



**Independent Market Operator**

**Final Rule Change Report:  
Partial Commissioning of  
Intermittent Generators**

**Ref: RC\_2010\_22**

**Date: 22 July 2011**



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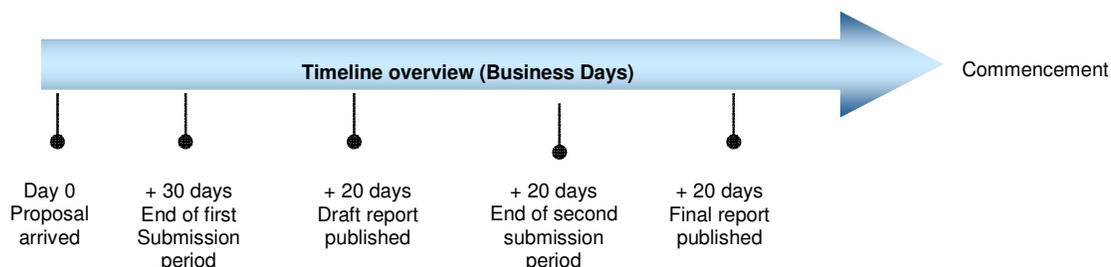
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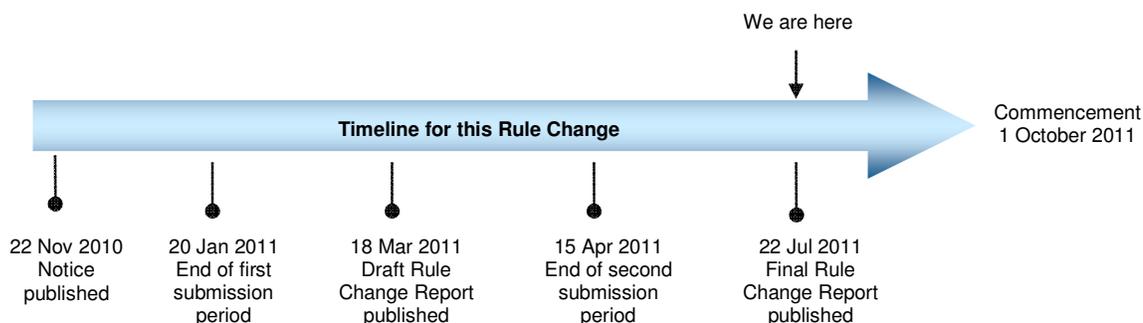
## 1. INTRODUCTION

On 18 November 2010 the IMO submitted a Rule Change Proposal regarding amendments to clause 4.26.1 of the Wholesale Electricity Market Rules (Market Rules).

The proposal was processed using the Standard Rule Change Process, described in section 2.7 of the Market Rules. The standard process adheres to the following timelines:



In accordance with clause 2.5.10 of the Market Rules the IMO decided to extend the end date for the first submission period and the timeframes for preparing the Draft Rule Change Report and Final Rule Change Report. Further details of the extensions are available on the IMO website. The key dates in processing this Rule Change Proposal, as amended in the extension notices, are:



The IMO's final decision is to accept the Rule Change Proposal in a modified form. The detailed reasons for the IMO's decision are set out in section 7 of this report.

In making its final decision on the Rule Change Proposal, the IMO has taken into account:

- the Wholesale Market Objectives;
- the practicality and cost of implementing the proposal;
- the views of the Market Advisory Committee (MAC); and
- the submissions received.

All documents related to this Rule Change Proposal can be found on the IMO website: [http://www.imowa.com.au/RC\\_2010\\_22](http://www.imowa.com.au/RC_2010_22)

## 2. THE RULE CHANGE PROPOSAL

### 2.1 Submission Details

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<b>Date submitted:</b>	18 November 2010
<b>Urgency:</b>	Standard Rule Change Process
<b>Change Proposal title:</b>	Partial Commissioning of Intermittent Generators
<b>Market Rules affected:</b>	4.26.1

### 2.2 Summary Details of the Proposal

The IMO noted in its Rule Change Proposal that RC\_2010\_12 proposes the implementation of a Required Level of output that a Facility is required to achieve for the purposes of the return of Reserve Capacity Security (RCS), Reserve Capacity Testing and capacity refunds<sup>1</sup>. Alternatively, the Market Participant may provide the IMO with a report from an IMO accredited expert, outlining that the Facility has been built to the specifications that certification was based on<sup>2</sup>.

A new Intermittent Generator is currently required to pay capacity refunds until it is deemed to be commissioned by the IMO. In its proposal the IMO contended that with the application of the IMO's proposed new Required Level criterion it will be possible that an Intermittent Generator may never be deemed commissioned. To address this issue the IMO proposed to introduce the concept of partially commissioned Intermittent Generators for the purposes of capacity refunds in the Market Rules.

The IMO proposed to amend clause 4.26.1 to allow for a new Intermittent Generator, who has not operated at 100 percent of its Required Level or provided the IMO with a report prepared by one of the IMO's accredited experts, but which the IMO considers to be in Commercial Operation, to only make partial refunds. Note that the concept of a Facility being determined to be in Commercial Operation is proposed under RC\_2010\_12. The level of partial refund to apply will be determined by the IMO using either:

- the second highest percentage (of its Required Level) that the Intermittent Generator has performed to; or
- the equivalent percentage of the Facility that has been built, described in the report provided under clause 4.10.3 where a report has been provided from an independent expert accredited by the IMO.

The full details of the Rule Change Proposal are available in Appendix 1 of this report.

### 2.3 The Proposal and the Wholesale Market Objectives

<sup>1</sup> Further details surrounding the concept of a Required Level or provision of an expert report are available on the following website: [http://www.imowa.com.au/RC\\_2010\\_12](http://www.imowa.com.au/RC_2010_12).

<sup>2</sup> Note that following the public consultation on RC\_2010\_12 the IMO has further amended the requirements for the report from an accredited expert to specify that the Facility was capable of meeting a certain level of output rather than simply stating that a certain percentage of the Facility has been built. For further details of the reasoning for this change refer to the Final Rule Change Report for RC\_2010\_12.

The IMO submitted that the proposed amendments are consistent with the Wholesale Market Objectives and would allow the Market Rules to better address Wholesale Market Objective (c).

- (c) *to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions*

The IMO contended that the introduction of the concept of Intermittent Generators being partially commissioned will better reflect the value of the capacity delivered by Intermittent Generators to the market. The IMO considered that requiring new Intermittent Generators who are considered by the IMO to be in Commercial Operation to only make refunds to the extent that they were unavailable during the Trading Month will promote a fairer outcome (and greater consistency with the treatment of new Scheduled Generators), which is consistent with Market Objective (c).

#### **2.4 The Amending Rules Proposed by the IMO**

The amendments to the Market Rules proposed by the IMO in its Rule Change Proposal are presented in Appendix 2 of this report.

#### **2.5 The IMO's Initial Assessment of the Proposal**

The IMO decided to proceed with this proposal on the basis that Market Participants should be given an opportunity to provide submissions as part of the rule change process.

### **3. FIRST SUBMISSION PERIOD**

The first submission period for this Rule Change Proposal was between 23 November 2010 and 20 January 2011. The timeframe for the first submission period was extended in accordance with the IMO's extension notice published on 22 November 2010.

#### **3.1 Submissions received**

The IMO received submissions from Alinta, Griffin Energy, Landfill Gas & Power (LGP), Perth Energy and Synergy during the first submission period. The main points raised in the submissions are summarised below. A copy of the full text of all submissions is available on the IMO website. Additional detail along with the IMO's response is contained in section 4.2 of this report.

In summary, the submissions received from LGP, Perth Energy and Synergy all supported the proposed amendments. Perth Energy noted that its support is contingent on the outcomes of RC\_2010\_12. Alinta supported the apparent intent of the proposed amendments but noted that it is not clear that the Market Rules as amended by RC\_2010\_12 would actually expose Intermittent Generators to full refunds. Alinta suggested that the proposed amendments actually result in Intermittent Generators not being exposed to any refunds, as the quantity of the MW shortfall would remain at zero because the Facility would not have a Reserve Capacity Obligation. Alinta also:

- noted that the test that a Facility is in Commercial Operation would be significantly less onerous than the current test for whether a Facility is commissioned or not under the Market Rules; and
- suggested that consideration should be given to whether other types of Facilities should be exposed to full refunds where they have not been determined by the IMO to be in Commercial Operation.

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Griffin Energy considered that the IMO is introducing a layer of complexity into the market in order to try to apply a one-size-fits-all mechanism to very different technologies. Griffin Energy noted its preference for the IMO to approach issues relating to Intermittent Generators differently to those of Scheduled Generators, recognising the inherent differences in the technologies and the roles they play in the market.

Griffin Energy proposed an alternative methodology that requires an Intermittent Generator to provide a report from an IMO accredited expert as to the completeness of the Facility at the same time as Scheduled Generators are deemed to be commissioned (1 December) or earlier. The report would form the basis for the Intermittent Generator providing refunds to the IMO proportionate to the shortfall in installed capacity. The Intermittent Generator may provide further updated monthly reports to the IMO as an incomplete facility progresses, thus reducing its refund liability. At the end of the Capacity Year, the Intermittent Generator would forfeit the amount of its security bond equal to the proportion of the facility that is still incomplete.

A summary of the assessment by the submitting parties as to whether the proposal would better the Wholesale Market Objectives is presented below:

Submitter	Wholesale Market Objective
Alinta	Considered that once the issues with the proposed changes identified in Alinta's submission have been resolved the IMO may be generally satisfied that the intent of RC_2010_22 is consistent with the Wholesale Market Objectives (and in any event are unlikely to be inconsistent with the Wholesale Market Objectives).
Griffin Energy	Do not adversely impact on objectives, however concerned at level of complexity being introduced and suggests simpler approaches specific to differing technologies are justified. While this may mean adopting new approaches as new technologies are brought into the market, this would be preferable to adopting a one-size-fits-all approach which ends up producing poor incentives across the board.
LGP	Supported (a), (b), (c) and (d).
Perth Energy	Better facilitates (b) and (c).
Synergy	Better addresses (c).

### **3.2 The IMO's response to submissions received during the first submission period**

The IMO's response to each of the issues identified during the first submission period is presented in Appendix 3 of this report.

### **3.3 Public Forums and Workshops**

No public forums or workshops were held in relation to this Rule Change Proposal.

