

---

## Rules Development Implementation Working Group (RDIWG)

### Meeting No. 13: Agenda

**Location:** Level 3, Governor Stirling Tower, 197 St Georges Terrace, Perth

**Date:** Tuesday, 31 May 2011

**Time:** 9.30am – 2.00pm

1. Previous meeting's minutes
2. Balancing and LFAS
  - Next Steps
3. Balancing Design Work
  - Verbal Update
4. Reserve Capacity Refunds
  - Lantau Group – Link between Dynamic Refund Proposal and the broader Reserve Capacity Review
5. General Business
6. Outstanding Action items
7. Next meeting date and time: Tuesday, 21 June 2011 (9.30am – 2.00pm)

Independent Market Operator

Rules Development Implementation Working Group

**Minutes**

<b>Meeting No.</b>	11
<b>Location:</b>	IMO Board Room Level 3, Governor Stirling Building, 197 St Georges Terrace, Perth
<b>Date:</b>	Tuesday 5 April 2011
<b>Time:</b>	Commencing at 9.35am to 12.34pm

<b>Attendees</b>	
Allan Dawson	IMO (Chair)
Troy Forward	IMO
John Rhodes	Market Customer
Corey Dykstra	Market Customer
Steve Gould	Market Customer
Geoff Gaston	Market Customer
Andrew Everett	Market Generator
Shane Cremin	Market Generator
Andrew Sutherland	Market Generator
Cameron Parrotte	System Management
Wana Yang	ERA
Paul Hynch	Office of Energy
Alasdair Macdonald	Minutes
Jacinda Papps	Observer
Jim Truesdale	Presenter
Greg Thorpe	Presenter
Douglas Birnie	Presenter
Ben Williams	Presenter
Winston Cheng	Observer
Bill Heaps	Observer
Paul Sell	Observer
Gavin White	Observer

<b>Item</b>	<b>Subject</b>	<b>Action</b>
	<b>WELCOME AND APOLOGIES / ATTENDANCE</b> The Chair opened the 11th meeting of the Rules Development Implementation Working Group (RDIWG) at 9.35am.	

Item	Subject	Action
	<p>The Chair announced the resignation of Troy Forward. In light of Troy Forward taking a role with a Market Participant, the Chair asked members to advise him if they had any concerns with Troy Forward remaining on the MAC and the RDIWG in the meantime.</p> <p>Mr Troy Forward introduced Mr Alasdair Macdonald as Mrs Jacinda Papps' replacement in the Market Development team. It was also noted that Mr Macdonald would undertake the minute taker role for the meeting.</p>	
1.	<p><b>PREVIOUS MEETING'S MINUTES</b></p> <p>The minutes of RDIWG Meeting No. 10, held on 15 March 2011, were circulated prior to the meeting. The following amendments were agreed:</p> <p><b><u>Page 4, last paragraph under the heading: Creation of a dynamically calculated refund regime and the level of refunds:</u></b></p> <ul style="list-style-type: none"> <li>There was not agreement <del>about</del> <u>on</u> the reserve capacity refund multiplier and potential exposure <u>under the proposal developed by the IMO, but given the differences in member's views, but</u> members acknowledged that the IMO <del>would</del> <u>was unlikely to recommend no change to</u> <u>modify</u> these aspects <u>of the proposal.</u></li> </ul> <p><b><u>Page 6, first paragraph:</u></b></p> <ul style="list-style-type: none"> <li>The Chair noted that, given the <u>level</u> of support for the proposal, the IMO..."</li> </ul> <p><b><u>Page 7, fourth bullet point:</u></b></p> <ul style="list-style-type: none"> <li>System Management noted that it thought that the <del>costs</del> <u>benefits</u> from avoiding cycling would be higher <u>and some of the other benefits would be lower,</u> citing its own analysis..."</li> </ul> <p><b><u>Page 7, new paragraph:</u></b></p> <ul style="list-style-type: none"> <li><u>It was noted that the \$6 million of savings (per annum) reflects only 1% of the value of the energy market.</u></li> </ul> <p><b><u>Page 9, General Business:</u></b></p> <p>The RDIWG agreed to:</p> <ul style="list-style-type: none"> <li>a dynamically calculated refund being established, <u>however there was no agreement on the Reserve Capacity refund multiplier and potential exposure under the proposal developed by the IMO, but given the differences in member's views members acknowledged that with the IMO indicating it would recommend no change to the quantum of the multiplier and potential exposure was unlikely to modify these aspects of the proposal;</u></li> </ul> <p><u>In response to a question regarding whether section 3(d) of the minutes adequately captured the discussion Mr Cameron Parrotte noted that System Management had some additional comments on</u></p>	

Item	Subject	Action
	<p><u>the minutes, which he would circulate to the IMO following the meeting. The IMO agreed to consider these comments when preparing the final minutes.</u></p> <p><i>Action Point: The IMO to amend the minutes of Meeting No. 10 to reflect the points raised by the RDIWG, and its consideration of the additional comments from System Management, and publish on the website as final.</i></p>	IMO
2.	<p><b>BALANCING MARKET PROPOSAL</b></p> <p><b>a) Cost Benefit Analysis on the Balancing proposal</b></p> <p>Mr Douglas Birnie advised the group that the cost benefit analysis (CBA) would be distributed on 6 April 2011 and apologised for not having it ready for the meeting.</p> <p>Mr Birnie gave a brief outline of the CBA. It was noted that Mr Kieran Murray had indicated that it is rare to get such a result from the quantitative analysis when opening up competition in markets and often qualitative arguments are needed to support a CBA.</p> <p>The Chair opened the floor for discussion. The following points were discussed/noted:</p> <ul style="list-style-type: none"> <li>• A member noted that a discussion on risk was missing in the CBA.</li> <li>• It was noted that there was a concern about security of supply under the new Balancing Market proposal, which was missing from the analysis. In response, the Chair noted that System Management will have its existing rights with respect to managing system security. The Chair notes that the preservation of these rights was a fundamental part of the design.</li> </ul> <p><i>Action Point: The IMO to circulate the updated CBA to the RDIWG on 6 April 2011.</i></p> <p><b>b) Modelling of the balancing proposal</b></p> <p>Mr Ben Williams presented an update and informed the group that the model had been provided to Shane Cremin and Geoff Gaston for their views about whether the model proposal was ready for wider distribution. It was noted that, while the model is relatively simple, it will be useful for operational staff. There was discussion regarding the level of circulation for the model. It was agreed to circulate the model to a wide audience.</p> <p><i>Action Point: Shane Cremin and Geoff Gaston to provide the IMO with any feedback for improvement on the model by 12 April 2011.</i></p> <p><i>Action Point: Following receipt of Griffin Energy and Perth Energy's advice on the Balancing market model, the IMO to circulate the model to relevant stakeholders.</i></p> <p><b>c) Recommendation paper on the balancing and load following ancillary services proposal</b></p>	<p>IMO</p> <p><b>Shane Cremin and Geoff Gaston</b></p> <p>IMO</p>

