

## Independent Market Operator

### IMO PROCEDURE CHANGE AND DEVELOPMENT GROUP

## Agenda

<b>Meeting No.</b>	4
<b>Location:</b>	IMO Board Room, Level 3, Governor Stirling Tower, 197 St Georges Terrace, Perth
<b>Date:</b>	Thursday 13 August 2009
<b>Time:</b>	Commencing at 9.30 am to 11.30am

Item	Subject	Responsible	Time
1.	<b>WELCOME AND APOLOGIES / ATTENDANCE</b>	<b>Chair</b>	5 min
2.	<b>MINUTES OF PREVIOUS MEETING</b>	<b>Chair</b>	5 min
3.	<b>MARKET PROCEDURE FOR SUPPLEMENTARY RESERVE CAPACITY</b>  The new procedure has been provided for consideration by members.	<b>IMO</b>	45 min
4.	<b>MARKET PROCEDURE FOR RESERVE CAPACITY TESTING</b>  An amended procedure has been provided for consideration by members.	<b>IMO</b>	15 min
5.	<b>MARKET PROCEDURE FOR UNDERTAKING THE LONG TERM PASA AND CONDUCTING A REVIEW OF THE PLANNING CRITERIA</b>  The new procedure has been provided for consideration by members.	<b>IMO</b>	45 min
6.	<b>NEXT MEETING</b>  To be advised.	<b>Chair</b>	5 min

Independent Market Operator

IMO PROCEDURE CHANGE AND DEVELOPMENT GROUP

**Minutes**

<b>Meeting No.</b>	3
<b>Location:</b>	IMO Board Room Level 3, Governor Stirling Building, 197 St Georges Terrace, Perth
<b>Date:</b>	Wednesday 25 March 2009
<b>Time:</b>	Commencing at 10.00am to 12:00pm

<b>Attendees</b>		
Jacinda Papps	IMO	Chair
John Rhodes	Synergy	Synergy Representative
Alistair Butcher	System Management	System Management Representative
Steve Gould	Landfill Gas and Power	Industry Representative
Fiona Edmonds	IMO	Minutes
Arianwyn Lowe	IMO	Presenter
Ben Williams	IMO	Presenter

<b>Apologies</b>		
Bill Truscott	Alinta	Industry Representative
Yin Heng	Perth Energy	Industry Representative
Andrew Everett	Verve Energy	Verve Energy Representative

<b>Item</b>	<b>Subject</b>	<b>Action</b>
1.	<b>WELCOME AND APOLOGIES / ATTENDANCE</b> Noted apologies from Yin Heng, Bill Truscott, and Andrew Everett.	<b>Chair</b>

Item	Subject	Action
2.	<p><b>MINUTES OF PREVIOUS MEETING</b></p> <p>The minutes of the Independent Market Operator (IMO) Procedure Change and Development Working Group (Working Group) Meeting 2, held on 18 April 2008, were circulated prior to this meeting.</p> <p>Although there was only one member present who attended the previous meeting, members agreed to adopt the minutes of Meeting 2 as a true and correct record of the meeting.</p>	Chair
3.	<p><b>WORKING GROUP TERMS OF REFERENCE</b></p> <p>One member suggested that the Terms of Reference (ToR), as currently drafted, are very Market Advisory Committee (MAC) specific and consequently suggested that maybe the Chair could have the power to agree to procedure changes in order to reduce administrative burden.</p> <p>The Chair noted that MR2.3.1 currently mandates the role of the MAC with one of its tasks to “advise the IMO and System Management regarding Procedure Change Proposals”. However, it was also noted that the IMO is looking at reviewing the operation of the MAC and the associated working groups as part of CP_2009_03, Market Advisory Committee Constitution and Operating Practices. It is intended that this paper will be presented to the April MAC meeting.</p> <p>It was agreed that no further changes to the ToR were necessary at this point.</p>	Chair
4.	<p><b>MARKET PROCEDURE FOR REGISTRATION AND DE-REGISTRATION OF RULE PARTICIPANTS</b></p> <p>The IMO noted that it is currently in breach of MR2.31.23(a) as the current Registration Market Procedure does not include details on the process for de-registration as a Rule Participant in a particular class. The IMO noted that it has lodged this as a compliance breach. Therefore the proposed changes are to ensure compliance with the Market Rules and to also improve the overall integrity of the Market Procedure.</p> <p>The IMO stepped the Working Group through the proposed amendments, in particular noting:</p> <p><b>Section 1.5:</b> The IMO is currently investigating the status of the ERA as a class of Rule Participant under MR2.28.1. Further amendments to the procedure will be made in light of any potential changes to the Market Rules.</p> <p><b>Table 1-1:</b> The IMO agreed to amend the step to read “South West <del>Interconnected System</del> <u>interconnected system</u>” for consistency with the Electricity Act. The IMO also agreed to look into whether MR2.28.16 should be referring to an “entity” rather than a “person”.</p> <p><b>Section 1.6.2:</b> It was questioned whether the statement that “the applicant will need to” is correct with respect to this clause as</p>	IMO (presented by Arianwyn Lowe)

Item	Subject	Action
	<p>section 1.6.3 suggests that this is optional. The IMO agreed to clarify whether the applicant “will” or “may” need to enter into an agreement for the IMO to issue Recipient Created Tax Invoices and amend appropriately.</p> <p><b>Section 1.7.12:</b> As currently stated it is unclear what System Management is responding to within five days. In addition, if the applicant was for a Network Operator class then the IMO would not be able to comply with MR2.31.10 (c). The IMO agreed to investigate and advise the Working Group of the outcome.</p> <p><b>Section 1.10:</b> The IMO agreed to replace “capacity credits” with “Capacity Credits” as this is a defined term in the Market Rules.</p> <p><b>Section 1.12.2:</b> The IMO agreed to amend “registration” with “de-registration” to correct this typographic error.</p> <p>It was noted, and the IMO agreed, that the Working Group would prefer to receive amended procedures for consideration using the underlined/strikethrough form as tracking for clarity. It was also agreed that the IMO would circulate both clean and tracked procedures.</p>	
5.	<p><b>MARKET PROCEDURE FOR RESERVE CAPACITY SECURITY</b></p> <p>The IMO noted that it is currently in breach of MR4.13.8 as there is no approved Market Procedure which deals with these required processes. The IMO noted that it has already lodged this as a compliance breach. The proposed new procedure will ensure compliance with the Market Rules.</p> <p>The IMO stepped the Working Group through the proposed Market procedure, in particular noting:</p> <p><b>Section 1.4.3 (d):</b> The IMO agreed to amend this to read “Other matters relating to clause 4.13.3 <del>and</del> <u>through to</u> 4.13.7.”</p> <p><b>Section 1.6.1:</b> The IMO agreed to amend this to read “<u>Relevant relevant</u> Market Participant”.</p> <p><b>Section 1.6.9 - 1.6.16:</b> It was questioned whether this section on notices is necessary given that the IMO has a Notices and Communications Procedure in place. It was noted that the Notices and Communications Procedure (as a generic procedure) may not have the required detail, however, the IMO agreed to investigate and amend the new Market Procedure if necessary.</p> <p><b>Section 1.7.2:</b> It was questioned whether we should be also listing cash in this step. It was noted that cash will only be accepted on special circumstances. The IMO agreed to look at whether this could be better clarified.</p> <p><b>Section 1.7.4:</b> The IMO agreed to amend this to read “in person <u>or by courier</u>”.</p> <p><b>Section 1.7.5:</b> The IMO agreed to review this clause to ensure that it is clear.</p>	<p style="text-align: center;"><b>IMO (presented by Ben Williams)</b></p>

Item	Subject	Action
	<p><b>Section 1.7.7:</b> The IMO agreed to review the statement “the Market Participant should ensure they are provided with a receipt” as it was the Working Group’s opinion that the onus should be on the IMO doing this.</p> <p><b>Section 1.8:</b> The IMO agreed to include a note that the step to be followed for guarantees is outlined in section 1.9.</p> <p><b>Section 1.8.1:</b> The IMO agreed to amend “must” to “may”.</p> <p><b>Section 1.8.3:</b> The IMO agreed to amend this step to note “<u>is in the form approved by the IMO from time to time, and published on its website as the pro-forma document</u>”. This is as it is currently unclear how this is determined by the IMO.</p> <p><b>Section 1.8.5:</b> As with section 1.7.7, the IMO agreed to look further at the statement that the Market Participant “should ensure” they are provided with a receipt as the emphasis should be on the IMO doing this.</p> <p><b>Section 1.8.7:</b> The IMO agreed to amend this to read “...Security, <del>it is the obligation of the Market Participant to the</del> <u>Market Participant must contact...</u>” for consistency with the language used elsewhere in the Market Procedure.</p> <p><b>Section 1.8.8:</b> The IMO agreed to remove this section as it is redundant.</p> <p><b>Section 1.9.1:</b> The IMO agreed to amend “must” to “may”.</p> <p><b>Section 1.9.3:</b> The IMO agreed to amend this to read “<u>is in the form approved by the IMO from time to time, and published on its website as the pro-forma document</u>”. This is as it is currently unclear how this is determined by the IMO.</p> <p><b>Section 1.9.5:</b> The IMO agreed to look further at the statement that the Market Participant should ensure they are provided with a receipt as the emphasis should be on the IMO doing this.</p> <p><b>Section 1.9.7:</b> The IMO agreed to amend this to read “...Security, <del>it is the obligation of the Market Participant to the</del> <u>Market Participant must contact...</u>” for consistency with the language used elsewhere in the Market Procedure.</p> <p><b>Section 1.9.8:</b> The IMO agreed to remove this section as it is redundant.</p> <p><b>Section 1.11.2:</b> The IMO agreed to amend “must” to “may”.</p> <p><b>Section 1.11.4:</b> The IMO agreed to amend this step to note “<u>is in the form approved by the IMO from time to time, and published on its website as the pro-forma document</u>”. This is as it is currently unclear how this is determined by the IMO.</p> <p><b>Section 1.11.6:</b> The IMO agreed to look further at the statement that the Market Participant should ensure they are provided with a receipt as the emphasis should be on the IMO doing this.</p>	

Item	Subject	Action
	<p><b>Section 1.11.8:</b> The IMO agreed to amend this to read “...Security, it is <del>the obligation of the Market Participant to the Market Participant must</del> contact...” for consistency with the language used elsewhere in the Market Procedure.</p> <p><b>Section 1.11.9:</b> The IMO agreed to remove this section as it is redundant.</p> <p><b>Section 1.11.13:</b> The IMO agreed to amend the statement “... Participant with <u>the</u> IMO’s nominated...”, and replace “...form” with “...from”.</p> <p><b>Section 1.11.14:</b> The IMO agreed to amend this to read “...made to <u>their</u> nominated...” to remove any ambiguity.</p> <p><b>Section 1.12:</b> A member noted that this section is quite prescriptive. The IMO noted that the IMO internal procedure was even more so with regards to needing Board approval at various stages. It was noted that this section needs to remain largely as it is in order for the IMO to comply with its internal procedure.</p> <p><b>Section 1.12.2:</b> The IMO agreed to investigate whether the word “obligation” is the correct word to use and amend the procedure if necessary.</p> <p><b>Section 1.12.5:</b> The IMO agreed to look further at the statement that the Market Participant should ensure they are provided with a receipt as the emphasis should be on the IMO doing this.</p> <p><b>Section 1.12.7:</b> The IMO noted that this clause should have been deleted.</p> <p><b>Section 1.12.8.</b> The IMO agreed amend “nominated exchange date” to read “Nominated Exchange Date”. The IMO also agreed to look at amending this step to include details relating to electronic transfer.</p> <p><b>Section 1.13:</b> The IMO agreed to review and amend as appropriate this section in light of the agreed changes for section 1.7.</p> <p><b>Section 1.13.6:</b> The IMO agreed to amend “Market Procedure 1.7” to read “step 1.7”</p> <p><b>Section 1.14:</b> The Working Group questioned the use of the word “reputable” and suggested that “acceptable” would be more appropriate. The IMO agreed to make this amendment. Additionally, the IMO to consider including a step which outlined the criteria for what determines an “acceptable” firm of solicitors.</p> <p><b>Section 1.14.1:</b> The IMO agreed to amend “Market Procedure 1.14” to read “step 1.14”.</p> <p><b>Section 1.14.4:</b> The IMO agreed to review the wording of this step and to amend the step to read “<del>on the Business Day following the Business Day</del> <u>on the next Business Day</u> on which...”.</p>	

