

## Independent Market Operator

### MRCPWG

## Minutes

<b>Meeting No.</b>	9
<b>Location:</b>	IMO Board Room Level 3, Governor Stirling Building, 197 St Georges Terrace, Perth
<b>Date:</b>	Thursday 5 May 2011
<b>Time:</b>	Commencing at 3:05 to 5:05pm

<b>Attendees</b>	
Greg Ruthven	IMO (Chair)
Monica Tedeschi	IMO (Minutes)
Johan van Niekerk	IMO
Corey Dykstra	Market Customer
Steve Gould	Market Customer
Stephen MacLean	Market Customer
Chin Koay	Market Generator (proxy)
Patrick Peake	Market Generator
Pablo Campillos	DSM Aggregator (3.05- 4.25pm)
Jeff Staloch	Observer/DSM Aggregator (proxy after 4.25pm)
Neil Gibbney	Western Power
Neil Hay	System Management
Adam Boyd	New Investor
Ben Tan	Observer
Chris Brown	Economic Regulation Authority (ERA) (Observer)
<b>Apologies</b>	
Allan Dawson	IMO
Brad Huppatz	Market Generator
Shane Cremin	Market Generator

<b>Item</b>	<b>Subject</b>	<b>Action</b>
1.	<p><b>WELCOME AND APOLOGIES / ATTENDANCE</b></p> <p>The Chair opened the 9th meeting of the Maximum Reserve Capacity Price (MRCP) Working Group (Working Group) at 3:05pm. It was highlighted that there was an extra item added to the agenda, being a discussion of the potential inclusion of a Forced Outage Refund Allowance in the MRCP.</p> <p>Apologies were noted from Allan Dawson (IMO), Brad Huppatz</p>	

	<p>(Market Generator) and Shane Cremin (Market Generator). Mr Chin Koay was welcomed in place of Mr Huppatz.</p> <p>The Chair also welcomed Adam Boyd, who had replaced Nenad Ninkov as the New Investor representative, and Ben Tan who attended as an observer.</p>	
2.	<p><b>MINUTES OF PREVIOUS MEETING</b></p> <p>The minutes of the 8th MRCP Working Group meeting, held 24 March 2011, were circulated prior to the meeting.</p> <p>The following amendment was agreed:</p> <ul style="list-style-type: none"> <li>Mr Corey Dykstra suggested under Agenda Item 5 in the third paragraph that the word “reviewing” be replaced with “called to review”.</li> </ul> <p><i>Action Point: The IMO to make the agreed amendment and publish Meeting 8 minutes on the website as final.</i></p>	IMO
3	<p><b>ACTION POINTS</b></p> <p>The actions arising were either complete or on the meeting agenda. Mr van Niekerk noted the following:</p> <ul style="list-style-type: none"> <li>AP37: The review of the relationship between humidity rates and generator output is still pending. It was noted that the outcomes of the Working Group were not dependent on the completion of this action item, and that the exercise would be completed in due course.</li> <li>AP59: The IMO is still awaiting the final report from Sinclair Knight Merz (SKM).</li> <li>AP61: While the IMO did not receive any comments on the draft Market Procedure following the previous meeting, it was noted that the Working Group would have a further opportunity to comment on it at subsequent meetings.</li> </ul>	
4	<p><b>DETERMINATION OF MARGIN M AND FORWARD ESCALATION FACTORS</b></p> <p>Mr van Niekerk explained that the IMO had commissioned WorleyParsons to provide independent advice on the margin M and forward escalation factors, as previously requested by the Working Group.</p> <p>Mr van Niekerk confirmed that WorleyParsons broadly agreed with SKM’s method for calculation of Margin M. In addition they agreed that the total value of 18.6% was a valid approximation.</p> <p>WorleyParsons highlighted that some of the component costs of the margin M were largely independent of project size (e.g. legal and environmental approval costs). WorleyParsons suggested that these components were more appropriately expressed as a fixed sum, rather than as a percentage of the capital cost of the project.</p> <p>Mr van Niekerk confirmed that the IMO had consulted SKM, who had previously developed the margin M for the IMO, and had received confirmation that this had been taken into account in</p>	

