

Determination of the Ancillary Service Cost LR, Margin Peak and Margin Off-Peak parameters

Issues Paper

24 December 2010

Economic Regulation Authority

 WESTERN AUSTRALIA

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1 Introduction

1.1 Background and scope of this Issues Paper

Clause 3.13 of the *Wholesale Electricity Market Rules* (**Market Rules**) ('Payment for Ancillary Services') requires the Economic Regulation Authority (**Authority**) to determine:

- values for the Ancillary Service Margin_Peak (**Margin Peak**) and Margin_Off-Peak (**Margin Off-Peak**) parameters for each financial year;¹ and
- revised values for the Ancillary Service Cost_LR (**Cost LR**) parameter for the relevant financial year(s), in the event revised values are submitted to the Authority for determination.²

Pursuant to the Market Rules, the Authority has received submissions from:

- the Independent Market Operator (**IMO**), proposing the values for the Margin Peak and Margin Off-Peak parameters for the 1 July 2011 to 30 June 2012 financial year;³ and
- System Management,⁴ proposing the revised values for the System Restart Ancillary Service (which is the 'R' value of the Cost LR parameter) for the two financial years from 1 July 2011 to 30 June 2013.⁵

These submissions are available on the Authority's [website](#).⁶

The Authority is required to determine the values for these Ancillary Service parameters by 31 March 2011.

The Authority has prepared this issues paper to assist interested parties in understanding and making submissions on the proposed values for these Ancillary Service parameters, as submitted by the IMO and System Management.

The remainder of this paper addresses the following matters:

- how to make a submission on the proposed Ancillary Service parameter values submitted by the IMO and System Management;
- the requirements of the Market Rules for determination of these Ancillary Service parameters;
- the process to be followed by the Authority in making determinations on these parameters; and
- summary information on the proposals submitted by the IMO and System Management.

¹ Clause 3.13.3A of the Market Rules.

² Clause 3.13.3C of the Market Rules.

³ Independent Market Operator, 30 November 2010, Submission under clause 3.13.3A (a) (inclusive of an independent assessment by the consultant SKM MMA).

⁴ System Management is the South West interconnected system's power system operator, and is a segregated (ring-fenced) business unit of Western Power.

⁵ Western Power, 5 November 2010, Determination of Cost_LR Ancillary Service Parameters.

⁶ See ERA website, Determination of the IMO and System Management Allowable Revenue and Ancillary Service Parameters web page, http://www.era.wa.gov.au/2/272/42/determination_o.pm

1.2 How to make a submission

A notice has been posted on the Authority's website advising of 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 and System Management by **4:00 pm (WST) on Wednesday, 27 January 2010**.

Submissions should be addressed to:

Determination of the Ancillary Service Cost LR, Margin Peak and Margin Off-Peak parameters - Issues Paper

Postal address: PO Box 8469, PERTH BC WA 6849
Office address: Level 6, 197 St Georges Terrace, 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*.

The receipt and publication of a submission shall not be taken as indicating that the Authority has knowledge either actual or constructive of the contents of a particular submission and, in particular, where the submission in whole or part contains information of a confidential nature and no duty of confidence will arise for the Authority in these circumstances.

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1.3 Summary of issues

Issues

Submissions are invited from interested parties on the process that the Authority intends to follow in making a determination on the:

- values for the Margin Peak and Margin Off-Peak parameters; and
- revised 'R' values of the Cost LR parameter.

Submissions are invited from interested parties on the proposed values for the Margin Peak and Margin Off-Peak parameters, as determined under clause 3.13.3A of the Market Rules.

Submissions are invited from interested parties on the proposed revised 'R' value of the Cost LR parameter, as determined under clause 3.13.3C of the Market Rules.

2 Requirements of the Market Rules

Clause 3.13.3A of the Market Rules requires the Authority to determine values for the Ancillary Service Margin Peak and Margin Off-Peak parameters. These parameters are used by the IMO in its market settlement calculations. Clause 3.13.3C of the Market Rules requires that the Authority determine revised values for the Cost LR parameter, in the event revised values for the Cost LR parameter are submitted to the Authority for determination.

