Independent Market Operator

IMO PROCEDURE CHANGE AND DEVELOPMENT GROUP

Agenda

Meeting No.	5
Location:	IMO Board Room, Level 3, Governor Stirling Tower, 197 St Georges Terrace, Perth
Date:	Thursday 22 April 2010
Time:	Commencing at 10.00 to 11.30am

Item	Subject	Responsible	Time
1.	**WELCOME AND APOLOGIES / ATTENDANCE**	**Chair**	2 min
2.	**MINUTES OF PREVIOUS MEETING**	**Chair**	5 min
3.	**ACTIONS ARISING**	**Chair**	5 min
4	**MARKET PROCEDURE FOR CERTIFICATION OF RESERVE CAPACITY**		
	a) Power Factor and Accuracy of Temperature Dependent Outputs (Presentation)	**IMO**	10 min
	b) Updated Market Procedure for Certification of Reserve Capacity *An amended procedure (tracked changes and clean) has been provided for consideration by members*	**IMO**	20 min
5	**MARKET PROCEDURE FOR SUPPLEMENTARY RESERVE CAPACITY** *The new procedure has been updated following comments from members during the previous meeting.*	**IMO**	40 min
6	**GENERAL BUSINESS** a) Maximum Reserve Capacity Price Working Group	**IMO**	5 min
7	**NEXT MEETING** To be advised.	**Chair**	2 min

Independent Market Operator

IMO PROCEDURE CHANGE AND DEVELOPMENT GROUP

Minutes

Meeting No.	4
Location:	IMO Board Room Level 3, Governor Stirling Building, 197 St Georges Terrace, Perth
Date:	Thursday 13 August 2009
Time:	Commencing at 9.30am to 11:22am

Attendees		
Jacinda Papps	Independent Market Operator (IMO)	Chair
Bill Truscott	Alinta	Industry Representative
Steve Gould	Landfill Gas & Power (LGP)	Industry Representative
Alistair Butcher	System Management	System Management Representative
John Rhodes	Synergy	Synergy Representative
Andrew Everett	Verve Energy	Verve Energy Representative
Fiona Edmonds	IMO	IMO
William Street	IMO	Presenter
Ken Phua	IMO	Minutes

Apologies		
Yin Heng	Perth Energy	Industry Representative

Item	Subject	Action
1.	**WELCOME AND APOLOGIES / ATTENDANCE** The Chair opened the 4th meeting of the IMO Procedure Change and Development Working Group (Working Group) at 9.30am. Noted apologies from Yin Heng. The Chair introduced William Street as the presenter and subject matter expert for the Procedure Change Proposals on the agenda for this meeting and Fiona Edmonds as the key person from the IMO managing the procedure change process.	
2.	**MINUTES OF PREVIOUS MEETING** The minutes from Meeting 3 of the Working Group, held on 25 March 2009, were circulated prior to this meeting. The IMO invited Working Group members to provide any comments on the minutes before 5pm 21 August 2009.	**Members**
3.	**MARKET PROCEDURE FOR SUPPLEMENTARY RESERVE CAPACITY** The IMO noted that it is currently in breach of clause 4.24.18 of the Wholesale Electricity Market Rules (Market Rules) as there is no approved Market Procedure which details the procedure that the IMO and System Management must follow in acquiring eligible services, entering into Supplementary Capacity Contracts and determining the maximum contract value per hour of availability for any Supplementary Capacity Contract. The IMO noted that this has been logged as a compliance breach. The proposed new procedure will ensure compliance with the Market Rules. The IMO stepped the Working Group through the proposed new procedure, in particular noting: **Section 2.1**: Step 1: System Management noted that there was currently no obligation on the IMO to consult with System Management about the amount of Supplementary Reserve Capacity (SRC) required. Alinta and Verve Energy considered that the IMO should consider a market wide consultation when determining the amount of SRC required especially as Market Participants are liable for costs-noting that the issue of how SRC is funded is not yet fully resolved with RC_2008_34 being rejected. It was noted that consultation would need to be an informal mechanism due to the timing of SRC requirements. Step 1(a): Synergy questioned how a major plant outage would be determined by the IMO? System Management further questioned if this determination should be based on duration or quantity? It was suggested that a definition of major plant outage in this situation could be where it has the potential to lead to a capacity shortfall. The IMO agreed to consider building into the Market Procedure	

Item	Subject	Action
	an informal mechanism for consultation with System Management and Market Participants regarding the need for calling SRC and with System Management for predicting any major plant outages. **Section 2.1.1(c):** The IMO agreed to amend the wording to be more concise. **Section 2.1.1(e):** The IMO agreed to include a requirement to consult with System Management. **Section 2.2.1:** LGP queried about the process the IMO has in place to monitor the shortfall. The IMO noted that it has internal procedures but will expand on its monitoring process further in the Market Procedure. **Section 2.3:** Synergy made a general comment that this section is hard to follow. In particular, Synergy queried how the Maximum Availability Price is prorated. Synergy noted that if 12 weeks is used and hot season is 16 then the total ratio is 12/16 of the capacity price, which is quite high. The IMO agreed to review the section and report back to the Working Group. Synergy suggest that prices should be listed as $/MW and not $/MWh as it will be difficult to rank. The IMO agreed to explore this further. Verve and Alinta questioned if this section attempts to pre-empt prices without testing the market. **Section 2.4.1:** System Management raised concerns with the wording "…if the IMO decides to follow…" The IMO agreed to amend the wording. **Section 2.4.3(j):** LGP noted that the numbering and wording needs to be corrected. Synergy questioned whether the maximum contract value per hour of availability was measured as $/MWh. The IMO noted that this is stated in clause 4.24.7 of the Market Rules. **Section 2.4.5(h):** Synergy queried what the Market Website is. The IMO confirmed that this is the Market Website as described in the Market Rules (any website operated by the IMO to carry out its functions under the Market Rules). For clarity, the IMO agreed to amend to read "the IMO's website". **Section 2.5.1(c)(v):** LGP commented that this clause seems difficult to implement however understands the probity reasons behind it. IMO commented that this is consistent with the Market Rules and will add this to the issues list to look at in more detail. **Section 2.6.2(a):** Verve Energy sees the exclusion of "force majeure" as problematic. It was noted that chapter 4 of the Market Rules specifically excludes force majeure. Alinta expressed concern regarding the liability of the contract in the event that energy cannot be provided from the provider's perspective. Alinta noted that the Market Rules provide for SRC to be called when generators fail during normal periods but do not provide a mechanism for the IMO to recover costs from a	

Item	Subject	Action
	generator who fails to supply SRC. Alinta suggested that a limit on the liability as a possible solution. LGP commented that there should not be liability or obligations for providers. The IMO noted that it is currently dealing with liquidated damages and limitation of liability clauses in the pro forma Network Control Service contracts and agreed to investigate this issue further for the pro forma supplementary capacity contracts. **Section 2.6.2(e):** Synergy suggested that the IMO elaborate on the consequences this might have for DSM. The IMO agreed to investigate this further. **Section 2.6.2(h):** Synergy commented that section 2.7 1) (d) will require the limits of availability. This is to cater for certain types of loads that need to be on during certain periods (eg. Shopping centres for late night shopping). The IMO noted that this is the standard contract and special contracts will take this into account. **Section 2.7:** System Management queried where the eligible service sits in the Dispatch Merit Order. System Management requested further clarity on whether two Dispatch Merit Orders would be provided and what it would do if a Dispatch Merit Order and a SRC merit order are both received. The IMO noted the comments and agreed to investigate. The IMO noted that it will review the procedure in light of the Working Group's comments and present an amended version back to the Working Group at a later date.	
4.	**MARKET PROCEDURE FOR RESERVE CAPACITY TESTING** The IMO noted that updates to the Market Procedure for Reserve Capacity Testing are required for consistency with RC_2008_20. The IMO noted that those Amending Rules which are yet to commence have been indicated in the procedure in a manner similar to that adopted in the Market Rules to indicate that they are subject to future change. **Section 1.5.1 (ii):** Synergy queried the definition of a Maximum Capacity Obligation. The IMO noted that this is as stated in the Amending Rules, but would investigate. **Section 1.5.9 (a):** The IMO agreed to amend the typographical error by replacing "and" with "or" as reflected in the Amending Rules. **Section 1.6.8:** Alinta noted that Market Participants should be required to pay "reasonable costs" and not all costs. LGP further questioned who pays for the excess in cost above "reasonable costs". The IMO agreed to consider this further and make any appropriate amendments. **Section 1.7.4:** The IMO to correct the section reference. **Section 1.7.4(a):** The IMO to clarify that this testing is once per interval for each 6-month period. **Section 1.7.5 (b) and (d):** Verve commented on the reference to temperature as the output values. IMO agreed to correct the	

Item	Subject	Action
	wording. **Section 1.7.6:** Alinta commented that this section assumes that generators can meet their Reserve Capacity Obligations at 41 degrees. The IMO agreed to further clarify this point. **Section 1.8:** System Management made a general comment that there needs to be a list of facilities to verify and that it would like to be notified in advance that verification is going to be required. System Management also suggested that the IMO should check the Metered Schedules and update them subsequent to this. The IMO noted that this is currently a manual process, but that this is one of the new initiatives of the IMO's systems upgrade. The IMO and System Management agreed that improvements to the verification process are desirable and agreed to discuss this further out of session. **Section 1.8.7 (b):** Alinta commented that a test either fails or passes but the results can't be inconclusive. The IMO agreed to consider further what circumstances might result in an inconclusive result and amend the clause contingent on the outcomes **Section 1.8.8:** Synergy noted that this appears to be a replication of Section 1.7.1(b). The IMO agreed to include a prefix noting that this step only applies from 1 October 2010. **Section 1.8.9:** The IMO agreed to remove this step from the process. **Section 1.9.1 (d):** Synergy commented that this test should only be conducted based on the market rules. The IMO agreed to replace the words "or other requirement as determined by the IMO" with "as required under the Market Rules". **Section 1.9.1 (c):** System Management queried if the IMO have the mandate under the Market Rules to perform this function. The IMO agreed to review the basis for this clause and amend if appropriate. **Section 1.9.5:** System Management requested that the IMO remove this clause as there is no heads of power for a Power System Operation Procedure (PSOP) in this case. Alinta suggested that a PSOP for this scenario would be beneficial. **Section 1.9.8:** System Management noted that the results received by the IMO do not come from System Management. The IMO to investigate and amend if required. **Section 1.9.14 (c):** It was agreed to remove the reference to PSOP. **Section 1.9.15:** The IMO to update "step 0" with the correct reference. **Section 1.9.16:** The IMO to update the Market Rule reference. **Section 1.13:** Synergy queried if the verification of a curtailable load is for Rule Participants. The IMO confirmed that the Market	

Item	Subject	Action
	Rules refers to Market Participant and agreed to correct the procedure.	
5.	**MARKET PROCEDURE FOR UNDERTAKING THE LONG TERM PASA AND CONDUCTING A REVIEW OF THE PLANNING CRITERIA** Bill Truscott from Alinta left at 11.02am. System Management noted that it would like to provide its planning engineers the opportunity to review this procedure and provide the IMO with feedback. The IMO agreed that this would be valuable. **Section 1:** The IMO agreed to amend to read "..falling on or ~~before~~ after 1 July..". Verve queried if Long Duration Outage is a defined term. System Management suggested that the procedure could be used to define the term of Long Duration Outage. The IMO noted the comments and agreed to investigate. **Section 2.2.1 (c):** LGP commented that there might be a number of Intermittent Loads not registered for this step. The IMO to investigate this. **Section 2.2.1 (a):** Synergy queried the definition of "peak shaving". IMO agreed to further clarify. **Section 2.4:** Synergy noted inconsistencies with the headings with "…Market Participants.." and the steps referring to "…Rule Participants…" The IMO confirmed that for consistency with the Market Rules they should refer to Rule Participants and agreed to amend accordingly. **Section 2.10.2 (vi):** The IMO agreed to remove this sub-clause as it repeats subclause 2.10.2 (vA) **Section 2.10.2 (iv) and 2.10.5:** LGP suggested adding inverted commas around the term probable. The IMO agreed to amend accordingly. **Section 3.2.1 and 3.3.1:** The IMO agreed to amend to refer to Working Group rather than advisory group and replace the "must" with a "may". **Section 3.4:** The IMO to correct the clause numbering. **Section 3.4.6 (d):** The IMO agreed to amend the spelling of "qualitative".	
6.	**NEXT MEETING** TBA	
7.	**CLOSED** The Chair thanked all members for attending and highlighted that due to the importance of the Market Procedures the consultation	**Chair**

Item	Subject	Action
	with the Working Group is an important process and that the input at today's meeting was very valuable. The chair declared the meeting closed at 11.22 am.	

IMO Procedure Change and Development Working Group - Action Points

Legend:

Unshaded	Unshaded action points are still being progressed.
Shaded	Shaded action points are actions that have been completed
Missing	Action items missing from sequence have been completed from previous meeting and subsequently removed from the log.

#	Procedure arising	Section	Action	Status/Progress
1	Market Procedure for Certification of Reserve Capacity		The IMO to review the Market Procedure in light of the changes required for the DSM Rule Change (RC_2008_20).	Completed: The IMO has confirmed that there are no changes to this Market Procedure required in light of RC_2008_20.
2	Market Procedure for Certification of Reserve Capacity	1.5.8	The IMO to check whether the screen shot is of an applicant's screen or was a generic screen and amend accordingly.	Completed: The IMO has confirmed that this is a generic screen shot.
3	Market Procedure for Certification of Reserve Capacity	Appendix 1	The IMO to engage an engineer to review the technical details surrounding generator capacity and the temperature dependence curves before submitting this procedure into the procedure change process	Completed: To be presented at today's meeting (Agenda item 4a).

#	Procedure arising	Section	Action	Status/Progress
4	Market Procedure for Supplementary Reserve Capacity	2.1	The IMO to consider an informal mechanism for consultation with System Management and Market Participants regarding the need for calling SRC and with System Management for predicting any major plant outages.	Completed: Procedure Step 2.1.2 has been included in the Market Procedure stating that that IMO must consult with System Management. However, IMO will only consult with Market Participants dependent on the circumstances and on an as needed basis.
5	Market Procedure for Supplementary Reserve Capacity	2.1.1(c)	The IMO to amend wording to be more concise	Completed.
6	Market Procedure for Supplementary Reserve Capacity	2.2.1	The IMO to investigate including further details of its monitoring process for shortfalls	Completed: This is outside the scope of the Market Procedure as it only applies once the shortfall is identified.
7	Market Procedure for Supplementary Reserve Capacity	2.3	The IMO to review this section and report back to the Working Group on how the Maximum Availability Price is prorated	Underway. This section will be circulated to members for consideration prior to the meeting.
8	Market Procedure for Supplementary Reserve Capacity	2.4.1	The IMO to clarify the drafting.	Completed.
9	Market Procedure for Supplementary Reserve Capacity	2.4.3(j)	The IMO to correct the numbering in this section and further clarify the drafting	Completed.
10	Market Procedure for Supplementary Reserve Capacity	2.4.5(h)	The IMO to amend to read “The IMO’s website”.	Completed.
11	Market Procedure for Supplementary Reserve Capacity	2.5.1(c)(v)	The IMO to add include on the issues list the difficulties surrounding the implementation of clause 4.24.7 of the Market Rules.	Completed.
12	Market Procedure for Supplementary Reserve Capacity	2.6.2(a)	The IMO to investigate the inclusion of liquidated damages and limitation of liability clauses in the proforma SRC contracts.	Under investigation.
13	Market Procedure for Supplementary Reserve Capacity	2.6.2(e)	The IMO to investigate whether the Market Procedure could elaborate on the financial	Completed: No change made as this is to be contained in the relevant pro forma SRC contracts.

#	Procedure arising	Section	Action	Status/Progress
			consequences of failing to supply the Eligible Service in accordance with the contract.	
14	Market Procedure for Supplementary Reserve Capacity	2.7	The IMO to investigate whether eligible services would sit in the Dispatch Merit Order or whether a separate SRC merit order would be provided.	Underway. Verbal update to be provided at the meeting (agenda item 5).
15	Market Procedure for Reserve Capacity Testing	1.5.1(ii)	The IMO to investigate further the definition of a Maximum Capacity Obligation.	Completed: Amended to refer to "maximum Reserve Capacity Obligation Quantity" for consistency with the Market Rules.
16	Market Procedure for Reserve Capacity Testing	1.5.9(a)	The IMO to amend the typographical error by replacing "and" with "or" as reflected in the Amending Rules.	Completed.
17	Market Procedure for Reserve Capacity Testing	1.6.8	The IMO to consider whether Market Participants should be paying "reasonable costs" and not all costs.	Completed. No change made. Given the alternative option of using BOM data the costs of calibration can be avoided. Market Participants can therefore make a decision around the use of this information for calibration purposes.
18	Market Procedure for Reserve Capacity Testing	1.7.4	The IMO to amend the section reference	Completed.
19	Market Procedure for Reserve Capacity Testing	1.7.4(a)	The IMO to clarify that this testing is once per interval for each 6-month period.	Completed.
20	Market Procedure for Reserve Capacity Testing	1.7.5 (b) & (d)	The IMO to amend the reference to temperature as the output values	Completed.
21	Market Procedure for Reserve Capacity Testing	1.7.6	The IMO to clarify the assumption that generators can meet their Reserve Capacity Obligations at 41 degrees.	Completed. No change required as this is clarified in the definition of Temperature Dependence Curve provided in Procedure Step 1.5.6(a).

#	Procedure arising	Section	Action	Status/Progress
22	Market Procedure for Reserve Capacity Testing	1.8	The IMO and System Management to discuss improvements to the verification process further out of session	Outstanding. Will be discussed prior to the completion of the Procedure Change Process.
23	Market Procedure for Reserve Capacity Testing	1.8.7(b)	The IMO to consider what circumstances might result in an inconclusive result and amend the clause contingent on the outcomes.	Completed. Clarified that the circumstances for an inconclusive result occur when the IMO is unable to determine the outcomes of a test in accordance with the Market Procedure.
24	Market Procedure for Reserve Capacity Testing	1.8.8	The IMO to include a prefix noting that this step only applied from 1 October 2010.	Completed.
25	Market Procedure for Reserve Capacity Testing	1.8.9	The IMO to remove this step.	Completed.
26	Market Procedure for Reserve Capacity Testing	1.9.1(c)	The IMO to review whether it has the mandate under the Market Rules to perform this function.	Completed. The IMO has confirmed that it does not have this mandate. Removed from Market Procedure.
27	Market Procedure for Reserve Capacity Testing	1.9.1(d)	The IMO to replace the words “or other requirement as determined by the IMO” with “as required under the Market Rules”.	Completed.
28	Market Procedure for Reserve Capacity Testing	1.9.8	The IMO to investigate where the results received by the IMO come from and amend this clause if required.	Completed. Amended to refer to receipt of information from System Management. Inclusion of a further clause defining that the results are determined by Metering Data or SCADA (where Meter data takes precedence).
29	Market Procedure for Reserve Capacity Testing	1.9.14 (c)	The IMO to remove the reference to the PSOP.	Completed: Amended to “… in accordance with these procedures, and in accordance with the ~~Power System Operation Procedure~~ Market Rules”.
30	Market Procedure for Reserve	1.9.15	The IMO to update “step 0” with the correct	Completed.

#	Procedure arising	Section	Action	Status/Progress
	Capacity Testing		reference.	
31	Market Procedure for Reserve Capacity Testing	1.13	The IMO to amend the clause to refer to Market Participant	Change not required as clause 4.25A of the Market Rules refers to Rule Participant and not Market Participant.
32	Market Procedure for Undertaking the LTPASA		System Management's planning engineers to review procedure and provide any feedback to the IMO	Outstanding. IMO to follow up with System Management.
33	Market Procedure for Undertaking the LTPASA	1	The IMO to amend to read "...falling on or ~~before~~ after 1 July..".	Completed.
34	Market Procedure for Undertaking the LTPASA	2.1	The IMO to consider defining the term of Long duration outage	Under consideration.
35	Market Procedure for Undertaking the LTPASA	2.2.1 (a)	The IMO to clarify the definition of "peak shaving"	Completed: Amended to "…expected ~~peak shaving~~ MW reduction in peak consumption implemented by retailers…"
36	Market Procedure for Undertaking the LTPASA	2.2.1 (c)	The IMO to investigate whether there might be a number of Intermittent Loads not registered for this step.	Under investigation.
37	Market Procedure for Undertaking the LTPASA	2.4	The IMO to amend any reference to "Market Participants" with "Rule Participants" for consistency with the Market Rules.	Completed.
38	Market Procedure for Undertaking the LTPASA	2.10.2 (vi)	The IMO to remove this subclause.	Completed.
39	Market Procedure for Undertaking the LTPASA	2.10.2 (iv) & 2.10.5	The IMO to include inverted commas around the term probable.	Completed.
40	Market Procedure for Undertaking the LTPASA	3.2.1 & 3.3.1	The IMO to amend to refer to Working Group rather than advisory group and replace the	Completed:

#	Procedure arising	Section	Action	Status/Progress
			"must" with "may".	
41	Market Procedure for Undertaking the LTPASA	3.4	The IMO to correct the clause numbering.	Completed.
42	Market Procedure for Undertaking the LTPASA	3.4.6 (d)	The IMO to amend the spelling of "qualitative".	Completed.

