Energy
Market
Company

Notice of Market Rules Modification

Paper No.:	EMC/RCP/33/2007/267
Rule reference:	Sections 7.2.2, 7.4 and 7.5 of Chapter 2; Prudential Requirements Market Manual
Proposer:	SP Services
Date received by EMC:	23 March 2007
Category allocated:	1
Status:	Approved by EMA
Effective Date:	10 September 2007

Summary of proposed rule modification:

This paper looks at allowing EMC to revise/revoke margin call requirements for a Market Participant (MP) or Market Support Services Licensee (MSSL) in exceptional cases where that MP/MSSL has reasonable basis to believe that its Estimated Net Exposure (ENE) determined by EMC contains manifest error. Such error could be due to metering, human input or system calculation error

The reassessment of a MP's/MSSL's ENE by the EMC and consequently, any revocation or revision to the margin call issued to that MP/MSSL made by EMC, will more accurately reflect the risk exposure of that MP/MSSL. Thus, it avoids making that MP/MSSL bears unnecessary costs and yet, does not expose the market to higher risk.

In short, the proposed rule changes aim at making the current prudential regime more robust.

Date considered by Rules Change Panel:	3 July 2007
Date considered by EMC Board:	26 July 2007
Date considered by Energy Market Authority:	22 August 2007

Proposed rule modification:

See attached paper.

Reasons for rejection/referral back to Rules Change Panel (if applicable):

PAPER NO.	:	**EMC/BD/04/2007/04(d)**
RCP PAPER NO.	:	**EMC/RCP/33/2007/267**
SUBJECT	:	**DISCRETION TO REVISE/REVOKE MARGIN CALL REQUIREMENTS IN THE PRESENCE OF MANIFEST ERROR(S)**
FOR	:	**DECISION**
PREPARED BY	:	**TEO WEE GUAN** **SENIOR ECONOMIST**
REVIEWED BY	:	**PAUL POH LEE KONG** **SVP, MARKET ADMINISTRATION**
DATE OF MEETING	:	**26 JULY 2007**

Executive Summary

This paper looks at allowing EMC to revise/revoke margin call requirements for a Market Participant (MP) or Market Support Services Licensee (MSSL) in exceptional cases where that MP/MSSL has reasonable basis to believe that its Estimated Net Exposure (ENE) determined by EMC contains manifest error. Such error could be due to metering, human input or system calculation error

The reassessment of a MP's/MSSL's ENE by the EMC and consequently, any revocation or revision to the margin call issued to that MP/MSSL made by EMC, will more accurately reflect the risk exposure of that MP/MSSL. Thus, it avoids making that MP/MSSL bears unnecessary costs and yet, does not expose the market to higher risk.

In short, the proposal aims at making the current prudential regime more robust. The RCP unanimously recommends that the EMC Board adopt this proposal.

1. Introduction

This paper looks at allowing EMC to revise/revoke margin call requirements for a Market Participant (MP) or Market Support Services Licensee (MSSL) in exceptional cases where that MP/MSSL has reasonable basis to believe that its Estimated Net Exposure (ENE) determined by EMC contains manifest error. Such error could be due to metering, human input or system calculation error.

2. Background

Extracts of the relevant sections the Market Rules and Market Operations Market Manual (Prudential Requirements) relating to margin call requirements are reproduced as follows:

2.1 Market Rules (Chapter 2, Sections 7.4 and 7.5)

7.4 <u>MARGIN CALLS</u>

7.4.1 The *EMC* shall notify a *market participant* when the estimated net exposure of the *market participant* reaches sixty percent of the *credit support* currently provided by that *market participant.*

7.4.2 The *EMC* shall issue a margin call to a *market participant* when the estimated net exposure of the *market participant* reaches a value equal to or greater than seventy percent of the *credit support* currently provided by that *market participant*.

7.5 <u>MARGIN CALL REQUIREMENTS</u>

7.5.1 A *market participant* must satisfy a margin call within the time prescribed in section 7.5.2 by

7.5.1.1 providing to the *EMC credit support* or additional *credit support* in accordance with the form as specified in section 7.6.2 such that the *market participant*'s estimated net exposure determined at the time the margin call was issued is no greater than fifty percent of the total *credit support* provided to the *EMC* by the *market participant*; or

7.5.1.2 paying a portion of the amount currently owed to the *EMC*, in an amount sufficient to reduce the *market participant's* estimated net exposure to a value no greater than fifty percent of the existing *credit support* provided to the *EMC* by that *market participant*.

7.5.2 The time within which a margin call must be satisfied under section 7.5.1 shall be the close of banking business of the bank at which the *EMC*'s bank accounts are held on the second *business day* following the date of the margin call.

2.2 MARKET OPERATIONS MARKET MANUAL (PRUDENTIAL REQUIREMENTS, Sections 2 and 3)

2.1 CURRENT EXPOSURE

The *EMC* shall determine the Current Exposure for each *market participant* as the total amount currently owed by a *market participant* to the *EMC* less the total amount owed by the *EMC* to that *market participant* for the most recent 12 days for which the *market participant's* trade settlement can be determined.

2.2 Estimated Net Exposure (ENE)

The ENE of each *market participant* shall represent an estimate of the *market participant's* 20-day exposure based on a daily average of the Current Exposure of the *market participant*.

For the avoidance of doubt, the ENE of a *market participant* shall be calculated in accordance with the following formula:

$$\text{ENE} = \frac{\text{Current Exposure}}{12} \times 20$$

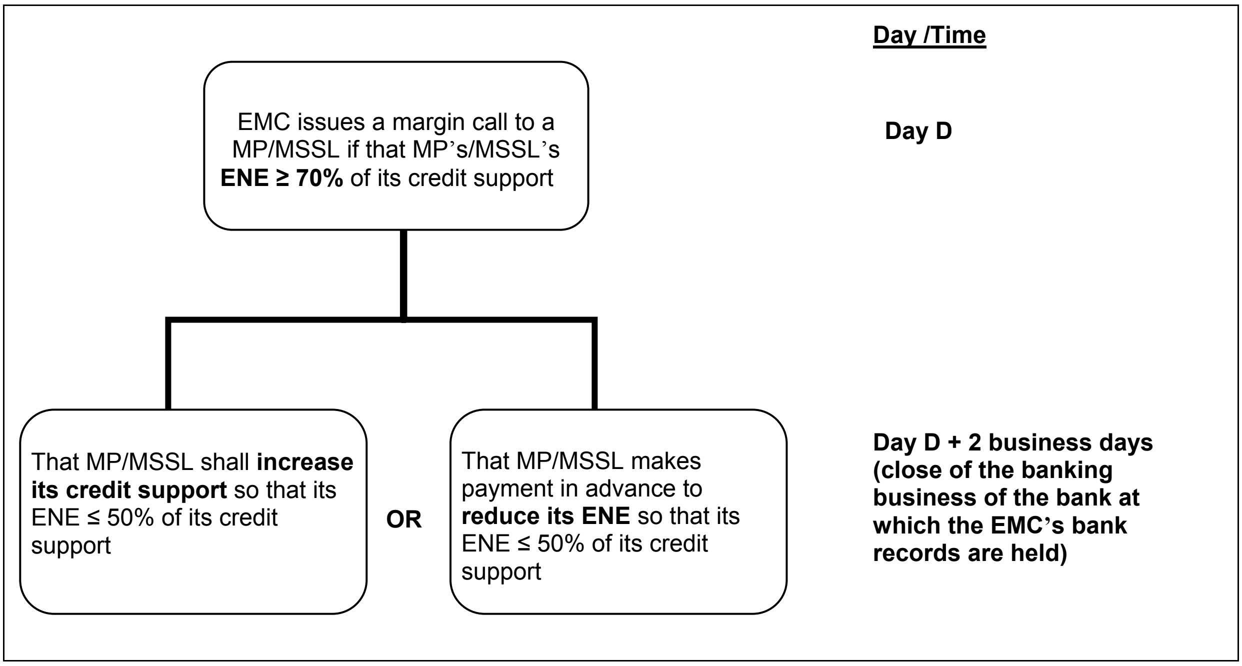
3 ESTIMATED AVERAGE DAILY EXPOSURE

Determining subsequent estimated average daily exposure

The *EMC* shall, pursuant to section 7.3.3, chapter 2 of the *market rules*, determine the estimated average daily exposure of each *market participant* in accordance with the following formula:

$$\text{Estimated Average Daily Exposure} = \frac{\text{Current Exposure}}{12}$$

The diagram illustrates the current process on margin call:



2.3 PROBLEM DEFINITION

On 26 Dec 2006, the EMC issued a margin call to SP Services (the MSSL) in accordance with Chapter 2 Section 7.4 of the Market Rules.

SP Services' investigation indicated that it had exceptionally high Withdrawal Energy Quantities (WEQ) for the trading days 15 – 19 December 2006 due to an error in the metering data submitted by the National Environment Agency. As a result, SP Services' daily settlement amount for the trading days 15 – 17 December 2006 (based on the preliminary settlement statement) surged --- it was about 123% higher than the average daily settlement amount for trading days 7 – 14 December 2006.

On 27 Dec 2006, SP Services submitted the corrected metering files to the EMC and appealed to the EMC to waive its margin call requirements. SP Services argued that it should not be issued with a margin call as its ENE was actually less than 70% of its existing credit support had its settlement amounts been calculated based on the corrected metering files for the affected trading days.

However, SP Services' appeal was rejected because the margin call was issued based on the ENE calculated by the EMC on 26 December 2006. Based on the current market rules, EMC has no discretion to revise or revoke margin call once it has been issued.

As a result, on 28 December 2006, SP Services prepaid about S$35.6 million to reduce its ENE to a value no greater than 50% of its existing credit support provided to the EMC (in accordance with Section 7.5, Chapter 2 of the Market Rules).

IMPACT OF MARGIN CALL ON SP SERVICES (THE MSSL)

SP Services claimed that metering error (beyond its control) can arise, thus affecting its WEQ and the corresponding settlement amounts determined by EMC. Under normal circumstances, the daily WEQ (and hence, daily settlement amount) should not surge.

However, a manifest error (e.g. metering error) involved in the determination of its ENE by the EMC could lead to SP Services being issued with a margin call. In such a case, it is not practical or fair to SP Services to require it to raise large amount of prudential within 48 hours from the issuance of the margin call. In the instance of 28 December 2006, it was fortuitous that SP Services was able to obtain approval for the prepayment of $35.6m within such a short time.

SP Services is concerned that if they have been unable to meet the margin call requirements in time, it will constitute an event of default under Chapter 3, section 7.3.1 of the Market Rules. EMC will then issue a default notice to MSSL, make claim on any credit support held and may also request the Market Surveillance and Compliance Panel to issue a suspension order suspending or restricting all or any of the MSSL's rights to participate in the wholesale electricity market upon failing to remedy the default. The implication of this eventuality will be that SP Services will not be able to perform its obligation to supply to the non-contestable consumers and as the provider of last resort. (Note that under section 7.3.14 of Chapter 3 of the Market Rules, a suspension order can only be issued to the MSSL with the consent of the EMA.)

SP Services is also concerned that apart from the risks posed to MSSL's ability to perform its obligation, there is also a cost impact. The costs associated with meeting the margin call requirements can be significant as the daily transaction volume is high. These costs will ultimately result in higher charges for the consumers and other market participants under SP Services.

3 PROPOSED SOLUTIONS

SP Services offered two proposed solutions as follows:

i) exempt MSSL from margin call requirements; or

ii) allow for reassessment of the ENE in exceptional cases, where MSSL/*market participant* can demonstrate to the satisfaction of EMC that the high ENE is due to metering errors in the preliminary run and the EMC may waive the requirements under section 7.5.1.

4 ANALYSIS

In this section, we shall analyse the two solutions proposed by SP Services.

4.1 Exempt MSSL from margin call requirements

The role of SP Services (the MSSL) in the retail sector is to be the supplier of electricity for all non-contestable consumers. It is also required, under its MSS license, to provide contestable consumer who does not, cannot or no longer wishes to purchase electricity from a retailer or wholesale market, the service to purchase electricity through SP Services at prevailing market prices (provider of last resort).

