

The background of the lower half of the page is a photograph of a wind farm and power lines, overlaid with a semi-transparent blue filter. On the left, several white wind turbines are visible, with their blades extending outwards. On the right, a tall, lattice-structured power transmission tower stands prominently. The overall scene is set against a clear sky.

Independent Market Operator

Final Rule Change Report

**Title: Calculation of Net STEM
Shortfall for Scheduled
Generators**

Ref: RC_2011_07

Date: 15 August 2011

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http://www.imowa.com.au/RC_2011_07

DOCUMENT DETAILS

IMO Notice No.: RC_2011_07
Report Title: Calculation of Net STEM Shortfall for Scheduled Generators
Release Status: Public
Confidentiality Status: Public domain
Published in accordance with Market Rule 2.6.4

Independent Market Operator

Level 3, Governor Stirling Tower
197 St George's Terrace, Perth WA 6000
PO Box 7096, Cloisters Square, Perth WA 6850
Tel. (08) 9254 4300
Fax. (08) 9254 4399
Email: imo@imowa.com.au
Website: www.imowa.com.au



EXECUTIVE SUMMARY

Proposed Amendments

Alinta's Rule Change Proposal seeks to correct a manifest error in the Net STEM Shortfall calculation, which can affect a Market Participant with a portfolio containing more than one Scheduled Generator. If one of the Scheduled Generators experiences a Forced Outage in a Trading Interval when another of the Scheduled Generators is not required to run, the Market Participant can incur additional penalties, in excess of the expected Forced Outage Refunds, that would not apply to a stand alone Scheduled Generator.

Consultation

- A Pre Rule Change Discussion Paper was presented by Alinta to the July 2011 meeting of the Market Advisory Committee (MAC) and received general support from MAC members.
- The Rule Change Proposal was formally submitted on 14 July 2011 and progressed by the IMO using the Fast Track Rule Change Process.
- The IMO did not receive any requests to be consulted on the Rule Change Proposal. One out of session submission was received from Synergy during the consultation period, which supported the proposal and its progression using the Fast Track Rule Change Process.

Assessment against Wholesale Market Objectives

The IMO considers that the proposed amendments correct a manifest error in the Market Rules and will allow the Market Rules to better address Wholesale Market Objectives (a) and (c).

Practicality and Cost of Implementation

The proposed amendments will require changes to the IMO's settlement system, at an estimated cost of \$10,000. No other costs have been identified.

The IMO notes that the Market Evolution Program (MEP) proposal for a competitive balancing market may result in the removal of the element of the Net STEM Shortfall calculation that is causing the issue. However, the suggested amendments to the Market Rules are still under development and are not expected to be implemented before the proposed commencement of the balancing market on 1 April 2012. As such, the IMO does not consider that the MEP proposal should deter the progression of this Rule Change Proposal, given its low implementation cost in comparison to the financial risk to Market Participants from the manifest error over the coming summer months.

The IMO's Decision

The IMO's decision is to accept the Rule Change Proposal as amended following the consultation period.

Next steps

The amendments to the Market Rules resulting from this Rule Change Proposal will commence at **8:00am on 1 December 2011**.

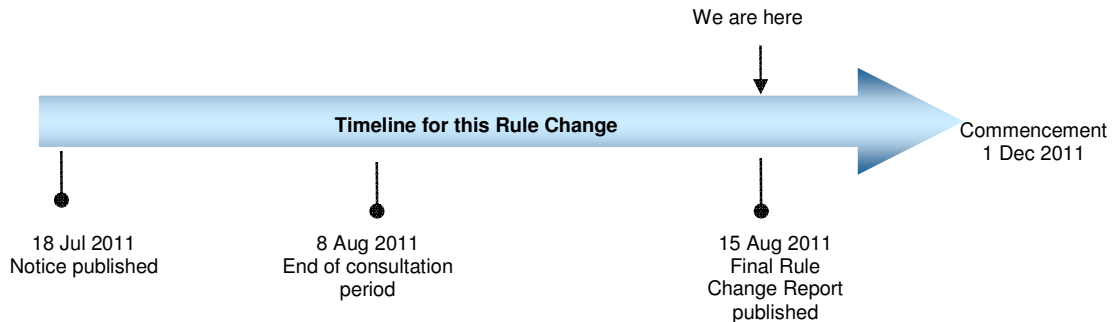


1. INTRODUCTION

On 14 July 2011 Alinta submitted a Rule Change Proposal regarding amendments to clauses 4.26.2 and 4.26.2B of the Market Rules.

This proposal was processed using the Fast Track Rule Change Process, described in section 2.6 of the Wholesale Electricity Market Rules (Market Rules).

The key dates in processing this Rule Change Proposal are:



2. PROPOSED AMENDMENTS

2.1 The Rule Change Proposal

In its Rule Change Proposal, Alinta noted that Capacity Cost Refunds for generation systems consist of:

- Facility Forced Outage Refunds, calculated by the IMO under clause 4.26.1A for each Facility; and
- Net STEM Shortfall Refunds, calculated by the IMO at a Market Participant level and based on the Net STEM Shortfall quantity determined in accordance with clause 4.26.2.