Item	Subject	Action
	<p><b>Section 1.14.5:</b> The IMO agreed to amend this to read “...these <u>the steps in this</u> Market Procedures...”</p> <p><b>Section 1.14.6:</b> The IMO agreed to review whether this has occurred in the past and advise the Working Group of the outcomes of its investigation.</p> <p><b>Section 1.16.3:</b> The IMO agreed to amend this to read “...co-signed <u>by</u> the appropriately...”.</p> <p><b>Section 1.16.4:</b> The IMO agreed to amend this to read “...its internal <u>business handling</u> procedures.” for consistency with section 1.15.</p> <p><b>Section 1.17.2:</b> The IMO agreed to amend this to read “... for the <u>exchange transaction</u>” .</p> <p><b>Section 1.17.3:</b> The IMO agreed to amend this to read “...both representatives (<u>the IMO and Market Participant</u>)...”.</p> <p>A member noted that the steps contained in this Market Procedure are reasonably specific and prescriptive with respect to the level of documentation required. In particular it was queried whether the IMO could utilise an electronic funds transfer for returning cash deposits. The IMO responded that this was current practice and that it would look into including these details in the Market Procedure.</p>	
6.	<p><b>MARKET PROCEDURE FOR CERTIFICATION OF RESERVE CAPACITY</b></p> <p>A member noted that the commencement date for the procedures should not be amended as the procedure still commenced on the date approved by the Minister for Energy. The version history will reflect when the amendments were made. The IMO agreed to clarify this further and amend the Market Procedures accordingly.</p> <p>The IMO stepped the Working Group through the proposed Market procedure, in particular noting:</p> <p><b>Section 1.5.8:</b> It was questioned whether the screen shot was of an applicant’s screen or was a generic screen. The IMO agreed to check this and amend the screen shot if it is of an applicant’s screen.</p> <p><b>Section 1.7.13 and Section 1.10.3(d):</b> The Working Group noted that there may be further changes to this clause required in light of the DSM Rule Change (RC_2008_20) which has changed the aggregation of curtailable loads. The IMO agreed to review the whole procedure in light of the DSM rule change and amend accordingly. The IMO noted that there are timing considerations due to the staggered implementation of some of the rules. The IMO agreed to investigate whether a similar option of putting changes to the procedure with a future commencement date in a text box to indicate this change will be occurring in the future once the rule change commences.</p> <p><b>Appendix A:</b> The IMO agreed to include details in the first</p>	<p style="text-align: center;"><b>IMO (presented by Ben Williams)</b></p>

Item	Subject	Action
	<p>paragraph to clarify that this is an annual process.</p> <p><b>Appendix A- Financing:</b> The IMO agreed to amend the appendix to read "To <del>verify</del> <u>permit verification of...</u>".</p> <p><b>Appendix A- Temperature Dependence:</b> The Working Group questioned whether the 0.1 degree intervals were practicable and recommended that the IMO consult with generators before making this change. The IMO noted that this number has been base on industry estimates and agreed to consult with generators before the procedure is submitted. The IMO also agreed to clarify who is an acceptable independent engineering firm.</p> <p><b>Appendix A- Environmental Approval:</b> The IMO agreed to amend the appendix to read "...made to the <del>Environmental Protection authority</del> <u>relevant Government Agencies (Environmental Protection Authority, the Department of Environment and Conservation and the Department of the Environment and Heritage); or</u>"</p> <p><b>Appendix A- Generator Capacity:</b> The Working Group expressed concerns that a power factor of 0.8 was extreme for generators. The IMO noted that it is going to be getting an engineer's report to review this before it progresses the procedure change (and will get further advice on the temperature dependence curves in 0.1 degree intervals at the same time).</p>	
7.	<p><b>MARKET PROCEDURE FOR DECLARATION OF BILATERAL TRADES AND THE RESERVE CAPACITY CYCLE</b></p> <p>The IMO noted that the proposed updates are in accordance with RC_2009_07 which notes that the IMO will update the Market Procedure for Declaration of Bilateral Trades and the Reserve Capacity Cycle to reflect the introduction of the concept of committed status for a facility.</p> <p>The IMO stepped the Working Group through the proposed Market procedure, in particular noting:</p> <p><b>Section 1.6.2(b):</b> The IMO agreed to reword this paragraph to improve its clarity.</p>	<p style="text-align: center;"><b>IMO (presented by Ben Williams)</b></p>
8.	<p><b>NEXT MEETING</b></p> <p>TBA</p>	
9.	<p><b>CLOSED</b></p> <p>The chair declared the meeting closed at 11.45am.</p>	<p style="text-align: center;"><b>Chair</b></p>

ELECTRICITY INDUSTRY ACT 2004

ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY  
MARKET) REGULATIONS 2004

WHOLESALE ELECTRICITY MARKET RULES

Market Procedure for:  
Supplementary Reserve Capacity

Version 1

**Commencement:** This Market Procedure is to have effect from  
8:00am (WST) on Xx XXXX 2009.

**Version Control**

Title of Document: Market Procedure for: Reserve Capacity Security  
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**Version history**

Xx XXXX 2009	Market Procedure proposed under Procedure Change Proposal (PC_2009_09)
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# 1. Supplementary Reserve Capacity Procedure

In the event that the Independent Market Operator (IMO) considers that, in its opinion, inadequate Reserve Capacity will be available in the South West interconnected system (SWIS) to satisfy the reliability requirements; it may follow the processes set out in clause 4.24 of the Wholesale Electricity Market Rules (Market Rules) to secure Supplementary Reserve Capacity (SRC).

The Market Procedure for Supplementary Reserve Capacity (Procedure) describes the process that the IMO and System Management will follow in acquiring Eligible Services, entering into Supplementary Reserve Capacity Contracts and determining the maximum contract value per hour of availability for any Supplementary Capacity Contract. It also details the information that is required to be exchanged between the IMO, Market Participants and System Management.

## 1.1 Relationship with the Market Rules

- a) This Procedure has been developed in accordance with, and should be read in conjunction with sections 4.24 and 4.25.4F of the Wholesale Electricity Market (WEM) Rules (Market Rules).
- b) References to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as at 24 July 2009. These references are included for convenience only and are not part of this Procedure.
- c) This Procedure is made in accordance with clause 4.24.18 of the Market Rules.

## 1.2 Interpretation

In this Procedure, unless the contrary intention is expressed:

- a) terms used in this procedure have the same meaning as those given in the Wholesale Electricity Market Rules (made pursuant to the Electricity Industry (Wholesale Electricity Market) Regulations 2004);
- b) to the extent that this procedure is contrary or inconsistent with the Market Rules, the Market Rules shall prevail to the extent of the inconsistency;
- c) a reference to the Market Rules or Market Procedures includes any associated forms required or contemplated by the Market Rules or Market Procedures; and
- d) words expressed in the singular include the plural or vice versa.

## 1.3 Purpose

The purpose of this Procedure is to describe the steps the IMO and System Management must follow in:

- a) Acquiring eligible services;
- b) Entering into Supplementary Reserve Capacity Contracts; and
- c) Determining the maximum contract value per hour of availability for any Supplementary Capacity Contract.

## **1.4 Application**

This Procedure applies to:

- a) The IMO; and
- b) System Management.

## **1.5 General Notes**

1. SRC may only be provided by “Eligible Services” in accordance with clause 4.24.3 of the Market Rules.
2. Market Participants may not offer Curtailable Loads for SRC if the Curtailable Load has had its Capacity Credits reduced in accordance with clause 4.25.4 for any part of the current Capacity Year.
3. The term of any Supplementary Capacity Contract is not to exceed 12 weeks **[MR 4.24.13 (h)]**.
4. Payment for SRC is made in two parts:
  - An availability price for entering into the contract and making capacity available.
  - An activation price which is a payment made when the service is called upon.

## **2. Procedure Steps**

### **2.1 Determination of the amount of SRC Required**

1. In determining how much SRC is required, the IMO will:
  - a) identify the actual level of Certified Reserve Capacity that will be available by reference to the level of Certified Reserve Capacity less any predicted major plant outages;
  - b) identify the level of Certified Reserve Capacity required to satisfy the SWIS reliability requirements, as set out in clauses 4.5.9(a) and 4.5.9(b) of the Market Rules, by reference to the most recent information regarding electricity supply and demand available to the IMO;

- c) determine the amount of Supplementary Reserve Capacity required, ensuring that the amount of Reserve Capacity is adequate. This is the amount by which the quantity identified above in b) exceeds the quantity in a) **[MR4.24.1(b)]**;
- d) determine the expected start and end dates for which the Supplementary Reserve Capacity will be required **[MR4.24.1 (a)]**;
- e) determine the number of hours over the contract period during which the capacity is expected to be required; and
- f) determine the time of day when the capacity is expected to be required.

## **2.2 Determine the process to be used to secure SRC**

1. If the expected start date of the shortfall is at least 12 weeks from the date the IMO becomes aware of the shortfall, then it must call for tenders from potential suppliers of supplementary capacity in an invitation to tender **[MR4.24.2(a)]**.
2. If the expected start date of the shortfall is less than 12 weeks from the date the IMO becomes aware of the shortfall, then the IMO must either:
  - a) call for tenders from potential suppliers of supplementary capacity in an invitation to tender; or
  - b) negotiate directly with potential suppliers of supplementary capacity **[MR4.24.2(b)]**.
3. If the IMO decides to call for tenders it must follow process steps set out in Section 2.4 of this procedure.
4. If the IMO decides to negotiate directly with potential suppliers it must follow the process steps set out in Section 2.5 of this procedure.

## **2.3 Determination of the Maximum Contract Value**

1. The maximum contract value is equal to the sum of:
  - The availability price that would apply across the full contract period; and
  - The activation price that would apply if the facility is called upon for the maximum number of hours permitted under the contract.
2. The maximum contract price is determined by estimating a notional availability price and a notional activation price.
3. The notional availability price is to be determined on the basis that:

- A demand side management (DSM) Facility, which has been certified for the relevant reserve capacity year, will receive Reserve Capacity payment equal to the annual Reserve Capacity Price;
  - The DSM facility will generally be expected to operate only during the Hot Season; and
  - The notional availability price for an eligible facility that provides SRC should be equal to the annual Reserve Capacity Price pro rated in the ratio of the duration of the SRC contract term to the duration of the Hot Season.
4. The notional activation price is to be determined on the basis that:
- When a DSM Facility, which has been certified for the relevant reserve capacity year, is activated it will receive payment up to the level of the Alternative Maximum STEM Price;
  - Eligible Facilities can be assumed to require a higher payment to encourage their participation within the Wholesale Electricity Market;
  - The notional activation price for an eligible facility that provides SRC should be equal to the Alternative Maximum STEM price multiplied by an uplift factor; and
  - The uplift factor is determined by consideration of the pricing level required to encourage persons to offer supplementary capacity.

## 2.4 Calling of Tenders

1. These process steps are to be followed if the IMO decides to follow the tender process.
2. The IMO must not call for tenders for supplementary capacity earlier than six calendar months prior to the calendar month in which the shortfall period is expected to start **[MR4.24.5]**.
3. The IMO must prescribe the tender form to be used by those applying to provide Eligible Services. This form must require the specification of:
  - a) the name and contact details of the applicant;
  - b) the nature of the Eligible Service to be provided;
  - c) the amount of the Eligible Service available;
  - d) the maximum number of hours over the term of the Supplementary Capacity Contract that the Eligible Service will be available;
  - e) the maximum number of hours on each day during the term of the Supplementary Capacity Contract that the Eligible Service will be available;

- f) the time of each day during the term of the Supplementary Capacity Contract that the Eligible Service will be available;
- g) any information required to complete the relevant standard form Supplementary Capacity Contract for the Eligible Service and the applicant, together with full details of any amendments to the standard form Supplementary Capacity Contract required by the applicant;
- h) the mechanism for activating the Eligible Service;
- i) the mechanisms available for measuring the Eligible Service provided; and
- j) the values of:
  - i. the availability price for the Eligible Service expressed in dollars; and
  - ii. the activation price for the Eligible Service, expressed in dollars per hour of activation, where this price must reflect direct or opportunity costs incurred,

where the activation price plus:

- i. the availability price; divided by
- ii. the lesser of:
  - 1. the number of hours specified in the advertisement for the call for tenders under clause 4.24.6(d); and
  - 2. the number of hours specified for the Eligible Service in accordance with paragraph (d),

must not exceed the maximum contract value per hour of availability specified in the advertisement for the call for tenders under clause 4.24.6(g) **[MR4.24.7]**.

- 4. No earlier than 30 Business Days and no later than 10 Business Days prior to the proposed closing date for submission of tenders, the IMO must advertise the call for tenders on the Market Web Site and in major local and national newspapers **[MR4.25.6]**.
- 5. The advertisement must include:
  - a) the date and time at which any person wishing to tender to supply Eligible Services must have completed and lodged with the IMO the form specified in step 3 above.
  - b) contact details for the IMO;
  - c) the amount of capacity required;
  - d) the number of hours over which the capacity is expected to be used;

- e) the time of the day where the capacity is expected to be required;
- f) the expected term of any Supplementary Capacity Contracts entered into as a result of the call for tenders;
- g) the maximum contract value per hour of availability for any Supplementary Capacity Contract that the IMO will accept;
- h) the location of copies of the standard Supplementary Capacity Contracts on the Market Web Site; and
- i) the location on the Market Web Site of the tender form to be used in applying to provide Eligible Services **[MR4.24.6]**.

## **2.5 Acquisition of SRC by Negotiation**

1. If the IMO negotiates directly with a potential supplier of Eligible Services then it must provide the following information to the potential supplier:
  - a) the amount of capacity required;
  - b) the relevant standard form Supplementary Capacity Contract; and
  - c) details of the information to be provided by the potential supplier, including:
    - i. the amount of the Eligible Service available;
    - ii. the mechanism for activating the Eligible Service;
    - iii. the mechanisms available for measuring the Eligible Service provided;
    - iv. the availability price for the Eligible Service expressed in dollars; and
    - v. the activation price for the Eligible Service, expressed in dollars per hour of activation, where this price must reflect direct or opportunity costs incurred. **[MR4.24.10]**
2. The IMO may accept or reject any proposals for the acquisition of SRC obtained by way of direct negotiation.