### **3.4 Additional Amendments to the Amending Rules**

Following the closure of the first consultation period and in response to the issues raised in submissions, the IMO made a number of additional changes to the proposed Amending Rules to:

- ensure a non-zero quantity is determined to apply for the purposes of the Forced Outage refund for a Intermittent Generator that is in Commercial Operation, but has not met the criteria in clause 4.26.1 to no longer be exposed to refunds (i.e. Y is not equal to 0);
- amend “Intermittent Facility” to “Intermittent Generator” for consistency with the definition of an Intermittent Generator provided in Chapter 11;
- reflect the amendments to the structure of clause 4.13.10 made in the Draft Rule Change Report for RC\_2010\_12; and
- clarify that the level of Capacity Credits referred to in clause 4.26.1A(a)(iv) is the original level of Capacity Credits associated with the Facility and does not take into account any subsequent reductions in this level that may have occurred.

The IMO also made a number of typographical amendments to improve the integrity of the proposed Amending Rules. These additional amendments are presented in Appendix 4 of this report.

#### **4. THE IMO’S DRAFT ASSESSMENT**

The IMO’s draft assessment, against clauses 2.4.2 and 2.4.3 of the Market Rules, and analysis of the Rule Change Proposal can be viewed in the Draft Rule Change Report (available on the IMO’s website).

#### **5. THE IMO’S DRAFT DECISION**

The IMO’s draft decision was to accept the Rule Change Proposal as modified by the amendments outlined in section 3.4 and specified in Appendix 4 of this report. .

The IMO made its decision on the basis that the Amending Rules:

- will allow the Market Rules to better address Wholesale Market Objective (c);
- are consistent with the other Wholesale Market Objectives;
- have the support of the MAC; and
- are supported by the majority of submissions received during the first submission period.

#### **6. SECOND SUBMISSION PERIOD**

Following the publication of the Draft Rule Change Report on the IMO website, the second submission period was between 21 March 2011 and 15 April 2011.

##### **6.1 Submissions received**

The IMO received submissions from Synergy and Collgar in the second submission period. The main points raised in the submissions, along with IMO’s responses, are summarised below. A copy of the full text of all submissions is available on the IMO website.

In summary, Synergy and Collgar both support the proposed amendments, albeit noting a number of minor suggested changes and clarifications. In Synergy’s view, the amendments represent a good balance between the complexity inherent in defining the Required Level (the key component allowing Intermittent Generator performance

assessment, which is linked to the basis on which Certified Reserve Capacity was sought) and recognition that the market benefits from that portion of operational capacity considered to be in Commercial Operation.

The assessment by submitting parties as to whether the proposal would better the Wholesale Market Objectives is summarised below:

Submitter	Wholesale Market Objective Assessment
Synergy	Believes that providing investors in intermittent generation projects with clear market investment signals will address a fundamental value that underwrites the market.
Collgar	Believes it will better address Wholesale Market Objective (c) and is consistent with the other Wholesale Market Objectives.

**6.2 The IMO's response to submissions received during the second submission period**

The IMO's response to each of the issues identified during the second submission period is presented in the table over the page.

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
4.26.1	Synergy	<p>In regard to the proposed amendments to clause 4.26.1, Synergy's view is that reference to Intermittent Generators in the last paragraph, which defines Y to be non-zero, is unnecessary and potentially confusing. This paragraph is clearly designed to be a residual catch-all; it applies to all Facilities not described in the immediately preceding paragraph where Y is set to zero. Separating out one specific type of Facility with a particular status i.e. an Intermittent Generator considered by the IMO to be in Commercial Operation, can give rise to misinterpretations and misunderstandings as to whether Y is defined to be other than zero and hence whether refunds apply. A simple restructuring of the paragraph would remove this risk. Synergy suggests the IMO consider amending the paragraph along the following lines:</p> <p>"For all other Facilities, Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals in the relevant Trading Month."</p>	The IMO agrees and has incorporated this amendment into the Amending Rules presented in Appendix 5.
Worked example	Collgar	Collgar notes that the option of providing an expert report is not presented as a worked example in the proposed change and would suggest that the IMO include a worked example of (b) as well to avoid confusion.	An expert report will provide an estimate of the level of output that the Facility is currently capable of achieving. This will be regarded as equivalent to the Facility having achieved this level of output for two Trading Intervals, as reflected in Meter Data Submissions. As such the IMO considers that updating the worked example to reflect the provision of an expert report is unnecessary.
Dependencies of Rule Change Proposals		Collgar notes that the concepts of Required Level and Commercial Operation are covered by RC_2010_12. To that end Collgar supports Perth Energy's views that it would be preferable for RC_2010_12 and RC_2010_22 to be combined to avoid confusion. In saying this, Collgar notes the IMO's response to this that both proposals are being progressed in parallel but does not believe RC_2010_22 should be unnecessarily delayed in being implemented should there be delays to the implementation of RC_2010_12.	The IMO notes that it has decided to approve both RC_2010_12 and RC_2010_22. The IMO originally decided to progress the two Rule Change Proposals separately as it considered the concept of introducing partial commissioning for the purposes of capacity refunds fell outside the scope of RC_2010_12, which proposed solution to a number of issues identified with the RCS process.

### 6.3 Public Forums and Workshops

No public forums or workshops were held in relation to this Rule Change Proposal.

### 6.4 Additional Amendments to the Amending Rules

Following the closure of the second consultation period and in response to the issues raised in submissions, the IMO has made a number of additional changes to the proposed Amending Rules to:

- reflect the suggestions received in submission during the second consultation period, where appropriate;
- improve the integrity of the proposed Amending Rules;
- clarify the adjustment of the Required Level for a Facility to its level of Capacity Credits currently held; and
- ensure consistency with the amendments implemented by the Final Rule Change Report for the Rule Change Proposal: Curtailable Loads and Demand Side Programmes (RC\_2010\_29).

These additional amendments are presented in Appendix 5 of this report.

## 7. THE IMO'S FINAL ASSESSMENT

In preparing its Final Rule Change Report, the IMO must assess the Rule Change Proposal in light of clauses 2.4.2 and 2.4.3 of the Market Rules. Clause 2.4.2 outlines that the IMO “*must not make Amending Rules unless it is satisfied that the Market Rules, as proposed to be amended or replaced, are consistent with the Wholesale Market Objectives*”.

Additionally, clause 2.4.3 states, when deciding whether to make Amending Rules, the IMO must have regard to the following:

- any applicable policy direction from the Minister regarding the development of the market;
- the practicality and cost of implementing the proposal;
- the views expressed in submissions and by the MAC; and
- any technical studies that the IMO considers necessary to assist in assessing the Rule Change Proposal.

The IMO notes that there has not been any applicable policy direction from the Minister in respect of this Rule Change nor has it commissioned a technical review in respect of this Rule Change Proposal.

The IMO's assessment is outlined in the following sections.

### 7.1 Wholesale Market Objectives

The IMO considers that the Market Rules as a whole, if amended, will be consistent with the Wholesale Market Objectives.

Wholesale Market Objective	Consistent with objective
(a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system	Yes

Wholesale Market Objective	Consistent with objective
(b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors	Yes
(c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions	Yes
(d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system	Yes
(e) to encourage the taking of measures to manage the amount of electricity used and when it is used	Yes

Further, the IMO considers that the Market Rules if amended would not only be consistent with the Wholesale Market Objectives but also allow the Market Rules to better address Wholesale Market Objective (c).

Impact	Market Objectives
Allow the Market Rules to better address the objective.	c
Consistent with objective.	a, b, d, e
Inconsistent with objective.	

The proposed amendments will introduce the concept of new Intermittent Generators being able to be partially commissioned, and therefore only liable to make partial refunds to the extent of the Facility's shortfall from its Reserve Capacity Obligations. The IMO considers that requiring new Intermittent Generators, considered by the IMO to be in Commercial Operation, to only make capacity refunds to the extent that they were unavailable during the Trading Month will promote a fairer outcome, which better reflects the value of the capacity delivered by these Facilities to the market. The IMO notes that this will improve the consistency between the treatment of new Scheduled Generators and Intermittent Generators, thereby promoting Wholesale Market Objective (c).

## 7.2 Practicality and cost of implementation

### Cost:

The proposed amendments will require changes to the Wholesale Electricity Market Systems operated by the IMO. The costs of these changes are closely linked with the costs of the changes contemplated by RC\_2010\_12:

The IMO notes that as it has decided to progress both RC\_2010\_12 and RC\_2010\_22 the costs of the changes will be (assuming 50/50 split of "shared" development/testing costs):

- RC\_2010\_12: Approximately \$38,000
- RC\_2010\_22: Approximately \$70,000

The proposed changes will not require any update to the systems operated by System Management. In addition there have been no identified changes to other Rule Participants' costs.

### Practicality:

The IMO has not identified any issues with the practicality of implementing the proposed changes.

### **7.3 Views expressed in submissions**

The IMO received five submissions during the first submission period, four of which supported the Rule Change Proposal, albeit suggesting a number of amendments and identifying a number of issues for further consideration by the IMO. Specifically, Alinta identified an issue with Intermittent Generators having an RCOQ of zero and therefore not being exposed to any capacity refunds if they were partially commissioned. The IMO has amended the proposed methodology to ensure that a shortfall quantity would apply in these instances, consistent with the original intent of the Rule Change Proposal. Alinta also suggested that consideration should be given to requiring all Facilities to be deemed to have been in Commercial Operation to avoid exposure to capacity refunds.

Griffin Energy did not support the proposed amendments, instead suggesting for consideration an alternative methodology which would simply require the Market Participant to provide a report from an accredited expert as to the completeness of the Facility at the same time Scheduled Generators are deemed to be commissioned (1 December). The IMO notes that Griffin Energy's proposal is consistent with the concerns it raised in response to the IMO's proposed solution to the treatment of Intermittent Generators under RC\_2010\_12.

In response to Griffin's proposal the IMO noted that its originally proposed changes would allow for a natural test of the Facility's ability to meet its capacity obligations. That is for a Market Participant which has installed its Facility to the specifications on which certification was originally based there would be no additional costs associated with proving the ability of the Facility to meet its Required Level. The IMO also noted that requiring an Intermittent Generator to simply make refunds on the proportion of its capacity that it failed to make available, as proposed by Griffin Energy, during the facility's first year of operation would fail to reflect the importance of making capacity available during the Hot Season. Further details of the IMO's response to Griffin Energy's proposal along with the other issues raised in submissions received during the first submission period is presented in Appendix 3 of this report.