Advice on Power Factor and Accuracy of Temperature Dependant Outputs

REPORT

- WP03749-EE-RP-0001
- Rev. 1
- 3 September 2009

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Executive Summary

This report documents the advice provided to the Independent Marker Operator (IMO) regarding the application of power factor to generator ratings and the validity of using a 0.1°C gradient calculation of the temperature dependence of a generation facility. Physical limits on provision of reactive power and reactive power control are also covered in this report.

Power Factor

To remain consistent with the requirements of the Technical Rules, the following power factors should be applied:

- Synchronous generators – most dispatchable generators : 0.8
- Induction generators – some smaller generators: 0.95
- Inverter generators- most wind-farms: 0.95

However, for some synchronous generators this may marginally overstate the capability of the generator to meet the requirements of the Technical Rules and therefore these calculations should be checked against a generator capability curve, to be supplied by the applicant, or against the registered maximum active power output detailed in the applicant's Access Contract. Permitted derogation from the Technical Rules may also impact the power factor to be applied.

Accuracy of De-rate Temperature Data

A 0.1°C change in temperature would reduce output of most gas turbines by approximately 0.065%. The ambient temperature will need to rise by 1°C before a decrease in output of approximately 0.5% can be seen. Furthermore, calculating temperature dependence using a 0.1°C gradient will not capture the true effect of the temperature change as other factors that affect generator output are also present. For example a loss of 1mbar of compressor inlet pressure will reduce output of industrial gas turbines by approximately 0.05%. This reduction of 0.05% will interfere with the accuracy of measurements that are intended for a 0.1°C increase in temperature.

SKM has undertaken no review of the impact changing the accuracy of the site temperature reference may have on the operation of the Wholesale Energy Market and therefore makes no comment with regards to this.

Contents

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1. Application of Load Factor

1.1. Use of Load Factor within the IMO Market Processes

The IMO Capacity Certification process requires the IMO to determine the maximum active power (MW) capability of generating plant in order to determine the number of capacity credits applicable to that generator. SKM understand that generators provide the capacity of plant to the IMO in active power (MW) or apparent power (MVA). Typically capacity provided in MW is with reference to the capability of the engine or prime mover to produce real power. A reference to MVA is reference to the current carrying capacity (Amps) of the generator or alternator and includes an active (MW) and a reactive (MVAr) component of power.

If the capacity of the generating plant is provided in MW (at a given temperature), this rating can be applied directly in the IMO capacity certification process. If the capacity for a generating plant is provided in MVA, an appropriate "power factor" must be applied to convert this MVA to the appropriate MW.

This section of the report is to provide IMO advice on the appropriate power factor applicable to various types of generation and to provide an overview of situations in which the application of the power factor may not be appropriate due to other limitations of particular machines.

1.2. Explanation of Power Factor

The **power factor** of an AC electric power system is defined as the ratio of the real power (P- measured in the units MW) flowing to the load, to the apparent power (S - measured in the units MVA). It is always a number between 0 and 1. Reactive power (R – measured in the units MVAr) is always present in alternating current (AC) systems. This reactive power fluctuates around the average real power. Reactive power can be understood as the component of apparent power that is necessary for an AC system to operate, however it does not do any useful work. Apparent power is the product of the root mean squared current and root mean squared voltage of the circuit and measured in volt-ampere (MVA). It is consists of both real and reactive power vectorialy added together. Due to energy being stored in the load and returning to the source, or due to a non-linear load that distorts the wave shape of the current drawn from the source, the apparent power can be greater than the real power. The power factor is defined as:

$$pf = \frac{P}{S}$$

Expressed using the common units

$$pf = \frac{MW}{MVA}$$

Or as would typically be used by the IMO .

$$MW = MVA \times pf$$

When power factor is equal to 0, the energy flow is entirely reactive, and stored energy in the load returns to the source on each cycle. When the power factor is 1, all the energy supplied by the source is consumed by the load. Power factors are usually stated as "leading" or "lagging" to show the sign of the phase angle between voltage and current.

For example, to get 1 MW of real power, if the power factor is unity, 1 MVA of apparent power needs to be transferred (1 MW / 1 = 1 MVA). At low values of power factor, more apparent power needs to be transferred to get the same real power. To get 1 MW of real power at 0.2 power factor, 5 MVA of apparent power needs to be transferred (1 kW / 0.2 = 5 kVA).

1.3. Technical Rule Requirements

The reactive power requirements stated in Western Power's Technical Rule Requirements for generators are presented below:

Synchronous generating units operating at any level of active power output between its registered maximum and minimum active power output level must be capable of:

- Supplying at its generator machine's terminals an amount of reactive power of at least the amount equal to the product of the rated active power output of the generating unit at nominal voltage and 0.750 (equivalent to 0.8 power factor).
- Absorbing at its generator machine's terminals an amount of reactive power of at least the amount equal to the product of the rated active power output of the generating unit at nominal voltage and 0.484 (equivalent to 0.9 power factor).

A synchronous generating unit must therefore operate with a power factor between 0.8 lagging and 0.9 leading, while producing at its maximum active power output.

Induction generating units operating at any level of active power output between its registered maximum and minimum output level, must be capable of supplying or absorbing an amount of reactive power at the connection point of at least the amount equal to the product of the rated active power output of the generating unit at nominal voltage and 0.329 (equivalent to 0.95 pf leading or lagging).

Inverter coupled or converter coupled generating units operating at any level of active power output between its registered maximum and minimum output level, must be capable of supplying reactive power such that at the inverter or converter connection point the lagging power factor is less than

or equal to 0.95 and must be capable of absorbing reactive power at a leading power factor less than or equal to 0.95**.**

1.4. Calculating Active Power (MW) from Apparent power (MVA)

In most cases, to calculate the active power (MW) capability of a generator the apparent power (MVA) capability of the generator should be multiplied by:

- 0.8 for synchronous generators.
- 0.95 for induction generators and inverter connected generators.

This rule will hold for the majority of the generators connected to the SWIS. Exceptions to this rule are discussed below.

1.5. Exceptions to the Rule 1

1.5.1. Scenarios Where a Case May Be Put That the Technical Rules Should Not Define Power Factor

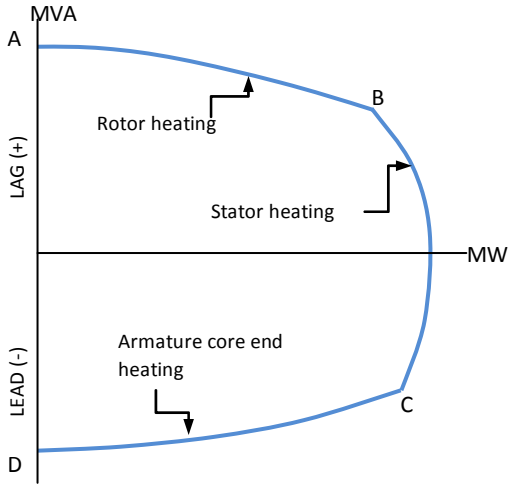
When a Generator is permitted to be in power factor control or Western Power have provided an alternative derogation, a generator will be excused from following the Technical Rules. Depending on the nature and duration of this derogation, it may be appropriate for the IMO to consider the use of alternative load factors for the calculation of real power in these scenarios. Such derogation may be applicable in cogeneration plant or plant that is providing “top up” power to the grid, depending on the nature of the customer load.

1.6. Exceptions to the Rule 2

1.6.1. Capability Curves of the Generator

All synchronous generators / alternators (item of plant that creates the electricity) have the capability to supply both reactive power and real power. However, the amount of reactive power capability varies with the generation of real power. This depends on the generator parameters and associated network parameters.

Figure 1 presents a typical generator reactive capability curve. These rated reactive power curves provided by manufacturers are strictly a function of generator’s design parameters at the rated terminal voltage and the hydrogen pressure. They show that different generator loads in (MW) produce greater heating in different parts of the generator. The segment (AB) of Figure 1 is limited by rotor heating; (BC) is limited by stator heating and (CD) by armature core end heating [1].

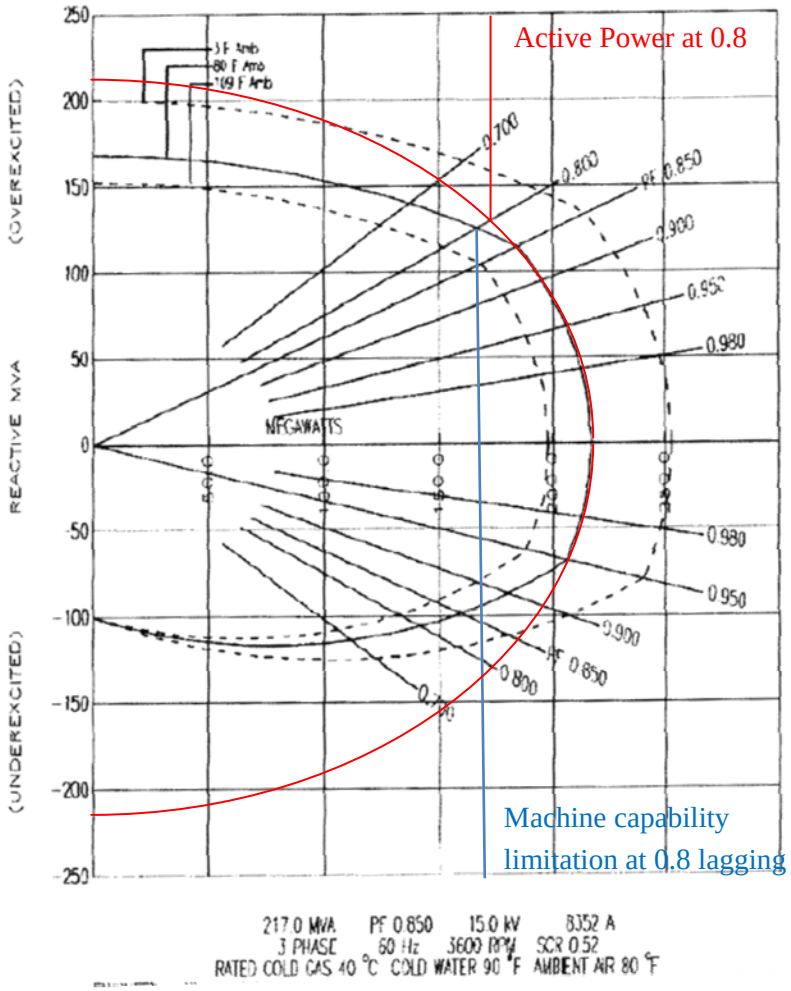


- **Figure 1 Generator Reactive Capability Curve**

The approach to calculating the MW capability of particular generators described in section 1.4 holds in general when curve BC encompasses the 0.8 lagging to 0.9 leading power factors. If this curve does not encompass this range the segments AB (rotor heating limitation) or segment CD (armature core end heating limitation) may limit the generators capability to deliver active power as calculated in section 1.4. This is discussed further below.

1.6.2. Impact of Capability of Synchronous Generators in the Active Power Calculation

A typical synchronous generator capability curve where the 0.8 lagging to 0.9 leading power factor is not encompassed by the section BC is provided is shown in Figure 2. The curve represented by a "continuous line" indicates the normal operation of the generator. The other two curves represented by "dashed-lines" are with higher and lower hydrogen pressure. Normally these curves are dependent on the cooling performance of the machine, which is represented by hydrogen pressure.



- **Figure 2 Typical Capability Curve of Synchronous Generator**

From this figure it can be seen that the machine active power (MW) capability at 0.8 lagging is less than the active power calculation at 0.8 lagging. In this figure the apparent power (MVA) basis is defined by the active power (MW) at unity power factor (horizontal axis).

Most generators connected to the SWIS will have the section BC applying over the 0.8 lagging to 0.9 leading power factor range and as such the calculation in section 1.4 should hold. However, to confirm this is the case the IMO could either request from the applicant the generator capability curve or refer to the registered maximum active power output detailed in the applicants Access Contract to confirm this position.

2. Environmental Correction Factors for Generation Facility

2.1. Quantification of Parameters Affecting Prime Mover[1] Performance

There are many parameters that affect generation unit performance (depending on the type of prime mover) and some can be relatively complex in their application.

Typically, a prime mover (eg. gas turbine) unit supplier will "guarantee" the operation of a unit at particular environmental conditions. The test against this guarantee is typically undertaken shortly after the installation of the machine whilst the machine is in optimal condition. From this point the output of the machine will degrade over time (performance degradation) and will change as environmental conditions change, described by the correction factors of the machine.

2.1.1. Correction factors.

The impact of environmental conditions on the output of a generation machine are described through correction factors.

Historically, correction curves representing these factors were used. However these curves are now typically only used to demonstrate effects and for estimating purposes only.

For accurate assessment and evaluation, correction algorithms built into supplier proprietary performance software are used. Correction factors apply to both environmental and system operating characteristics. Some correction factors have greater influence on unit performance than others. The relative influence of these factors may also change depending on the generator operating load at any given time. Every generator supplier has their own series of prime mover correction factors depending on type of mover, supplier and model. There is no general set of correction factors that can be applied across a range of different supplier prime mover models or types.

Similarly, suppliers may potentially develop and present correction algorithms or curves for specific project applications rather than publish overall generic corrections. In such instances the corrections are presented to best suit the expected performance around the actual guaranteed conditions, with performance at the extreme end of the range typically degraded. Basic correction factors affect the prime mover's gross power output and corresponding input energy consumption (usually expressed either in terms efficiency, heat rate or specific fuel consumption).

[1] Refernce to "Prime Mover" used to avoid confusion with the use of "generator" to describe the electrical component of electricity generating plant in the previous section.

These correction factors influence mainly the machine airflow, which will influence the gross power output capability of the prime mover (turbine or reciprocating engine) and the generator or main generator transformer equipment.

Typically the external influencing correction factors include

1) Gas Turbine Generator Equipment
   - Compressor inlet temperature (usually equal to ambient temperature unless inlet conditioning is used).
   - Compressor inlet air pressure (equal to ambient pressure less inlet system pressure losses).
   - Compressor inlet air relative or specific humidity.
   - Compressor inlet pressure losses (separate correction if atmospheric pressure is used as the principal correction).
   - Exhaust pressure losses.
   - Generator cooling system inlet temperature.
   - Bottoming cycle cooling system supply temperatures (combined cycle only).
   - Fuel type.
   - Fuel calorific value.
   - Generator unit operating speed.
   - Connected system frequency (may be the same as the generator unit operating speed, but can be different depending on generator type and load conditions) .
   - System power factor.
   - System voltage.

2) Reciprocating Engine (Diesel or Gas Engine) Generator Equipment
   - Ambient air temperature (effects typically only significant at higher ambient air temperatures of 25°C or greater).
   - Atmospheric air inlet pressure (typically only significant at atmospheric inlet pressures equivalent to 1500m elevation or higher).
   - Exhaust pressure losses.
   - Generator cooling system inlet temperature.
   - Fuel type.
   - Fuel calorific value.

- Generator unit operating speed almost universally directly related to connected system frequency.
- System power factor.
- System voltage.

3) Thermal Generation Plant (Boilers + Steam Turbine Generators)
   - Primary cooling system supply temperatures.
   - Generator cooling system inlet temperature.
   - Fuel type.
   - Fuel calorific value.
   - Fuel moisture and ash content.
   - Carbon Ash content.
   - Generator unit operating speed almost universally directly related to connected system frequency.
   - System power factor.
   - System voltage.

   Such plant performance is normally presented in the form of varying Heat Balance Diagrams.

2.1.2. Performance Degradation Information Available

Performance degradation refers to the degradation of machine output over time due to wear in machine tolerances. This degradation is usually partially recovered at machine overhaul times. Performance degradation is again dependent on unit type, but also importantly on the operating regime.

Suppliers typically only make available generic overall average fleet performance degradation information. This information is not used to assess the specific performance of any individual generating units at any particular point in its life cycle. If this is required then suppliers will provide this information in conjunction with some form of Long Term Service Agreement (LTSA), with the actual quoted degradation values being more commercially than technically driven.

2.2. Environmental Factors Affecting Generators and Applicable De-Rating Values for Various Generation Technologies

All gas turbines, irrespective of the fuel type that powers them, require air for the combustion process to occur efficiently. An increase in the ambient temperature will reduce the density of air flowing into the compressor; this reduces the output of the prime mover.

The main potential impact of higher altitude is the effect on compressor inlet pressure. Lower compressor inlet pressure means lower compressor discharge pressure, which directly reduces the overall performance of the unit.

Inlet and exhaust pressure losses also cause the air density to decrease. This will also cause a reduction in the generator output.

Table 1 below presents the main de-rating factors for some common gas turbine models.

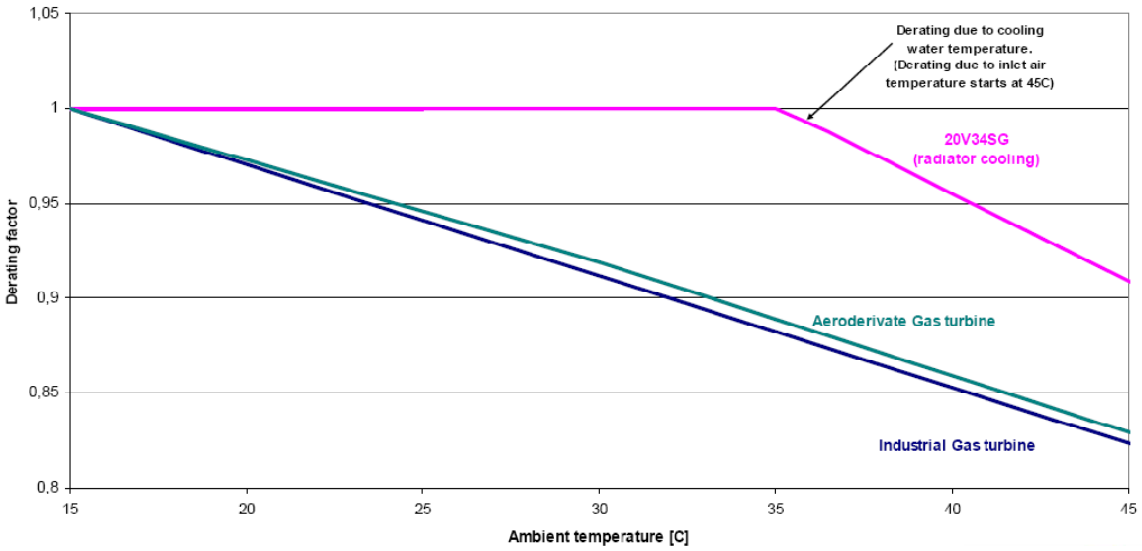
- **Table 1 De-rating Factors for Different Generators**

	Compressor Inlet Temperature effect	Inlet pressure loss effect	Exhaust pressure loss effect
GE Frame 6B	-0.65% per °C	-1.5% per 10 mbar	-0.5% per 10 mbar
GE Frame 9E	-0.65% per °C	-1.5% per 10 mbar	-0.5% per 10 mbar
GE LM 6000PC	-1.25% per °C	-1.35% per 10 mbar	-0.35% per 10 mbar

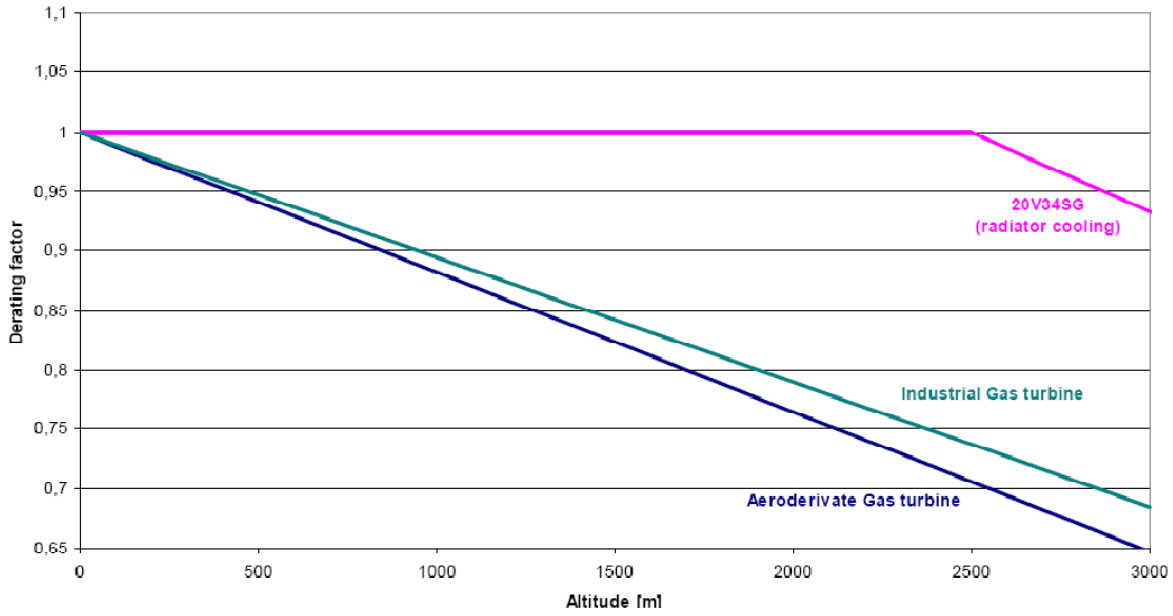
- **Table 2 Effect on Generator Output of Gas Engines**

	Temperature effect (15-41°C)	Inlet pressure loss effect (0-30mbar)	Exhaust pressure loss effect (0-30mbar)
GE Frame 6B	-17%	-4.5%	-1.5%
GE Frame 9E	-17%	-4.5%	-1.5%
GE LM 6000PC	-33%	-4.0%	-1.0%

Table 2 above presents the effects on prime mover output for a certain changes in the operating conditions of the gas turbines. For a GE Frame 6B and 9E a compressor inlet temperature increase from 15 to 41°C, or increase by 26°C will result in a 17% reduction in output. For a GE LM 6000PC the reduction in output is 33% for the same change in compressor inlet temperature conditions. Similarly the inlet pressure needs to drop by 30mbar for approximately a 4% reduction in output across all three machines. Altitude needs to increase by 1000m in order for a 10% reduction in output to happen.