## **2.6 Standard Contract**

1. The IMO must develop and maintain a standard form Supplementary Capacity Contract which accords with the requirements in clause 4.24.13 of the Market Rules **[MR4.24.12]**.
2. The standard form Supplementary Capacity Contract will require the supplier of an Eligible Service to reduce net consumption, or to increase generation, on instruction from System Management and must specify:

- a) that there are no force majeure conditions;
- b) the settlement process to be followed, including timing of payments;
- c) contract variation conditions;
- d) any conditions required to ensure that if a different person takes over the facility used to provide the Eligible Service, that the person taking over will be bound by the contract obligations (for example, by requiring the execution of a deed of assumption or novation);
- e) the financial consequences of failing to supply the Eligible Service in accordance with the contract, based on the arrangements which apply under clause 4.26 where a Market Participant holding Capacity Credits for a Facility fails to comply with its Reserve Capacity Obligations;
- f) a condition allowing the IMO to disclose the information required by Market clause 2.24.16 and preventing the disclosure set out in clause 2.14.17;
- g) the technical standards and verification arrangements which facilities used to provide Eligible Services must comply with; and
- h) blank schedules specifying:
  - i. the term of the Supplementary Capacity Contract, where this term is not to exceed 12 weeks;
  - ii. the sources of the net consumption reduction or generation increase;
  - iii. the amount of net consumption reduction or generation increase required;
  - iv. the notification time to be given for activation;
  - v. the method of notification of activation;
  - vi. the minimum duration of any activation;
  - vii. the maximum duration of any single activation;
  - viii. any limits on the number of times System Management can request activation;
  - ix. the basis to be used for measuring the response;
  - x. the availability price;
  - xi. the activation price;
  - xii. technical matters relating to the facility (including testing); and

- xiii. the fact that activation instructions will be given by System Management **[MR4.24.13]**.
3. Despite the existence of the standard form Supplementary Capacity Contract, the IMO may enter into Supplementary Capacity Contracts in any form it considers appropriate **[MR4.24.14]**.

## **2.7 Information to be provided to System Management**

1. The IMO must provide the following Supplementary Capacity Contract information to System Management, so as to allow System Management to dispatch the contracted Eligible Services:
  - a) the identity of each contracted Eligible Service, listed in order of increasing activation price;
  - b) the information required to contact the party which will activate the Eligible Service;
  - c) the process to be followed in activating that Eligible Service, including required advance notification times; and
  - d) the limitations on the availability of the Eligible Service **[MR4.24.16]**.
2. The IMO must not provide the following Supplementary Capacity Contract information to System Management for any Eligible Service:
  - a) the activation price for that Eligible Service; or
  - b) the availability price for that Eligible Service **[MR4.24.17]**.

## **2.8 Settlement processes**

1. Settlement of SRC Contracts is to be through the non-STEM settlement system.
2. The IMO must recover the full cost it incurs in respect of Supplementary Capacity Contracts in accordance with clause 4.28 and Chapter 9 of the Market Rules **[MR4.24.15]**.

## **2.9 Publication of outcomes**

1. The IMO must publish on its website:
  - Total quantity of Supplementary Reserve Capacity Secured
  - Names of suppliers of Supplementary Reserve Capacity

ELECTRICITY INDUSTRY ACT 2004

ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY  
MARKET) REGULATIONS 2004

WHOLESALE ELECTRICITY MARKET RULES

## Market Procedure for: Reserve Capacity Testing

[Version 2](#)

**Commencement:** This Market Procedure is to have effect from 8:00am (WST) on the same date as the Wholesale Electricity Market Rule, in which this procedure is made in accordance with, commences.

## Market Procedures Published by the Minister

I, FRANCIS LOGAN, Minister for Energy for the State of Western Australia, under regulation 9(2) of the *Electricity Industry (Wholesale Electricity Market) Regulations 2004* hereby approve the publication of the Reserve Capacity Testing Procedure contained in this document.

This Market Procedure is to have effect from 8:00am (WST) on the same date as the Wholesale Electricity Market Rule, in which this procedure is made in accordance with, commences.

.....

Dated at Perth this ..... day of .....2006.

### Version Control

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2.0.0 <b>3.0.0</b>	13/3/2007	T. Forward <u>B.Williams</u>	P. Peake	14/3/2007	For MAC Review <u>Update</u>

# 1. Reserve Capacity Testing Procedure

Each year, the Independent Market Operator (IMO) is required to verify and test the operation of Facilities holding Capacity Credits to ensure that the Reserve Capacity Obligations of Market Participants are met. There are two methods by which the IMO may verify the operation of a Facility. In particular the,

- first method is by observation of the Facility using metered schedules; and
- second method of verification is by conducting a test on the Facility [MR4.25.2].

The IMO must verify the operation of each Generation Facility at least twice a year, and each curtailable load once a year, within specified time periods, but may also conduct Facility verifications on an as required basis [MR4.25.1]. .

Following tests, the IMO may reduce the number of Capacity Credits assigned to a Facility and/or may reduce the Reserve Capacity Obligations associated with that Facility. [MR4.25.4]

In the event that the IMO reduces the number of Capacity Credits associated with a Facility, the Market Participant may, subject to certain provisions, ask to have the Facility re-tested and have the Capacity Credits reassigned in the case that the Facility performs to the relevant level. Decisions by the IMO in regard to verification by observation, and to tests, are not reviewable decisions under the Market Rules.

## 1.1. Relationship with the Market Rules

- (a) This Procedure has been developed in accordance with, and should be read in conjunction with sections 4.25 of the Wholesale Electricity Market (WEM) Rules (Market Rules).
- (b) References to particular Market Rules within the Procedure in bold and square brackets [MR XX] are current as at 28 July 2009. These references are included for convenience only and are not part of this procedure.
- (c) This procedure is made in accordance with MR4.25.14

~~**\_\_\_\_\_This procedure is made in accordance with Market Rule 4.25.14.**~~

### 1.1.1.2. Interpretation

In this procedure, unless the contrary intention is expressed:

- (a) terms used in this procedure have the same meaning as those given in the ~~Wholesale Electricity~~ Market Rules (made pursuant to the Electricity Industry (Wholesale Electricity Market) Regulations 2004);
- (b) to the extent that this procedure is contrary or inconsistent with the Market Rules, the Market Rules shall prevail to the extent of the inconsistency;
- (c) a reference to the Market Rules or Market Procedures includes any associated forms required or contemplated by the Market Rules or Market Procedures; and
- (d) words expressed in the singular include the plural or vice versa.

### **1.3. Purpose**

The purpose of this procedure is to describe the steps that:

- (a) the IMO must take in fulfilling the Reserve Capacity Testing functions under the Market Rules; and
- (b) Market Participants must follow in fulfilling the Reserve Capacity Testing functions under the Market Rules.

### **1.4. Application**

This procedure applies to:

- (a) The IMO in conducting Reserve Capacity verifications and tests;
- (b) Market Participants in complying with Reserve Capacity tests; and
- (c) System Management in conducting Reserve Capacity tests.

### **1.5. Glossary and Defined Terms used in this Procedure**

#### **1.2.1 Glossary and Defined Terms used in this Procedure**

**2** Relevant Reserve Capacity Test Level means, in the case of a generation system, the required Reserve Capacity level, in MW, net of any parasitic or embedded loads and determined by the IMO for the purposes of conducting Reserve Capacity Tests under this Procedure and Section 4.25. of the Wholesale Electricity Market Rules. This level is determined using temperature dependence curves submitted as part of the Certification of Reserve capacity for a generation Facility.

*The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:*

**Relevant Reserve Capacity Test Level** means,

- i. in the case of a generation system, the required Reserve Capacity level, in MW, net of any parasitic or embedded loads and determined by the IMO for the purposes of conducting Reserve Capacity Tests under this Procedure and Section 4.25. of the Wholesale Electricity Market Rules. This level is determined using temperature dependence curves submitted under MR 4.10.1 (e)(i) as part of the Certification of Reserve Capacity for a generation Facility.
- ii. In the case of a Curtailable Load, the reduction required to meet it's Maximum Capacity Obligation.

**32** Request to Conduct Temperature Calibration is the request made by the IMO to conduct a calibration of the Temperature Measurement Systems associated with a Facility.

**43** Reserve Capacity Test means a test conducted in accordance with Clause(s) 4.25 of the Wholesale Electricity Market Rules.

**54** Temperature Measurement Consultant means a consultant or organisation appointed by the IMO to conduct calibrations of the Temperature Measurement Systems.

**65** Temperature Measurement Systems means the sensors, systems and data used to measure ambient temperature at a Facility where the information is provided to System Management through the SCADA system.

**6** Temperature Dependence Curve: refers to the information provided by a Market Participant under Clause 4.10.1(e)(i) of the Market Rules. If a Change in Capacity Credits occurs over a Reserve Capacity Year, the Temperature Dependence Curve will be:

- (a) scaled to reflect the change in Capacity Credits at 41°C; or
- (b) Changed to reflect a new temperature dependence curve supplied by the Market Participant which has been determined by an independent engineering firm.

**7** Summer Reserve Capacity Testing Cycle: refers to :

1 October to 31 March;

**8** Winter Reserve Capacity Testing Cycle: refers to :

1 April to 30 September;

*The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:*

**9 Verification Test:** The Test that is required under clause 4.25A of the Market Rules to be undertaken by a Curtailable Load:

- a) Within 20 Business Days of registration; and
- b) Between 1 October and 30 November of Each Reserve Capacity Year

~~*The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:*~~

~~**9 Verification Test:** The Test that is required under clause 4.25A of the Market Rules to be undertaken by a Curtailable Load:~~

- ~~a) Within 20 Business Days of registration; and~~
- ~~b) Between 1 October and 30 November of Each Reserve Capacity Year.~~

~~c~~

### ~~1.3.Purpose~~

~~7The purpose of this procedure is:~~

~~=====~~

~~8To describe the steps that the IMO must take in fulfilling the Reserve Capacity Testing functions under the Market Rules;~~

~~(a)To describe the steps that Market Participants must follow in fulfilling the Reserve Capacity Testing functions under the Market Rules; and~~

### ~~1.2.Application~~

~~1This procedure applies to:~~

~~(a)The IMO in conducting Reserve Capacity verifications and tests;~~

~~(b)Market Participants in complying with Reserve Capacity tests.~~

### ~~1.3.Overview~~

~~=====~~  
~~Each year, the IMO is required to verify and test the operation of Facilities holding Capacity Credits to ensure that the Reserve Capacity Obligations of Market Participants are met. There are two methods by which the IMO may verify the operation of a Facility. The first method is by observation of the Facility using metered schedules. The second method of verification is by conducting a test on the Facility.~~

~~=====~~  
~~The IMO must verify the operation of each Generation Facility at least twice a year, and each curtailable load once a year, within specified time periods, but may also conduct Facility verifications on an as required basis. Following tests, the IMO may reduce the number of Capacity Credits assigned to a Facility and/or may reduce the Reserve Capacity Obligations associated with that Facility. In the event that the IMO reduces the number of Capacity Credits associated with a Facility, the Market Participant may, subject to certain provisions, ask to have the Facility re-tested and have~~

~~the Capacity Credits reassigned in the case that the Facility performs to the relevant level. Decisions by the IMO in regard to verification by observation, and to tests, are not reviewable decisions under the Market Rules.~~

**1.6. Steps that must be undertaken by the IMO and the Market Participant to calibrate Temperature Measurement Systems used in association with the SCADA system.**

~~1~~ 1 The IMO may require the Temperature Measurement Systems associated with any Facility subject to the testing requirements under Chapter 4 of the Market Rules be calibrated by an IMO appointed Temperature Measurement Consultant.

~~2~~ 2 The IMO may appoint a Temperature Measurement Consultant each year to calibrate the temperature measurement systems associated with each Generation Facility that nominates to use the SCADA Temperature Method.

~~3~~ 3 If the IMO requires that the Temperature Measurement Consultant calibrate the Facility's Temperature Measurement System, the IMO must contact relevant Market Participant in writing with a Request to Conduct Temperature Calibration.

~~4~~ 4 The Request to Conduct Temperature Calibration must include the following information:

~~(a)~~ (a) Information detailing the time and location of the proposed calibration; and

~~(b)~~ (b) Details of the Temperature Measurement Consultant that will be conducting the calibration.

~~5~~ 5 Within 2 Business Days of receiving the Request to Conduct Temperature Calibration, the Market Participant must contact the IMO to either:

~~(a)~~ (a) accept the proposed time; or

~~(b)~~ (b) propose another time, which must be within 10 business days of the original request date.

~~6~~ 6 The Market Participant must not refuse the Request to Conduct Temperature Calibration as proposed by the IMO unless the Market Participant believes the calibration may endanger person(s) or equipment at the time proposed.

~~7~~ 7 The IMO must present the results of the temperature calibration to the Market Participant within 5 working days of receiving the results from the Temperature Measurement Consultant.

~~8~~ 8 The Market Participant will be required to pay all costs associated with calibration of the Temperature Measurement Systems.

