

Independent Market Operator



Market Rule Change Report

Title: Reserve Capacity Refund Shortfall Formula

Ref: RC_2007_05

Date: 18 June 2007

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1. INTRODUCTION

1.1. *General Information about Rule Changes*

Clause 2.5.1 of the Wholesale Electricity Market Rules provides that any person (including the Independent Market Operator) may make a rule change proposal by completing a Rule Change Proposal Form and submitting this to the Independent Market Operator (IMO).

In order for the proposal to be progressed, the change proposal must explain how it will enable the Market Rules to better contribute to the achievement of the wholesale electricity market objectives. The objectives of the market are:

- (a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system
- (b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors
- (c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions
- (d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system
- (e) to encourage the taking of measures to manage the amount of electricity used and when it is used

A rule change proposal can be processed using a Standard process or a Fast Track process. The Standard process involves a combined 10 weeks public submission period. Under the shorter Fast Track process the IMO consults with Rule Participants who either advise the IMO that they wish to be consulted or the IMO considers have an interest in the change.

1.2. *About this Rule Change*

On 11 May 2007, the IMO submitted a Rule Change Proposal titled Reserve Capacity Refund Shortfall Formula.

The proposal was processed using the Fast Track Rule Change Process, described in section 2.6 of the Wholesale Electricity Market Rules. The Fast Track process was used as, given that the change was required to correct a manifest error, it satisfied clause 2.5.9 (b) of the Market Rules.

The Fast Track Process adheres to the following timelines, outlined in section 2.6 of the Market Rules:

- Within 5 Business Days of a Rule Change Notice being published, the IMO must notify any Rule Participants that the IMO intends to consult regarding the rule change

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- Within 5 Business Days of the Rule Change Notice being published, any Rule Participant wishing to be consulted may contact the IMO to request consultation on the rule change
- Within 15 Business Days of the Rule Change Notice being published, all consultations must be concluded
- Within 20 Business Days of the Rule Change Notice being published, the IMO must publish a Final Rule Change report.

The key dates in processing this Rule Change Proposal were:

- The Rule Change Notice for this proposal was published on the IMO website on 21 May 2007
- The IMO notified all Rule Participants that the IMO wished to consult with them on 21 May 2007
- The consultation on the Rule Change was completed on 11 June 2007
- This Rule Change Report is published on 18 June 2007

Based on the response received from interested parties, the IMO's decision is to accept the Rule Change in the form suggested in the original proposal, with some minor amendments to correct typographical errors observed by parties during the consultation period.

This Final Rule Change Report on the Rule Change Proposal has been prepared by the IMO in accordance with clause 2.6.4 of the Market Rules.

The amendments to clause 4.26.2 of the Wholesale Electricity Market Rules will commence at 08.00am on 1 July 2007.

2. THE RULE CHANGE PROPOSAL

2.1. *Submission details*

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Organisation: IMO
Date submitted: 11/05/2007
Urgency: High
Change Proposal title: Reserve Capacity Refund Shortfall Formula

2.2. *The proposal*

The IMO submitted that the correction, in December 2006, to a potential anomaly in the Reserve Capacity Shortfall calculations, which led to an overstatement of a Market Participant's fulfilment of its Reserve Capacity obligation, may have had an unintended adverse impact on participant refund calculations.

Prior to the change implemented in December 2006, Clause 4.26.2(b) of the Market Rules read as follows:

- (b) subject to paragraph (a), for the case where Market Participant p is not the Electricity Generation Corporation, the sum of:
 - i. the sum of the Reserve Capacity Obligation Quantities in Trading Interval t of that Market Participant's Interruptible Loads and Curtailable Loads; plus
 - ii. the MW quantity calculated by doubling the total MWh quantity of energy sent out during that Trading Interval by Facilities registered by that Market Participant as indicated by the applicable Resource Plan; plus
 - iii. the MW quantity calculated by doubling the total MWh quantity covered by the STEM Offers which were not scheduled and the STEM Bids which were scheduled in the relevant STEM Auction, determined by the IMO for that Market Participant under clause 6.9 for Trading Interval t, corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
 - iv. double the total MWh quantity to be provided as Ancillary Services as specified by the IMO in accordance with clause 6.3A.2(e)(i) for that Market Participant corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
 - v. the greater of zero and $(BSFO(p,d,t) - RTFO(p,d,t))$; and
[Balance of clause not changed]

In order to determine whether a Market Generator had fulfilled its obligation to offer all of its capacity covered by capacity credits into the Market, Clause 4.26.2(b) added together the following quantities:

- The capacity associated with the quantities offered into the STEM but not cleared
- The capacity associated with the quantities bid into the STEM and scheduled
- The capacity associated with the quantities scheduled to be generated in a Resource Plan
- The capacity kept aside for Ancillary Services
- The capacity not available due to a forced outage before the STEM submission but subsequently available in real time.