Currently, if a Market Participant operates a single Scheduled Generator and that Facility suffers a Forced Outage, the Market Participant is exposed to a Facility Forced Outage Refund, calculated under clause 4.26.1A. The specification of the Net STEM Shortfall calculation in clause 4.26.2 ensures that the Market Participant does not also incur a Net STEM Refund for the same Forced Outage.

However, Alinta noted that where a Market Participant operates more than one Scheduled Generator, and one of these Facilities suffers a Forced Outage while another is not dispatched, the Market Participant will be exposed to both:

- a Facility Forced Outage Refund calculated under clause 4.26.1A; and
- a Capacity Cost Refund under clause 4.26.2E, as a Net STEM Shortfall will also arise under clause 4.26.2 in respect of the same Forced Outage.

That is, for a Market Participant operating more than one Scheduled Generator, the cost of a Forced Outage in respect of a specific generator is up to twice that which would be incurred had the same generator been the only Scheduled Generator registered to that Market Participant.

Alinta proposed changes to the Net STEM Shortfall calculation in clause 4.26.2 to ensure that a Market Participant operating more than one Scheduled Generator will incur the same cost for a Forced Outage in respect of a specific Scheduled Generator as it would have incurred had the same Facility been the only Scheduled Generator registered to that Market Participant.

The full details of the Rule Change Proposal are contained in Appendix 1 of this report.

2.2 The IMO's Initial Assessment of the Proposal

The IMO decided to proceed with the proposal on the basis that the IMO's preliminary assessment indicated that the proposal is consistent with the Wholesale Market Objectives.

The IMO decided to process the Rule Change Proposal using the Fast Track Rule Change Process, described in section 2.6 of the Market Rules, on the basis that it satisfies the criterion in clause 2.5.9(b) of the Market Rules. Clause 2.5.9 states:

The IMO may subject a Rule Change Proposal to the Fast Track Rule Change Process if, in its opinion, the Rule Change Proposal:

- (a) is of a minor or procedural nature; or*
- (b) is required to correct a manifest error; or*
- (c) is urgently required and is essential for the safe, effective and reliable operation of the market or the SWIS.*

The IMO noted that a Market Participant declaring a Forced Outage for a Scheduled Generator will pay a Forced Outage Refund equivalent to the extent of the outage. However, if a Market Participant has another Scheduled Generator that was not required to operate at its full Reserve Capacity Obligation Quantity (RCOQ), then under clause 4.26.2 it can be exposed to additional Net STEM Refunds in relation to the same outage.

For other Capacity Cost Refunds based on the Refund Table the level of refund payable for a particular Trading Interval is proportional to the extent of the outage (i.e. how much capacity was not made available). However, in the above scenario the Capacity Cost Refunds payable can greatly exceed this level (e.g. can be more than double the amount indicated in the Refund Table for the actual MW shortfall). The problem is not a new one, since Market Participants with multiple Scheduled Generators have existed since market start. As such, the IMO considered that the proposed amendments fulfil clause 2.5.9(b), in that they are required to correct a manifest error, and therefore may be fast tracked.



3. CONSULTATION

3.1 The Market Advisory Committee

Mr Corey Dykstra presented Alinta's proposal as a Pre Rule Change Discussion Paper to the 13 July 2011 meeting of the MAC. Full minutes of the meeting can be accessed at http://www.imowa.com.au/MAC_40.¹

Mr Dykstra submitted that the proposal addresses a manifest error in the Market Rules, similar to the issue addressed by the Rule Change Proposal: Calculation of Net STEM Shortfall (RC_2010_03)². Mr Dykstra considered that the proposal should be progressed using the Fast Track Rule Change Process, as the error constitutes a significant risk to Alinta over next summer, when the Refund Table multipliers are higher and the risk of outages is greatest.

Mr Dykstra considered that while the proposed Market Evolution Program (MEP) changes appear likely to remove the relevant component of the Net STEM Shortfall calculation, there was some risk as to the timing of these changes. Mr Dykstra also considered that (based on the costs associated with RC_2010_03) the costs of the proposal were likely to be minor, and therefore in Alinta's view likely to be outweighed by the benefits.

The Chair noted a potential issue around the availability of Navita resources (Navita being the IT providers for the IMO's settlements system). The Chair noted that two IMO representatives were travelling to the USA the following week for discussions with Navita. These discussions were expected to give the IMO a better understanding of the availability of Navita resources, in light of the MEP work, to make updates to the settlements system before the start of next summer.

