Rule Change Notice
Changes to the Reserve Capacity Price and the dynamic Reserve Capacity refund regime
(RC_2013_20)

This notice is given under clause 2.5.7 of the Wholesale Electricity Market Rules (Market Rules).

Submitter: Allan Dawson, IMO

Date Submitted: 10 January 2014

The Proposal

Based on the outcomes of the Reserve Capacity Mechanism Working Group, the IMO has developed a Rule Change Proposal to progress proposed amendments related to the administered Reserve Capacity Price (RCP) formula and the establishment of a dynamic Reserve Capacity refund regime.

Changes to the RCP formula

To address the issue of increasing excess capacity, the RCP formula is proposed to be amended to include:

(a) the ability for the RCP to move above the Maximum Reserve Capacity Price (MRCP) such that the RCP is 110 percent of the MRCP when 97 percent of the Reserve Capacity Requirement has been fulfilled; and

(b) a steeper slope function of -3.75 replacing the current -1 slope embedded into the 'excess capacity adjustment' component of the RCP formula such that the rate of downward adjustment is accelerated as excess capacity increases.

The proposed amendments are expected to increase the responsiveness of the RCP adjustment to changing market conditions resulting in better signals for investment in new capacity. Accordingly, it is expected that the proposed amendments will, over time, result in a reduction of excess capacity.

In accordance with the proposed amendments to the RCP formula, the applicable ceiling price for a Reserve Capacity Price-Quantity Pair to be submitted in a Reserve Capacity Auction is also proposed to be amended to 110 percent of the MRCP.

The IMO also proposes to rename the 'Maximum' RCP to the 'Benchmark' RCP based on the assessment that, following the five-yearly MRCP review completed in 2011, the MRCP has become more representative of a benchmark price that signals the expected, rather than the maximum price for providing Reserve Capacity.

Dynamic Reserve Capacity refund regime

To address the issue of the weak alignment of the current Reserve Capacity refund factors to the prevalent system conditions, the Refund Table is proposed to be replaced by a formula for determining the applicable refund factor. It is proposed that the refund factor will be determined as a function of the spare capacity in a given Trading Interval where spare capacity is calculated as the sum of the capacity available from different types of Facilities taking into account shortfalls and consumption. The formula is proposed to work such that:

    (a) a maximum refund factor of six applies when the spare capacity in a Trading Interval is 750 MW or below;

    (b) a minimum refund factor of 0.25 applies when the spare capacity in a Trading Interval exceeds 1500 MW; and

    (c) the minimum refund factor scales up from 0.25 towards one depending on the level of unavailability of a Facility over the previous 90-day period up to and including that Trading Interval.

Additionally, to address the issue of the inefficient value transfer from Market Generators to Market Customers which exists in the current regime in the form of the distribution of Capacity Cost Refund revenue to Market Customers, it is proposed that a recycling regime be adopted where the collected Capacity Cost Refund revenue is re-distributed to capacity providers in the form of rebates. Eligibility for rebates is proposed to be based on an assessment of actual dispatch of a Facility in the previous 30-day rolling period. Rebates for a Trading Interval are proposed to be allocated to Facilities based on their share of available Capacity Credits in that Trading Interval.

The proposed amendments are expected to strengthen the incentives for maximising the availability of capacity in the energy market through efficient scheduling of maintenance, increasing competition and reducing the risk of price spikes in the event of unforeseen supply interruptions. Additionally, the proposed amendments related to the recycling regime are expected to promote economic efficiency by reducing inefficient value transfer from Market Generators to Market Customers.

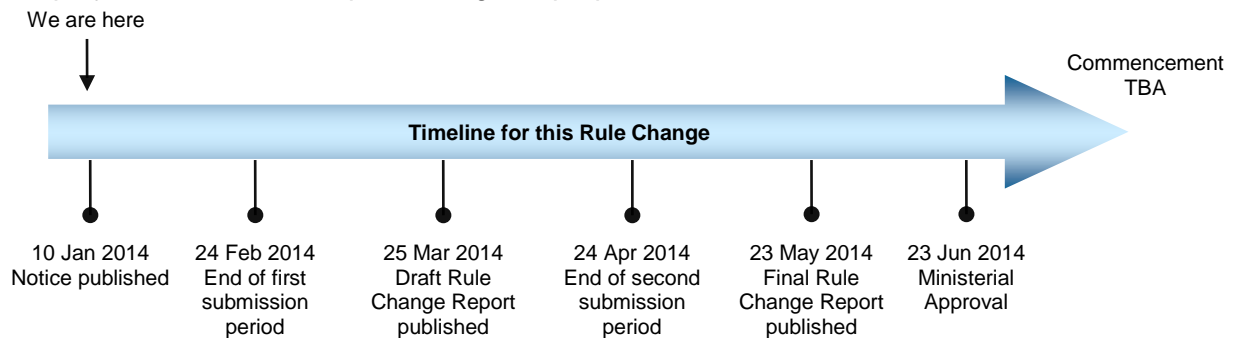Appendix 1 contains the Rule Change Proposal and gives complete information about:

- the proposed amendments to the Market Rules;

- relevant references to clauses of the Market Rules and any proposed specific amendments to those clauses; and

- the submitter's description of how the proposed amendments would allow the Market Rules to better address the Wholesale Market Objectives.

Decision to Progress the Rule Change

The IMO has decided to progress the Rule Change Proposal on the basis that Rule Participants should be given an opportunity to provide submissions as part of the rule change process.

Timeline

The projected timelines for processing this proposal are:

We are here

Commencement
TBA

Timeline for this Rule Change

10 Jan 2014	24 Feb 2014	25 Mar 2014	24 Apr 2014	23 May 2014	23 Jun 2014
Notice published	End of first submission period	Draft Rule Change Report published	End of second submission period	Final Rule Change Report published	Ministerial Approval

Call for Submissions

The IMO invites interested stakeholders to make submissions on this Rule Change Proposal. The submission period is 30 Business Days from the Rule Change Notice publication date. Submissions must be delivered to the IMO by **5.00pm** on **Monday, 24 February 2014**.

The IMO prefers to receive submissions by email (using the submission form available on the Market Web Site: http://www.imowa.com.au/rule-changes) to market.development@imowa.com.au.

Submissions may also be sent to the IMO by fax or post, addressed to:

Independent Market Operator
Attn: Group Manager, Development & Capacity
PO Box 7096
Cloisters Square, PERTH, WA 6850
Fax: (08) 9254 4399

Wholesale Electricity Market
Rule Change Proposal

Rule Change Proposal ID: **RC_2013_20**
Date received: **10 January 2014**

Change requested by:

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Address:	Level 17, 197 St Georges Terrace, Perth WA 6000
Date submitted:	10 January 2014
Urgency:	2-medium
Change Proposal title:	Changes to the Reserve Capacity Price and the dynamic Reserve Capacity refund regime
Market Rules affected:	Table of Contents, 1.4.1, 2.26.1, 2.26.2, 2.26.3, 4.1.19, 4.3.1, 4.13.2, 4.16.1, 4.16.2, 4.16.3, 4.16.5, 4.16.6, 4.16.7, 4.16.8, 4.18.2, 4.22.2, 4.26.1, 4.26.1A, 4.26.3, 4.26.3A, 4.26.4, 4.26.6(new), 4.26.7(new), 4.28.4, 4.28A.1, 4.28C.9, 4.29.1, 4.29.3, 9.7.1, 10.5.1 and the Glossary

Introduction

Market Rule 2.5.1 of the Wholesale Electricity Market Rules provides that any person (including the IMO) may make a Rule Change Proposal by completing a Rule Change Proposal Form that must be submitted to the Independent Market Operator.

This Change Proposal can be posted, faxed or emailed to:

Independent Market Operator
Attn: Group Manager, Development and Capacity
PO Box 7096
Cloisters Square, Perth, WA 6850
Fax: (08) 9254 4339
Email: market.development@imowa.com.au

The Independent Market Operator will assess the proposal and, within 5 Business Days of receiving this Rule Change Proposal form, will notify you whether the Rule Change Proposal will be further progressed.