The Margin Peak and Margin Off-Peak parameters are used in the Ancillary Service settlement calculations under clause 9.9.2 of the Market Rules. The Margin Peak parameter reflects the margin applied to the Marginal Cost Administered Price (**MCAP**) parameter of the settlement calculations, which is paid to Electricity Generation Corporation (**Verve Energy**) for being available to provide the Spinning Reserve Service (**Spinning Reserve**) and Load Following Service (**Load Following**) Ancillary Services during Peak Trading Intervals, while the Margin Off-Peak parameter reflects the margin for being available to provide these services during Off-Peak Trading Intervals.

The Cost LR parameter covers the payment to a market generator for the costs of providing the Load Rejection Reserve Service (**Load Rejection Reserve**), the System Restart Service (**System Restart**) and Dispatch Support Service (**Dispatch Support**) Ancillary Services not paid under specific contracts.⁷

Further background information on these parameters is presented in Appendix 1.

The factors that the Authority must take into account in determining values for the Ancillary Service Margin Peak and Margin Off-Peak parameters,⁸ and revised values for the Ancillary Service Cost LR parameter,⁹ are as follows:

- the Wholesale Market Objectives; and
- submissions received from the IMO (proposing the values for the Margin Peak¹⁰ and Margin Off-Peak parameters)¹¹ and System Management (proposing the revised value for the Cost LR parameter).¹²

The requirements of the Market Rules for the Authority's determination of the values for these Ancillary Service parameters are materially the same for those proposed by the IMO and System Management:

⁷ Dispatch Support Ancillary Services contracted through clause 3.11.8B of the Market Rules.

⁸ Clause 3.13.3A of the Market Rules.

⁹ Clause 3.13.3C of the Market Rules.

¹⁰ In proposing the value for the Margin Peak parameter, the IMO must take into account: the margin Verve Energy could reasonably have been expected to earn on energy sales forgone due to the supply of Spinning Reserve during Peak Trading Intervals; and the loss in efficiency of Verve Energy Registered Facilities that System Management has scheduled to provide Spinning Reserve during Peak Trading Intervals that could reasonably be expected due to the scheduling of those reserves.

¹¹ In proposing the value for the Margin Off-Peak parameter, the IMO must take into account: the margin Verve Energy could reasonably have been expected to earn on energy sales forgone due to the supply of Spinning Reserve during Off-Peak Trading Intervals; and the loss in efficiency of Verve Energy Registered Facilities that System Management has scheduled to provide Spinning Reserve during Off-Peak Trading Intervals that could reasonably be expected due to the scheduling of those reserves.

¹² The revised values for Cost LR proposed by System Management must cover the costs for providing the Load Rejection Reserve and System Restart Ancillary Services and Dispatch Support Ancillary Services, except those provided through clause 3.11.8B.

- the IMO must submit a proposal for the values for the Margin Peak and Margin Off-Peak parameters by 30 November prior to the start of the financial year;¹³
- System Management may submit a proposal for revised values for the Cost LR parameter by 30 November prior to the start of the relevant financial year of a Review Period,¹⁴ in the event that System Management determines the costs to be materially different to the costs provided for under clause 3.13.3B of the Market Rules;¹⁵
- the Authority must undertake a public consultation process in determining the values for the Margin Peak and Margin Off-Peak parameters,¹⁶ and may undertake a public consultation process in determining the revised values for the Cost LR parameter.¹⁷ When the Authority undertakes public consultation, the Authority is required to publish an issues paper and issue an invitation for public submissions;¹⁸
- by 31 March prior to the start of the financial year (in respect of the values for the Margin Peak and Margin Off-Peak parameters) or the relevant financial year(s) of a Review Period (in respect of the revised values for the Cost LR parameter), the Authority must determine the values for these Ancillary Service parameters.

Since the commencement of Rule Change 2010_01 *Annual Review of Margin Values* on 1 July 2010,¹⁹ the Authority is required to determine values for the Margin Peak and Margin Off-Peak parameters annually. Prior to the Rule Change, the Authority was required to determine these values for a three-year Review Period. The Authority's determination of the values for the Margin Peak and Margin Off-Peak parameters on 31 March 2010, for the Review Period 1 July 2010 to 30 June 2013, will be superseded by the Authority's determination to be made on 31 March 2011 for the 2011/12 financial year.

¹³ Clause 3.13.3A(a) of the Market Rules.