Item	Subject	Action
	<p>Mr Birnie outlined the background to the recommendation paper. A member noted that the paper was a useful summary; however had some suggestions regarding the messaging. It was agreed that the IMO would consider these comments out of session.</p> <p><i>Action Point: Mr Dykstra to provide the IMO with his comments on the recommendation paper.</i></p> <p>The RDIWG considered the paper. The following was discussed/noted:</p> <p><b><u>Section 3, work done to date:</u></b></p> <ul style="list-style-type: none"> <li>• Mr Birnie noted that bullet point (i) to be amended to: “UDAP/DDAP penalties should be removed <u>or lowered</u>”.</li> <li>• Mr Birnie advised that the table on page 14 reflected the discussion from the last RDIWG meeting. A member noted principle 1 still missed the footnote agreed at the last RDIWG meeting (i.e. noting that it is a theoretical possibility that all Market Participants can participate, however currently, the majority of benefits currently sit with Market Generators).</li> </ul> <p><i>Action: The IMO to add in the footnote.</i></p> <p><b><u>Section 5, outstanding issues:</u></b></p> <p><u>Gate closure times:</u></p> <ul style="list-style-type: none"> <li>• The Chair noted that markets are often reasonably conservative regarding gate closure to begin with, and often move closer to real time as the market matures.</li> <li>• Mr Parrotte questioned whether 2 hours was an appropriate gate closure for the WEM, suggesting that additional analysis is required.</li> <li>• Mr Truesdale noted that without relatively short gate closure times participants will not accrue the benefits.</li> <li>• It was agreed to amend the recommendation regarding gate closure times to: “<u>An initial design</u> target outcome would be two hours ... “.</li> </ul> <p><u>Verve Resubmission:</u></p> <ul style="list-style-type: none"> <li>• Mr Everett questioned the rationale behind Verve resubmissions being 6 hours ahead. Mr Everett agreed to circulate a paper regarding the boundaries of the resubmission times.</li> <li>• Mr Forward advised that the IMO Board had concerns regarding Market Power and had voiced a desire that a cautious approach be taken on the issue and to let the design evolve.</li> </ul>	<p style="text-align: center;"><b>Mr Dykstra</b></p>

Item	Subject	Action
	<p><u>Ancillary services – deferred until later:</u></p> <ul style="list-style-type: none"> <li>Mr Birnie clarified that the reference to “deferred until later” was a reference to the question whether the Load Following Ancillary Services proposal should be dealt with in tandem to the design work on balancing. It was agreed to amend the issue to: <u>“Timing of rollout of new Load Following Ancillary Services Market”</u>.</li> <li>Mr Everett questioned how Verve Energy could submit its Portfolio Supply Curve and a Load Following Portfolio Supply Curve in practice. It was agreed that the IMO would work with verve Energy on this.</li> </ul> <p><i>Action Point: The IMO to work with Verve Energy on how to submit note a Portfolio Supply Curve and a Load Following Portfolio Supply Curve.</i></p> <p><u>Timelines and milestones:</u></p> <ul style="list-style-type: none"> <li>Mr Birnie noted that the IMO would work with SM and Market Participants to achieve the target timelines and the current timelines were not “set in stone”. However, if the timeline was to extend beyond April 2012 then the IMO’s budget would likely be affected. The Chair noted that he had clear direction from the Minister regarding the trial of design changes to the market by the end of 2011.</li> <li>A discussion took place between members whether the Minister’s desire might conflict with the time needed to unravel the complexities involved in the issues involved. Mr Birnie reiterated that a project delay is likely to be more expensive.</li> </ul> <p><b>Section 6, consistency with the Market Objectives:</b></p> <p>It was agreed to:</p> <ul style="list-style-type: none"> <li>Include a reference to the impacts on safety and reliability aspects of the proposal (Market Objective (a)); and</li> <li>Reflect the positive impacts regarding the clean balancing price (Market Objective (e));</li> </ul> <p><b>Section 7, impacts on the current WEM:</b></p> <p>It was agreed to amend this bullet point to read: “extend the life of current <u>hybrid</u> market arrangements”.</p> <p><b>Section 8, high level const benefit assessment:</b></p> <p>It was agreed to include further explanation of the quantum of benefits of the balancing proposal.</p> <p><b>Section 9, Market Power:</b></p> <p>The members discussed the meaning of market power. It was noted that the ERA was the responsible entity for determining the scope of this. Mr Birnie noted that the Board has requested an independent</p>	<p style="text-align: center;"><b>IMO</b></p>

Item	Subject	Action
	<p>assessment of the market power implications to be available to it when assessing the draft rule changes.</p> <p><b>Section 10, time for a decision?:</b></p> <p>It was agreed to amend the wording in the penultimate bullet point by substituting “only” with “most effective” with a consequential amendment to <u>recommendation (e)</u>.</p> <p><b>Section 11, recommendations:</b></p> <p>The Chair sought member’s views on the recommendations. Individual views were as follows:</p> <ul style="list-style-type: none"> <li>• Mr Rhodes: Support sending to MAC. There is a question whether the RDIWG can do any more;</li> <li>• Mr Parrotte: (proxy for Mr Kelloway): Can’t support all recommendations, need more detail e.g. around the Cost Benefit Analysis, more work on roles/systems needed, respect that this paper is principles, timing is still a concern for System Management;</li> <li>• Mr Everett: Supportive of competitive balancing, supportive of design, proceeding on good faith with regards to the detailed design process;</li> <li>• Mr Cremin: Proposal is adding sophistication to the market, this will force change/rebidding etc. Supportive;</li> <li>• Mr Sutherland: Supportive, providing not limiting ourselves with regards to gate closure. Has concerns still around STEM, but noted that this is outside the scope of this work;</li> <li>• Mr Hynch: Supportive. Interested in non-quantifiable benefits. Support the move to more light handed regulation (re removal of UDAP and DDAP);</li> <li>• Mr Gaston: Can’t participate currently. Fully supportive.</li> <li>• Mr Dykstra: Noted that it seemed to be the most effective option available but in light of the low net benefits and the risks, did not consider it worth pursuing. Not supportive.</li> <li>• Mr Gould: From a smaller retailer’s perspective will provide benefits. Strongly support.</li> </ul> <p>In light of this, the Chair resolved to proceed to recommend this proposal to the MAC.</p>	
3.	<p><b>RESERVE CAPACITY REFUNDS</b></p> <p>The Chair noted there was a delay in providing the recommendation paper.</p> <p>The members discussed widely the issues surrounding Reserve Capacity Refunds. The members discussed whether the start point should be with a problem definition rather than as a reaction to</p>	

Item	Subject	Action
	<p>commercial positions. The Chair pointed out that delay of issue resolution may prevent implementation before next summer. The members noted that early implementation should not be a priority over getting the right answer.</p> <p>It was agreed that:</p> <ul style="list-style-type: none"> <li>• a high level principles paper on the issues surround reserve capacity refunds should be prepared;</li> <li>• the next RDIWG meeting would be workshop-style to discuss the defined principles; and</li> <li>• this action will be likely to forego a summer 2012 solution.</li> </ul> <p>The RDIWG discussed the SRC fund, the following points were noted:</p> <ul style="list-style-type: none"> <li>• A member noted the unresolved issues from RC_2008_34: Funding of SRC and questioned whether agreeing to the SRC fund meant that those unresolved issues were off the table. It was in this member's opinion that the matters raised by MMA in RC_2008_34 need to be resolved prior to making a decision on an SRC fund;</li> <li>• It was noted that a SRC fund does not take away the risk to Market Customers, but changes the timing. It was noted that Market Customers are still exposed to an uncapped SRC liability. It was also noted that the SRC fund was better than the status quo;</li> <li>• There is currently no force majeure in the market, and the risk of SRC is uninsurable;</li> <li>• The Chair noted that establishing an SRC fund will not preclude further work on the MMA recommendations, members were supportive of a wider review of SRC;</li> </ul> <p>In response to a question, the IMO agreed to provide the RDIWG with a quantification of the level of refunds per annum.</p>	
6.	<p><b>GENERAL BUSINESS</b></p> <p>There was no general business raised.</p>	
7.	<p><b>OUTSTANDING ACTION POINTS</b></p> <ul style="list-style-type: none"> <li>• Action item 19: <u>Mr Parrotte noted that System Management was working on being able to provide wind generation forecasts to participants at the same time as Load forecasts.</u></li> <li>• Action Item 51: In response to a question regarding what this action item was trying to achieve, it was noted that there are a number of participants paying for the same, or similar, services from BoM and that the IMO would look to purchase the relevant BoM forecasts and provide to participants. It was noted that the IMO had not heard from BoM. The IMO undertook to follow this action item up.</li> </ul>	



Item	Subject	Action
8.	<b>NEXT MEETING</b> Meeting No. 12 will be held on Tuesday 3 May 2011 (9.30am-2.00pm).	
9.	<b>CLOSED:</b> The Chair thanked members and declared the meeting closed at 12.34pm.	