In order for the proposal to be progressed, all fields below must be completed and the change proposal must explain how it will enable the Market Rules to better contribute to the achievement of the Wholesale Market Objectives.

The objectives of the market are:

> (a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system;
>
> (b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors;
>
> (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;
>
> (d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system; and
>
> (e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

Details of the Proposed Rule Change

1. Describe the concern with the existing Market Rules that is to be addressed by the proposed Market Rule change:

Background

The Reserve Capacity Mechanism (RCM) is designed to support the Wholesale Electricity Market (WEM) in the South West interconnected system (SWIS) by ensuring there is sufficient Reserve Capacity to meet peak demand. Through the RCM, the IMO procures capacity from supply-side resources (generation facilities) or temporary curtailments in demand from Demand Side Programmes (DSPs).

In 2011, the IMO Board engaged The Lantau Group to conduct a comprehensive review of the design and performance of the RCM. The Lantau Group prepared a report concluding that while the RCM has promoted capacity development and reliability of supply in the WEM, refinements were needed to improve its responsiveness to changing market conditions. In 2012, the Market Advisory Committee (MAC) decided to constitute the RCM Working Group (RCMWG) to discuss issues and develop solutions with respect to the recommendations put forward by The Lantau Group.

The RCMWG explored four major work-streams[1] encompassing the WEM Rules (Market Rules):

1. adjustments to the Reserve Capacity Price (RCP);

2. the obligations of DSPs and the harmonisation with supply-side capacity resources[2];

3. a dynamic Reserve Capacity refund regime; and

4. the calculation of Individual Reserve Capacity Requirements[3].

Work-stream 1 focused on the responsiveness of the administrative RCP formula in clause 4.29.1 of the Market Rules to changing market condition. The RCMWG members discussed the issue that the current RCP formula is unable to send efficient signals for investment in or withholding investment from new capacity.

Work-stream 3 explored the issue that the refund factors outlined in the Refund Table[4] in clause 4.26.1 of the Market Rules that determine the value of Capacity Cost Refunds, do not necessarily align with time periods of greatest system need. As a result, the current Reserve Capacity refund regime does not signal appropriate incentives to capacity providers for presenting capacity to the market when system need is the greatest.

The IMO considered that the recommendations in work-streams 1 and 3 needed to be progressed as a comprehensive package because of their interdependencies. The RCM impacts a Market Participant's refund exposure through the RCP because it is determined by multiplying the applicable refund factor in the Refund Table by the Monthly RCP. The Reserve Capacity refund regime may impact on the value expected to be recovered by a Market Participant through the RCM based on an assessment of the availability of a Facility.

Together, the RCP and the Reserve Capacity refund regime signal the attractiveness of investment in the WEM. In particular, new investment will only be economic if the combination of energy revenues plus Capacity Credit revenues less any lost revenue from the Reserve Capacity refund regime is at least equal to the long-run marginal cost of new capacity. Therefore, adjustments to the RCP should only be made with supporting changes to the Reserve Capacity refund regime to avoid the potential for unintended perverse outcomes.

Consultation

A concept paper exploring the proposed changes to the RCP and the introduction of a dynamic Reserve Capacity refund regime was presented at the MAC meeting held on 9 October 2013[5]. In the concept paper, the IMO recommended the following proposals, in addition to those previously presented to the RCMWG:

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[1] The RCMWG outcomes in each work-stream are detailed on page 13 of the meeting papers of RCMWG meeting no.10:
http://www.imowa.com.au/f5415,3566068/Combined_RCMWG_Mtg_10_Papers.pdf
[2] More details on this Rule Change Proposal are available on the Market Web Site:
http://www.imowa.com.au/rc_2013_10
[3] More details on this Rule Change Proposal are available on the Market Web Site:
http://www.imowa.com.au/rc_2013_11
[4] The Refund Table outlines the determination of the applicable Trading Interval Rate as the product of a 'factor'(0.25, 0.5, 0.75, 1.5, 4 and 6) and the Monthly RCP.
[5] CP_2013_06 is available on page 66 of the meeting papers of the MAC meeting no.65:
http://www.imowa.com.au/governance/market-advisory-committee-(mac)/2013/mac-65

(a) the minimum refund factor applicable to a Market Participant's unavailable capacity would be 0.25 and would apply when the spare capacity in a Trading Interval is 1500 MW or more;

(b) the minimum refund factor applicable to a Market Participant's unavailable capacity would scale up from 0.25 towards one depending on the level of unavailability of a Facility over the previous 90-day period up to and including that Trading Interval; and

(c) the revenue collected from the application of the dynamic Reserve Capacity refund regime would be distributed as rebates to Facilities that have generated a non-zero MW value in any one Trading Interval in the previous 30-day period up to and including the Trading Interval in which refunds were applied. Rebates for that Trading Interval would be allocated to Facilities based on their share of available Capacity Credits in that Trading Interval. Intermittent Generators would be excluded from the rebate pool on the basis that Intermittent Generators that are in Commercial Operation and have operated at their Required Level are not liable for Capacity Cost Refunds.

The IMO also presented additional analyses on the minimum refund factor and the application of the recycling of Capacity Cost Refund revenue in response to feedback received from some RCMWG members.

At the October 2013 MAC meeting, some members raised the following comments and issues:

- Clarification was sought on the application of the eligibility criterion for the rebate pool in cases where the 30-day rolling period coincided with Reserve Capacity Testing as conducted under clause 4.25 of the Market Rules. The IMO clarified that in principle, dispatch to meet Reserve Capacity Tests would also qualify the Facility for rebate eligibility.

- Confirmation was sought on the application of the principle that a delayed new Facility would automatically have a minimum refund factor of one because it is unavailable. The IMO confirmed that this would be the case.

- Clarification was also sought on the determination of spare capacity in a Trading Interval. The IMO provided further detail in the pre Rule Change Proposal.

Two MAC members noted their disagreement with the recycling of Capacity Cost Refund revenue to capacity providers on the grounds that it would result in a monetary gain for generators that have already received payments for their capacity and that there was no evidence that the recycling of Capacity Cost Refund revenue to capacity providers would incentivise more efficient decision-making on availability of capacity. The IMO provided further details on the economic arguments for the recycling of Capacity Cost Refund revenue in the pre Rule Change Proposal.

The pre Rule Change Proposal was presented at the MAC meeting held on 11 December 2013 where members generally agreed to its submission into the Standard Rule Change Process., Some members sought clarifications on the definition of spare capacity in a Trading Interval. Members also queried if the quantity of spare capacity could be made publicly available to facilitate commercial decision-making. The IMO proposed to consider the publication of this information by Trading Interval.

This Rule Change Proposal elaborates on the proposed solutions as discussed in the RCMWG and outlined in the concept paper and includes the necessary amendments to the relevant Market Rules. The issues raised at the MAC meetings have been addressed in this proposal.

Issues to be addressed in the Market Rules

1. Changes to the Reserve Capacity Price formula

Where the number of Capacity Credits to be traded bilaterally (as determined through the Bilateral Trade Declaration process in clause 4.14 of the Market Rules) exceeds the Reserve Capacity Requirement (RCR), the IMO determines the cost of Capacity Credits by applying the RCP formula in clause 4.29.1 of the Market Rules. The formula is set at 85% of the Maximum Reserve Capacity Price (MRCP) and is further adjusted downward if there is excess capacity. This downward adjustment of the RCP is intended to reduce the value of a Capacity Credit, thereby sending signals to investors to defer new investment in capacity.

The RCMWG noted that despite the existing downward adjustment of the RCP, excess capacity has continued to increase, and stands at 11% (~564 MW) of the RCR in the 2015/16 Capacity Year. Excess capacity can be considered an unnecessary cost to the market in the sense that consumers end up paying more than the efficient economic value of a Capacity Credit. The RCMWG discussed that a number of factors such as Government policy decisions, cessation of demand growth, forecasted large Loads not entering the market as expected and the poor responsiveness of the RCP to changing market conditions have contributed to the consistent increase in excess capacity[6].