¹⁴ Under the Market Rules, a Review Period is a financial triennium that primarily relates to the process of proposal, assessment and determination of either the IMO's or System Management's Allowable Revenue. The current Review Period covers the period from 1 July 2010 to 30 June 2013.

¹⁵ Clause 3.13.3C of the Market Rules.

¹⁶ Clause 3.13.3A(b) of the Market Rules.

¹⁷ Clause 3.13.3C(b) of the Market Rules.

¹⁸ Clauses 3.13.3A(b) and 3.13.3C(b)(i) of the Market Rules.

¹⁹ See IMO website, Rule Change RC 2010_01 web page, http://www.imowa.com.au/RC_2010_01

3 Process to be followed by the Authority

3.1 Determination of the values for the Margin Peak and Margin Off-Peak parameters

Clause 3.13.3A of the Market Rules sets out how the values for the Margin Peak and Margin Off-Peak parameters are to be determined, and the Authority intends to determine the values for these parameters in accordance with this clause.

Clause 3.13.3A(a) of the Market Rules sets out the matters the IMO must take into account in proposing the values for the Margin Peak and Margin Off-Peak parameters. The IMO engaged the consultant SKM MMA to provide an independent assessment of these values.

On 17 November 2010, the IMO received a report from SKM MMA on its review of the Margin Peak and Margin Off-Peak parameters. On 30 November 2010, the IMO submitted to the Authority proposed values for these parameters. These values were recommended in the SKM MMA's report.²⁰

The IMO provided the Authority with a separate report on SKM MMA's key modelling assumptions for the Margin Peak and Margin Off-Peak parameters. In its submission to the Authority, the IMO noted that SKM MMA's key modelling assumptions were reviewed by the IMO, System Management and the Authority. The IMO also noted it had requested that Verve Energy confirm the assumptions made with regards to its facilities. The IMO considered that, given confidentiality requirements, a wider consultation process would have been of limited benefit.

The IMO's proposed values for the Margin Peak and Margin Off-Peak parameters are set out in Section 4 of this paper.

3.2 Determination of the revised 'R' value of the Cost LR parameter

Clause 3.13.3C of the Market Rules sets out how the revised values for the Cost LR parameter are to be determined, and the Authority intends to determine the revised values in accordance with this clause.

The Authority intends to determine the revised 'R' value for the Cost LR parameter by taking into account the Wholesale Market Objectives and by considering whether the revised 'R' value covers the costs for providing the System Restart Ancillary Service.

In determining the revised 'R' value of the Cost LR parameter, and in the context of the System Restart Ancillary Service, the Authority will also consider whether System Management has sought to minimise the cost of meeting its obligations in respect of scheduling and dispatching facilities to meet the Ancillary Service Requirements, and also

²⁰ SKM MMA's report is included as an attachment to the IMO's proposal of the values for the Margin Peak and Margin Off-Peak parameters, which is available on the Authority's web site.

consider whether System Management has given consideration to using a competitive tender process in seeking to contractually procure this service.²¹

System Management's proposal for the revised 'R' values of the Cost LR parameter is set out in Section 5 of this paper.

Issue

Submissions are invited from interested parties on the process that the Authority intends to follow in making a determination on the:

- values for the Margin Peak and Margin Off-Peak parameters; and
- the revised 'R' values of the Cost LR parameter.

²¹ As required by clause 3.11.9 of the Market Rules.

4 Proposed values for the Margin Peak and Margin Off-Peak parameters

Currently, the Margin Peak and Margin Off-Peak parameters are set at 30 per cent and 103 per cent respectively. As shown in Table 4.1 below, the proposed value of the Margin Off-Peak parameter (53 per cent) is significantly lower than the current value (103 per cent). In contrast, the proposed value of the Margin Peak parameter (44 per cent) is relatively close to the current value (30 per cent).

Table 4.1 Margin Peak and Margin Off-Peak parameters

Margin (%)	Current values (2010/11 – 2012/13) ²²	Proposed values (2011/12)
Margin Peak	30	44
Margin Off-Peak	103	53

Determining the above parameters under clause 3.13.3A of the Market Rules requires estimates of Verve Energy's generation costs both with and without providing the Load Following and Spinning Reserve Ancillary Services. Generators providing these services are run at lower efficiencies and possibly out of dispatch merit order.²³ Therefore, when the balancing price (MCAP) is multiplied by the margins and capacities reserved for these services, the product equates to the generation cost compensation that is paid to the generator (i.e. margin x MCAP x capacities reserved = generation cost compensation).

