Independent Market Operator

Energy Price Limits Discussion Paper

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Author: Chin Koay
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INTRODUCTION

MAC has constituted this Working Group to consider various issues raised in the 2007 Annual Review of Energy Price Limits. The purpose of this document is to set out the background as a starting point for the Working Group deliberation.

MAC has included the following issues in the Terms of Reference:

- Consider the recommended amendments to the methodology regarding heat rates and startup costs.
- Assess the recommendation to remove the Maximum Shutdown Price.
- Assess the need for changing or providing more flexibility regarding the frequency of the Energy Price Limits reviews.
- Consider, as necessary, issues raised in submissions made by Participants in response to the IMO's Draft Report.

Heat Rates

Clause 6.20.7(b)iii requires the use of the average heat rate of a 40 MW open cycle gas turbine generating station at minimum and maximum capacities in the determination of the Maximum STEM Price and the Alternative Maximum STEM Price. In the 2007 Annual Energy Price Limits Review MMA investigated the time weighted average loading of generators which could be reference for setting Maximum STEM Price and Alternative Maximum STEM Price. The heat rate corresponding to time weighted average loading was determined to be higher (less efficient) than the straight average of the heat rates at minimum and maximum capacities. MMA considered the substitution of this time weighted average to be more appropriate but was restricted to using the straight average under clause 6.20.7(b)iii.

The Working Group is commissioned to consider the appropriateness of the straight average or otherwise and amendment to clause 6.20.7(b)iii as appropriate.

The following considerations could be relevant:

- The time weighted average heat rate could be higher or lower than the straight average of the heat rates at minimum and maximum capacities.
- The historical time average heat rate will be more readily available than a projected time average heat rate but they may not be equal. It is however more likely to be an improvement to the straight average
- The heat rate could be incorporated in the probabilistic approach used which will then effectively take into consideration the time weighted average heat rate.

Capacity

Clause 6.20.7(b) also requires the reference to a 40 MW open cycle gas turbine. Verve Energy, in the Energy Price Limits Workshop held on 21 September, pointed out that its fleet included smaller units. Clause 6.20.7(a) also makes reference to setting the price limits on the basis of the highest cost generating works in the SWIS.

There are historical reasons for the apparent inconsistency between clauses 6.20.7(a) and 6.20.7(b). 40 MW open cycle gas turbine was considered to be the most efficient size of the smallest unit on the SWIS in the longer term.

The following considerations could be relevant:

- Clause 6.20.7(a) is open on what is meant by the highest cost generating works. For example the highest cost generating works could conceivably be a high capital cost generator and its short run marginal cost could be low. The generating works may not even be an open cycle gas turbine.
- Adopting smallest and perhaps least efficient unit in SWIS could, in the Reserve Capacity and Energy market design, discourage retirement of such units. These units, being existing plants, could take up space which could otherwise be taken by newer and more efficient plants.

Startup Cost

In practice in the initial determination of Maximum STEM Price and Alternative Maximum STEM Price in 2004, the startup cost was included in the Variable O&M in clause 6.20.7(b)ii. MMA considered this to be simplistic and adopted a probabilistic approach in 2007 review as the Market Rules is silent on any specific treatment. The startup cost is then expressed on $/MWh basis using the generator loading record and incorporated in the probabilistic approach.

The Working Group could choose to leave the Market Rules as it is – silent on any specific treatment of startup cost. This will leave future review to continue to use the methodology in the 2007 review or to adopt a more appropriate methodology.

Maximum Shutdown Price

The Maximum Shutdown Price is applied to prohibit a non-Verve Energy generator registering a decommitment cost in excess of the Maximum Shutdown Price times the minimum dispatchable loading (Appendix 1(c)i2). This decommitment cost is paid in clause 9.10.1 and calculated in clause 6.18.1 following a dispatch instruction from System Management.

In its report MMA recommended that the Maximum Shutdown Price clauses be reviewed with respect to definition and application. It suggested that the IMO should not be required to make a payment when requiring an independent generator to shutdown in the normal course of energy market operations.

The following considerations could be relevant:

- Startup or commitment cost is covered in Appendix 1(c)i1. The terms are however different from de-commitment cost:

  1. *a whole dollar amount representing the cost of committing the facility, where this amount must represent reasonable costs incurred in the typical start-up as justified by supporting evidence.*
  2. *a whole dollar amount representing the cost of de-committing the facility, where this amount must not exceed the Maximum Shutdown Price multiplied by the minimum dispatchable loading level defined in b(xiv).*

  One would expect the two provisions to be similar and Appendix 1(c)i2 should have been simply asking for “reasonable” and “supported by evidence” qualifications.

- When a non-Verve Energy generator is instructed to shutdown the participant will be purchasing energy from the market at its Balancing Data or Standing Data price. The participant has the opportunity to set its pay-as-bid price to reflect the economic impact of buying from the market. Clause 6.20.8 reference to MCAP and opportunity cost thus appears to duplicate this provision.

Frequency of Energy Price Limits Review

An issue of more frequent review of the Maximum STEM Price as is done for the Alternative Maximum STEM Price has been raised. Currently the Market Rules provide for the Maximum STEM Price to be adjusted annually with the Consumer Price Index under clause 6.20.2(b) and also to be reviewed annually under clause 6.20.6. In contrast the Alternative Maximum STEM Price is revised monthly – the fuel component. The different treatment arises from the volatility of oil prices in comparison with non-oil fuel.

The following considerations could be relevant:

- Gas prices, unlike distillate prices, will continue to be hidden in gas contracts in the near future.
- Gas transport, in relation to regulated tariffs, is available in the public domain.
- Prices in gas and coal contracts could be adjusted quarterly and this may suggest quarterly adjustment of the fuel component of the Maximum STEM Price
- Fuel component in Maximum STEM Price is a smaller component in comparison with fuel component in Alternative Maximum STEM Price.