- 5.1.3. ~~To undertake a Verification Test the Market Customer must activate the Demand Side Programme and provide evidence satisfactory to AEMO of the Trading Intervals during which the Verification Test was conducted [clause 4.25A.2]. The notification in paragraph 5.1.2 must be provided through WEMS.~~

- 5.1.4. ~~A Demand Side Programme will be deemed to have failed the Verification Test unless a reduction in demand equal to at least 10% of the Capacity Credits, when measured against the Demand Side Programme's Relevant Demand determined under clause 4.26.2CA of the WEM Rules, is identified from the Demand Side Programme Load associated with that Demand Side Programme [clause 4.25A.3]. Clauses 4.25A.2 to 4.25A.4 apply with respect to a first Verification Test.~~

- ~~Where a Demand Side Programme fails a Verification Test AEMO must reduce the Capacity Credits assigned to the Demand Side Programme to zero from the second Trading Day following the Scheduling Day on which AEMO determines that the Verification Test was failed under clause 4.25A.3 of the WEM Rules [clause 4.25A.4].~~

- 5.1.5. ~~Where a Demand Side Programme fails a first Verification Test, the relevant Market Customer may request that a second Verification Test be undertaken. If the Demand Side Programme fails the second Verification Test then the Capacity Credits assigned to the Demand Side Programme are to remain at zero until the end of the relevant Capacity Year [clause 4.25A.5]. If the Demand Side Programme passes the second Verification Test then, from the second Trading Day following the Scheduling Day on which the second Verification Test was performed, the Capacity Credits assigned to the Demand Side Programme are to be increased to the value applies to the Demand Side Programme immediately prior to the first Verification Test.~~

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5.6. RESERVE CAPACITY TESTS

5.1-6.1. Conducting Reserve Capacity Tests

5.1.1.1. AEMO may conduct a Reserve Capacity Test if:

- (a) ~~the Facility~~ a generation system has not demonstrated Verification by Observation, as detailed under ~~paragraph section 4 of this Procedure~~, before the deadline specified in ~~step paragraph 2.1.2 of this Procedure~~;
- (b) AEMO determines the most appropriate course of action is to test the Facility as described in clause 4.25.2(a)(ii), ~~clause 4.25.2(b)(ii) or clause 4.25.2(c) of the WEM Rules~~;
- ~~(b)(c) the Facility is a Demand Side Programme and must be tested in accordance with clause 4.25.2(b)(ii);~~
- ~~(c)(d) AEMO requires a re-test in accordance with clause 4.25.4 of the WEM Rules; or~~
- ~~(d)(e) a Market Participant requests a re-test in accordance with clause 4.25.5 of the WEM Rules.~~

6.1.2. ~~AEMO must conduct Reserve Capacity Tests in accordance with the requirements in clause 4.25.9 of the WEM Rules.~~

6.1.3. ~~Subject to paragraph 6.3.1, if a second Reserve Capacity Test is required in accordance with step paragraph 5.2.3(c) of this Procedure, AEMO must, in accordance with clause 4.25.4 of the WEM Rules, re-test that Facility:~~

- (a) ~~not earlier than 14 days after the first Reserve Capacity Test; and~~
- (b) ~~not later than 28 days after the first Reserve Capacity Test.~~

5.1.2. ~~AEMO must subject a Facility to a Reserve Capacity Test if (clause 4.25.3A):~~

- (a) ~~that Facility is undergoing a Scheduled Outage or Opportunistic Outage which has been approved in accordance with clause 3.19 of the WEM Rules;~~
- (b) ~~the relevant Market Participant has advised AEMO of a Forced Outage or Consequential Outage in accordance with clause 3.21.4 of the WEM Rules; or~~
- (c) ~~that Facility is undergoing a Commissioning Test for the Facility that is approved in accordance with clause 3.21A of the WEM Rules.~~

5.1.3.1.1. ~~AEMO must conduct Reserve Capacity Tests in accordance with the requirements in clause 4.25.9 of the WEM Rules.~~

~~5.1.4. If a second Reserve Capacity Test is required in accordance with step 5.2.3(c) of this Procedure, AEMO must, in accordance with clause 4.25.4 of the WEM Rules, re-test that Facility:~~