---

## **Agenda Item 2: Balancing and Load Following Ancillary Services – Board decisions and next steps**

### **1. Purpose**

This paper updates the RDIWG on the decisions made by the IMO Board in relation to the Balancing and Load Following Ancillary Services proposal and outlines next steps.

### **2. IMO Board decisions**

The IMO Board considered the Balancing and Load Following Ancillary Services proposal and the associated MAC advice on Thursday 17 April. The IMO Board noted the paper and attachments, noted the advice from MAC and agreed to the proposal as set out in sections, 3, 4 and 5 of the paper. It also noted the target implementation date of April 2012 and considered it important to have a clear target date for implementation. The Board considered the proposal was consistent with the market objectives, had clear net benefits and was also consistent with the likely future direction of the WEM.

### **3. Next steps**

The project team's focus has turned to finalising the few outstanding detailed design issues and preparing process maps setting out the detailed design of the new arrangements. Work is also underway with System Management to clarify accountabilities, processes and system implications. The Project Team would like to update the RDIWG on this work at its next meeting to be scheduled for Tuesday 21 June.

This work will, in turn, be used to inform the rule drafting, system development and operational changes. Work on all these areas is now underway.

The Minister's office has also been briefed on the proposal.

### **4. Role and future work of the RDIWG**

The RDIWG terms of reference approved by MAC require it to oversee implementation of the changes. Consequently the group will continue. The RDIWG seems most suited to:

- Commenting on the rule drafting
- Overseeing the implementation of the new market arrangements via regular project reporting.

At this stage the current indicative timeframe for rule drafting is as follows:

- Draft rules issued – August
- Submissions close – late September
- Second rule draft issues – November
- Submissions close – December
- Rules in place – February
- Rules in force – from April.

The IMO would like to schedule RDIWG meetings ideally prior to or soon after the issuing or the initial and second round of rule drafting to allow sufficient time for discussion and feedback if members are comfortable with this. If so, the IMO would like to set aside **Tuesday 2 July** and **Tuesday 19 July 19** as RDIWG workshops on the first draft of the rules. The IMO is also likely to suggest inviting non-RDIWG MAC members to these workshops if members concur.

The IMO would like to continue using its IT Forum and the MEP site visits and general information sessions to brief IT and operational staff on the changes as they progress if RDIWG members are comfortable with this. But the RDIWG should oversee the overall implementation of the new arrangements, if members concur. A revised set of timelines and milestones for the program will be issued at the meeting, which subject to comments from RDIWG members, will be sent to the IMO Board for approval.

## 5. RDIWG membership

In the interim, members may wish to consider now that the project is moving into implementation for the balancing and load following proposal (and once the issues around reserve capacity refunds are resolved), whether they wish to remain on the RDIWG or be substituted by someone else in their organisation. It will be desirable, however, for there to be at least some continuity of membership of the RDIWG throughout the project.

## 6. Recommendations

It is recommended that RDIWG members

- **Note** the decisions of the IMO Board in relation to the Balancing and LFAS proposal;
- **Note** that the immediate focus is now on finalising remaining detailed design aspects and mapping the resultant processes;
- **Note** that work is commencing simultaneously on rule drafting, system development and operational processes to implement the new balancing and LFAS market arrangements;
- **Note** the timelines and milestones will be circulated, which subject to any comment from RDIWG members will be sent to the IMO Board for approval;
- **Agree** to setting aside Tuesday 21 June for an update on final detail of the balancing design work and Tuesday 2 July and Tuesday 19 July for workshops on the first draft of the rules;
- **Advise** the Chair if a member wishes to be substituted by a colleague on the RDIWG for the implementation phase of the project.




---

## Agenda Item 3: Reserve Capacity Refunds – some principles, scope of RDIWG work and next steps

### 1. Purpose

This paper sets out some of the underlying principles behind the reserve capacity and refund mechanism, describes the current reviews underway and updates a few aspects of the current refund proposals. The aim of the paper is to enable the RDIWG to have a “first principles” discussion around the refund regime – particularly as it relates to the broader reserve capacity mechanism and discuss next steps.

### 2. Purpose of the Reserve Capacity Mechanism

The Reserve Capacity Mechanism is intended:

- to ensure that the SWIS has sufficient capacity to cover expected system peak demand even in the event of the failure of the largest generator;
- to limit the volatility of wholesale prices (usually through the use of caps).

The creation of a separate centrally-determined capacity market was a deliberate decision driven out of a desire to have greater certainty over reliability. This was seen as important given the small isolated market covered by the SWIS and the concern over energy price spikes in other markets.

The reserve capacity mechanism (RCM) in the WEM is designed to incentivise sufficient capacity to be available *and reliable* when needed. Energy pricing in the WEM is designed to incentivise the production of energy from the most cost effective suppliers at anytime. The two are clearly linked but intended to be complementary.

### 3. Design of the current mechanism including refunds

In the WEM, Market Customers pay Market Generators and others to provide capacity and receive refunds when forced outages make that capacity unavailable. In essence, the capacity payment to the majority of generators has two parts:

- A monthly capacity payment;
- Refunds imposed for forced outages based on their perceived impact at highest risk periods i.e. summer.

The combined effect is a net payment for effective capacity where those receiving the capacity payments are incentivised to invest in the capacity *and* maximise its reliability at the times it is likely to be needed most.

The RCM may fully fund the capital costs for peaking facilities, and will contribute towards a base-load unit's capital costs. Partly as a consequence, energy prices in the WEM are capped. This is a key design feature of the WEM.

Capacity payments ignore planned outages – so in effect customers are paying for these but System Management must approve such outages in order to minimise risks to the system.

While Market Generators are exposed to refunds for forced outages, there is also a cap that limits their exposure to the amount the generator could earn in a Capacity Year.

Market Participants have the ability to bilaterally contract for capacity. Whether and how they do this and manage the associated risks around refunds is something they must manage themselves.

#### **4. Alternative models for dealing with reliability**

There are two broad options around ensuring reliability – relying on energy prices alone or having some form of separate reserve capacity mechanism. The NEM for example is an energy only market with a price cap of \$12,500 MWh with a reliability safety net. A recent review recommended retaining this model over establishing a dedicated reserve capacity market given the stronger incentives it provided for demand side management and bilateral contracts and the fundamental change establishing a reserve capacity market would require.

The PJM Market in the north east of the US has operated a separate “short term” capacity market for years but there were concerns around its efficiency. In 2007, a “longer term” capacity market was instituted instead with many characteristics similar to the WEM model in WA. This arrangement comprises:

- Procurement of capacity three years before it is needed through a competitive auction;
- Locational pricing for capacity that reflects limitations on the transmission system's ability to deliver electricity into an area and to account for the differing need for capacity in various areas of PJM;
- A variable resource requirement to help set the price for capacity;
- A backstop mechanism to ensure that sufficient resources will be available to preserve system reliability.

No Wholesale Electricity Market is perfect in managing the tension between providing clear short term *and* longer term incentives, particularly given the inelasticity of short term energy demand, and the very lumpy and expensive profile for new electricity investments.

#### **5. Broader implications of capacity arrangements**

The reserve capacity mechanism has impacts on shorter term energy pricing, the overall costs of the electricity system, and longer term investment incentives for the sector. Any significant changes to

the reserve capacity scheme therefore need to consider any consequential impacts on energy pricing, overall costs of the sector, and longer term investment incentives in the sector.

## 6. Implications for economic efficiency

The design of energy market arrangements need to reflect – as far as practicable – the basic economic tenet of marginal revenue equalling marginal costs. This is obviously easier said than done, and indeed there is a large volume of literature on the challenges in achieving this.

