

Determination of the Ancillary Service Margin_Peak and Margin_Off-Peak parameters

Issues Paper

18 December 2012

Economic Regulation Authority

WESTERN AUSTRALIA

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1. Introduction

1.1 Background and scope of this Issues Paper

The Ancillary Service Margin_Peak and Margin_Off-Peak parameters are required under clause 9.9.2 of the *Wholesale Electricity Market Rules* (**Market Rules**). These parameters reflect the margins applied to the Balancing Price in the settlement calculations of the availability costs to be paid to Verve Energy for the provision of Spinning Reserve Ancillary Service.¹

Clause 3.13.3A of the Market Rules requires that the Economic Regulation Authority (**Authority**) determine the values for the Ancillary Service Margin_Peak and Margin_Off-Peak parameters by 31 March 2013. The time period to which the determination applies is from 1 July 2013 to 30 June 2014.

Sub clause 3.13.3A(b) of the Market Rules requires the Authority, in determining the values of the Ancillary Service Margin_Peak and Margin_Off-Peak parameters, to undertake a public consultation process, which must include publishing an Issues Paper and issuing an invitation for public submissions.

Sub clause 3.13.3A(a) of the Market Rules requires the IMO to submit a proposal for the Ancillary Service Margin_Peak and Margin_Off-Peak parameters to the Authority by 30 November of the year prior to the start of the Financial Year. The Authority received a submission from the IMO on 30 November 2012 proposing values of the Ancillary Service Margin_Peak and Margin_Off-Peak parameters that compensate Verve Energy for the provision of Spinning Reserve Ancillary Services for the period from 1 July 2013 to 30 June 2014 under the Market Rules. These values were recommended by its consultant, Sinclair Knight Merz / McLennan Magasanik Associates (**SKM MMA**) in its final report to the IMO.² The IMO also provided the Authority with a separate report prepared by SKM MMA on the key modelling assumptions for the Margin_Peak and Margin_Off-Peak parameters.

In its submission to the Authority, the IMO noted that it requested feedback from eight large Market Generators on the key operating assumptions for their facilities, and five of the eight Market Generators provided feedback on their facility operating assumptions.

The IMO also noted that the IMO and its consultant SKM MMA had consulted directly with System Management regarding assumptions on network topography and Load Following response.

The IMO noted that feedback provided by stakeholders was used by SKM MMA to update the input assumptions for the review of the values of the Margin_Peak and Margin_Off-Peak parameters for the period from 1 July 2013 to 30 June 2014.

¹ Verve Energy is currently the default provider of the Spinning Reserve Ancillary Service under the Market Rules.

² SKM MMA's final report is included as an attachment to the IMO's proposal of the values for the Margin_peak and Margin_Off-Peak parameters.

The IMO's submissions and its consultant's (SKM MMA) reports are available on the Authority's [website](#).³

The Authority has prepared this Issues Paper to assist interested parties in understanding and making submissions on the proposed values for the Ancillary Service Margin_Peak and Margin_Off-Peak parameters for the 2013/14 Financial Year from 1 July 2013 to 30 June 2014, as submitted by the IMO.

The remainder of this paper addresses the following matters:

- how to make a submission on the proposed Ancillary Service Margin_Peak and Margin_Off-Peak parameters submitted by the IMO;
- the process to be followed by the Authority in making determinations on these parameters;
- a discussion of the methodology used in modelling the margin parameters by the IMO and its consultant SKM MMA; and
- the proposed margin values for the 2013/14 Financial Year submitted by the IMO.

1.2 How to make a submission

A notice has been posted on the Authority's website advising the release of this issues paper. This notice invites interested parties to make submissions in print and electronic form (where possible) on the proposed values for the Ancillary Service parameters submitted by the IMO by **4:00 pm (WST) on Friday, 1 February 2013**.

Submissions should be addressed to:

Determination of the Ancillary Service Margin_Peak and Margin_Off-Peak parameters - Issues Paper

Postal address: PO Box 8469, PERTH BC WA 6849

Office address: Level 4, 469 Wellington Street, PERTH WA 6000

Email address: publicsubmissions@erawa.com.au

Confidentiality

Submissions made to the Authority will be treated as in the public domain and placed on the Authority's website unless confidentiality is claimed. The submission or parts of the submission in relation to which confidentiality is claimed should be clearly marked. Any claim of confidentiality will be dealt with in the same way as is provided for in section 55 of the *Economic Regulation Authority Act 2003*.

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³ See ERA website, Determination of the IMO and System Management Allowable Revenue and Ancillary Service Parameters, http://www.erawa.com.au/2/272/42/determination_o.pm

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2. The process to be followed by the Authority

Under clause 3.13.3A of the Market Rules, the factors that the Authority must take into account in determining values for the Ancillary Service Margin_Peak and Margin_Off-Peak parameters are as follows:

- the Wholesale Market Objectives; and
- the submission received from the IMO (proposing the values for the Margin_Peak and Margin_Off-Peak parameters).