## 1.7. Procedure Steps that must be undertaken by the IMO

1 Each year the IMO must take steps to verify that each Facility providing Capacity Credits can,

a) In the case of a generation system during the period ~~term~~ the Reserve Capacity Obligations apply, operate at its maximum Reserve Capacity Obligation Quantity at least once during each of the 6 month periods listed in procedure step ~~1.7.2~~ 1.7.2 below. ~~[(Market Rule MR 4.25.1(a))]~~

*The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:*

~~b)~~ in the case of a Curtailable Load, ~~can,~~ during the ~~term~~ period the Reserve Capacity Obligations apply, operate at its maximum Reserve Capacity Obligation Quantity at least once during the period between 1 October to 31 March e Each Capacity Year. ~~[(Market Rule MR 4.25A.1(bc))]~~

~~2~~ 2 The verification referred to in procedure s ~~Step 1.7.1(a)~~ 1.7.1 must be conducted at least once during the following periods ~~[(Market Rule MR 4.25.1(a))]~~:

~~(a)~~ a) 1 October to 31 March (The Summer Reserve Capacity Testing Cycle); and

~~(b)~~ b) 1 April to 30 September (The Winter Reserve Capacity Testing Cycle).

~~3~~ 3 ~~In respect of Energy Market Commencement, the IMO must take steps to verify that each Facility that has been commissioned can, during the six months prior to the Reserve Capacity Obligations for the first Reserve Capacity Cycle taking effect, operate at its maximum Reserve Capacity Obligation Quantity at least once. (Market Rule 4.25.1(b))~~

~~4~~ 4 ~~Procedure Step 1.7.3 does not apply to facilities that are not commissioned prior to Energy Market Commencement. (Market Rule 4.25.1(b))~~

~~5~~ 5 The

The verifications conducted in accordance with procedure sSteps 1.7.1(a)1.7.1 and 1.7.3 above must be conducted on each type of fuel available to that Facility as notified in the information provided in respect of Certification of Reserve Capacity required under Market Rule clause 4.10.1(e)(v) of the Market Rules. — ~~[(Market Rule MR 4.25.1)]~~

64 The verification referred to in pProcedure sSteps 1.7.1 through 1.7.4 can be achieved:

~~(a)~~ a) -by the IMO observing the Facility operate at the required level at least once as part of normal operations in Metered Schedules specific to the Facility; or

~~(b)~~ b) by the IMO:

~~(i)~~ (i) in the case of a generation system, requiring System Management in accordance with Market Rule clause 4.25.7 to test the Facility's ability to operate at the required level for not less than 60 minutes and the Facility successfully passing that test; and

*The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:*

~~(ii)~~ (ii) in the case of Interruptible Loads, Curtailable Loads and Dispatchable Loads, requiring System Management, in accordance with Market Rule clause 4.25.7, to test the Facility's ability to reduce demand to the required level for not less than one Trading Interval and the Facility successfully passing that test. ~~to test the process and systems to activate a reduction in demand without requiring demand to actually reduce, and the Facility successfully passing that test.~~

75 For the purposes of Reserve Capacity Testing, the term Relevant Reserve Capacity Test Level will be used to describe the required level referred to in Procedure Step 1.7.4 above. - The Relevant Reserve Capacity Test Level will be determined by the IMO and may be different for different Trading Intervals. -For example, the Relevant Reserve Capacity Test Level may vary with ambient temperature at the Facility.

a) The Facility will be deemed to have passed a Reserve Capacity Test if the output is above the output specified in the Temperature Dependence Curve for the ambient temperature measures at the site;

b) The Facility will be deemed to have passed a reserve capacity test if if the output of the facility is above the output required at the highest point of the temperature dependence curve where the ambient temperature measured at the site exceeds the largest value supplied n the temperature dependence curve.

c) The Facility will be deemed to have failed a Reserve Capacity Test if the ambient temperature is below the lower bound of the temperature dependence curves submitted as part of the Certification of Reserve Capacity for the Facility; and

d) The Facility will be deemed to have failed a Reserve Capacity Test if the ambient temperature is below the output specified in the Temperature Dependence Curve for the ambient temperature measures at the site

~~7~~

6 A Market Participant may update the Temperature Dependence Curve associated with a Facility at any time before they have been tested by observation in respect of a Reserve Capacity Testing Cycle b. By submitting a new Temperature Dependence Curve determined by an independent engineering firm.

87 The IMO must not subject a Facility to a test of Reserve Capacity if that Facility is ~~[(Market Rule~~MR 4.25.3A]):

~~(a)~~a) undergoing a Scheduled Outage or Opportunistic Maintenance which has been approved in accordance with ~~c~~Clause 3.19 of the Market Rules, or

~~(b)~~b) if the Facility has advised System Management of a Forced Outage or Consequential Outage in accordance with clause 3.21.4 of the Market Rules; or

~~(c)~~c) if the Facility is undergoing Commissioning Test approved in accordance with ~~c~~Clause 3.21A of the Market Rules.

## **1.8. Procedures Steps to be undertaken by the IMO to Verify by Observation**

~~1~~1 In accordance with ~~p~~Procedure step 01.7.61.7.6, the IMO may use information gathered through the Wholesale Electricity Market System (WEMS) to observe a generation ~~the~~ Facility operating at the required level as part of normal operations.

~~2~~2 To verify by observation, the IMO must use temperature dependence information obtained ~~through using the methodology selected~~submitted by the Market Participant under ~~c~~Clause 4.10.1 (iv) (e) (i) of the Market Rules.

3 The IMO must refer to the temperature measurement source specified by the Market Participant under clause 4.10.1 (e)(iv) when determining the ambient temperature at the site of the generation Facility. Where no temperature source is specified the Market Participant must notify the IMO of a Temperature source before the start of the Reserve Capacity Year.

~~3~~4 To verify that a generation ~~the~~ Facility has operated at its ~~operated at~~ Relevant Reserve Capacity Test Level the IMO must use the information contained in the WEMS, together with the temperature information, to determine the operating output and ambient temperature relationship of the Facility.

~~4~~5 The IMO must assess the results obtained through ~~p~~Procedure ~~s~~Steps 01.8.11.8.1 through ~~01.8.31.8.3~~ and determine if the generation Facility

achieved its Relevant Reserve Capacity Test Level through the temperature range observed.

~~56~~ The IMO may be required to adjust the results to the equivalent values at a temperature of 41°C.

~~67~~ Following verification by observation the IMO may request a Reserve Capacity Test if:

~~(a)~~a) The IMO determines that the Facility failed to operate at its Relevant Reserve Capacity Test Level for part or all of the by observation verification process; or

~~(b)~~b) The IMO makes the determination that the results of the test were inconclusive.

8 The IMO must between 1 October and 31 March request a Reserve Capacity Test of each Curtailable load.

~~79~~ If the IMO requests a Reserve Capacity Test as a result of ~~this~~ pProcedure Step 1.8, the IMO must conduct the Reserve Capacity Test in accordance with pProcedure sStep 1.9.

~~710~~ If the IMO requests a Reserve Capacity Test in accordance with pProcedure sStep ~~01.8.6~~1.8.6, the IMO must provide the Market Participant with a summary of results obtained pProcedure sStep ~~01.8.4~~1.8.4.

~~811~~ The IMO must compile and maintain a list of Facilities whose operation have been undergone the verification by observation process and must keep records of outcome of the verification process.

## 1.9. Procedure Steps to be Undertaken by the IMO to Conduct a Reserve Capacity Test

~~41~~ Reserve Capacity Tests may be conducted by the IMO if:

~~(a)~~a) The IMO determines the most appropriate course of action is to test the Facility in accordance with ~~Market Rule~~clause 4.25.2(b) of the Market Rules;

~~(b)~~b) The IMO determines that the operation of the Facility failed the Verification by Observation process detailed at pProcedure sStep 1.8;

~~(b)~~c) The IMO believes, or has been made aware of any potentially limiting factors which may impact, or have impacted on the ability of the Facility to meet any or all of its Reserve Capacity Obligations;

~~(e)~~d) The IMO requires that a Reserve Capacity Test be conducted in respect of any Network Control Service Contract, Ancillary Service Contract or other requirement as determined by the IMO;

~~(d)~~e) The IMO is required to conduct a re-test in accordance with ~~Market Rule~~clause 4.25.4 of the Market Rules; or

- ~~(e)f)~~ A Market Participant requests a re-test in accordance with ~~Market Rule~~ clause 4.25.5 ~~of the Market Rules~~.
- ~~22~~ In the case that the IMO requires a Reserve Capacity Test to be conducted on a Facility, the IMO must contact System Management requesting that the test be conducted.
- ~~33~~ In requesting System Management to conduct a test, the IMO must provide System Management with the following information:
- ~~(a)a)~~ the Facility to be tested;
  - ~~(b)b)~~ the fuel to be used by the Facility during the test where applicable; and
  - ~~(c)c)~~ the time interval during which the test is proposed to be conducted, where this interval must begin not less than two Business Days after the time the IMO issues the request to System Management ~~[MR4.25.7]~~.
- ~~44~~ All information regarding the request for the test must be treated as System Management Confidential.
- ~~55~~ If the IMO requests System Management to conduct a test in accordance with this procedure, System Management must conduct the test in accordance with the Power System Operation Procedure.
- ~~66~~ When the IMO receives the results of the test from System Management, the IMO must, within ~~5-10~~ Business Days, determine whether the Facility has operated at the Relevant Reserve Capacity Test Level(s) and make a determination that the Facility has either Passed or Failed the Reserve Capacity Test.
- ~~77~~ The IMO must record the results of the test including:
- ~~(a)a)~~ Information regarding the conduct of the Reserve Capacity Test
  - ~~(b)b)~~ Information regarding the results of the Reserve Capacity Test;
  - ~~(c)c)~~ The determination of the outcome of the Reserve Capacity Test (Passed or Failed)
  - ~~(d)d)~~ Reasons as to why the IMO believes the Facility has Passed or Failed the Reserve Capacity Test
  - ~~(e)e)~~ Information regarding any action taken in accordance with Procedure Steps ~~01.9.9~~1.9.9 and ~~01.9.11~~1.9.11 and ~~01.9.13~~1.9.13 as applicable.
  - ~~e)~~
- ~~88~~ In the event that the IMO determines the Facility has ~~Passed~~passed the Reserve Capacity Test, the IMO must inform the Market Participant that the Facility has ~~Passed~~passed, and provide the Market Participant with a copy of the results produced. This must be completed within ~~5-10~~ Business Days of the date ~~the IMO receives the results of the test from System Management~~ at which the Market Participant is notified under Step 1.9.6 of this Procedure.

~~99~~ 10 In the event that the IMO determines the Facility has Failed the Reserve Capacity Test, the IMO must

~~(a)~~ (a) inform the Market Participant that the Facility has Failed the Reserve Capacity Test;

~~(b)~~ (b) provide the Market Participant with a copy of the results produced;

~~(c)~~ (c) require System Management re-test the Facility in accordance with Procedure Step ~~01.9.10~~ 1.9.10 below.

~~10~~ 10 In the event that a re-test is required in accordance with pProcedure Sstep ~~1.21.6.1e)1.9.9(c), 1.9.9(c)~~, ~~System Management must re-test that Facility~~ [(Market Rule 4.25.4)]:

~~(a)~~ (a) not earlier than 14 days after the first test; and

~~(b)~~ (b) not later than 28 days after the first test.

~~11~~ 11 The IMO must record the results of the second Reserve Capacity Test and determine if the Facility Passed or Failed the second Reserve Capacity Test in accordance with pProcedure sSteps ~~01.9.6~~ 1.9.6 and ~~01.9.7~~ 1.9.7 and notify the Market Participant in accordance with pProcedure sStep ~~01.9.8, 1.9.8~~ and ~~1.21.6.1a)1.9.9(a) 1.9.9(a)~~ and ~~1.21.6.1b)1.9.9(b) 1.9.9(b)~~ as appropriate.

12 If a Curtailable Load fails a Reserve Capacity test and is activated prior to a second Reserve Capacity test being undertaken then the activation shall be deemed to be the second Reserve Capacity test.

~~12~~ 13 If a Facility fails the second Reserve Capacity Test (the re-test) outlined in pProcedure sSteps ~~01.9.9~~ 1.9.9 and ~~01.9.10~~ 1.9.10 then, in accordance with Market Rule clause 4.25.4, the from the next Trading Day IMO must:

~~(a)~~ (a) reduce the number of Capacity Credits held by the relevant Market Participant for that Facility to reflect the maximum capabilities achieved in either 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 if the test related to a generation system; or

The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:

~~(b)~~ (b) if the test related to a Dispatchable Load, Curtailable Load 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 the two tests; ~~reduce the number of Capacity Credits held by the relevant Market Participant for that Facility to zero if the test related to a Dispatchable Load, Curtailable Load or Interruptible Load.~~

~~13~~14 In the case that the Capacity Credits are reduced in accordance with ~~p~~Procedure ~~s~~Step ~~01.9.12, 1.9.12~~ a Market Participant may apply to the IMO to have the Facility re-tested (the third test) subject to the following conditions:

~~(a)~~(a) The Facility may only be re-tested once in accordance with this ~~p~~Procedure ~~s~~Step ~~01.9.13, 1.9.13~~ during the remaining Reserve Capacity Cycle.

~~(b)~~(b) The IMO must request System Management to conduct the re-test within seven days from receiving the request from the Market Participant. ~~[(Market Rule 4.25.5)]~~

~~(c)~~(c) System Management must undertake the re-test in accordance with these procedures, and in accordance with the Power System Operation Procedure.