- **Figure 3 General ambient de-rating factor for typical gas turbines**



- **Figure 4 General altitude de-rating factors for typical gas turbines**

Figure 3 illustrates how the de-rating factors change with increasing ambient temperature for a generic reciprocating engine, aeroderivative and industrial gas turbine. Generally a reciprocating engine does not incur any degradation in output until the temperature rises approximately past 35°C. In the case of the aeroderivative and industrial gas turbines, performance degradation occurs when the ambient temperature increases to past 15°C. This is assuming that the performance reference condition is at 15°C. If the performance reference condition is set at another figure then performance degradation will begin when the temperature passes that figure.

Figure 4 illustrates how the de-rating factors change with increasing altitude for a generic reciprocating engine, aeroderivative and industrial gas turbine. The impact here is again air pressure. As altitude increases air pressure drops. For any specific reference installation the altitude does not change. However the air pressure changes constantly. This figure shows that reciprocating engines are less affected by changes in air pressure than aeroderivative and gas turbines.

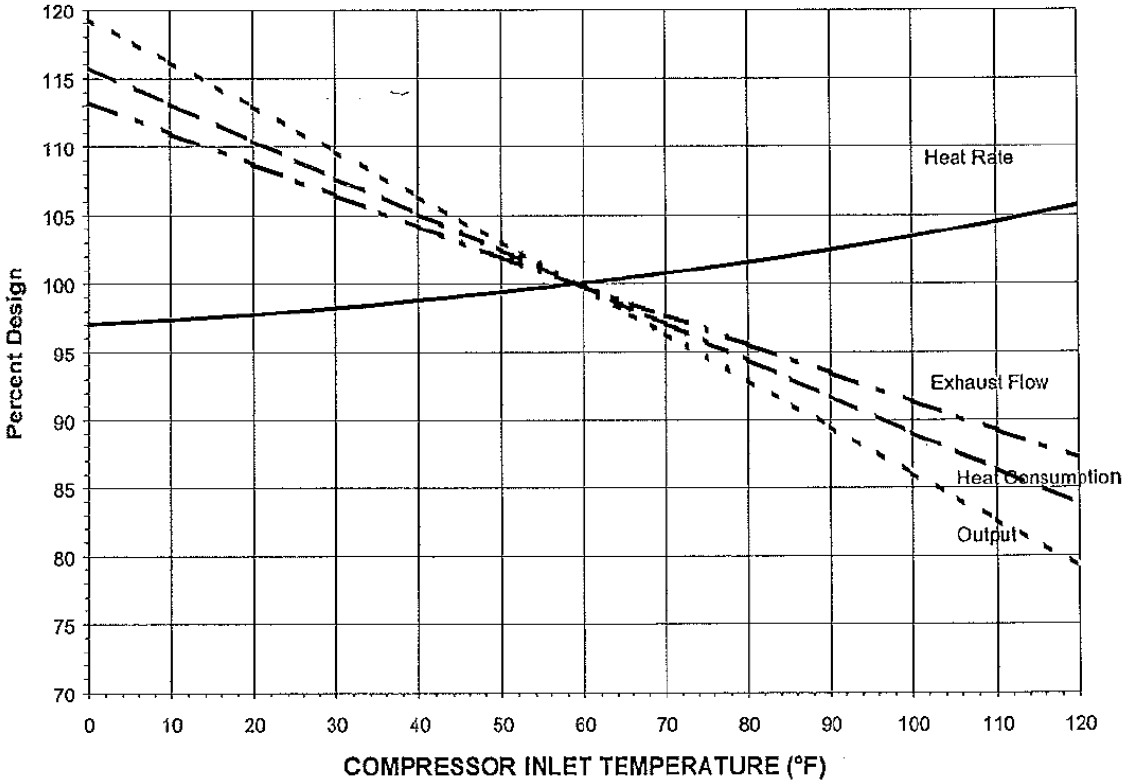
Please note that Figure 3 and Figure 4 have been taken directly from a "Sales Presentation" provided by Wartsila to sell reciprocating engines in comparison to gas turbine generator equipment. Hence they should only be considered to show that reciprocating engines are influenced less than a gas turbine by inlet temperature and inlet pressure.

2.2.1. Main Factors Affecting Generators and Applicable De-Rating Values for Steam Turbines

For steam turbine powered generators, there is negligible effect across changes in the factors mentioned above.

2.3. Conclusions on the Applicability of 0.1 degree Temperature Accuracy

A 0.1°C change in temperature would reduce output of most gas turbines by approximately 0.065%. The ambient temperature will need to rise by 1°C before a decrease in output of approximately 0.5% can be seen. Furthermore, calculating temperature dependence using a 0.1°C gradient will not capture the true effect of the temperature change as other factors that affect generator output are also present. For example a loss of 1mbar of compressor inlet pressure will reduce output of industrial gas turbines by approximately 0.05%. This reduction of 0.05% will interfere with the accuracy of measurements that are intended for a 0.1°C increase in temperature. Figure 5 below is typical performance curve of a generator provided by manufacturers for estimating purposes. SKM has undertaken no review of the impact changing the accuracy of the site temperature reference may have on the operation of the Wholesale Energy Market and therefore makes no comment with regards to this.



- **Figure 5 Typical Generator Performance Graph Provided by Manufacturers**

3. Conclusions

To remain consistent with the requirements of the Technical Rules, the following power factors should be applied:

- Synchronous generators – most dispatchable generators : 0.8
- Induction generators – some smaller generators: 0.95
- Inverter generators- most wind-farms: 0.95

However, for some synchronous generators this may marginally overstate the capability of the generator to meet the requirements of the Technical Rules and therefore these calculations should be checked against a generator capability curve, to be supplied by the applicant, or against the registered maximum active power output detailed in the applicant's Access Contract. Derogation from the Technical Rules may also impact the power factor to be applied.

A 0.1°C change in temperature would reduce output of most gas turbines by approximately 0.065%. The ambient temperature will need to rise by 1°C before a decrease in output of approximately 0.5% can be seen. Furthermore, calculating temperature dependence using a 0.1°C gradient will not capture the true effect of the temperature change as other factors that affect generator output are also present. For example a loss of 1mbar of compressor inlet pressure will reduce output of industrial gas turbines by approximately 0.05%. This reduction of 0.05% will interfere with the accuracy of measurements that are intended for a 0.1°C increase in temperature.

SKM has undertaken no review of the impact changing the accuracy of the site temperature reference may have on the operation of the Wholesale Energy Market and therefore makes no comment with regards to this.

4. References

[1] Adibi, M.M., Milaniez D.P. and Volkmann, T.L, “Optimizing Generator Reactive Power Resources”, IEEE Trans on Power Systems, Vol.14, No.1 February 1999, pp 319-323

[2] Adibi, M.M. and Milanicz, D.P., “Reactive Capability Limitation of Synchronous Machines”, IEEE Trans on Power Systems, Vol.9, No.1 February 1994, pp 29-40

ELECTRICITY INDUSTRY ACT 2004

ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY MARKET) REGULATIONS 2004

WHOLESALE ELECTRICITY MARKET RULES

Market Procedure for: Certification of Reserve Capacity

Version 3

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

21 September 2006	Market Procedure for Facility Registration as at Market Start
27 June 2008	IMO amended changes to the procedure resulting from Procedure Change Proposal PC_2008_04
XX YYYYY 2010	IMO amended changes to the procedure resulting from Procedure Change Proposal PC_2009_04

1. Procedure for Certification of Reserve Capacity

The Reserve Capacity Mechanism is a yearly process, with certification of Reserve Capacity taking place in Year 1 of the Reserve Capacity Cycle. Subject to a number of provisions under the Wholesale Electricity Market Rules (Market Rules), the Facility must provide the capacity between 1 October of Year 3 and 1 October of Year 4 of that Reserve Capacity Cycle.

Each year, Market Participants owning or controlling generating Facilities and Demand Side Management capacity must apply for Certified Reserve Capacity in respect of those Facilities if they wish to apply for Capacity Credits. The application for Certification of Reserve Capacity is the first step in the process. Once an application for Certified Reserve Capacity has been made to the IMO, the Independent Market Operator (IMO) must then assess the application and set a level of Certified Reserve Capacity in respect of that Facility.

Obtaining Certified Reserve Capacity is only one of the steps required to secure Capacity Credits, therefore it does not constitute a commitment on behalf of the IMO to assign Capacity Credits to the Facility. A Facility that receives certification, by the way of obtaining Certified Reserve Capacity, is under no obligation to progress their project or Facility through to the stage where it is assigned Capacity Credits. Under the Market Rules, Reserve Capacity is required to be certified by the IMO as a prerequisite for that Reserve Capacity to be either traded bilaterally or to be offered in the Reserve Capacity Auction. In the absence of certification, no Capacity Credits would be assigned to the Facility.

A Market Participant may also seek to have their Facility conditionally certified for future Reserve Capacity Cycles. If a Market Participant obtains Conditional Certified Reserve Capacity, they may, subject to the provisions of the Market Rules, apply for the Conditional Certified Reserve Capacity to be converted to Certified Reserve Capacity in Year 1 of the Reserve Capacity Cycle. Likewise a facility deemed to be committed by the IMO may apply to the IMO for Early Certified Reserve Capacity (ECRC) at any time between the date the facility is deemed committed and January 1 of Year 1 of the Capacity Cycle.

The Market Procedure for Certification of Reserve Capacity (Procedure) lays out the steps to be taken by Rule Participants and the Independent Market Operator (IMO) in order to certify the Reserve Capacity of Facilities.

As this Procedure may be subject to revision at any time either before, during, and after the certification process, Market Participants must refer to the latest published Market Procedure, the Market Rules, and contact the IMO for further information regarding the process.

1.1. Relationship with the Market Rules

(a) This Procedure has been developed in accordance with, and should be read in conjunction with, chapter 4 of the Market Rules.

(b) References to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as at 1 April 2010. These references are included for convenience only and are not part of this procedure.

(c) This Procedure is made in accordance with clause 4.9.10 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 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; and

(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 a Market Participant is required to complete to make an application for Certification of Reserve Capacity **[MR 4.9.10]**;

(b) Specify the format of the data required to be submitted by a Market Participant applying for certification of Reserve Capacity **[MR 4.9.3 (a)];**

(c) To describe the steps that the IMO must follow in processing an application for Certification of Reserve Capacity, including:

(i) How Certified Reserve Capacity is assigned; and

(ii) How Reserve Capacity Obligation Quantities are set **[MR 4.9.10]**; and

(d) To describe the process for applying for and approving Early Certified Reserve Capacity **[MR 4.28C.15]**.

1.4. Application

1 This Procedure applies to:

(a) A Market Participant wishing to submit an application for Certified Reserve Capacity for:

(i) Non-intermittent generating Facilities;

(ii) Intermittent generating Facilities; and/or

(iii) Curtailable Load or Dispatchable Load.

(b) A Market Participant wishing to submit an application for Early Certified Reserve Capacity; and

(c) The IMO in processing applications for Certification of Reserve Capacity and Early Certified Reserve Capacity.

1.5. Associated Market Procedures

1 The following Market Procedures are associated with this Procedure:

(a) Declaration of Bilateral Trades and the Reserve Capacity Auction;

(b) Capacity Credit Allocation;

(c) Reserve Capacity Security;

(d) Reserve Capacity Performance Monitoring;

(e) Facility Registration, De-Registration and Facility Transfer;

(f) Registration and De-Registration of Rule Participants; and

(g) Notices and Communications.

2. The following Power System Operation Procedures are associated with this Procedure:

(a) Facility Outages.

1.6. Procedure steps to be followed by IMO in preparing for Certification of Reserve Capacity

1 By 1 May of Year 1 of the relevant Reserve Capacity Cycle, the IMO must advise all Market Participants that the certification process has commenced **[MR 4.1.7]**. Market Participants will be notified through the Wholesale Electricity Market System (WEMS).

2 The IMO must accredit independent experts to prepare reports on the estimated Reserve Capacity of Intermittent Generators that are yet to commence operation. The IMO must ensure that at least two accredited independent experts are available to Market Participants at any time. **[MR4.11.6]**

3 The IMO must ensure that each accredited independent expert is competent to estimate Reserve Capacity of Intermittent Generators. The IMO may

remove accreditation at any time subject to the completion of any work in progress by the expert in estimating Reserve Capacity of Intermittent Generators. **[MR 4.11.6]**

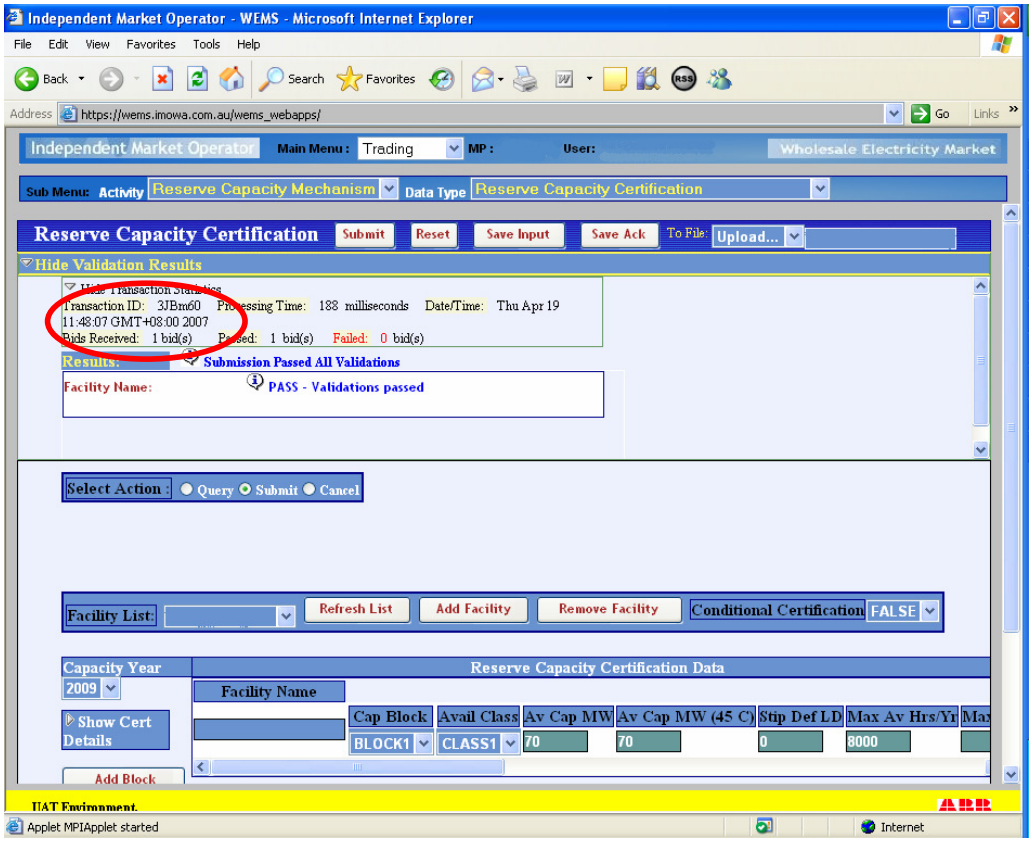
4 The IMO must publish on the Market Web Site the contact details of independent experts who are accredited by the IMO for estimating Reserve Capacity of Intermittent Generators. **[MR 4.11.6]**

5 The IMO must accept applications for Certification of Reserve Capacity from Market Participants beginning from 9 AM on the first Business Day following 1 May of Year 1 until 5 PM on the last business day falling on or before 20 July of Year 1 of the Reserve Capacity Cycle. **[MR 4.9.1]**

6 The IMO will only accept applications for Certified Reserve Capacity that have been appropriately entered through the WEMS.

7 The IMO must accept applications from Market Participants for future Reserve Capacity Cycles at any time until the closing date specified for that Reserve Capacity Cycle. **[MR 4.9.1]**

8 The IMO must notify an applicant for certification of Reserve Capacity of receipt of the application within one Business Day of receipt. **[MR 4.9.6]** Notification will be provided through the WEMS as a Transaction ID.



9 The IMO must process all applications for Certification of Reserve Capacity for the current Reserve Capacity Cycle by 5 PM of the last Business Day on or before 5 August of Year 1 of that Reserve Capacity Cycle. **[MR 4.1.12]**

10 The IMO must process all applications for certification of Reserve Capacity for future Reserve Capacity Cycles (i.e. applications for Conditional Certified Reserve Capacity or Early Certified Reserve Capacity) within 90 days of the IMO receiving the application. **[MR4.9.8]**

11 The IMO must notify each applicant of the results of the certification process pertaining to that applicant and include in its notification the information contained in step 1.16. The IMO must notify all applicants by the time and date specified in steps 1.6.9 and 1.6.10, as appropriate. This notification will be provided through the WEMS.

12 Reserve Capacity will only be certified once the IMO has issued the notice of results of application for Certification of Reserve Capacity listed in step 1.6.11.

1.7. Application for Certification of Reserve Capacity

1 The information to be included in an application for Certified Reserve Capacity is listed in the document "Information for Applications for Certification of Reserve Capacity" on the IMO Website. The information provided must be consistent with the Reserve Capacity Cycle for which the application is being made. The information must be provided for each Facility. **[MR4.9 & 4.10]**

2 All primary information provided in respect of an application for Certified Reserve Capacity must be provided through the WEMS. Supporting evidence must be submitted to the IMO in both electronic format (through the WEMS) and in hard copy format (via email or courier).

3 The information provided through the WEMS should be entered in accordance with the WEMS User Guides and online help.

1.8. Procedure steps to be followed by an applicant applying for Certification of Reserve Capacity

During each Reserve Capacity Cycle, applications may be submitted for Certified Reserve Capacity that will apply to future Reserve Capacity Cycles. In this case certification granted will be either Conditional Certified Reserve Capacity or Early Certified Reserve Capacity. For example,

i. a proposed Facility can be conditionally certified, but then must be recertified during the Reserve Capacity Cycle corresponding to the period that the Facility is expected to commence operation; or

ii. if the Facility is deemed committed prior to 1 January of Year 1 of the Reserve Capacity Cycle for which it intends to provide Capacity and is a generating system, the Facility may then apply for Early Certified Reserve Capacity in accordance with step 1.9 of this Procedure.

1 Before submitting an application for Certification of Reserve Capacity, Market Participants should familiarise themselves with the relevant Market Rules and the related Reserve Capacity Market Procedures specified in step 1.5 of this Procedure.

2 Before submitting an application for Certification of Reserve Capacity, the applicant must ensure they are registered as a Market Participant. The applicant should follow the Market Procedure for Registration and De-Registration of Rule Participants which can be found on the IMO Website: http://www.imowa.com.au/market-procedures

3 All Facilities must be registered in the WEMS for the purposes of certified capacity prior to submitting an application for Certification of Reserve Capacity. In respect of new Facilities, the Market Participant must register the Facility for the purposes of Certified Reserve Capacity. Market Participants should consult the Market Procedure for Facility Registration, De-Registration and Facility Transfer and associated Market Rules for this purpose.

4 Market Participants submitting an application for Certified Reserve Capacity must allow sufficient time, as required under the Market Procedure Facility Registration, De-Registration and Facility Transfer, for the registration of the Facility to be completed. Market Participants may submit an application for Facility registration for the purposes of Reserve Capacity prior to 1 May of Year 1 of the Reserve Capacity Cycle to which the application relates.

5 Market Participants applying for Certification of Reserve Capacity must make an application to the IMO during the application open period, which is between 9 AM on the first Business Day following 1 May of Year 1 and 5 PM on the last business day falling on or before 20 July of Year 1 of the Reserve Capacity Cycle. **[MR 4.9.1]**

6 Market Participants must follow this Procedure in applying for Certified Reserve Capacity**. [MR 4.9.10]**

7 All primary information provided by a Market Participant in respect of an application for Certified Reserve Capacity must be provided through the WEMS. Supporting documentation is uploaded through the WEMS file exchange in any of the following formats:

- compressed ZIP files (where the files in the archive must be in any of the formats listed below);
- MS Office 2003 (xls, doc or ppt); and
- Adobe PDF.