The basic principle is that the generator operating at the margin in any market should be recovering their true economic costs (including a normal profit) and no more when in a stable state. This is obviously fine “in theory” but difficult to achieve in practice. In the absence of any particular driver for change, then excessive prices will lead to inefficient new investment or abnormal returns and excessive costs and insufficient prices will result in the reverse and may threaten system reliability and security. By contrast if demand is increasing, higher prices and profits are necessary to attract new investment. Getting the balance right is fundamentally important to ensuring that costs are minimised at any point in time but investment matches demand over time.

## 7. Purpose of the refund scheme

Forced outages at times when reserve margins in the market are low could have significant implications for other Market Participants and System Management as opposed to when reserve margins are high. Consequently, the refund scheme seems designed to deal with circumstances *when the impact of the forced outages has material market-wide consequences*. In short, financial penalties for forced outages provide Market Participants with a direct incentive to manage reliability at times when other Market Participants would otherwise face unexpected impacts and/or when System Management might otherwise be forced to intervene. With its pre-determined methodology applying the highest factors in summer, the current refund scheme is, in effect, focussed on *incentivising reliability at times of expected peak demand*.

But the question is whether the reserve capacity scheme should really be focussed on *incentivising reliability at times whenever reserve margins are lowest*. More directly this could be considered as *incentivising minimum forced outages when reserve margins are lowest*. This seems important to consider given the impact that energy prices will be having anyway. For example, in theory energy prices provide an incentive to the extent that they exceed a generator’s short-run marginal cost. A baseload generator, for example, clearly is incentivised to be available during periods in which prices are set by higher cost sources of supply. On the other hand, the incentives for peaking generators to be available, are more complex. Given capped prices, they may derive little if any profit from energy dispatch, as energy prices tend to match peaking plant dispatch costs when peaking plant are running. Clearly a refund scheme is most valuable when it incentivises desirable behaviours that are not otherwise properly incentivised. A testing and compliance regime can also be essential.

Viewed in this light, the challenge is to consider the refunds regime in connection with the broader Reserve Capacity Mechanism, as the Reserve Capacity Mechanism establishes the context that determines what gaps the refund regime must aim to address.

## 8. Issues and current reviews

There are two exercises underway at the moment.

### *Reserve Capacity Review – Lantau Group to the IMO Board*

The IMO Board has commissioned a review of the Reserve Capacity Mechanism. The focus of this work is on the following:

(i) The quantum of capacity procured including:

- the current declaration by Market Participants of their intent to bilaterally trade capacity;
- the classification of new facilities between those that are committed and proposed;
- the current philosophy of allocating Capacity Credits to all committed facilities which intend to bilaterally trade capacity; and
- alternative market-based mechanisms for assigning Capacity Credits.

(ii) The pricing of capacity including:

- the appropriateness of the selection of a 160 MW open cycle gas turbine power station as the marginal capacity technology and the basis of the Maximum Reserve Capacity Price;
- the appropriateness of the current price calculation;
- the responsiveness of the capacity price to the supply-demand position;
- the appropriateness of maintaining a constant capacity price for all types of capacity (irrespective of type and availability) and, if variability in capacity pricing was recommended, the impact for IRCR and Market Customers; and
- if different capacity for different capacity types was recommended, the impact on Market Customers and the IRCR mechanism.

(iii) The funding of capacity including:

- the appropriate measure of consumption for each load and Market Customer;
- the appropriateness of the existing distinction between Intermittent Loads,

and for Non-Temperature Dependent Loads and Temperature Dependent Loads

- the appropriateness of the separate treatment of excess capacity in the IRCR mechanism; and
- the transparency and complexity of the mechanism and the ability for Market Customers to manage their risk

(iv) Finally the timing of reserve capacity procurement.

The full scope of the review is attached as Appendix 1.

### *Refunds - RDIWG*

As part of its Terms of Reference, the RDIWG received a list of issues from MAC to investigate, item number 4 of which was as follows:

*At different times the capacity refund arrangements under and over price the value of capacity leading to inefficient decisions by participants about the timing of maintenance and presentation of capacity.*

Under this mandate the RDIWG has been investigating the refund mechanism and has identified the following more specific issues:

- i. The level and exposure of different Market Participants to refunds;
- ii. The lack of a sufficient link between refund levels and actual reserve capacity margins;
- iii. The volatility of refund revenues;
- iv. The unpredictability and financial difficulties posed by calls for Supplementary Reserve Capacity (SRC) funding.

Two more fundamental issues have also been raised in discussions:

- v. The “causer pays” issue in relation to the payment for reserve capacity and/or supplementary reserve capacity;
- vi. Whether market customers should receive all refunds – eg from withheld security deposits;

In light of these issues, the RDIWG has been progressing work on:

- a) Developing a dynamic refund regime;
- b) Replacing the refund obligation for net STEM shortfalls with a stronger compliance regime and the option of requiring an operational test;
- c) Establishing the SRC Fund.

*Update on modelling of dynamic regime*

The following table shows how the refunds for the last three calendar years would have been affected under a refund profile where the maximum factor of 6 applied from 0-750MW and from 0-500MW compared to the current schedule prices. The approximate level of refunds that would have applied if commissioning of the Bluewaters’ unit had not been delayed from late 2008 to early 2009 is shown in brackets.

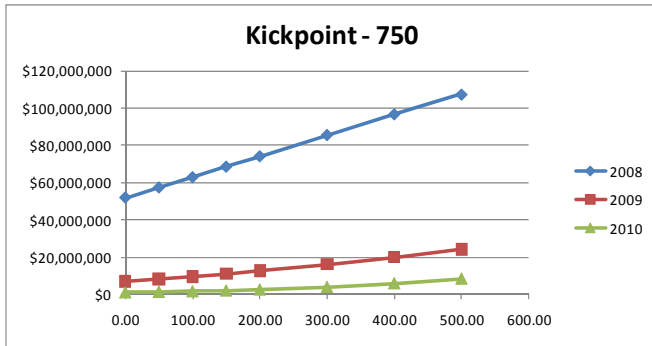
Jan-Dec	Current WEM rules	Dynamic_750MW	Dynamic_500MW
<b>2008<sup>1</sup></b>	\$36M (\$32M)	\$52M (\$51M)	\$42M (\$42M)
<b>2009</b>	\$22M (\$9M)	\$7.2M (\$4.5M)	\$5.8M (\$3.7M)
<b>2010</b>	\$12M	\$0.8M	\$0.6M

Note 1: Refunds in 2008 were high under all approaches due to the unusual level of forced outages early in the year, predominantly of Verve facilities.

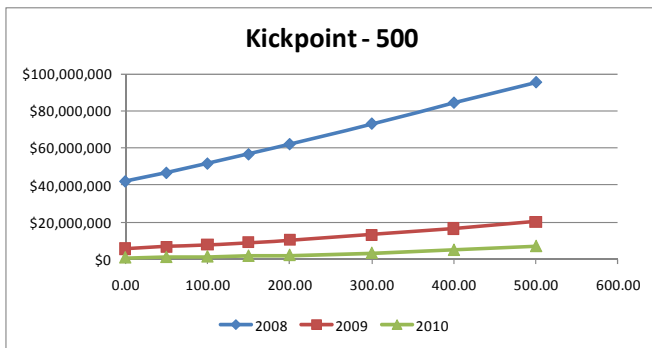
Modelling has been undertaken to assess the sensitivity of these results in relation to the level of reserve capacity. If reserve capacity in 2010 had been 500MW lower than it actually was, then the 750WM result would have been over \$8m. If reserve capacity in 2010 had been 1000MW lower, then the 750WM result would have been over \$27m. This is demonstrated in the following graphs.

The first graph below shows the analysis using 750 MW as the first Kick Point. It shows refunds for the 2010 calendar year going from \$1.1M to \$8.5M if we reduce the amount of reserve down by 500 MW in every trading interval. Incidentally, in this year, there is **always** at least 800+ MW of reserve.