~~(d)~~(d) The IMO must set the number of Capacity Credits held by the relevant Market Participant for that 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), but not to exceed the number of Capacity Credits originally confirmed by the IMO for that Facility under Clause 4.20 of the Market Rules in respect of the relevant Reserve Capacity Cycle. ~~(Market Rule [MR 4.25.6])~~

~~14~~15 If a third Reserve Capacity Test is conducted in accordance with ~~p~~Procedure ~~s~~Step ~~001.9.13~~, the IMO must determine the outcome, record the results and notify the Market Participant in accordance with ~~p~~Procedure ~~s~~Steps ~~01.9.6, 01.9.7, 01.9.8, 1.9.6, 1.9.7, 1.9.8, and 1.21.6.1a)1.9.9(a)1.9.9(a) and 1.21.6.1b)1.9.9(b)1.9.9(b)~~, as appropriate.

~~15~~16 Where a Facility is tested in accordance with this clause 4.25, the Dispatch Schedule for that Facility during the period of the test is to reflect the energy scheduled in the test. ~~[(Market Rule MR 4.15.10)]~~

## 1.10. Procedure Steps to be undertaken by the Market Participant

~~1~~1 If the Market Participant is contacted by the IMO with results of a Reserve Capacity test that indicate that the IMO determined the ~~F~~facility to have ~~f~~Failed the ~~t~~Test, the Market Participant can expect a second test be conducted between 14 and 28 days from the first test ~~[MR4.25.4]~~.

~~2~~2 If the Market Participant is contacted by the IMO with the results of the second Reserve Capacity Test, which indicate that the IMO determined the facility to have Failed the Reserve Capacity Test, the Market Participant may also expect notification that the Capacity Credits in respect of that Facility have been reduced.

~~3~~3 In the event that the Market Participant is notified by the IMO that the Capacity Credits in respect of the Facility have been reduced (either in all or in part) as a result of the Reserve Capacity Testing process, then the Market

Participant may request that the IMO conduct one further Reserve Capacity Test (the third Test).

~~4~~ The Market Participant may only request the third Reserve Capacity Test once during the remaining Reserve Capacity Cycle.

~~5~~ The third Reserve Capacity Test, performed at the request of the Market Participant in accordance with ~~p~~Procedure ~~s~~Step ~~01-10-31.10.3~~ and ~~01-10-41.10.4~~ should be performed by System Management within seven days of the IMO receiving the request, subject to the provisions of this Procedure and subject to the provisions of the Power System Operation Procedure.

### **1.11. Procedure steps to be undertaken by the IMO to publish the results of Reserve Capacity Tests**

~~1~~ Every three months the IMO must publish details of ~~(Market Rule~~ [\[MR 4.25.11\]](#)):

~~(a)~~ Facilities tested during the preceding three months; and

~~(b)~~ whether any of those tests were delayed by System Management and the reasons for the delay as given by System Management.

~~2~~ The details published in accordance with ~~p~~Procedure ~~s~~Step ~~01-11-21.11.2~~ must be published on the IMO Website ([www.imowa.com.au](http://www.imowa.com.au)) or in the WEMS as appropriate.

### **1.12. Procedure Steps to be undertaken by the IMO when setting the level of Certified Reserve Capacity and Reserve Capacity Obligation Quantities in respect of Facilities that have been tested under this Market Procedure**

Each year, Market Participants are required to Re-certify the capacity of their Facilities (apply for Certification of Reserve Capacity). Under ~~Market Rule clause~~ [4.11 of the Market Rules](#) and the Market Procedure: Certification of Reserve Capacity, the IMO is required to set the ~~L~~Level of Certified Reserve Capacity assigned to a Facility. This decision is not a reviewable decision under the Market Rules.

~~1~~ Each year, the IMO must use the information, data and results obtained from Reserve Capacity Tests and Verification by Observation when considering the level of Certified Reserve Capacity assigned to a Facility.

~~2~~ The IMO may reduce, either in part or in total, the level of Certified Reserve Capacity in respect of an application for Certification of Reserve Capacity ~~under~~ if the IMO believes the results obtained through the Reserve Capacity

Tests in conjunction with the level of Certified Reserve Capacity being applied for: ~~(Market Rule [MR4.25.12])~~:

~~(a)~~ constitutes a *Potentially Limiting Factor* in accordance with the Reserve Capacity Procedure: Certification of Reserve Capacity; and/or

~~(b)~~ -if the IMO believes the level of Certified Reserve Capacity being applied for exceeds the IMO's reasonable expectation that the amount of capacity likely to be available in accordance with ~~Market Rule clause 4.11.1(a) of the Market Rules~~.

3 The IMO may use the information, data and results obtained from Reserve Capacity Tests and Verification by Observation when setting the Reserve Capacity Obligation Quantities in respect of that Facility in subsequent Reserve Capacity Cycles. ~~(Market Rule [MR 4.25.12])~~.

The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:

### **1.13. Procedure Steps to be undertaken by the IMO for Verification of a Curtailable Load**

1 A Rule Participant must undertake a Verification Test of each Curtailable Load registered by the Rule Participant:

a) within 20 Business Days of registration of the Curtailable Load, or

b) between 1 October and 30 November of each Reserve Capacity Year [MR4.25A.1].

2 To undertake a Verification Test the Rule Participant will activate the Curtailable Load and advise the IMO of the Trading Intervals during which the Verification Test was conducted [MR4.25A.2].

3 The Verification Test is failed if a reduction in demand equal to at least 10% of the Capacity Credits is not identified from the Curtailable Load meter data [MR4.25A.3].

4 Where a Verification Test is failed the IMO must reduce the Capacity Credits assigned to the Curtailable Load to zero [MR4.25A.4].

5 Where the Verification Test is failed the Rule Participant may request a second Verification Test be undertaken. If the Curtailable Load fails this second Verification Test then the Capacity Credits assigned are to remain at zero until the end of the relevant Reserve Capacity Year [MR4.25A.5].

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ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY  
MARKET) REGULATIONS 2004

WHOLESALE ELECTRICITY MARKET RULES

# Market Procedure for: Reserve Capacity Testing

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[Version 2](#)

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**Commencement:** This Market Procedure is to have effect from 8:00am (WST) on the same date as the Wholesale Electricity Market Rule, in which this procedure is made in accordance with, commences.

## Version history

<a href="#">21 September 2006</a>	<a href="#">Market Procedure for Reserve Capacity Testing as at Market Start</a>
<a href="#">XX XXX 2009</a>	<a href="#">Proposed changes - Procedure Change Proposal PC 2009_10</a>

# 1. Reserve Capacity Testing Procedure

[Each year, the Independent Market Operator \(IMO\) is required to verify and test the operation of Facilities holding Capacity Credits to ensure that the Reserve Capacity Obligations of Market Participants are met. There are two methods by which the IMO may verify the operation of a Facility. In particular the,](#)

- [first method is by observation of the Facility using metered schedules; and](#)
- [second method of verification is by conducting a test on the Facility \[MR4.25.2\].](#)

[The IMO must verify the operation of each Generation Facility at least twice a year, and each curtailable load once a year, within specified time periods, but may also conduct Facility verifications on an as required basis \[MR4.25.1\].](#)

[Following tests, the IMO may reduce the number of Capacity Credits assigned to a Facility and/or may reduce the Reserve Capacity Obligations associated with that Facility. \[MR4.25.4\]](#)

[In the event that the IMO reduces the number of Capacity Credits associated with a Facility, the Market Participant may, subject to certain provisions, ask to have the Facility re-tested and have the Capacity Credits reassigned in the case that the Facility performs to the relevant level. Decisions by the IMO in regard to verification by observation, and to tests, are not reviewable decisions under the Market Rules.](#)

## 1.1. Relationship with the Market Rules

- [This Procedure has been developed in accordance with, and should be read in conjunction with sections 4.25 of the Wholesale Electricity Market \(WEM\) Rules \(Market Rules\).](#)
- [References to particular Market Rules within the Procedure in bold and square brackets \[MR XX\] are current as at 28 July 2009. These references are included for convenience only and are not part of this procedure.](#)
- [This procedure is made in accordance with MR4.25.14](#)

### Deleted: Market Procedures Published by the Minister¶

¶ I, FRANCIS LOGAN, Minister for Energy for the State of Western Australia, under regulation 9(2) of the *Electricity Industry (Wholesale Electricity Market) Regulations 2004* hereby approve the publication of the Reserve Capacity Testing Procedure contained in this document.¶

¶ This Market Procedure is to have effect from 8:00am (WST) on the same date as the Wholesale Electricity Market Rule, in which this procedure is made in accordance with, commences.¶

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### Version Control ¶

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## 1.2. Interpretation

In this procedure, unless the contrary intention is expressed:

- (a) terms used in this procedure have the same meaning as those given in the Market Rules (made pursuant to the Electricity Industry (Wholesale Electricity Market) Regulations 2004);
- (b) to the extent that this procedure is contrary or inconsistent with the Market Rules, the Market Rules shall prevail to the extent of the inconsistency;
- (c) a reference to the Market Rules or Market Procedures includes any associated forms required or contemplated by the Market Rules or Market Procedures; and
- (d) words expressed in the singular include the plural or vice versa.

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## 1.3. Purpose

The purpose of this procedure is to describe the steps that:

- (a) the IMO must take in fulfilling the Reserve Capacity Testing functions under the Market Rules; and
- (b) Market Participants must follow in fulfilling the Reserve Capacity Testing functions under the Market Rules.

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## 1.4. Application

This procedure applies to:

- (a) The IMO in conducting Reserve Capacity verifications and tests;
- (b) Market Participants in complying with Reserve Capacity tests; and
- (c) System Management in conducting Reserve Capacity tests.

## 1.5. Glossary and Defined Terms used in this Procedure

**1. Relevant Reserve Capacity Test Level** means, in the case of a generation system, the required Reserve Capacity level, in MW, net of any parasitic or embedded loads and determined by the IMO for the purposes of conducting Reserve Capacity Tests under this Procedure and Section 4.25. of the Wholesale Electricity Market Rules. This level is determined using temperature dependence curves submitted as part of the Certification of Reserve capacity for a generation Facility.

*The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:*

**Relevant Reserve Capacity Test Level** means,

- i. in the case of a generation system, the required Reserve Capacity level, in MW, net of any parasitic or embedded loads and determined by the IMO for the purposes of conducting Reserve Capacity Tests under this Procedure and Section 4.25. of the Wholesale Electricity Market Rules. This level is determined using temperature dependence curves submitted under MR 4.10.1 (e)(i) as part of the Certification of Reserve Capacity for a generation Facility.
- ii. In the case of a Curtailable Load, the reduction required to meet it's Maximum Capacity Obligation.

**2. Request to Conduct Temperature Calibration** is the request made by the IMO to conduct a calibration of the Temperature Measurement Systems associated with a Facility.

**3. Reserve Capacity Test** means a test conducted in accordance with Clause(s) 4.25 of the Wholesale Electricity Market Rules.

**4. Temperature Measurement Consultant** means a consultant or organisation appointed by the IMO to conduct calibrations of the Temperature Measurement Systems.

**5. Temperature Measurement Systems** means the sensors, systems and data used to measure ambient temperature at a Facility where the information is provided to System Management through the SCADA system.

**6. Temperature Dependence Curve:** refers to the information provided by a Market Participant under clause 4.10.1(e)(i) of the Market Rules. If a Change in Capacity Credits occurs over a Reserve Capacity Year, the Temperature Dependence Curve will be:

- (a) scaled to reflect the change in Capacity Credits at 41°C; or
- (b) changed to reflect a new temperature dependence curve supplied by the Market Participant which has been determined by an independent engineering firm.

**7. Summer Reserve Capacity Testing Cycle:** refers to 1 October to 31 March;

**8. Winter Reserve Capacity Testing Cycle:** refers to 1 April to 30 September;

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The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:

**9 Verification Test: The Test that is required under clause 4.25A of the Market Rules to be undertaken by a Curtailable Load:**

- a) Within 20 Business Days of registration; and
- b) Between 1 October and 30 November of Each Reserve Capacity Year

**1.6. Steps that must be undertaken by the IMO and the Market Participant to calibrate Temperature Measurement Systems used in association with the SCADA system.**

1. The IMO may require the Temperature Measurement Systems associated with any Facility subject to the testing requirements under Chapter 4 of the Market Rules be calibrated by an IMO appointed Temperature Measurement Consultant.

2. The IMO may appoint a Temperature Measurement Consultant each year to calibrate the temperature measurement systems associated with each Generation Facility that nominates to use the SCADA Temperature Method.

3. If the IMO requires that the Temperature Measurement Consultant calibrate the Facility's Temperature Measurement System, the IMO must contact relevant Market Participant in writing with a Request to Conduct Temperature Calibration.

4. The Request to Conduct Temperature Calibration must include the following information:

- a) Information detailing the time and location of the proposed calibration; and
- b) Details of the Temperature Measurement Consultant that will be conducting the calibration.

5. Within 2 Business Days of receiving the Request to Conduct Temperature Calibration, the Market Participant must contact the IMO to either:

- a) accept the proposed time; or
- b) propose another time, which must be within 10 business days of the original request date.

6. The Market Participant must not refuse the Request to Conduct Temperature Calibration as proposed by the IMO unless the Market Participant believes the calibration may endanger person(s) or equipment at the time proposed.

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**9 . Verification Test:** The Test that is required under clause 4.25A of the Market Rules to be undertaken by a Curtailable Load:¶  
a) . Within 20 Business Days of registration; and¶  
b) . Between 1 October and 30 November of Each Reserve Capacity Year.¶

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7 The IMO must present the results of the temperature calibration to the Market Participant within 5 working days of receiving the results from the Temperature Measurement Consultant.