This formula resulted in a Market Generator, which was also a Market Customer, potentially overstating the fulfilment of its Reserve Capacity obligation. This is because in practice the “quantities scheduled to be generated in a Resource Plan” would normally cover the participant’s own demand and this demand would normally also be included in the “quantities offered into the STEM but not cleared”.

To avoid this anomaly in the Reserve Capacity Shortfall calculations, the participant’s own demand has to be deducted from its capacity scheduled to be generated where that demand is included in a Resource Plan. To achieve this, in November 2006, the Transitional Market Advisory Committee considered and accepted a proposal to amend clause 4.26.2(b)ii as follows:

- ii. the MW quantity calculated by doubling the total MWh quantity of energy sent out by Facilities registered by that Market Participant net of the MW quantity calculated by doubling the total MWh quantity of energy to be consumed by that Market Participant including demand associated with any Curtailable Load or Interruptible Load, but excluding demand associated with any Dispatchable Load during that Trading Interval as indicated by the applicable Resource Plan; plus

This change to the Rules was implemented in December 2006. However, experience in the market since the change was made has demonstrated that, while the change addressed the originally identified issue, it could have an unintended detrimental impact on participant refund calculations in certain circumstances.

In practice, the current formula could result in understatement of the capacity made available to the market. This is due to the change being based on the assumption that participants holding Capacity Credits would normally make STEM submissions and ensure that their own demand is included in the “quantities offered into the STEM but not cleared”. The change provided, therefore, that a participant’s own demand (as included in a Resource Plan) is deducted from its capacity scheduled to be generated in the Resource Plan to avoid double-counting of the relevant capacity.

However, where a STEM submission is not available, the calculation has the potential to underestimate the capacity made available to the market.

This circumstance can arise in the case of Intermittent Generators, which are not obliged to make STEM submissions, and that this was overlooked in the rule change implemented in December 2006.

Therefore, the IMO proposed to amend the rules to add back the participant's own demand in the determination of the Reserve Capacity Shortfall, to account for circumstances where a participant does not have a valid STEM submission in any Trading Interval.

2.3. Amending rules proposed by the IMO

The IMO proposed to amend clause 4.26.2(b) as follows:

- (b) subject to paragraph (a), for the case where Market Participant p is not the Electricity Generation Corporation, the sum of:
 - i. the sum of the Reserve Capacity Obligation Quantities in Trading Interval t of that Market Participant's Interruptible Loads and Curtailable Loads; plus
 - ii. the MW quantity calculated by doubling the ~~total net~~ MWh quantity of energy sent out by Facilities registered by that Market Participant ~~net of the MW quantity calculated by doubling the total MWh quantity of energy to be consumed by that Market Participant including demand associated with any Curtailable Load or Interruptible Load, but excluding demand associated with any Dispatchable Load during that Trading Interval~~ calculated as the Net Contract Position less the shortfall as indicated by the applicable Resource Plan; plus
 - iiA if a STEM submission does not exist for that Trading Interval, the MW quantity calculated by doubling the total MWh quantity of energy to be consumed by that Market Participant including demand associated with any Curtailable Load or Interruptible Load, but excluding demand associated with any Dispatchable Load during that Trading Interval as indicated by the applicable Resource Plan; plus

[Balance of clause not changed]

2.4. The IMO's initial assessment of the proposal

In its proposal, the IMO considered that the current clause 4.26.2(b)ii, which resulted from a change made in November 2006, could give rise to an inappropriate capacity refund and disadvantage participants even though they have complied with their obligations.

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The IMO decided to proceed with the proposal on the basis of its preliminary assessment which indicated that the proposal was consistent with the Market Objectives. This preliminary assessment was published in a Rule Change Notice on 21 May 2007.

The IMO considered that, as the change aims to correct a manifest error, it should be processed using the Fast Track process to avoid further unjustified financial consequences for participants as a result of this error. The Market Advisory Committee endorsed Fast Tracking the proposal at its meeting on 9 May 2007.

