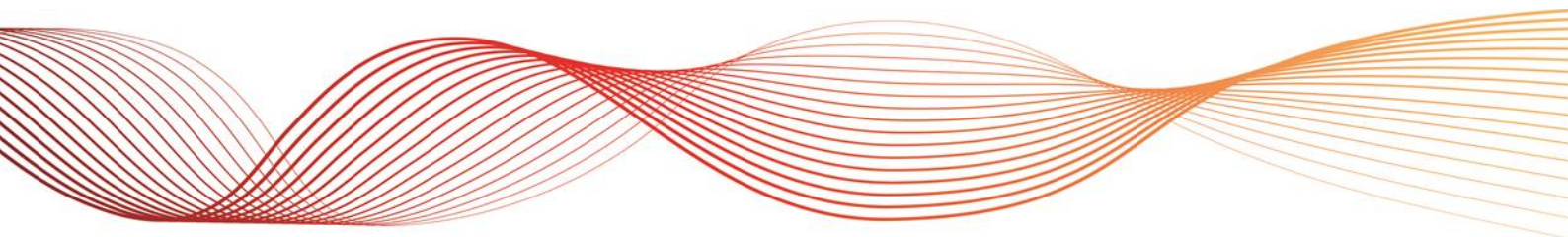




2016 REVIEW OF THE ENERGY PRICE LIMITS FOR THE WHOLESALE ELECTRICITY MARKET

AEMO FINAL REPORT

Published: **June 2016**





IMPORTANT NOTICE

Purpose

The Australian Energy Market Operator (AEMO) has prepared this document to set out the inputs on the 2016 Energy Price Limits Review draft report. This document has been prepared and published by AEMO as required by clause 6.20.10 of the Wholesale Electricity Market (WEM) Rules (Market Rules).

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1. BACKGROUND

Clause 6.20.6 of the Wholesale Electricity Market (WEM) Rules (Market Rules) requires the Australian Energy Market Operator (AEMO) to annually review the appropriateness of the values of the Energy Price Limits. In conducting the review, AEMO may propose revised values for the Maximum Short Term Energy Market (STEM) Price and the Alternative Maximum STEM Price. AEMO must calculate the proposed values using the methodology set out in clause 6.20.7 of the WEM Rules and then submit the proposed values to the Economic Regulation Authority (ERA) for approval.

The Market Rules allow AEMO to delegate certain functions under the Market Rules to a person or body of persons that is, in AEMO's opinion, competent to exercise the relevant functions (clause 2.1A.3 of the Market Rules). Accordingly AEMO engaged Jacobs Group Pty Ltd (Jacobs), an independent consultant, to assist AEMO in preparing the draft report for the annual review of the Energy Price Limits for 2016.

The 2016 review included:

- determining whether the cost assumptions and probability levels adopted in the modelling of the Energy Price Limits in 2015 are still appropriate;
- revising the maximum prices by conducting an analysis of the relevant costs; and
- the preparation of a draft report for consultation and a final report.

The review of the Energy Price Limits is now complete. The final report required under clause 6.20.10 of the Market Rules comprises this report and Jacobs' final report which is available at <http://wa.aemo.com.au/home/electricity/consultations/2016-energy-price-limits-review>

2. SUMMARY OF THE DRAFT REPORT

2.1 Overview

Two price caps were reviewed, the Maximum Short Term Energy Market (STEM) Price, which applies when gas is used by the highest cost peaking plant, and the Alternative Maximum STEM Price, which applies when liquid fuel is required to be used.

The 2016 review has continued with the basis for setting the Energy Price Limits as applied in 2015, with Jacobs making changes to the following input parameters:

- Updated operation and maintenance costs for operating 40 MW gas turbines for both the industrial and aero-derivative types by accounting for movements in foreign exchange rates and applying Consumer Price Index escalation.
- The time series forecasting approach used to project the gas price distribution was adjusted for the unusually low spot gas prices and to reflect the recent upwards trend in the gas contract price which also has an influence on the spot price. Jacobs found a reasonably strong correlation between the Brent crude oil price denominated in US dollars and the historical maximum monthly spot gas prices in WA. With the expectation that the recent upwards trend in the Brent crude oil price will continue in the short to medium term, Jacobs considered it reasonable to add an uptrend to the maximum monthly spot gas price forecast to represent the expected movement in the oil price.
- Extended the Monte Carlo sampling from 1,000 samples to 10,000 samples, thereby reducing the standard error of estimated quantities.