Note that the WEMS file exchange cannot receive documents which are larger than 4MB, however, there is no limit to the number of documents that can be exchanged.

8 The application must include the data and information specified in clause 4.9.3 of the Market Rules. Further details of the data and information required to be submitted in support of an application is provided in the "Information for Applications of Certification of Reserve Capacity" document on the IMO Website. Additional clarification of the some of the data required to be supplied by Market Participants in support of their application is provided in Appendix A of this Procedure.

9 In the case that a Market Participant is resubmitting a certification application in respect of a Facility that has received Conditional Certified Reserve Capacity, it must also submit details of any Network Access offer(s) and Environmental Approvals in accordance with clause 4.10.1(c)i and 4.10.1(c)ii. This will assist the IMO to make a determination as to whether the Facility will be a Registered Facility during the Reserve Capacity Year and if there are any potentially limiting factors associated with the application.

10 Market Participants should receive notification that the application has been received. This will be in the form of a WEMS receipt. Market Participants should maintain a record of this receipt.

11 Market Participants must contact the IMO and must resubmit the application in the event that receipt of acknowledgement has not been received within 1 Business Day of the application having been provided to the IMO. The resubmission of an application must be made during the application open period, which is from 9 AM on the first Business Day following 1 May of Year 1 until 5 PM on the last business day falling on or before 20 July of Year 1 of the Reserve Capacity Cycle.

12 Market Participants must make an application for certification for each subsequent Reserve Capacity Cycle. **[MR 4.9.5]**

13 Market Participants must respond to any requests for clarification or further information received from the IMO to assist in processing the Market Participants application.

1.9. Procedure steps to be followed by an applicant applying for Early Certified Reserve Capacity

1 Before submitting an application for Early Certification of Reserve Capacity, Market Participants should familiarise themselves with the relevant Market Rules and the related Reserve Capacity Market Procedures specified in step 1.5 of this Procedure.

2 Before submitting an application for Early Certified of Reserve Capacity, the applicant must ensure they are registered as a Market Participant. The applicant should follow the Market Procedure for Registration and De-Registration of Rule Participants which can be found on the IMO Website: http://www.imowa.com.au/market-procedures

3 All Facilities must be registered in the WEMS for the purposes of certified capacity prior to submitting an application for Early Certification of Reserve Capacity.

4 All Facilities must be deemed to be of committed status by the IMO prior to submitting an application for Early Certification of Reserve Capacity. Details on this process can be found in Appendix 1 of the Market Procedure for Declaration of Bilateral Trades and the Reserve Capacity Auction.

5 Market Participants applying for Early Certified Reserve Capacity may make an application to the IMO at anytime between the dates the Facility is deemed committed by the IMO and 1 January of Year 1 of the Capacity Cycle to which the application relates. **[MR 4.28C.2]**

6 All information provided by a Market Participant in respect of an application for Certified Reserve Capacity must be provided through the WEMS. Supporting documentation is uploaded through the WEMS file exchange in any of the following formats:

- compressed ZIP files (where the files in the archive must be in any of the formats listed below)
- MS Office 2003 (xls, doc or ppt)
- Adobe PDF

Note that the WEMS file exchange can not support documents which are larger than 4MB.

7 The application must include the data and information listed in clause 4.9.3 of the Market Rules. Further details of the data and information required to be submitted in support of an application is provided in the "Information for Applications of Certification of Reserve Capacity" document on the IMO Website. Additional clarification of the some of the data required to be supplied by Market Participants in support of their application is provided in Appendix A of this Procedure.

8 Market Participants should receive notification that the application has been received. This will be in the form of a WEMS receipt. Market Participants should maintain a record of this receipt.

9 Market Participants must contact the IMO and must resubmit the application in the event that receipt of acknowledgement has not been received within 1 Business Day of the application having been provided to the IMO.

10 Market Participants must make an application for certification for each subsequent Reserve Capacity Cycle. **[MR 4.9.5]**

11 The application must state that the applicant intends to trade all assigned Certified Reserve Capacity bilaterally. **[MR4.28C.4]**

12 Each application for Early Certified Reserve Capacity must relate to a single future Reserve Capacity Cycle. A Market Participant should not submit more than one application for certification of Reserve Capacity per facility per calender year. **[MR4.28C.3]** This includes both Early Certified Reserve Capacity and Certified Reserve Capacity applied for in accordance with sections 1.9 and 1.9 this Procedure, respectively.

13 The applicant must provide Reserve Capacity Security in accordance with clause 4.28C.9 within 30 Business Days of receiving notification of the amount of Early Certified Reserve Capacity assigned to the Facility **[MR4.28C.8].** More information on how to submit the Reserve Capacity Security can be found in the Market Procedure for Reserve Capacity Security.

1.10. Procedure steps to be followed by the IMO in Processing an Application for Certification of Reserve Capacity

Acknowledgement of application

1 The IMO must notify the applicant within one business day that its application has been received. This will be provided through the WEMS.

Eligibility check

2 The IMO must determine whether the applicant is a Market Participant and has either registered the Facility or intends to register the Facility by the commencement date of the Reserve Capacity Obligations for the relevant Reserve Capacity Year specified in clause 4.1.26. This requirement will be completed automatically on the premise that the Facility is registered or that it is registered for the purposes of Reserve Capacity. **[MR 4.8.1]**

3 The IMO must determine that the Facility is not a Network. **[MR 4.8.1]**

4 If the application fails either of the steps within this eligibility check, the IMO must reject the application and advise the Market Participant.

Date accuracy and sufficiency check

5 The IMO must check all data provided in the application to determine that:

(a) All required information has been provided;

(b) The information provided is of sufficient depth; and

(c) Information has been specifically provided to support the applicant's claims in respect to the capacity of the Facility.

6 The IMO may seek information from Network Operators to confirm the accuracy of data provided to it by the applicant to enable the IMO to determine the Certified Reserve Capacity for a Facility. **[MR 4.11.5]**

7 The IMO must not provide information to any Network Operator that was provided to it as part of an application for Certified Reserve Capacity except with the permission of the applicant.

8 If the information provided by the applicant is insufficient or incomplete, the IMO must notify the applicant and request additional data in accordance with the Market Procedure for Notices and Communications.

9 If the information provided by the applicant is sufficient, including any additional information provided by the applicant, the IMO must process the application.

Reserve Capacity Cycle check

10 The IMO must determine whether the application is for the current Reserve Capacity Cycle or for a future Reserve Capacity Cycle.

11 If the application is for the current Reserve Capacity Cycle the IMO must proceed to process the application as an application for Certified Reserve Capacity in accordance with steps 1.10, 1.11, 1.12, 1.13, 1.14 or 1.15 as applicable.

12 If the application is for a future Reserve Capacity Cycle, the IMO must determine if the application is for Conditional Certified Reserve Capacity or for Early Certified Reserve Capacity. The IMO must then proceed to process the application in accordance with step 1.10., 1.11, 1.12, 1.13, 1.14 or 1.15 as applicable.

Application where Participant has previously been granted Conditional Certified Reserve Capacity

13 If the applicant is re-lodging an application and already has Conditional Certified Reserve Capacity the IMO must determine:

(a) whether the application is consistent with the information upon which the Conditional Certified Reserve Capacity was assigned; and

(b) whether the information is correct.

14 If the re-lodged application is for re-certification and the Market Participant has not submitted details of Network Access offer(s) and Environmental Approvals in accordance with step 1.8.9 of this Procedure, the IMO will deem the application to be inconsistent with the initial application by which the Facility received Conditional Certification of Reserve Capacity. This will be deemed to be made on the basis that the Facility detailed in the initial application for Conditional Certified Reserve Capacity would be a Registered Facility in accordance with clause 4.11.1(f) and there were no potentially limiting factors.

15 If the re-lodged application is consistent with the information upon which the Conditional Certified Reserve Capacity was assigned and the information is correct, the IMO must confirm the Certified Reserve Capacity or Conditional Certified Reserve Capacity, as appropriate, and report to the applicant as per steps 1.10.31 or 1.10.32 below.

16 If the re-lodged application is not consistent with the information upon which the Conditional Certified Reserve Capacity was assigned or the information is not correct, the IMO must not take the Conditional Certified Reserve Capacity into account when processing the application.**[MR4.9.5]**

Timing check

17 The IMO must determine which Reserve Capacity Cycle the applicant is requesting certification for. The IMO must determine if the Facility is scheduled to first commence operations before the time that Reserve Capacity Obligations will apply for that Facility for that Reserve Capacity Cycle. **[MR 4.11.1(c)]**

18 The IMO must determine if the Facility will cease operation permanently such that it can no longer meet its Reserve Capacity Obligations before the time that Reserve Capacity Obligations will no longer apply for that Facility for the Reserve Capacity Cycle. **[MR 4.11.1(c)]**

19 The IMO must set the Reserve Capacity for a Reserve Capacity Cycle at zero for a Facility that is not scheduled to commence operations or that will cease operations as determined in steps 1.10.17 or 1.10.18, respectively. **[MR 4.11.1(c)]**

20 The IMO must determine if the Facility is expected to be a Registered Facility by the time its Reserve Capacity Obligations take effect. The IMO must not assign Certified Reserve Capacity to a Facility that is not expected to be registered by that time. **[MR 4.11.1 (f)]**

Forced outage and planned outage check

21 The IMO must determine if the Facility has operated for at least 36 months and, if so, whether it has had a Forced Outage rate of greater than 15% or a combined Planned Outage rate and Forced Outage rate of greater than 30% over the preceding 36 months. This must be determined in accordance with the Power System Operating Procedure: Facility Outages. **[MR 4.11.1 (h)]**

22 The IMO must determine if the Facility has operated for less than 36 months or is yet to commence operation and, if so, whether the IMO has cause to believe that over a period of 36 months the Facility is likely to have a Forced Outage rate of greater than 15% or a combined Planned Outage rate and Forced Outage rate of greater than 30%. This must be determined in accordance with the Power System Operating Procedure: Facility Outages. **[MR 4.11.1 (g)]**

23 The IMO may consult with System Management to determine the Forced and Planned Outage rates in respect of steps 1.10.21 or 1.10.22.

24 If the criteria in steps 1.10.21 or 1.10.22 of this Procedure apply to the Facility, the IMO may seek information from the applicant in respect to the present and future performance of the Facility including:

(a) the causes of outages;

(b) steps being taken, or that have been taken, to reduce outages; and

(c) the expected level of future outages.

25 The IMO must determine whether or not to grant Certified Reserve Capacity for the Facility if the criteria in steps 1.10.21 or 1.10.22 of this Procedure apply to that Facility. In making this determination the IMO may consider, amongst other factors:

(a) The actions being taken by the Market Participant to reduce the level of outages at the Facility;

(b) The likelihood that these actions will reduce the outages at the Facility; and

(c) Whether or not the outages at the Facility are compromising, or are likely to compromise, the security and reliability of the SWIS.

26 The IMO may consult with System Management in deciding whether or not to refuse to grant Certified Reserve Capacity for a Facility where the criteria in steps 1.10.21 or 1.10.22 of this Procedure may apply to that Facility. **[MR 4.11.1 (h)]**

27 If the IMO determines not to grant Certified Capacity Credits to the Facility it must advise the applicant of this decision in accordance with the timeframes specified in step 1.10.31 and 1.10.32 of this Procedure.

28 If the IMO determines that it may grant Certified Capacity Credits to the Facility, the IMO must proceed to process the application.

Determination of Certified Reserve Capacity

29 The IMO must use the methodology contained in the following sections of this Procedure for setting the Certified Reserve Capacity of a Facility:

(a) For existing non-intermittent and intermittent generation Facility – Section 1.11;

(b) For existing Curtailable Loads and Dispatchable Loads – Section 1.12;

(c) For new non-intermittent generation Facility – Section 1.13;

(d) For new intermittent generation Facility – Section 1.14;

(e) For new Curtailable Loads and Dispatchable Loads– Section 1.15;

Reporting to Applicant

30 The IMO must produce a report on the outcomes of its determinations which is consistent with the requirements of Section 1.16 of this Procedure and clause 4.9.5 and 4.9.9 of the Market Rules.

31 If the application was for Certified Reserve Capacity, the IMO must deliver its report to the applicant by 5 August of Year 1 of that Reserve Capacity Cycle.

32 If the application was for Conditional Certified Reserve Capacity the IMO must deliver its report to the applicant within 90 days of the application having been received.

33 If the application was for Early Certified Reserve Capacity the IMO must provide its decision within 90 days of the application having been received. **[MR4.28C.7]**

1.11. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for an existing non-intermittent or intermittent generation Facility

1 The IMO must complete its certification of an existing non-intermittent or intermittent generating Facility based on the following steps using the information provided by the applicant and based on any other information that the IMO may require to make its determinations.

Assessment of potentially limiting factors

2 The IMO must determine whether the Facility has failed any test conducted in accordance with clause 4.25 and, if so, determine:

(a) Whether the test results were a reasonable indication of the capacity expected to be available for supply from the Facility when it is operating normally;

(b) Whether there are any mitigating circumstances such that the test results are not a reasonable indication of the capacity expected to be available for supply from the Facility when it is operating normally; and

(c) The level of capacity indicated by the tests, taking account of any mitigating circumstances, that is expected to be available from the Facility when it is operating normally**.**

3 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. **[MR4.10.1(g)]**

4 The IMO must determine whether the Facility will be subject to a Network Control Service contract and, if so, whether the capacity that the Facility can usefully contribute is likely to be limited by transmission constraints. **[MR 4.11.1(g)]**

5 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of Reserve Capacity nominated by the Market Participant.

Selection of assessment methodology

6 The IMO must determine whether the applicant has nominated, in accordance with clause 4.10.1(i), for the capacity of its Facility to be assigned in accordance with the methodology described in clause 4.11.2(b).

7 If the applicant has nominated the methodology described in clause 4.11.2(b), then the IMO must determine whether it considers that the capacity of the Facility has permanently declined, or is anticipated to permanently decline prior to or during the Reserve Capacity Cycle to which the Certified Reserve Capacity applies. **[MR4.11.2(a)]**

8 In making the determination in step 1.11.7, the IMO may consider any potentially limiting factors.**[MR4.10.1(g)]**

9 If the IMO considers that the capacity of the Facility has permanently declined, or is anticipated to permanently decline prior to or during the Reserve Capacity cycle to which the Certified Reserve Capacity applies, then the IMO must set the Certified Reserve Capacity in accordance with steps 1.11.12 to 1.11.15 (“Methodology A”), otherwise it must set the Certified Reserve Capacity in accordance with steps 1.11.17 to 1.11.18 (“Methodology B”).

10 If the application for Certified Reserve Capacity relates to an Intermittent Generator, the IMO must use assessment “Methodology B”.

11 If the applicant has not nominated the methodology in Market Rule 4.11.2(b), then the IMO must set the Certified Reserve Capacity in accordance with “Methodology A”.

Methodology A for setting Certified Reserve Capacity

12 The IMO must determine the maximum sent out capacity, net of Intermittent Loads, embedded and Parasitic loads that can be guaranteed to be available for supply to the network from the Facility when it is operated normally at an ambient temperature of 41ºC. **[MR 4.10.1(e))]**

13 The IMO must determine the maximum sent out capacity, net of Intermittent Loads, embedded and Parasitic loads, beyond the capacity described in step 1.11.12 that can be made available for supply to the network from the Facility at an ambient temperature of 41ºC allowing for any restrictions on the availability of that capacity, including limitations on duration. **[MR 4.10.1(e) & 4.10.1(g)]**

14 The IMO may consult with System Management as required.

15 Based on the outcome of steps 1.11.12 to 1.11.13, and the assessment of potentially limiting factors, the IMO must determine its reasonable expectation of the amount of Reserve Capacity likely to be available from the Facility during daily peak demand times from 1 December up to and including 2009 or 1 October from 2010 onwards in Year 3 to 31 July in Year 4 of the Reserve Capacity Cycle, assuming an ambient temperature of 41ºC. **[MR 4.11.1(a)]**

16 For the purposes of step 1.11.15 'daily peak demand times' are taken to have the same meaning as Peak Trading Intervals as defined in the Market Rules.

Methodology B for setting Certified Reserve Capacity

17 The IMO must set the Relevant Level in respect of a Facility at a point in time which is determined by the IMO as follows:

(a) take all the Trading Intervals that fell within the last three years up to, and including, the last Hot Season;

(b) determine the amount of electricity (in MWh) sent out by the Facility in accordance with Metered Data Submissions received by the IMO in accordance with clause 8.4 during these Trading Intervals;

(c) if the Generator has not entered service, or if it entered service during the period referred to in step 1.11.17(a), estimate the amount of electricity (in MWh) that would have been sent out by the Facility, had it been in service, for all Trading Intervals occurring during the period referred to in step 1.11.17(a) which are prior to it entering service; and

(d) set the Relevant Level as double the sum of the quantities determined in step 1.11.17(b) and step 1.11.17(c) divided by 52,560. **[MR4.11.3A]**

18 In the case where three years of data is not available, the Market Participant may have the quantity, determined in accordance with step 1.11.17(b), estimated by an independent expert which has been accredited by the IMO in accordance with step 1.6.2 of this Procedure. The independent expert must use any and all data available to the Market Participant, to evaluate the expected amount of electricity in accordance with step 1.11.17 above. The

intention should be to validate any models and results based on the data available for the period of operation.

19 In respect of step 1.11.17 above, the IMO will use metered data provided in accordance with clause 8.4 where possible. If meter data is not available, the IMO may consult with System Management to obtain appropriate SCADA data records to determine the Relevant Level. The IMO may also set the Relevant Level to take into account embedded, interruptible and parasitic loads.

20 The IMO must set the Certified Reserve Capacity of the Facility equal to the Relevant Level determined in step 1.11.17, while considering the outcome of steps 1.11.18 and 1.11.19 and any potentially limiting factors.

Assignment of Certified Reserve Capacity

21 The IMO must assign Certified Reserve Capacity to the Facility equal to the minimum of the level nominated by the applicant, or the level determined at step 1.11.15 or 1.11.20, as appropriate.

Initial Reserve Capacity Obligation Quantity

22 The IMO must determine whether there are periods of time during which staffing or other factors will limit the Facility's ability to operate at full output.

23 The IMO must set the initial Reserve Capacity Obligation Quantity at a level equal to the Certified Reserve Capacity except for those periods of time determined at step 1.11.22, in which case the IMO may set the initial Reserve Capacity Obligation at a lower level for those periods

24 The IMO must set the initial Reserve Capacity Obligation Quantity to zero for an Intermittent Generator. **[MR 4.12.4.aA]**

1.12. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for an existing Curtailable Load or Dispatchable Load

1 The IMO must complete its certification of an existing Curtailable Load or Dispatchable Load based on the following steps using the information provided by the applicant and based on any other information that the IMO may require to make its determinations.

Availability classes

2 The IMO must assess each capacity block and accept only those where:

(a) The maximum number of hours per year that the block is available to provide Reserve Capacity is not less than 24; and

(b) The maximum number of hours per day that the block is available to provide Reserve Capacity is not less than four.

3 Each accepted capacity block is to be allocated to an Availability Class where:

(a) Blocks that are available for at least 24 hours but less than 48 hours are allocated to Availability Class 4;

(b) Blocks that are available for at least 48 hours but less than 72 hours are allocated to Availability Class 3; and

(c) Blocks that are available for at least 72 hours but less than 96 hours are allocated to Availability Class 2. **[Appendix 3]**

Assessment of potentially limiting factors

4 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. **[MR 4.10.1(g)]**

5 The IMO must determine whether the Facility will be subject to a Network Control Service contract and, if so, whether the capacity that the Facility can usefully contribute is likely to be limited by transmission constraints. **[MR 4.11.1(g)]**

6 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of Reserve Capacity nominated by the Market Participant.

Assignment of Certified Reserve Capacity

7 Where the applicant has specified the Reserve Capacity expected to be available from a capacity block, the IMO is to assign Certified Reserve Capacity for that capacity block equal to the expected Reserve Capacity subject to the assessment of potentially limiting factors.

8 Where the applicant has specified the Stipulated Default Load for any capacity block, the IMO is to determine the expected load reduction based on historic load data and assign Certified Reserve Capacity to that capacity block equal to that expected load reduction subject to the assessment of potentially limiting factors.

9 Where the applicant has indicated that the Reserve Capacity is to be in the form of a Demand Side Programme, the IMO must assign Certified Reserve Capacity in consideration of clause 4.8.3 of the Market Rules. The following must be considered in the assignment of Certified Reserve Capacity:

(a) No Intermittent Load may be included in the Demand Side Programme. **[MR 4.8.3(a)]**

(b) The Loads comprising the Demand Side Programme must be registered as Curtailable Loads if they are to count towards satisfying the relevant Reserve Capacity Obligations of the Demand Side Programme and must not have been separately awarded Capacity Credits. **[MR 4.8.3(b)]**

(c) As the Loads comprising the Demand Side Programme are registered, the IMO must assign Certified Reserve Capacity and Reserve Capacity Obligations to those Facilities and must correspondingly reduce the Certified Reserve Capacity and Reserve Capacity

Obligations associated with the Demand Programme Side during the time those Facilities are registered. **[MR 4.8.3(c)]**

(d) After accounting for the modifications in step 1.12.9(c), if at any time a Market Customer has Reserve Capacity Obligations associated with its Demand Side Programme then, for settlement purposes, the Demand Side Programme must be treated by the IMO as a Facility that has failed to satisfy its Reserve Capacity Obligations. **[MR4.8.3(d)]**

(e) Loads comprising the Demand Side Programme must have the same or higher availability as the Demand Side Programme. **[MR 4.8.3(e)]**

Initial Reserve Capacity Obligation Quantity

10 The assigned Certified Reserve Capacity for each capacity block must be available for the number of hours per year that does not exceed the maximum specified by the applicant for that capacity block.