The IMO considered that the proposal satisfied the requirements of clause 2.5.9 (b), and decided to process the Rule Change Proposal using the Fast Track Process, described in section 2.6 of the Wholesale Electricity Market Rules.

3. RULE PARTICIPANTS CONSULTED

For this rule change, the IMO notified the following registered Rule Participants of its intention to consult with them:

- Alcoa World Alumina Australia
- Alinta Sales Pty Ltd
- Barrick (Kanowna) Limited
- Bioenergy Limited
- Economic Regulation Authority
- Eneabba Gas Pty Ltd
- Griffin Energy
- Landfill Gas and Power Pty Ltd
- Mount Herron Engineering
- NewGen Power Kwinana Pty Ltd
- Newmont Australia Ltd.
- Office of Energy
- Perth Energy Pty Ltd
- Premier Power Sales Pty Ltd
- TransAlta Energy
- Synergy Energy
- System Management
- Verve Energy
- Wambo Power Ventures Pty Ltd
- Waste Gas Resources Pty Ltd
- Water Corporation
- Western Australia Biomass Pty Ltd (Babcock and Brown)
- Western Power Corporation

The IMO requested the Participants to provide their views on the rule change in writing.

No objection to the original proposal was expressed by any Rule Participant during the consultation period. Below is a summary of the received feedback.

3.1. Market Advisory Committee

The Market Advisory Committee (MAC) was invited to have preliminary discussions on the proposal at its meeting on 9 May 2007, before it was formally submitted by the IMO.

MAC expressed general support to the proposed change and to have it Fast Tracked, given that it corrects a manifest error which was introduced during the implementation of an earlier change in late 2006.

3.2. The Economic Regulation Authority

Since the Rule Change Proposal is to correct an error of a systems/operational nature, the Authority considered the change relates to an area where the Authority is not placed to provide a comment. However, the Authority considered that, given that the proposed rule change is intended to correct an error, it is likely to better facilitate the achievement of the Wholesale Market Objectives.

3.3. The Office of Energy

The Office of Energy (OoE) informed the IMO that it supports the conclusions in the proposal. It considers that the Rule Change is consistent with the Wholesale Electricity Market Objectives and supports the IMO's statements how the change will further them. OoE also considered that the Rule Change will have no impact on small use electricity customers.

A few typographical errors were noted by the OoE. This included the spelling of the word "interruptible" in subclause (iiA) in the IMO's proposal and the existing duplicate wording "the sum of" in clause 4.26.2.

The IMO has corrected these errors in the amended clause 4.26.2.

3.4. System Management

System Management noted that this change is to correct an anomaly created by a previous rule change. Therefore System Management had no issue with this modification.

3.5. Landfill Gas and Power

Landfill Gas and Power (LGP) expressed its support of the suggested change. LGP agreed that the change will better facilitate the achievement of the Market Objectives and noted the importance of avoiding discrimination against technologies that make use of renewable resources and which reduce overall greenhouse gas emissions.

3.6. Alinta Sales

Alinta Sales agreed with the proposed change to the Market Rules. Alinta considered that the change will better facilitate the achievement of market objectives (a), (b), (c) and (d). Below is a summary of Alinta's assessment:

- Market objective (a) will be better facilitated as the change will lead to more accurate calculation of refunds and thus enhance cost efficiency within the SWIS. This will also have positive long term effects, as it will promote entry of reliable generation on the system.
- In regard to market objective (b), the change will more accurately reflect the appropriate level of refunds for Intermittent Generators. Correct refunds are an important part of ensuring equality between participants.
- Market objective (c) will be better facilitated by removing the current potential discrimination against Intermittent Generators.
- The change will also help to minimise the long term cost of electricity supplied (objective (d)), as the improved facilitation of objectives (a) and (b) will likely lead to long term efficiency gains in the production of electricity.

4. THE IMO'S ASSESSMENT AND DECISION

4.1. Assessment

4.1.1. *The originally proposed change to clause 4.16.2(b)*

The IMO submitted in its Rule Change Proposal that the current clause 4.26.2(b)ii, which resulted from a change made in November 2006, can give rise to an inappropriate capacity refunds and disadvantage participants even though they have complied with their obligations.

No participant expressed objections to the changes proposed by the IMO, which confirmed that the proposed solution to this issue (i.e. the suggested amendment to clause 4.16.2(b)) is an appropriate way to address the issue.

4.1.2. *Consultations*

During the consultation process no interested party expressed any concern regarding the proposed change. The IMO therefore considers that the proposed change has the support of the participants in the Wholesale Electricity Market.