8 The Market Participant will be required to pay all costs associated with calibration of the Temperature Measurement Systems.

## 1.7. Procedure Steps that must be undertaken by the IMO

1 Each year the IMO must take steps to verify that each Facility providing Capacity Credits can,

a) In the case of a generation system during the period, the Reserve Capacity Obligations apply, operate at its maximum Reserve Capacity Obligation Quantity at least once during each of the 6 month periods listed in procedure step 1.7.2 below. [MR 4.25.1(a)].

*The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:*

b) in the case of a Curtailable Load, during the period the Reserve Capacity Obligations apply, operate at its maximum Reserve Capacity Obligation Quantity at least once during the period between 1 October to 31 March each Capacity Year. [MR 4.25.1(c)].

2 The verification referred to in procedure step 1.7.1(a) must be conducted at least once during the following periods [MR 4.25.1(a)]:

a) 1 October to 31 March (The Summer Reserve Capacity Testing Cycle); and

b) 1 April to 30 September (The Winter Reserve Capacity Testing Cycle).

3 The verifications conducted in accordance with procedure steps 1.7.1(a) must be conducted on each type of fuel available to that Facility as notified in the information provided in respect of Certification of Reserve Capacity required under clause 4.10.1(e)(v) of the Market Rules. [MR 4.25.1]

4 The verification referred to in procedure steps 1.7.1 through 1.7.4 can be achieved:

a) by the IMO observing the Facility operate at the required level at least once as part of normal operations in Metered Schedules specific to the Facility; or

b) by the IMO:

(i) in the case of a generation system, requiring System Management in accordance with clause 4.25.7 to test the Facility's ability to operate at the required level for not less than 60 minutes and the Facility successfully passing that test; and

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The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:

(ii) in the case of Interruptible Loads, Curtailable Loads and Dispatchable Loads, requiring System Management, in accordance with clause 4.25.7, to test the Facility's ability to reduce demand to the required level for not less than one Trading Interval and the Facility successfully passing that test.

5 For the purposes of Reserve Capacity Testing, the term Relevant Reserve Capacity Test Level will be used to describe the required level referred to in Procedure Step 1.7.4 above. The Relevant Reserve Capacity Test Level will be determined by the IMO and may be different for different Trading Intervals. For example, the Relevant Reserve Capacity Test Level may vary with ambient temperature at the Facility.

a) The Facility will be deemed to have passed a Reserve Capacity Test if the output is above the output specified in the Temperature Dependence Curve for the ambient temperature measures at the site;

b) The Facility will be deemed to have passed a reserve capacity test if if the output of the facility is above the output required at the highest point of the temperature dependence curve where the ambient temperature measured at the site exceeds the largest value supplied n the temperature dependence curve.

c) The Facility will be deemed to have failed a Reserve Capacity Test if the ambient temperature is below the lower bound of the temperature dependence curves submitted as part of the Certification of Reserve Capacity for the Facility; and

d) The Facility will be deemed to have failed a Reserve Capacity Test if the ambient temperature is below the output specified in the Temperature Dependence Curve for the ambient temperature measures at the site

6 A Market Participant may update the Temperature Dependence Curve associated with a Facility at any time before they have been tested by observation in respect of a Reserve Capacity Testing Cycle by submitting a new Temperature Dependence Curve determined by an independent engineering firm.

7 The IMO must not subject a Facility to a test of Reserve Capacity if that Facility is **[MR 4.25.3A]**:

a) undergoing a Scheduled Outage or Opportunistic Maintenance which has been approved in accordance with clause 3.19 of the Market Rules, or

b) if the Facility has advised System Management of a Forced Outage or Consequential Outage in accordance with clause 3.21.4 of the Market Rules; or

c) if the Facility is undergoing Commissioning Test approved in accordance with clause 3.21A of the Market Rules.

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## 1.8. Procedures Steps to be undertaken by the IMO to Verify by Observation

1 In accordance with procedure step 1.7.6, the IMO may use information gathered through the Wholesale Electricity Market System (WEMS) to observe a generation Facility operating at the required level as part of normal operations.

2 To verify by observation, the IMO must use temperature dependence information obtained submitted by the Market Participant under clause 4.10.1(e)(i) of the Market Rules.

3 The IMO must refer to the temperature measurement source specified by the Market Participant under clause 4.10.1 (e)(iv) when determining the ambient temperature at the site of the generation Facility. Where no temperature source is specified the Market Participant must notify the IMO of a Temperature source before the start of the Reserve Capacity Year.

4 To verify that a generation Facility has operated at its Relevant Reserve Capacity Test Level the IMO must use the information contained in the WEMS, together with the temperature information, to determine the operating output and ambient temperature relationship of the Facility.

5 The IMO must assess the results obtained through procedure steps 1.8.1 through 1.8.3 and determine if the generation Facility achieved its Relevant Reserve Capacity Test Level through the temperature range observed.

6 The IMO may be required to adjust the results to the equivalent values at a temperature of 41°C.

7 Following verification by observation the IMO may request a Reserve Capacity Test if:

a) The IMO determines that the Facility failed to operate at its Relevant Reserve Capacity Test Level for part or all of the by observation verification process; or

b) The IMO makes the determination that the results of the test were inconclusive.

8 The IMO must between 1 October and 31 March request a Reserve Capacity Test of each Curtailable load.

9 If the IMO requests a Reserve Capacity Test as a result of procedure Step 1.8, the IMO must conduct the Reserve Capacity Test in accordance with procedure step 1.9.

10 If the IMO requests a Reserve Capacity Test in accordance with procedure step 1.8.6, the IMO must provide the Market Participant with a summary of results obtained procedure step 1.8.4.

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11 The IMO must compile and maintain a list of Facilities whose operation have been undergone the verification by observation process and must keep records of outcome of the verification process.

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## 1.9. Procedure Steps to be Undertaken by the IMO to Conduct a Reserve Capacity Test

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1 Reserve Capacity Tests may be conducted by the IMO if:

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- a) The IMO determines the most appropriate course of action is to test the Facility in accordance with [clause 4.25.2\(b\) of the Market Rules](#);
- b) The IMO determines that the operation of the Facility failed the Verification by Observation process detailed at [procedure step 1.8](#);
- c) The IMO believes, or has been made aware of any potentially limiting factors which may impact, or have impacted on the ability of the Facility to meet any or all of its Reserve Capacity Obligations;
- d) The IMO requires that a Reserve Capacity Test be conducted in respect of any Network Control Service Contract, Ancillary Service Contract or other requirement as determined by the IMO;
- e) The IMO is required to conduct a re-test in accordance with [clause 4.25.4 of the Market Rules](#); or
- f) A Market Participant requests a re-test in accordance with [clause 4.25.5 of the Market Rules](#).

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2 In the case that the IMO requires a Reserve Capacity Test to be conducted on a Facility, the IMO must contact System Management requesting that the test be conducted.

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3 In requesting System Management to conduct a test, the IMO must provide System Management with the following information:

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- a) the Facility to be tested;
- b) the fuel to be used by the Facility during the test where applicable; and
- c) the time interval during which the test is proposed to be conducted, where this interval must begin not less than two Business Days after the time the IMO issues the request to System Management [\[MR4.25.7\]](#).

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4 All information regarding the request for the test must be treated as System Management Confidential.

5 If the IMO requests System Management to conduct a test in accordance with this procedure, System Management must conduct the test in accordance with the Power System Operation Procedure.

6 When the IMO receives the results of the test from System Management, the IMO must, within [10 Business Days](#), determine whether the Facility has

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operated at the Relevant Reserve Capacity Test Level(s) and make a determination that the Facility has either Passed or Failed the Reserve Capacity Test.

7 The IMO must record the results of the test including:

- a) Information regarding the conduct of the Reserve Capacity Test
- b) Information regarding the results of the Reserve Capacity Test;
- c) The determination of the outcome of the Reserve Capacity Test (Passed or Failed)
- d) Reasons as to why the IMO believes the Facility has Passed or Failed the Reserve Capacity Test
- e) Information regarding any action taken in accordance with Procedure Steps 1.9.9 and 1.9.11 and 1.9.13 as applicable.

8 In the event that the IMO determines the Facility has passed the Reserve Capacity Test, the IMO must inform the Market Participant that the Facility has passed, and provide the Market Participant with a copy of the results produced. This must be completed within 10 Business Days of the date the IMO receives the results of the test from System Management.

9 In the event that the IMO determines the Facility has Failed the Reserve Capacity Test, the IMO 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 results produced;
- c) require System Management re-test the Facility in accordance with Procedure Step 1.9.10 below.

10 In the event that a re-test is required in accordance with procedure step 1.9.9(c), System Management must re-test that Facility [MR 4.25.4]:

- a) not earlier that 14 days after the first test; and
- b) not later that 28 days after the first test.

11 The IMO must record the results of the second Reserve Capacity Test and determine if the Facility Passed or Failed the second Reserve Capacity Test in accordance with procedure steps 1.9.6 and 1.9.7 and notify the Market Participant in accordance with procedure step 1.9.8 and 1.9.9(a) and 1.9.9(b) as appropriate.

12 If a Curtailable Load fails a Reserve Capacity test and is activated prior to a second Reserve Capacity test being undertaken then the activation shall be deemed to be the second Reserve Capacity test.

13 If a Facility fails the second Reserve Capacity Test (the re-test) outlined in procedure steps 1.9.9 and 1.9.10 then, in accordance with clause 4.25.4, the from the next Trading Day IMO must:

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- a) reduce the number of Capacity Credits held by the relevant Market Participant for that Facility to reflect the maximum capabilities achieved in either 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 if the test related to a generation system; or

The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:

- b) if the test related to a Dispatchable Load, Curtailable Load 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 the two tests;

14 In the case that the Capacity Credits are reduced in accordance with procedure step 1.9.12 a Market Participant may apply to the IMO to have the Facility re-tested (the third test) subject to the following conditions:

- a) The Facility may only be re-tested once in accordance with this procedure step 1.9.13 during the remaining Reserve Capacity Cycle.
- b) The IMO must request System Management to conduct the re-test within seven days from receiving the request from the Market Participant. [MR 4.25.5]
- c) System Management must undertake the re-test in accordance with these procedures, and in accordance with the Power System Operation Procedure.
- d) The IMO must set the number of Capacity Credits held by the relevant Market Participant for that 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), but not to exceed the number of Capacity Credits originally confirmed by the IMO for that Facility under Clause 4.20 of the Market Rules in respect of the relevant Reserve Capacity Cycle. [MR 4.25.6]

15 If a third Reserve Capacity Test is conducted in accordance with procedure step 0, the IMO must determine the outcome, record the results and notify the Market Participant in accordance with procedure steps 1.9.6, 1.9.7, 1.9.8, and 1.9.9(a) and 1.9.9(b), as appropriate.

16 Where a Facility is tested in accordance with this clause 4.25, the Dispatch Schedule for that Facility during the period of the test is to reflect the energy scheduled in the test. [MR 4.15.10]

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## 1.10. Procedure Steps to be undertaken by the Market Participant

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1 If the Market Participant is contacted by the IMO with results of a Reserve Capacity test that indicate that the IMO determined the Facility to have failed the test, the Market Participant can expect a second test be conducted between 14 and 28 days from the first test [\[MR4.25.4\]](#).

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2 If the Market Participant is contacted by the IMO with the results of the second Reserve Capacity Test, which indicate that the IMO determined the facility to have Failed the Reserve Capacity Test, the Market Participant may also expect notification that the Capacity Credits in respect of that Facility have been reduced.

3 In the event that the Market Participant is notified by the IMO that the Capacity Credits in respect of the Facility have been reduced (either in all or in part) as a result of the Reserve Capacity Testing process, then the Market Participant may request that the IMO conduct one further Reserve Capacity Test (the third Test).

4 The Market Participant may only request the third Reserve Capacity Test once during the remaining Reserve Capacity Cycle.

5 The third Reserve Capacity Test, performed at the request of the Market Participant in accordance with procedure step [1.10.3](#) and [1.10.4](#) should be performed by System Management within seven days of the IMO receiving the request, subject to the provisions of this Procedure and subject to the provisions of the Power System Operation Procedure.

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## 1.11. Procedure steps to be undertaken by the IMO to publish the results of Reserve Capacity Tests

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1 Every three months the IMO must publish details of [\[MR 4.25.11\]](#):

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a) Facilities tested during the preceding three months; and

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b) whether any of those tests were delayed by System Management and the reasons for the delay as given by System Management.

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2 The details published in accordance with procedure step [1.11.2](#) must be published on the IMO Website ([www.imowa.com.au](http://www.imowa.com.au)) or in the WEMS as appropriate.

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## 1.12. Procedure Steps to be undertaken by the IMO when setting the level of Certified Reserve Capacity and Reserve Capacity Obligation Quantities in respect of Facilities that have been tested under this Market Procedure

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Each year, Market Participants are required to Re-certify the capacity of their Facilities (apply for Certification of Reserve Capacity). Under [clause 4.11 of the Market Rules](#) and the Market Procedure: Certification of Reserve Capacity, the IMO is required to set the level of Certified Reserve Capacity assigned to a Facility. This decision is not a reviewable decision under the Market Rules.

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1 Each year, the IMO must use the information, data and results obtained from Reserve Capacity Tests and Verification by Observation when considering the level of Certified Reserve Capacity assigned to a Facility.