11 The assigned Certified Reserve Capacity for each capacity block must be available for the number of hours per day that does not exceed the maximum specified by the applicant for that capacity block.

12 The initial Reserve Capacity Obligation Quantity must take account of any staffing and other restrictions that may limit the ability of the Facility to provide energy upon request.

1.13. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for a new non-intermittent generating Facility

1 The IMO must complete its certification for a new non-intermittent generating Facility based on the following steps using the information provided by the applicant and taking into account any other information that the IMO may require to make its determinations.

Assessment of potentially limiting factors

2 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. **[MR 4.10.1(g)]**

3 The IMO must determine whether the Facility will be subject to a Network Control Service contract and, if so, whether the capacity that the Facility can usefully contribute is likely to be limited by transmission constraints. **[MR 4.11.1(g)]**

4 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of Reserve Capacity nominated by the Market Participant.

Methodology for setting Certified Reserve Capacity

5 The IMO must determine the maximum sent out capacity, net of Intermittent Loads embedded and Parasitic loads that can be guaranteed to be available

for supply to the Network from the Facility when it is operated normally at an ambient temperature of 41ºC. **[MR4.10.1(e)]**

6 The IMO must determine the maximum sent out capacity, net of Intermittent Loads, embedded and Parasitic loads, beyond the capacity described in step 1.13.5 that can be made available for supply to the Network from the Facility at an ambient temperature of 41ºC allowing for any restrictions on the availability of that capacity, including limitations on duration. **[MR 4.10.1(e)]**

7 The IMO may use the information provided by the Market Participant or any other information deemed appropriate, which is required to set the level of Certified Reserve Capacity of the Facility.

8 Based on the outcome of steps 1.13.5 to 1.13.7, and the assessment of potentially limiting factors, the IMO must determine its reasonable expectation of the amount of Reserve Capacity likely to be available from the Facility during daily peak demand times from 1 December up to and including 2009 and 1 October from 2010 onwards in Year 3 to 31 July in Year 4 of the Reserve Capacity Cycle, assuming an ambient temperature of 41ºC. **[MR4.11.1(a)]**

9 For the purposes of step 1.13.8 'daily peak demand times' are the Trading Intervals occurring between 8 AM and 10 PM. This is the same meaning as Peak Trading Intervals as defined in the Market Rules.

Assignment of Certified Reserve Capacity

10 If the application is for the current Reserve Capacity Cycle, the IMO must assign Certified Reserve Capacity to the Facility equal to the minimum of the level determined at step 1.13.8 or the level nominated by the applicant.

11 If the application is for Conditional Certified Reserve Capacity, the IMO must assign Conditional Certified Reserve Capacity to the Facility equal to the minimum of the level determined at step 1.13.8 or the level nominated by the applicant.

12 If the application is for Early Certified Reserve Capacity, the IMO must assign Early Certified Reserve Capacity to the Facility equal to the minimum of the level determined at step 1.13.8 or the level nominated by the applicant.

13 If the application is for re-certification and the IMO is satisfied that the application which has been re-lodged is consistent with the information upon which the Conditional Certified Reserve Capacity was assigned and the information is correct then the IMO must confirm the Certified Reserve Capacity, or Conditional Certified Reserve Capacity, depending on the Reserve Capacity Cycle for which the application is being made, that was previously assigned by the IMO.

14 If the application is for re-certification and the Market Participant has not submitted details of Network Access offer(s) and Environmental Approvals in accordance with step 1.8.9 of this Procedure, the IMO will deem the application to be inconsistent with the initial application by which the Facility received Conditional Certification of Reserve Capacity. This will be deemed

to be made on the basis that the Facility detailed in the initial application for Conditional Certified Reserve Capacity would be a Registered Facility in accordance with clause 4.11.1(f) and there were no potentially limiting factors.

15 If the re-lodged application is not consistent with the information upon which the Conditional Certified Reserve Capacity was assigned or the information is not correct, the IMO must not take the Conditional Certified Reserve Capacity into account when processing the application. .**[MR4.9.5]**

Initial Reserve Capacity Obligation Quantity

16 The IMO must determine whether there are periods of time during which staffing or other factors will limit the Facility's ability to operate at full output.

17 IMO must set the initial Reserve Capacity Obligation at a level equal to the Certified Reserve Capacity except for those periods of time determined at step 1.13.16, in which case the IMO may set the initial Reserve Capacity Obligation at a lower level.

18 If the application is for Early Certified Reserve Capacity the IMO must set the Capacity Credits for the Facility equal to the Early Certified Reserve Capacity of the Facility once the Reserve Capacity Security is provided the IMO in accordance with clause 4.28C.8 **[MR4.28C.10].**

1.14. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for a new intermittent generating Facility

1 The IMO must complete its certification for a new intermittent generating Facility based on the following steps using the information provided by the applicant and based on any other information that the IMO may require to make its determinations.

2 If the applicant has submitted a report, in accordance with clause 4.10.3 of the Market Rules, prepared by an expert accredited by the IMO, the IMO must set Certified Reserve Capacity for the Facility based upon the estimate provided by the expert. **[MR 4.11.1(e)]**

3 If the applicant has not submitted a report in accordance with clause 4.10.3 of the Market Rules, the IMO will set the Certified Reserve Capacity to zero.

Assessment of potentially limiting factors

4 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. **[MR 4.10.1(g)]**

5 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of Reserve Capacity nominated by the Market Participant.

Assignment of Certified Reserve Capacity

6 If the application is for the current Reserve Capacity Cycle, for an Intermittent Generator that has not commenced operation, the IMO must assign Certified Reserve Capacity as the amount determined in step 1.14.2, subject to steps 1.14.4 and 1.14.5 (where applicable).

7 If the application is for Conditional Certified Reserve Capacity, the IMO must assign Conditional Certified Reserve Capacity as the amount determined in step 1.14.2, subject to steps 1.14.4 and 1.14.5 (where applicable).

8 If the application is for Early Certified Reserve Capacity, the IMO must assign Early Certified Reserve Capacity as the amount determined in Step 1.14.2, subject to steps 1.14.4 and 1.14.5 (where applicable).

9 If the application is for re-certification of Conditional Certified Reserve Capacity and the IMO is satisfied that the application which has been re-lodged is consistent with the information upon which the Conditional Certified Reserve Capacity was assigned and the information is correct then the IMO must confirm the Certified Reserve Capacity, or Conditional Certified Reserve Capacity, depending on the Reserve Capacity Cycle for which the application is being made, that was previously assigned by the IMO.

10 If the application is for re-certification and the Market Participant has not submitted details of Network Access offer(s) and Environmental Approvals in accordance with step 1.8.9 of this Procedure, the IMO will deem the application to be inconsistent with the initial application by which the Facility received Conditional Certification of Reserve Capacity. This will be deemed to be made on the basis that the Facility detailed in the initial application for Conditional Certified Reserve Capacity would be a Registered Facility in accordance with clause 4.11.1(f) and there were no potentially limiting factors.

11 If the re-lodged application is not consistent with the information upon which the Conditional Certified Reserve Capacity was assigned or the information is not correct, the IMO must not take the Conditional Certified Reserve Capacity into account when processing the application.

Initial Reserve Capacity Obligation Quantity

12 The initial Reserve Capacity Obligation Quantity for a new Intermittent Generator is zero.

13 If the application is for Early Certified Reserve Capacity the IMO must set the Capacity Credits for the Facility equal to the Early Certified Reserve Capacity of the Facility once the Reserve Capacity Security is provided the IMO in accordance with clause 4.28C.8 **[MR4.28C.10].**

1.15. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for a new Curtailable Load or Dispatchable Load

1 The IMO must complete its certification of a new Curtailable Load or Dispatchable Load based on the following steps using the information

provided by the applicant and based on any other information that the IMO may require to make its determinations.

Availability classes

2 The IMO must assess each capacity block and accept only those where:

(a) The maximum number of hours per year that the block is available to provide Reserve Capacity is not less than 24; and

(b) The maximum number of hours per day that the block is available to provide Reserve Capacity is not less than four.

3 Each accepted capacity block is to be allocated to an Availability Class where:

(a) Blocks that are available for at least 24 hours but less than 48 hours are allocated to Availability Class 4;

(b) Blocks that are available for at least 48 hours but less than 72 hours are allocated to Availability Class 3; and

(c) Blocks that are available for at least 72 hours but less than 96 hours are allocated to Availability Class 2.

Assessment of potentially limiting factors

4 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. **[MR 4.10.1(g)]**

5 The IMO must determine whether the Facility will be subject to a Network Control Service contract and, if so, whether the capacity that the Facility can usefully contribute is likely to be limited by transmission constraints. **[MR 4.11.1(g)]**

6 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of Reserve Capacity nominated by the Market Participant.

Assignment of Certified Reserve Capacity

7 Where the applicant has specified the Reserve Capacity expected to be available from a capacity block in accordance with clause 4.10.1(f)(i)(1) of the Market Rules, the IMO is to assign Certified Reserve Capacity for that capacity block equal to the expected Reserve Capacity Reduction from the Relevant Demand level determined in accordance with clause 4.26.2C of the Market Rules and subject to the assessment of potentially limiting factors.

8 Where the applicant has specified the Stipulated Default Load for any capacity block, the IMO is to determine the expected load reduction based on expected load data and assign Certified Reserve Capacity to that capacity block equal to that expected load reduction subject to the assessment of potentially limiting factors.

9 Where the applicant has indicated that the Reserve Capacity is to be in the form of a Demand Side Programme, the IMO must assign Certified Reserve Capacity in consideration of clause 4.8.3. The following must be considered in the assignment of Certified Reserve Capacity:

(a) No Intermittent Load may be included in the Demand Side Programme. **[MR 4.8.3(a)]**

(b) The Loads comprising the Demand Side Programme must be registered as Curtailable Loads if they are to count towards satisfying the relevant Reserve Capacity Obligations of the Demand Side Programme and must not have been separately awarded Capacity Credits. **[MR 4.8.3(b)]**

(c) As the Loads comprising the Demand Side Programme are registered, the IMO must assign Certified Reserve Capacity and Reserve Capacity Obligations to those Facilities and must correspondingly reduce the Certified Reserve Capacity and Reserve Capacity Obligations associated with the Demand Programme Side during the time those Facilities are registered. **[MR 4.8.3(c)]**

(d) After accounting for the modifications in (c), if at any time a Market Customer has Reserve Capacity Obligations associated with its Demand Side Programme then, for settlement purposes, the Demand Side Programme must be treated by the IMO as a Facility that has failed to satisfy its Reserve Capacity Obligations. **[MR 4.8.3(d)]**

(e) Loads comprising the Demand Side Programme must have the same or higher availability as the Demand Side Programme. **[MR 4.8.3(e)]**

Initial Reserve Capacity Obligation Quantity

10 The assigned Certified Reserve Capacity for each capacity block must be available for the number of hours per year that does not exceed the maximum specified by the applicant for that capacity block.

11 The assigned Certified Reserve Capacity for each capacity block must be available for the number of hours per day that does not exceed the maximum specified by the applicant for that capacity block.

12 The initial Reserve Capacity Obligation must take account of any staffing and other restrictions that may limit the ability of the Facility to vary its demand upon request.

13 If the capacity of a Curtailable Load is specified in accordance with clause 4.10.1(f)(i)(1), the Certified Reserve Capacity assigned by the IMO to that Curtailable Load, including during the registration of that Curtailable Load in accordance with clause 4.8.3(c), must not exceed the Relevant Demand for the Curtailable Load set by the IMO in accordance with clause 4.26.2C of the Market Rules.

1.16. Procedure steps to be followed by the IMO in advising an applicant of its Certified Reserve Capacity

The IMO is to provide the following information to the applicant on the results of applications for Certified Reserve Capacity. **[MR 4.9.5 & 4.9.9]**

1 **Identity of Market Participant and Facility** – The identity of Market Participant making the application and the identification of the Facility for which the results apply.

2 **Application of Results for Facility** – The Reserve Capacity Cycle to which the result applies. **[MR 4.9.5]**

3 **Conditional Certified Reserve Capacity** – In the case of Certified Reserve Capacity relating to a future Reserve Capacity Cycle, the conditions of continued certification, including the requirements for reapplying for certification. **[MR 4.9.5]**

4 **Certified Reserve Capacity** – The amount of Certified Reserve Capacity to apply to the Facility. **[MR 4.9.9]**

5 **Initial Reserve Capacity Obligations** – The Initial Reserve Capacity Obligations associated with the Certified Reserve Capacity. **[MR 4.9.9]**

6 **Reserve Capacity Security Deposit Requirements** – Any Reserve Capacity Security Deposit required as a condition of the Facility holding the Certified Reserve Capacity. **[MR 4.9.9]**

7 **Calculation Basis for Certification** – The calculations upon which the IMO's determination is based.

APPENDIX A

This appendix specifies in more detail some of the information required by the Market Rules which Market Participants need to provide as part of their annual application for Certified Reserve Capacity.

Financing [MR 4.10.1 (c) iii 2.]

To facilitate verification of the key financing dates provided in the submission, the applicant must provide details of their financing status at the time of application, including any financing applications made and the current status of these applications.

Temperature Dependence [MR 4.10.1 (e) i.]

The applicant must provide temperature dependence curves in 0.1 degree intervals, for the capacity level applied for, verified from either the manufacturer or an independent engineering firm.

If the application relates to an upgrade of a facility for which temperature dependence curves have previously been provided, the applicant must provide new heat rate curves reflecting the upgrade.

Environmental Approval [MR 4.10.1 (c) ii.]

The applicant must provide detail of all environmental approvals it has applied for and the status of each of the specific areas. Acceptable supporting evidence includes (but is not limited to):

- details and status of submissions made to the relevant Government instrumentalities i.e. the Environmental Protection Authority and/or Department of the Environment and Heritage.; or
- details relating to the above submissions provided by the Market Participant's appointed environmental contractor.

Generator Capacity [MR 4.10.1 (e) ii & 4.10.1 (e) iii]

As part of providing information of maximum sent out capacity in clauses, the IMO requests that applicants provide the relevant power factor for the facility. If no power factor is provided, the IMO will use a power factor of 0.8 when determining the capacity of the Facility.

ELECTRICITY INDUSTRY ACT 2004

ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY MARKET) REGULATIONS 2004

WHOLESALE ELECTRICITY MARKET RULES

Market Procedure for: Certification of Reserve Capacity

Version ~~2~~3

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

21 September 2006	Market Procedure for Facility Registration as at Market Start
27 June 2008	IMO amended changes to the procedure resulting from Procedure Change Proposal PC_2008_04
XX YYYYY 2010~~09~~	IMO amended changes to the procedure resulting from Procedure Change Proposal PC_2009_04~~2~~

1. Procedure for Certification of Reserve Capacity

The Reserve Capacity Mechanism is a yearly process, with certification of Reserve Capacity taking place in Year 1 of the Reserve Capacity Cycle. Subject to a number of provisions under the Wholesale Electricity Market Rules (Market Rules), the Facility must provide the capacity between 1 October of Year 3 and 1 October of Year 4 of that Reserve Capacity Cycle.

~~The Procedure for Certification of Reserve Capacity lays out the steps to be taken by Rule Participants and the IMO in order to certify the Reserve Capacity of Facilities. Under the Wholesale Electricity Market Rules (Market Rules), Reserve Capacity is required to be certified by the IMO as a prerequisite for that Reserve Capacity to be either traded bilaterally or to be offered in the Reserve Capacity Auction to the IMO. In the absence of certification, no Reserve Capacity Credits would be assigned to the Facility.~~

~~This procedure may be subject to revision before, during, and after the certification process. Rule Participants must refer to the latest published procedure~~Procedure~~, the Market Rules, and contact the IMO for further information regarding the process.~~ Each year, Market Participants owning or controlling generating Facilities and Demand Side Management capacity must apply for Certified Reserve Capacity in respect of those Facilities if they wish to apply for Capacity Credits. The application for Certification of Reserve Capacity is the first step in the process. Once an application for Certified Reserve Capacity has been made to the IMO, the Independent Market Operator (IMO) must then assess the application and set a level of Certified Reserve Capacity in respect of that Facility.

Obtaining Certified Reserve Capacity is only one of the steps required to secure Capacity Credits, therefore it does not constitute a commitment on behalf of the IMO to assign Capacity Credits to the Facility. A Facility that receives certification, by the way of obtaining Certified Reserve Capacity, is under no obligation to progress their project or Facility through to the stage where it is assigned Capacity Credits. Under the Market Rules, Reserve Capacity is required to be certified by the IMO as a prerequisite for that Reserve Capacity to be either traded bilaterally or to be offered in the Reserve Capacity Auction. In the absence of certification, no Capacity Credits would be assigned to the Facility.

A Market Participant may also seek to have their Facility conditionally certified for future Reserve Capacity Cycles. If a Market Participant obtains Conditional Certified Reserve Capacity, they may, subject to the provisions of the Market Rules, apply for the Conditional Certified Reserve Capacity to be converted to Certified Reserve Capacity in Year 1 of the Reserve Capacity Cycle. Likewise a facility deemed to be committed by the IMO may apply to the IMO for Early Certified Reserve Capacity (ECRC) at any time between the date the facility is deemed committed and January 1 of Year 1 of the Capacity Cycle.

The Market Procedure for Certification of Reserve Capacity (Procedure) lays out the steps to be taken by Rule Participants and the Independent Market Operator (IMO) in order to certify the Reserve Capacity of Facilities.

As this Procedure may be subject to revision at any time either before, during, and after the certification process, Market Participants must refer to the latest published

Market Procedure, the Market Rules, and contact the IMO for further information regarding the process.

1.1. ~~This procedure is made in accordance with market Rule 4.9.10.~~ Relationship with the Market Rules

(a) This Procedure has been developed in accordance with, and should be read in conjunction with, chapter 4 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 1 April 2010. These references are included for convenience only and are not part of this procedure.

(c) This Procedure is made in accordance with clause 4.9.10 of the Market Rules.

~~1.1.~~1.2. Interpretation

1 In this P~~p~~rocedure, unless the contrary intention is expressed:

(a) terms used in this P~~p~~rocedure 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 P~~p~~rocedure 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.

~~1.2.~~1.3. Purpose

1 The purpose of this P~~p~~rocedure is:

~~(a)~~ To describe the steps that a ~~Rule~~ Market Participant is required to complete to make an application for Certification of Reserve Capacity **[MR 4.9.10]**;

(a)

(b) Specify the format of the data required to be submitted by a Market Participant applying for certification of Reserve Capacity **[MR 4.9.3 (a)];** ~~and~~

(c) To describe the steps that the IMO must follow in ~~assessing~~ processing an application for Certification of Reserve Capacity, including:

(i) How Certified Reserve Capacity is assigned; and

(ii) How Reserve Capacity Obligation Quantities are set **[MR 4.9.10]**; and

(d) To describe the process for applying for and approving Early Certified Reserve Capacity **[MR 4.28C.15]**.~~.~~

~~1.3.~~1.4. Application

1 This P~~p~~rocedure applies to:

(a) A ~~Rule~~ Market Participant wishing to submit an a~~A~~pplication for ~~Certification~~ Certified ~~of~~ Reserve Capacity for:

(i) Non-intermittent generating Facilities;

(ii) Intermittent generating Facilities; and/or

(iii) Curtailable Load or Dispatchable Load~~;~~.

(b) A Market Participant wishing to submit an application for Early Certified Reserve Capacity; and

~~(b)~~The IMO in processing applications for Certification of Reserve Capacity and Early Certified Reserve Capacity. ~~.~~

(c)

1.5. Associated Market Procedures

1 The following Market Procedures are associated with this Procedure:

(a) ~~The Market Procedure for the~~ Declaration of Bilateral Trades and the Reserve Capacity Auction;

(b) ~~The Market Procedure for~~ Capacity Credit Allocation;

(c) ~~The Market Procedure for~~ Reserve Capacity Security;

(d) ~~The Market Procedure for~~ Reserve Capacity Performance Monitoring;

(e) ~~The Market Procedure for~~ Facility Registration, De-Registration and Facility Transfer;

(f) ~~The Market Procedure for~~ Registration and De-Registration of Rule Participants; and

(g) Notices and Communications.

2. The following ~~The~~ Power System Operation Procedures are associated with this Procedure:

~~9~~(a) Facility Outages.