- ~~(d)(a) not earlier than 14 days after the first Reserve Capacity Test; and~~
- ~~(e)(a) not later than 28 days after the first Reserve Capacity Test.~~

6.1.4. If a Facility cannot be tested due to restrictions imposed by clause 4.25.3A ~~of the WEM Rules~~, AEMO will:

- ~~(f)(a) in the case of the first Reserve Capacity Test not being able to be completed within the relevant Reserve Capacity testing period in accordance with clause 4.25.1 of the WEM Rules, conduct a Reserve Capacity Test as soon as practicable in the next Reserve Capacity testing period; or~~
- ~~(g)(b) in the case of the second Reserve Capacity Test not being able to be completed within 14 to 28 days after the first Reserve Capacity Test in accordance with clause 4.25.4 of the WEM~~

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Rules, conduct the first Reserve Capacity Test again, subject to ~~step 5.1.3 and step 5.1.5(a) of this Procedure~~ paragraph 6.1.3 and paragraph 6.1.5(a).

~~5.1.6. If a Demand Side Programme fails a Reserve Capacity Test under clause 4.25.2(b)(ii) of the WEM Rules and is issued a Dispatch Instruction by AEMO to decrease its consumption to a level equivalent to its Required Level, adjusted to the level of Capacity Credits currently held, for not less than one Trading Interval prior to a second Reserve Capacity Test being undertaken, in accordance with clause 4.25.4 of the WEM Rules, then the activation shall be deemed to be the second Reserve Capacity Test [clause 4.25.3B].~~

5.2.6.2. Assessing the results of Reserve Capacity Tests

~~5.2.6.2.1.~~ Within 10 Business Days of completing a Reserve Capacity Test and receiving Meter Data Submissions ~~data (if applicable) and temperature (if applicable)~~ data for the Facility, AEMO must determine the result of the Reserve Capacity Test as follows:

- (a) for a generation system, that the Facility:
 - (i) passed a Reserve Capacity Test, if the output is at or above the Required Level, calculated in accordance with ~~step paragraph 3.3.1 of this Procedure~~, for at least two Trading Intervals (not necessarily consecutive) during the period of the test;
 - (ii) passed a Reserve Capacity Test, if the output ~~of the Facility~~ is at or above the output required at the highest quantity of net power in MW shown on the Temperature Dependence Curve, where the ambient temperature measured at the site exceeds 45°C during the Trading Interval; or
 - (iii) failed a Reserve Capacity Test, if the output is not above the Required Level, calculated in accordance with ~~step paragraph 3.3.1 of this Procedure~~, for at least two Trading Intervals during the period of the test; or
- (b) for a Demand Side Programme:
 - (i) passed a Reserve Capacity Test, if its Demand Side Programme Load is at, or below, the Required Level, calculated in accordance with ~~step paragraph 3.3.2 of this Procedure~~, adjusted to the ~~quantity level~~ of Capacity Credits currently held, for ~~one at least two~~ Trading Intervals ~~(not necessarily consecutive)~~ during the period of the test; or
 - (ii) ~~failed a Reserve Capacity Test if its Demand Side Programme Load is above the Required Level, calculated in accordance with step 3.3.2 of this Procedure, adjusted to the level of Capacity Credits currently held, for all Trading Intervals during the period of the test. failed a Reserve Capacity Test otherwise.~~

~~5.2.6.2.2.~~ For the purposes of determining the results of a Reserve Capacity Test, the test period includes any Trading Intervals when the Facility was required to increase its output or decrease its consumption in response to an Operating Instruction issued in accordance with clause 4.25.9(h) ~~of the WEM Rules.~~

~~5.2.6.2.3.~~ If a Facility ~~has failed~~ fails a Reserve Capacity Test, AEMO must:

- (a) inform the Market Participant that the Facility has failed the Reserve Capacity Test;
- (b) provide the Market Participant with a copy of the ~~test results produced~~;



- (c) where the Reserve Capacity Test was a first test, re-test the Facility under ~~step paragraph 5.2.4.6.2.4~~ paragraph 5.2.4.6.2.4 of this Procedure, subject to the limitations in ~~paragraph step 5.2.4.6.2.4~~ paragraph 5.2.4.6.2.4 of this Procedure.

The notifications under this ~~step paragraph 5.2.4.6.2.4~~ paragraph 5.2.4.6.2.4 may be provided through WEMS.