During the second submission period IMO received two submissions that supported the Rule Change Proposal. The IMO's response to the suggestions presented in submissions received during the second submission period is presented in section 6.2 of this report.

### **7.4 Views expressed by the Market Advisory Committee**

The MAC discussed the proposal at both the 10 November 2010 and 15 December 2010 MAC meetings. An overview of the MAC discussions is presented below. Further details are available in the MAC meeting minutes<sup>3</sup>.

#### November 2010 meeting

During the meeting it was noted that the proposal would ensure that the value of capacity delivered by Intermittent Generators to the market is better reflected (promoting Wholesale Market Objective (c)). Scheduled Generators can currently take a commercial position of entering the market and for the purposes of Reserve Capacity log partial outages, thereby avoiding full capacity refunds.

The following points were noted:

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<sup>3</sup> Available: <http://www.imowa.com.au/market-advisory-committee>.

- Mr Stephen MacLean questioned why the IMO had decided to use the second highest value of output for the Facility. Mr Ben Williams clarified that this would be consistent with the requirements for the return of RCS.
- Mr Corey Dykstra noted that the proposal would open all Intermittent Generators up to capacity refunds even if they have developed everything they had indicated in their certification application. Mr Dykstra noted that the inclusion of an ability to provide an expert report to the IMO would avoid this issue. Mr Dykstra noted that otherwise an additional cost would be effectively imposed on a Market Generator if it does not meet 100 percent of its Required Level. Mr Dykstra noted that the practical outworking of this would be that the majority of participants would provide the IMO with an expert report to reduce their risks, and that this raises the question of what the proposal would achieve in practice.
- Mr Alistair Craib noted that the rationale behind the proposed rule change is that currently a generator needs to be fully commissioned to avoid capacity refunds. As a result, if they did not manage to bring on all their turbines they would be unduly impacted by paying back to the market the full amount of their Capacity Credits. Mr Forward noted that a thermal plant that was not 100 percent commissioned (e.g. one of its four mills not operating) might be able to achieve 70 percent of output whereas a Intermittent Generator would be penalised for the whole amount of its capacity not being available. The proposed amendments will create a similar type of regime where if commissioning had not been completely successful there would be a point in time where the Market Participant would be relieved from full exposure to capacity refunds. Mr Dykstra clarified that the commissioning provisions are different for a thermal plant under the Market Rules.
- Mr Shane Cremin questioned if an Intermittent Generator can state that it has completed commissioning and then register a partial outage. Mr Williams noted that this was not currently an option for an Intermittent Generator. Mr Cremin questioned if this would be an easier option. Mr Williams noted that he did not consider that this would be the case.
- Mr Sutherland noted that the proposed amendments would improve the consistency with the treatment of Scheduled Generators.
- Mr MacLean suggested that brackets be included around the 2 and the  $Max_2$  in the equation for determining the amount of refund that would be required in these circumstances. Additionally, Mr MacLean suggested that the IMO clarify that the “level of output” would be achieved during a Trading Interval during the Trading Month. Mr Forward agreed.

The MAC agreed for the IMO to progress the Rule Change Proposal, subject to the incorporation of the agreed amendments.

*Further update: The IMO amended the proposal following the MAC's advice to allow for an expert report (outlining the capability of the Facility in meeting its capacity obligations) to be provided for the purposes of determining any capacity refunds required. That is capacity refunds would be determined based on either the Facility's metered output or the value provided in the most recent expert report.*

#### December 2010 meeting

During the meeting Mr Dykstra noted that it was unclear that the proposed changes would improve consistency in treatment between Scheduled Generators and Intermittent Generators. Mr Dykstra requested clarification of how Scheduled Generators can take a commercial position when they enter the market. Mr Dykstra also questioned whether an Intermittent Generator that has partially built its wind farm and is subsequently required

to make capacity refunds should make capacity refunds on the amount of the capacity that has been built rather than the total amount of capacity that is required to be provided for the year. Mr Forward agreed to discuss this further with Mr Dykstra and that the IMO would provide clarification of the process out of session.

*Further update: The IMO and Alinta discussed informally whether the proposed changes to the treatment of Intermittent Generators would be consistent with the ability of a Scheduled Generator to take a commercial position in the market and agreed that this would be the case. It was noted that this change may shift the risk associated with the unavailability of the full amount of capacity from the Market Participant to the market, reflecting the current situation with Scheduled Generators.*

## 8. THE IMO'S FINAL DECISION

Based on the matters set out in this report, the IMO's final decision, in accordance with clause 2.7.8 (e), is to accept the Rule Change Proposal as modified by the amendments outlined in sections 3.4 and 6.4 of this report and presented in Appendices 4 and 5.

### 8.1 Reasons for the Decision

The IMO has made its decision on the basis that the Amending Rules:

- will allow the Market Rules to better address Wholesale Market Objective (c);
- are consistent with the other Wholesale Market Objectives;
- have the support of the MAC; and
- are supported by the majority of submissions received during both submission periods.

The IMO also notes that in making its final decision to accept the amendments it has taken into account its final decision to approve the proposed Amending Rules under RC\_2010\_12, given the contingency of these amendments on the implementation of the concept of a Required Level.

Additional detail outlining the analysis behind the IMO's decision is outlined in section 7 of this Final Rule Change Report.

## 9. AMENDING RULES

### 9.1 Commencement

The amendments to the Market Rules resulting from this Rule Change Proposal will commence at **8.00am** on **1 October 2011**.

### 9.2 Amending Rules

The following clauses are amended (~~deleted text~~, added text):

- 4.26.1. If a Market Participant holding Capacity Credits associated with a generation system fails to comply with its Reserve Capacity Obligations applicable to any given Trading Interval then the Market Participant must pay a refund to the IMO calculated in accordance with the following provisions.

#### REFUND TABLE

Dates	1 April to 1	1 October to	1 December	1 February
-------	--------------	--------------	------------	------------

Public Domain

	October	1 December	to 1 February	to 1 April
Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y
Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	1.5 x Y	1.5 x Y	4 x Y	6 x Y
Non-Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y
Non-Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.75 x Y	0.75 x Y	1.5 x Y	2 x Y
Maximum Participant Generation Refund	The total value of the Capacity Credit payments paid or to be paid under these Market Rules to the relevant Market Participant for the 12 Trading Months commencing at the start of the Trading Day of the previous 1 October (excluding any payments relating to a Demand Side Programme) assuming the IMO acquires all of the Capacity Credits held by the Market Participant (excluding any Capacity Credits held for Demand Side Programmes) and the cost of each Capacity Credit so acquired is determined in accordance with clause 4.28.2(b), (c) and (d) (as applicable).			
<p>Where:</p> <p>For an Intermittent <del>Facility Generator</del> that has been commissioned:</p> <p>(a) <u>either:</u></p> <p>i. <u>operated at a level equivalent to its Required Level, adjusted to 100 percent of the level of Capacity Credits currently held, in at least two Trading Intervals; or</u></p> <p>ii. <u>provided the IMO with a report under clause 4.13.10C, where this report specifies that the Facility can operate at a level equivalent to its Required Level, adjusted to 100 percent of the level of Capacity Credits currently held; and</u></p> <p>(b) <u>is, following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:</u></p> <p>Y equals 0.</p> <p>For all other facilities, including <del>Intermittent Facilities</del> that have not been commissioned: Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals in the relevant <u>Trading Month</u>.</p> <p><del>For the purposes of this clause, an Intermittent Facility will be deemed to be commissioned when the IMO determines that the facility is fully operational. In this case the IMO must apply the principle that the Facility is fully operating in accordance with the basis on which the Facility applied for, and was granted, Certified Reserve Capacity, in accordance with clause 4.10 and 4.11 respectively and was subsequently assigned Capacity Credits in accordance with clause 4.14.</del></p>				

4.26.1A. The IMO must calculate the Reserve Capacity Deficit refund for each Facility (“**Facility Reserve Capacity Deficit Refund**”) for each Trading Month m as the lesser of:

- (a) the sum over all Trading Intervals t in Trading Month m of the product

of:

- i the Off-Peak Trading Interval Rate or Peak Trading Interval Rate determined in accordance with the Refund Table applicable to Trading Interval t; and
- ii the Reserve Capacity Deficit in Trading Interval t,

where the Reserve Capacity Deficit for a Facility is equal to which ever of the following applies:

- iii. if the Facility is required to have submitted a Forced Outage under clause 3.21.4, the Forced Outage in that Trading Interval measured in MW; or
- iv. if the Facility is an Intermittent ~~Facility Generator~~ which is deemed to have not been commissioned not considered by the IMO to have been in Commercial Operation; for the purposes of clause 4.26.1, the number of Capacity Credits associated with the relevant Intermittent ~~Generator Facility~~; or
- ivA. if the Facility is an Intermittent Generator which is considered by the IMO to have been in Commercial Operation, but for which Y does not equal zero in the Refund Table in clause 4.26.1, the minimum of:

1. RL - (2 × Max<sub>2</sub>); or

2. RL - A

where:

RL is the Required Level, adjusted to 100 percent of the level of Capacity Credits currently held;

Max<sub>2</sub> is the second highest value of the output for the Facility (MWh) achieved during a Trading Interval during the relevant Trading Month, as measured in Meter Data Submissions received by the IMO in accordance with clause 8.4, that has been achieved since the date the IMO determined the Facility to be in Commercial Operation, where this value must be set equal to or greater than the Max<sub>2</sub> applied by the IMO for the previous Trading Month; and

A is the level of output (in MW) detailed in the most recent report provided by the Market Participant for the Facility under clause 4.13.10C.

where this value will be applied for the purposes of this clause for the relevant Trading Month; or

- v. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010 onwards, the Facility is undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system, the number of Capacity Credits associated with the relevant Facility; or
  - vi. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010 onwards, the Facility is not yet undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system, the number of Capacity Credits associated with the relevant Facility; or
  - vii. if the Facility is a Demand Side Programme:  
$$\max(0, \text{RCOQ} - \max(0, (\text{RD} - \text{MinLoad})))$$

where:

    - RCOQ is the Reserve Capacity Obligation Quantity determined for the Facility under clause 4.12.4;
    - RD is the Relevant Demand for the Facility determined in accordance with clause 4.26.2CA; and
    - MinLoad is the sum of the minimum load MW quantities provided under clause 2.29.5B(c) for the Facility's Associated Loads; and
- (b) the total value of the Capacity Credit payments associated with the relevant Facility paid or to be paid under these Market Rules to the relevant Market Participant for the 12 Trading Months commencing at the start of the Trading Day of the most recent 1 October, assuming the IMO acquires all of the Capacity Credits associated with that Facility and the cost of each Capacity Credit so acquired is determined in accordance with clause 4.28.2(b), (c) and (d) (as applicable), less all Facility Reserve Capacity Deficit Refunds applicable to the Facility in previous Trading Months falling in the same Capacity Year.