The purpose of the prudential requirements and margin call imposed on a MP/MSSL is to protect EMC and other MPs against payment defaults. As SP Services is "trading" daily in the SWEM in much the same manner as other retailers, it should be subjected to the same prudential and margin call requirements as listed in Section 7 of Chapter 2 (Market Rules) as all other retailers. EMC and the market need to be protected from the outstanding exposure of MSSL. To exempt MSSL from margin call requirements will also create dissatisfaction among the other MPs who dutifully meet their margin call requirements. It would be inequitable if only MSSL is exempted from margin call requirements.

4.2 Allow for reassessment by EMC of the ENE in exceptional cases, where MSSL/market participant can demonstrate to the satisfaction of EMC that the high ENE is due to metering errors in the preliminary run and the EMC may waive the requirements under section 7.5.1

This proposed solution is feasible but it needs some fine-tuning as described below.

We recommend that the EMC be given the discretion to reassess the ENE and consequently, to revise or revoke the margin call requirements for a MP/MSSL in exceptional cases where that MP/MSSL has reasonable basis to believe its ENE determined by the EMC contains manifest error. Manifest error can arise due to metering, human input or system calculation error.

Operationally, we recommend the following procedures be followed:

(a) The EMC shall issue a margin call to a MP/MSSL on a business day (say day 'D') when the ENE of that MP/MSSL reaches a value equal to or greater than seventy percent of the credit support currently provided by that MP/MSSL.

(b) In the presence of manifest error(s), a MP/MSSL may request for a reassessment of its ENE by the EMC if it has reasonable basis to believe that the removal of such manifest error(s) will result in:

(i) that MP/MSSL's actual (i.e. reassessed) ENE being different from the ENE originally determined by the EMC by at least 10%; and/or

(ii) that MP/MSSL's actual (i.e. reassessed) ENE not exceeding 70% of the credit support currently provided by that MP/MSSL.

(c) In its submission to the EMC requesting for a reassessment of its ENE, that MP/MSSL must include the corrected data (if applicable), with all other supporting materials, including the recalculation of the relevant ENE to the EMC**, no later than 12pm on the next business day** (i.e. 'D' +1 business day) following the date of margin call issued to that MP/MSSL by the EMC.

(d) After receiving a request for reassessment of ENE from a MP/MSSL, the EMC shall consider the merits of each request and advise that MP/MSSL on the outcome **no later than the end of the next business day** following the date the margin call issued to that MP/MSSL by the EMC (i.e. 'D' +1 business day). The outcome could comprise one of the following:

(i) when the reassessed ENE does not reach seventy percent of the credit support currently provided by that MP/MSSL, the EMC shall revoke the margin call issued to that MP/MSSL;

(ii) when the reassessed ENE is either greater or lesser than the ENE originally calculated by the EMC by at least 10%, the EMC shall issue a revised margin call to that MP/MSSL; or

(iii) when the above-mentioned two conditions [i.e. (i) and (ii)] do not apply , the EMC shall take no further action and the original margin call issued to that MP/MSSL will remain unchanged.

(e) The time within which a revised margin call issued to a MP/MSSL must be satisfied will not be extended. In other words, the deadline shall remain as the **close of banking business of the bank at which the EMC's bank accounts are held on the second business day** following the date of the original margin call issued to that MP/MSSL i.e. 'D' +2 business days).

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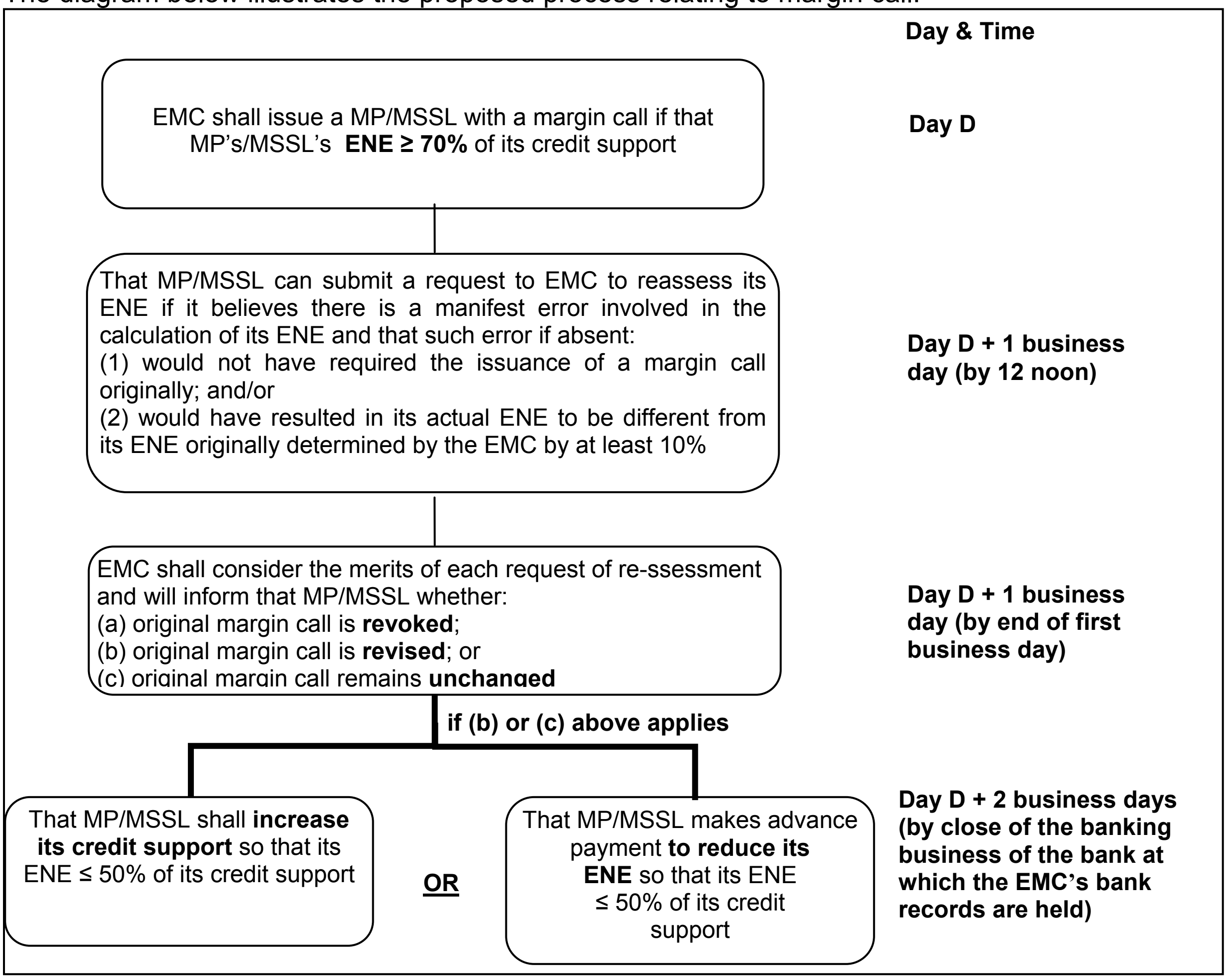
The diagram below illustrates the proposed process relating to margin call:



Further, we are proposing the following changes to the definitions of 'Current Exposure', 'ENE" and "Estimated Average Daily Exposure' contained in the market manual as follows:

(i) Current Exposure (CE)

It is proposed that Current Exposure (CE) of a MP/MSSL be re-defined as such:

> "The Current Exposure for a market participant on a given day is negative one multiplied by the aggregate of the net settlement amounts set out on all of the market participant's preliminary settlement statements (or corresponding final settlement statements if available) for all trading days where the invoices (whether or not issued) for such settlement statements would not yet be due for payment on that given day."

Reason for proposed change:

This re-definition more accurately reflects the total amount of outstanding debts of a MP/MSSL known to EMC on a given day which is determined from that MP's/MSSL's Preliminary Settlement Statements (or their corresponding Final Settlement Statements if available) for all trading days that are not due for payments. Due to public holiday(s), such number of trading days will not always take a fixed number 12.

By convention, a positive current exposure of a MP/MSSL indicates that that MP/MSSL has, or may have, payment liability to the EMC, while a negative current exposure indicates that that MP/MSSL has, or may have, a right to payment from the EMC. By convention, the value of credit support held by the EMC is also reflected as a positive number.

However, section 5.3.3 of Chapter 7 states that where the net settlement amount for a market participant is negative, the absolute value of the settlement amount shall be an amount payable by the market participant to the EMC; or where the net settlement amount for a market participant is positive, the settlement amount shall be an amount receivable by the market participant from the EMC.

Thus, in determining current exposure consistently with the conventions described above, the aggregate of the net settlement amounts would need to be multiplied by negative one.

(ii) Estimated Net Exposure (ENE)

It is proposed that the ENE of a MP/MSSL shall be re-defined as such:

> "The Estimated Net Exposure (ENE) of each market participant on a given day represents an estimate of the market participant's 20-day exposure and shall be calculated in accordance with the following formula:
>
> ENE = Current Exposure + (20 - X)*(Estimated Average Daily Exposure) – (Prepayment Amount)
>
> Where:
> 1. Prepayment Amount = the sum of:
> (a) the aggregate prepayments paid to the EMC by the market participant under section 5.9.2 of Chapter 7 of the market rules; and

(b) the aggregate prepayments paid to the EMC by the market participant under section 7.5.1.2 of Chapter 2 of the market rules.
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2. 'X' refers to the number of trading days to which the market participant's Current Exposure on the given day relate.

Note that the EMC shall only use a nett positive figure of calculated ENE in the determination of a market participant's/MSSL's margin call under Chapter 2, section 7.4.

Reason for proposed change:

This revised formula for ENE more accurately reflects the estimated 20-day exposure of a MP/MSSL by using the proposed revised definition of 'Current Exposure' (see (i) above). Since the number of trading days to which the MP's/MSSL's current exposure on a given day relate is not fixed at 12, we have denoted this with 'X' (this being a variable to represent the number of trading days to which that current exposure relate). The exposure for the remaining (20 – 'X') days is estimated using the Estimated Average Daily Exposure.

The Estimated Average Daily Exposure (see (iii) below) is calculated as a simple average of past 90 days of net settlement amounts. 90 days' of trade amounts are used to determine the average daily exposure, instead of 12 days' of trade amounts currently, to remove any outlier effect that may occur in that 12-day period.

The element of prepayment made by a MP/MSSL for the net settlement amounts relating to its Current Exposure is duly and correctly reflected in the calculation of that MP's/MSSL's ENE.

(iii) <u>ESTIMATED AVERAGE DAILY EXPOSURE:</u>

It is proposed that the determination of subsequent estimated average daily exposure of a MP/MSSL be re-defined as such:

> "The estimated average daily exposure (ADE) of a market participant on a given day as negative one multiplied by the simple average of the net settlement amounts set out on the 90 most recently available preliminary settlement statements (or corresponding final settlements statements if available) of that market participant which have been issued on or before that day."
>
> Note that for the purpose of determining credit support value under Chapter 2, section 7.3.2, the EMC shall only use a nett positive figure of the respective market participant's estimated average daily exposure to calculate the respective market participant's credit support value."

Reason for proposed change

The credit support value, which determines the amount of credit support a MP/MSSL needs to provide, is by convention a positive number. Hence, in determining the estimated average daily exposure, the simple average of the net settlement amounts needs to be multiplied by negative one in order to determine the credit support value which is in turn used to determine the minimum credit support required from a MP/MSSL. This ensures that a MP/MSSL with larger negative simple average of net settlement amounts (meaning it owes EMC more money) would have a larger credit support value and hence, needs to place more credit support with the

EMC. The EMC would only determine the credit support value of a MP/MSSL who has positive Estimated Average Daily Exposure

5. Conclusion

This proposal looks at allowing the EMC to revise/revoke margin call requirements for a MP/MSSL in exceptional cases where that MP/MSSL has reasonable basis to believe that its ENE determined by the EMC contains manifest error(s). Such error(s) could be due to metering, human input or system calculation error.

In the presence of manifest error(s), a MP/MSSL may request (with supporting materials) for a reassessment of its ENE by the EMC if it has reasonable basis to believe that the removal of such manifest error(s) will result in:

(i) that MP/MSSL's actual (i.e. reassessed) ENE being different from the ENE originally calculated by the EMC by at least 10%; and/or

(ii) that MP/MSSL's actual (i.e. reassessed) ENE not exceeding 70% of the credit support currently provided by that MP/MSSL.