4.1.3. *The IMO's assessment*

According to clauses 2.4.2 of the Market Rules *"the IMO must not make Amending Rules unless it is satisfied that the Market Rules, as proposed to be amended or replaced, are consistent with the Wholesale Market Objectives"*.

The IMO' assessment against each of the Market Objectives is as follows:

(a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system

Assessment: Properly accounting for participants meeting their reserve capacity obligations contributes positively to this objective by:

- In the immediate term, ensuring that participants are treated equitably in the reserve capacity mechanism; and
- In the longer term, efficient investment in capacity required by the market through providing correct signals for making capacity available.

Therefore, the IMO considers that the rule change will assist in promoting the economically efficient and reliable production and supply of electricity in the market. Submissions received from participants also supported this assessment.

(b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors

Assessment: Removing the inaccuracies in the Reserve Capacity Refund shortfall formula will enhance the market as an equitable platform by ensuring that all participants are treated in an equitable and fair manner. This will contribute to the encouragement of competition and facilitate entry of new competitors. The IMO considers that the proposed changes, therefore, will further objective (b) of the Market Objectives. Submissions received agreed with this assessment, especially in regard to removing a potential disadvantage for Intermittent Generators in the current rules.

(c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions

Assessment: The current formula may produce an unintended penalty in the case of Intermittent Generators in certain circumstances. The IMO considers, therefore, that correcting the formula in a timely manner to avoid this will contribute positively the operation of objective (c) of the Market Objectives. This assessment was supported by views expressed during the consultation process.

(d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system

Assessment: The IMO considers that, by avoiding inappropriate financial consequences for participants, the rule change proposal will contribute positively to the operation of objective (d) of the Market Objectives. Submissions received by Market Participants also noted that appropriate refund levels are an important instrument to keep the long-term cost of electricity at a low level.

(e) to encourage the taking of measures to manage the amount of electricity used and when it is used

Assessment: The IMO considers that the proposed changes do not impact on, and therefore are consistent with, the operation of objective (e) of the Market Objectives.

In accordance with Clause 2.4.3(b) of the Market Rules, in deciding whether or not to make Amending Rules, the IMO must also have regard to the practicality and cost of implementing the Amending Rules.

The proposed changes to section 4.26.2(b) will require changes to the Wholesale Electricity Market System operated by the IMO. The cost of implementing these changes has been estimated at \$ 8,000.

The IMO has found this cost to be acceptable and considers that the benefits the change will bring to Market Participants will outweigh the cost. The implementation of the required system changes will take one week. No other costs have been identified in relation to this change during the consultation process.

4.2. IMO's Decision

The IMO's decision is to:

- Accept the proposed changes to clause 4.26.2(b) in their original form. This will amend the clause to account for circumstances where a participant does not have a valid STEM submission in any Trading Interval.
- Correct an existing typographical error in the current main body of clause 4.26.2, where the words 'sum over all of' are, in error, replicated between the words Registered and Facilities.

The IMO has made its decision on the basis that the resulting Amending Rules will allow the Market Rules to better address the Market Objectives.

The wording of the relevant Amending Rule is presented in section 5 of this Report.

4.3. Amending Rules Commencement

The amendment to clause 4.26.2 of the Wholesale Electricity Market Rules will commence at 08.00am on 1 July 2007.

5. AMENDING RULES

5.1. Clause 4.26.2

Clause 4.26.2 will be amended as follows (~~deleted wording~~, new wording):

- 4.26.2. The IMO must determine the capacity shortfall (“**Capacity Shortfall**”) in Reserve Capacity supplied by each Market Participant p holding Capacity Credits in each Trading Interval t of Trading Day d and Trading Month m relative to its Reserve Capacity Obligation Quantity as:

$$SF(p,m,d,t) = \text{Max}(\text{RTFO}(p,d,t), \text{RCOQ}(p,d,t) - A(p,d,t)) + \text{Max}(0, B(p,d,t) - C(p,d,t))$$

Where

$$A(p,d,t) = \text{Min}(\text{RCOQ}(p,d,t), \text{CAPA}(p,d,t));$$

$$B(p,d,t) = \text{Min}(\text{RCOQ}(p,d,t) - \text{RTFO}(p,d,t), \text{DSQ}(p,d,t));$$

$$C(p,d,t) = \text{Min}(\text{DSQ}(p,d,t), \text{MSQ}(p,d,t));$$

RCOQ(p,d,t) is the total Reserve Capacity Obligation Quantity of Market Participant p’s unregistered facilities that have Reserve Capacity Obligations, plus the sum over all of the Registered ~~sum over all of~~ Facilities registered to Market Participant p of the product of the factor described in clause 4.26.2B as it applies to the Registered Facility and the Facility’s Reserve Capacity Obligation Quantity in Trading Interval t of Trading Day d;