## APPENDIX 1: FULL DETAILS OF THE PROPOSAL

### Background

The IMO notes in its Rule Change Proposal that it has recently undertaken a review of the provisions in the Market Rules around the administration of Reserve Capacity Security. One of the issues identified as part of this review was the treatment of Intermittent Generation Facilities and the uncertainty created around when an Intermittent Generation Facility would be entitled to receive its security back due to the interrelationship of clauses 4.13.11A and 4.13.10(c).

Clause 4.13.11A (via a reference to clause 4.13.11) stipulates that the Reserve Capacity Security provided will be forfeited for Facilities that cannot, at least once during the Capacity Year, operate at least at 90 percent of the Reserve Capacity Obligation Quantity (RCOQ) level, in a Trading Interval when the RCOQ for that Facility is greater than zero. Intermittent Facilities have an RCOQ level of zero at all times and it is therefore impossible for them to meet the requirements of clause 4.13.11A. At the same time clause 4.13.10(c) stipulates that a Facility captured by that clause (which applies to Intermittent Generation Facilities) should have its security returned by the end of the Reserve Capacity Cycle irrespective of performance. This is in contrast to the requirements under clause 4.13.11A.

At the May 2010 MAC meeting, a paper was presented outlining a number of issues identified with the administration of Reserve Capacity Security and in particular the return of security to Intermittent Generation Facilities. During the meeting the MAC agreed that all Facilities (both conventional and non-conventional) should be entitled to receive their Reserve Capacity Security back when they can prove to the IMO that they can perform to the level at which their certification is based.

The IMO notes that to implement the agreed changes, the IMO prepared RC\_2010\_12. One component of the proposal is the implementation of a Required Level of output a Facility is required to perform at for the purposes of the return of Reserve Capacity Security, Reserve Capacity Testing and capacity refunds. The Required Level for each Facility type will be calculated by the IMO as follows:

- for Facilities assigned Certified Reserve Capacity (CRC) under clause 4.11.1(a), using the Metered Schedule and Temperature Dependence Curves submitted to the IMO under clause 4.10.1(e)i. and converted to a sent out basis at 41 °C;
- for Facilities assigned CRC under clause 4.11.2(b), using either the:
  - a value which equals the 5 percent probability of exceedance (POE) of the 3-year expected generation output for the Facility, expressed in MW, provided to the IMO under clause 4.10.3; or
  - in the case where the value which equals the 5 percent POE is not considered to be appropriate by the IMO, an alternative value, expressed in MW, to that identified in the report provided under clause 4.10.3; and
- Curtailable Loads and Demand Side Programmes, using the Facility's Relevant Demand minus Capacity Credits assigned to that Facility.

Alternatively a Market Participant who does not consider that its Facility, that was assigned CRC under clause 4.11.2(b), will be able to meet the 90 percent requirement (of the Required Level) prior to the end of the relevant Capacity Year, may provide to the IMO a report prepared by one of the IMO's accredited experts that specifies the Facility has been built to the specifications its certification was based on. In this case the security will also be returned to a Market Participant following the end of the Capacity

Year. Note that the report from the accredited expert can be provided at any time during the Capacity Year, and to the extent that the report indicates that the Facility has been built to its original specifications full capacity refunds will no longer be required from that time onwards.

The IMO notes that in determining the Required Level to be met for Facility's assigned CRC under clause 4.11.2(b) (mainly Intermittent Generators), the views of the IMO's panel of independent experts were sought. Further details of the Required Level criterion and the advice received from the independent experts are available on the following webpage: [http://imowa.com.au/RC\\_2010\\_12](http://imowa.com.au/RC_2010_12)

## Issue

A new Intermittent Generator is currently required to make capacity refunds until it is deemed to be commissioned by the IMO. Any amendments to the Market Rules resulting from RC\_2010\_12 will specify that an Intermittent Generator will be commissioned when it has met 100 percent of its Required Level for two Trading Intervals and is considered by the IMO to be in Commercial Operation.<sup>4</sup> The IMO contends that with the application of the IMO's proposed new Required Level criterion it will be possible that an Intermittent Generator may never be deemed commissioned. For example a 100MW wind farm (comprising of 50 2MW turbines) may have commissioned 20 turbines (40MW) but would not be deemed by the IMO to be completely commissioned and therefore required to make full refunds.

## Proposal

The IMO proposes to introduce the concept of partially commissioned Intermittent Generators for the purposes of capacity refunds in the Market Rules. Clause 4.26.1 will be amended to allow for a new Intermittent Generator who has not operated at 100 percent of its Required Level or provided the IMO with a report prepared by one of the IMO's accredited experts but which the IMO considers to be Commercial Operation to only make partial refunds. The level of partial refund to apply will be determined by the IMO as either:

- the second highest percentage (of its Required Level) that the Intermittent Generator has performed to<sup>5</sup>; or
- the equivalent percentage of the Facility described in the report provided under clause 4.10.3 that has been built, where a report has been provided from an independent expert accredited by the IMO<sup>6</sup>.

The IMO considers that the introduction of the concept of partial commissioning for Intermittent Generators will better reflect the value of the capacity delivered by these Facilities to the Wholesale Electricity Market. Intermittent Generators are paid for a service and should only be required to make refunds to the extent that they do not deliver that service. The IMO considers that for a Facility which it deems to be in Commercial Operation, the Facility's availability is either indicated by the highest level of output achieved for two Trading Intervals (second highest level of output) during the Trading Month or alternatively as the level detailed in the accredited expert's report.

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<sup>4</sup> Note that the IMO proposes in RC\_2010\_12 to define the term "Commercial Operation" in the Market Rules and the considerations that will taken into account in making its decision as to whether a Facility meets the criteria to be deemed in Commercial Operation. Further details will be specified in the Market Procedure for RCS (see Appendix 1 of RC\_2010\_12 for further details).

<sup>5</sup> Note that this requirement is consistent with the number of Trading Intervals that a Facility must achieve its Required Level to be entitled to receive its RCS back, as proposed under RC\_2010\_12.

<sup>6</sup> Note that the ability to provide a report from an accredited expert to apply for the purposes of the return of security or partial refunds will be introduced under RC\_2010\_12.

The IMO contends that implementing a partial refund scheme will provide sufficient incentive for Market Participants developing Intermittent Generators to develop projects in accordance with applications made to the IMO. This is while recognising the value of any capacity made available to the market. While there could be an alternative option of implementing a completely dynamic partial refund scheme, the IMO does not consider that this would reflect the Intermittent Generators true availability, given the nature of these types of facilities (e.g. variable wind conditions), and would create additional complexity to both the Market Rules and IMO Settlement System.

The IMO considers that the proposed solution will ensure greater consistency between the treatment of new Intermittent Generators and new Scheduled Generators that are no longer undertaking Commissioning Tests. Currently once a Scheduled Generator has completed its Commissioning Tests it is required to make refunds only to the extent that it fails to make all of its capacity available to the market (Clause 4.26.1A)<sup>7</sup>. Requiring new Intermittent Generators to only make refunds to the extent that they were unavailable (as indicated by the Facility's second highest level of output during the Trading Month) will promote a more consistent outcome for the different technology types (Wholesale Market Objective (c)).

The IMO notes that the introduction of the concept of partially commissioned Intermittent Generators for the purposes of capacity refunds will be conditional on the outcomes of RC\_2010\_12 and that any Amending Rules resulting from either Rule Change Proposal would be commenced at the same time.

### **Worked Example**

The IMO presents that following worked example in its proposal. Consider a Market Participant that has not installed all the turbines that its wind farm (Facility 1) was originally certified for, but following an application the IMO considers Facility 1 to be in Commercial Operation. If during a Trading Month the turbines which have been installed for Facility 1 operate at 77 percent of the Facility's Required Level (second highest level of output achieved) the Market Participant will only be required to make refunds of 23 percent (the shortfall in output) of the Facility's Capacity Credits for the Trading Month from the date where the IMO considers that Facility to be in Commercial Operation.

The IMO's worked example is illustrated in the diagram presented below. The yellow section illustrates the amount of refunds that would be required to be made by Facility 1 during the Trading Month (including full refunds prior to the Facility being deemed to be in Commercial Operation and partial refunds subsequently). Note that under the Market Rules (as proposed to be amended under RC\_2010\_12), Facility 1 would be required to make refunds of 100 percent of its Capacity Credits until such time as it reached 100 percent of its Required Level.

