

**Public Report: Maximum
Reserve Capacity Price for
the 2008/09 Capacity Year**

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REPORT DETAILS

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EXECUTIVE SUMMARY

One of the functions of the Independent Market Operator (IMO) is to set the Maximum Reserve Capacity Price for the Wholesale Electricity Market. The Maximum Reserve Capacity Price is used as a basis for payment of uncontracted Capacity Credits in year three for the Reserve Capacity Cycle. For the 2005 Reserve Capacity Cycle, the Maximum Reserve Capacity Price was set at \$150,000/MW. This was the maximum price to be paid by the IMO for Capacity Credits in the 2007/08 Reserve Capacity year.

Each year, the IMO is required to review the Maximum Reserve Capacity Price and to assess the appropriateness of the input values used in the price computation listed at Appendix 4 of the Market Rules. This report details part of the process undertaken by the IMO to review the Maximum Reserve Capacity Price for the 2008/09 Reserve Capacity year. Under the Market Rules, the IMO is also required to request public submissions on the proposed Maximum Reserve Capacity Price. The IMO initiated the public consultation process on 21 December 2006, with submissions closing on 6 January 2007. The IMO received seven submissions on the draft review report.

Following the public consultation process, and the subsequent consideration of the proposals received, the IMO revised the value of the Maximum Reserve Capacity Price for the 2008/09 Reserve Capacity year. The final proposed price is **\$122,500/MW**. The Maximum Reserve Capacity Price of \$122,500/MW will be effective from 1 October 2008.

This value was submitted to the Economic Regulation Authority as a final revised Maximum Reserve Capacity Price and differs from the \$123,000/MW value proposed in the draft report for the following reasons:

- It was considered appropriate to change the electricity transmission connection pricing model from a substation extension model to a turn in and out model.
- In response to the public submissions, a margin of 20% has been included in the electricity transmission connection costs estimates to reflect increased construction prices.
- In response to the public submissions, the insurance costs component in the gas turbine fixed O&M costs have been adjusted upward.
- An error was discovered in the Commonwealth Bond Rate input value, which has now been corrected.
- A more appropriate method to estimate real Commonwealth Bond Rates has been adopted.

Some of the changes that have been adopted increase the Maximum Reserve Capacity Price, while some of the changes reduce the price. This results in a net reduction of \$500/MW to the value being proposed.

INTRODUCTION

Under the Market Rules, each year the IMO is required to conduct a review of the Maximum Reserve Capacity Price. The review conducted by the IMO must assess the appropriateness of a number of the input values used to calculate the Maximum Reserve Capacity Price including:

- The optimum size of an open cycle gas turbine (OCGT) for the SWIS;
- The capital cost of OCGT power stations;
- The level of electricity transmission connection costs;
- The cost of acquiring and installing fuel tanks sufficient to accommodate 24 hours of liquid fuel storage;
- The capital cost of a gas pipeline lateral to allow for dual fuel capability;
- The estimate of the fixed operating and maintenance costs for the power station and the transmission facilities listed above;
- A margin for legal, approval, financing costs and contingencies.

Following the review process, the IMO published a draft report describing how it arrived at the proposed Reserve Capacity Price and called for submissions from all sectors of the Western Australian Energy industry on the report.

After receiving, and giving consideration to the public submissions, the IMO submitted a final revised value of the Maximum Reserve Capacity Price to the ERA for approval. The final revised value of the Maximum Reserve Capacity Price was submitted to the ERA on 11 January 2006.

This final report is derived from the Draft Report, with additional information regarding the public submissions received, the outcomes of the consideration process, and the steps taken to arrive at the final proposed Maximum Reserve Capacity Price.

REVIEW PROCESS

Following an initial review of the 2005 Maximum Reserve Capacity Price calculation, the IMO retained Sinclair Knight Merz (SKM) to assist with the estimation of a number of the cost components that contribute to the Maximum Reserve Capacity Price. SKM provided advice on the electricity transmission connection and O&M costs and the Power Station O&M costs. Western Power Corporation – Networks Division also provided costing assistance for this process.

2006 MAXIMUM RESERVE CAPACITY PRICE

Using the methodology detailed in Appendix 4 of the Market Rules, and the input values listed above, the Maximum Reserve Capacity Price calculated for the draft report was \$122,962.11 for the 2006 Reserve Capacity cycle. In the draft report released by the IMO, it was proposed that the 2008/09 Maximum Reserve Capacity Price be set at \$123,000.00.