In carrying out its 2010 review of the Margin Peak and Margin Off-Peak parameters, SKM MMA commented on the variation in these proposed parameters when compared to the values obtained in last year's review. In regard to the proposed Margin Off-Peak value, SKM MMA considered that the major contributing factors in the value being significantly lower in this year's review.

- A lower Load Following minimum provision requirement of 72 MW this year (compared to 150 MW last year) led to fewer Verve Energy units being constrained on overnight.
- Rather than 250 MW of capacity previously modelled as being available for the whole financial year, the staged commissioning for Collgar wind farm delivered 200 MW of installed capacity by the end of the financial year. This resulted in a lowering of the level of the service's reserve requirements with respect to last year's review. This change in assumption also resulted, in the modelling, in a lowering of the instances of units being constrained on at times when the wind farm was generating at higher levels.
- Cheaper fuel for the Kwinana G5 and G6 units (run on a mix of 50 per cent gas and 50 per cent coal) was modelled in this review, which resulted in an increased availability of these units to provide the Ancillary Service, and to be dispatched.

²² See ERA website, Ancillary Service Parameters Determination – Margin_Peak, Margin_Off-Peak and Cost_LR, [http://www.erawa.com.au/cproot/8441/2/20100401_Ancillary_Service_Parameters_Determination - Margin_Peak_Margin_Off-Peak_and_Cost_LR.pdf](http://www.erawa.com.au/cproot/8441/2/20100401_Ancillary_Service_Parameters_Determination_-_Margin_Peak_Margin_Off-Peak_and_Cost_LR.pdf)

²³ For further details, see Appendix 1.

Issue

Submissions are invited from interested parties on the proposed values for the Margin Peak and Margin Off-Peak parameters as determined under clause 3.13.3A of the Market Rules.

5 Proposed revised 'R' value of the Cost LR parameter

System Management's proposed revised costs for System Restart (being the 'R' value of the Cost LR parameter) for the 2011/12 and 2012/13 financial years of the current Review Period are shown in Table 5.1.²⁴

Table 5.1 'R' value of the Cost LR parameter

'R' value of Cost LR (\$ per year)	Current values	Proposed values
2011/12	0	491,200
2012/13	0	499,000

Currently, System Restart is only provided by Verve Energy under a contractual arrangement organised prior to market commencement. This arrangement will expire on 30 June 2011.

In its 2010 determination²⁵ the Authority determined the 'R' value of the Cost LR parameter to be nil for the 2011/12 and 2012/13 financial years. This was due to negotiations for all the System Restart services having not been finalised, and the inability for the Authority to either determine:

- an estimate of the overall cost (due to the way the Market Rules' Ancillary Service settlement mechanism operates – the balance of uncontracted services is paid to Verve Energy); or
- the cost of the contracts already negotiated (as this may have affected ongoing contract negotiations).²⁶

System Management has previously advised that in its operational plans, the South West Interconnected System (**SWIS**) is divided into five sub-networks for System Restart purposes.²⁷ More recently, in supplementary information provided to the Authority,²⁸ System Management advised that it requires at least three generating stations to provide System Restart (able to energise the rest of the SWIS upon black system conditions). To that end, System Management undertook competitive procurement processes to provide System Restart in three of the five SWIS sub-networks, with the provision of the service to commence at the start of the 2011/12 financial year (i.e. from 1 July 2011).

²⁴ System Management has not proposed a revised value for the Load Rejection Reserve Ancillary Service (i.e. the 'L' value of the Cost LR parameter), which is currently determined to be \$0 per year for the Review Period covered by the financial triennium from 2010/11 to 2012/13.

²⁵ 2010 determination of Cost LR for the current Review Period (covering the financial triennium from 2010/11 to 2012/13).