After its reassessment, the EMC will inform that MP/MSSL of one of the following outcomes:

(i) <u>revoke</u> the margin call issued to that MP/MSSL if the reassessed ENE does not reach seventy percent of the credit support currently provided by that MP/MSSL; or

(ii) issue a <u>revised</u> margin call to that MP/MSSL if the reassessed ENE is either greater or lesser than the ENE originally calculated by the EMC by at least 10% ; or

(iii) take no further action if neither of the above-mentioned two conditions [i.e. (i) and (ii)] applies ,.

Further, some changes have been proposed to the definitions of 'Current Exposure', 'ENE" and "Estimated Average Daily Exposure' contained in the market manual. The revised definitions will more accurately reflect the Current Exposure, ENE and Estimated Average Daily Exposure of a MP/MSSL.

In summary, all the proposed changes seek to make the current prudential regime more robust.

6. Impact on market systems

The EMC (Settlement) will have to calculate the Current Exposure, Estimated Net Exposure and Estimated Average Daily Exposure of a MP/MSSL using the revised definitions. Changes will be made to the existing prudential calculator outside of the NEMS' settlement system.

7. Implementation process

EMC (Settlement) will need **3 weeks** from the day when the approval of the rule change is approved to implement the proposed changes.

The work will be done in-house by EMC with an internal cost of about $32,000. The cost will come from EMC budget and no additional budget is required.

8. Consultation

We have published the rule modification proposal on the EMC website for comments.

We received some comments from the industry. The comments, and EMC's response to these comments, are given below.

Keppel's comments:
SP Services (as MSSL) interrogate and read all customers' meters including customers of retailers. This means SP Services will be the only one able to cite manifest error arising from metering, human input or system calculation errors. Retailers are only able to obtain metering file from MSSL via EBT much later. Hence, discretion to revise margin call requirements appears to benefit MSSL only.

EMC's response:
Under the Metering Code (section 4.9 on 'Data Transmission Process'), the Meter Data Manager (currently SP Services) is required to submit to the EMC, each market participant retailer, each market participant consumer and each applicable MSSL, by no later than close of the business on the fifth business day after a trading day. In other words, all entities will receive metering information for trading day 'D' from SP Services before the issue of the preliminary settlement statement by EMC (on 'D'+6 business days) which EMC uses to determine if a MP/MSSL has margin call. Thus, a retailer would have sufficient time to make a request for reassessment of its ENE to the EMC if there is a metering error involved in the determination of its ENE by the EMC.
However, we note Keppel's comments in that the Meter Data Manager is currently also SP Services, and that would mean SP Services would have quicker access to meter readings and hence, there could be more lead time for SP Services to raise a request for reassessment, compared to other market players.

Power Seraya's comments:
The recommendations do not appear to solve the issue of manifest(ed) metering errors. We are of the opinion that the onus lies on the meter collection and validation system (operated by the MSSL on behalf of the market) to detect these errors and prevent them being passed on for settlements. Manifest errors can be detected either through comparison with check meters (where they exist – i.e. at big customers premises) or by analysis of reading exceptions (e.g. Big reading much greater than seen in the past from a meter). We reject the rule change based on the following grounds:

1) The MSSL is trying to protect itself from its own failures (in validation of meter readings it collects on behalf of MPs);

2) The rule change suggested is more difficult for MPs to apply in a timely fashion than it is for the MSSL due to time taken for MPs to get meter readings from the MSSL.

3) The Rule Change is therefore not equitable and not in accordance with the principles of the Market Rules. The solution need to be provided for by the MSSL metering systems themselves. With adequate meter validation these should not produce manifest errors of 10% or more impact on prudential requirements. Our recommendation is for EMC to replace this rule change with a requirement for MSSL to improve and address meter reading validation such that manifest errors do not occur.

EMC's Response:

Our intention is to keep the definition of 'manifest error' broad. We have explained that such error can arise due to metering, human input or system calculation error. The error is not limited to metering error alone. It could be that there is an error involved n the calculation of ENE (say, arising from wrong application of the formula for determining ENE by the EMC or a wrong amount has been keyed into the calculator).

The proposed rule change gives EACH market participant (and not just MSSL alone) a chance to request for the EMC to reassess its ENE and consequently, to revise or revoke the margin call requirements, if that market participant has valid ground(s) to believe that its ENE has been wrongly determined and the wrong amount of ENE determined originally has a material impact on that MP's margin call requirements.

With regard to timeline for submission of metering file by SP Services, under the Metering Code SP Services will provide the data to all entities by end of the 5^{th} business day after a trading day. Thus all MPs/MSSL will have time to raise a request for reassessment of its ENE. (Please also see our response to Keppel's comments above).

With regard to the issue raised on metering accuracy, we understand that metering data validation requirements (under the obligations of the Meter Data Manager) are set out in sections 4.4 and 4.5 of the Metering Code. Any propose changes to improve the validation process should be submitted to the EMA (as it will entail changes to the Metering Code). It is not appropriate to deal with this issue by making changes to the market rules.

9. Legal sign off

Text of the rule modifications has been vetted by EMC's external legal counsel whose opinion is that the modifications reflect the intent of the rule modification proposal as expressed in the analysis section of this paper.

10. Recommendations

The RCP unanimously recommends that the EMC Board:

a. **adopt** the proposed rule modifications as set out in the Annex 1;

b. **seek the Authority's approval for** the proposed rule modifications; and

c. **recommend** that the proposed rule modifications come into force **3 weeks** after the date on which the approval of the Authority is published by the EMC.

ANNEX 1 PROPOSED RULE MODIFICATONS

Existing Rules (Release 1 Jan 2007)	**Proposed Rules Changes** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
Chapter 2	**Chapter 2**	
7.2.2 A *market participant's* estimated net exposure shall be estimated by the *EMC* each *business day* and shall be a dollar amount estimated in accordance with the procedure specified in the *market manual*.	7.2.2 A *market participant's* estimated net exposure shall be ~~estimated~~ determined by the *EMC* each *business day* and shall be a dollar amount ~~estimated~~ determined in accordance with the procedure specified in the *market manual*.	The change from "estimated" to "determined" is for consistency in the use of the latter expression in the existing section 7.5.1.1 of Chapter 2 and the proposed changes to the market rules set out herein.
7.4 MARGIN CALLS 7.4.1 The *EMC* shall notify a *market participant* when the estimated net exposure of the *market participant* reaches sixty percent of the *credit support* currently provided by that *market participant*.	**7.4 MARGIN CALLS** 7.4.1 The *EMC* shall notify a *market participant* when the estimated net exposure of the *market participant* reaches sixty percent of the value of the *credit support* currently provided by that *market participant*.	To improve the clarity of this section.