CONSULTATION PROCESS

The consultation process was conducted in a necessarily short timeframe. Market Participants and other interested parties in the electricity industry were directly contacted on the 21 December 2005 by email and provided an electronic copy of the Draft Report. A public notice was placed in the West Australian Newspaper on 23

December 2005. Public submissions were accepted until 4.00 pm WST on 6 January 2006. In total, submissions were made from seven organisations.

Some of the submissions were marked CONFIDENTIAL. As such, the submissions will not be released to the public (but were released to the ERA in accordance with the Market Rules). Individual comments were provided to the ERA on each of the submissions

DISCUSSION OF SUBMISSIONS MADE TO THE IMO

The main points raised by the various submissions will be discussed below. On the balance of the arguments, a number of issues were considered and adjustments have been made to the Maximum Reserve Capacity Price.

Many of the comments were based on a comparison with the values used for the 2006 Reserve Capacity cycle. The value of \$150,000/MW for the 2005 Reserve Capacity cycle, is mandated under the Market Rules, and was not subject to the same review process completed here. The IMO believes the methodology adopted this year, which was to seek commercial estimates of a number of the costing components gives a more appropriate indication of the associated costs for power station development and operation.

Optimum size of open cycle gas turbine

There was little discussion surrounding this point. A number of the proponents commented that the size of 160MW seemed appropriate.

Capital Cost of an Open Cycle Gas Turbine

There were two main concerns raised here, namely the appropriateness of the methodology and the comment that industry is experiencing a real rise in project development costs in response to upward pressure from labour costs in the construction industry.

In considering the methodology used, the IMO believes that while not perfect, the method of using OCGT prices published in the Gas Turbine World Handbook offers a reasonable approach to funding a generic OCGT power station. It is also noted that many of the proponents making comment on the methodology were involved with its development through participation in the Market Rules Development Group. The avenues for addressing concerns about the general methodology have been discussed with a number of the proponents during the IMO's consideration of public submissions.

The Market Rules specify that the base cost of the power station is to be derived from gas turbine prices set in the annual review published by the US Magazine

entitled Gas Turbine World (GTW). This price is doubled to provide an allowance for the ancillary infrastructure and site costs. A further allowance of 10% is then included in the power station costing as a contingency margin.

GTW suggests that the cost of a complete power station is in the order of 60% to 100% higher than the base gas turbine cost. The 110% increase allowed in the Market Rules is therefore quite generous and could be considered to cover the variations in prices currently being experienced in the construction industry. Therefore, no change to the OCGT price is supported by the IMO.

Electricity Transmission Connection Costs

Most concerns regarding this parameter indicated the value to be too low. Much of the argument focussed on the fall in prices, relative to those used in the 2005 Reserve Capacity Cycle. It is the IMO's view that the values derived this year more appropriately reflect actual costing estimates and have been developed in a more rigorous manner than last year. Notwithstanding this, following consideration of the arguments presented, the IMO believes there are a number of issues that support an increase to this price. First, the IMO believes an allowance should be made to include the increases in labour-driven costs reported by a number of the respondents. While any increase in labour-driven construction costs will be very project specific, the IMO believes it appropriate to include an additional margin of 20% in the cost of electricity transmission connection costs. It is noted that the 20% margin covers the whole project cost and not just those elements subject to the various pressures mentioned. This value should be re-evaluated each year to reflect the condition of the economy from year to year. The IMO believes it is also appropriate to use an alternate electricity transmission connection model. The costing estimates used for the Draft Report were based on a substation extension costing approach. The IMO believes it more appropriate to use a turn in and out connection given the status of power station development in the SWIS. This resulted in an increase to the electricity transmission connection cost.

The revised the Electricity Transmission Connection Costs proposed by the IMO is now \$17.516M, which has been increased from the previous value of \$14.410M.

In response to the change in connection pricing model, the electricity transmission connection O&M costs have risen from \$7812/MW to \$7823/MW.

Cost of acquiring and installing fuel tanks

An issue was raised regarding the possible increase in development costs with regard to this item. The IMO believes there does not appear to be adequate justification to increase this cost at this stage.

Lateral Pipeline Installation Cost

A number of comments were received on this issue. In general respondents advocated the inclusion of costs relating to lateral pipeline installation. The IMO believes that it is not appropriate to fund a pipeline lateral, given that the Reserve Capacity Price is directed to fund peaking plant. As such, a pipeline lateral is not a prerequisite for this type of facility. Furthermore, the calculation included in Appendix 4 of the Market Rules makes no allowance for such a cost, further supporting this position.