The following points were raised by MAC members:

- Mr Brendan Clarke noted that he had independently worked through the examples in Alinta's proposal and agreed that there was definitely an error in how the calculations currently worked;
- In response to a question from the Chair, Mr Dykstra advised that the financial impact on Alinta of the most recent occurrences of the problem had been in the tens of thousands, and that Alinta had been fortunate that on these occasions the Refund Table multipliers had been low at the time;
- Mr Shane Cremin considered that there was definitely a precedent (in RC_2010_03) for action to be taken, and if definite cost and risks were identified it was clear what needed to be done, subject to a cost/benefit analysis;
- Mr Andrew Sutherland queried whether the IMO could implement a manual workaround for settlements if resources were not available to implement an automated solution.

In response to a query from Mr Dykstra, the Chair considered that Alinta should not delay the submission of its Rule Change Proposal.

¹ Note that at the time of publication the draft minutes for MAC Meeting No. 40 have been distributed to MAC members for review.

² For further details refer to http://www.imowa.com.au/RC_2010_03

3.2 Consultation period

An invitation for all Rule Participants to contact the IMO, should they wish to be consulted on this Rule Change Proposal, was published on the IMO website on 18 July 2011, together with the Rule Change Notice.

The consultation period for the Rule Change Proposal was between 19 July 2011 and 8 August 2011. Interested stakeholders were requested to inform the IMO if they wished to be consulted on the Rule Change Proposal by 25 July 2011. The IMO did not receive any requests to be consulted on the Rule Change Proposal during this time.

3.3 Out of Session Submissions

The IMO received one out of session submission from Synergy during the consultation period. Synergy supports the Rule Change Proposal and agrees that it should be progressed under the Fast Track Rule Change Process.

Synergy considers that the Rule Change Proposal will allow the Market Rules to better address:

- Wholesale Market Objective (c), by ensuring that Market Participants with a portfolio of generators are not discriminated against; and
- Wholesale Market Objective (d), by removing an extraneous cost from generators which would be passed on to customers.

Synergy did not raise any issues with the Rule Change Proposal in its submission.

3.4 Public Forums and Workshops

No public forums or workshops were held in relation to this Rule Change Proposal.

4. THE IMO'S ASSESSMENT

In preparing this Final Rule Change Report, the IMO must assess the Rule Change Proposal in light of clauses 2.4.2 and 2.4.3 of the Market Rules.

Clause 2.4.2 outlines that 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”.

Additionally, clause 2.4.3 states, when deciding whether to make Amending Rules, the IMO must have regard to the following:

- any applicable policy direction from the Minister regarding the development of the market;
- the practicality and cost of implementing the proposal;
- the views expressed in submissions and by the MAC; and
- any technical studies that the IMO considers necessary to assist in assessing the Rule Change Proposal.

The IMO notes that there has not been any applicable policy direction from the Minister, nor have there been any technical studies commissioned in respect of this Rule Change Proposal. A summary of the views expressed in submissions and by the MAC is available in section 3 of this report.

The IMO's assessment is outlined in the following sections.

4.1 IMO Analysis

As discussed in section 2.2, the IMO agrees with Alinta that the Net STEM Shortfall calculation contains a manifest error, which can impose inappropriately large Capacity Cost Refunds on a Market Participant with more than one Scheduled Generator.

The most recent occurrence of the problem for Alinta happened over the period from Friday, 6 May 2011 to Saturday, 7 May 2011. During this period one of Alinta's Scheduled Generators experienced two Forced Outages, with a total duration of 13 hours. Another of Alinta's Scheduled Generators was not scheduled to run during the periods when the outages occurred.

To understand the potential impact of the error, the IMO reviewed the settlement outcomes for Alinta over this period. The IMO found that over the 26 Trading Intervals Alinta incurred a total Facility Forced Outage Refund of \$25,909. However, Alinta also incurred a Net STEM Refund of \$20,428 over this period, due to the impact of the same outages. If Alinta only had one Scheduled Generator (i.e. the one that experienced the Forced Outages) then it would have incurred a Net STEM Refund of only around \$1400³, as its "expected output" would not have been inflated by the RCOQ of the Scheduled Generator not scheduled to run during the relevant Trading Intervals.

The size of the refund was limited by the low Refund Table multipliers applicable at the time (1.5 for the Friday and 0.75 for the Saturday). However, if the same outages had occurred over two Business Days in March Alinta would have incurred a Net STEM Refund of approximately \$120,000.

If the proposed Amending Rules had been in place when these outages occurred, then Alinta would have incurred a total Net STEM Refund of only \$1400, consistent with the refund incurred by a Market Participant with a single Scheduled Generator.

The IMO notes that the scenario described above is not exceptional and is quite likely to re-occur during the upcoming summer months.

³The small remaining Net STEM Shortfall Refund is due to the Forced Outage quantity recorded for a few Trading Intervals not fully covering the reduction in actual output against Resource Plan.



4.2 Additional Amendments to the Proposed Amending Rules

Following its analysis of the Rule Change Proposal the IMO has made an additional change to the proposed Amending Rules, to reflect the new requirement under clause 4.26.2 for RCOQ values to be provided at an individual Facility level.