	<p>their calculations.</p> <p>In light of this, the Chair proposed that the current methodology for determination of the margin M be retained.</p> <p>Mr Dykstra noted that the Working Group had previously agreed that debt issuance costs would be included in the WACC and removed from the financing cost component of the Margin M. The Chair agreed, noting that the IMO would review the wording in the draft Market Procedure to ensure that this was adequately reflected.</p> <p>Mr Koay pointed out that clause 1.12.1(b) in the draft Market Procedure describes the component included in M as additional cost not covered in the debt issuance cost in WACC. The debt issuance cost in WACC will be paid to the lenders and included in the interest payments whereas the financing cost component in M relates to the cost incurred by the borrower in setting up the loan.</p> <p>The Working Group agreed that the Margin M calculation basis should remain unchanged except for the removal of debt issuance costs.</p> <p><i>Action Point: IMO to review the Market Procedure to ensure there is no double counting of debt issuance costs.</i></p> <p>Mr van Niekerk explained that the WorleyParsons report had also provided a number of options for forward escalation of costs. These included the use of:</p> <ul style="list-style-type: none"> <li>• a weighted average of various Australian Bureau of Statistics (ABS) indices, reflecting cost movements from the previous 12 months;</li> <li>• linear regression of the historical ABS indices to predict future price movements; or</li> <li>• a combination of Consumer Price Index (CPI) and Wage Price Index (WPI) forecasts published in the State budget papers.</li> </ul> <p>Mr van Niekerk noted the relative strengths and weaknesses of each methodology and proposed that the Working Group consider adopting the method based on CPI and WPI forecasts as it considered future expectations of economic conditions, and was simple and transparent.</p> <p>The Chair noted that the change previously agreed by the Working Group to the application of the WACC, assuming that costs were incurred, on average, 6 months before payments are received, required that costs will now need to be escalated forward almost 3 years.</p> <p>Mr Dykstra stated that CPI is not necessarily a good indicator of the typical input costs for a power station, with other indices, such as those available for steel and copper, possibly being better predictors for escalation purposes.</p> <p>Mr van Niekerk reiterated that transparency and simplicity were the key advantages of moving to a forward-looking CPI/WPI basis for determining escalation factors.</p> <p>Mr Tan asked if WorleyParsons had compared longer-run historical changes in power station capital costs against CPI. The Chair noted that WorleyParsons had included this in its report as part of its suggestion of a linear regression method, indicating that this was approximately 3% over the period from 2005 to 2010.</p>	<p><b>IMO</b></p>
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	<p>Mr Campillos noted that the use of CPI allows the calculation to be replicated. However, if CPI is significantly different from expected escalation in power station costs then perhaps it might be better not to use it as a basis for escalation. Mr Dykstra agreed with Mr Campillos, however noted that the MRCP was a cap and therefore contains some head room.</p> <p>The Chair explained the discussions held previously with the ERA in relation to the use of forward commodity price estimates to develop escalation factors. The Chair noted that SKM had advised that its forward escalation factors for switchyard and transmission costs had previously been endorsed by the Australian Energy Regulator.</p> <p>Switchyard and transmission costs are typically incurred by regulated entities and are significantly more transparent, allowing easier development and refinement of a weighting matrix to determine the relative contribution of various costs (e.g. copper, steel, cement and labour). However, SKM had only determined a weighting matrix for the power station capital cost recently and had not had the opportunity to refine this over several years.</p> <p>Mr Chris Brown noted that there was limited transparency under the forward looking methodology as proposed by SKM. Mr Brown of the ERA noted that the assessment of the suitability of an escalation methodology is based on its reliability in reflecting the true cost of a power station.</p> <p>Notwithstanding these issues, the Working Group generally agreed that the use of escalators based on forward estimates of power station input costs, as recommended by SKM, would be more appropriate than CPI/WPI forecasts.</p> <p>The Chair asked whether participants could be satisfied with the accuracy of a cost that was predicted 3 years ahead.</p> <p>Mr Dykstra indicated that the professional judgment of the consultant should be applied, using the best available information at the time. He proposed that the consultant provide the power station capital cost as at the date 6 months before payments are received, along with an explanation of how the cost was developed, including any escalation. The Working Group agreed with Mr Dykstra's proposal.</p> <p><i>Action Point: The IMO to amend the Market Procedure to state that the Consultant provides a price as at April in Year 3 of the Reserve Capacity Cycle and explain its derivation, including any escalation factor applied.</i></p> <p>The Chair noted that, as Western Power was responsible for calculating the transmission connection cost, the IMO would still require escalation factors for the transmission and switchyard costs. The Chair proposed that the IMO would confirm the history of regulatory acceptance of SKM's recommended forward cost escalators for these costs.</p> <p><i>Action Point: The IMO to investigate the history of regulatory acceptance of SKM's recommended forward cost escalators for switchyard, transmission and O&amp;M costs.</i></p>	<p>IMO</p> <p>IMO</p>
5	<p><b>FORCED OUTAGE ALLOWANCE</b></p> <p>The Chair introduced Mr Chin Koay from Verve Energy to present the paper on Forced Outage Allowance in Maximum Reserve</p>	

## Capacity Price.

Mr Koay stated that Gas Turbines are not designed to have 100% availability. Mr Koay proposed that the corresponding Forced Outage Refund liability be allowed for within the MRCP calculation by including a provision, based on an average forced outage rate of 3%.