Existing Rules (Release 1 Jan 2007)	**Proposed Rules Changes** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
7.4.2 The *EMC* shall issue a margin call to a *market participant* when the estimated net exposure of the *market participant* reaches a value equal to or greater than seventy percent of the *credit support* currently provided by that *market participant*.	7.4.2 The *EMC* shall issue a margin call to a *market participant* when the estimated net exposure of the *market participant* reaches a value equal to or greater than seventy percent of the value of the *credit support* currently provided by that *market participant*.	To improve the clarity of this section.
	7.4.3 Upon a *market participant's* receipt of a margin call under section 7.4.2, if such *market participant* has a reasonable basis for believing that there is a manifest error in the determination of its estimated net exposure by the *EMC* for the purposes of section 7.4.2 and that such error if absent, 7.4.3.1 would not have required the issuance of such margin call by the *EMC* under section 7.4.2; and/or 7.4.3.2 would have resulted in its estimated net exposure (if correctly determined) to be either greater than 110%, or	This new section is intended to preclude a market participant from making a request for reassessment of its estimated net exposure if it has no reasonable basis for believing that the alleged error (if corrected) has any significant impact on its obligation to meet a margin call made under Section 7.4.2. Sections 7.4.3.1 and 7.4.3.2 set out what the EMC considers to be errors which will have a significant impact on a market participant's obligation to meet such a margin call.

Existing Rules (Release 1 Jan 2007)	**Proposed Rules Changes** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
	lesser than 90%, of its estimated net exposure originally determined for the purposes of section 7.4.2, that *market participant* may request the *EMC* to reassess its estimated net exposure. Such request for reassessment shall be made in such form as may be specified in the applicable *market manual* and shall clearly state, with supporting material, the nature of such error and the proposed correction to the relevant estimated net exposure. All requests for reassessments shall be made to the *EMC* no later than 12pm on the first *business day* following the date of such margin call issued by the *EMC* under section 7.4.2.	
	Explanatory Note: Manifest errors in the determination of a market participant's estimated net exposure can be caused by metering, human input or system calculation errors.	

Existing Rules (Release 1 Jan 2007)	Proposed Rules Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reason for Modification
	7.4.4 The *EMC* shall consider the merits of each request for reassessment of estimated net exposure made to the *EMC* in accordance with section 7.4.3, and notify the *market participant* to which such request relates, by no later than the end of the first *business day* following the date of the relevant margin call issued by the *EMC* under section 7.4.2 to which such request for reassessment relates, that: 7.4.4.1 such margin call is revoked, if the *market participant's* reassessed estimated net exposure is less than seventy percent of the value of the *credit support* currently provided by the *market participant*; 7.4.4.2 (except where section 7.4.4.1 applies) such margin call is to be revised (together with the particulars of such revision) if the *market participant's* reassessed estimated net exposure is either greater than	This new section sets out the EMC's powers to assess the merits of each request of reassessment of estimated net exposure and to take appropriate action to correct errors in its determination of such estimated net exposure and revoke or amend margin calls made under section 7.4.2.

Existing Rules (Release 1 Jan 2007)	**Proposed Rules Changes** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
	110%, or lesser than 90%, of its estimated net exposure originally determined for the purposes of section 7.4.2; or 7.4.4.3 the *EMC* will take no further action and such margin call shall continue to apply if neither section 7.4.4.1 nor section 7.4.4.2 applies. In this case, the *EMC* shall not be obliged to carry out any further reassessment of such estimated net exposure.	
	7.4.5 Where the *market participant's* estimated net exposure is reassessed, and consequently, its margin call is also revised by the *EMC*, under section 7.4.4.2, then all references in section 7.5.1 to "estimated net exposure" and "estimated net exposure, determined at the time the margin call was issued" in respect of that *market participant* shall be deemed to be references to the estimated net exposure as so reassessed	This section is to make clear that, if both reassessment of estimated net exposure **and** revision of margin call take place under section 7.4.4, the reassessed estimated net exposure (determined under section 7.4.4) shall be used in section 7.5.1 instead of the erroneous estimated net exposure originally determined. It should be noted that this section 7.4.5

Existing Rules (Release 1 Jan 2007)	Proposed Rules Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reason for Modification
	under section 7.4.4.	only applies when both reassessment of estimated net exposure **and** revision of margin call take place under section 7.4.4. There is no mention of section 7.5.2 here since the deadline specified in section 7.5.2 should not be changed, notwithstanding a successful request for reassessment.
7.5 MARGIN CALL REQUIREMENTS 7.5.1 A *market participant* must satisfy a margin call within the time prescribed by section 7.5.2 by 7.5.1.1 providing to the *EMC credit support* or additional *credit support* in accordance with the form as specified in section 7.6.2 such that the *market participant's* estimated net exposure determined at the time the margin call was issued is no greater than fifty percent of the	**7.5 MARGIN CALL REQUIREMENTS** 7.5.1 Subject to section 7.4.5, a *market participant* must satisfy a margin call (if not revoked by the *EMC*) within the time prescribed by section 7.5.2 by 7.5.1.1 providing to the *EMC credit support* or additional *credit support* in ~~accordance with~~ the form as specified in section 7.6.2 such that the *market participant's* estimated net exposure determined at the time the margin call was issued is no	These amendments are to make clear that: (1) the market participant would not need to satisfy any margin call which has been revoked by the EMC; and (2) if a margin call is not revoked, but only revised, then the market participant's reassessed estimated net exposure (as opposed to the erroneous estimated net exposure originally