Fixed Operating and Maintenance Cost of an Open Cycle Gas Turbine Power Station

A number of concerns were raised with regard to the fixed power station O&M costs. The general view was that these costs were too low. A question was also raised with regard to inclusion of insurance in the cost estimate that was used to determine the Maximum Reserve Capacity Price. Insurance costs were included in the calculation, however following consultation with a number of the respondents it would appear that insurance costs are considerably higher than those values supplied by SKM in the initial analysis. Following consultation and consideration by the IMO, it was our view that the insurance costs should be raised. This adjustment increases the OCGT O&M cost from \$10,474/MW to approximately \$15,599/MW.

Legal, Approval, Financing Costs and Contingency Margin

No significant comments were received in regard to these items, however it is noted that a 10% contingency margin is included, which could be used to absorb a number of the price variations discussed previously.

Summary

A number of issues have been raised through the consultation process. The IMO considers that some of the issues were of sufficient importance to warrant changes and has adjusted the proposed costing components accordingly. Some issues that were raised were considered outside the scope of the Maximum Reserve Capacity Price Review, but will be addressed directly with the proponents involved.

WACC ADJUSTMENT

It was brought to the attention of the IMO that there existed an error in one of the input values for the Maximum Reserve Capacity Price calculation. This error was discovered after the Draft Report was released. However, it is noted that the error presents a technical issue in regard to calculation of the Maximum Reserve Capacity Price, and is not a subject of the Review Process under the Market Rules. As such, the IMO has corrected the input parameter in question and recomputed the Maximum Reserve Capacity Price accordingly.

Additionally, the IMO changed the methodology it used to arrive at a suitable rate for 10-year Commonwealth Bonds. The new approach is supported by the Australian

Energy Regulator and the ERA for electricity transmission costing proposals. The IMO has now adopted the methodology presented in the public paper titled: "Determination of the preferred methodology for calculating the weighted average cost of capital for covered electricity networks" published by the ERA in February 2005 by using a 20-day moving average as a benchmark of the 10 year Commonwealth Bond (real risk free rate).

The IMO has made the following changes:

- Yield rate used instead of coupon rate for nominal risk free rate of return. Using the methodology adopted for the 2005 Reserve Capacity cycle, this correction reduces the Maximum Reserve Capacity Price.
- Adoption of 20-day moving average estimation of rate of return for indexed (real) Commonwealth 10 year bond rate. This further reduces the Maximum Reserve Capacity Price.

The correction to the rate of return correction has had a significant impact on the Maximum Reserve Capacity Price Calculation, reducing the price of Reserve Capacity. However, it is re-iterated that this is largely a technical correction to the application methodology.

FINAL PROPOSED MAXIMUM RESERVE CAPACITY PRICE

Following industry consultation and consideration of the responses that were received, the IMO proposed a final revised Maximum Reserve Capacity Price of \$122,436/MW to the ERA for the 2008/09 Reserve Capacity year. It was further proposed that this value be rounded up to \$122,500/MW.

Following completion of a review by the ERA, a Maximum Reserve Capacity Price of **\$122,500/MW** was approved on Monday 23 January 2006. This value will be effective from 1 October 2008. A copy of the notice provided by the ERA is included in Appendix 1.

SUMMARY OF CHANGES TO THE MAXIMUM RESERVE CAPACITY PRICE FOLLOWING CONSULTATION

The Draft Report requesting submissions on the review proposed a Maximum Reserve Capacity Price of \$123,000/MW. Following the public consultation process, a final revised value of \$122,500/MW was proposed to the ERA. While the deviation from the value proposed in the draft report is relatively small, a number of substantial adjustments have been made. These include:

- A change from a substation extension pricing model to a turn in and out pricing model for electricity transmission connection costs – Upward influence in price;
- Inclusion of margin of 20% for the electricity transmission connection costs to reflect increased construction prices – Upward influence in price;
- Increase in the insurance costs for OCGT fixed O&M costs – Upward Influence in price;
- Correction of input error in Commonwealth Bond Rates – Downward influence in price; and
- Selection of more appropriate method to estimate real Commonwealth Bond Rates – Downward influence in price.

APPENDIX 1 ERA APPROVAL NOTICE



Notice - MRCP approval 23Jan06.pdf