

Decision on Energy Price Limits to apply from 1 October 2008

Submitted by the Independent Market Operator

19 September 2008

Economic Regulation Authority

 WESTERN AUSTRALIA

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DECISION

- 1 The Authority approves the revised value for the Maximum STEM Price of \$286/MWh pursuant to clause 2.26 of the Wholesale Electricity Market Rules (Market Rules). In accordance with clause 6.20.11 of the Market Rules, the approved revised value for the Maximum STEM Price will apply with effect from the time specified in a notice to be published on the IMO's web site.
- 2 The Authority approves the revised value for the Alternative Maximum STEM Price of \$763/MWh pursuant to clause 2.26 of the Market Rules. In accordance with clause 6.20.11 of the Market Rules, the approved revised value for the Alternative Maximum STEM Price will apply with effect from the time specified in a notice to be published on the IMO's web site.

REASONS

Background

- 3 Clause 6.20.6 of the Market Rules requires the IMO to annually review the appropriateness of the value of the Energy Price Limits. Clause 6.20.7 states that in conducting the review, the IMO may propose revised values for the Maximum STEM Price and the Alternative Maximum STEM Price. If it does propose such revised values, the IMO must use the applicable methodology set out in clause 6.20.7(b) of the Rules.
- 4 Where, as a result of its review, the IMO has proposed a revised value for the Maximum STEM Price and/or the Alternative Maximum STEM Price, the IMO is required to prepare a draft report describing how it arrived at a proposed revised value of an Energy Price Limit. The IMO must publish the report on the Market Web-Site and advertise the report in newspapers widely published in Western Australia and request submissions from all sectors of the Western Australian energy industry, including end-users, within six weeks of the date of publication. After considering the submissions on the Draft Report, the IMO must propose a final revised value for any proposed change to an Energy Price Limit and submit those values and its final report, including submissions received on the Draft Report, to the Authority for approval.
- 5 The Market Rules require the Authority to review the Final Report provided by the IMO, including all submissions received by the IMO in the preparation of the report, and to make a decision as to whether or not to approve the revised value for any value comprising the Energy Price Limits.
- 6 In making its decision as to whether or not to approve any proposed change to an Energy Price Limit, the Authority must only consider:
 - whether the revised value for the Energy Price Limit proposed by the IMO reasonably reflects the application of the method and guiding principles for calculating the Energy Price Limits, described in clause 6.20 of the Market Rules; and
 - whether the IMO has carried out an adequate public consultation process.

The IMO's process

- 7 The IMO engaged McLennan Magasanik Associates (MMA) to assist with reviewing the requirements and the prescribed methodology of the Market Rules, and revising the Energy Price Limits by conducting an analysis of the relevant costs. MMA, who performed the analysis used in the 2007 review of Energy Price Limits, provided the IMO with its draft report on 18 July 2008, which was published on the IMO's web site.
- 8 The IMO published on its web site a Draft Report on its review of the energy price limits on 22 July 2008, inviting submissions by 2 September 2008. Submissions were received from three parties: Griffin Energy, Landfill Gas and Power and Synergy.
- 9 MMA provided the IMO with its final report, responding to submissions from interested parties, on 9 September 2008.
- 10 The IMO provided the Authority with its Final Report on its review of the Energy Price Limits on 12 September 2008.
- 11 Clause 2.26.1 of the Market Rules states:

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

 - (a) review the report provided by the IMO, including all submissions received by the IMO in preparation of the report;
 - (b) make a decision as to whether or not to approve the revised value for the Maximum Reserve Capacity Price or any value comprising the Energy Price Limits;
 - (c) in making its decision, only consider:
 - i. whether the proposed revised value for the Maximum Reserve Capacity Price or Energy Price Limits proposed by the IMO reasonably reflects the application of the method and guiding principles described in clauses 4.16 or 6.20 (as applicable);
 - ii. whether the IMO has carried out an adequate public consultation process; and
 - (d) notify the IMO as to whether or not it has approved the revised value.
- 12 The Authority has reviewed the IMO's Draft Report, all submissions from interested parties, MMA's Second Draft Report to the IMO, and the IMO's Final Report. The Authority has also been provided with and has reviewed a spreadsheet setting out MMA's methodology for calculating the Energy Price Limits.
- 13 On the basis of this information, the Authority is satisfied that:
 - 1) the proposed revised Energy Price Limits set out in the IMO's Final Report reasonably reflect the application of the method and guiding principles for calculating the Energy Price Limits; and
 - 2) that the IMO has carried out an adequate public consultation process.`