Mr Hay noted that the Reserve Capacity Mechanism accounts for forced outages through the procurement of extra capacity to satisfy the Planning Criterion. He also noted that the 15% reserve margin in the paper is based on 1 in 2 year peak demand forecasts rather than the 1 in 10 year peak demand.

The Chair noted that the IMO had analysed the forced outage rates of peaking gas turbine facilities that were built in the previous 10 years, as these most closely relate to the power station upon which the MRCP is based. The average forced outage rate in the last year for these facilities was under 1%. The Chair also noted that the theoretical peaking plant upon which the MRCP is based has a 2% capacity factor, so any outage allowance above this level would make little sense. Mr Peake noted that outage costs are very significant to gas turbines. He suggested that forced outage rates are typically 1-2%, with outages commonly occurring at times where refund costs are higher as faults can sometimes not be identified until the facility is dispatched. Mr Peake proposed that the IMO should calculate what a likely refund level is and apply that within the MRCP to compensate for an inevitable level of forced outages.

Mr Koay noted that a 3% level for forced outages may not be the right number and that he would be satisfied for any agreed level to be based on market statistics.

Mr Peake also explained that working capital is typically set aside to account for outages and refunds. He stated that a high level of forced outages, in the region of 3%, falling during peak periods could seriously threaten the profitability of an operator. He proposed that a number be determined, which was likely to be lower than 3%, and then be incorporated into the MRCP to compensate operators. Mr Tan noted his support for this proposal.

Mr Boyd noted that generally a 3% outage rate is a conservative estimate that would be unlikely to be exceeded and that an investor should allow for this in their business model. Mr Boyd stated that if it was the intention of the MRCP to compensate investors for costs then a provision for refunds should be included. This was supported by Mr Campillos.

Mr Peake noted that long periods of plant idleness can result in uncertainty surrounding reliability when called upon at short notice, which will naturally result in forced outages due to unforeseen circumstances. Mr MacLean stated that it was his experience that gas turbines typically start when needed as long as proper maintenance is undertaken.

The Chair questioned the validity of using a percentage-based Forced Outage Refund allowance for a plant that only runs 2% of the time, particularly given that market statistics suggest average forced outage rates for OCGT's in the market of less than 1%.

	<p>Mr Peake suggested that, as refund rates were more punitive during peak periods, the IMO could consider looking at refund quantities to gauge the financial impact of forced outages for similar facilities.</p> <p>Mr MacLean noted that any changes in the MRCP in relation to forced outage rates could only be implemented pending the outcome of further discussions on the capacity refund mechanism by the Rules Development &amp; Implementation Working Group.</p> <p><i>Action Point: The IMO to analyse the value of refunds paid by newer peaking gas turbines in the market to investigate whether these facilities are typically exposed to higher refund multipliers.</i></p>	<b>IMO</b>
<b>6</b>	<p><b>ANALYSIS OF SENSITIVITY TO CHANGES TO MRCP METHODOLOGY</b></p> <p>Mr van Niekerk explained that the IMO had performed a sensitivity analysis for a number of changes to the MRCP methodology. These included changes in the transmission cost calculation methodology, changes in the Debt Risk Premium methodology, the change in the effective construction period in applying the WACC, the inclusion of annual insurance costs and changes in the capitalisation period.</p> <p>Mr van Niekerk noted that the paper presented by the IMO suggested that all of the variations taken together, under the current capitalisation period of 15 years, would have resulted in an MRCP that was approximately 18% lower than the 2013/14 MRCP.</p> <p>However, the Chair noted that the IMO had noticed that this analysis had not taken account of the need to escalate the capital costs forward by a further two years to align the costs with the payment timing assumed in the application of the WACC. He indicated that this escalation could, on average, lead to a 5-8% increase in the capital costs. With this taken into account, the overall reduction in the MRCP was in the order of 10-13%.</p> <p>Mr Dykstra noted that the Working Group had previously agreed that the adoption of the Debt Risk Premium methodology proposed by the ERA was subject to it becoming “accepted regulatory practice”. The Chair noted this and indicated that the IMO should remove this from the graph prior to inclusion in the Procedure Change Proposal.</p> <p><i>Action Point: The IMO to remove the change to the Debt Risk Premium from the sensitivity analysis and provide the graph in the draft Procedure Change Proposal.</i></p> <p>Mr Van Niekerk explained the impact of a change in the capitalisation period. He noted that an increase in the capitalisation period to 20 years was, in isolation, likely to reduce the MRCP by approximately 11%.</p> <p>Mr van Niekerk proposed that the Working Group consider a transition to a capitalisation period of 20 years. He suggested that this would still provide head room while moving closer to the likely operating life of such a Facility. He also noted that a glide path could be considered for this change to avoid significant price</p>	<b>IMO</b>