The proposed changes are as follows (~~deleted text~~, added text):

4.26.5. To support the calculation of the values of RCOQ(p,d,t) and RCOQ(f,d,t) required by clause 4.26.2:

...

4.3 Wholesale Market Objectives

The IMO considers that the Market Rules as a whole, if amended, will be consistent with the Wholesale Market Objectives.

Wholesale Market Objective	Consistent with objective
<ul style="list-style-type: none"> to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system 	Yes
<ul style="list-style-type: none"> to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors 	Yes
<ul style="list-style-type: none"> 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 	Yes
<ul style="list-style-type: none"> to minimise the long-term cost of electricity supplied to customers from the South West interconnected system 	Yes
<ul style="list-style-type: none"> to encourage the taking of measures to manage the amount of electricity used and when it is used 	Yes

Further, the IMO considers that the Market Rules, if amended, would not only be consistent with the Wholesale Market Objectives but also allow the Market Rules to better address Wholesale Market Objectives (a) and (c):

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

The proposed amendments will better achieve Wholesale Market Objective (a), through restoring market price signals to their correct levels for Market Participants with multiple Scheduled Generators. In particular, the purpose of Capacity Cost Refunds is to ensure that Market Participants who hold Capacity Credits face an appropriate incentive to ensure that they deliver the capacity for which they have been contracted. Currently, Market Participants with multiple Scheduled Generators are faced with refunds that can be disproportionately large for the actual MW capacity shortfall caused by a Forced Outage. The proposed amendments will



prevent this perverse outcome, limiting refunds to a level reflective of the actual size of the Forced Outage.

(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*

The proposed amendments will better achieve Wholesale Market Objective (c) by correcting an error that discriminates against Market Participants with multiple Scheduled Generators.

The IMO considers that the proposed changes are consistent with the remaining Wholesale Market Objectives.

4.4 Practicality and cost of implementation

Cost:

The proposed amendments will require changes to the settlement systems operated by the IMO. These changes will cost approximately \$10,000. No changes are required to the IMO's internal procedures or Market Procedures.

The proposed amendments do not require any changes to any of System Management's systems or procedures. In addition there have been no identified changes to other Rule Participant's costs.

Practicality:

The IMO has confirmed that Navita can provide the necessary resources to update the IMO's settlements system by the proposed commencement date of 1 December 2011. The implementation of a manual work around is not considered to be feasible due to the complexity of the Net STEM Shortfall calculation and the number of inputs required.

The IMO notes that the MEP proposal for a competitive balancing market may result in the removal of the element of the Net STEM Shortfall calculation that is causing the issue. However, the suggested amendments to the Market Rules are still under development and are not expected to be implemented prior to the proposed commencement of the balancing market on 1 April 2012. As such, the IMO does not consider that the MEP proposal should deter the progression of this Rule Change Proposal, given its low implementation cost in comparison to the financial risk to Market Participants from the manifest error over the coming summer months.

5 THE IMO'S FINAL DECISION

The IMO's final decision is to accept the Rule Change Proposal as modified by the amendments specified in section 4.2 of this report.

5.1 Reasons for the decision

The IMO has made its decision on the basis that the Amending Rules:



- will correct a manifest error in the Market Rules, which can expose a Market Participant with more than one Scheduled Generator to Capacity Cost Refunds for a Forced Outage that are disproportionate to the extent of that outage;
- will allow the Market Rules to better address Wholesale Market Objectives (a) and (c);
- are consistent with the remaining Wholesale Market Objectives;
- have a low implementation cost in comparison to the financial risk to Market Participants over the upcoming summer months; and
- have the support of the MAC.

Additional detail outlining the analysis behind the IMO's reasons is outlined in section 4 of this Final Rule Change Report.

6. AMENDING RULES

6.1 Commencement

The amendments to the Market Rules resulting from this Rule Change Proposal will commence at **8:00am** on **1 December 2011**.

6.2 Amending Rules

The following clauses are amended (~~deleted text~~, new text)⁴:

- 4.26.2. The IMO must determine the net STEM shortfall ("**Net STEM Shortfall**") in Reserve Capacity supplied by each Market Participant p holding Capacity Credits associated with a generation system in each Trading Interval t of Trading Day d and Trading Month m as:

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

Where

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

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

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

$\text{RCOQ}(p,d,t)$ for Market Participant p and Trading Interval t of Trading Day d is equal to:

⁴ The IMO notes that it has reflected the final changes approved in the Rule Change Proposal: Curtailable Loads and Demand Side Programmes (RC_2010_29). For further details refer to the following webpage: http://www.imowa.com.au/RC_2010_29.