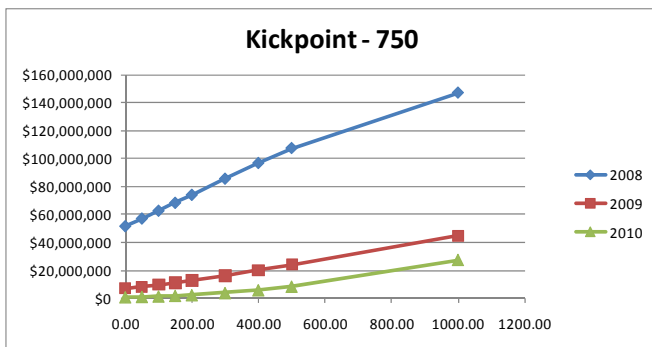




The second graph below is a similar chart with the first kickpoint at 500MW which very slightly reduces the overall magnitude of the refunds.



To stress test the scenario, and knowing that the min level of reserve is 800+MW, the following graph demonstrates the results of removing 1000MW of reserve from every trading interval.



Thus it seems likely that such a dynamic regime will risk more “extreme” results – in terms of overall refunds - than the current scheme and will be more influenced – as designed – by the level of forced outages and amount of reserve capacity available in any particular year.

**SRC Fund**

In relation to the establishment of the SRC Fund, the IMO notes that over the three years of operation under the current refund rules refunds have ranged from in excess of \$35M (calendar basis) to \$10 million although this includes approximately \$18M due to the late commissioning of a single unit large facility. If it is assumed 60MW to be purchased under SRC this would involve an annualised payment of around \$9 million or more. A fund of approximately \$10M would cover this

cost for the first year, noting that in the year SRC is called refunds probably would be at the higher end of likely range.

That said, modelling of the implications of a move to a dynamic refund regime – while reserve capacity margins are high – would indicate a likely significant fall in refund revenues. The size of this reduction might result in the reserve pool attracting only a mere fraction of this \$10-\$20 million in the near few years.

## 9. Way forward?

The Review of Reserve Capacity Mechanism is due to be completed next month and, at this stage, it would seem likely that there will be some changes to the mechanism arising from that review, eg given the current “excess” level of capacity in the market. Some of these possible changes – including to the calculation of reserve capacity prices will have a flow on impact to the calculation of refunds.

Given the financial impacts of the potential move to a dynamic refund regime now, the IMO commissioned some separate advice from The Lantau Group on the merits/risks of proceeding with the dynamic regime and/or whether these impacts are such that the whole issue should be included in the Reserve Capacity Review. The RDIWG scheduled for May 3 was cancelled so that this further advice could be sought.

The Lantau Group have now provided their advice to the IMO and the IMO Board. This advice is attached as a separate paper. The Lantau Group will be presenting their advice to the RDIWG at this upcoming meeting. Following this advice, the IMO Board expressed a preference for dealing with the issues as a package given the likely convergence in timing of the two exercises and the need to ensure that they are cohesive.

In light of this the IMO would like RDIWG members views on whether they still supported:

- a) developing a dynamic refund regime; and/or
- b) replacing the refund obligation for net STEM shortfalls with a stronger compliance regime and the option of requiring an operational test; and/or
- c) establishing the SRC Fund;

if these are tied into a package of changes addressing issues with the whole Reserve Capacity Mechanism? If so the IMO suggests that these proposals be “injected” into the broader review and that the IMO be tasked with reverting to the RDWIG with a package of changes around reserve capacity that incorporate these refund proposals.

## 10. Recommendations

It is recommended that the RDIWG:

- (a) Discuss** this paper.

## **APPENDIX 1: RESERVE CAPACITY REVIEW**

### **SCOPE OF WORK**

The IMO is seeking the services of an Economic Consultant to assist the IMO in reviewing the RCM and to provide recommendations on any practical changes to the RCM which help to ensure the appropriate investment signals and incentives for the right mix of plant, while delivering economic efficient outcomes.

More specifically the review will need to include the following considerations and assess any recommendations against the Market Objectives.

### **Quantity and Type of Capacity Procured**

In light of the trend of capacity oversupply, the Consultant will consider the current Capacity Credit allocation process and prioritisation methodology and evaluate whether they deliver economically efficient outcomes. This consideration will include reviews of the appropriateness of:

- the current declaration by Market Participants of their intent to bilaterally trade capacity;
- the classification of new facilities between those that are committed and proposed;
- the current philosophy of allocating Capacity Credits to all committed facilities which intend to bilaterally trade capacity; and
- alternative market-based mechanisms for assigning Capacity Credits.

The Consultant will consider whether the RCM is delivering the optimal mix of generation and DSM capacity. This consideration will include a review of the Availability Classes.

The Consultant will analyse the additional costs borne by the market for capacity oversupply and costs that may arise from a sub-optimal mix of generation and DSM capacity.

### **Price of Capacity**

The Consultant will review the current capacity pricing mechanism and evaluate the appropriateness of the investment signals and incentives. This will require consideration of:

- the appropriateness of the selection of a 160 MW open cycle gas turbine power station as the marginal capacity technology and the basis of the Maximum Reserve Capacity Price;
- the appropriateness of the current price calculation;
- the responsiveness of the capacity price to the supply-demand position;
- the appropriateness of maintaining a constant capacity price for all types of capacity (irrespective of type and availability) and, if variability in capacity pricing was recommended, the impact for IRCR and Market Customers; and
- if different capacity for different capacity types was recommended, the impact on Market Customers and the IRCR mechanism.

The Consultant will not consider the methodology for determining the Maximum Reserve Capacity Price. The five-yearly review of this methodology is currently being undertaken by the Maximum Reserve Capacity Price Working Group.

### **Funding Reserve Capacity**

The Consultant will review the IRCR mechanism and evaluate whether it provides a fair and equitable allocation of capacity costs to Market Customers and provides adequate transparency. This will require consideration of:

- the appropriate measure of consumption for each load and Market Customer;
- the appropriateness of the existing distinction between Intermittent Loads, Non Temperature Dependent Loads and Temperature Dependent Loads;
- the appropriateness of the separate treatment of excess capacity in the IRCR mechanism; and
- the transparency and complexity of the mechanism and the ability for Market Customers to manage their risk

#### Other Elements of the RCM

The Consultant will consider whether the current timing of the Reserve Capacity Mechanism, with capacity procured two years in advance, delivers the most economically efficient outcomes. This will require consideration of the IMO's ability to rigorously certify DSM facilities in the current process.

A recent review of Network Control Services has resolved that a DSM facility subject to a Network Control Service contract will not be paid a Dispatch Instruction Payment by the market in the event that the facility is dispatched to provide a network support service. The facility will instead be reimbursed through the terms of its Network Control Service contract. The Consultant will consider the broader appropriateness of Dispatch Instruction Payments for all DSM facilities.

The Consultant will consider the importance and value of the Expressions of Interest process. The main deliverable for this project will be a report detailing the analysis undertaken in reviewing the elements of the RCM listed above, and any other elements deemed appropriate by the Consultant. Any recommendations or options for change to the RCM will be supported by an assessment of the changes against the Market Objectives.