An example of a Facility which the IMO determines is in Commercial Operation and which during the same month reaches 100 percent of its Required Level (Facility 2) is also presented in the diagram below. In this case full refunds would be required to be made for the entire period up until the IMO determined the Facility is in Commercial Operation (indicated by the green section). For the remainder of the Trading Month,

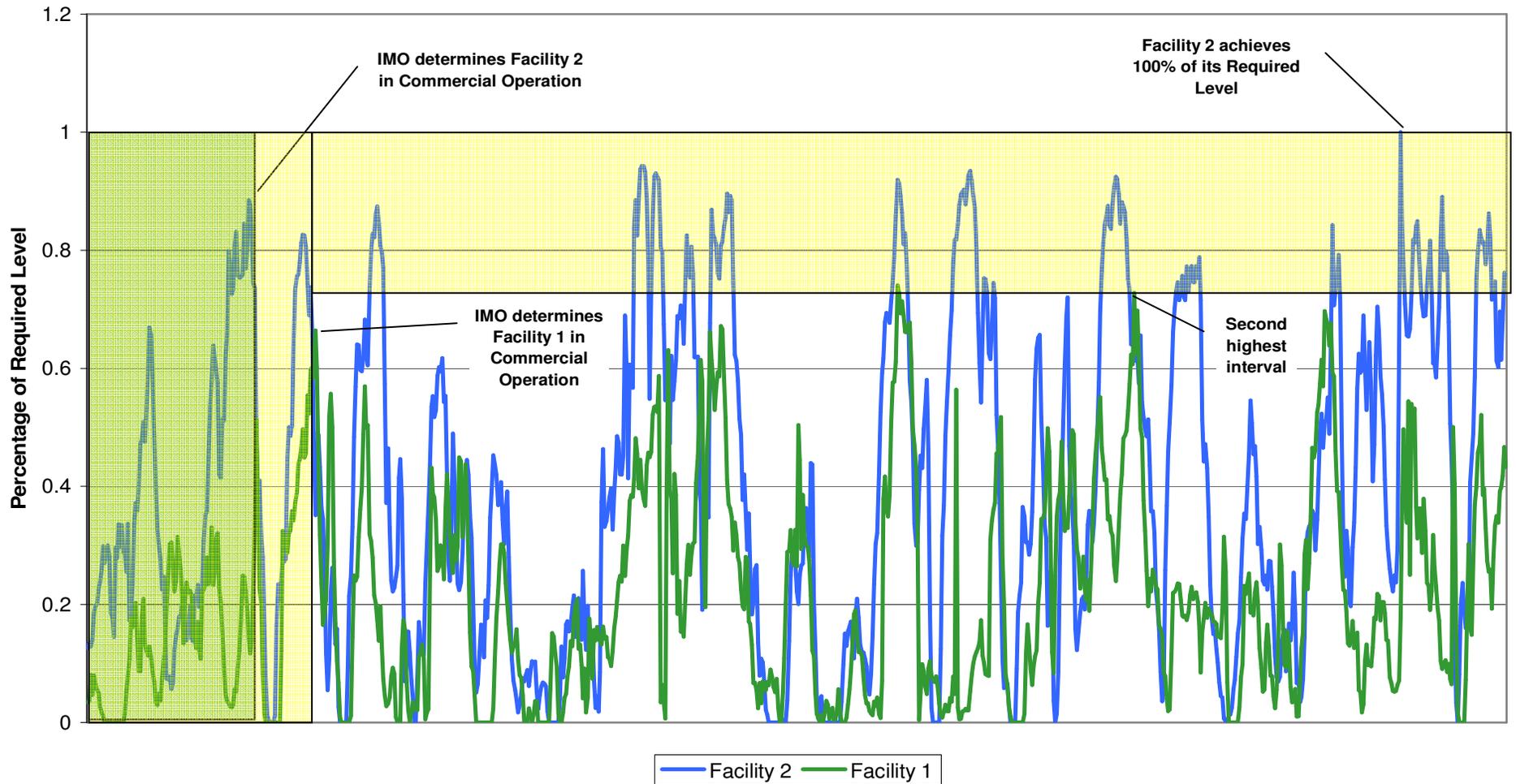
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<sup>7</sup> Note that after 1 October of Year 3 of the Capacity Cycle, Market Generators who have yet to commence operation or that are undertaking late commissioning are required to make full Capacity Cost Refunds. For late commissioning plants full Capacity Cost Refunds will apply for a period of up to four continuous months. Market Generators undertaking late commissioning can make commercial decisions around whether to officially finish commissioning once they have reached a certain level of reliability.

once the Facility has been determined to be in Commercial Operation, no refunds will apply. This will also be the case for subsequent Trading Months.

The IMO notes that Market Participants wishing for a Facility to be considered by the IMO to be in Commercial Operation will be required to make an application to the IMO for this purpose. Details of the process for applications will be specified in the Reserve Capacity Market Procedure (consistent with the proposed definition of Commercial Operation and criterion for the IMO's determination to be implemented in any Amending Rules resulting from RC\_2010\_12). The IMO will develop the specific proposed amendments to the Market Procedure during the first submission period for RC\_2010\_12. This will be in conjunction with the IMO Procedure Change and Development Working Group. The IMO considers that this will ensure that interested parties submitting on the Rule Change Proposal will be provided with transparency of the proposed changes to the Market Procedure.

### Wind Farm Output during 1 Trading Month



## APPENDIX 2: PROPOSED AMENDING RULES IN THE RULE CHANGE PROPOSAL

The proposed amendment to clause 4.26.1 will allow for a partially commissioned Intermittent Facility to only pay partial capacity refunds where the IMO considers it to be in Commercial Operation. The IMO proposes to insert the same scaling factor to Capacity Credits assigned at the beginning of the Capacity Year as used for the purposes of the return of Reserve Capacity Security and in determining when a Facility has operated at 100% of its Required Level.

The amendments to clause 4.26.1 proposed under RC\_2010\_12 have been presented in the drafting to ensure that the further amendments to this clause to allow for partially commissioned Intermittent Facilities to pay partial refunds can be reviewed in context.

Note that clause 4.13.10C is a new clause proposed under RC\_2010\_12. The proposed new clause 4.13.10C will allow a Market Participant to provide the IMO with a report from an independent expert outlining that the Facility has been installed as was originally proposed to be built during certification (as used in the report provided under clause 4.10.3). Alternatively the report can specify that a equivalent percentage of the Facility has been installed. Note that a Market Participant may provide multiply updates of the report as necessary

- 4.26.1. If a Market Participant holding Capacity Credits associated with a generation system fails to comply with its Reserve Capacity Obligations applicable to any given Trading Interval then the Market Participant must pay a refund to the IMO calculated in accordance with the following provisions.

### REFUND TABLE

Dates	1 April to 1 October	1 October to 1 December	1 December to 1 February	1 February to 1 April
Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y
Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	1.5 x Y	1.5 x Y	4 x Y	6 x Y
Non-Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y
Non-Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.75 x Y	0.75 x Y	1.5 x Y	2 x Y
Maximum Participant Refund	The total value of the Capacity Credit payments paid or to be paid under these Market Rules to the relevant Market Participant for the 12 Trading Months commencing at the start of the Trading Day of the previous 1 October assuming the IMO acquires all of the Capacity Credits held by the Market Participant and the cost of each Capacity Credit so acquired is determined in accordance with clause 4.28.2(b), (c) and (d) (as applicable).			

Where:

For an Intermittent Facility that:

- (a) has operated at 100 percent of its Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a), in at least two Trading Intervals; or
- (b) has provided the IMO with a report under clause 4.13.10C, where this report specifies that 100 percent of the Facility certified under clause 4.11.2(b) has been built; and
- (c) is following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:

Y equals 0.

For an Intermittent Facility that:

- (a) has not operated at 100 percent of its Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a), in at least two Trading Intervals; or
- (b) has not provided the IMO with a report under clause 4.13.10C, where this report specifies that 100 percent of the Facility certified under clause 4.11.2(b) has been built; and
- (c) is following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:

Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals during the relevant Trading Month, and multiplying this value by either

- (i) the following formula:

$$\frac{RL - (2 \times \text{Max}_2)}{RL}$$

where:

RL is the Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a)

Max<sub>2</sub> is the second highest value of the output for the Facility (MWh) achieved during a Trading Interval during the relevant Trading Month, as measured by the Meter Schedule data (sent out) that has been achieved since the date the IMO determined the Facility to be in Commercial Operation, where this value must be set equal to or greater than the Max<sub>2</sub> applied by the IMO for the previous Trading Month; or

- (ii) the percentage detailed in the most recent report provided by Market Participant under clause 4.13.10C.

For all other facilities, including Intermittent Facilities that ~~following a request to the IMO by a Market Participant~~ are not considered by the IMO to be in Commercial Operation: Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals in the relevant ~~Trading M~~month.

### **APPENDIX 3: THE IMO'S RESPONSE TO SUBMISSIONS RECEIVED DURING THE FIRST SUBMISSION PERIOD**

The IMO's response to each of the issues identified during the first submission period is presented in the table over the page:

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
Current Treatment of Intermittent Generators	Perth Energy	The current treatment of Intermittent Generators (with the IMO's application of the Market Rules to date) which effectively guarantees that Intermittent Generators will have their RCS returned by the end of the Reserve Capacity Cycles, as well as not ever being exposed to capacity refunds even in the cases of late or only partial commissioning, is discriminatory and gives an unfair competitive advantage to these technologies.	<p>The IMO considers that the current Market Rules around the treatment of Intermittent Generators and the return of their RCS are ambiguous. In particular the obligations in clauses 4.13.11A (that the Facility meets 90 percent of RCOQ) and 4.13.10(c) (that the security is returned at the end of year regardless of the Facility's performance) are in contrast to each other. This was highlighted in more detail as Issue 2: Treatment of Intermittent Facilities in the IMO's RC_2010_12. The IMO notes that RC_2010_12 proposes a solution to directly address this current ambiguity and ensure that all facilities will receive their security back when they can perform to the level at which their certification was based.</p> <p>The IMO however notes that this issue has not impacted the exposure of these Facilities to capacity refunds. Under the current Market Rules Intermittent Generators will always be required to pay full refunds until they are considered to be "commissioned", including in the cases of late and partial commissioning. The IMO notes that RC_2010_22 proposes a methodology for better valuing the capacity provided by partially commissioned Intermittent Generators, thereby better reflecting the value of their capacity to the market.</p>
Current Treatment of Intermittent Generators	Perth Energy	The current treatment of Intermittent Generators could potentially lead to very inefficient investment decisions with a resultant sub optimal technology mix in the SWIS.	The IMO agrees that the current treatment of Intermittent Generators, with regard to the requirement to make capacity refunds until the Facility is 100 percent commissioned, could provide unintended signals to new investors. The IMO considers that the proposed changes will ensure more equivalent treatment of all technology types by better reflecting the value to the market of capacity provided by Intermittent Generators prior to operating at the full level of output for the Facility (meeting the 100 percent test or equivalent) while still providing incentives for an Intermittent Generator to make available all of its capacity to the market.
Treatment of Intermittent Generators	Griffin Energy	Griffin Energy considers that the IMO is introducing a layer of complexity into the market in order to continue to try and apply one-size-fits-all mechanisms to very different technologies.	The IMO disagrees that the concept of a Required Level is a one-size-fits all approach as the methodology explicitly differentiates between the different technology types. The IMO considers that, where appropriate, different technology types should be treated differently. However, for the purposes of the provision of capacity by generators no distinction is currently made in the WEM between the sources of the capacity. It is expected that all certified capacity will be made available to the market. Any differences between the classes of generation are taken into