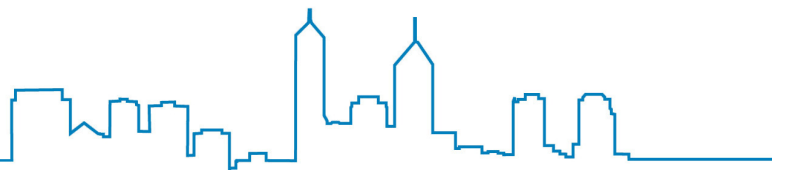


- (a) the total Reserve Capacity Obligation Quantity of Market Participant p's unregistered facilities that have Reserve Capacity Obligations, excluding Loads that can be interrupted on request, plus
- (b) the sum of the product of:
 - i. the factor described in clause 4.26.2B as it applies to Market Participant p's Registered Facilities; and
 - ii. the Reserve Capacity Obligation Quantity for each Facility for all Market Participant p's Registered Facilities, excluding Demand Side Programmes;

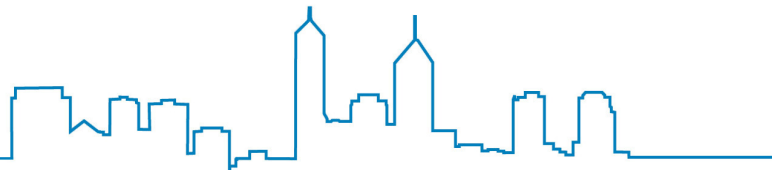
RCOQ (f,d,t) for Facility f and Trading Interval t of Trading Day d is equal to the product of the factor described in clause 4.26.2B as it applies to Facility f and the Reserve Capacity Obligation Quantity for Facility f.

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

- (c) 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;
- (d) subject to paragraph (c), 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; plus
 - ii. the MW quantity calculated by doubling the net MWh quantity of energy sent out by Facilities registered by that Market Participant 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 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
- (e) subject to paragraph (c), 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; 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 7.13.1A (b);

RTFO(f,d,t) is the total MW quantity of Forced Outage associated with Facility f in real-time for Trading Interval t of Trading Day d, where this is the lesser of the Reserve Capacity Obligation Quantity of the Facility f for Trading Interval t and the MW Forced Outage of the Facility f for Trading Interval t as provided to the IMO by System Management in accordance with clause 7.13.1A (b);

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

~~MSQ(p,f,d,t) is a MW quantity calculated by doubling the greater of zero and the MWh value of sum over all of the Facilities registered by Market Participant p of the greater of zero and Facility f'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;~~

F denotes the set of Scheduled Generators registered by Market Participant p, where "f" is used to refer to a member of that set.

- 4.26.2B. The IMO is to set the factor described in the definition of RCOQ(p,d,t) and RCOQ(f,d,t) in clause 4.26.2 to equal one in all situations except for Scheduled Generators, Non-Scheduled Generators and Dispatchable Loads with Loss Factors less than one in which event the factor must equal the facilities Loss Factor.
- 4.26.5. To support the calculation of the values of RCOQ(p,d,t) and RCOQ(f,d,t) required by clause 4.26.2:

...



APPENDIX 1: FULL DETAILS OF THE PROPOSAL

Change Proposal No: RC_2011_07

Received date: 14 July 2011

Change requested by:

Name:	Corey Dykstra
Phone:	9486 3749
Fax:	9221 9128
Email:	corey.dykstra@alinta.net.au
Organisation:	Alinta Sales Pty Ltd
Address:	Level 9, 12-14 The Esplanade, PERTH WA 6000
Date submitted:	14 July 2011
Urgency:	1 - High
Change Proposal title:	Calculation of Net STEM Shortfall for Scheduled Generators
Market Rule(s) affected:	4.26.2 and 4.26.2B

Introduction

Market Rule 2.5.1 of the Wholesale Electricity Market Rules provides that any person (including the IMO) may make a Rule Change Proposal by completing a Rule Change Proposal Form that must be submitted to the Independent Market Operator.

This Change Proposal can be posted, faxed or emailed to:

Independent Market Operator

Attn: Manager Market Development and System Capacity

PO Box 7096

Cloisters Square, Perth, WA 6850

Fax: (08) 9254 4339

Email: market.development@imowa.com.au

The Independent Market Operator will assess the proposal and, within 5 Business Days of receiving this Rule Change Proposal form, will notify you whether the Rule Change Proposal will be further progressed.

In order for the proposal to be progressed, all fields below must be completed and 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; and
- (e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

Details of the proposed Market Rule Change

1. Describe the concern with the existing Market Rules that is to be addressed by the proposed Market Rule change:

Background

Clause 4.26.1A of the Market Rules requires that the Independent Market Operator (IMO) calculate a Forced Outage refund for each Facility (“Facility Forced Outage Refund”), whereas the IMO must also determine whether there arises a “Net STEM Shortfall” under clause 4.26.2 and hence a Capacity Cost Refund under clause 4.26.2E.⁵

Currently, if a Market Participant operates a single Scheduled Generator and that generator suffers a Forced Outage, the Market Participant is exposed to a Facility Forced Outage Refund calculated under clause 4.26.1A. The specification of the Net STEM Shortfall calculation in clause 4.26.2 ensures that the Market Participant does not also incur a Net STEM Shortfall Refund for the same Forced Outage.