~~1.5.Overview of Reserve Capacity Certification~~

~~Each year, participants owning or controlling generating Facilities and Demand Side Management capacity must apply for Certified Reserve Capacity in respect of those Facilities if they wish to apply for Capacity Credits. The application for Certification of Reserve Capacity is the first step in the process. Once an application for Certified Reserve Capacity has been made to the IMO, the IMO must then assess the application and set a level of Certified Reserve Capacity in respect of that Facility.~~

~~Obtaining Certified Reserve Capacity is only one of the steps required to secure Capacity Credits, therefore it does not constitute a commitment on behalf of the IMO to assign Capacity Credits to the Facility. Similarly, a Facility that receives certification, by the way of obtaining Certified Reserve Capacity, is under no obligation to progress their project or Facility through to the stage where it is assigned Capacity Credits.~~

~~The Reserve Capacity Mechanism is a yearly process, with certification of Reserve Capacity taking place in Year 1 of the Reserve Capacity Cycle. Subject to a number of provisions under the Market Rules, the Facility must provide the capacity between 1 October of Year 3 and 1 October of Year 4 of that Reserve Capacity Cycle.~~

~~A Rule Participant may also seek to have their Facility conditionally certified for future Reserve Capacity Cycles. If a Rule Participant obtains Conditional Certified Reserve Capacity, they may, subject to the provisions of the Market Rules, apply for the Conditional Certified Reserve Capacity to be converted to Certified Reserve Capacity in Year 1 of the Reserve Capacity Cycle.~~

~~1.5.~~1.6. Procedure steps to be followed by IMO in preparing for Certification of Reserve Capacity

1 By 1 May of Year 1 of the relevant Reserve Capacity Cycle, the IMO must advise all ~~Rule~~ Market Participants that the ~~Certification~~ certification process

has commenced **[MR 4.1.7]**. ~~Rule~~Market Participants will be notified through the Wholesale Electricity Market System (WEMS).

2 The IMO must accredit independent experts to prepare reports on the estimated Reserve Capacity of Intermittent Generators that are yet to commence operation. The IMO ~~and~~ must ensure that at least two accredited independent experts are available to ~~Rule~~ Market Participants at any time. ~~**(Market Rule [MR4.11.6])**~~

3 The IMO must ensure that each accredited independent expert is competent to estimate Reserve Capacity of Intermittent Generators. The IMO ~~and~~ may remove accreditation at any time subject to the completion of any work in progress by the expert in estimating Reserve Capacity of Intermittent Generators. ~~**(Market Rule [MR 4.11.6])**~~

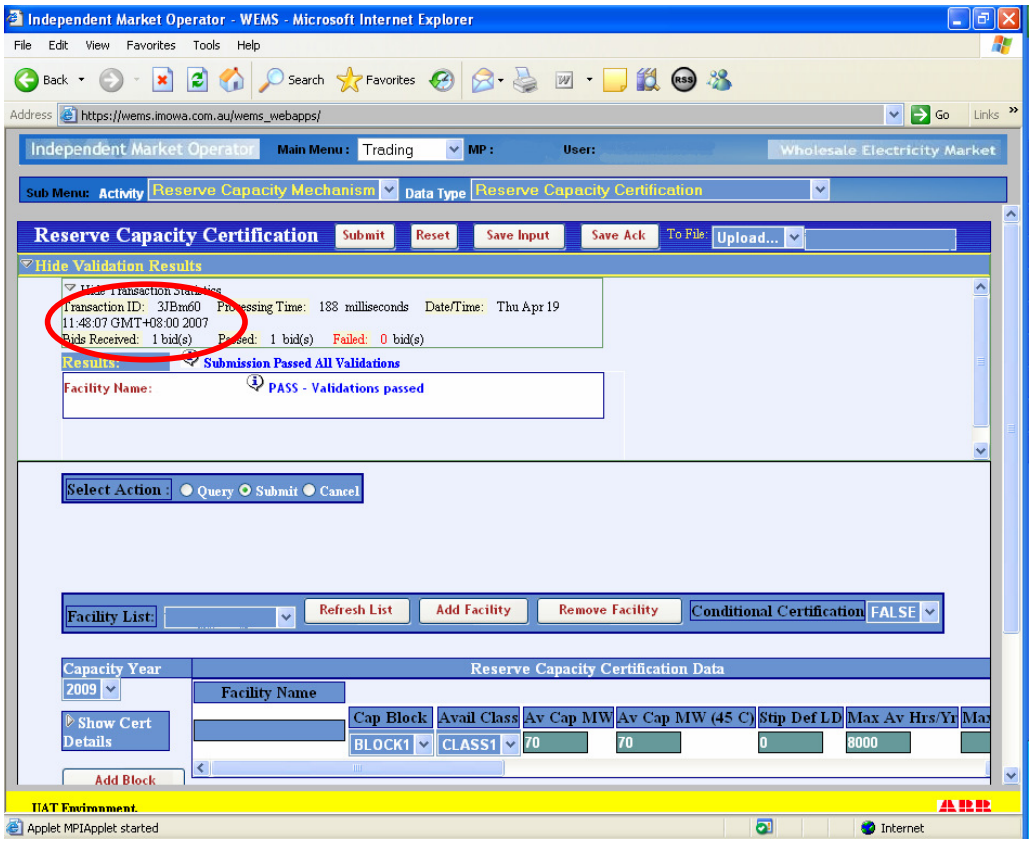
4 The IMO must publish on ~~its website~~the Market Web Site the contact details of independent experts who are accredited by the IMO for estimating Reserve Capacity of Intermittent Generators. ~~**(Market Rule [MR 4.11.6])**~~

5 The IMO must accept applications for Certification of Reserve Capacity from ~~Rule~~ Market Participants beginning from 9 AM on the first Business Day following 1 May of Year 1 until 5 PM on the last business day falling on or before 20 July of Year 1 of the Reserve Capacity Cycle. ~~**(Market Rule [MR 4.9.1])**~~

6 The IMO will only accept applications for Certified Reserve Capacity that have been appropriately entered through the WEMS.

7 The IMO must accept applications from ~~Rule~~ Market Participants for future Reserve Capacity Cycles at any time until the closing date specified for that Reserve Capacity Cycle. ~~**(Market Rule [MR 4.9.1])**~~

8 The IMO must notify an applicant for certification of Reserve Capacity of receipt of the application within one Business Day of receipt. ~~**(Market Rule [MR 4.9.6])**~~ Notification will be provided through the WEMS as a Transaction ID.



9 The IMO must process all applications for Certification of Reserve Capacity for the current Reserve Capacity Cycle by 5 PM of the last Business Day on or before 5 August of Year 1 of that Reserve Capacity Cycle. ~~**(Market Rule [MR 4.1.12])**~~

10 The IMO must process all applications for certification of Reserve Capacity for future Reserve Capacity Cycles (~~ie~~i.e. applications for Conditional Certified Reserve Capacity or Early Certified Reserve Capacity) within 90 days of the IMO receiving the application. **[MR4.9.8]**

11 The IMO must notify each applicant of the results of the certification process pertaining to that applicant and include in its notification the information contained in ~~section~~ step 1.16~~1.14~~. The IMO must notify all applicants by the time and date specified in ~~Step~~ steps 1.6.9~~1.5.9~~ and 1.6.10, as appropriate. ~~**(Market Rules 4.9.8)**~~ This notification will be provided through the WEMS.

12 ~~The Certification of~~ Reserve Capacity will only ~~take effect~~ be certified once the IMO has issued the notice of r~~R~~esults of a~~A~~pplication for Certification of Reserve Capacity listed in s~~S~~tep 1.6.11~~1.5.11~~.

~~1.6.~~1.7. Application for Certification of Reserve Capacity

1 The information to be included in an a~~A~~pplication for Certifi~~cation of~~ed Reserve Capacity is listed in the document "Information for Applications for Certification of Reserve Capacity" on the IMO Website. The information provided must be consistent with the Reserve Capacity Cycle for which the

application is being made. The information must be provided for each Facility. ~~(**Market Rules** **[MR4.9 & 4.10]**)~~

2 All primary information provided in respect of an application for Certified Reserve Capacity must be provided through the WEMS. ~~–~~Supporting evidence must be submitted to the IMO in both electronic format (through the WEMS) and in hard copy format (via email or courier). ~~. Electronic information must be emailed to imo@imowa.com.au.~~

3 The information provided through the WEMS should be entered in accordance with the WEMS User Guides and online help.

~~1.7.~~1.8. Procedure steps to be followed by an applicant applying for Certification of Reserve Capacity

~~It must be noted that d~~During each Reserve Capacity Cycle, applications may be submitted for Certified Reserve Capacity that will apply to future Reserve Capacity Cycles. In this case ~~in which case any~~ certification granted will be either Conditional Certified Reserve Capacity or Early Certified Reserve Capacity. For example,

i. a proposed Facility can be conditionally certified, but then must be recertified during the Reserve Capacity Cycle corresponding to the period that the Facility is expected to commence operation; ~~.~~ o~~O~~r

ii. if the Facility is deemed c~~C~~ommitted~~"~~ prior to 1 January of Y~~y~~ear 1 of the Reserve Capacity Cycle for which it intends to provide Capacity and is a generating system, the Facility may then apply for Early Certified Reserve Capacity in accordance with s~~ection~~tep 1.~~8~~ 9 of this Procedure.

1 Before submitting an application for Certification of Reserve Capacity, ~~Rule~~ Market Participants should ~~familiarize~~ familiarise themselves with the relevant Market Rules and the related Reserve Capacity Market P~~p~~rocedures specified in step 1.5 of this Procedure. ~~.~~

2 Before s~~S~~ubmitting an application for Certification of Reserve Capacity, the applicant must ensure they are registered as a ~~Rule~~ Market Participant. The applicant should follow the ~~Participant Registration~~Market Procedure for Registration and De-Registration of Rule Participants which can be found on the IMO Website: http://www.imowa.com.au/market-procedures~~which can be found on the IMO Website.~~

3 All Facilities must be registered in the WEMS for the purposes of certified capacity prior to submitting an application for Certification of Reserve Capacity. In respect of new Facilities, the ~~Rule~~ Market Participant must register the Facility for the purposes of Certified Reserve Capacity. ~~Rule~~Market Participants should consult the ~~Facility Registration~~Market Procedure for Facility Registration, De-Registration and Facility Transfer and associated Market Rules for this purpose.

4 ~~Rule~~ Market Participants submitting an application for Certified Reserve Capacity ~~in accordance with Step 1.7.3~~ must allow sufficient time, as required under the Market Procedure Facility Registration, De-Registration and Facility Transfer~~Facility Registration Procedure~~, for the registration of the Facility to be completed. ~~Rule~~Market Participants may submit an

application for Facility ~~R~~registration for the purposes of Reserve Capacity prior to 1 May of Year 1 of the Reserve Capacity Cycle to which the application relates.

5 ~~Rule~~ Market Participants applying for Certification of Reserve Capacity must make an application to the IMO during the application open period, which is between 9 AM on the first Business Day following 1 May of Year 1 and 5 PM on the last business day falling on or before 20 July of Year 1 of the Reserve Capacity Cycle. ~~**(Market Rule [MR 4.9.1])**~~

~~6~~

6 ~~Rule~~Market Participants must follow this ~~P~~procedure ~~to apply~~in applying for Certified Reserve Capacity**.** ~~**(Market Rule [MR 4.9.10])**~~

7 All primary information provided by a ~~Rule~~ Market Participant in respect of an application for Certified Reserve Capacity must be provided through the WEMS. Supporting documentation is uploaded through the WEMS file exchange in any of the following formats:

- compressed ZIP files (where the files in the archive must be in any of the formats listed below);
- MS Office 2003 (xls, doc or ppt); and
- Adobe PDF.

Note that the WEMS file exchange ~~can not~~cannot ~~support~~receive documents which are larger than 4MB, however, there is no limit to the number of documents that can be exchanged.

~~8~~The ~~Rule Participant~~ application must include the ~~information~~ data and information ~~listed~~ specified in clause 4.9.3 of the Market Rules. ~~This information~~Further details of the data and information required to be submitted in support of an application is provided in the "Information for Applications of Certification of Reserve Capacity" document on the IMO Website. ~~**(Market Rule 4.9.3])**~~

8 ~~Appendix A of this procedure outlines the specific~~Additional clarification of the some of the data require~~ments~~d to be supplied by ~~Rule~~Market Participants ~~must provide~~ in support of their application is provided in Appendix A of this Procedure. ~~.~~

~~10~~9 In the case that a ~~Rule~~ Market Participant is resubmitting ~~an Application for Certification~~a certification application in respect of a Facility that has received Conditional Certified Reserve Capacity, ~~they~~ it must also submit details of any Network Access offer(s) and Environmental Approvals in accordance with ~~Market Rule~~clause 4.10.1(c)i and 4.10.1(c)ii. This will assist the IMO to make a determination as to whether the Facility will be a Registered Facility during the Reserve Capacity Year and if there are any potentially limiting factors associated with the application.

~~11~~10 ~~The Rule~~ Market Participants should receive notification that the application has been received. This will be in the form of a WEMS receipt. ~~The Rule~~ Market Participants should maintain a record of this receipt.

~~12~~11 ~~The Rule~~ Market Participants must contact the IMO and must resubmit ~~an~~ the application in the event that ~~an application~~receipt of acknowledgement has not been received within 1 Business Day of the application having ~~has been made to the~~been provided to the IMO. ~~but the receipt of the application has not been acknowledged by the IMO within one Business Day of the submission.~~ The resubmission of an application must be made during the application open period, ~~for making applications,~~ which is from 9 AM on the first Business Day following 1 May of Year 1 until 5 PM on the last business day falling on or before 20 July of Year 1 of the Reserve Capacity Cycle.

12 ~~The Rule~~ Market Participants must make an application for certification for each subsequent Reserve Capacity Cycle. ~~**(Market Rule [MR 4.9.5])**~~

13 ~~The Rule~~ Market Participants must respond to any requests for clarification or further information received from the IMO to assist in ~~additional requirements or questions of the Reserve Capacity Procedure and/or the IMO during the~~ processing ~~of its~~the Market Participants application.

1.9. Procedure steps to be followed by an applicant applying for Early Certified Reserve Capacity

1 Before submitting an application for Early Certification of Reserve Capacity, ~~Rule~~Market Participants should familiarise themselves with the relevant Market Rules and the related Reserve Capacity Market P~~p~~rocedures specified in step 1.5 of this Procedure.

2 Before submitting an application for Early Certified of Reserve Capacity, the applicant must ensure they are registered as a ~~Rule~~Market Participant. ~~-~~The applicant should follow the Market Procedure for Registration and De-Registration of Rule Participants ~~Participant Registration Procedure~~ which can be found on the IMO Website: http://www.imowa.com.au/market-procedures~~.~~

3 All Facilities must be registered in the WEMS for the purposes of certified capacity prior to submitting an application for Early Certification of Reserve Capacity.

4 All Facilities must be deemed to be of c~~C~~ommitted~~"~~ status by the IMO prior to submitting an application for Early Certification of Reserve Capacity. Details on this process can be found in Appendix 1 of the Market Procedure for~~:~~ Declaration of Bilateral Trades and the Reserve Capacity Auction.

5 ~~Rule~~ Market Participants applying for Early Certified Reserve Capacity may make an application to the IMO at anytime between the dates the Facility is deemed committed by the IMO ~~as outlined in Appendix 1 of the Market Procedure for: Declaration of Bilateral Trades and the Reserve Capacity Auction available on the IMO website).~~ and 1 January of Y~~y~~ear 1 of the ~~reserve~~ C~~c~~apacity C~~c~~ycle to which the application relates. **[MR 4.28C.2]**

6 All information provided by a ~~Rule~~Market Participant in respect of an application for Certified Reserve Capacity must be provided through the WEMS. Supporting documentation is uploaded through the WEMS file exchange in any of the following formats:

- compressed ZIP files (where the files in the archive must be in any of the formats listed below)
- MS Office 2003 (xls, doc or ppt)
- Adobe PDF

Note that the WEMS file exchange can not support documents which are larger than 4MB.

7 The ~~Rule Participant~~ application must include the ~~information~~data and information listed in clause 4.9.3 of the Market Rules. Further details of the data and information required to be submitted in support of an application is provided in the "Information for Applications of Certification of Reserve Capacity" document on the IMO Website. Additional clarification of the some of the data required to be supplied by Market Participants in support of their application is provided in Appendix A of this Procedure. ~~This information is provided in the "Information for Applications of Certification of Reserve Capacity" document on the IMO Website. **(Market Rule 4.9.3**)~~

~~Appendix A of this procedure outlines specific data requirements Rule Participants must provide in support of their application.~~

8 ~~The Rule~~Market Participants should receive notification that the application has been received. This will be in the form of a WEMS receipt. ~~The Rule~~ Market Participants should maintain a record of this receipt.

9 ~~The Rule~~Market Participants must contact the IMO and must resubmit the application in the event that receipt of acknowledgement has not been received within 1 Business Day of the application having been provided to the IMO ~~Participant must contact the IMO and must resubmit an application in the event that an application has been made to the IMO but the receipt of the application has not been acknowledged by the IMO within one Business Day of the submission~~.

10 ~~The Rule~~Market Participants must make an application for certification for each subsequent Reserve Capacity Cycle. ~~**(Market Rule**~~**[MR 4.9.5]**~~)~~

11 The application must state that the applicant intends to trade all assigned Certified Reserve ~~cApacity~~Capacity ~~bilateral;ly~~bilaterally. **[MR4.28C.4]**

~~13~~Each application for Early Certified Reserve Capacity must relate to a single future Reserve Capacity Cycle. A Market P~~p~~articipant should not submit more than one application for c~~e~~ertification of R~~r~~eserve C~~e~~apacity per facility per c~~C~~alender year. **[MR4.28C.3]** This includes both Early Certified Reserve Capacity and Certified R~~r~~eserve Capacity applied for in accordance with sections 1.9~~1.8~~ and 1.~~1.7~~9 ~~respectively of~~ this Procedure, respectively.

12

The ~~Market Participant~~applicant must provide Reserve Capacity Security in accordance with ~~Market Rule~~clause 4.28C.9 within 30 Business Days of receiving notification of the amount of Early Certified Reserve Capacity assigned to the Facility~~.~~ **[MR4.28C.8].** ~~more~~More information on how to

submit the Reserve Capacity Security can be found in the Market Procedure for :for: Reserve Capacity SecurityReserve Capacity Security.:

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1.8.1.10. Procedure steps to be followed by the IMO in Processing an Application for Certification of Reserve Capacity

Acknowledgement of application

1 The IMO must notify the applicant within one business day that its application has been received. This will be provided through the WEMS.

Eligibility check

2 The IMO must determine whether the applicant is a Rule Market Participant and has either registered the Facility or intends to register the Facility by the commencement date of the Reserve Capacity Obligations for the relevant Reserve Capacity Year specified in clause 4.1.26. This requirement will be completed automatically on the premise that the Facility is Registered registered or that it is Registered registered for the purposes of Reserve Capacity. (**Market Rule [MR 4.8.1]**)

3 The IMO must determine that the Facility is not a Network. (**Market Rule [MR 4.8.1]**)

4 If the application fails either of the steps within this Eligibility eligibility check, the IMO must reject the application and advise the Rule Market Participant.

Date accuracy and sufficiency check

5 The IMO must check all data provided in the application to determine that:

(a) All required information has been provided;

(b) The information provided is of sufficient depth; and

(c) Information has been specifically provided to support the Applicant's applicant's claims in respect to the capacity of the Facility.

6 The IMO may seek information from Network Operators to confirm the accuracy of data provided to it by the applicant to enable the IMO to determine the Certified Reserve Capacity for a Facility. (**Market Rule [MR 4.11.52]**)

7 The IMO must not provide information to any Network Operator that was provided to it as part of an application for Certified Reserve Capacity except with the permission of the applicant. (**Market Rule 4.11.2**)

8 If the information provided by the applicant is insufficient or incomplete, the IMO must ~~contact~~ notify the applicant and request additional data~~.~~ in accordance with the Market Procedure for Notices and Communications.

9 If the information provided by the applicant is sufficient, including any additional information provided by the applicant, the IMO must process the application.

Reserve Capacity Cycle check

10 The IMO must determine whether the application is for the current Reserve Capacity Cycle or for a future Reserve Capacity Cycle.

11 If the application is for the current Reserve Capacity Cycle the IMO must proceed to process the application as an application for ~~Certified Reserve Capacity~~Certified Reserve Capacity i~~.~~n accordance with steps 1.10, 1.11, 1.12, 1.13, 1.14 or 1.15 as applicable.

12 If the application is for a future Reserve Capacity Cycle, the IMO must ~~determi~~determine if the application is for Conditional Certified Reserve Capacity or for Early Certified Reserve C~~e~~apacity. The IMO must then proceed to process the application ~~as an application for Conditional Certified Reserve Capacity~~accordingly~~.~~ in accordance with step 1.10., 1.11, 1.12, 1.13, 1.14 or 1.15 as applicable.

Application where Participant has previously been granted Conditional Certified Reserve Capacity

13 If the applicant is re-lodging an application and already has Conditional Certified Reserve Capacity the IMO must determine:

(a) whether the application is consistent with the information upon which the Conditional Certified Reserve Capacity was assigned; and

(b) ~~and~~ whether the information is correct.