Existing Rules (Release 1 Jan 2007)	**Proposed Rules Changes** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
total *credit support* provided to the *EMC* by the *market participant*; or 7.5.1.2 paying a portion of the amount currently owed to the *EMC*, in an amount sufficient to reduce the *market participant's* estimated net exposure to a value no greater than fifty percent of the existing *credit support* provided to the *EMC* by that *market participant*.	greater than fifty percent of the total value of the *credit support* provided to the *EMC* by the *market participant*; or 7.5.1.2 ~~paying a portion of the~~ prepaying such amount ~~currently owed~~ to the *EMC* as would be ~~in an amount~~ sufficient to reduce the *market participant's* estimated net exposure to a value no greater than fifty percent of the value of the existing *credit support* provided to the *EMC* by that *market participant*.	determined) should be used to determine the amount of credit support/payment which the market participant is required to make under section 7.5.1 to satisfy the margin call.
7.5.2 The time within which a margin call must be satisfied under section 7.5.1 shall be the close of banking business of the bank at which the *EMC*'s bank accounts are held on the second *business day* following the date of the margin call.	7.5.2 The time within which a margin call (unless revoked by the *EMC*) must be satisfied under section 7.5.1 shall be the close of banking business of the bank at which the *EMC*'s *bank accounts* are held on the second *business day* following the date of the margin call issued under section 7.4.2, whether or not such margin call is subsequently	The deadline given to market participant or MSSL to fulfill their revised margin call amounts shall remain the same as the second business day following the date of the original margin call. This is to protect the EMC and all MPs from payment defaults.

Existing Rules (Release 1 Jan 2007)	**Proposed Rules Changes** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
	revised under section 7.4.4.2.	

Existing Market Manual (Release 1 Jan 2003)	Proposed Changes to Market Manual (Deletions represented by strikethrough text and additions represented by double underlined text)	Reason for Modification
PRUDENTIAL REQUIREMENTS MARKET MANUAL (Chapter 2 Market Rules)	**PRUDENTIAL REQUIREMENTS MARKET MANUAL (Chapter 2 Market Rules)**	
2. Current Exposure **2.1 Current Exposure** The *EMC* shall determine the current exposure for each *market participant* as the total amount currently owed by a *market participant* to the *EMC* less the total amount owed by the *EMC* to the *market participant* for the most recent 12 days for which the *market participant*'s trade settlement can be determined.	**2. Current Exposure & Estimated Net Exposure** **2.1 Current Exposure** ~~The *EMC* shall determine the current exposure for each *market participant* as the total amount currently owed by a *market participant* to the *EMC* less the total amount owed by the *EMC* to the *market participant* for the most recent 12 days for which the *market participant*'s trade settlement can be determined.~~ The current exposure for a *market participant* on a given day is negative one multiplied by the aggregate of the net *settlement amounts* set out on all of the *market participant*'s *preliminary settlement statements* (or corresponding *final settlement statements* if available) for all *trading days* where the *invoices* (whether or not issued) for such *settlement statements* would not yet be due for payment on that given day.	

Existing Market Manual (Release 1 Jan 2003)	Proposed Changes to Market Manual (Deletions represented by strikethrough text and additions represented by double underlined text)	Reason for Modification
	Explanatory Note: The current exposure is used to determine a market participant's estimated net exposure, which is in turn used to determine if a market participant is required to place additional credit support. **By convention, a positive current exposure of a market participant indicates that the market participant has, or may have, payment liability to the EMC, while a negative current exposure indicates that the market participant has, or may have, a right to payment from the EMC. By convention, the value of credit support held by the EMC is also reflected as a positive number.** **However, section 5.3.3 of Chapter 7 states that where the net settlement amount for a market participant is negative, the absolute value of the settlement amount shall be an amount payable by the market participant to the EMC; or where the net settlement amount for a market participant is positive, the settlement amount shall be an amount receivable by the market participant from the EMC.** **Thus, in determining current exposure consistently with the conventions described above, the aggregate of the net settlement amounts would need to be multiplied by negative one.**	

Existing Market Manual (Release 1 Jan 2003)	**Proposed Changes to Market Manual** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**

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<tr><th>Existing Market Manual (Release 1 Jan 2003)</th><th>Proposed Changes to Market Manual (Deletions represented by strikethrough text and additions represented by double underlined text)</th><th>Reason for Modification</th></tr>
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2.2 Estimated net exposure

The estimated net exposure of each *market participant* shall represent an estimate of the *market participant*'s 20-day exposure based on a daily average of the current exposure of the *market participant*.

For the avoidance of doubt, the estimated net exposure of a *market participant* shall be calculated in accordance with the following formula:

Estimated Net Exposure =

$$\frac{\text{Current Exposure}}{12} \times 20$$

</td><td>

2.2 Estimated Net Exposure

The estimated net exposure of each *market participant* on a given day represents ~~shall represent~~ an estimate of the *market participant*'s 20-day exposure ~~based on a daily average of the current exposure of the *market participant*.~~ and shall be determined in accordance with the following formula:

Estimated Net Exposure =

Current Exposure + (20-X)(Estimated Average Daily Exposure) – Prepayment Amount

Where:

1. Prepayment Amount = the sum of:

   (a) the aggregate prepayments paid to the *EMC* by the *market participant* under section 5.9.2 of Chapter 7 of the *market rules*; and

   (b) the aggregate prepayments paid to the *EMC* by the *market participant* under section 7.5.1.2 of Chapter 2 of the *market rules*.

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Existing Market Manual (Release 1 Jan 2003)	**Proposed Changes to Market Manual** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
	2. 'X' refers to the number of *trading days* to which the *market participant's* current exposure on the given day relate. ~~For the avoidance of doubt, the estimated net exposure of a *market participant* shall be calculated in accordance with the following formula:~~ ~~Estimated Net Exposure =~~ ~~Current Exposure x 20~~ ~~12~~ **Explanatory Note: The estimated net exposure is used by the EMC to (among other things) determine if a margin call should be issued to a market participant under section 7.4.2 of Chapter 2.** **By convention, a positive estimated net exposure of a market participant indicates that the market participant has, or may have, payment liability to the EMC, while a negative estimated net exposure indicates that the market participant has, or may have, a right to payment from the EMC. By convention, the value of credit support held by the EMC is also reflected as a positive number.**	

Existing Market Manual (Release 1 Jan 2003)	**Proposed Changes to Market Manual** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
	Consistently with the above conventions, a negative estimated net exposure of a market participant would thus always be less than any positive value of the credit support of the market participant for the purposes of section 7.4.2 of Chapter 2 and thus would not require any margin calls to be issued to the market participant under that section.	