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2 The IMO may reduce, either in part or in total, the level of Certified Reserve Capacity in respect of an application for Certification of Reserve Capacity if the IMO believes the results obtained through the Reserve Capacity Tests in conjunction with the level of Certified Reserve Capacity being applied for: **[MR4.25.12]**:

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a) constitutes a *Potentially Limiting Factor* in accordance with the Reserve Capacity Procedure: Certification of Reserve Capacity; and/or

b) if the IMO believes the level of Certified Reserve Capacity being applied for exceeds the IMO's reasonable expectation that the amount of capacity likely to be available in accordance with [clause 4.11.1\(a\) of the Market Rules](#).

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3 The IMO may use the information, data and results obtained from Reserve Capacity Tests and Verification by Observation when setting the Reserve Capacity Obligation Quantities in respect of that Facility in subsequent Reserve Capacity Cycles. **[MR 4.25.12]**.

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The following rule will commence on 1 October 2010, for additional information please refer to RC 2008 20:

### **1.13. Procedure Steps to be undertaken by the IMO for Verification of a Curtailable Load**

- 1 A Rule Participant must undertake a Verification Test of each Curtailable Load registered by the Rule Participant:
  - a) within 20 Business Days of registration of the Curtailable Load, or
  - b) between 1 October and 30 November of each Reserve Capacity Year [MR4.25A.1].
- 2 To undertake a Verification Test the Rule Participant will activate the Curtailable Load and advise the IMO of the Trading Intervals during which the Verification Test was conducted [MR4.25A.2].
- 3 The Verification Test is failed if a reduction in demand equal to at least 10% of the Capacity Credits is not identified from the Curtailable Load meter data [MR4.25A.3].
- 4 Where a Verification Test is failed the IMO must reduce the Capacity Credits assigned to the Curtailable Load to zero [MR4.25A.4].
- 5 Where the Verification Test is failed the Rule Participant may request a second Verification Test be undertaken. If the Curtailable Load fails this second Verification Test then the Capacity Credits assigned are to remain at zero until the end of the relevant Reserve Capacity Year [MR4.25A.5].

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Publication Status: Public

Approval Status: Approved By: None/~~IMO/MAC/Minister/~~

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Document Number	Date Issued	Reviewed By	Approved By	Date Approved	Revision Type
2.0.0	13/3/2007	T. Forward	P. Peake	14/3/2007	For MAC Review
3.0.0		B.Williams			Update

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**To describe the steps that the IMO must take in fulfilling the Reserve Capacity Testing functions under the Market Rules;**

**To describe the steps that Market Participants must follow in fulfilling the Reserve Capacity Testing functions under the Market Rules; and**

### **Application**

**This procedure applies to:**

**The IMO in conducting Reserve Capacity verifications and tests;**

**Market Participants in complying with Reserve Capacity tests.**

### **Overview**

**Each year, the IMO is required to verify and test the operation of Facilities holding Capacity Credits to ensure that the Reserve Capacity Obligations of Market Participants are met.**

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**There are two methods by which the IMO may verify the operation of a Facility.**

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**The first method is by observation of the Facility using metered schedules.**

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The second method of verification is by conducting a test on the Facility.

The IMO must verify the operation of each Generation Facility at least twice a year, and each curtailable load once a year, within specified time periods, but may also conduct Facility verifications on an as required basis.

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Following tests, the IMO may reduce the number of Capacity Credits assigned to a Facility and/or may reduce the Reserve Capacity Obligations associated with that Facility.

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In the event that the IMO reduces the number of Capacity Credits associated with a Facility, the Market Participant may, subject to certain provisions, ask to have the Facility re-tested and have the Capacity Credits reassigned in the case that the Facility performs to the relevant level.

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Decisions by the IMO in regard to verification by observation, and to tests, are not reviewable decisions under the Market Rules.

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In respect of Energy Market Commencement, the IMO must take steps to verify that each Facility that has been commissioned can, during the six months prior to the Reserve Capacity Obligations for the first Reserve Capacity Cycle taking effect, operate at its maximum Reserve Capacity Obligation Quantity at least once. (Market Rule 4.25.1(b))

Procedure Step 1.7.3 does not apply to facilities that are not commissioned prior to Energy Market Commencement. (Market Rule 4.25.1(b))

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ELECTRICITY INDUSTRY ACT 2004

ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY  
MARKET) REGULATIONS 2004

WHOLESALE ELECTRICITY MARKET RULES

Market Procedure for:  
Undertaking the Long Term PASA and  
Conducting a Review of the Planning  
Criteria

Version 1

**Commencement:** This Market Procedure is to have  
effect from 8:00am (WST) on  
./././2009

## **Version Control**

Title of Document: Market Procedure for undertaking the Long Term PASA and  
Conducting a review of the Planning Criteria  
This Version: 1.0  
Publication Status: Public  
Approval Status: Approved By: None/~~IMO/MAC/Minister~~

## **Version history**

<u>Xx XXXX 2009</u>	<u>Market Procedure proposed under Procedure Change Proposal (PC 2009 11)</u>
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## **1 Overview of Procedure for Undertaking the Long Term Projected Assessment of System Adequacy and Conducting a review of the Planning Criteria.**

Each year, the Independent Market Operator (IMO) is required to prepare a range of data that can be used as a guide for existing and potential Market Participants. This data is to include:

- Forecasts of maximum electricity demand (MW) and sent-out energy (GWh) for a range of possible economic and weather conditions over the coming decade.
- Information concerning the amount of generation and DSM capacity which is currently in place, is planned to be built or is planned to be decommissioned.
- Estimates of the amount of capacity that can be provided by DSM.

This information is published within the Statement of Opportunities Report (SOO). This is required to be published on the first business day falling on or before 1 July each year.

Clause 4.5.9 of the Market Rules sets out the planning criteria that are to be used by the IMO in undertaking the Long Term Projected Assessment of System Adequacy (LT PASA). The results of the LT PASA are then used by the IMO to prepare the SOO Report that outlines, among other things:

- The amount of additional generation and demand side management (DSM) capacity required to meet the system reliability target in future years; and
- The amount of capacity that can be provided by DSM.

The IMO is required to undertake a review of the planning criteria from time to time and at least once every five years. The first review was completed during 2007.

The IMO may use third parties, such as consultants or independent advisors, to prepare any portion of the LT PASA or review of the Planning Criterion and the process by which the IMO forecasts SWIS peak demand. The IMO has also generally used consultants to prepare load forecasts and to estimate the potential contribution from DSM facilities.

The Market Procedure for Undertaking the LT PASA and Conducting a Review of the Planning Criteria (Procedure) lays out the steps to be taken by the IMO and Rule Participants in order to conduct the LT PASA and reviews under clause 4.5.15 of the Wholesale Electricity Market Rules (Market Rules). Under the Market Rules, the LT PASA is to be published as part of the SOO as a guide for Market Participants and potential investors. The LT PASA identifies the requirement for additional generation and Demand Side Management (DSM) capacity required to meet electricity demand in coming years.

The Market Rules require the IMO to consult with stakeholders in undertaking the review of the Planning Criteria **[MR4.5.16]**. This Procedure outlines the degree of consultation to be applied in undertaking the review, including the establishment of an Advisory Group to provide a formal industry forum for the review.

## **1.1 Relationship with the Market Rules**

- a) This Procedure has been developed in accordance with, and should be read in conjunction with section 4.5 of the Wholesale Electricity Market (WEM) Rules (Market Rules).
- b) References to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as at 31 July 2009. These references are included for convenience only and are not part of this procedure.
- c) This procedure is made in accordance with clause 4.5.14 of the Market Rules.

## **1.2 Interpretation**

- 1 In this procedure, unless the contrary intention is expressed:
  - (a) terms used in this procedure have the same meaning as those given in the Wholesale Electricity Market Rules (made pursuant to Electricity Industry (Wholesale Electricity Market) Regulations 2004).
  - (b) to the extent that this procedure is contrary or inconsistent with the Market Rules, the Market Rules shall prevail to the extent of the inconsistency.
  - (c) a reference to the Market Rules or Market Procedures includes any associated forms required or contemplated by the Market Rules or Market Procedures.
  - (d) words expressed in the singular include the plural or vice versa.

## **1.3 Purpose**

- 1 The purpose of this procedure is:
  - (a) To describe the steps that the IMO is required to undertake in preparing the LT PASA and SOO; and
  - (b) To describe the steps that Market Participants, and other parties, must follow in providing information to the IMO to assist in preparation of the LT PASA and SOO.

## **1.4 Application**

- 1 This procedure applies to:
  - (a) The IMO in preparing the LT PASA and SOO;
  - (b) Market Participants in providing information to the IMO;
  - (c) Other entities in providing information to the IMO;
  - (d) The IMO in undertaking any review of the Planning Criteria;
  - (e) Any third party contracted by the IMO to undertake any part of a review of the Planning Criteria; and

Stakeholders that may be part of the consultation process for reviewing the Planning Criterion and the process by which the IMO forecasts SWIS peak demand.

## **2 Procedure for Undertaking the Long Term Projected Assessment of System Adequacy**

### **2.1 Procedure steps to be followed by the IMO in gathering data from Market Generators for the LT PASA**

- 1 By 1 April of each year, the IMO must notify Market Generators that it requires information from them in the following areas:
  - (a) Generation capacity expected to be available during the forecast period, including details on seasonal capacities;
  - (b) Ancillary Service capabilities of each available Facility;
  - (c) Long duration outages planned over the forecast period; and
  - (d) For Non-Scheduled Generation Facilities, production profiles **[MR4.5.3]**.

### **2.2 Procedure steps to be followed by the IMO in gathering data from Market Customers for the LT PASA**

- 1 By 1 April of each year, the IMO must notify Market Customers of the information that it requires from them in the following areas:
  - (a) Expected Demand Side Management capabilities and expected peak shaving by retailers to reduce their Individual Reserve Capacity Requirements.
  - (b) The capacity of any large loads (>10MW) that will be added to, or removed from, the system.

- (c) For Intermittent Loads and Loads that are expected to be registered and operating as Intermittent Loads during the second Capacity Year:
  - (i) the amount of capacity required to serve that Load in the event of a failure of on-site generation where this amount of capacity cannot exceed the greater of:
    - either:
      1. for an existing Intermittent Load, the maximum allowed level of Intermittent Load specified in Standing Data for that Intermittent Load at the time of providing the data; or
      2. for an Intermittent Load that is yet to be registered with the IMO, zero; and
    - (ii) the Contractual Maximum Demand associated with that Intermittent Load to apply during the Capacity Year to which the nomination relates. The Market Customer must provide evidence to the IMO of this Contractual Maximum Demand level unless the IMO has previously been provided with that evidence
  - (d) For each Intermittent Load that is yet to be registered with the IMO:
    - (i) the location of the Load and the NMI of that load if available;
    - (ii) evidence that the Load can be expected to satisfy the requirements to be registered as an Intermittent Load during the second Capacity Year within the Long Term PASA Study Horizon; and
    - (iii) The expected firm MW capacity and location of any generation system to serve that Intermittent Load in accordance with clause 2.30B.2 **[MR 4.5.3]**.

### **2.3 Procedure steps to be followed by the IMO in gathering data from Network Operators for the LT PASA**

- 1 By 1 April of each year, the IMO must notify Network Operators of the information that it requires from them in the following areas **[MR 4.5.3]**:
  - (a) Expected transmission network capabilities allowing for expansion plans, losses and constraints or restrictions **[MR4.5.2(d)]**;
  - (b) Any potential transmission capacity constraints or restrictions in sub-regions of the SWIS **[MR 4.5.10.(c)]**;
  - (c) Potential transmission, generation or DSM capacity augmentation options that may alleviate shortfalls identified above; and

- (d) The expected amount of capacity required to maintain normal frequency control over the LTPASA Horizon.

## **2.4 Procedure steps to be followed by the IMO in gathering data from persons who are not Market Participants**

- 1 The IMO may identify and request information from persons who are not Rule Participants but who may have information in respect to the areas described under clause 4.5.2 of the Market Rules in respect of the Long Term PASA **[MR4.5.5]** :

2 The information and data requested by the IMO may change from time to time but must be for the purposes of the requirements of this Procedure and the Market Rules.

3 The IMO must provide any such request for information in writing.

## **2.5 Procedure to be followed by Market Participants in providing data**

1 Rule Participants must provide the data requested by the IMO within 15 Business Days from the date of that request **[MR4.5.4]**.

2 The IMO may seek clarification of any and all data or information that is provided in accordance with the Market Rules or this Procedure and the Market Participant must provide any clarifications as necessary.

## **2.6 Procedure to be followed by the IMO to review data**

1 The IMO must review the information provided to it in accordance with clause 4.5.4 of the Market Rules and where necessary, seek clarifications **[MR4.5.6]**.

2 The IMO must treat all information provided to it in accordance with this procedure as confidential except where the provider has granted permission for its release or as otherwise provided under these Market Rules. However, the IMO may release any such information as part of an unidentifiable component of an aggregate number in a Statement of Opportunities Report **[MR4.5.7]**.

3 The IMO may seek clarification of any and all data or information that is provided in accordance with the Market Rules or this Procedure.

4 Where any information provided to the IMO in accordance with this procedure is insufficient for the purpose for which it is required, the IMO may make its own estimate and use that estimate in place of information provided in accordance with this procedure **[MR4.5.8]**.