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
			account during initial certification under either clause 4.11.1(a) or clause 4.11.2(b), and when defining the criterion against which to assess the performance of a Facility. The Required Level concept explicitly differentiates between the different classes of generation when determining the level to apply for a Facility to prove it can meet its capacity obligations. The Required Level concept for a Facility can then be applied consistently across a number of areas of the Market Rules such as RCS and capacity refunds.
Treatment of Intermittent Generators	Griffin Energy	Griffin Energy would prefer the IMO approach issues relating to Intermittent Generators differently to issues relating to Scheduled Generators, recognising the inherent differences in the technologies and the roles they play in the market.	Refer to above.
Treatment of Intermittent Generators	Griffin Energy	Adopting a one size fits all approach ends up producing poor incentives across the board.	Refer to above.
Treatment of Intermittent Generators	Griffin Energy	Griffin Energy proposes an alternative methodology to deal with the partial commissioning of Intermittent Generators (with the caveat that this is at a high level only and has not been considered in detail). An Intermittent Generator would provide a report from an IMO accredited expert as to the completeness of the Facility at the time scheduled generators are deemed to be commissioned (1 December). This could be provided earlier by the Intermittent Generator if it has completed the construction and commissioning of the Facility prior to this date. Based on the report, the Intermittent Generator would refund to the IMO an amount proportionate to the shortfall in installed capacity (where this would not be linked to the capacity Refund Table but be on a one to one basis). An Intermittent Generator may wish to provide further updated reports to the IMO each month (by a specified time) as an incomplete Facility progresses, thus reducing its refund liability. At the end of the Capacity Year, the Intermittent Generator would forfeit the amount of its security	<p>The IMO notes that the alternative methodology proposed by Griffin Energy is a variation of the IMO's proposal and has been previously indirectly discussed at the MAC with regards to simply basing the Facility's Required Level on an expert report (RC_2010_12). The IMO considers that Griffin Energy's proposed alternative methodology, of requiring an expert report to indicate the ability of a Facility to meet its obligations, would potentially create additional costs to the Facility to prove that it can meet its capacity obligations. Further, for a Facility which is not yet capable of meeting 100 percent of its Required Level there would be an ongoing requirement to provide an expert report to indicate improvements in the Facility's ability to meet its Required Level. This could be construed as creating a barrier to entry for Intermittent Generators.</p> <p>The IMO notes that RC_2010_22 proposes two ways for a facility to indicate the level of its capacity obligations that it can meet and which therefore form the basis of any capacity refunds once the Facility has been deemed to be in Commercial Operation, either via:</p> <ul style="list-style-type: none"> <li>• the metered output of the facility; or</li> </ul>

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
		bond equal to the proportion of the facility still incomplete.	<ul style="list-style-type: none"> <li>• the value indicated in the most recent expert report provided to the IMO.</li> </ul> <p>The IMO considers that the originally proposed changes would allow for a natural test of the Facility's ability to meet its capacity obligations. That is for a Market Participant which has installed its Facility to the specifications on which certification was originally based there would be no additional costs associated with proving the ability of the Facility to meet its Required Level. This would simply be indicated by the Facility's Metered Schedule. However, the originally proposed methodology would also provide an option for a Market Participant to provide a report from an accredited expert certifying the percentage of its Required Level that the Facility is capable of meeting. This option could be exercised where a Market Participant does not consider its metered output would be reflective of the true ability of the Facility to meet its capacity obligations.</p> <p>The IMO also notes the following points with regards to Griffin Energy's proposed alternative methodology:</p> <ul style="list-style-type: none"> <li>• Under the current Market Rules Scheduled Generators are not automatically deemed to be commissioned on 30 November. Scheduled Generators themselves determine when they want to finish undertaking an approved Commissioning Test by submitting a Resource Plan - signalling to the market that they are now operating commercially. The IMO notes that there are also provisions in the Market Rules to allow a Facility to undertake late commissioning for a period of up to 4 months after the date at which the Facility's Reserve Capacity Obligations apply<sup>8</sup>.</li> <li>• Requiring an Intermittent Generator to simply make refunds (which would no longer be linked to the Refund Table contained in clause 4.26.1 of the Market Rules) on the proportion of its capacity that it</li> </ul>

<sup>8</sup> Refer to: Updates to Commissioning Provisions (RC\_2009\_08) available: [http://www.imowa.com.au/RC\\_2009\\_08](http://www.imowa.com.au/RC_2009_08)

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
			<p>failed to make available during the facility's first year of operation would fail to reflect the importance of making capacity available during the Hot Season.</p> <ul style="list-style-type: none"> <li>The changes proposed under RC_2010_22 would not impact on the amount of RCS that would be returned to the Market Participant. The requirement for the return of RCS would continue to be that they meet either the 100 percent test (during the year) or 90 percent test (by the end of the year). As proposed under RC_2010_12, the provision of a report from an accredited expert specifying that the Facility has been built in accordance with the basis on which the Facility applied for and was granted Certified Reserve Capacity would provide a further mechanism to prove that it has met the requirements of the 90 percent test. A Facility that meets either the 100 percent or 90 percent test would be entitled to receive its <u>entire</u> RCS back. The IMO does not consider it would be appropriate to implement a mechanism to allow for the partial return of a RCS, given the potential risk to the market that a Facility which does not meet either of these tests may impose. The IMO also notes that the implementation of such a mechanism would fall outside the scope of RC_2010_22.</li> <li>Further details of the process for providing the report from the accredited expert, including any potential requirements to provide further updated reports by certain dates would need to be developed, in order to clarify the process surrounding the proposed alternative methodology.</li> </ul>
Quantity of shortfall for Intermittent Generators	Alinta	It appears that the amendments contemplated by RC_2010_22 would fail to achieve their apparent intent because although the "price" of the refund per MW is now non-zero (by virtue of the amendments to the refund table), the quantity of the MW shortfall would remain at zero as an Intermittent Generator does not have a Reserve Capacity Obligation. Consequently RC_2010_22 would result in a partially commissioned Intermittent Generator not being exposed to any refunds.	The IMO agrees that the originally proposed amendments would only define the price to apply for these instances but not the shortfall quantity (as an Intermittent Generator would always have an RCOQ of zero). As such clause 4.26.1A requires amendments to ensure that an RCOQ of zero does not apply when a Facility has been determined to be in Commercial Operation but has not met its obligations. The IMO has incorporated a number of additional amendments to the proposed Amending Rules (as presented in Appendix 4 of this report) to ensure that partially commissioned Intermittent Generators would not have a quantity of zero apply in these instances.

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
Quantity of shortfall for Intermittent Generators	Alinta	It is not clear that the Market Rules (as amended by RC_2010_12) would actually expose Intermittent Generators to full refunds where such facilities are capable of partially meeting their Reserve Capacity Obligations. In fact, it appears that the amendments contemplated by RC_2010_22 would actually result in partially commissioned Intermittent Generators not being exposed to any refunds.	Refer to above.  Further, the IMO acknowledges that by not defining the quantity to apply in these instances, a partially commissioned Intermittent Generator would not be exposed to any refunds. The IMO has incorporated a number of additional amendments to the Amending Rules (as presented in Appendix 4 of this report) to fix this identified issue.
Quantity of shortfall for Intermittent Generators	Alinta	Considers it would be preferable to: <ul style="list-style-type: none"> <li>not amend clause 4.26.1 (as proposed by RC_2010_22); but</li> <li>instead amend clause 4.26.1A(a) to insert a further subclause that defined how the quantity of the MW shortfall in any Trading Interval relative to the quantity of Capacity Credits associated with the Facility should be calculated when the Facility is in Commercial Operation but does not meet either of the other criterion (achieved 100 percent of Required Level or an provided expert report that the Facility can achieve 100 percent of its certified output).</li> </ul>	The IMO has adopted Alinta's suggested amendment to clause 4.26.1A(a) along with a number of other amendments to the drafting following the first submission period. These additional amendments are presented in Appendix 4 of this report, with the proposed Amending Rules presented in section 7 of the draft report.
Requirements to be in Commercial Operation	Alinta	The test for whether an Intermittent Generator is in Commercial Operation (as contemplated in RC_2010_12) is different to, and significantly less onerous than, the test for whether it is commissioned under the current Market Rules, that the facility is "...fully operating in accordance with the basis on which the Facility applied for, and was granted, Certified Reserve Capacity...".	The IMO notes that the test as to whether a Facility is in "Commercial Operation" has been intentionally made less onerous to allow for a Facility that is not 100 percent in operation to be eligible to meet this criteria and therefore no longer be subject to full capacity refunds (and only subject to the level of refunds equivalent to the shortfall in capacity made available). The IMO notes that under RC_2010_12 the requirements for a Facility to be deemed to be in Commercial Operation will be specified in clause 4.13.10B. Further details of the information required to be provided by Market Participants to allow the IMO to make this assessment will be specified in the Reserve Capacity Market Procedure.