In evaluating different solutions to address the issue of excess capacity[7], The Lantau Group noted that the solution should seek to address the two key issues associated with the current operation of the RCM:

(a) it is not sufficiently dynamic to respond appropriately to market conditions; and

(b) it creates asymmetrical incentives for capacity providers and capacity users to manage their risk exposure through Bilateral Contracts.

Based on the recommendations of The Lantau Group and the discussions at various RCMWG meetings, the IMO proposed to implement the following amendments to the RCP formula:

(a) the ability for the RCP to move above the MRCP such that the RCP is 110% of the MRCP when 97% of the RCR has been fulfilled; and

(b) a steeper slope function of -3.75 replacing the current -1 slope embedded into the 'excess capacity adjustment' component of the RCP formula such that the rate of downward adjustment is accelerated as excess capacity increases.

The IMO considers that the proposed amendments to the RCP would achieve a more balanced RCM where the RCP would be lower than under the current formula for levels of excess capacity above approximately seven percent, while enhancing the investment incentives necessary to assure capacity adequacy as the excess capacity level declines. The increased responsiveness of the RCP formula resulting from the steeper slope and the ability to exceed the MRCP would create stronger commercial and behavioural incentives.

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[6] A detailed discussion on various factors contributing to excess capacity is provided on Page 45 of the meeting papers of RCMWG Meeting no. 3 papers:
http://www.imowa.com.au/f5415,2873678/Combined_RCMWG_Mtg_3_Papers.pdf
[7] A detailed discussion on various solutions can be accessed on the Market Web Site:
http://www.imowa.com.au/f5415,2873740/IMO_RCM_October_WG_to_IMO_Updated.pdf

The IMO proposes to amend clause 4.29.1 of the Market Rules such that a new RCP formula is introduced from the 2016 Capacity Year where no Reserve Capacity Auction is required.

2. The applicable ceiling price in a Reserve Capacity Auction

Clause 4.18 of the Market Rules outlines the Reserve Capacity Offer format that must be followed by a Market Participant to submit capacity into a Reserve Capacity Auction. Clause 4.18.2(b) of the Market Rules specifies that the Reserve Capacity Price-Quantity Pairs that are offered in a Reserve Capacity Auction (if called) must not have an offer price greater than the MRCP.

The IMO notes that the changes proposed to the RCP formula (as discussed under Issue 1) would also affect the ceiling price that will apply if a Reserve Capacity Auction is called. Given that the proposed amendment to the RCP formula allows the RCP to reach 110% of the MRCP when 97% of the RCR is met, the IMO proposes to amend the ceiling price that will apply in a Reserve Capacity Auction accordingly.

Proposed Amendments

The IMO proposes to amend clause 4.18.2(b) of the Market Rules to reflect that the ceiling price of a Reserve Capacity Price-Quantity Pair in a Reserve Capacity Auction is 110% of the MRCP.

This amendment will also be reflected in clause 2.26.3 of the Market Rules which outlines the aspects of Reserve Capacity Offers that the Economic Regulation Authority's (ERA) review must examine when reviewing the methodology for setting the MRCP. Specifically, under clause 2.26.3(d) of the Market Rules, the ERA must examine historical Reserve Capacity Offers and the proportion of Reserve Capacity Offers with prices equal to the ceiling price. The IMO proposes to include a new sub-clause reflecting that the applicable ceiling price for a Reserve Capacity Offer from the 2014 Reserve Capacity Cycle onwards is 110% of the MRCP.

Additionally, this amendment will also be reflected in the definition of the Reserve Capacity Price in the Glossary which outlines that the RCP has a value between zero and the MRCP. In accordance with the proposed amendments, this definition is proposed to be amended such that the RCP can have a value up to 110% of the MRCP.

3. Renaming the Maximum RCP to the Benchmark RCP

In accordance with clause 4.16 of the Market Rules, the IMO determines the MRCP to reflect the marginal cost of providing additional Reserve Capacity in each Capacity Year. The MRCP is established by undertaking a technical bottom-up cost evaluation of the entry of a 160MW open cycle gas turbine generation facility entering the WEM in the relevant Capacity Year.

The RCMWG members noted that following the five-yearly MRCP review completed in 2011, the MRCP has become more representative of a benchmark price that signals the expected rather than the maximum price for providing Reserve Capacity. Based on this, the RCMWG members generally considered it appropriate that the MRCP be renamed to a more appropriate term such as the Benchmark RCP to reflect its underlying intent.

Based on the recommendations of the RCMWG, the IMO proposes to replace all references to the 'Maximum' RCP with the 'Benchmark' RCP in the Market Rules. This proposed amendment affects clauses 2.26.1, 2.26.2, 2.26.3, 4.1.19, 4.3.1, 4.13.2, 4.16.1, 4.16.2, 4.16.3, 4.16.5, 4.16.6, 4.16.7, 4.16.8, 4.22.2, 4.28C.9, 4.29.1, 10.5.1and the definitions of the Maximum Reserve Capacity Price and the Reserve Capacity Price in the Glossary of the Market Rules.

4. Dynamic Reserve Capacity refund factors

The current Reserve Capacity refund regime requires Market Generators who have been paid to provide capacity (through Capacity Credits) to pay Capacity Cost Refunds if that capacity is not made reliably available to the market. The refund factors are currently set on a time-based schedule specified in the Refund Table in clause 4.26.1 of the Market Rules. The refund factors are weighted to times when high demand is more likely and spare capacity may be low. They range from a minimum of 0.25 applicable at off-peak times in winter and shoulder seasons to a maximum of six applicable at peak times in summer.

The RCMWG members noted that a key issue with the current Reserve Capacity refund regime is that at different times, the refund factors result in under or over-pricing the value of capacity leading to inefficient decisions on the scheduling of maintenance and therefore the availability of capacity. The current regime is also more punitive for generators with high utilisation rates, such as baseload generators as they can be exposed to the risk of Capacity Cost Refunds in most Trading Intervals of the year.

The IMO proposed a dynamic Reserve Capacity refund regime as an alternative to the current regime in its paper titled "*Review of Capacity Cost Refunds*"[8]. The Lantau Group examined the proposed framework further and presented it to the RCMWG at its 22 November 2012 meeting[9].

The RCMWG members agreed that a dynamic Reserve Capacity refund regime should be implemented to improve the alignment of the magnitude of refunds with the prevalent system conditions. However, in adopting dynamic refund factors, the RCMWG members emphasised the need to retain a maximum and a minimum refund factor to provide certainty of the potential financial exposure to Market Participants. The RCMWG members agreed to retain the maximum refund factor of six which would apply when the spare capacity in a Trading Interval reduces to 750MW[10] or below.

A minimum refund factor of one was initially proposed to ensure that a Facility that was unavailable for an entire Capacity Year would not retain any Capacity Credit revenue. However, the IMO undertook additional analyses arising out of suggestions received from some RCMWG members that a minimum refund factor of one would create perverse outcomes for Facilities with high utilisation factors. These members noted that under the

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[8] The IMO presented this paper to the Rules Development and Implementation Working Group (RDIWG) in April 2011. Subsequently, the recommendations were examined further in the RCMWG. The paper is available from page 45 in RCMWG meeting no. 5 papers:
http://www.imowa.com.au/f5415,2873627/Combined_Papers_Mtg_5.pdf
[9] The Lantau Group's presentation can be accessed at:
http://www.imowa.com.au/f5415,4028778/Agenda_Item_6._IMO_Refund_Regime_20121122_Final_Read-Only_.pdf
[10] The applicable inflection points of 750 MW for the maximum refund factor and 1500 MW for the minimum refund factor was originally proposed in the IMO's paper for the RDIWG titled *"Review of Capacity Cost Refunds"* and was based on an estimate of the minimum reserve that System Management would generally use in the Outage planning process.

current regime, Market Participants are exposed to refund factors below one (0.25, 0.50 and 0.75) in off-peak periods. With the proposed minimum refund factor of one, the increased potential financial exposure could ultimately be manifested in the form of higher energy prices.