Existing Market Manual (Release 1 Jan 2003)	**Proposed Changes to Market Manual** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
3. Estimated Average Daily Exposure **3.1 Determining initial estimated average daily exposure** The initial estimated average daily exposure of a *market participant* who has traded previously in the Singapore electricity pool prior to the commencement of the *wholesale electricity market*, that will apply immediately when the *market participant* begins to participate in the *wholesale electricity market*, shall be a historical daily average of the amounts owed by the *market participant* to the Singapore electricity pool over a period of the latest 30 days. The initial estimated average daily exposure of a *market participant* who has not previously traded in the Singapore electricity pool, that will apply immediately when the *market participant* begins to participate in the	**3. Estimated Average Daily Exposure** **3.1 Determining initial estimated average daily exposure** ~~The initial estimated average daily exposure of a *market participant* who has traded previously in the Singapore electricity pool prior to the commencement of the *wholesale electricity market*, that will apply immediately when the *market participant* begins to participate in the *wholesale electricity market*, shall be a historical daily average of the amounts owed by the *market participant* to the Singapore electricity pool over a period of the latest 30 days.~~ Until a *market participant* has a sufficiently long period of participation on the *wholesale electricity market* so that the *EMC* can determine its estimated average daily exposure in accordance with section 3.2 below, the ~~The~~ initial estimated average daily exposure of ~~a~~ that *market participant* ~~who has not previously traded in the Singapore electricity pool,~~ that will apply immediately when the *market participant* begins to participate in the *wholesale electricity market*, shall be based on the average daily amount that the *market participant* forecasts it will owe to the *EMC* as a result of trading in the *wholesale electricity market* over a period of 30 days.	This paragraph is no longer required and may be deleted. Until a new market participant has a sufficiently long trading history on the wholesale electricity market, the EMC will not be able to determine that market participant's estimated average daily exposure in accordance with section 3.2 below.

Existing Market Manual (Release 1 Jan 2003)	**Proposed Changes to Market Manual** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
wholesale electricity market, shall be based on the average daily amount that the *market participant* forecasts it will owe to the *EMC* as a result of trading in the *wholesale electricity market* over a period of 30 days.		Thus, in the interim period, the market participant's estimated average daily exposure would be determined as provided in this paragraph.
3.2 Determining subsequent estimated average daily exposure The *EMC* shall, pursuant to section 7.3.3, chapter 2 of the market rules, determine the estimated average daily exposure of each *market participant* in accordance with the following formula: Estimated Average Daily Exposure = $\frac{\text{Current Exposure}}{12}$	**3.2 Determining subsequent estimated average daily exposure** ~~The *EMC* shall, pursuant to section 7.3.3, chapter 2 of the market rules, determine the estimated average daily exposure of each *market participant* in accordance with the following formula:~~ ~~Estimated Average Daily Exposure =~~ ~~Current Exposure~~ ~~12~~ <u>The estimated average daily exposure of each *market participant* on a given day shall be determined as negative one multiplied by the simple average of the net *settlement amounts* set out on the 90 most recently available *preliminary settlement statements* (or corresponding *final*</u>	

Existing Market Manual (Release 1 Jan 2003)	**Proposed Changes to Market Manual** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
	settlement statements if available) of that *market participant* which have been issued on or before that given day. **Explanatory Note: By convention, a positive estimated average daily exposure of a market participant indicates that the market participant has, or may have, payment liability to the EMC, while a negative estimated average daily exposure indicates that the market participant has, or may have, a right to payment from the EMC.** **However, section 5.3.3 of Chapter 7 states that where the net settlement amount for a market participant is negative, the absolute value of the settlement amount shall be an amount payable by the market participant to the EMC; or where the net settlement amount for a market participant is positive, the settlement amount shall be an amount receivable by the market participant from the EMC.** **Thus, in determining estimated average daily exposure consistently with the above convention, the average of the net settlement amounts would need to be multiplied by negative one.** **For the avoidance of doubt, a negative estimated average**	

Existing Market Manual (Release 1 Jan 2003)	**Proposed Changes to Market Manual** (Deletions represented by strikethrough text and additions represented by double underlined text)	**Reason for Modification**
	daily exposure of a market participant would be treated as a zero value for the purposes of calculation of credit support value under section 7.3.2 of Chapter 2.	
	4. Format of Request for Reassessment of Estimated Net Exposure A *market participant*, who wishes to submit a request for reassessment of its estimated net exposure under section 7.4.3, Chapter 2 of the *market rules*, shall submit a duly completed Request for Reassessment of Estimated Net Exposure in the form set out below, together with all relevant supporting materials, to the *EMC* at the following email address: settlement@emcsg.com.	

Paper No.: EMC/RCP/33/2007/267

Request for Reassessment of Estimated Net Exposure

Date :	
Submitted by :	
Company :	

Settlement A/C :			
Trading Date :		**Date of Margin Call Issued by the EMC:**	

Reason(s) for Reassessment

We are submitting this Request for Reassessment of Estimated Net Exposure in accordance with Section 7.4.3, Chapter 2 of the Market Rules as we have a reasonable basis to believe that there is a manifest error in the determination of our estimated net exposure ("ENE") by the EMC under section 7.4.2 and that the absence of such error:

☐ would not have required the making of any margin call by the EMC under section 7.4.2 of Chapter 2 of the Market Rules; AND/OR

☐ would have resulted in our ENE (if determined correctly) to be either greater than 110%, or lesser than 90%, of the ENE presently determined by the EMC for the purposes of section 7.4.2 of Chapter 2 of the Market Rules.

Proposed Adjustment to ENE

[*Please state the nature of the error, the proposed correction to ENE - with the mathematical working*]

Market Participant must provide supporting materials to support the abovesaid request for reassessment of ENE.

(*This Form (duly completed) must be received by the EMC no later than 12pm on the first business day following the date of the margin call issued by the EMC.)*

EMC Internal Use:
Date
Receipt : ______________________ Received by : __________________________