However, where a Market Participant operates more than one Scheduled Generator and one of its generators suffers a Forced Outage, the Market Participant will be exposed to both:

- a Facility Forced Outage Refund calculated under clause 4.26.1A; and
- a Capacity Cost Refund under clause 4.26.2E as a Net STEM Shortfall will also arise under clause 4.26.2 in respect of the same Forced Outage,

in circumstances where at least one Scheduled Generator has not been dispatched.

That is, for a Market Participant operating more than one Scheduled Generator, the cost of a Forced Outage in respect of a specific generator is **up to twice** that which would be incurred had the same generator been the only Scheduled Generator registered to that Market Participant.⁶

⁵ Clause 4.26.1A (and other clauses) will be amended from 1 October 2011 by RC_2010_29 to change references to “Forced Outage Refund” to “Facility Reserve Capacity Deficit Refund”.

⁶ The cost of the Forced Outage would be twice that which would be payable by a Market Participant with a single Scheduled Generator where the non-dispatched capacity from another Scheduled Generator (or generators) operated by the Market Participant exceeded the quantum of the Forced Outage.

A worked example is provided in the attachment.

RC_2010_03

This issue identified above is essentially the same as that rectified by the amendments to the Market Rules resulting from RC_2010_03.

In RC_2010_03, the IMO identified that where a Market Participant has multiple generators in its portfolio and one (or more) suffers a real-time Forced Outage then the expected energy supplied in real-time from the portfolio is reduced to reflect just the Forced Outage.

However, the IMO also noted that this adjustment was applied relative to the portfolio's total Reserve Capacity Obligation Quantity, including Scheduled Generators, Curtailable Loads and Interruptible Loads that were **not dispatched**. As a result, the IMO noted that the Market Participant would be exposed to a Net STEM shortfall purely because some of its facilities were not asked to supply energy or loads requested to reduce consumption.

RC_2010_03 was subject to the Fast Track Rule Change Process as the IMO considered that the proposed amendments were required to correct a manifest error, including to remove a potential anomaly in determining the Net STEM Shortfall.

2. Explain the reason for the degree of urgency:

Alinta requests that this Rule Change Proposal, and the proposed specific changes to clauses outlined in the following section, be subject to the Fast Track Rule Change Process in accordance with clause 2.5.9 of the Market Rules.

Like RC_2010_03, Alinta submits that the Rule Change Proposal should be subject to the Fast Track Rule Change Process as the Rule Change Proposal is required to correct a manifest error.

Alinta notes that the "New Balancing Market" proposal being progressed as part of the Market Evolution Plan (MEP) may result in the Market Rules being amended to remove at least that element of the Net STEM Shortfall calculation in clause 4.26.2 that results in the double penalty to Market Participant operating more than one Scheduled Generator.

However, as noted in section 5, the potential cost associated with this manifest error is significant (up to around \$1.5 million), while the expected costs are small (perhaps several thousand dollars). The greatest risk, and financial impact, associated with the manifest error arises during the periods of peak system demand (i.e. the summer period commencing 1 December) when multipliers of 6 apply to capacity refunds.

As there is no certainty that the package of rule changes to give effect to the "New Balancing Market" proposal will be implemented prior to 1 December 2011, there is an urgent need to rectify the manifest error through the Fast Track Rule Change Process.

In addition, Alinta notes that System Management raised concerns about the proposed removal of the Net STEM Shortfall calculation at the Rules Development Implementation Working Group



meeting on 21 June 2011, which creates further uncertainty around the outcome in respect of this matter.

3. Provide any proposed specific changes to particular Rules: (for clarity, please use the current wording of the Rules and place a ~~strikethrough~~ where words are deleted and underline words added)

The proposed specific changes to the Market Rules outlined below are restricted to addressing the manifest error in the Market Rules to ensure that a Market Participant operating more than one Scheduled Generator will incur the same cost for a Forced Outage in respect of a specific Scheduled Generator as would be incurred had the same generator been the only Scheduled Generator registered to that Market Participant.

The proposed amending rules do not address any of the other issues identified by RC_2010_03 in respect of the Net STEM Shortfall calculation, including in respect of Intermittent Generators (of which there are none) or Dispatchable Loads.

4.26.2. The IMO must determine the net STEM shortfall ("**Net STEM Shortfall**") in Reserve Capacity supplied by each Market Participant p holding Capacity Credits associated with a generation system in each Trading Interval t of Trading Day d and Trading Month m as:

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

Where

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

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

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

$\text{RCOQ}(p,d,t)$ for Market Participant p and Trading Interval t of Trading Day d is equal to:

(a) the total Reserve Capacity Obligation Quantity of Market Participant p 's unregistered facilities that have Reserve Capacity Obligations, excluding Loads that can be interrupted on request, plus

(b) the sum of the product of:

- i. the factor described in clause 4.26.2B as it applies to Market Participant p 's Registered Facilities; and
- ii. the Reserve Capacity Obligation Quantity for each Facility



for all Market Participant p's Registered Facilities, excluding Curtailable Loads;

RCOQ (f,d,t) for Facility f and Trading Interval t of Trading Day d is equal to the product of the factor described in clause 4.26.2B as it applies to Facility f and the Reserve Capacity Obligation Quantity for Facility f.