14 If the re-lodged application is for re-certification and the ~~Rule~~ Market Participant has not submitted details of Network Access offer(s) and Environmental Approvals in accordance with s~~S~~tep ~~1.7.10~~1.8.9 of this P~~p~~rocedure, the IMO will deem the application to be inconsistent with the initial application by which the Facility received Conditional Certification of Reserve Capacity. This will be deemed to be made on the basis that the Facility detailed in the initial application for Conditional Certified Reserve Capacity would be a Registered Facility in accordance with ~~Market Rule~~clause 4.11.1(f) and there were no potentially limiting factors.

15 If the re-lodged application is consistent with the information upon which the Conditional Certified Reserve Capacity was assigned and the information is correct, the IMO must confirm the Certified Reserve Capacity or Conditional Certified Reserve Capacity, as appropriate, and report to the applicant as per s~~S~~teps ~~1.8.30~~1.10.31 or ~~1.8.31~~1.10.32 below.

16 If the re-lodged application is not consistent with the information upon which the Conditional Certified Reserve Capacity was assigned or the information is not correct, the IMO must not take the Conditional Certified Reserve

Capacity into account when ~~proceed to~~ processing the application.**[MR4.9.5]** ~~without regard for the Conditional Certified Reserve Capacity.~~

Timing check

17 The IMO must determine ~~for~~ which Reserve Capacity Cycle the applicant is requesting ~~Certification~~ certification for. The IMO must ~~and~~ determine if the Facility is scheduled to first commence operations before the time that Reserve Capacity Obligations will apply for that Facility for that Reserve Capacity Cycle. ~~**(Market Rule** **[MR** **4.11.1(c)]**~~

18 The IMO must determine if the Facility will cease operation permanently such that it can no longer meet its Reserve Capacity Obligations before the time that Reserve Capacity Obligations will no longer apply for that Facility for the Reserve Capacity Cycle. ~~**(Market Rule** **[MR** **4.11.1(c)]**~~

19 The IMO must set the Reserve Capacity for a Reserve Capacity Cycle at zero for a Facility that is not scheduled to commence operations or that will cease operations as determined in s~~S~~teps 1.10.17~~1.8.17~~ or 1.10.18~~1.8.18~~, respectively. ~~**(Market Rule** **[MR** **4.11.1(c)]**~~

20 The IMO must determine if the Facility is expected to be a Registered Facility by the time its Reserve Capacity Obligations take effect. The ~~and the~~ IMO must not ~~grant~~ assign Certified Reserve Capacity to a Facility that is not expected to be registered by that time. ~~**(Market Rule** **[MR** **4.11.1 (f)]**~~

Forced outage and planned outage check

21 The IMO must determine if the Facility has operated for at least 36 months and, if so, whether it has had a Forced Outage rate of greater than 15% or a combined Planned Outage rate and Forced Outage rate of greater than 30% over the preceding 36 months. This must be determined in accordance with the Power System Operating Procedure: Facility Outages. ~~**(Market Rule** **[MR** **4.11.1 (h)]**~~

22 The IMO must determine if the Facility has operated for less than 36 months or is yet to commence operation and, if so, whether the IMO has cause to believe that over a period of 36 months the Facility is likely to have a Forced Outage rate of greater than 15% or a combined Planned Outage rate and Forced Outage rate of greater than 30%. This must be determined in accordance with the Power System Operating Procedure: Facility Outages. ~~**(Market Rule** **[MR** **4.11.1 (gg)]**~~

23 The IMO may consult with System Management to determine the Forced and Planned Outage ~~Rates~~ rates in respect of s~~S~~teps 1.10.21~~1.8.21~~ or 1.10.22~~1.8.22~~.

24 If the criteria in s~~S~~teps 1.10.21~~1.8.21~~ or 1.10.22~~1.8.22~~ of this ~~p~~Procedure apply to the Facility, the IMO may seek information from the applicant in respect to the present and future performance of the Facility including:

(a) the causes of outages;

(b) steps being taken, or that have been taken, to reduce outages; and

(c) the expected level of future outages.

25 The IMO must determine whether or not to grant Certified Reserve Capacity for the Facility if the criteria in sSteps 1.10.211.8.21 or 1.10.221.8.22 of this Pprocedure apply to that Facility. In making this determination the IMO may consider, amongst other factors:

(a) The actions being taken by the Rule Market Participant to reduce the level of outages at the Facility;

(b) The likelihood that these actions will reduce the outages at the Facility; and

(c) Whether or not the outages at the Facility are compromising, or are likely to compromise, the security and reliability of the SWIS.

26 The IMO may consult with System Management in deciding whether or not to refuse to grant Certified Reserve Capacity for a Facility where the criteria in sSteps 1.10.211.8.21 or 1.10.221.8.22 of this Pprocedure may apply to that Facility. **(Market Rule[MR 4.11.1 (h)])**

27 If the IMO determines not to grant Certified Capacity Credits to the Facility it must advise the applicant of this decision in accordance with the timeframes specified in step 1.10.31 and 1.10.32 of this Procedure.

28 If the IMO determines that it may grant Certified Capacity Credits to the Facility, the IMO must proceed to process the application.

Determination of Certified Reserve Capacity

29 The IMO must use the methodology contained in the following Sections sections of this pProcedure for setting the Certified Reserve Capacity of a Facility:

(a) For existing non-intermittent and intermittent generation Facility – Section 1.111.9;

(b) For existing Curtailable Loads and Dispatchable Loads – Section 1.121.10;

(c) For new non-intermittent generation Facility – Section 1.131.11;

(d) For new intermittent generation Facility – Section 1.141.12;

(e) For new Curtailable Loads and Dispatchable Loads– Section 1.151.13;

Reporting to Applicant

30 The IMO must assemble the results of its determinations from the certification process and produce a report on the outcomes of its determinations of its resultswhich is consistent with the requirements of Section 1.161.14 of this Pprocedure and clause 4.9.5 and 4.9.9 of the Market Rules. **(Market Rules 4.9.5 & 4.9.9)**

31 If the application was for Certified Reserve Capacity, the IMO must deliver its report to the applicant by 5 August of Year 1 of that Reserve Capacity Cycle. ~~**(Market Rule 4.9.6)**~~

32 If the application was for Conditional Certified Reserve Capacity the IMO must deliver its report to the applicant within 90 days of the application having been received.

~~32~~33 If the application was for Early Certified Reserve C~~c~~apacity the IMO must provide its decision ~~deliver~~ ~~it's determination~~ within 90 days of the application having been received. **[MR4.28C.7]**

~~1.9.~~1.11. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for an existing non-intermittent ~~generation Facility and for an existing~~or intermittent generation Facility

1 The IMO must complete its certification of an existing non-intermittent or intermittent generating Facility based on the following steps using the information provided by the applicant and based on any other information that the IMO may require to make its determinations.

Assessment of potentially limiting factors

2 The IMO must determine whether the Facility has failed any test conducted in accordance with ~~Market Rule~~clause 4.25 and, if so, determine:

(a) Whether the test results were a reasonable indication of the capacity expected to be available for supply from the Facility when it is operating normally;

(b) Whether there are any mitigating circumstances such that the test results are not a reasonable indication of the capacity expected to be available for supply from the Facility when it is operating normally; and

(c) The level of capacity indicated by the tests, taking account of any mitigating circumstances, that is expected to be available from the Facility when it is operating normally**.**

3 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. ~~**(Market Rule**~~ **[MR4.10.1(~~q~~g)]** ~~)~~

4 The IMO must determine whether the Facility will be subject to a Network Control Service contract and, if so, whether the capacity that the Facility can usefully contribute is likely to be limited by transmission constraints. ~~**(Market Rule**~~ **[MR 4.11.1(g)]** ~~)~~

5 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of ~~reserve~~ Reserve ~~capacity~~ Capacity nominated by the ~~Rule~~ Market Participant.

Selection of assessment methodology

6 The IMO must determine whether the applicant has nominated, in accordance with ~~Market Rule~~clause 4.10.1(i), for the capacity of its Facility to be assigned in accordance with the methodology described in ~~Market Rule~~clause 4.11.2(b).

7 If the applicant has nominated the methodology described in ~~Market Rule~~clause 4.11.2(b), then the IMO must determine whether it ~~believes~~ considers that the capacity of the Facility has permanently declined, or is anticipated to permanently decline prior to or during the Reserve Capacity Cycle to which the Certified Reserve Capacity applies. **[MR4.11.2(a)]**

8 In making the determination in s~~S~~tep 1.11.7~~1.9.7~~, the IMO may consider ~~the assessment of~~ any potentially limiting factors.**[MR4.10.1(g)]**

9 If the IMO ~~believes~~ considers that the capacity of the Facility has permanently declined, or is anticipated to permanently decline prior to or during the Reserve Capacity cycle to which the Certified Reserve Capacity applies, then the IMO must set the Certified Reserve Capacity in accordance with steps 1.11.12~~1.9.12~~ to 1.11.15~~1.9.15~~ ("Methodology A"), otherwise it must set the Certified Reserve Capacity in accordance with steps 1.11.17~~1.9.17~~ to 1.11.18~~1.9.18~~ ("Methodology B").

10 If the application for Certified Reserve Capacity relates to an Intermittent ~~generating Facility~~Generator, the IMO must use assessment "Methodology B".

11 If the applicant has not nominated the methodology in Market Rule 4.11.2(b), then the IMO must set the Certified Reserve Capacity in accordance with "Methodology A".

Methodology A for setting Certified Reserve Capacity

12 The IMO must determine the maximum sent out capacity, net of Intermittent Loads, embedded and P~~p~~arasitic loads that can be guaranteed to be available for supply to the network from the Facility when it is operated normally at an ambient temperature of 41ºC. **~~(Market Rules~~[MR 4.10.1(e~~e~~) ~~& 4.11.1(b)~~]~~)~~**

13 The IMO must determine the maximum sent out capacity, net of Intermittent Loads, embedded and P~~p~~arasitic loads, beyond the capacity described in s~~S~~tep 1.11.12~~1.9.12~~ that can be made available for supply to the network from the Facility at an ambient temperature of 41ºC allowing for any restrictions on the availability of that capacity, including limitations on duration. **~~(Market Rules~~[MR 4.10.1(e~~e~~) & 4.10.1(g) ~~& 4.11.1(b)~~]~~)~~**

14 The IMO may consult with System Management as required.

15 Based on the outcome of s~~S~~teps 1.11.12~~1.9.12~~ to 1.11.13~~1.9.13~~, and the assessment of potentially limiting factors, the IMO must determine its reasonable expectation of the amount of Reserve Capacity likely to be available from the Facility during daily peak demand times from 1 December up to and including 2009 or 1 October from 2010 onwards in Year 3 to 31 July in Year 4 of the Reserve Capacity Cycle, assuming an ambient temperature of 41ºC. **~~(Market Rule~~[MR 4.11.1(a)]~~)~~**

16 For the purposes of sStep 1.11.151.9.15 'daily peak demand times' are taken to have the same meaning as Peak Trading Intervals as defined in the Market Rules.

Methodology B for setting Certified Reserve Capacity

17 The IMO must set the Relevant Level in respect of a Facility at a point in time which is determined by the IMO as follows:

(a) take all the Trading Intervals that fell within the last three years up to, and including, the last Hot Season;

(b) determine the amount of electricity (in MWh) sent out by the Facility in accordance with Mmetered Ddata Ssubmissions received by the IMO in accordance with Market Ruleclause 8.4 during these Trading Intervals;

(c) iIf the Generator has not entered service, or if it entered service during the period referred to in step 1.11.17(a)1.9.17(a), estimate the amount of electricity (in MWh) that would have been sent out by the Facility, had it been in service, for all Trading Intervals occurring during the period referred to in step 1.11.17(a)1.9.17(a) which are prior to it entering service; and

(d) set the Relevant Level as double the sum of the quantities determined in step 1.11.17(b)1.9.17(b) and step 1.11.17(c)1.9.17(c) divided by 52,560. **[MR4.11.3A]**

18 In the case where three years of data is not available, the Rule Market Participant may have the quantity, determined in accordance with Sstep 1.11.17(b)1.9.17(b), estimated by an independent expert which has been accredited by the IMO in accordance with sStep 1.6.21.5.2 of this Pprocedure. The independent expert must use any and all data available to the Rule Market Participant, to evaluate the expected amount of electricity in accordance with sStep 1.11.171.9.17 above. The intention should be to validate any models and results based on the data available for the period of operation.

19 In respect of sStep 1.11.171.9.17 above, the IMO will use metered data provided in accordance with Market Ruleclause 8.4 where possible. If meter data is not available, the IMO may consult with System Management to obtain appropriate SCADA data records to determine the Relevant Level. The IMO may also set the Relevant Level to take into account embedded, interruptible and parasitic loads.

20 The IMO must set the Certified Reserve Capacity of the Facility equal to the Relevant Level determined in the above step 1.11.17, while considering the outcome of sSteps 1.9.171.11.18 through and 1.11.191.9.19 and the assessment of any potentially limiting factors.

Assignment of Certified Reserve Capacity

21 The IMO must assign Certified Reserve Capacity to the Facility equal to the minimum of the level nominated by the applicant, or the level determined at sStep 1.11.151.9.15 or 1.11.201.9.20, as appropriate.

Initial Reserve Capacity Obligation Quantity

22 The IMO must determine whether there are periods of time during which staffing or other factors will limit the Facility's ability to operate at full output.

23 The IMO must set the ~~Initial i~~initial Reserve Capacity Obligation ~~Quantity??~~Quantity at a level equal to the Certified Reserve Capacity except for those periods of time determined at s~~S~~tep 1.11.22~~1.9.22~~, in which case the IMO may set the ~~Initial~~ initial Reserve Capacity Obligation at a lower level for those periods~~.~~

24 The IMO must set the ~~Initial~~ initial Reserve Capacity Obligation ~~quantity~~ Quantity to zero for an Intermittent ~~generating Facility~~Generator. ~~(**Market Rule**~~**[MR 4.12.4~~~~2~~**.aA]**~~)~~

~~1.10.~~1.12. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for an existing~~,~~ Curtailable Load or Dispatchable Load

1 The IMO must complete its certification of an existing Curtailable Load or Dispatchable Load based on the following steps using the information provided by the applicant and based on any other information that the IMO may require to make its determinations.

Availability classes ~~this section needs links to rules~~

2 The IMO must assess each capacity block and accept only those where:

(a) The maximum number of hours per year that the block is available to provide Reserve Capacity is not less than 24; and

(b) The maximum number of hours per day that the block is available to provide Reserve Capacity is not less than four.

3 Each accepted capacity block is to be allocated to an Availability Class where:

(a) Blocks that are available for at least 24 hours but less than 48 hours are allocated to Availability Class 4;

(b) Blocks that are available for at least 48 hours but less than 72 hours are allocated to Availability Class 3; and

(c) Blocks that are available for at least 72 hours but less than 96 hours are allocated to Availability Class 2~~; and~~. **[Appendix 3]**

~~(d)Blocks that are available for at least 96 hours are allocated to Availability Class 1.~~

Assessment of potentially limiting factors

4 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available.~~ (**Market Rule**~~**[MR 4.10.1(gg)]**~~)~~

5 The IMO must determine whether the Facility will be subject to a Network Control Service contract and, if so, whether the capacity that the Facility can usefully contribute is likely to be limited by transmission constraints. ~~(Market~~ [MR~~Rule~~ **4.11.1(g)**]~~)~~

6 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of R~~r~~eserve C~~c~~apacity nominated by the ~~Rule~~ Market Participant.

Assignment of Certified Reserve Capacity

7 Where the applicant has specified the Reserve Capacity expected to be available from a capacity block, the IMO is to assign Certified Reserve Capacity for that capacity block equal to the expected Reserve Capacity subject to the assessment of potentially limiting factors.

8 Where the applicant has specified the Stipulated Default Load for any capacity block, the IMO is to determine the expected load reduction based on historic load data and assign Certified Reserve Capacity to that capacity block equal to that expected load reduction subject to the assessment of potentially limiting factors.

9 Where the applicant has indicated that the Reserve Capacity is to be in the form of a Demand Side Programme, the IMO must assign Certified Reserve Capacity in consideration of ~~Market Rule~~clause 4.8.3 of the Market Rules. The following must be considered in the assignment of Certified Reserve Capacity:

(a) No Intermittent Load may be included in the Demand Side Programme. ~~(Market Rule~~[MR **4.8.3(a)**]~~)~~

(b) The Loads comprising the Demand Side Programme must be registered as Curtailable Loads if they are to count towards satisfying the relevant Reserve Capacity Obligations of the Demand Side Programme and must not have been separately awarded Capacity Credits. ~~(Market Rule~~ [MR **4.8.3(b)**]~~)~~

(c) As the Loads comprising the Demand Side Programme are registered, the IMO must assign Certified Reserve Capacity and Reserve Capacity Obligations to those Facilities and must correspondingly reduce the Certified Reserve Capacity and Reserve Capacity Obligations associated with the Demand Programme Side during the time those Facilities are registered. ~~(Market Rule~~[MR **4.8.3(c)**]~~)~~

(d) After accounting for the modifications in step 1.12.9(c)~~1.10.9(c)~~, if at any time a Market Customer has Reserve Capacity Obligations associated with its Demand Side Programme then, for settlement purposes, the Demand Side Programme must be treated by the IMO as a Facility that has failed to satisfy its Reserve Capacity Obligations. ~~(Market Rule~~ [MR**4.8.3(d)**]~~)~~

(e) Loads comprising the Demand Side Programme must have the same or higher availability as the ~~Demand Side Programme~~Demand Side Programme. ~~(Market Rule~~[MR **4.8.3(e)**]~~)~~

Initial Reserve Capacity Obligation Quantity

10 The ~~Assigned~~ assigned Certified Reserve Capacity for each capacity block must be available for the number of hours per year that does not exceed the maximum specified by the applicant for that capacity block.

11 The ~~Assigned~~ assigned Certified Reserve Capacity for each capacity block must be available for the number of hours per day that does not exceed the maximum specified by the applicant for that capacity block.

12 The ~~Initial~~ initial Reserve Capacity Obligation Quantity must take account of any staffing and other restrictions that may limit the ability of the Facility to provide energy upon request.

~~1.11.~~1.13. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for a new non-intermittent generating Facility

1 The IMO must complete its certification for a new non-intermittent generating Facility based on the following steps using the information provided by the applicant ~~and based on any other~~and taking into account any other information that the IMO may require to make its determinations.

Assessment of potentially limiting factors

2 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. ~~(**Market Rule**~~**[MR 4.10.1(g~~~~g~~~~)]~~~~)~~

3 The IMO must determine whether the Facility will be subject to a Network Control Service contract and, if so, whether the capacity that the Facility can usefully contribute is likely to be limited by transmission constraints. ~~(**Market Rule**~~**[MR 4.11.1(g)]~~~~)~~

4 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of ~~reserve~~ Reserve ~~capacity~~ Capacity nominated by the ~~Rule~~ Market Participant.

Methodology for setting Certified Reserve Capacity

5 The IMO must determine the maximum sent out capacity, net of Intermittent Loads embedded ~~–~~and P~~p~~arasitic loads that can be guaranteed to be available for supply to the N~~n~~etwork from the Facility when it is operated normally at an ambient temperature of 41ºC. ~~(**Market Rules**~~ **[MR4.10.1(e~~~~e~~~~)~~ ~~**& 4.11.1(b)]~~~~)~~

6 The IMO must determine the maximum sent out capacity, net of Intermittent Loads, embedded and P~~p~~arasitic loads, beyond the capacity described in s~~S~~tep 1.13.5~~1.11.5~~ that can be made available for supply to the N~~n~~etwork from the Facility at an ambient temperature of 41ºC allowing for any restrictions on the availability of that capacity, including limitations on duration. ~~(**Market Rules**~~**[MR 4.10.1(e~~~~e~~~~)~~ ~~**& 4.11.1(b)]~~~~)~~

7 The IMO may use the information provided by the ~~Rule~~ Market Participant or any other information deemed appropriate, which is required to set the level of Certified Reserve Capacity of the Facility.

8 Based on the outcome of s~~S~~teps 1.13.5~~1.11.5~~ to 1.13.7~~1.11.7~~, and the assessment of potentially limiting factors, the IMO must determine its reasonable expectation of the amount of Reserve Capacity likely to be available from the Facility during daily peak demand times from 1 December up to and including 2009 and 1 October from 2010 onwards in Year 3 to 31 July in Year 4 of the Reserve Capacity Cycle, assuming an ambient temperature of 41ºC. **[MR ~~(Market Rule~~ 4.11.1(a)~~)~~]**

9 For the purposes of s~~S~~tep 1.13.8~~1.11.8~~ 'daily peak demand times' are the Trading Intervals occurring between 8 AM and 10 PM. This is ~~taken to have~~ the same meaning as Peak Trading Intervals as defined in the Market Rules.

Assignment of Certified Reserve Capacity

10 If the application is for the current Reserve Capacity Cycle, the IMO must assign Certified Reserve Capacity to the Facility equal to the minimum of the level determined at ~~S~~step 1.13.8~~1.11.8~~ or the level nominated by the applicant.

11 If the application is for ~~a future~~Conditional Certified Reserve Capacity ~~Cycle~~, the IMO must assign Conditional Certified Reserve Capacity to the Facility equal to the minimum of the level determined at s~~S~~tep 1.13.8~~1.11.8~~ or the level nominated by the applicant.