Based on the additional analyses, the IMO outlined the following recommendations on the minimum refund factor in the concept paper presented to the MAC on 9 October 2013:

(a) A minimum refund factor of 0.25, applicable when the spare capacity in a Trading Interval exceeds 1500 MW[10], would be adopted to protect Facilities with high utilisation factors from overly punitive refund exposure.

(b) The minimum refund factor would scale up from 0.25 towards one depending on the level of unavailability of a Facility over the previous 90-day period up to and including that Trading Interval.

The IMO considers that this approach will appropriately reflect the greater value of capacity when the spare capacity in a Trading Interval is low. This will focus the incentives for Market Participants to maximise their availability and reduce their risk of exposure to Capacity Cost Refunds arising from plant failure at times when spare capacity is low. Additionally, the proposed application of the minimum refund factor would achieve a balance between implementing the principle that capacity payments should be forfeited by Market Participants that are unable to deliver capacity during the Capacity Year and ensuring the protection for Facilities with better availability performance from punitive refund exposure when spare capacity in the system is relatively high.

Additionally, the IMO proposes to publish the spare capacity in each Trading Interval based on the information available, to improve transparency and facilitate Market Participants to assess the level of risk exposure in the market.

Proposed Amendments

The IMO proposes the following amendments to the Market Rules:

(a) The Refund Table in clause 4.26.1 of the Market Rules is replaced with a formula for the applicable refund factor for a Facility in a Trading Interval such that the refund factor is equal to the lesser of:

    a. six; and

    b. the greater of the dynamic refund factor and the floor refund factor.

(b) The dynamic refund factor is determined as a function of the spare capacity in a Trading Interval. Spare capacity is calculated as the sum of the capacity available from different types of Facilities taking into account shortfalls and consumption.

(c) The floor refund factor is determined as a function of the available capacity for dispatch for a Facility in a Trading Interval where the available capacity for dispatch is determined as one minus the percentage of capacity on Forced Outage over the previous 90-day rolling period up to and including that Trading Interval. Additionally, where a Facility is a generating system that has yet to commence operation or is a DSP with a non-zero Reserve Capacity Deficit value, the floor refund factor is set to one.

(d) The concepts of the Off-Peak and Peak Trading Interval Rate as outlined in the Refund Table in clause 4.26.1 of the Market Rules, are replaced with a Trading

Interval Refund Rate which is determined as the product of the applicable refund factor in a Trading Interval and the applicable Monthly RCP determined in accordance with clause 4.29.1 of the Market Rules.

5. The applicable refund rate for DSPs

In the Rule Change Proposal *RC_2013_10: Harmonisation of Supply-Side and Demand-Side Capacity Resources*[11], the IMO proposed amendments to clause 4.26.3A of the Market Rules which outlines the Demand Side Programme Capacity Cost Refund. To maintain consistency with the supply-side capacity resources, the IMO considered that the magnitude of the refund for DSPs should be reflective of that faced by generators. As such, the IMO proposed to link the proposed Demand Side Programme Capacity Cost Refund formula in clause 4.26.3A to the Refund Table in clause 4.26.1 of the Market Rules.

The proposed amendments to the Refund Table as discussed under Issue 4 of this Rule Change Proposal affect the calculation of the Demand Side Programme Capacity Cost Refund in clause 4.26.3A of the Market Rules as proposed to be amended in RC_2013_10, so that the reference to the Off-Peak or Peak Trading Interval Rate is replaced by the Trading Interval Refund Rate.

Proposed Amendments

The IMO proposes additional amendments to clause 4.26.3A (as proposed to be amended in RC_2013_10) to reflect the inclusion of the Trading Interval Refund Rate in the calculation of the Demand Side Programme Capacity Cost Refund.

6. Recycling of Capacity Cost Refund revenue

In accordance with clause 4.26.4 and 4.28.4 of the Market Rules, the revenue collected through the current Reserve Capacity refund regime is distributed to Market Customers in proportion to their Individual Reserve Capacity Requirements.

In its presentation of issues with the current refund regime at various RCMWG meetings, The Lantau Group noted that the distribution of Capacity Cost Refund revenue to Market Customers constitutes a value loss from Market Generators because it is the RCM as a whole that is responsible for ensuring adequate capacity and building resilience, not the performance of individual capacity resources. The distribution of Capacity Cost Refund revenue amounts to an uncertain revenue stream for Market Customers with no long-term benefits. Ultimately, the inefficient value transfer from Market Generators to Market Customers would need to be offset by higher energy costs or higher capacity prices.

The Lantau Group recommended that the Capacity Cost Refund revenue should be re-distributed as a rebate to Market Generators with better availability performance to compensate for the higher risk they undertake in the event of an unplanned Outage in the energy system. At the MAC meeting on 9 October 2013, two MAC members disagreed with the principles behind the proposed recycling of Capacity Cost Refund revenue. It was agreed at that MAC meeting that the IMO would provide more detail on the economic arguments underpinning the recycling of Capacity Cost Refund revenue as rebates to Market Generators.

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[11] The Rule Change Proposal is available on the Market Web Site: http://www.imowa.com.au/rules/rule-changes/wem-rule-changes/under-development/rule-change-rc_2013_10

Benefits of recycling of Capacity Cost Refund revenue

For the payment for Capacity Credits made by Market Customers, end-users receive the benefits of an energy system capable of meeting demand despite the reasonable risk of unplanned Outages of generation capacity. As long as there is uninterrupted electricity supply to end-users implying that the risk of unplanned Outages is absorbed within the energy system, the distribution of Capacity Cost Refund revenue to Market Customers represents a loss of value relative to what had been charged through the RCM.

It would be appropriate to distribute Capacity Cost Refund revenue to Market Customers if they have paid in advance for a quality of service that they are not receiving or if the Capacity Credit payments incorporated an extra cost associated with Outage risk.

However, if the quality of service remains unaffected, then it would be appropriate to consider compensating Market Generators for the burden of risk undertaken to respond to an unplanned Outage. Further, the MRCP does not currently incorporate any provision for expected Capacity Cost Refunds payable by a capacity provider as a result of unplanned Outage. It could be argued that the RCP could be uplifted by an amount corresponding to the expected Capacity Cost Refund payments. However, this uplift would be applicable to all Capacity Credits irrespective of the actual performance of the associated Facilities. Furthermore, this approach would not improve any incentives for maximising availability beyond what is currently achieved.

The recommended approach is to distribute the Capacity Cost Refund revenue paid by unavailable capacity resources in a zero sum[12] fashion to those capacity resources that are available for dispatch. Under this approach, Market Customers pay for and receive the predictable value of a Capacity Credit without the need to pay for better performance than that which is reasonably expected of a capacity resource. Additionally, limiting the inefficient value transfer implies that the cost of energy no longer needs to account for the higher risk undertaken by Market Generators responding to an unplanned Outage. As a result, Market Customers also receive the benefit of a potential reduction in the volatility of energy prices.

A key advantage of the proposed Capacity Cost Refund revenue recycling regime is that it improves the alignment of risk (refund) and reward (rebate) exposure. In doing so, the expected value of a Capacity Credit remains unchanged. Capacity that is reasonably available receives the predictable value of a Capacity Credit. There is no loss of value and there is no consequential need to adjust the payment for Capacity Credits in advance to account for expected receipts of Capacity Cost Refund revenue throughout the year.

A further advantage of the proposed Capacity Cost Refund revenue recycling regime is that it is self-adjusting. There is no requirement for the IMO to estimate the 'expected refund cost' to be added to the MRCP or RCP each year so that the Capacity Cost Refund revenue paid to Market Customers is linked to the value of a Capacity Credit they have paid for. Instead, the incentive of the recycling regime is constantly adjusted based on the average refund exposure of all available capacity. As capacity with better availability performance is added, capacity with lesser availability is exposed to higher refunds and receives lower rebates.