2.2 Results in the draft report

The proposed revised values for the 2016 Energy Price Limits were as follows:

- **Maximum STEM Price:** The proposed revised value for the Maximum STEM Price is \$240/MWh using the gas price forecast method which had been applied in last year's review (alternative case). This is based on the estimated costs (with gas firing) for industrial type gas turbines. These units have shorter run times and higher start-up costs, which make them the higher cost resources; and
- **Alternative Maximum STEM Price:** The proposed revised value for the Alternative Maximum STEM Price is \$347/MWh using the estimated costs (with distillate firing) for industrial type gas turbines at the distillate price of \$13.56/GJ. The Alternative Maximum STEM Price is calculated, applying this distillate price as the fuel cost, as the total of:

\$84.27/MWh + 19.356 multiplied by the Net Ex Terminal¹ distillate fuel cost in \$/GJ.

Further details of historical Maximum STEM Prices and Alternative Maximum STEM prices are available on the Market Web Site at:

<http://wa.aemo.com.au/home/electricity/market-information/price-limits>

¹ Wholesale price for distillate in Perth, Western Australia, after deduction of excise rebate and excluding GST. This price does not include road freight costs.

3. PUBLIC CONSULTATION PROCESS

On 18 April 2016, AEMO published on the Market Web Site a draft report proposing the revised values for the Energy Price Limits to apply from 1 July 2016, together with a call for submissions. AEMO also published a notice in The West Australian newspaper on 20 April 2016, requesting submissions from all sectors of the Western Australian energy industry, including end-users. The consultation period was six weeks in length and closed on 30 May 2016.

AEMO also invited interested parties to participate in a public workshop on 9 May 2016. No parties responded to the invitation and AEMO cancelled the workshop. AEMO did not receive any submissions on the draft report. Jacobs has therefore prepared the Final Energy Price Limits Report based on the information contained in the draft report.

3.1 Changes from the draft report

As no submissions were received on the draft Energy Price Limits Reports, the proposed values in the final report have remained unchanged. Jacobs recommended the following values:

- A Maximum STEM Price of \$240/MWh using the gas price forecast method which had been applied in the 2015 Energy Price Limits review; and
- An Alternative Maximum STEM Price of \$347/MWh as outlined in section 2.2 above.

AEMO notes that the decrease in the Maximum STEM Price is primarily due to the downward movement in the forecast gas price, distillate price and the dispatch cycle cost. This is partially offset by an increase in O&M costs due to a fall in the exchange rate, and the loss factor.

The decrease in the Alternative Maximum STEM Price is primarily due to the decrease in the oil price. This is partially offset by the increase in the number of Monte Carlo samples (increased from 1,000 to 10,000 samples this year), the increase in the Operating & Maintenance cost and the loss factor.



4. CONCLUSIONS

The 2016 review has continued with the basis for setting the Energy Price Limits as applied in 2015, with Jacobs making changes to the following input parameters:

- Updated operation and maintenance costs for operating 40 MW gas turbines for both the industrial and aero-derivative types by accounting for movements in foreign exchange rates and applying Consumer Price Index escalation.
- The time series forecasting approach used to project the gas price distribution was adjusted for the unusually low spot gas prices and to reflect the recent upwards trend in the gas contract price which also has an influence on the spot price. Jacobs found a reasonably strong correlation between the Brent crude oil price denominated in US dollars and the historical maximum monthly spot gas prices in WA. With the expectation that the recent upwards trend in the Brent crude oil price will continue in the short to medium term, Jacobs considered it reasonable to add an uptrend to the maximum monthly spot gas price forecast to represent the expected movement in the oil price.
- Extended the Monte Carlo sampling from 1,000 samples to 10,000 samples, thereby reducing the standard error of estimated quantities.

AEMO supports the values recommended in the 2016 Final Energy Price Limits Review Report and proposes these take effect on 1 July 2016. The new values will be posted on the Market Web Site in advance of that date to allow Market Participants to update their standing bids on the basis of the revised Energy Price Limits.

In order to meet this timetable, the ERA's approval is sought by 24 June 2016. Once approved, the new values for Energy Price Limits will take effect from the date specified in the notice posted by AEMO on the Market Web Site.