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
Requirements to be in Commercial Operation	Alinta	<p>There would appear to remain a difference in how the Market Rules would treat Intermittent Generators and other Facilities with regards to exposure to refunds. Specifically, while an Intermittent Generator that has not been determined by the IMO to be in Commercial Operation would be exposed to full refunds, the same provision does not apply for other Facilities. Alinta suggests consideration should be given to whether for the purposes of the Facility Forced Outage Refund all Facilities should be required to have been deemed in Commercial Operation.</p>	<p>The IMO notes that a Scheduled Generator will determine when it has finished commissioning and wishes to operate in the market by no longer submitting a Commissioning Test plan to System Management for approval. This is a commercial decision for a Scheduled Generator to make, based on their perceived ability to meet their Resource Plan and therefore reduce their capacity refund obligations. The IMO notes that commissioning units are exposed to full refunds from the date their Reserve Capacity Obligation applies, including under a late Commissioning Test. The ability to allow a Market Participant to make a commercial decision to enter the market was incorporated into RC_2009_08. The IMO however notes that the requirements for a new Intermittent Generator entering the market differ to those of a Scheduled Generator, as an Intermittent Generator does not have a Resource Plan and therefore does not need to apply to undertake a Commissioning Test in accordance with clause 3.21A.</p> <p>Under the IMO's proposed changes both Scheduled and Intermittent Generators entering the market late will be exposed to full capacity refunds following the date from which their obligations apply until they take a commercial position in the market (either via no longer submitting a Commissioning Test plan (Scheduled Generator) or being deemed to be in Commercial Operation (Intermittent Generator)). After this time the Scheduled Generator will be exposed only to the extent that it fails to meet its capacity obligations. Intermittent Generators will only be partially exposed to the extent that their output falls short of their Required Level until such time as the Facility meets 100 percent of its Required Level, after which the Facility will no longer be exposed to capacity refunds. The IMO notes that in the <i>Wholesale Electricity Market Amending Rules (September 2006)</i> the rationale for no longer requiring Intermittent Generators to be exposed to capacity refunds once they were "commissioned" was that the potential loss of income associated with Capacity Credits in future cycles would be a significant disincentive for Intermittent Generators to operate. It was also noted that this is consistent with the obligations of an Intermittent Generator to simply run if they can.</p> <p>The IMO considers that a Scheduled Generator's commercial decision to</p>

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
			<p>submit a Resource Plan provides an indicator of their intention/perceived ability to operate in the market. Under the proposed amendments to clause 4.13.10B(a) (as presented in RC_2010_12) the IMO will take into account a decision by a Scheduled Generator to operate commercially in the WEM. A Market Participant would be able to apply to the IMO to determine whether a Facility is in Commercial Operation once the Facility had completed an approved Commissioning Test and subsequently produced energy for two Trading Intervals. This is the proposed requirement for the return of RCS in accordance with both the 100 percent and 90 percent tests.</p> <p>The IMO notes that if Scheduled Generators were to be required to be deemed in Commercial Operation in order to not be exposed to full capacity refunds (as suggested for further consideration by Alinta) they would be potentially exposed to full capacity refunds for a period of time between:</p> <ul style="list-style-type: none"> <li>• when it had determined to operate commercially in the WEM; and</li> <li>• where, following an application from the Market Participant, the Facility has been deemed to be in Commercial Operation by the IMO.</li> </ul> <p>The IMO considers that further exposure to capacity refunds for Scheduled Generators is neither warranted nor consistent with the intent of RC_2009_08. Additionally the IMO notes that requiring Scheduled Generators to also be deemed to be in Commercial Operation would require all existing generators to apply to the IMO to achieve this status. The IMO reiterates that under RC_2010_12 only Scheduled Generators seeking to have their RCS returned would apply to the IMO to be considered in Commercial Operation. There would be no need for an existing generator who was not undertaking an upgrade and therefore had provided a RCS to apply to be considered in Commercial Operation.</p>
Dependencies of Rule Change Proposals	Perth Energy	Would have been preferable to include these proposed changes as part of RC_2010_12, rather than as a separate Rule Change Proposal	The IMO notes that the two Rule Change Proposals were progressed separately as it considered the concept of introducing partial commissioning for the purposes of capacity refunds falls outside the

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
		<p>dependent on another, yet to be approved or implemented, Rule Change Proposal. As a minimum Perth Energy requests that the IMO continue to consider both RC_2010_12 and RC_2010_22 at the same time (throughout the entire rule change process) to explicitly allow the interaction between the two rule changes to be considered.</p>	<p>scope of RC_2010_12, which proposes solutions to a number of issues identified with the RCS process. In particular, RC_2010_22 proposes a mechanism which would be enacting a conceptual change, to better reflect the value of capacity provided by Intermittent Generators to the market via the requirements for capacity refunds. The changes proposed under RC_2010_12, which would amongst other things ensure the equivalent treatment of all generation types (Issue 2), relate only for the purposes of the return of RCS. RC_2010_12 does not propose any further conceptual changes to the operation of the WEM outside of those related to the provision and return of RCS.</p> <p>The IMO notes that it will continue to progress the two Rule Change Proposals together, as originally intended.</p>
Dependencies of Rule Change Proposals	Perth Energy	<p>Questions whether the Market Rules allow for Rule Change Proposals to be linked to another Rule Change Proposal that has not yet been finalised.</p>	<p>The IMO does not consider there to be an issue with linking to Rule Change Proposals that are not yet finalised, provided that the interaction and contingencies among the proposals are made transparent. As previously indicated the proposed amendments in RC_2010_22 are not only subject to the outcomes of the Rule Change Process but are also contingent on the outcomes of RC_2010_12. The IMO notes that this was signalled in the Rule Change Proposal for RC_2010_22.</p>
4.26.1	Perth Energy	<p>The drafting should be updated as follows:</p> <p>"... Y equals 0.</p> <p><u>For an Intermittent Facility that neither (a) nor (b) and (c) above applies:</u></p> <p>(a) <del>has not operated at 100 percent of its Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a), in at least two Trading Intervals; or</del></p> <p>(b) <del>has not provided the IMO with a report under clause 4.13.10C, where this report specifies that 100 percent of the Facility certified under</del></p>	<p>While the IMO agrees that Perth Energy's suggested changes would improve the integrity of the Amending Rules, the IMO has not adopted the suggested amendments as the proposed amendments to this clause have been removed and incorporated into new sub-clause 4.26.1A(a)(ivA). The IMO has taken into account Perth Energy's identified issue around the repetition of the criteria outlined in developing the proposed revised Amending Rules presented in section 7 of the draft report.</p>

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Clause/Issue	Submitter	Comment/Change Requested	IMO's response
		<p>clause 4.11.2(b) has been built; and</p> <p>(c) <del>is following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:</del></p> <p><u>Y is determined by dividing the Monthly Reserve Capacity ..."</u></p>	
4.26.1	Perth Energy	<p>The drafting to define Max<sub>2</sub> should be replaced by the following:</p> <p>"Max<sub>2</sub> is the second highest value of the output for the Facility (MWh) achieved during all Trading Intervals as measured by the Meter Schedule data (sent out) that has been achieved since the date the IMO determined the Facility to be in Commercial Operation."</p>	<p>The IMO has not adopted Perth Energy's proposed revised definition of Max<sub>2</sub> this is because it would change the test from the Facility having achieved the level of output for two Trading Intervals during the Trading Month to having simply achieved the level of output for any two Trading Intervals (potentially over a number of Trading Months). This would potentially make it much easier to achieve a higher level of output to apply for the purposes of determining capacity refunds. Given the intermittent nature of wind farms the IMO does not consider that this would necessarily be reflective of the actual ability of a Facility to produce a certain level of output.</p>

**APPENDIX 4: ADDITIONAL AMENDMENTS MADE BY THE IMO FOLLOWING THE FIRST SUBMISSION PERIOD**

The IMO has made some amendments to the Amending Rules following the first submission period. These changes are as follows (~~deleted text~~, added text):

The proposed changes to clause 4.26.1 will remove the separate determination of the value of Y for a partially commissioned Intermittent Generator. Partially commissioned Intermittent Generators will have a value of Y determined in accordance with the formula defined for all other facilities - that is based on Monthly Reserve Capacity Price divided by the number of Trading Intervals during that Trading Month. However, for the purposes of determining the Forced Outage refund to apply for the Facility (clause 4.26.1A) the quantity of the shortfall in available capacity will be defined as being non zero. Details of how the IMO will determine the shortfall quantity will be defined in clause 4.26.1A (ivA).

The proposed amendments will also reflect the changes to the structure of clause 4.13.10 made under RC\_2010\_12. They will improve the clarity of the requirements to either:

- operate the facility at at least 100 percent of its Required Level; or
- provide an expert report stating that the Facility can operate at 100 percent of the amount it was certified for,

and be considered by the IMO to be in Commercial Operation. The IMO considers that the amendments will improve the integrity of the Amending Rules.

The IMO notes that it has also reflected its proposed further amendments to specify that the report provided under clause 4.13.10C would need to specify that the Facility was capable of meeting 100 percent of its Required Level rather than simply 100 percent of the Facility having been built, contained in the Draft Rule Change Report for RC\_2010\_12.

The proposed amendments will also amend the reference to an “Intermittent Facility” to an “Intermittent Generator” to reflect the terminology defined in the glossary.

4.26.1. If a Market Participant holding Capacity Credits associated with a generation system fails to comply with its Reserve Capacity Obligations applicable to any given Trading Interval then the Market Participant must pay a refund to the IMO calculated in accordance with the following provisions.

**REFUND TABLE**

<b>Dates</b>	<b>1 April to 1 October</b>	<b>1 October to 1 December</b>	<b>1 December to 1 February</b>	<b>1 February to 1 April</b>
Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y
Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	1.5 x Y	1.5 x Y	4 x Y	6 x Y
Non-Business Days Off-Peak Trading Interval Rate	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y

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(\$ per MW shortfall per Trading Interval)				
Non-Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.75 x Y	0.75 x Y	1.5 x Y	2 x Y
Maximum Participant Refund	The total value of the Capacity Credit payments paid or to be paid under these Market Rules to the relevant Market Participant for the 12 Trading Months commencing at the start of the Trading Day of the previous 1 October assuming the IMO acquires all of the Capacity Credits held by the Market Participant and the cost of each Capacity Credit so acquired is determined in accordance with clause 4.28.2(b), (c) and (d) (as applicable).			
<p>Where:</p> <p>For an Intermittent <del>Facility-Generator</del> that <u>has</u>:</p> <p>(a) <del>has either:</del></p> <p style="padding-left: 40px;"><del>_____ i _____ operated at 100 percent of its Required Level, scaled-adjusted to the level of Capacity Credits specified in clause 4.20.1(a), in at least two Trading Intervals; or</del></p> <p style="padding-left: 40px;"><del>(b) _____ ii _____ has provided the IMO with a report under clause 4.13.10C, where this report specifies that the Facility can operate at 100 percent of its Required Level the Facility certified under clause 4.11.2(b) has been built; and</del></p> <p style="padding-left: 40px;"><del>(c) is, following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:</del></p> <p style="padding-left: 80px;">Y equals 0.</p> <p>For an Intermittent Facility that:</p> <p>(a) <del>has not operated at 100 percent of its Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a), in at least two Trading Intervals; or</del></p> <p>(b) <del>has not provided the IMO with a report under clause 4.13.10C, where this report specifies that 100 percent of the Facility certified under clause 4.11.2(b) has been built; and</del></p> <p>(c) <del>is following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:</del></p> <p style="padding-left: 40px;"><del>Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals during the relevant Trading Month, and multiplying this value by either</del></p> <p style="padding-left: 40px;"><del>(i) the following formula:</del></p> <p style="padding-left: 80px;"><del><math>(RL - (2 \times Max_2)) / RL</math></del></p> <p style="padding-left: 40px;"><del>where:</del></p> <p style="padding-left: 80px;"><del>RL is the Required Level, scaled to the level of Capacity Credits specified in clause 4.20.1(a)</del></p> <p style="padding-left: 80px;"><del>Max<sub>2</sub> is the second highest value of the output for the Facility (MWh) achieved during a Trading Interval during the relevant Trading Month, as measured by the Meter Schedule data (sent out) that has been achieved since the date the IMO determined the Facility to be in Commercial Operation, where this value must be set equal to or greater than the Max<sub>2</sub> applied by the IMO for the previous Trading Month; or</del></p>				

~~(ii) the percentage detailed in the most recent report provided by Market Participant under clause 4.13.10C.~~

For all other facilities, including Intermittent ~~Facilities~~ Generators that are following a request to the IMO by a Market Participant not considered by the IMO to be in Commercial Operation: Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals in the relevant Trading Month.