The Authority must undertake a public consultation process in determining the values for the Margin_Peak and Margin_Off-Peak parameters. When the Authority undertakes public consultation, the Authority is required to publish an Issues Paper and issue an invitation for public submissions.

The Authority intends to follow the process in accordance with these clauses in determining the values for these parameters, with an expected timeline as follows:

- | | |
|--|---------------------------------------|
| • Public consultation on this issues paper | 18 December 2012 -
1 February 2013 |
| • Publication of determination paper | End of March 2013 |

3. Modelling of the values for the Margin_Peak and Margin_Off-Peak parameters

The underlying principle for determining the Margin_Peak and Margin_Off-Peak parameters is to ensure Verve Energy, in providing the Spinning Reserve Ancillary Service, is appropriately compensated for:

- the energy sales foregone; and
- the generation efficiency losses that could reasonably be expected to be incurred.

To estimate the 'availability cost' to be paid to Verve Energy, i.e. to compensate for the energy sales foregone and the generation efficiency losses, the IMO and SKM MMA have developed a method that compares the revenue and generation cost outcomes from two market simulations, with and without the provision of the Spinning Reserve Ancillary Service by using the following equation in its modelling:

(1) Availability cost =

$$\begin{aligned} & \text{Verve Energy's total generation costs with Ancillary Services provision} \\ & - \text{Verve Energy's total generation costs without Ancillary Services provision} \\ & + (\text{Verve Energy's total generation volume without Ancillary Services provision} \\ & - \text{Verve Energy's total generation volume with Ancillary Services provision}) \\ & * \text{system marginal price with Ancillary Services provision} \end{aligned}$$

Having determined the availability cost, SKM MMA calculates the margin values by rearranging the formula in clause 9.9.2 of the Market Rules for calculating the total availability cost (per Trading Month). The rearrangement of the formula in clause 9.9.2 of the Market Rules is described in SKM MMA's 2012 Margin Peak and Margin Off-Peak Review – assumptions and methodology report (11 September 2012), which is published

on the IMO's website.⁴ This method of modelling to determine the margin values has been used for the past three reviews.

In response to the Authority's Issues Paper on the proposed margin values for the 2011/12 financial year, submissions were received from Market Participants regarding the methodology used by SKM MMA, raising concerns that the methodology for forecasting the availability cost may over-compensate Verve Energy. The Authority shares the same view that the formula presented in SKM MMA's report for calculating the availability cost only takes into account the differential in Verve Energy's generation costs and generation volumes in providing the Ancillary Service by Verve Energy, but not the differential in the system marginal price.

In the Authority's Determination Paper for the margin values for the 2011/12 Financial Year, the Authority recommended that the IMO conduct a full review of the methodology and the process applied in deriving the values prior to the review for the 2012/13 Financial Year. However, this review was undertaken by the IMO only to the extent that the assumptions were modified, and the Authority noted in its determination paper for the margin values for the 2012/13 Financial Year that its recommendation to conduct a full review has not been sufficiently fulfilled by the IMO.

The omitted term highlighted by the Authority

The availability cost is intended to provide the appropriate compensation to Verve Energy for its provision of the Spinning Reserve Ancillary Service to the market. The change in Verve Energy's profit under the two simulation scenarios, i.e. with and without the provision of the Spinning Reserve Ancillary Service can be expressed as follows:

(Verve Energy's total generation volume with Ancillary Services provision
 * system marginal price with Ancillary Services provision
 – Verve Energy's total generation costs with Ancillary Services provision)
 – (Verve Energy's total generation volume without Ancillary Services provision
 * system marginal price without Ancillary Services provision
 – Verve Energy's total generation costs without Ancillary Services provision)

This formula can be arranged as:

(2) Verve Energy's total generation costs with Ancillary Services provision
 – Verve Energy's total generation costs without Ancillary Services provision
 + (Verve Energy's total generation volume without Ancillary Services provision
 – Verve Energy's total generation volume with Ancillary Services provision)
 * system marginal price with Ancillary Services provision
 + (system marginal price without Ancillary Services provision
 – system marginal price with Ancillary Services provision)
 * Verve Energy's total generation volume without Ancillary Services provision

Comparing equation (1) with equation (2), the omitted term in equation (1) refers to the impact of the price differential under the two scenarios:

⁴ See IMO website, SKM MMA's 2012 *Margin Peak and Margin Off-Peak Review – Assumptions and methodology report* (11 September 2012), <http://www.imowa.com.au/n6364.html>

- (3) (system marginal price without Ancillary Services provision
– system marginal price with Ancillary Services provision)
* Verve Energy's total generation volume without Ancillary Services provision

There are three possible outcomes in omitting this term:

- no impact when the system margin prices under the two scenarios are the same;
- under compensation to Verve Energy when the system marginal price without Ancillary Services provision is greater than the system marginal price with Ancillary Services provision; and
- over compensation to Verve Energy when the system marginal price without Ancillary Services provision is lower than the system marginal price with Ancillary Services provision.