Methodology for calculating Energy Price Limits

- 14 The methodology for calculating Energy Price Limits has been modified since the IMO's 2007 review, as a result of a Rule Change Proposal submitted by the IMO in February 2008 that come into effect on 1 August 2008.
- 15 This Rule change affected a range of clauses dealing with Energy Price Limits – namely, clauses 6.18.1, 6.18.2, 6.18.3, 6.20.1, 6.20.5, 6.20.7, 6.20.8, 10.5.1 and Appendix 1 of the Wholesale Electricity Market Rules. These Rule changes focused on three issues:
- Amending clause 6.20.7(b) to prescribe the use of the heat rate obtained at the relevant minimum operating capacity, as opposed to the average heat rate obtained over the relevant minimum and maximum operating capacities;
 - Amending clause 6.20.7(b) to explicitly accommodate start-up costs as a component of variable O&M costs. This was to further align the price setting methodology with the probabilistic approach adopted by MMA in its 2007 review, whereby uncertain variables such as the heat rate were treated as stochastic rather than deterministic variables; and
 - Amending various clauses throughout the Rules to remove, in certain cases, mention of the Maximum Shutdown Cost on the grounds that, in such instances, those Rules did not appear to be either necessary or appropriate.
- 16 However, for the purposes of calculating the Maximum STEM Price and the Alternative Maximum STEM Price, only the changes to clause 6.20.7 are relevant.
- 17 As a result of the changes to clause 6.20.7(b), the Market Rules now require the IMO to calculate the Maximum STEM Price or the Alternative Maximum STEM Price using the following methodology:
- $$(1 + \text{Profit Margin}) \times (\text{Variable O\&M} + (\text{Heat Rate} \times \text{Fuel Cost})) / \text{Loss Factor}$$
- Where:
- i. Profit Margin is the allowable profit margin expressed as a fraction;
 - ii. Variable O&M is the variable operating and maintenance costs for a 40 MW open cycle gas turbine generating station expressed in \$/MWh and includes, but is not limited to, start-up related costs;
 - iii. Heat Rate is based on a 40 MW open cycle gas turbine generating station's heat rate at minimum capacity, expressed in GJ/MWh;
 - iv. Fuel Cost is the unit fixed and variable fuel cost for a 40 MW open cycle gas turbine generating station expressed in \$/GJ; and
 - v. Loss Factor is the marginal loss factor for the generator relative to the Reference Node.
- Where the IMO must determine appropriate values for the factors described in paragraphs (i) to (v) as applicable to the Maximum STEM Price and Alternative Maximum STEM Price.
- 18 The Authority considers that the proposed revised Energy Price Limits reasonably reflect the application of this methodology. In particular, the Authority notes:
- The IMO, on the basis of advice provided by MMA, has updated the costs of running a 40MW gas turbine in the SWIS, for both industrial and aero type plant. The new values for variable O&M and fuel costs are set out in Section 5.4 of the IMO's Final Report, and discussed in more detail in Section 3.5 of

MMA's Final Report. The Authority notes that while the size of the price increases (in particular the Maximum STEM Price) appear significant, such increases are consistent with the underlying market conditions faced by the highest cost generating works in the SWIS;

- The IMO's analysis has incorporated the new definition of the prescribed heat rate as defined in clause 6.20.7(b)(iii) of the Market Rules. That is, the heat rate obtained at the minimum operating capacity of a 40MW OCGT plant;
- Following on from the above issue, the Authority notes that MMA confirmed that the use of the heat rate obtained from operating at minimum capacity is /less than the average heat rate obtained from an observed distribution of actual run times. Thus the use of a heat rate obtained from operating at minimum capacity adds an additional layer of conservatism to the calculated maximum prices;
- The IMO, on the advice of MMA and Worley Parsons, has corrected the application of the heat rate when using liquid fuel. This issue is further discussed in Section 3.4 of MMA's Final Report;
- The MMA analysis used by the IMO has further instituted the probabilistic treatment of uncertain variables, such as heat rates, as was done to a lesser degree in the 2007 Review. Maximum prices have been set such that the actual cost of gas-fired generation will be less than the Maximum STEM Price of \$286/MWh on 80% of occasions, while the actual cost of liquid-fired generation will be less than the Alternative Maximum STEM Price of \$763/MWh on 90% of occasions; and
- The IMO has accepted MMA's revised technique for calculating the non-fuel component and fuel coefficient values used in determining the Alternative Maximum STEM Price.

Public Consultation Process

- 19 The Authority is satisfied that the IMO has carried out an adequate public consultation process.
- 20 The IMO prepared a Draft Report describing how it arrived at the proposed revised values of the Maximum STEM Price and the Alternative Maximum STEM Price, and published both its Draft Report, and the draft report prepared by MMA, on its web site. The IMO invited submissions from interested parties to comment on the draft reports.
- 21 The Authority is satisfied that the IMO has considered the submissions from interested parties. The submissions from interested parties are addressed in Section 4 of MMA's Final Report to the IMO, and Section 7 of the IMO's Final Report.
- 22 The Authority has reviewed the submissions from interested parties, and notes that, in general, interested parties were supportive of the proposal to increase the Energy Price Limits, and were in broad agreement with the methodology and assumptions used by MMA. Several submissions noted that the use of the heat rate obtained from operating at minimum capacity is unlikely to accurately reflect the true cost of generation, and that a review of the methodology used in calculating the heat rate may be warranted going forward. The Authority notes that the methodology used to determine the prescribed heat rate was revised on the advice

and deliberations of the Energy Price Limits Working Group during the IMO's Rule change process of August 2008.

- 23 Therefore, the Authority considers that the IMO has appropriately considered and responded to submissions from interested parties. Accordingly, for the reasons outlined above, the Authority considers that the IMO has carried out an adequate public consultation process.