## **2.7 Procedure to be followed by the IMO in preparing forecasts**

1 The IMO is to prepare forecasts of the expected rate of economic growth as well as high and low economic growth forecasts.

2 The IMO is to prepare the following forecasts of maximum electricity demand:

(a) Median peak demand assuming low demand growth.

(b) One in ten year peak demand assuming low demand growth.

(c) Median peak demand assuming expected demand growth.

- (d) One in ten year peak demand assuming expected demand growth.
- (e) Median peak demand assuming high demand growth.
- (f) One in ten year peak demand assuming high demand growth.

Where the low, expected and high demand growth cases reflect demand changes stemming from the low, expected and high economic growth rates, with these being temperature adjusted to produce the one in ten year peak demand cases **[MR4.5.10.(a)]**.

- 3 The IMO must prepare forecasts of energy sent out based on each of the expected, high and low economic growth rates.
- 4 In respect of Procedure Steps 2.7.2 and 2.7.3, the IMO may use any other conditions the IMO deems necessary for the efficient forecasting of electricity maximum demand and energy sent out. This may include, but not be limited to:
  - (a) Airconditioning penetration and saturation rates;
  - (b) Forecasts of building approvals, new home starts etc;
  - (c) And other information, data, condition or constraint deemed necessary or appropriate in order to produce forecasts in line with industry best practices.
- 5 The IMO must determine an estimate of the Reserve Capacity required to cover the forecast cumulative needs of Intermittent Loads such that:
  - (a) this Reserve Capacity estimate is in addition to the Reserve Capacity required to satisfy the Planning Criterion in the situation where there were no Intermittent Loads; and
  - (b) this Reserve Capacity estimate must be set by the IMO to equal the sum over all expected Intermittent Loads of their forecast maximum possible Intermittent Load levels multiplied by:
    - (i) the ratio of:
      - The Reserve Capacity Target for the relevant Capacity Year as described in clause 4.5.10(b)(i); and
      - The expected peak demand for the relevant Capacity Year as described in clause 4.5.10(b)(ii).
    - (ii) Minus one **[MR4.5.2A]**.

## 2.8 Procedure to be followed by the IMO to assess reliability

- 1 The IMO must determine the Reserve Capacity Target, which is the capacity required to meet the Planning Criteria assuming a one in ten year peak demand and expected demand growth.
- 2 The Planning Criterion to be used by the IMO in undertaking the LT PASA study is set out in the Market Rules **[MR4.5.9]**.
- 3 The Planning Criterion is that there should be sufficient available capacity in each Capacity Year during the Long Term PASA Planning Horizon to both:
  - (a) meet the forecast peak demand (including transmission losses and allowing for Intermittent Loads) supplied through the SWIS plus a reserve margin equal to the greater of:
    - 8.2% of the forecast peak demand ( including transmission losses and allowing for Intermittent Loads); and
    - The maximum capacity, measured at 41°, of the largest generating unit

While maintaining the Minimum Frequency Keeping Capacity for normal frequency control. The forecast peak demand should be calculated to a probability level that the forecast would not be expected to be exceeded in more than one year out of ten; and
  - (b) limit expected energy shortfalls to 0.002% of annual energy consumption (including transmission losses) **[MR4.5.9]**.
- 6 The IMO is to assess the extent to which the anticipated installed generation capacity and DSM capacity is capable of satisfying the Planning Criterion and identify any capacity shortfalls in each Relevant Year in the LT PASA Study Horizon for each of the forecast demand scenarios in step 2.6.2 **[MR 4.5.10.(a)]**.
- 7 The IMO must:
  - (a) Identify and assess any potential capacity shortfalls isolated to a sub-region of the SWIS resulting from expected restrictions on transmission capability or other factors **[MR4.5.10.(c)]**; and
  - (b) Identify any potential transmission, generation or demand side capacity augmentation options to alleviate identified capacity shortfalls **[MR 4.5.10.(d)]**.

## 2.9 Procedure steps to be followed by the IMO in developing the Availability Curve

- 1 The IMO is to determine the forecast capacity, in MW, required for more than 24 hours per year, 48 hours per year, 72 hours per year and 96 hours per year **[MR 4.5.12.(a)]**.
- 2 The IMO is to determine the minimum capacity required to be provided by generation capacity if Power System Security and Power System Reliability is to be maintained. This minimum capacity is to be set at a level such that if:
  - (a) all Demand Side Management capacity (excluding Interruptible Load used to provide Spinning Reserve to the extent that it is anticipated to provide Certified Reserve Capacity), were activated during the Capacity Year so as to minimise the peak demand during that year; and
  - (b) the Planning Criterion and the criteria for evaluating Outage Plans set out in clause 3.18.11 of the Market Rules were to be applied to the load scenario defined above.

it would be possible to satisfy the Planning Criterion and the criteria for evaluating Outage Plans set out in clause 3.18.11 of the Market Rules, as applied in step 2.9.2(b) using, to the extent that the capacity is anticipated to provide Certified Reserve Capacity, the anticipated installed generating capacity, the anticipated Interruptible Load capacity available as Spinning Reserve, and to the extent that further generation capacity would be required, an appropriate mix to generation capacity to make up that shortfall **[MR4.5.12(b)]**.

- 3 The IMO is to determine the extent that further generation capacity would be required to meet any shortfall identified in Procedure Step 2.9.2 and determine an appropriate mix of generation capacity to make up that shortfall, where the mix of generation refers to the amount in each availability class.
- 4 The IMO is to develop a two dimensional curve ("**Availability Curve**") for each of the 2nd and 3rd Capacity Years of the Long Term PASA Study Horizon where:
  - (a) The capacity quantity associated with Availability Class 4 is the Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under Procedure Step 2.9.1 and the quantity specified under Procedure Step 2.9.2 as being required for more than 48 hours per year;
  - (b) The capacity quantity associated with Availability Class 3 is:
    - (i) The Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under Procedure Step 2.9.2 and the quantity specified under Procedure Step 2.9.1 as being required for more than 72 hours per year The capacity quantity associated with Availability Class 4 is the Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under Procedure Step 2.8.1 and the quantity specified under Procedure Step 2.8.2 as being required for more than 48 hours per year; less

- (ii) The capacity quantity associated with Availability Class 4.
- (c) The capacity quantity associated with Availability Class 2 is:
  - (i) The Reserve Capacity Target for the Capacity Year less the greater of the quantity specified under Procedure Step 2.9.2 and the quantity specified under Procedure Step 2.9.1 as being required for more than 96 hours per year; less
  - (ii) The total capacity quantity associated with Availability Class 3 or Availability Class 4.
- (d) The capacity quantity associated with Availability Class 1 is:
  - (i) The Reserve Capacity Target for the Capacity Year; less
  - (ii) The total capacity quantity associated with Availability Class 2, Availability Class 3 or Availability Class 4 **[MR2.5.12(c)]**.

## **2.10 Procedure to be followed by the IMO to publish the LT PASA**

- 1 The IMO must publish the Statement of Opportunities Report for a Reserve Capacity Cycle by the first business day on or before 1 July of Year 1 of the relevant Reserve Capacity Cycle **[MR4.5.11 & MR 4.1.8]**.
- 2 The Statement of Opportunities Report must include :
  - (a) the input information assembled by the IMO in performing the Long Term PASA study including, for each Capacity Year of the Long Term PASA Study Horizon:
    - (i) The demand growth scenarios used;
    - (ii) The generation capacities of each generation Registered Facility;
    - (iii) The generation capacities of each committed generation project;
    - (iv) The generation capacities of each probable generation project;
    - (v) The Demand Side Management capability and availability;
    - (vA) The amount of Reserve Capacity forecast to be required to serve the aggregate Intermittent Load;
    - (vi) The amount of Reserve Capacity forecast to be required to serve the aggregate Intermittent Load;
    - (vii) The assumptions about transmission network capacity, losses, and network and security constraints that impact on study results;

- (viii) A summary of the methodology used in determining the values and assumptions specified in (i) to (vi), including methodological changes relative to previous Statement of Opportunities Reports;
  - (b) The Reserve Capacity Target for each Capacity Year of the Long Term PASA Study Horizon;
  - (c) The amount by which the installed generation capacity plus the Demand Side Management available exceeds or falls short of the Reserve Capacity Target for each Capacity Year and each demand growth scenario considered in the study;
  - (d) The extent to which localised supply restrictions will exist while satisfying the Reserve Capacity Target for each Capacity Year and each demand growth scenario considered in the study;
  - (e) A statement of potential generation, demand side and transmission options that would alleviate capacity shortfalls relative to the Reserve Capacity Target and to capacity requirements in sub-regions of the SWIS; and
  - (f) The Availability Curve for the 2nd and 3rd Capacity Years of the Long Term PASA Study Horizon **[MR4.5.13]**.
- 3 For the purposes of Procedure Step 2.10.2, the IMO may publish aggregated information in the SOO Report.
- 4 For the purposes of Procedure Step 1.1.2(a)(iii), the term committed refers to Facilities that are yet to enter service, but have already received Capacity Credits in respect of a previous Reserve Capacity Cycle.
- 5 For the purposes of Procedure Step 1.1.2(a)(iv), the term probable refers to Facilities have not already received Capacity Credits in respect of a previous Reserve Capacity Cycle, but have been granted Certified Reserve Capacity in respect of the current Reserve Capacity Cycle.

### **3 Procedure for Conducting a Review of the Planning Criteria.**

#### **3.1 Procedure steps to be followed by the IMO in determining whether a review should be undertaken**

- 1 The IMO must review the time since the last review was undertaken and, subject to Procedure Step 3.1.2, if this is greater than four years the IMO must initiate a review **[MR4.5.15]**.
- 2 The IMO must determine whether significant changes have occurred which may have significantly impacted on the current reliability criteria. These may include:

- (a) Changes to the types or sizes of generating plant on the system; and
  - (b) Changes to the growth patterns or characteristics of electricity demand.
- 3 If significant changes have occurred the IMO must initiate a review **[MR4.5.15]**.

### **3.2 Procedure steps to be followed by the IMO to initiate Market Participant Support**

- 1 The IMO must invite a number of stakeholders to participate within an Advisory Group.
- 2 The Advisory Group should contain representatives of:
- (a) The IMO;
  - (b) Generators;
  - (c) Retailers;
  - (d) System Management; and
  - (e) Major electricity users.
- 3 The IMO is to publish a Request for Public Submissions to invite persons to provide input to the review **[MR4.5.16]**.
- 4 Persons are to be invited to comment on:
- (a) The performance and suitability of the Planning Criterion;
  - (b) The process by which the IMO forecasts SWIS peak demand; and
  - (c) Any other relevant matters.
- 5 The Request for Submissions is to be published on the IMO website and in the local press.
- 6 All submissions are to be published on the IMO website **[MR 4.5.18]**.

### **3.3 Procedure steps to be followed by the IMO to Prepare for Review**

- 1 The IMO must, with input from the Advisory Group, develop Terms of Reference for the Review.
- 2 The IMO must determine whether it will undertake the review with internal resources or utilise independent consultants.

3 If the review is to be undertaken by a consultant, the IMO is to seek proposals from a number of appropriately qualified persons or entities.

4 If required, the appointment of any consultant must be undertaken in accordance with any IMO Contracting Policy and is to be based on securing the best value for money for the IMO.

### **3.4 Procedure steps to be followed by the IMO to prepare a Draft Report**

5 The IMO or its consultant must undertake technical analysis including **[MR 4.5.15.(a)]**:

(a) Review of reliability criteria performance in the context of present and potential future load characteristics;

(b) Review of criteria performance with current and potential future generation and DSM characteristics; and

(c) Review of alternative criteria to better the Market Objectives.

6 The IMO with the assistance of any consultant it uses must undertake a cost benefit study of retaining existing criteria versus changing to an alternative criteria including **[MR4.5.15.(b)]**:

(a) Estimation of the costs associated with changing the criteria;

(b) Estimate of the impact of changes;

(c) Estimate of the value to customers of any proposed changes; and

(d) Qualitative assessment of the impact of the alternative criteria on achieving the Market Objectives.

7 The IMO with the assistance of any consultant it uses must review reliability criteria used in other relevant systems.

8 The IMO must publish a Draft Report on the IMO website and invite submissions **[MR4.5.17]**. In inviting submissions, the IMO must specify the terms, conditions and format required. The IMO must advise stakeholders that the Draft Report has been published.

### **3.5 Procedure steps to be followed by the IMO to publish Final Report**

1 The IMO, in consultation with the Advisory Group, must collate and review all submissions received on the Draft Report **[MR 4.5.18]**.

2 The IMO, in consultation with the Advisory Group, must prepare a Final Report recommending either the retention of the exiting criteria or the proposal of a new set of criteria. The Final Report must include

(a) Issues identified by the IMO;

- (b) Assumptions made by the IMO in undertaking the Review;
  - (c) Submissions received by the IMO in the first round of consultations;
  - (d) The IMO's responses to issues raised in those submissions;
  - (e) The results of the technical and cost benefit studies;
  - (f) The IMO's responses to submissions on the draft report; and
  - (g) Any recommended changes to the Planning Criteria **[MR4.5.18]**.
- 3 The IMO must include a set of draft changes to the Market Rules and Procedures required to implement any recommended changes to the reliability criteria in the Final Report.
- 4 The Final Report is to include recommended changes, if any, to the processes used by the IMO in developing its electricity maximum demand and usage forecasts **[MR4.5.19]**.