CAPA(p,d,t) is for Market Participant p and Trading Interval t of Trading Day d:

- (a) equal to RCOQ(p,d,t) for a Trading Interval where the STEM auction has been suspended by the IMO in accordance with clause 6.10;
- (b) subject to paragraph (a), for the case where Market Participant p is not the Electricity Generation Corporation, the sum of:
 - i. the sum of the Reserve Capacity Obligation Quantities in Trading Interval t of that Market Participant’s Interruptible Loads and Curtailable Loads; plus
 - ii. the MW quantity calculated by doubling the ~~total net~~ MWh quantity of energy sent out by Facilities registered by that Market Participant ~~net of the MW quantity calculated by doubling the total MWh quantity of energy to be consumed by that Market Participant including demand associated~~

~~with any Curtailable Load or Interruptible Load, but excluding demand associated with any Dispatchable Load during that Trading Interval calculated as the Net Contract Position less the shortfall as indicated by the applicable Resource Plan; plus~~

- ~~iiA if a STEM submission does not exist for that Trading Interval, the MW quantity calculated by doubling the total MWh quantity of energy to be consumed by that Market Participant including demand associated with any Curtailable Load or Interruptible Load, but excluding demand associated with any Dispatchable Load during that Trading Interval as indicated by the applicable Resource Plan; plus~~
 - iii. the MW quantity calculated by doubling the total MWh quantity covered by the STEM Offers which were not scheduled and the STEM Bids which were scheduled in the relevant STEM Auction, determined by the IMO for that Market Participant under clause 6.9 for Trading Interval t, corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
 - iv. double the total MWh quantity to be provided as Ancillary Services as specified by the IMO in accordance with clause 6.3A.2(e)(i) for that Market Participant corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
 - v. the greater of zero and $(BSFO(p,d,t) - RTFO(p,d,t))$; and
- (c) subject to paragraph (a), for the case where Market Participant p is the Electricity Generation Corporation, the sum of:
- i the sum of the Reserve Capacity Obligation Quantities in Trading Interval t of that Market Participant's Interruptible Loads and Curtailable Loads; plus
 - ii the MW quantity calculated by doubling the total MWh quantity of the Net Contract Position quantity of that Market Participant for Trading Interval t, corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
 - iii the MW quantity calculated by doubling the total MWh quantity of the STEM Offers which were not scheduled and the STEM Bids which were scheduled in the relevant STEM Auction, determined by the IMO for that

Market Participant under clause 6.9 for Trading Interval t , corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus

- iv. double the total MWh quantity to be provided as Ancillary Services as specified by the IMO in accordance with clause 6.3A.2(e)(i) for the Electricity Generation Corporation corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
- v. the greater of zero and $(BSFO(p,d,t) - RTFO(p,d,t))$.

$BSFO(p,d,t)$ is the total MW quantity of Forced Outage associated with Market Participant p before the STEM Auction for Trading Interval t of Trading Day d , where this is the sum over all the Market Participant's Registered Facilities of the lesser of the Reserve Capacity Obligation Quantity of the Facility for Trading Interval t and the MW Forced Outage of the Facility for Trading Interval t as provided to the IMO by System Management in accordance with clause 7.3;

$RTFO(p,d,t)$ is the total MW quantity of Forced Outage associated with Market Participant p in real-time for Trading Interval t of Trading Day d , where this is the sum over all the Market Participant's Registered Facilities of the lesser of the Reserve Capacity Obligation Quantity of the Facility for Trading Interval t and the MW Forced Outage of the Facility for Trading Interval t as provided to the IMO by System Management in accordance with clause 7.13.1(e);

$DSQ(p,d,t)$ is a MW quantity calculated by doubling the MWh value of the sum over all of the Facilities registered by Market Participant p of each Facility's Dispatch Schedule for Trading Interval t of Trading Day d ;

$MSQ(p,d,t)$ is a MW quantity calculated by doubling the MWh value of the sum over all of the Facilities registered by Market Participant p of the greater of zero and each Facility's Metered Schedule for Trading Interval t of Trading Day d corrected for Loss Factor adjustments applicable to that Facility so as to be a sent out quantity.