A further benefit of the proposed Capacity Cost Refund revenue recycling regime is to strengthen the incentives to promote more efficient energy market outcomes. The proposed refund regime collects Capacity Cost Refunds applicable to unavailable capacity and then redistributes the collected revenues as rebates to capacity that was available for dispatch at the time (with availability being determined based on specific conditions). The result is to

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[12] A zero-sum situation is that in which whatever is gained by one party is lost by the other.

strengthen incentives to compete in the energy market and to recognise that unplanned Outages must be catered for in a resilient energy system. The way to reduce the cost of achieving and maintaining this resilience is to promote incentives that consistently reward timely availability.

Determining eligibility for rebates

In the concept paper presented to the MAC in October 2013, the IMO proposed to introduce an eligibility criterion for Facilities to qualify for rebates based on dispatch in the previous 30-day period (determined on a rolling basis). Facilities that have generated a non-zero MW value in any one Trading Interval in the previous 30-day period would qualify for rebates. Rebates for a Trading Interval would be allocated to Facilities based on their share of available Capacity Credits in that interval.

The IMO considers that the introduction of the eligibility criterion would minimise the inefficient value transfers from Facilities with better availability to Facilities with less availability by promoting a balance between risk and reward. It would also promote efficient scheduling of maintenance so that capacity is readily available for dispatch during periods of high demand. Additionally, it may reduce administrative costs for the IMO and System Management with regard to Reserve Capacity Tests, based on the principle that Facilities that have successfully dispatched to demonstrate their eligibility for rebates may no longer be required to do so under a Reserve Capacity Test. This principle strengthens the incentives for Market Participants to increase the likelihood for their Facilities to be dispatched of their own accord, thereby reducing the need for specific Reserve Capacity Tests to be conducted for those Facilities.

DSPs would be eligible for rebates based on actual dispatch. With the harmonisation of demand and supply-side resources underway, the likelihood of dispatch for DSP is expected to be higher. The IMO considers that it is appropriate to provide rebates to a DSP if it has reliably curtailed demand in response to a Dispatch Instruction.

Intermittent Generators would not be eligible for rebates because under clauses 4.26.1 and 4.26.1A of the Market Rules. Intermittent Generators that are in Commercial Operation and have operated at their Required Level are not liable for Capacity Cost Refunds. Given this arrangement where the risk of exposure to refunds is minimal, the IMO considers that it is appropriate to exclude them from eligibility for a reward.

Proposed Amendments

The IMO proposes the following amendments to the Market Rules:

(a) Clause 4.26.4 of the Market Rules is amended to reflect that the revenue generated from the application of clause 4.26.2E is applied to Market Participants holding Capacity Credits in respect of Scheduled Generators and DSPs based on the fulfillment of the eligibility criterion.

(b) New clauses 4.26.7 and 4.26.8 of the Market Rules are proposed to determine the application of rebates for eligible Scheduled Generators and DSPs.

(c) Clause 4.28.4 of the Market Rules is amended to remove Capacity Cost Refunds from the calculation of the Shared Reserve Capacity Cost for a Market Customer.

(d) Clause 4.29.3 of the Market Rules is amended to reflect the inclusion of rebates in the settlement system.

(e) Clause 9.7.1 of the Market Rules is amended to include the payment of rebates to

Market Participants, where applicable.

Protected Provisions

The IMO notes that clause 4.1.19 and section 4.16 of the Market Rules are Protected Provisions under clause 2.8.13(d). Under clause 2.8.3 of the Market Rules, amendments to a Protected Provision require the Amending Rules in this Rule Change Proposal to be approved by the Minister.

The IMO will engage with the Public Utilities Office to progress these amendments.

2. Explain the reason for the degree of urgency:

The cost of excess capacity that is borne by the market should be minimised as soon as practicable to allow for the overall RCM to become responsive to changing market conditions. The IMO noted in its concept paper presented to the October 2013 MAC meeting that updated information for the 2015/16 Capacity Year indicated that the proposed amendments to the RCP formula would not result in a significantly different result than using the current formula. Additionally, the IMO noted that the potential revenue loss to Market Customers as a result of the application of the dynamic Reserve Capacity refund regime is expected to be small and would be offset by the adjustments to the RCP formula.

Therefore, the IMO proposes that the proposed amendments be applied from the 2016/17 Capacity Year.

3. Provide any proposed specific changes to particular Rules: *(for clarity, please use the current wording of the Rules and place a ~~strikethrough~~ where words are deleted and <u>underline</u> words added)*

The IMO proposes to make the following amendments to the relevant Market Rules.

To the extent that the proposed Amending Rules are similar to those in the Draft Rule Change Report for RC_2013_09: *Incentives to Improve Availability of Scheduled Generators* and the Rule Change Proposal for RC_2013_10, the IMO has used the wording of the proposed Amending Rules as proposed to be amended by the Rule Change Proposals. Specifically, the proposed Amending Rules for clauses 1.4.1 and 4.26.3A and the Glossary definitions for Off-Peak Trading Interval Rate, Peak Trading Interval Rate and Refund Table are provided below. Additionally, the proposed amendments to clause 4.26.1 are based on the proposed Amending Rules in the pre Rule Change Proposal for RC_2013_16: *Outages and the Application of Availability and Constraint Payments to Non-Scheduled Generators.*

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...

1.4.1.   In these Market Rules, unless the contrary intention appears:

> ...

> (r)   (**Headings and comments**): headings and comments appearing in boxes in these Market Rules (other than ~~the Refund Table in clause 4.26 and~~ the Outage Rate Limit Table in clause 4.11.1D) are for convenience only and do not affect the interpretation of these Market Rules.

...

[Note: Drafting of clause 1.4.1(r) reflects the proposed amendment in the Draft Rule Change Report for RC_2013_09: Incentives to improve availability of Scheduled Generators]

...

2.26.1. Where the IMO has proposed a revised value for the ~~Maximum~~Benchmark Reserve Capacity Price in accordance with clause 4.16 or a change in the value of one or more Energy Price Limits in accordance with clause 6.20, the Economic Regulation Authority must:

(a)   review the report provided by the IMO, including all submissions received by the IMO in preparation of the report;

(b)   make a decision as to whether or not to approve the revised value for the ~~Maximum~~Benchmark Reserve Capacity Price or any value comprising the Energy Price Limits;

(c)   in making its decision, only consider:

i.   whether the proposed revised value for the ~~Maximum~~Benchmark Reserve Capacity Price or Energy Price Limit proposed by the IMO reasonably reflects the application of the method and guiding principles described in clauses 4.16 or 6.20 (as applicable);

...

2.26.2. Where the Economic Regulation Authority rejects a revised ~~Maximum~~Benchmark Reserve Capacity Price or the Energy Price Limits submitted by the IMO it must give reasons and may direct the IMO to carry out all or part of the review process under clause 4.16 or 6.20 (as applicable) again in accordance with any directions or recommendations of the Economic Regulation Authority.

2.26.3. The Economic Regulation Authority must review the methodology for setting the ~~Maximum~~Benchmark Reserve Capacity Price and the Energy Price Limits not later than the fifth anniversary of the first Reserve Capacity Cycle and, subsequently, not later than the fifth anniversary of the completion of the preceding review under this clause 2.26.3. A review must examine:

(a)   the level of competition in the market;

(b)   the level of market power being exercised and the potential for the exercise of market power;

(c)   the effectiveness of the methodology in curbing the use of market power;

(d)   historical Reserve Capacity Offers and the proportion of Reserve Capacity Offers with prices equal to the ~~Maximum~~Benchmark Reserve Capacity Price, in the case of Reserve Capacity Cycles up to and including 2013;

historical Reserve Capacity Offers and the proportion of Reserve Capacity Offers with prices equal to 110 percent of the Benchmark Reserve Capacity Price, in the case of Reserve Capacity Cycles from 2014 onwards;

(e)   historical STEM Bids and STEM Offers and the proportion of STEM Bids and Offers with prices equal to the Energy Price Limits;

(f)   the appropriateness of the parameters and methodology in clauses 4.16 and the Market Procedure referred to in clause 4.16.3 for recalculating the ~~Maximum~~Benchmark Reserve Capacity Price;

…

…

4.1.19.   The IMO must commence a review of the ~~Maximum~~Benchmark Reserve Capacity Price as required by clause 4.16.3 with the objective of completing the review, including consideration of public submissions in relation to that review, so as to allow a reasonable time for the Economic Regulation Authority to approve any proposed change in value and for that value to be implemented prior to the date and time specified in clause 4.1.4 that relates to the following Reserve Capacity Cycle.