Hence, the Authority requested the IMO to review its methodology in order to provide the interested parties with a better understanding of the implications of its approach of omitting this term.

The IMO's response to the omitted term

In response to the Authority's concerns, the IMO conducted a review of the availability cost calculation formula applied by SKM MMA as part of its review for the margin values for the 2013/14 financial year.

The IMO noted in its submission that the term highlighted by the Authority has been omitted intentionally by SKM MMA. In SKM MMA's methodology, no change in system marginal price is assumed in determining the level of compensation required for Verve Energy to provide the required Spinning Reserve Ancillary Service. The IMO acknowledged that the inclusion of this term could either increase or decrease the availability cost in a given Trading Interval, depending on which system marginal price was larger in that Trading Interval.

The IMO stated that it shared SKM MMA's concern that the additional term does not reflect the real world impact of system marginal price variations on Verve Energy's revenue for two reasons. Firstly, the 'without Spinning Reserve provision' scenario is not a real world scenario, since the South West Interconnected System would never be operated without Spinning Reserve.⁵ As such, this scenario's system marginal price results are unlikely to be reflective of real market prices. Secondly, the IMO considers that changes in system marginal price would only be expected to have an impact over the comparatively small quantities generated above or below Verve Energy's Net Contract Position since most of the energy generated by Verve Energy is sold under bilateral contracts, and including the additional term would apply any price difference to all of Verve Energy's generation output.

The IMO considered that the provision of Spinning Reserve services by Verve Energy would not have an impact on its energy revenue under bilateral contracts that could be approximated by the additional term contained in equation (2). The IMO concluded that

⁵ The Authority notes that the 'without Spinning Reserve' provided by Verve Energy can be modelled as either a system 'without Spinning Reserve' service by any parties or a system 'with Spinning Reserve' service provided by generators other than Verve Energy. The SKM MMA's modelling approach is based on a system 'without Spinning Reserve' service by any parties.

the additional term could overestimate the extent of the impact, and therefore retained its methodology in deriving the margin values for the 2013/14 Financial Year.

The Authority notes that this issue regarding the methodology for calculating the availability cost was not raised again by Market Participants when the IMO invited submissions on SKM MMA's report on its key modelling assumptions and methodology for the margin values review for the 2012/13 and 2013/14 Financial Years.

Submissions are invited from interested parties on the methodology used by SKM MMA in its modelling to calculate the availability cost for Verve Energy.

4. Proposed values for the Margin_Peak and Margin_Off-Peak parameters

Table 1 below shows SKM MMA's modelled availability cost for the 2012/13 and 2013/14 financial years.

Table 1 SKM MMA's modelled availability cost for the 2012/13 and 2013/14 Financial Years

Financial Year	Modelled availability cost (\$M)
2012/13	12.51
2013/14	7.22

In its final report to the IMO, SKM MMA highlighted a number of factors causing the differences between the modelled availability costs for the 2012/13 and 2013/14 financial years. These factors include:

- updated demand projections;
- relaxed voltage stability constraint in North Country;
- changes in the modelling approach to Load Following Reserve; and
- revised parameters for generators following consultation on the assumptions.

Table 2 below shows the corresponding values for the Margin_Peak and Margin_Off-Peak parameters for the 2012/13 and 2013/14 financial years.

Table 2 Margin Peak and Margin Off-Peak parameters for the 2012/13 and 2013/14 Financial Years

Margin parameter	Current values FY 2012/13 (%)	Proposed values FY 2013/14 (%)
Margin_Peak	32	17
Margin_Off-Peak	31	27

For the 2012/13 financial year, the values for the Margin_Peak and Margin_Off-Peak parameters are set at 32 per cent and 31 per cent, respectively. The corresponding availability cost is estimated at \$12.51 million as shown in Table 1.

The proposed values for the 2013/14 Financial Year are 17 per cent for the Margin_Peak parameter and 27 per cent for the Margin_Off-Peak parameter. The corresponding availability cost is estimated at \$7.22 million.

The Authority invites public submissions on the IMO's proposed values of the Ancillary Service Margin_Peak and Margin_Off-Peak parameters for the 2013/14 financial year.

Submissions are invited from interested parties on proposed values for the Margin_Peak and Margin_Off-Peak parameters under the Market Rules.