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

- (c) 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;
- (d) subject to paragraph (c), for the case where Market Participant p is not the Electricity Generation Corporation, the sum of:
 - iii. the sum of the Reserve Capacity Obligation Quantities in Trading Interval t of that Market Participant's Interruptible Loads; plus
 - iv. the MW quantity calculated by doubling the net MWh quantity of energy sent out by Facilities registered by that Market Participant 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
- (e) subject to paragraph (c), 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; 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 7.13.1A (b);



RTFO(f,d,t) is the total MW quantity of Forced Outage associated with Facility f in real-time for Trading Interval t of Trading Day d, where this is the lesser of the Reserve Capacity Obligation Quantity of the Facility f for Trading Interval t and the MW Forced Outage of the Facility f for Trading Interval t as provided to the IMO by System Management in accordance with clause 7.13.1A (b);

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

MSQ(p,f,d,t) is a MW quantity calculated by doubling the greater of zero and the MWh value of sum over all of the Facilities registered by Market Participant p of the greater of zero and Facility f'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;

F denotes the set of Scheduled Generators registered by Market Participant p, where "f" is used to refer to a member of that set.

- 4.26.2A. All values in clause 4.26.2 which are required to be corrected for Loss Factor adjustments so as to be a sent out quantity are to be adjusted based on an assumed Loss Factor of 1.
- 4.26.2B. The IMO is to set the factor described in the definition of RCOQ(p,d,t) and RCOQ(f,d,t) in clause 4.26.2 to equal one in all situations except for Scheduled Generators, Non-Scheduled Generators and Dispatchable Loads with Loss Factors less than one in which event the factor must equal the facilities Loss Factor.

4. Describe how the proposed Market Rule change would allow the Market Rules to better address the Wholesale Market Objectives:

Market Rule 2.4.2 states that 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 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; and



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

The Rule Change Proposal would ensure that for a Market Participant operating more than one Scheduled Generator, the cost of a Forced Outage in respect of a specific Scheduled Generator would be the same as that which would be incurred had the same generator been the only Scheduled Generator registered to that Market Participant.

Consequently, Alinta considers that the Market Rules as proposed to be amended or replaced by the Rule Change Proposal, would be consistent with, and better achieve, the Wholesale Market Objectives. Specifically, Alinta considers that the Rule Change Proposal would:

- better promote the economically efficient, safe and reliable production supply of electricity and electricity related services in the South West Interconnected System (objective (a)).
- better encourage competition among generators and retailers in the South West interconnected system (objective (b)).
- avoids discrimination against a portfolio generator and therefore better achieves objective (c).
- likely to further minimise the long term costs of electricity supplied to customers from the South West interconnected system (objective (d)).

5. Provide any identifiable costs and benefits of the change:

For Market Participants operating more than one Scheduled Generator, the cost of a Forced Outage in respect of a specific generator is **up to twice** that which would be incurred had the same generator been the only Scheduled Generator registered to that Market Participant. As with RC_2010_03, the main benefit of the proposed Amending Rules will be to restore market price signals to their correct levels.

As a Market Participant operating more than one Scheduled Generator, Alinta estimates that the potential additional cost it might incur in respect of Forced Outages could be up to \$1.5 million per annum. This estimate reflects:

- a Forced Outage rate of 0.73% (consistent with the estimate provided by the IMO to the Maximum Reserve Capacity Working Group);
- the Reserve Capacity Price for the 2011/12 year (\$131,804), and
- a refund multiplier of 6 times, which would apply where a Forced Outage occurs during a Peak Interval during summer.

Costs would be incurred by the IMO, and therefore the Market as a whole, in updating the current settlement functions of the IMO. Alinta is unable to quantify these costs precisely, but notes that for RC_2010_03 the IMO estimated that the costs it would incur in updating the settlement function was \$3,525.



It is expected that the “New Balancing Market” proposal being progressed as part of the MEP would ultimately result in the Market Rules being amended to remove at least that element of the Net STEM Shortfall calculation in clause 4.26.2 that results in the double penalty to Market Participant operating more than one Scheduled Generator. However, as noted earlier, there remains some uncertainty about this outcome.

Further, given the significant potential risk and cost that arises from this manifest error, Alinta considers that the benefits, including those to the broader market, of proceeding with this Rule Change Proposal significantly exceed any costs.

ATTACHMENT

Scenario 1

Single Scheduled Generator (130 MW) with a Resource Plan (DSQ) that does not meet the dispatch and does not log a forced outage.

Under the existing and proposed changes, a shortfall of 130 MW is calculated.