~~5.2.4.6.2.4~~ 5.2.4.6.2.4. If a Facility ~~has passed~~ passes the Reserve Capacity Test, AEMO must:

- (a) inform the Market Participant that the Facility has passed the Reserve Capacity Test; and
- (b) provide a copy of the ~~test~~ test results ~~produced~~.

The notification under this ~~step paragraph 5.2.4.6.2.4~~ paragraph 5.2.4.6.2.4 may be provided through WEMS.

~~5.2.5.6.2.5~~ 5.2.5.6.2.5. AEMO must deem a Reserve Capacity Test to be an Invalid Test if:

- (a) the temperature measured by the temperature method specified in WEMS for the Facility is outside of the range 0°C to 45°C, and ~~paragraph step 6.2.1(a)(ii) of this Procedure~~ paragraph 6.2.1(a)(ii) of this Procedure does not apply;
- (b) AEMO considers that ~~an error was made in the determination of the results of any Reserve Capacity Test and AEMO has not re-determined the results of the Reserve Capacity Test under step 7.1.3(a)(i) of this Procedure~~ there is an error in the data, including Meter Data Submissions, used to determine the test results;
- (c) where the output of a Facility was reduced to correct any over-frequency events; or
- (d) ~~any circumstances where~~ AEMO, in its sole discretion, considers ~~that~~ that an error was made in the conduct of a Reserve Capacity Test.

~~6.2.6~~ 6.2.6. If a Reserve Capacity Test is deemed to be an Invalid Test under ~~step paragraph 5.2.5.6.2.5 of this Procedure~~ paragraph 5.2.5.6.2.5 of this Procedure, then AEMO must:

- (a) ~~re-conduct the Reserve Capacity Test as soon as practicable in accordance with paragraph step 5.2.4.6.2.4 of this Procedure, with consideration to the timelines in clauses 4.25.1, clause 4.25.4, and clause 4.25.5 of the WEM Rules or~~

~~5.2.6(b) use the results of the latest Reserve Capacity Test in place of the Invalid Test where another Reserve Capacity Test has already been completed in accordance with paragraph 6.1.1.~~

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5.3. Demand Side Programmes that fail first Reserve Capacity Tests ~~If a Reserve Capacity Test is deemed to be an Invalid Test under step 5.2.5 of this Procedure, then AEMO must:~~

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5.3.1. In accordance with clause 4.25.4G, if AEMO notifies a Market Participant that a Demand Side Programme has failed a test under paragraph 6.2.3 for a first Reserve Capacity Test, the Market Participant may notify AEMO that it elects not to subject the Demand Side Programme to a second Reserve Capacity Test

6.3.1.

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5.3.2. In accordance with clause 4.25.4H, the Market Participant's notification under paragraph 6.3.1 must be given to AEMO by 5:00 PM on the second Business Day after receiving the notification under paragraph 6.2.3, if another Reserve Capacity Test has already been completed in accordance with step 5.1.1 of this Procedure, use the results of the latest Reserve Capacity Test in place of the Invalid Test; or

6.3.2.

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5.3.3. Where AEMO receives a notification under paragraphs 6.3.1 and 6.3.2, it must reduce the Capacity Credits for the relevant Demand Side Programme to the maximum level of reduction achieved in the first Reserve Capacity Test, disregard the results of the latest Reserve Capacity Test, if a Reserve Capacity Test is no longer required under clause 4.25.3B of the WEM Rules.

6.3.3.

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6.3.4. If a Market Participant does not notify AEMO under paragraphs 6.3.1 and 6.3.2, AEMO must re-test the Demand Side Programme in accordance with clause 4.25.4, subject to the limitations in paragraph 6.1.5.

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5.4.6.4. Capacity Credit reductions after failing the second Reserve Capacity Test

5.4.1. In accordance with clause 4.25.4 of the WEM Rules, if a Facility fails the second Reserve Capacity Test outlined in step 5.1.4 of this Procedure, then AEMO must, from the second Trading Day following the Scheduling Day on which AEMO determines that the Reserve Capacity Test was failed in accordance with step 5.2.1 of this Procedure:

- (a) if the Reserve Capacity Test related to a generation system, reduce the number of Capacity Credits held by the relevant Market Participant for that Facility to reflect the maximum capabilities achieved in either Reserve Capacity Test performed (after adjusting these results to the equivalent values at a temperature of 41°C and allowing for the capability provided by operation on different types of fuels); or
- (b) if the Reserve Capacity Test related to a Demand Side Programme or Interruptible Load, reduce the number of Capacity Credits held by the relevant Market Participant for that Facility to the maximum level of reduction achieved in either of the two Reserve Capacity Tests.