Report

**Prepared For:**

Independent Market Operator (IMOWA)  
Level 3, Governor Stirling Tower  
197 St Georges Terrace  
Perth, WA

# Capacity Refund Proposal: Brief Review

**Prepared By:**

The Lantau Group (HK) Limited  
1902A Tower Two Lippo Centre  
89 Queensway, Hong Kong  
Mike Thomas ([mthomas@lantaugroup.com](mailto:mthomas@lantaugroup.com))  
Tom Parkinson ([tparkinson@lantaugroup.com](mailto:tparkinson@lantaugroup.com))

---

Date: 26 May 2011

## TABLE OF CONTENTS

1. INTRODUCTION.....	1
1.1. SCOPE .....	1
1.2. THE CURRENT REGIME.....	1
1.3. CURRENT SITUATION .....	1
1.4. THE IMO'S PROPOSAL.....	2
2. ASSESSING THE DYNAMIC PROPOSAL.....	3
2.1. OVERVIEW .....	3
2.2. IDENTIFIED ISSUES AND OBJECTIVES .....	3
2.3. THE CAPACITY PRODUCT .....	5
2.4. LINKAGES WITH THE RCM .....	6
2.5. INTERACTIONS BETWEEN THE RCR AND THE RCM .....	6
3. RECOMMENDATION .....	8

26 May 2011

---

## 1. INTRODUCTION

### 1.1. SCOPE

The Lantau Group (HK) Limited (TLG) has been asked to provide a peer review of changes proposed to the Reserve Capacity Refund (RCR) scheme.

In this review we set out the current proposals and then assess their impact and consistency with the overall Reserve Capacity regime. In conducting this review we have had regard to the Wholesale Market Objectives as set out in Section of 122(2) of the Electricity Industry Act and repeated in clause 1.2.1 of the Market Rules and the report by the IMO entitled "Review of Capacity Cost Refunds" dated 22 February 2011" (referenced in this paper as "RCCR"). TLG has also been reviewing other aspects of the Reserve Capacity Mechanism (RCM). Insights from that on-going review also inform our views of the Reserve Capacity Refund scheme.

A change to the way the RCM responds to market conditions will affect the value at stake when refunds are triggered. Alternatively, a change to the refund regime will affect the value and effectiveness of the overall RCM. We therefore have advised the IMO board that a change to the capacity refund regime should be considered in conjunction with potential changes to the RCM arising from the broader RCM review.

### 1.2. THE CURRENT REGIME

The RCM and the capacity refund regimes currently operate as follows:

- The IMO determines the minimum Reserve Capacity requirement three years in advance;
- Asset owners or developers seek accreditation for their capacity to meet the IMO's requirement. (Other steps occur if there is a need to induce additional capacity into the market);
- Accredited capacity can enter into bilateral arrangements with loads or, failing that, can receive a flat monthly payment from the IMO at a price established by a process set out in the Market Rules;
- If the accredited capacity fails to perform as certified when it is called upon by System Management, then it must refund a portion of the capacity payment it has received or is expected to receive during the relevant Capacity Year.

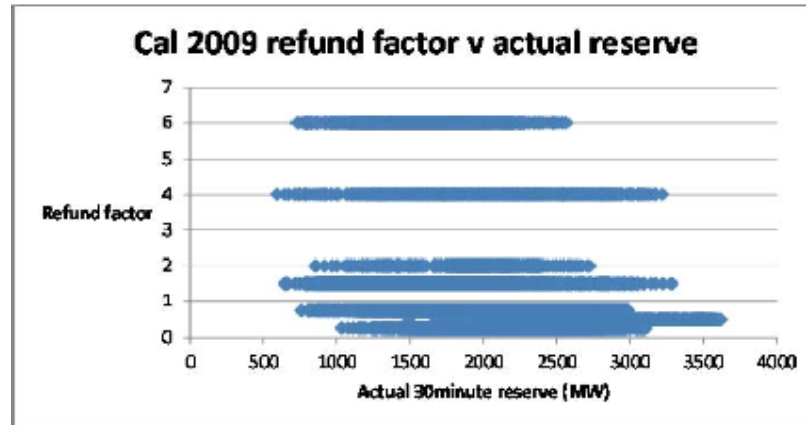
The IMO describes the capacity refunds regime as a commercial contract in which capacity providers are contracted to meet certain standards of service.

### 1.3. CURRENT SITUATION

Currently there is excess reserve capacity in the WEM. As a result, the economic value of incremental reserve capacity is substantially below the administered capacity credit price paid by the IMO (and which has been the basis for capacity refund obligations). Furthermore, this means that the costs imposed on generators who are obligated to make refund payments can exceed, potentially greatly, the economic value at stake when an event occurs that triggers a refund obligation.

26 May 2011

The IMO's analysis (see Figure 1) highlights the substantial disconnect between the current refund amounts and market conditions.



**Figure 1: IMO Analysis of the calendar 2009 refund factor vs. actual reserve**

The existing refund mechanism applies a set of “refund factors” that vary according to specific time periods, rather than to system conditions. The correlation between available reserve at a point in time and the applicable refund factor is, as a practical matter, zero. A generator can be exposed to a refund factor of 0.25 all the way up to 6.0 even if there is always 2500 MW of 30 minute reserve available. Conversely, a generator can be exposed to a refund factor ranging from 0.75 up to 6.0 when available reserve falls below 1000 MW. A generator has an incentive to ignore system conditions when scheduling maintenance, as the larger exposure is potentially to the refund factors themselves.

#### 1.4. THE IMO'S PROPOSAL

The IMO's proposal would establish a dynamic regime that links more clearly to market conditions. Under the proposal, exposure to refunds would depend, in part, on the amount of reserve capacity available rather than on predefined time periods.

The idea of flexing the value of capacity refunds with the amount of excess capacity makes good sense. But how tight should the relationship between refunds and economic value be? During periods of excess capacity, the economic value of an incremental MW of reserve capacity can be extremely low. Conversely, during periods of looming shortage, the economic value of access to one more MW of reserve capacity can be extremely high. A regime that fully reflected short-term market conditions has the potential to be extremely volatile.

The IMO's proposal retains the use of refund factors which suppress this volatility. The refund factors cap the maximum refund exposure and set a floor for the minimum obligation. Implicitly the factors imply that a trade-off between the accuracy of the economic signal and risk profile that is transmitted by that signal to stakeholders. This same question of how sharply to align the value of capacity credits with the economic value of reserve capacity is also relevant to the broader review of the RCM.



26 May 2011

---

The linkage between the capacity refund regime and the value of capacity credits in the overall RCM is an important one. Given current excess reserve capacity, the proposed dynamic refund regime would reduce the value of refund payments. A reduction in capacity refund exposure without corresponding reduction in the value of capacity credits would increase the expected value to generators from the overall RCM. Perversely, such one-sided change would increase the incentive to bring more capacity into the WEM at a time when the economic value of such incremental capacity is close to zero.

Linking changes to the refund regime to changes in the broader RCM would reduce the risk of unsynchronized and unintended effects.

## 2. ASSESSING THE DYNAMIC PROPOSAL

### 2.1. OVERVIEW

The proposed changes to the RCR regime represent an improvement in the form of the existing design. But we have concerns related to the potential disconnect between changes to the RCR and the workings of the overall RCM. Sensible changes to the RCR regime that are implemented without making corresponding changes to the RCM can introduce distortions. One concern is the focus on efforts to reduce cost of the RCM through the implementation and design of the RCR regime. Another concern is that the design and implementation of the RCR at times attempts to treat blurs the distinction between capacity and energy as wholly separate products. We therefore have included a brief comment on the distinction between these two products in the context of the WEM.

Furthermore, by considering changes to the RCR *in conjunction* with those to the RCM, it might be possible to identify a more fundamentally robust mechanism.

### 2.2. IDENTIFIED ISSUES AND OBJECTIVES

The RCCR identifies a number of issues and objectives underlying the choice of the proposed refunds mechanism.