…

4.3.1.   A Request for Expression of Interest for a Reserve Capacity Cycle must include the following information:

...

(c)   for each of the three previous Reserve Capacity Cycles (if applicable):

...

v.   the ~~Maximum~~Benchmark Reserve Capacity Price;

...

(f)   the then current ~~Maximum~~Benchmark Reserve Capacity Price;

...

4.13.2.   For the purposes of this clause 4.13 the amount of Reserve Capacity Security is:

(a)   at the time and date referred to in clause 4.1.13, twenty-five percent of the ~~Maximum~~Benchmark Reserve Capacity Price included in the most recently issued Request for Expressions of Interest at the time the Certified Reserve Capacity is assigned, expressed in $/MW per year, multiplied by an amount equal to:

i.   the Certified Reserve Capacity assigned to the Facility; less

ii. the total of any Certified Reserve Capacity amount specified in accordance with clause 4.14.1(d) or referred to in clause 4.14.7(c)(ii); and

(b) at the time and date referred to in clause 4.1.21, twenty-five percent of the ~~Maximum~~<ins>Benchmark</ins> Reserve Capacity Price included in the most recently issued Request for Expressions of Interest at the time the Certified Reserve Capacity is assigned, expressed in $/MW per year, multiplied by an amount equal to the total number of Capacity Credits assigned to the Facility under clause 4.20.5A.

...

4.16. The ~~Maximum~~<ins>Benchmark</ins> Reserve Capacity Price

4.16.1. For all Reserve Capacity Cycles, the IMO must publish a ~~Maximum~~<ins>Benchmark</ins> Reserve Capacity Price as determined in accordance with this clause 4.16 prior to the time specified in clause 4.1.4.

4.16.2. The ~~Maximum~~<ins>Benchmark</ins> Reserve Capacity Price to apply for the first Reserve Capacity Cycle is $150,000 per MW per year.

4.16.3 The IMO must develop a Market Procedure documenting the methodology it uses and the process it follows in determining the ~~Maximum~~<ins>Benchmark</ins> Reserve Capacity Price, and:

(a) the IMO and Rule Participants must follow that documented Market Procedure when conducting any review and consultations in accordance with that Market Procedure and clause 4.16.6; and

(b) the IMO must follow the documented Market Procedure to annually review the value of the ~~Maximum~~<ins>Benchmark</ins> Reserve Capacity Price in accordance with this clause 4.16 and in accordance with the timing requirements specified in clause 4.1.19.

...

4.16.5. The IMO must propose a revised value for the ~~Maximum~~<ins>Benchmark</ins> Reserve Capacity Price using the methodology described in the Market Procedure referred to in clause 4.16.3.

4.16.6. The IMO must prepare a draft report describing how it has arrived at a proposed revised value for the ~~Maximum~~<ins>Benchmark</ins> Reserve Capacity Price under clause 4.16.5. The IMO must publish the report on the Market Web <ins>-</ins>Site and advertise the report in newspapers widely distributed in Western Australia and request submissions from all sectors of the Western Australia energy industry, including end-users.

4.16.7. After considering of the submissions on the draft report described in clause 4.16.6 the IMO must propose a final revised value for the ~~Maximum~~<ins>Benchmark</ins> Reserve

Capacity Price and publish that value and its final report, including submissions received on the draft report on the Market Web -Site.

4.16.8.   A proposed revised value for the ~~Maximum~~Benchmark Reserve Capacity Price becomes the ~~Maximum~~Benchmark Reserve Capacity Price after the IMO has posted a notice on the Market Web Site of the new value of the ~~Maximum~~Benchmark Reserve Capacity Price with effect from the time specified in the IMO's notice.

...

4.18.2.   Each Reserve Capacity Price-Quantity Pair must comprise:

(a)   the identity of the Facility to which it relates;

(b)   an offer price in units of dollars per MW per year expressed to a precision of $0.01/MW between zero and 110 percent of the ~~Maximum~~Benchmark Reserve Capacity Price;

...

…

4.22.2.   If a Market Participant nominates to have Capacity Credits covered by a Long Term Special Price Arrangement, it must at the same time nominate:

...

Where the Long Term Special Price Arrangement is conditional on evidence being provided to the IMO prior to that Long Term Special Price Arrangement taking effect that capital costs in excess of 10~~%~~ percent of the ~~Maximum~~Benchmark Reserve Capacity Price have been incurred on average with respect to the provision of each Capacity Credit covered by the arrangement; and

...

...

4.26.1.   If a Market Participant holding Capacity Credits associated with a ~~generation system~~Facility 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.

(a)   The refund factor RF(f,t) for a Facility f in a Trading Interval t is the lesser of:

i.   six; and

ii.   the greater of RF_dynamic(t) and RF_floor(f,t).

(b)   The dynamic refund factor RF_dynamic(t) in a Trading Interval t is equal to:

$$11.75 - \left(\frac{5.75}{750}\right) \times Spare(t)$$

where $Spare(t)$ in a Trading Interval t is equal to the sum of the quantities calculated as follows:

i.   for a Scheduled Generator for which a Market Participant holds Capacity Credits:

     1.   the MW quantity of Capacity Credits; less

     2.   the MW quantity of Outage determined in accordance with clause 7.13.1A(b)(ii); less

     3.   the Sent Out Metered Schedule multiplied by two so as to be a MW quantity;

[Note: Drafting of clause 4.26.1(b)(i)(2) is based on the proposed amendment to clause 7.13.1A in the pre Rule Change Proposal for RC_2013_16: Outages and the Application of Availability and Constraint Payments to Non-Scheduled Generators]

ii.   for a Non-Scheduled Generator that received a Dispatch Instruction to decrease its output under clause 7.6.1C and for which a Market Participant holds Capacity Credits:

     1.   the estimate of the maximum quantity of sent out energy which would have been generated had a Dispatch Instruction not been issued, as provided by System Management in accordance with clause 7.13.1(eF), multiplied by two so as to be a MW quantity; less

     2.   the Sent Out Metered Schedule multiplied by two so as to be a MW quantity; and

iii.   for a Demand Side Programme within the periods specified in clause 4.10.1(f)(vi) and for which a Market Participant holds Capacity Credits:

     1.   the Demand Side Programme Load multiplied by two so as to be a MW quantity; less

     2.   the sum of the minimum load MW quantities provided under clause 2.29.5B(c) for the Facility's Associated Loads.

[Note: Drafting of clause 4.26.1(b)(iii) is based on the proposed amendments to clause 4.10.1(f)(vi) in the Rule Change Proposal for RC_2013_10: Harmonisation of demand-side and supply-side capacity resources]

(c)   Subject to clause 4.26.1(d), the minimum refund factor RF_floor(t) in a Trading Interval t is equal to:

$$1 - 0.75 \times Dispatchable(f,t)$$

where $Dispatchable(f,t)$ for a Facility f in a Trading Interval t, over the 4,320 Trading Intervals prior to and including that Trading Interval, is determined as:

$$1 - \left(\frac{\sum FO(t)}{\sum Cap(t)}\right)$$

where:

i.　　$FO(t)$ is the quantity of Forced Outage determined in accordance with Appendix 10; and

ii.　　$Cap(t)$ is the capacity for the Facility determined in accordance with Appendix 10.