~~———~~If the application is for Early Certified Reserve Capacity, the IMO must assign Early Certified Reserve Capacity to the Facility equal to the minimum of the level determined at s~~S~~tep 1.13.8~~1.11.8~~ or the level nominated by the applicant.

~~11~~12

~~12~~13 If the application is for re-certification and the IMO is satisfied that the application which has been re-lodged is consistent with the information upon which the Conditional Certified Reserve Capacity was assigned and the information is correct then the IMO must confirm the Certified Reserve Capacity, or Conditional Certified Reserve Capacity, depending on the Reserve Capacity Cycle for which the application is being made, that was previously assigned by the IMO.

~~13~~14 If the application is for re-certification and the ~~Rule~~ Market Participant has not submitted details of Network Access offer(s) and Environmental Approvals in accordance with s~~S~~tep 1.8.9~~1.7.10~~ of this P~~p~~rocedure, the IMO will deem the application to be inconsistent with the initial application by which the Facility received Conditional Certification of Reserve Capacity. This will be deemed to be made on the basis that the Facility detailed in the initial application for Conditional Certified Reserve Capacity would be a Registered Facility in accordance with ~~Market Rule~~clause 4.11.1(f) and there were no potentially limiting factors.

~~14~~15 If the re-lodged application is not consistent with the information upon which the Conditional Certified Reserve Capacity was assigned or the information

is not correct, the IMO must ~~proceed to process the application without regard for the Conditional Certified Reserve Capacity.~~not take the Conditional Certified Reserve Capacity into account when processing the application. .**[MR4.9.5]**

Initial Reserve Capacity Obligation Quantity

~~15~~16 The IMO must determine whether there are periods of time during which staffing or other factors will limit the Facility's ability to operate at full output.

~~16~~17 IMO must set the ~~Initial~~ initial Reserve Capacity Obligation at a level equal to the Certified Reserve Capacity except for those periods of time determined at s~~S~~tep 1.13.16~~1.11.15~~, in which case the IMO may set the ~~Initial~~ initial Reserve Capacity Obligation at a lower level.

~~16~~18 If the application is for Early Certified Reserve Capacity the IMO must set the Capacity Credits for the Facility equal to the Early Certified Reserve Capacity of the Facility once the Reserve ~~capcity~~Capacity Security is p~~P~~rovided the ~~the~~ IMO in accordance with ~~Market Rule~~clause 4.28C.8 **[MR4.28C.10].**

~~1.12.~~1.14. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for a new intermittent generating Facility

1 The IMO must complete its certification for a new intermittent generating Facility based on the following steps using the information provided by the applicant and based on any other information that the IMO may require to make its determinations.

2 If the applicant has submitted a report, in accordance with clause 4.10.3 of the Market Rules, prepared by an expert accredited by the IMO, the IMO must set Certified Reserve Capacity for the Facility based upon the estimate provided by the expert. ~~**(Market Rule**~~**[MR 4.11.1(e)]**~~)~~

3 If the applicant has not submitted a report in accordance with c~~C~~lause 4.10.3 of the Market Rules, the IMO will set the Certified Reserve Capacity to zero.

Assessment of potentially limiting factors

4 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. **[MR ~~(Market Rule~~ 4.10.1(g)]**~~)~~

5 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of ~~reserve~~ Reserve ~~capacity~~ Capacity nominated by the ~~Rule~~ Market Participant.

Assignment of Certified Reserve Capacity

6 If the application is for the current Reserve Capacity Cycle, for an Intermittent Generator that has not commenced operation, the IMO must assign Certified Reserve Capacity as the amount determined in s~~S~~tep 1.14.2~~1.12.2~~, subject to s~~S~~teps 1.14.4~~1.12.4~~ and 1.14.5~~1.12.5~~ (where applicable).

7 If the application is for Conditional Certified Reserve Capacity, the IMO must assign Conditional Certified Reserve Capacity as the amount determined in sStep 1.14.21.12.2, subject to sSteps 1.14.41.12.4 and 1.14.51.12.5 (where applicable).

8 If the application is for Early Certified Reserve Capacity, the IMO must assign Early Certified Reserve Capacity as the amount determined in Step 1.14.21.12.2, subject to sSteps 1.14.41.12.4 and 1.14.51.12.5 (where applicable).

7If the application is for a future Reserve Capacity Cycle, the IMO must assign Conditional Certified Reserve Capacity as the amount determined in Step 1.12.2, subject to Steps 1.12.4 and 1.12.5 (where applicable).

89 If the application is for re-certification of Conditional Certified Reserve Capacity and the IMO is satisfied that the application which has been re-lodged is consistent with the information upon which the Conditional Certified Reserve Capacity was assigned and the information is correct then the IMO must confirm the Certified Reserve Capacity, or Conditional Certified Reserve Capacity, depending on the Reserve Capacity Cycle for which the application is being made, that was previously assigned by the IMO.

910 If the application is for re-certification and the Rule Market Participant has not submitted details of Network Access offer(s) and Environmental Approvals in accordance with sStep 1.8.91.7.10 of this Pprocedure, the IMO will deem the application to be inconsistent with the initial application by which the Facility received Conditional Certification of Reserve Capacity. This will be deemed to be made on the basis that the Facility detailed in the initial application for Conditional Certified Reserve Capacity would be a Registered Facility in accordance with Market Ruleclause 4.11.1(f) and there were no potentially limiting factors.

1011 If the re-lodged application is not consistent with the information upon which the Conditional Certified Reserve Capacity was assigned or the information is not correct, the IMO must proceed to process the application without regard for the Conditional Certified Reserve Capacity.not take the Conditional Certified Reserve Capacity into account when processing the application.

Initial Reserve Capacity Obligation Quantity

1112 The Initial initial Reserve Capacity Obligation Quantity for a new Iintermittent Ggenerator is zero.

If the application is for Early Certified Reserve Capacity the IMO must set the Capacity Credits for the Facility equal to the Early Certified Reserve Capacity of the Facility once the Reserve capcityCapacity Security is pProvided the the IMO in accordance with Market Ruleclause 4.28C.8 **[MR4.28C.10].**

1113

~~1.13.~~1.15. Procedure steps to be followed by the IMO in setting the Certified Reserve Capacity for a new Curtailable Load or Dispatchable Load

1 The IMO must complete its certification of a new Curtailable Load or Dispatchable Load based on the following steps using the information provided by the applicant and based on any other information that the IMO may require to make its determinations.

Availability classes

2 The IMO must assess each capacity block and accept only those where:

(a) The maximum number of hours per year that the block is available to provide Reserve Capacity is not less than 24; and

(b) The maximum number of hours per day that the block is available to provide Reserve Capacity is not less than four.

3 Each accepted capacity block is to be allocated to an Availability Class where:

(a) Blocks that are available for at least 24 hours but less than 48 hours are allocated to Availability Class 4;

(b) Blocks that are available for at least 48 hours but less than 72 hours are allocated to Availability Class 3; and

(c) Blocks that are available for at least 72 hours but less than 96 hours are allocated to Availability Class 2~~;~~.

~~(d)Blocks that are available for at least 96 hours are allocated to Availability Class 1;~~

Assessment of potentially limiting factors

4 The IMO must determine whether there are any restrictions on the capacity expected to be available due to staffing or availability and, if so, what level of capacity is expected to be available. ~~(**Market Rule** **[MR** **4.10.1(g)]~~)

5 The IMO must determine whether the Facility will be subject to a Network Control Service contract and, if so, whether the capacity that the Facility can usefully contribute is likely to be limited by transmission constraints. ~~(**Market Rule** **[MR** **4.11.1(g)]~~)

6 The IMO must determine whether there are any other reasons to think that the Facility may not be able to provide the level of R~~r~~eserve C~~c~~apacity nominated by the ~~Rule~~ Market Participant.

Assignment of Certified Reserve Capacity

7 Where the applicant has specified the Reserve Capacity expected to be available from a capacity block in accordance with clause 4.10.1(f)(i)(1) of the Market Rules, the IMO is to assign Certified Reserve Capacity for that capacity block equal to the expected Reserve Capacity Reduction from the

Relevant Demand level determined in accordance with clause 4.26.2C of the Market Rules and subject to the assessment of potentially limiting factors.

8 Where the applicant has specified the Stipulated Default Load for any capacity block, the IMO is to determine the expected load reduction based on expected load data and assign Certified Reserve Capacity to that capacity block equal to that expected load reduction subject to the assessment of potentially limiting factors.

9 Where the applicant has indicated that the Reserve Capacity is to be in the form of a Demand Side Programme, the IMO must assign Certified Reserve Capacity in consideration of ~~Market Rule~~clause 4.8.3. The following must be considered in the assignment of Certified Reserve Capacity:

(a) No Intermittent Load may be included in the Demand Side Programme. ~~(Market Rule~~**[MR 4.8.3(a)]**~~)~~

(b) The Loads comprising the Demand Side Programme must be registered as Curtailable Loads if they are to count towards satisfying the relevant Reserve Capacity Obligations of the Demand Side Programme and must not have been separately awarded Capacity Credits. ~~(Market Rule~~ **[MR 4.8.3(b)]**~~)~~

(c) As the Loads comprising the Demand Side Programme are registered, the IMO must assign Certified Reserve Capacity and Reserve Capacity Obligations to those Facilities and must correspondingly reduce the Certified Reserve Capacity and Reserve Capacity Obligations associated with the Demand Programme Side during the time those Facilities are registered. ~~. (Market Rule~~**[MR 4.8.3(c)]**~~)~~

(d) After accounting for the modifications in (c), if at any time a Market Customer has Reserve Capacity Obligations associated with its Demand Side Programme then, for settlement purposes, the Demand Side Programme must be treated by the IMO as a Facility that has failed to satisfy its Reserve Capacity Obligations. ~~(Market Rule~~**[MR 4.8.3(d)]**~~)~~

(e) Loads comprising the Demand Side Programme must have the same or higher availability as the ~~Demand Side Programme~~Demand Side Programme. ~~(Market Rule~~**[MR 4.8.3(e)]**~~)~~

Initial Reserve Capacity Obligation Quantity

10 The ~~Assigned~~ assigned Certified Reserve Capacity for each capacity block must be available for the number of hours per year that does not exceed the maximum specified by the applicant for that capacity block.

11 The ~~Assigned~~ assigned Certified Reserve Capacity for each capacity block must be available for the number of hours per day that does not exceed the maximum specified by the applicant for that capacity block.

12 The ~~Initial~~ initial Reserve Capacity Obligation must take account of any staffing and other restrictions that may limit the ability of the Facility to vary its demand upon request.

13 If the capacity of a Curtailable Load is specified in accordance with clause 4.10.1(f)(i)(1), the Certified Reserve Capacity assigned by the IMO to that Curtailable Load, including during the registration of that Curtailable Load in accordance with clause 4.8.3(c), must not exceed the Relevant Demand for the Curtailable Load set by the IMO in accordance with clause 4.26.2C of the Market Rules.

~~1.14.~~1.16. Procedure steps to be followed by the IMO in advising an applicant of its Certified Reserve Capacity

The IMO is to provide the following information to the applicant on the results of applications for ~~Certification~~ Certified ~~of~~ Reserve Capacity. ~~(Market Rules~~ **[MR 4.9.5 & 4.9.9]**~~)~~

1 **Identity of Market Participant and Facility** – The identity of Market Participant making the application and the identification of the Facility for which the results apply.

2 **Application of Results for Facility** – The Reserve Capacity Cycle to which the result applies. ~~(Market Rule~~**[MR 4.9.5]**~~)~~

3 **Conditional Certified Reserve Capacity** – In the case of Certified Reserve Capacity relating to a future Reserve Capacity Cycle, the conditions of continued certification, including the requirements for reapplying for certification. ~~(Market Rule~~ **[MR 4.9.5]**~~)~~

4 **Certified Reserve Capacity** – The amount of Certified Reserve Capacity to apply to the Facility. ~~(Market Rule~~ **[MR 4.9.9]**~~)~~

5 **Initial Reserve Capacity Obligations** – The ~~i~~Initial Reserve Capacity Obligations associated with the Certified Reserve Capacity. ~~(Market Rule~~**[MR 4.9.9]**~~)~~

6 **Reserve Capacity Security Deposit Requirements** – Any Reserve Capacity Security Deposit required as a condition of the Facility holding the Certified Reserve Capacity. ~~(Market Rule~~**[MR 4.9.9]**~~)~~

7 **Calculation Basis for Certification** – The calculations upon which the IMO's determination is based.

APPENDIX A

This appendix specifies in more detail some of the information mentioned inrequired by the Market Rules which RuleMarket Participants need to provide as part of their annual application for Certified Reserve Capacity.

Financing (Market Rule[MR 4.10.1 (c) iii 2.]

)

To verifyfacilitate verification of the key financing dates provided in the submission, the applicant must provide details of their financing status at the time of application, including any financing applications made and the current status of these applications.

Temperature DependanceDependence (Market Rule[MR 4.10.1 (e) i.]

)

The applicant must provide full heat rate temperature dependence curves in 0.1 degree intervals, for the capacity level applied for, verified from either the manufacturer or an independent engineering firm.

If the application relates to an upgrade of a facility for which heat ratetemperature dependence curves have previously been provided, the applicant must provide new heat rate curves reflecting the upgrade.

Environmental Approval (Market Rule[MR 4.10.1 (c) ii.]

)

The applicant must provide detail of all environmental approvals it has applied for and the status of each of the specific areas. Acceptable supporting evidence includes (but is not limited to):

The applicant must provide detail of all environmental approvals it has applied for and the status of each of the specific areas. Acceptable supporting evidence includes (but is not limited to):

- details and status of submissions made to the Environmental Protection Authority and/or Department of the Environment and Heritagerelevant Government instrumentalities i.e. the Environmental Protection Authority and/or Department of the Environment and Heritage.; or

- details relating to the above submissions provided by the Market Participant's appointed environmental contractor.

Generator Capacity (Market Rules[MR 4.10.1 (e) ii and& 4.10.1 (e) iii]

)

As part of providing information of maximum sent out capacity in clausesin clauses, the IMO requests that applicants provide the relevant power factor for the facility. If

no power factor is provided, the IMO will use a power factor of 0.8 when determining the capacity of the Facility.

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~~2010.

Version Control

Title of Document:	Market Procedure for~~:~~: Supplementary Reserve Capacity ~~Security~~
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Xx XXXX ~~2009~~2010	Market Procedure proposed under Procedure Change Proposal (PC_2009_09)

1. Supplementary Reserve Capacity Market 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 in clause 4.5.9(a) and (b); it ~~may~~ must follow the processes set out in clause 4.24 of the Wholesale Electricity Market Rules (Market Rules) to secure s~~S~~upplementary r~~R~~eserve c~~C~~apacity (SRC).

The Market Procedure for Supplementary Reserve Capacity (Procedure) describes the process that the IMO and System Management will 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.

This Procedure ~~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)~~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)~~b) References to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as at ~~24~~ 16 April~~July~~ 2010~~09~~. These references are included for convenience only and are not part of this Procedure.

~~c)~~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 Eeligible Sservices;

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 withidentified in clause 4.24.3 of the Market Rules **[MR 4.23.3]**.

2. Market Participants may not offer Curtailable Loads for SRC if thefrom either a Curtailable Load or Registered Facilities that haves had theirits Capacity Credits reduced in accordance with clause 4.25.4 for any part of the current Capacity YearCapacity Year **[MR4.24.3]**.

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 partsis determined based on :

   a) An The availability price for which is provided for entering into the contract and making the agreed capacity available; and.

   b) An The activation price which is a payment made when which applies only when the service is called upon.

2. Procedure Steps

2.1 Determination of the amount of SRC Required

1. ~~1.~~ In determining ~~how much~~the amount of SRC that is required and the associated timeframes, 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~~,~~. This is 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 t~~calculate the amount by which the quantity identified ~~above~~ in step 2.1.1 b) exceeds the quantity identified in step 2.1.1 a) **[MR4.24.1(b)]**;

   d) determine the expected start and end dates for which the amount of ~~Supplementary Reserve Capacity~~SRC calculated in step 2.1.1 c) will be required **[MR4.24.1 (a)]**;

   e) determine the number of hours over the contract period during which ~~the capacity~~SRC is expected to be required; and

   f) determine the time of day when the ~~capacity~~ SRC is expected to be required.

2. To assist in determining the amount of SRC, and associated timeframes, required:

   a) the IMO must consult with System Management; and

   b) the IMO may consult with Market Participants.

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~~SRC 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~~SRC in an invitation to tender; or

   b) negotiate directly with potential suppliers of ~~supplementary capacity~~ SRC **[MR4.24.2(b)]**.

3. If the IMO decides to call for tenders it must follow the 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 sSection 2.5 of this Pprocedure.

2.3 Determination of the Maximum Contract Value - [This section will be updated and tabled prior to the meeting]

1. The maximum contract value is equal to the sum of:

   a) The availability price that would apply across the full contract period; and

   b) 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) A demand side management (DSM) Facility, which has been certified for the relevant Rreserve Ccapacity year, will receive Reserve Capacity payment equal to the annual Reserve Capacity Price;

   b) The DSM facility will generally be expected to operate only during the Hot Season; and

   c) 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:

   a) When a DSM Facility, which has been certified for the relevant Rreserve Ccapacity year, is activated it will receive payment up to the level of the Alternative Maximum STEM Price;

   b) Eligible fFacilities can be assumed to require a higher payment to encourage their participation within the Wholesale Electricity Market;

   c) 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

   d) The uplift factor is determined by consideration of the pricing level required to encourage persons to offer supplementary capacity.

2.4 Acquisition of SRC via ~~Calling of~~a Tender Process

1. These process steps are to be followed if the IMO ~~decides to follow the tender process~~seeks to acquire ~~supplementary capacity~~SRC via a tender process.

2. The IMO must not call for tenders for ~~supplementary capacity~~ SRC 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.~~iii. the availability price; divided by

   iv. ~~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 **[MR4.245.6]**.

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 2.4.3 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 form 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. These process steps are to be followed if the IMO seeks to acquire SRC via negotiation.

~~1.~~2. 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 Form Supplementary Capacity 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. This standard form Supplementary Capacity Contract will be available on the M~~m~~arket Web Site in the event that the IMO decides to acquire SRC via a tender process.

~~3.~~4. 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~~will 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].**

~~2.9Publication of outcomes~~

~~1. The IMO must publish on its website:~~

~~a)Total quantity of Supplementary Reserve CapacitySRC Secured; and~~

~~b)Names of suppliers of Supplementary Reserve CapacitySRC.~~

2.9 Process following each call for SRC or acquisition of Eligible Services

1. Following each call for tenders for supplementary capacity or otherwise acquiring Eligible Services, the IMO must review the SRC provisions in section 4.24 of the Market Rules.

2. This review must:

a) have regard to the Wholesale Market Objectives; and

b) undertake a public consultation process in respect of the outcome of the review **[MR 4.24.19]**.

3. Following the review the IMO may propose amendments to the Market Rules and this Procedure (if applicable).

2.3 Determination of the Maximum Contract Value for SRC

1. The IMO will conduct an assessment of each SRC event, taking into account:

   a) The amount of SRC required, determined in step 2.1.1;

   b) Any relevant considerations raised through consultation with System Management and Market Participants in step 2.1.2; and

   c) Any other relevant considerations.

2. Based on the assessment undertaken by the IMO in step 2.3.1, in determining the Maximum Contract Value, the IMO will select either:

   a) The calculation method outlined in step 2.3.3 of this Procedure (determined as the notional availability price plus the notional activation price); or

   b) The value of lost load. This will be determined by the IMO, having regard to the value of the "market price cap" as specified in clause 3.9.4(b) of the National Electricity Rules.

   A copy of the National Electricity Rules is available on the following webpage: http://www.aemc.gov.au/Electricity/National-Electricity-Rules/Current-Rules.html

3. The following steps will be undertaken to determine the Maximum Contract Value using the calculation method referred to in step 2.3.2(a).

   a) The notional availability price in dollars per megawatt ($/MW) is calculated in accordance with the following formula:

      $P_{av}(P_{RC}, d) = P_{RC} * d / x$

      Where:

      P_{RC} is the Reserve Capacity Price for the Capacity Year for which the SRC is being procured in dollars per megawatt ($/MW);

      d is the term of the SRC contract in days, which is capped at 84 days (12 weeks) **[MR4.24.12(h)(i)]**; and

      x is 121 days, which is the length of the Hot Season.

   b) The notional activation price is calculated as double the Alternative Maximum STEM Price in dollars per megawatt hour ($/MWh).

   c) The Maximum Contract Value in dollars per megawatt per hour ($/MW/hr) is calculated in accordance with the following formula:

      $MCV(P_{av}, P_{ac}, d) = (P_{av} + (P_{ac} * t)) / t$

      Where:

P_{av} is the notional availability price determined in step 2.3.3(a);

P_{ac} is the notional activation price determined in step 2.3.3(b); and

t is the number of hours during which the capacity is expected to be required as determined in step 2.1.1(e).

4. In addition to stipulating the Maximum Contract Value when calling for tenders for SRC, the IMO may also stipulate a Maximum Activation Price. This value will be set as the notional availability price as calculated in step 2.3.3(a).

~~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.~~