- **Long-term incentives.** The stated intent of the refunds mechanism is to “incentivise long term maintenance activity which will minimise future risk to system security and system reliability.” [RCCR, p. 90] In particular, there is a strong feeling that episodic refunds provide an insufficient motivation to provide a consistent incentive and that the lack of a consistent refund may lead to “free-riders.” “The profile can be structured so the probability of the peak refund not applying at any time during the year is low and as a result delivers an incentive to undertake maintenance for all peak periods and reduces the risk that a participant may choose to risk avoiding exposure and not pursue an adequate maintenance regime.” [RCCR, p. 95]

26 May 2011

---

- **Short-term incentives.** A second stated intent is to “Incentivise short term behaviours to ensure day to day operation and maintenance activities are directed to maximising reliability at time of greatest value, generally when actual reserves are lowest.” [RCCR, p. 90] It is interesting to note, however, that the short-term incentive is not really an incentive to make capacity available. “This is an important feature of the design, as it means refunds are (implicitly) directed at influencing plant reliability and maintenance performance, not the amount of capacity available to the Market per se.” [RCCR, p. 95]
- **Fairness.** A key issue that arises is the differing treatment of baseload and peaking generators. “Due to the exposure of participants to refunds through Resource Plan shortfalls the current refund regime may create an imbalance in the exposure to refunds for participants with generators with differing utilisation rates.” [RCCR, p. 90] Similarly, the proposal “provides a refinement that creates incentives for both short and long term scheduling of maintenance effort and more equitable treatment of different forms of capacity.” [RCCR, p. 93] “As far as practicable all capacity providers should be treated equally.” [RCCR, p. 103]
- **Level of refunds.** We understand the *level* of refunds overall to be an issue in the design of the mechanism. If the overall RCM is considered too generous, then a reduction in the level of refunds without a commensurate change to the RCM would make the RCM more generous. The temptation therefore is to design or adopt a modified refund regime that does not reduce the overall level of refunds. The alternative, which we recommend, is to view changes to the refund regime in the context of the outcome of a broader review of the RCM.
- **Volatility of refund revenues.** Volatility of refund revenues is also understood to be a concern. The issue of volatility arises in relation to the shape of the refund/reserve level relationship. “If refunds were based only on LoLP, refunds would be likely to fall to very low levels for reserve that was more than a relatively low margin above the largest unit, but would also lead to very high refunds well in excess of the current maximum level that applies in peak periods of summer. This would change the risk exposure and prudential risks in the market and should only be contemplated if it is clearly a net benefit – this not expected.” [RCCR, p. 92]

In general, this seems like an appropriate list. Our main concern is with respect to the emphasis on maintaining the level of refunds and keeping down the overall cost of capacity. Forcing the cost of refunds to be above the associated economic cost of outages in order to achieve a “discount” to the cost of capacity has the potential to introduce other distortions that can undermine the effectiveness of the overall RCM. If the overall cost of capacity is too high, then other steps can be taken to bring that cost into better alignment with the economic value of capacity. The objective of keeping down the overall cost of capacity is best viewed as the purview of the RCM rather than the RCR regime, which is just a component of the overall RCM.

26 May 2011

---

### 2.3. THE CAPACITY PRODUCT

The concept of reserve capacity is central to an understanding of the refunds regime and to the RCM itself. Capacity as offered into the RCM is a specific product. The rights and responsibilities associated with this product – and the associated payments and the allocation of costs – flow naturally from its definition. In order to provide clear guidance, however, it is crucial to define clearly what capacity is – and what it is not.

“The current capacity refund mechanism requires Market Participants (Generators) who have been paid for capacity (through Capacity Credits) to pay refunds if that capacity is not made reliably available to the market. The current capacity refund mechanism requires capacity refunds to be made if accredited capacity presented to market is less than (temperature adjusted) accredited capacity... Specifically the capacity refund mechanism requires a Capacity Credit holder to make repayments to the IMO if the capacity is not presented.” [RCCR, p. 89]

The WEM, unlike the NEM in eastern Australia, can be characterised as a two-product “market”. One product is sold through the bilateral energy market (and centralised balancing mechanism) that provides for the provision and delivery of energy in each hour. This capacity product may be bundled within a bilateral contract, or be provided via the centralised and administered capacity “market” associated with the RCM.<sup>1</sup> Given the existence of these two separate products, the requirement that capacity be made “available to the market” is a somewhat ambiguous statement. The fact that the obligation to make repayments exists in all hours – even when the possibility of shortage is virtually non-existent – suggests that there is some lingering expectation that the capacity procured through the RCM should be available to supply energy at all hours of the year.

In theory, however, this capacity product is entirely separate from the energy product. It does not provide for energy per se – that is the purpose of the energy market. The RCM is intended to compensate generators for providing capacity that is *able* to generate energy under situations of scarcity. Capacity as a separate product has no value at any other time.

These situations of scarcity are intermittent and occasional occurrences. While some capacity mechanisms have tried to compensate generators only during these conditions of scarcity, these markets proved ineffective. Accordingly, it has become common practice to provide capacity payments on an on-going basis throughout the year, as is done in the WEM through the RCM. As noted [RCCR, p. 88], “Like any contract the RCM has terms and conditions such as the flat monthly payment, refunds, the obligation to present capacity and to participate in coordinated maintenance planning.”

Nonetheless, we must not confuse the terms of payment with the nature and value of the service being provided. While *payment* is continuous across the year, the *nature* of the service, and its intrinsic *value*, is episodic.

---

<sup>1</sup> The RCM is technically better characterised as a “mechanism” and not a “market”. The price and quantity of capacity procured does not adjust freely as they would in a market. Nonetheless, the RCM has a clear impact on merchant investment behavior in the WEM, so the use of the term “market” in this context is valid.

26 May 2011

---

We must also distinguish the capacity in the RCM from the notion of “capacity” embedded into many bilateral contracts (or PPAs). These contracts give the buyer the right to purchase the energy from a generation facility whenever it is available at a price that approximates its dispatch cost. In return for this right, the buyer commits to a stream of “capacity” payments. Capacity in this sense is a bundled product. It not only compensates the generator for providing capacity that is able to generate under conditions of scarcity, but also provides compensation for the difference between the dispatch cost of the energy and its market value.

The capacity in the RCM is not intended to be a bundled product – it is pure capacity in the reliability sense. Because “capacity” in a bilateral contract is a bundled product, the contract must contain restrictions and incentives to ensure the provision of energy. The capacity product in the RCM needs no such requirements. To the extent that such restrictions or incentives are required, they are (or should be) established via the energy market.

The importance of the WEM as a two product “market” is that the value at stake when an accredited source of capacity fails to present itself depends entirely on market conditions (supply and demand) at the time. The simple failure to provide energy has no consequence for the capacity market except under shortage conditions.

## **2.4. LINKAGES WITH THE RCM**

The quantum of refunds payable is based on the administered capacity price. The administered capacity price is the subject of at least two on-going reviews, including the review of its constituent assumptions and parameters as well as our own review of the RCM in which we consider the basis for adjusting the administered capacity price to reflect the overall supply and demand for capacity credits. In our review of the RCM, we highlight how the current, essentially proportional, adjustment to the administered capacity price materially understates the extent to which the economic value of reserve capacity declines as the amount of excess capacity increases.

An economic-based adjustment in the administered capacity price to reflect excess capacity credits would make the administered capacity price more dynamic (and thus more volatile), but it would also have the impact of greatly reducing the penalty associated with capacity refunds during periods in which there is excess capacity. We think that this linkage should be an important consideration in the design of the RCR scheme. Changes should not assume continuity of the current administered capacity price.