[Note: Drafting of clause 4.26.1(c)(i) and (ii) are based on the proposed amendments in new Appendix 10 proposed in the pre Rule Change Proposal for RC_2013_16: Outages and the Application of Availability and Constraint Payments to Non-Scheduled Generators]

(d)　　For a Facility to which clause 4.26.1A(a)(iv), 4.26.1A(a)(v) or 4.26.1A(a)(vi) applies or for which a non-zero value is determined under clause 4.26.1A(vii), RF_floor(t) in a Trading Interval t is equal to one.

(e)　　The Trading Interval Refund Rate for a Facility f in a Trading Interval t is equal to:

$$RF(f,t) \times Y$$

where:

i.　　for a Non-Scheduled Generator that has either:

　　1.　　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

　　2.　　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 that the IMO has determined under clause 4.13.10B, is in Commercial Operation, Y equals 0; and

ii.　　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.

~~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).~~			

~~Where:~~

~~For an Intermittent Generator that has:~~

~~(a)   either:~~

~~i.   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~~

~~ii.   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~~

~~(b)   is, following a request to the IMO by a Market Participant, considered by the IMO to be in Commercial Operation:~~

~~Y equals 0~~

~~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.~~

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 <u>Refund</u> Rate ~~determined in accordance with the Refund Table~~ applicable to <u>the Facility in</u> Trading Interval t; and

…

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(e), the minimum of:

...

…

4.26.3.   The Generation Capacity Cost Refund for Trading Month m for a Market Participant p holding Capacity Credits associated with a generation system is the lesser of:

(a)   the Maximum Participant Generation Refund determined for Market Participant p and Trading Month m ~~in accordance with the Refund Table,~~ less all Generation Capacity Cost Refunds applicable to Market Participant p in previous Trading Months falling in the same Capacity Year as Trading Month m; and

(b)   the Generation Reserve Capacity Deficit Refund for Market Participant p and Trading Month m, plus the sum over all Trading Intervals t in Trading Month m of the Net STEM Refund,

where the Net STEM Refund is the product of:

i.   the ~~Off-Peak Trading Interval Rate or Peak~~ Trading Interval Refund Rate ~~determined in accordance with the Refund Table~~ applicable to Facility f in Trading Interval t; and

ii.   the Net STEM Shortfall for Market Participant p in Trading Interval t.

4.26.3A.   The Demand Side Programme Capacity Cost Refund for Trading Month m for a Demand Side Programme is equal to the lesser of:

(a)   twelve times the Monthly Reserve Capacity Price for Trading Month m multiplied by the number of Capacity Credits associated with the Facility, less all Demand Side Programme Capacity Cost Refunds applicable to the Facility in previous Trading Months falling in the same Capacity Year as Trading Month m; and

(b)   the sum of:

i.   the sum over all Trading Intervals t in Trading Month m of:

$$\left(\frac{24}{H}\right) \times TIRR \times S$$

Where:

S is the Capacity Shortfall in MW determined in accordance with clause 4.26.2D in any Trading Interval;

H is the maximum number of hours per Trading Day that the Facility is available to provide Reserve Capacity in accordance with clause 4.10.1(f)(iii); and

$TIRR$ is the ~~Off-Peak Trading Interval Rate or Peak~~ Trading Interval Refund Rate applicable to the Facility in Trading

Interval t; and

ii. the Facility Reserve Capacity Deficit Refund for Trading Month m for the Facility.

[Note: Drafting of clause 4.26.3A reflects the proposed amendments in the Rule Change Proposal for RC_2013_10: Harmonisation of demand-side and supply-side capacity resources]

4.26.4. ~~The IMO must apply any revenue generated from the application of clause 4.26.2E to Market Customers in accordance with clause 4.28.4.~~For each Market Participant holding Capacity Credits associated with a Scheduled Generator or a Demand Side Programme, the IMO must determine the amount of the rebate (**Participant Capacity Rebate**) to be applied for Trading Month m as the sum of all Facility Capacity Rebates determined in accordance with clause 4.26.6.

...

4.26.6 The Facility Capacity Rebate for Facility f, being a Scheduled Generator or a Demand Side Programme for which a Market Participant holds Capacity Credits, is the sum over all Trading Intervals t in Trading Month m of:

$$\frac{CC(f,t) \times E(f,t)}{\sum_{f=1}^{F} CC(f,t) \times E(f,t)} \times \sum CCR(t)$$

where:

$\sum CCR(t)$ is the sum over all Market Participants of the Capacity Cost Refund for Trading Interval t; and

$\sum_{f=1}^{F} CC(f,t) \times E(f,t)$ is the sum, over all Facilities F in Trading Interval t, being Scheduled Generators or Demand Side Programmes for which Market Participants hold Capacity Credits, of the product of:

(a) $CC(f,t)$ which equals:

  i. for a Scheduled Generator, the MW value of Capacity Credits less the MW quantity of Outage as determined in accordance with clause 7.13.1A(b)(ii); and

  ii. for a Demand Side Programme, the Demand Side Programme Load multiplied by two so as to be a MW quantity less the sum of the minimum load MW quantities provided under clause 2.29.5B(c) for the Facility's Associated Loads; and

(b) $E(f,t)$ which is the eligibility of the Facility f in Trading Interval t, where eligibility is equal to:

  i. one if, subject to clause 4.26.7, Facility f has generated a non-zero MW value in any one Trading Interval of the 1,440 Trading Intervals prior to and including Trading Interval t; or

  ii. zero otherwise.

4.26.7   For the purposes of clause 4.26.6(b)(i), a Facility is deemed to have generated a non-zero MW value if it meets the requirements for a Reserve Capacity Test specified in clause 4.25.1(a) in any one Trading Interval of the 1,440 Trading Intervals prior to and including Trading Interval t.

...

4.28.4.   For each Trading Month, the IMO must calculate a Shared Reserve Capacity Cost being the sum of:

(a)   the cost defined under clause 4.28.1(b); and

(aAb)   the net payments to be made by the IMO under Supplementary Capacity Contracts less any amount drawn under a Reserve Capacity Security by the IMO and distributed in accordance with clause 4.13.11A(a); less

(b)   the Capacity Cost Refunds for that Trading Month; less

(bAc)   the Intermittent Load Refunds for that Trading Month; less

(cd)   any amount drawn under a Reserve Capacity Security by the IMO and distributed in accordance with clause 4.13.11A(b)

and the IMO must allocate this total cost to Market Customers in proportion to each Market Customer's Individual Reserve Capacity Requirement.

...

4.28A.1   The IMO must determine for each Intermittent Load registered to Market Participant p the amount of the refund ("Intermittent Load Refund") to be applied for each Trading Month m in respect of that Intermittent Load as the sum over all Trading Intervals t of Trading Day d in the Trading Month m of the product of:

(a)   the applicable value of Y in the Refund Table described in clause 4.26.1 is that which applies for Scheduled Generators; and

    …

...

4.28C.9.   The amount for the purposes of clauses 4.28C.8 and 4.28C.12 is twenty-five percent of the MaximumBenchmark Reserve Capacity Price included in the most recent Request for Expressions of Interest at the time and date associated with either clause 4.28C.8 or 4.28C.12 as applicable, multiplied by an amount equal to the Early Certified Reserve Capacity assigned to the Facility.

...

4.29.1.   The Monthly Reserve Capacity Price to apply during the period specified in clause 4.1.29 is to equal:

(a)   if a Reserve Capacity Auction was run for the Reserve Capacity Cycle, the Reserve Capacity Price for the Reserve Capacity Cycle divided by 12; or

(b) if no Reserve Capacity Auction was run for the Reserve Capacity Cycle:

    i. prior to 1 October 2008, 85% of the ~~Maximum~~Benchmark Reserve Capacity Price for the Reserve Capacity Cycle divided by 12;

    ii. ~~from 1 October 2008~~up to and including the 2013 Reserve Capacity Cycle, 85% of the ~~Maximum~~Benchmark Reserve Capacity Price for the Reserve Capacity Cycle multiplied by the ~~E~~excess ~~C~~capacity ~~A~~adjustment and divided by 12;

(c) the ~~E~~excess ~~C~~capacity ~~A~~adjustment is equal to the minimum of:

    i. one~~,~~; and

    ii. the Reserve Capacity Requirement for the Reserve Capacity Cycle divided by the total number of Capacity Credits assigned by the IMO in accordance with clause 4.20.5A for the Reserve Capacity Cycle.