5.4.2.6.4.1. AEMO must determine the results of the ~~outcome of the~~ second Reserve Capacity Test and notify the Market Participant in accordance with the process described in ~~section 5.2 of this Procedure paragraph 6.2.~~ If the Facility failed the second Reserve Capacity Test as determined under ~~step paragraph 5.2.1 of this Procedure,~~ AEMO must notify the Market Participant that the Capacity Credits will be reduced and ~~the:~~

- (a) ~~the quantity level~~ that the Capacity Credits will be reduced to; and
- (b) ~~the~~ effective date for the reduction.

The notification under this ~~step paragraph 5.3.26.4.1~~ may be provided through WEMS.

5.5.6.5. Reserve Capacity re-test under clause 4.25.5 ~~of the WEM Rules~~

5.5.1.6.5.1. ~~If a Market Participant is notified by AEMO~~AEMO notifies a Market Participant that the Capacity Credits for a Facility have been reduced under ~~step 5.3.2 of this Procedure paragraph 6.4.1,~~ then the Market Participant may request that AEMO conduct a re-test ~~[clause 4.25.5], under clause 4.25.5,~~ subject to the following conditions:

- (a) the Facility may only be re-tested once prior to the end of the Capacity Year;
- (b) AEMO must conduct the re-test during the ~~seven~~7 days following that request from the Market Participant; and
- (c) AEMO must undertake the re-test in accordance with this Procedure and the WEM Rules.

5.5.2.6.5.2. If a Reserve Capacity re-test is conducted in accordance with ~~step paragraph 6.5.1-5.4.1 of this Procedure,~~ AEMO must determine the outcome (~~paragraph step 5.2.16.2.1 of this Procedure~~), record the results (~~step 5.5.1 of this Procedure paragraph 6.6.1~~) and notify the Market Participant in accordance with ~~step 5.2.3 paragraph 6.2.3 or step 5.2.4 of this Procedure paragraph 6.2.4,~~ as ~~appropriate~~applicable.

5.5.3.6.5.3. AEMO must set the ~~number quantity~~ of Capacity Credits held by the relevant Market Participant for the Facility to reflect the maximum capabilities achieved in the re-test (after adjusting these results to the equivalent values at a temperature of 41°C and allowing for the capability provided by operation on different types of fuel), which must not exceed the Capacity Credits originally confirmed by AEMO for that Facility under ~~section clause 4.20 of the WEM Rules~~ for the relevant Reserve Capacity Cycle.

5.5.4.6.5.4. The Capacity Credits must be set under ~~step 5.4.3 of this Procedure paragraph 6.5.3~~ within two Business Days of the determination of the re-test results under ~~paragraph 6.5.2 step 5.4.2 of this Procedure.~~

5.6.6.6. Recording and publishing Reserve Capacity Test results

5.6.1.6.6.1. AEMO must record the results of Reserve Capacity Tests including:

- (a) information regarding the conduct of the Reserve Capacity Test;
- (b) the results of the Reserve Capacity Test;
- (c) the determination of the outcome of the Reserve Capacity Test (passed or failed); and

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- (d) information regarding any action taken in accordance with [paragraphs steps 5.6.2.3, 5.3.16.3.3, and 5.4.36.5.3 of this Procedure, or clause 4.25.4](#), as applicable.

This information may be stored in WEMS.

~~5.6.2. — AEMO must publish the details required by clause 4.25.11 every 3 months. Every three months AEMO must publish details of [\[clause 4.25.11\]](#):~~

- ~~(a) — Facilities that have undergone a Reserve Capacity Test during the preceding three months; and~~
- ~~(b) [6.6.2](#), whether any of those Reserve Capacity Test were delayed and the reasons for the delay.~~

~~[5.6.3-6.6.3](#). —~~ The details published under ~~step 5.5.2 of this Procedure~~[paragraph 6.6.2](#) may be published on the ~~Market Web Site~~[WEM Website](#) or in WEMS, at AEMO's discretion.