EXISTING Net STEM Shortfall		
	RTFO (p,d,t)	0
	CAPA	750
	RCOQ (p,d,t)	130
A = Min(RCOQ, CAPA)	A	130
	RCOQ(p,d,t) – RTFO(p,d,t)	130
	DSQ(p,d,t)	130
B = Min(RCOQ–RTFO, DSQ)	B	130
	MSQ(p,d,t)	0
	DSQ(p,d,t)	130
C = Min(DSQ, MSQ)	C	0
	SF	130
PROPOSED Net STEM Shortfall		
	RTFO (p,d,t)	0
	CAPA	750
	RCOQ (p,d,t)	130
A = Min(RCOQ, CAPA)	A	130
	RCOQ(f,d,t) – RTFO(f,d,t)	
	DSQ(f,d,t)	
B = Min(RCOQ–RTFO, DSQ)	B	
	MSQ(f,d,t)	
	DSQ(f,d,t)	
C = Min(DSQ, MSQ)	C	
	Max(0, B – C)	
	∑ Scheduled Generators	130
	SF	130



Scenario 2

Single Scheduled Generator (130 MW) with a DSQ that does not meet the dispatch, and where a forced outage is logged.

Under the existing and proposed changes, no shortfall is calculated as the refund will be applied at the facility level.

EXISTING Net STEM Shortfall		
	RTFO (p,d,t)	130
	CAPA	750
	RCOQ (p,d,t)	130
A = Min(RCOQ, CAPA)	A	130
	RCOQ(p,d,t) – RTFO(p,d,t)	0
	DSQ(p,d,t)	130
B = Min(RCOQ–RTFO, DSQ)	B	0
	MSQ(p,d,t)	0
	DSQ(p,d,t)	130
C = Min(DSQ, MSQ)	C	0
	SF	0
PROPOSED Net STEM Shortfall		
	RTFO (p,d,t)	130
	CAPA	750
	RCOQ (p,d,t)	130
A = Min(RCOQ, CAPA)	A	130
	RCOQ(f,d,t) – RTFO(f,d,t)	
	DSQ(f,d,t)	
B = Min(RCOQ–RTFO, DSQ)	B	
	MSQ(f,d,t)	
	DSQ(f,d,t)	
C = Min(DSQ, MSQ)	C	
	Max(0, B – C)	
	∑ Scheduled Generators	0
	SF	0



Scenario 3

Two Scheduled Generators (130 MW each), one with a DSQ that does not meet the dispatch and does not log a forced outage. The other unit is not required to run.

Under the existing and proposed changes, a shortfall is calculated.

EXISTING Net STEM Shortfall		
	RTFO (p,d,t)	0
	CAPA	750
	RCOQ (p,d,t)	260
A = Min(RCOQ, CAPA)	A	260
	RCOQ(p,d,t) – RTFO(p,d,t)	260
	DSQ(p,d,t)	130
B = Min(RCOQ–RTFO, DSQ)	B	130
	MSQ(p,d,t)	0
	DSQ(p,d,t)	130
C = Min(DSQ, MSQ)	C	0
	SF	130
PROPOSED Net STEM Shortfall		
	RTFO (p,d,t)	0
	CAPA	750
	RCOQ (p,d,t)	260
A = Min(RCOQ, CAPA)	A	260
	RCOQ(f,d,t) – RTFO(f,d,t)	
	DSQ(f,d,t)	
B = Min(RCOQ–RTFO, DSQ)	B	
	MSQ(f,d,t)	
	DSQ(f,d,t)	
C = Min(DSQ, MSQ)	C	
	Max(0, B – C)	
	∑ Scheduled Generators	130
	SF	130



Scenario 4

Two Scheduled Generators (130 MW each), one with a DSQ that does not meet the dispatch, but where forced outage is logged. The other unit is not required to run.

Under the existing rules a shortfall is calculated as well as the Forced Outage refund.

Under the proposed changes no shortfall is calculated as the changes pick up the forced outage of the facility that did not deliver.

EXISTING Net STEM Shortfall		
	RTFO (p,d,t)	130
	CAPA	750
	RCOQ (p,d,t)	260
A = Min(RCOQ, CAPA)	A	260
	RCOQ(p,d,t) – RTFO(p,d,t)	130
	DSQ(p,d,t)	130
B = Min(RCOQ–RTFO, DSQ)	B	130
	MSQ(p,d,t)	0
	DSQ(p,d,t)	130
C = Min(DSQ, MSQ)	C	0
	SF	130
PROPOSED Net STEM Shortfall		
	RTFO (p,d,t)	130
	CAPA	750
	RCOQ (p,d,t)	260
A = Min(RCOQ, CAPA)	A	260
	RCOQ(f,d,t) – RTFO(f,d,t)	
	DSQ(f,d,t)	
B = Min(RCOQ–RTFO, DSQ)	B	
	MSQ(f,d,t)	
	DSQ(f,d,t)	
C = Min(DSQ, MSQ)	C	
	Max(0, B – C)	
	∑ Scheduled Generators	0
	SF	0