	<p>shocks.</p> <p>Mr Tan questioned if the analysis had considered any adjustment to the O&amp;M costs corresponding to the longer capitalisation period. Mr van Niekerk confirmed that the annual variable O&amp;M cost was estimated for the IMO by SKM, which had considered this cost to be flat in real terms.</p> <p>Mr Koay questioned the apparent inconsistency in a WACC based on 10 year bond rates versus its use over a 15 year capitalisation period within the MRCP. Mr Dykstra noted this was not necessarily an inconsistency as the Special Price Arrangement applied for a period of 10 years. Mr MacLean noted that alignment of the capitalisation period with the WACC was not necessary as gas turbines could be sold and relocated.</p> <p>Mr Peake suggested that there may be limited scope for increasing the capitalisation period to 20 years given the limited availability of debt facilities of 10 years or longer.</p> <p>Mr Tan noted that a change to the capitalisation period may require reconsideration of the WACC. For example, the cost of funding a 5 year period is cheaper than 10 years. Mr Dykstra agreed and noted there was likely to be a lower risk premium in a shorter period.</p> <p>Mr Peake noted that the MRCP should allow an investor to be profitable during the term of the Special Price Arrangement. He raised concern that an increase in the capitalisation period could prevent this from occurring.</p> <p>It was agreed that in order to determine the impact of a change in capitalisation period, the IMO should model the cash flows of a model plant for the first 10 years under both a 15 and 20 year capitalisation period.</p> <p><i>Action Point: The IMO to perform financial modelling on cash flow impacts of a change to the capitalisation period and report back to the Working Group.</i></p>	<b>IMO</b>
<b>7</b>	<p><b>DRAFT MARKET PROCEDURE</b></p> <p>Mr van Niekerk briefly outlined the changes to the Market Procedure that had been made since the last meeting.</p> <p>Mr Dykstra noted the need to confirm that the fuel tank capacity corresponded to the requirement for sufficient fuel for 24 hours of operation.</p> <p><i>Action Point: The IMO to confirm that the fuel tank size in Section 1.9 of the Market Procedure is sufficient for 24 hours of operation.</i></p> <p>He also noted that the reference to CPI in section 1.9.5 should be specified.</p> <p><i>Action Point: The IMO to ensure that section 1.9.5 of the Market Procedure is sufficiently descriptive regarding CPI.</i></p> <p>The Chair noted that Mr Chris Brown from the ERA had already suggested that the readability of step 1.13.7(h) could be improved</p>	<b>IMO</b>  <b>IMO</b>

	<p>and had offered to provide suggestions for improvement.</p> <p>Mr Gould noted that the corporate tax rate in section 1.13.8 is currently a Major WACC parameter, suggesting that it would only be reviewed five-yearly. He noted that it is possible that the corporate tax rate will be changed soon and proposed that it be changed to be a Minor parameter. The Chair agreed to amend this.</p> <p><i>Action Point: The IMO to change the corporate tax rate to be a Minor WACC parameter in section 1.13.8 of the Market Procedure.</i></p> <p>The Chair requested that Working Group members send their comments on the draft Market Procedure to the IMO by email. Mr Dykstra requested that the IMO sends a reminder email to Working Group members.</p> <p><i>Action Point: Any comments regarding the proposed MRCP Procedure to be forwarded via email to the IMO by COB 12 May 2011.</i></p>	<p><b>IMO</b></p> <p><b>All</b></p>
<b>8</b>	<p><b>GENERAL BUSINESS</b></p> <p>No general business.</p>	
<b>9</b>	<p><b>NEXT MEETING</b></p> <p>Mr Ruthven noted that the date of the next meeting would be confirmed at a later date.</p> <p><i>Action Point: The IMO to advise prospective attendees of the next meeting details.</i></p>	<b>IMO</b>
<b>10</b>	<p><b>CLOSED:</b> The Chair declared the meeting closed at 5:05 pm.</p>	