(d) if no Reserve Capacity Auction was run for the Reserve Capacity Cycle from 2014 onwards, the value calculated as below and divided by 12:

$$MIN\left\{\left(\frac{BRCP \times 1.1}{1-((surplus+0.03)\times-3.75)}\right), BRCP \times 1.1\right\}$$

where:

    i. $BRCP$ is the Benchmark Reserve Capacity Price determined in accordance with clause 4.16; and

    ii. $surplus$ is the percentage of excess capacity calculated as:

        1. the total number of Capacity Credits assigned by the IMO in accordance with clause 4.20.5A for the Reserve Capacity Cycle; less

        2. the Reserve Capacity Requirement for the Reserve Capacity Cycle,

    divided by the Reserve Capacity Requirement for the Reserve Capacity Cycle, multiplied by 100.

4.29.3. The IMO must prepare and provide the following information to the Settlement Systems in time for settlement of Trading Month m:

...

(d) subject to clause 4.29.4, for each Market Participant p and for Trading Month m:

    ...

    v. the Individual Reserve Capacity Requirement for each Market Customer for that Trading Month; ~~and~~

    vi. the total Capacity Cost Refund to be paid by the Market Participant to the IMO; and

    vii. the total Participant Capacity Rebate to be paid to the Market Participant by the IMO.

  ...

9.7.1. The Reserve Capacity settlement amount for Market Participant p for Trading Month m is:

RCSA(p,m) =
 Monthly Reserve Capacity Price(m) × (CC_NSPA(p,m)
       – Sum(q∈ P,CC_ANSPA(p,q,m)))
 + Sum(a ∈ A, Monthly Special Price(p,m,a) × (CC_SPA(p,m,a)
       – Sum(q∈ P,CC_ASPA(p,q,m,a))))
 - Capacity Cost Refund(p,m)
 - Intermittent Load Refund(p,m)
 + Participant Capacity Rebate (p,m)
 + Supplementary Capacity Payment(p,m)
 - Targeted Reserve Capacity Cost(m) × Shortfall Share(p,m)
 - Shared Reserve Capacity Cost(m) × Capacity Share(p,m)
 + LF_Capacity_Cost(m) × Capacity Share(p,m)

Where:

 ...

LF_Capacity_Cost(m) is the total Load Following Service capacity payment cost for Trading Month m as specified in clause 9.9.2(q); and

Participant Capacity Rebate(p,m) is the Participant Capacity Rebate payable to the Market Participant p for Trading Month m.

...

10.5.1. The IMO must set the class of confidentiality status for the following information under clause 10.2.1, as Public and the IMO must make each item of information available from the Market Web Site after that item of information becomes available to the IMO:

 ...

(e) details of bid, offer and clearing price limits as approved by the Economic Regulation Authority including:

  i. the MaximumBenchmark Reserve Capacity Price;

 ...

...

11 Glossary

...

Benchmark Reserve Capacity Price: In respect of a given Reserve Capacity Cycle, the price in clause 4.16.2 as revised in accordance with clause 4.16.

...

Facility Capacity Rebate: Has the meaning given in clause 4.26.6.

…

Maximum Participant Generation Refund: ~~Has the meaning given in clause 4.26.1.~~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).

~~**Maximum Reserve Capacity Price**: In respect of a given Reserve Capacity Cycle, the price in clause 4.16.2 as revised in accordance with clause 4.16.~~

...

~~**Off-Peak Trading Interval Rate**: means the rate determined for the applicable Off-Peak Trading Interval under the Refund Table.~~

...

Participant Capacity Rebate: Has the meaning given in clause 4.26.4.

...

~~**Peak Trading Interval Rate**: means the rate determined for the applicable Peak Trading Interval under the Refund Table.~~

...

~~**Refund Table**: The table titled "Refund Table" and set out in clause 4.26.1.~~

[Note: Drafting of the definitions for Off-Peak Trading Interval Rate, Peak Trading Interval Rate and Refund Table reflects the proposed amendments in the Rule Change Proposal for RC_2013_10: Harmonisation of demand-side and supply-side capacity resources]

...

Reserve Capacity Price: In respect of a Reserve Capacity Cycle, the price for Reserve Capacity determined in accordance with clause 4.29.1 and multiplied by 12, where this price is expressed in units of dollars per megawatt per year and has a value between zero and 110 percent of the ~~Maximum~~Benchmark Reserve Capacity Price.

...

Trading Interval Refund Rate: The refund rate applicable in a Trading Interval, and in respect of a Facility, as calculated in accordance with clause 4.26.1(e).

…

4. Describe how the proposed Market Rule change would allow the Market Rules to better address the Wholesale Market Objectives:

The IMO considers that the Market Rules as a whole, if amended to reflect the recommendations in this pre Rule Change Proposal will allow the Market Rules to better achieve Wholesale Market Objectives (a), (b), (c) and (d). A detailed assessment against the Wholesale Market Objectives is outlined in the table below:

Proposal	Benefits	Wholesale Market Objective assessment
Proposed RCP formula	• Improve the market-responsiveness of the RCP thereby promoting economically efficient supply of electricity; • Facilitate efficient entry of new competitors by supporting an appropriate level of new investment in capacity; and • Minimise the long-term cost of electricity supply by reducing the cost of excess capacity borne by Market Participants.	Better achieves Wholesale Market Objectives (a), (b) and (d)
Dynamic refund factors	• Improve incentives for efficient scheduling of plant maintenance thereby promoting economically efficient and reliable supply of electricity; • Avoid discrimination against Facilities with high utilisation factors by aligning Refund Factors with prevalent system conditions; and • Avoid discrimination between demand-side and supply-side capacity sources by applying refund factors consistently.	Better achieves Wholesale Market Objectives (a) and (c)
Recycling of refunds	• Improve incentives for Market Generators to provide capacity at times of greatest need thereby promoting efficient supply in peak periods; • Encourage competition between Market Generators by rewarding better availability performance; • Improve economic efficiency of the market by allocating the Capacity Cost Refund revenue to Market Generators instead of Market Customers thereby reducing the value loss in the RCM; • Minimise the long-term cost of electricity by reducing the risk of price spikes (through incentives to increase availability) in the event of unforeseen supply interruptions; and • Minimise the long-term cost of electricity by reducing the administrative costs of the IMO and System Management incurred with respect to Reserve Capacity Testing.	Better achieves Wholesale Market Objectives (a), (b), (c) and (d)

The IMO also considers that the proposed amendments are consistent with Wholesale Market Objective (e).

5. Provide any identifiable costs and benefits of the change:

Costs

The IMO considers that it would incur significant costs to build and test the proposed changes in its settlement systems. The IMO considers that Market Participants may decide to build additional functionality into their business forecasting models to account for the proposed recommendations. Some Market Participants may also decide to re-negotiate their Bilateral Contract terms in response to the proposed amendments. Market Participants may incur some costs to incorporate these proposed changes. However, the IMO is unable to quantify those costs.

Benefits

As a result of the proposed amendments, the market is likely to experience a net economic benefit over time as a result of:

- maximising the availability of generation capacity in the energy markets through efficient scheduling of maintenance, increasing competition and reducing the risk of price spikes in the event of unforeseen supply interruptions;

- increasing accountability for Market Participants with Facilities that have poor availability;

- reducing the loss of value for capacity providers in the RCM; and

- strengthening the economic signals for investing in capacity where it is efficient to do so.