## **2.5. INTERACTIONS BETWEEN THE RCR AND THE RCM**

In concept, the “dynamic refund regime” is an improvement on the existing static scheme. However, the RCM and refund regime clearly interact in ways that shape incentives in the WEM. In this section we take a brief look at some aspects of the RCM and capacity refunds regime together:

1. The RCM pays generators for their full capacity, but then requires rebates in the event of forced outages.

26 May 2011

- An improvement that would both sharpen the incentive for reliability and potentially address value transfer concerns is to pay generators for their de-rated capacity and allow them to earn credits or expose them to refund obligations depending on whether they exceed or fall short of “standard” performance. A “symmetric” regime in which there are rewards as well as refunds could be set up such that the *expected* level of *net* refunds is essentially zero. Such a “symmetric” approach would be a pure incentive regime;
  - Failure to set refunds so as to fully reflect the cost of outages means that the refunds will not actually relate to the economic costs associated with failing to behave as intended. The current “asymmetric” approach means that an “economic” refund signal would introduce significant volatility but without any offsetting beneficial incentive to actually aim for better performance on average over time, as there is no potential reward for improved reliability above the certified capacity level;
  - It has been noted that current capacity prices may diverge from the historical prices for capacity embedded into contracts. The current refund regime and the IMO’s dynamic proposal involve value exposure for those generators whose contract capacity prices diverge from current market prices. This exposure would not exist (or would be much smaller) for a symmetric system.
  - The asymmetric system relies on forced outage-related refunds in order to align the net cost of capacity with its value. Assuming all the parameters are set right, such a system might arguably work well for baseload generators, as these are likely to suffer forced outages on a regular basis. But it does not work well for peaking generators, since they are rarely called (and will be called even less often during periods of excess capacity)<sup>2</sup>. Ensuring equitable treatment requires the creation of some parallel means of valuing reliability (such as the operational testing). Under a symmetric system, peaking generators could be deemed to have a standard forced outage rate and compensated on that basis until they have enough dispatch events to estimate a specific forced outage rate.
2. The refund levels are far too low to act as appropriate short-term signals when capacity actually has value. Given the capacity price and a reasonable VoLL estimate, the annual LoLP should be on the order of 10-15 hours under equilibrium conditions. This suggests that the capacity refund should be 500-1000 times the average hourly capacity price under a loss-of-load situation. But the proposal caps the refund at 6 times the hourly price – two orders of magnitude lower than the potential outage cost. This refund level seems far too low to incentivise short-term behaviour in situations in which capacity has high value – which, of course, is the only time that these price signals are relevant.

---

2

Perversely rewarding peaking generators the most when they are valued the least.

26 May 2011

---

3. The refunds apply only to capacity underage associated with forced outages. The value of capacity, however, is indifferent to whether an incremental MW arises by avoiding a capacity underage or creating an additional MW of capacity that was not otherwise being compensated under the RCM. If short-term price signals are to be used at all, there would appear to be no reason not to use them as an incentive to create additional capacity under shortage conditions when capacity has high value. While such short-term price signals could, in theory, create possibilities for the potential abuse of market power, the existence of the RCM contracts should act to mitigate such potential.
4. The desire to set charges low so as to minimise the volatility of refunds seems misplaced. In order to induce efficient behaviour, short-term signals should reflect the underlying value of capacity. If the volatility of refunds associated with such prices is truly a concern, then it may in fact be appropriate to institute some form of “insurance” to reduce this volatility. This could be done via a system analogous to “co-payments” for health insurance. In other words, rather than distorting the price signal represented by the refund price, part of this cost could be met via an insurance pool funded by generators making payments proportional to their forced outage rates. In the event of an outage, the majority of the refund would be paid by the insurance pool; the generator itself would make a much smaller payment. Note that the “symmetric” structure described above effectively creates such an insurance pool.
5. If refunds are to recover the expected cost of outages, setting the refund levels far below the outage cost under true shortage conditions means that charges must be set above the true cost of outages in many more hours. While there is some benefit to spreading the charges out across enough hours so that they are not simply a random and episodic price signal, spreading them across too many hours creates a diffuse short-term price signal that fails to reflect the true outage cost.

### 3. RECOMMENDATION

The proposed dynamic regime is an improvement on the existing regime in that it does incorporate market conditions in the setting of the refunds. Implementing the proposed dynamic refund regime without making any other changes to the RCM itself, however, would have the effect of reducing refund exposure to generators. We therefore recommend consideration of the refund regime only in the context of the broader review of the RCM.

A change to just the refund regime in the direction of the proposed dynamic refund scheme would result in a perverse outcome. Generators would implicitly receive a higher “expected value” of capacity at a time when the economic value of reserve capacity is nearly zero. A more integrated solution would be to link changes to the refund regime to changes in the RCM itself. A consistent change, for example, would see the introduction of a more market-based price paid by the IMO for capacity credits. In a period of excess capacity, that price would be lower. That lower price would also flow through to the capacity refunds regime.

26 May 2011

---

Other possible changes to the refunds regime include adding a symmetric aspect to it such that penalties for failure to present capacity can be offset to a degree by the ability to present more capacity than has been accredited. A derating-based refunds regime could then be constructed in which the cumulative value impact of the refunds would be essentially zero over the course of a year, but the desirable incentive aspects would each be enhanced. Such a refund regime would make the most sense in the context of possible changes to the RCM to introduce more economic pricing of those capacity credits that are not traded bilaterally.

We caution against early adoption of the dynamic refund regime even though it is clearly an improvement to the current static regime. Instead, we recommend that the IMO explicitly consider the interactions between the RCR scheme and the RCM and coordinate proposed changes.



## RDIWG Action Points

### Legend:

<b>Shaded</b>	Shaded action points are actions that have been completed since the last RDIWG meeting (contained in table 2).
<b>Unshaded</b>	Unshaded action points are still being progressed (contained in table 1).
<b>Missing</b>	Action items missing in sequence have been completed from previous meetings and subsequently removed from log.

**Table 1: Outstanding**

#	Action	Responsibility	Meeting arising	Status/Progress
19	The IMO to investigate with System Management whether wind generation forecasts could be provided to participants at the same time as load forecasts.	IMO	3	
42	The IMO to offer site presentations to Working Group members and invite Working Group members to participate in the presentations.	IMO	5	Underway.
43	The IMO to confirm the accounting advice it has received previously that its expenditure on the Market Evolution Program can all be capitalised.	IMO	6	Underway..
51	The IMO to arrange a workshop in early 2011 with the Bureau of Meteorology (BoM) and RDIWG members, to discuss options for the enhancement of BoM forecasts and the wider usage of forecasts by	IMO	6	



#	Action	Responsibility	Meeting arising	Status/Progress
	Market Participants.			
52	The IMO and System Management to discuss System Management's dispatch system and whether it is able to accommodate future enhancements.	IMO and SM	6	Underway.
68	The IMO to update the scenario to include summation information.	IMO	9	The Project Team has developed a model for MPs to use.
70	The IMO to provide an additional scenario(s) to include plant commitment and decommitment.	IMO	9	The Project Team has developed a model for MPs to use.
72	The IMO to review its practice of publishing draft minutes on website before made final.	IMO	9	
83	Mr Dykstra to review the SRC rule change within 1 week of meeting 10 and inform the IMO whether he supported the SRC fund proposal or not.	Mr Dykstra	10	
84	IMO to update the design principles underpinning the Balancing and LFAS proposals, as agreed at the meeting.	IMO	10	Completed
85	IMO to write to participants requesting whether the specific balancing model can be distributed.	IMO	10	
86	The IMO to amend the minutes of Meeting No. 10 to reflect the points raised by the RDIWIIG, and its consideration of the additional comments from System Management, and publish on the website as final.	IMO	11	Completed
87	The IMO to circulate the updated CBA to the RDIWIIG on 6 April 2011.	IMO	11	Circulated to all MAC members and is now available to others if they wish to see it.
88	Shane Cremin and Geoff Gaston to provide the IMO with any feedback for improvement on the model by 12 April 2011.	Shane Cremin/Geoff Gaston	11	

#	Action	Responsibility	Meeting arising	Status/Progress
89	Following receipt of Griffin Energy and Perth Energy's advice on the Balancing market model, the IMO to circulate the model to relevant stakeholders.	IMO	11	
90	Mr Dykstra to provide the IMO with his comments on the recommendation paper.	Corey Dykstra	11	
91	The IMO to work with Verve Energy on how to submit note a Portfolio Supply Curve and a Load Following Portfolio Supply Curve.	IMO	11	Underway

**Table 2: Completed since last meeting**

#	Action	Responsibility	Meeting arising	Status/Progress
82	The IMO to amend the minutes of Meeting No. 9 to reflect the points raised by the RDIWG and publish on the website as final.	IMO	10	Completed.