The proposed amendment to clause 4.26.1A will define the quantity to apply for the purposes of determining the capacity refund for a Facility which is partially commissioned. The IMO notes that a Facility will be able to provide updated reports from the accredited expert to the IMO to apply for the purposes of this calculation. Any refunds will be required to be made on the quantity of the Facility which is not operating to the level for which it originally received Capacity Credits, as indicated by the lower of the Facility's output achieved for two Trading Intervals during the Trading Month or quantity certified by the accredited expert.

The proposed amendments will also update the requirement for the full capacity refund (sub-clause iv) to refer to the number of Capacity Credits specified in clause 4.20.1(a). This will ensure that any capacity refunds are determined based on the number of Capacity Credits originally provided by the Intermittent Generator prior to any reductions following a request from a Market Participant.

The proposed amendments will also amend the reference to an "Intermittent Facility" to an "Intermittent Generator" to reflect the terminology defined in the glossary and updated sub-clause 4.26.1A (a) iv. to reflect the language used elsewhere when referring to a Facility having been considered by the IMO to be in Commercial Operation.

The amendments to clause 4.26.1 proposed under RC\_2010\_12 have been presented in the drafting to ensure that the further amendments to this clause to allow for partially commissioned Intermittent Facilities to pay partial refunds can be reviewed in context.

4.26.1A. The IMO must calculate the Forced Outage refund for each Facility ("**Facility Forced Outage Refund**") as the lesser of:

- (a) the sum over all Trading Intervals t in Trading Month m of the product of:
  - i the Off-Peak Trading Interval Rate or Peak Trading Interval Rate determined in accordance with the Refund Table applicable to Trading Interval t; and
  - ii the Forced Outage Shortfall in Trading Interval t,

where the Forced Outage Shortfall for a Facility is equal to which ever of the following applies:

- iii. if the Facility is required to have submitted a Forced Outage under clause 3.21.4, the Forced Outage in that Trading Interval measured in MW; or
- iv. if the Facility is an Intermittent Facility Generator which is

~~deemed to have not been in~~ not considered by the IMO to have been in Commercial Operation, for the purposes of clause 4.26.1, the number of Capacity Credits specified in clause 4.20.1(a) associated with the relevant Intermittent Facility; or

ivA. if the Facility is an Intermittent Generator which is considered by the IMO to have been in Commercial Operation, but for which Y does not equal zero in the Refund Table in clause 4.26.1, the maximum of:

1. RL - (2 × Max<sub>2</sub>); or

2. RL × (1-A)

Where

RL is the Required Level, adjusted to the level of Capacity Credits specific in clause 4.20.1(a)

Max<sub>2</sub> is the second highest value of the output for the Facility (MWh) achieved during a Trading Interval during the relevant Trading Month, as measured in Metered Data Submissions received by the IMO in accordance with clause 8.4, that has been achieved since the date the IMO determined the Facility to be in Commercial Operation, where this value must be set equal to or greater than the Max<sub>2</sub> applied by the IMO for the previous Trading Month

A is the percentage detailed in the most recent report provided by the Market Participant for the Facility under clause 4.13.10C,

where this value will be applied for the purposes of this clause for the relevant Trading Month; or

v. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010 onwards, the Facility is undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system, the number of Capacity Credits associated with the relevant Facility; or

vi. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010

onwards, the Facility is not yet undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system, the number of Capacity Credits associated with the relevant Facility; and

- (b) the total value of the Capacity Credit payments associated with the relevant Facility paid or to be paid under these Market Rules to the relevant Market Participant for the 12 Trading Months commencing at the start of the Trading Day of the most recent 1 October, assuming the IMO acquires all of the Capacity Credits associated with that Facility and the cost of each Capacity Credit so acquired is determined in accordance with clause 4.28.2(b), (c) and (d) (as applicable), less all Facility Forced Outage Refunds applicable to the Facility in previous Trading Months falling in the same Capacity Year.

**APPENDIX 5: ADDITIONAL AMENDMENTS MADE BY THE IMO FOLLOWING THE SECOND SUBMISSION PERIOD**

The IMO has made some amendments to the Amending Rules following the second submission period. These changes are as follows (~~deleted text~~, added text):

- 4.26.1. If a Market Participant holding Capacity Credits associated with a generation system fails to comply with its Reserve Capacity Obligations applicable to any given Trading Interval then the Market Participant must pay a refund to the IMO calculated in accordance with the following provisions.

**REFUND TABLE**

Dates	1 April to 1 October	1 October to 1 December	1 December to 1 February	1 February to 1 April
Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y
Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	1.5 x Y	1.5 x Y	4 x Y	6 x Y
Non-Business Days Off-Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.25 x Y	0.25 x Y	0.5 x Y	0.75 x Y
Non-Business Days Peak Trading Interval Rate (\$ per MW shortfall per Trading Interval)	0.75 x Y	0.75 x Y	1.5 x Y	2 x Y
Maximum Participant Generation Refund	The total value of the Capacity Credit payments paid or to be paid under these Market Rules to the relevant Market Participant for the 12 Trading Months commencing at the start of the Trading Day of the previous 1 October (excluding any payments relating to a Demand Side Programme) assuming the IMO acquires all of the Capacity Credits held by the Market Participant (excluding any Capacity Credits held for Demand Side Programmes) and the cost of each Capacity Credit so acquired is determined in accordance with clause 4.28.2(b), (c) and (d) (as applicable).			
<p>Where:</p> <p>For an Intermittent Generator that has:</p> <p>(a) either:</p> <p>i. operated at <u>a level equivalent to 100 percent of its Required Level, adjusted to 100 percent of the level of Capacity Credits currently held</u> <del>specified in clause 4.20.1(a)</del>, in at least two Trading Intervals; or</p> <p>ii. provided the IMO with a report under clause 4.13.10C, where this report specifies that the Facility can operate at <u>a level equivalent to 100 percent of its Required Level, adjusted to 100 percent of the level of Capacity Credits currently held</u>; and</p> <p>(b) is, following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:</p> <p>Y equals 0.</p>				

For all other facilities, including Intermittent Generators that following a request to the IMO by a Market Participant are not considered by the IMO to be in Commercial Operation: Y is determined by dividing the Monthly Reserve Capacity Price (calculated in accordance with clause 4.29.1) by the number of Trading Intervals in the relevant Trading Month.

4.26.1A. The IMO must calculate the Reserve Capacity Deficit refund for each Facility (“**Facility Reserve Capacity Deficit Refund**”) for each Trading Month m as the lesser of:

- (a) the sum over all Trading Intervals t in Trading Month m of the product of:
  - i the Off-Peak Trading Interval Rate or Peak Trading Interval Rate determined in accordance with the Refund Table applicable to Trading Interval t; and
  - ii the Reserve Capacity Deficit in Trading Interval t,

where the Reserve Capacity Deficit for a Facility is equal to which ever of the following applies:

- iii. if the Facility is required to have submitted a Forced Outage under clause 3.21.4, the Forced Outage in that Trading Interval measured in MW; or
- iv. if the Facility is an Intermittent Generator which is not considered by the IMO to have been in Commercial Operation for the purposes of clause 4.26.1, the number of Capacity Credits specified in clause 4.20.1(a) associated with the relevant Intermittent Generator Facility; or
- ivA. if the Facility is an Intermittent Generator which is considered by the IMO to have been in Commercial Operation, but for which Y does not equal zero in the Refund Table in clause 4.26.1, the ~~maximum~~ minimum of:
  - 1.  $RL - (2 \times Max_2)$ ; or
  - 2.  $RL \times (1 - A)$

~~Where~~ where:

RL is the Required Level, adjusted to 100 percent of the level of Capacity Credits currently held ~~specified in clause 4.20.1(a)~~;

Max<sub>2</sub> is the second highest value of the output for the Facility (MWh) achieved during a Trading Interval during the relevant Trading Month, as measured in ~~Metered~~ Data Submissions received by the IMO in

accordance with clause 8.4, that has been achieved since the date the IMO determined the Facility to be in Commercial Operation, where this value must be set equal to or greater than the  $Max_2$  applied by the IMO for the previous Trading Month; and

- A is the percentage level of output (in MW) detailed in the most recent report provided by the Market Participant for the Facility under clause 4.13.10C,

where this value will be applied for the purposes of this clause for the relevant Trading Month; or

- v. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010 onwards, the Facility is undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system, the number of Capacity Credits associated with the relevant Facility; or
- vi. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010 onwards, the Facility is not yet undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system, the number of Capacity Credits associated with the relevant Facility; or
- vii. if the Facility is a Demand Side Programme:  
 $\max(0, RCOQ - \max(0, (RD - \text{MinLoad})))$

where:

RCOQ is the Reserve Capacity Obligation Quantity determined for the Facility under clause 4.12.4;

RD is the Relevant Demand for the Facility determined in accordance with clause 4.26.2CA; and

MinLoad is the sum of the minimum load MW quantities provided under clause 2.29.5B(c) for the Facility's Associated Loads; and

- (b) the total value of the Capacity Credit payments associated with the relevant Facility paid or to be paid under these Market Rules to the relevant Market Participant for the 12 Trading Months commencing at the start of the Trading Day of the most recent 1 October, assuming

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the IMO acquires all of the Capacity Credits associated with that Facility and the cost of each Capacity Credit so acquired is determined in accordance with clause 4.28.2(b), (c) and (d) (as applicable), less all Facility Reserve Capacity Deficit Refunds applicable to the Facility in previous Trading Months falling in the same Capacity Year.