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~~6.1. VERIFICATION TESTS FOR DEMAND SIDE PROGRAMMES~~

~~6.1.1.1.1. In each Capacity Year, a Market Customer must undertake a Verification Test during the period specified in clause 4.10.1(f)(vi) of the WEM Rules for each Demand Side Programme registered to the Market Customer. Each test must be conducted in accordance with this Procedure and carried out **[clause 4.25A.1]:**~~

- ~~(a) within 20 Business Days of registration as notified by AEMO under clause 2.31.6 of the WEM Rules, of the Demand Side Programme, if applicable; or~~
- ~~(b)(a) between 1 October and 30 November.~~

~~6.1.2.1.1. A Market Customer must notify AEMO no later than two Business Days prior to the commencement of the Trading Day during which it intends to conduct a Verification Test, advising:~~

- ~~(a) the identity of the Demand Side Programme that will be tested;~~
- ~~(b)(a) the Trading Interval(s) in which the Verification Test will be conducted; and~~
- ~~(c)(a) the expected reduction in Demand Side Programme Load from the Relevant Demand.~~

~~If AEMO does not receive notification in accordance with this step 6.1.2, the results of the Verification Test will not be considered by AEMO.~~

~~6.1.3.1.1. To undertake a Verification Test the Market Customer must activate the Demand Side Programme and provide evidence satisfactory to AEMO of the Trading Intervals during which the Verification Test was conducted **[clause 4.25A.2]:**~~

~~6.1.4.1.1. A Demand Side Programme will be deemed to have failed the Verification Test unless a reduction in demand equal to at least 10% of the Capacity Credits, when measured against the Demand Side Programme's Relevant Demand determined under clause 4.26.2CA of the WEM Rules, is identified from the Demand Side Programme Load associated with that Demand Side Programme **[clause 4.25A.3]:**~~

~~6.1.5.1.1. Where a Demand Side Programme fails a Verification Test AEMO must reduce the Capacity Credits assigned to the Demand Side Programme to zero from the second Trading Day following the Scheduling Day on which AEMO determines that the Verification Test was failed under clause 4.25A.3 of the WEM Rules **[clause 4.25A.4]:**~~

~~6.1.6.1.1. Where a Demand Side Programme fails a Verification Test, the relevant Market Customer may request that a second Verification Test be undertaken. If the Demand Side Programme fails the second Verification Test then the Capacity Credits assigned to the Demand Side Programme are to remain at zero until the end of the relevant Capacity Year **[clause 4.25A.5]:**~~



7. REVIEWING RESULTS

7.1.1. A Market Participant who ~~believes~~ considers that an error has been made in determining the results of a Verification by Observation, Reserve Capacity Test, or Verification Test, may contact AEMO to request an investigation into the results.

7.1.2. On receiving a request under ~~paragraph step 7.1.1 of this Procedure~~, AEMO must review the results of the Verification by Observation, Reserve Capacity Test, or Verification Test as applicable, and must determine, at its discretion, whether an error was made. An investigation may include, but is not limited to, the accuracy of the following:

- (a) inputs into the Required Level calculation, including (where relevant):
 - (i) the Relevant Demand calculation and any applicable Consumption Deviation Applications; and
 - (ii) Temperature Dependence Curve; and
- (b) Meter Data Submissions used to calculate the results.

7.1.3. As soon as practicable after receiving a request under ~~step paragraph 7.1.1 of this Procedure~~, AEMO must inform the Market Participant of the results of the investigation either as follows:

- (a) if an error was made:
 - (i) its re-determination of the Verification by Observation, Reserve Capacity Test, or Verification Test results, as applicable; ~~and/or~~
 - (ii) its determination that the Reserve Capacity Test or Verification Test was an Invalid Test; or

(b) if it determines no error was made, notify the Market Participant accordingly otherwise that it has determined that no error was made.

7.1.4. Where AEMO identifies that it has made an error in determining the results of a Verification by Observation, Reserve Capacity Test, or Verification Test, as applicable, AEMO must:

- (a) re-determine the Verification by Observation, Reserve Capacity Test, or Verification Test results, as applicable; and
- (b) notify the Market Participant of the re-determination in paragraph 7.1.4(a).

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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
4.25.14
(b)

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