²⁶ See ERA website, Ancillary Service Parameters Determination – Margin_Peak, Margin_Off-Peak and Cost_LR, pp 11 – 12, http://www.erawa.com.au/cproot/8441/2/20100401_Ancillary_Service_Parameters_Determination_-_Margin_Peak_Margin_Off-Peak_and_Cost_LR.pdf

²⁷ See ERA website, Western Power - Determination of Cost_LR Ancillary Service Parameters (2009), p 3, http://www.erawa.com.au/cproot/8214/2/20091224_Western_Power_-_Determination_of_Cost_LR_Ancillary_Service_Parameters.pdf

²⁸ Email correspondence from System Management, received 9 November 2010. This correspondence has not been published due to it containing confidential information.

System Management also advised that, while competitive procurement resulted in offers for the service in two sub-networks, no offers were received for one sub-network. As a result, System Management was required to directly negotiate a fee for service for a third System Restart service in the SWIS.

Therefore, System Management's proposed revised 'R' values for the Cost LR parameter for the 2011/12 and 2012/13 financial years reflect the cost of three proposed System Restart Ancillary Service contracts, that will provide the service from three locations in the SWIS. Two of these contracts are based on competitive procurement processes (both of which have proposed contract durations of five years) and the third contract is based on a negotiated fee for service arrangement (with a proposed contract duration of two years).

Issue

Submissions are invited from interested parties on the proposed revised 'R' value of the Cost LR parameter as determined under clause 3.13.3C of the Market Rules.

APPENDICES

Appendix 1 Relevant Ancillary Service background information

Margin Peak and Margin Off-Peak parameters

For reliable operation of the power system, some generating units are run in a manner that allows for the generators' output to be rapidly changed to 'balance' real-time fluctuations between load and generation, particularly in the case of electricity from wind generators (which can fluctuate significantly over short periods of time). Generating units running in this manner are providing the Ancillary Service defined under the Market Rules as Load Following. Some of these generating units, and also other units (that are not able to rapidly change output as quickly as units that are providing Load Following), are run in such a manner as to be able to pick up any generation supply lost in an unplanned generator outage. Generating units running in this manner are providing the Ancillary Service defined under the Market Rules as Spinning Reserve. The purpose of the provision of these two Ancillary Services is to ensure that the power system's frequency remains within an acceptable limit.

Due to the nature of the services provided, generating units providing Load Following and Spinning Reserve Ancillary Services are not run in the most efficient manner, as they may be run instead of more efficient units which are not capable of providing the fast response that is required. Under the Market Rules, the providers of these services are compensated through applying a compensation factor to the balancing price (i.e. MCAP) through the Margin Peak parameter (over peak Trading Intervals), and Margin Off-Peak parameter (over off-peak Trading Intervals). In the market settlement processes, prescribed under clause 9.9.2 of the Market Rules, the MCAP is multiplied by these margins. The resulting values from this calculation are the rates at which the generating capacity reserved for such services is priced to compensate the provider.

Clause 3.13.3A of the Market Rules, which sets out how the margins are to be determined, recognises Verve Energy as the sole provider for these services. However, the Market Rules also allow other generators to provide such services as well.

'R' value of the Cost LR parameter

System Restart is provided by generators that are capable of starting up without the need to draw power from the power system and are also able to energise the power system to enable other generators to be started up. After considering information about network flows, System Management has divided the SWIS into five sub-networks for System Restart purposes, thereby requiring a System Restart unit in each of the sub-networks. System Restart (being the 'R' value of the Cost LR parameter) is designed to compensate generators providing this service.

Unlike Margin Peak and Margin Off-Peak, both the 'L' and 'R' values of the Cost LR parameter are expressed in dollars per year, and these values represent the cost to the market for these Load Rejection Reserve and System Restart Ancillary Services.

Annual Ancillary Services report

Pursuant to clause 3.11.11 of the Market Rules, System Management must submit an annual Ancillary Services report to the IMO that comprises information on:

- quantities of each of the Ancillary Services provided in the preceding year, including Ancillary Services provided under Ancillary Service Contracts, and the adequacy of these quantities;
- total cost of each of the categories of Ancillary Services provided, including Ancillary Services provided under Ancillary Service Contracts, in the preceding year; and
- Ancillary Service Requirements for the coming year and the Ancillary Services plan to meet those requirements.

The IMO must publish System Management's annual Ancillary Services report.²⁹

²⁹ See IMO website, Annual Ancillary Services Report web page, <http://www.imowa.com.au/n2841,211.html>