

## Notice of Market Rules Modification

**Paper No.:** EMC/RCP/82/2015/333  
**Rule Reference:** Section 3.7.2 of Chapter 7  
**Proposer:** EMC, Market Administration  
**Date Received by EMC:** 5 August 2015  
**Category Allocated:** 2  
**Status:** Approved by EMA  
**Effective Date:** 28 April 2016

**Date considered by Rules Change Panel:** 08 September 2015  
**Date considered by EMC Board:** 13 October 2015  
**Date considered by Energy Market Authority:** 09 November 2015

The formula for calculating Net Participant Settlement Credit (NPSC) is proposed to be amended to be the aggregate of net account settlement credits (NASC) over all of the settlement accounts associated with the Market Participant.

The RCP by majority vote recommends that the EMC Board adopt the proposed rule modifications.

**Proposed rule modification:**

See attached paper.

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

PAPER NO. : **EMC/BD/07/2015/10(b)**

RCP PAPER NO. : **EMC/RCP/82/2015/333**

SUBJECT : **RECTIFICATION OF SETTLEMENT FORMULA FOR NET PARTICIPANT SETTLEMENT CREDIT**

FOR : **DETERMINATION**

PREPARED BY : **WANG JING  
AVP, MARKET ADMINISTRATION**

REVIEWED BY : **PAUL POH LEE KONG  
EVP, MARKET ADMINISTRATION**

DATE OF MEETING : **08 SEPTEMBER 2015**

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### **Executive Summary**

This paper seek to amend the formula for Net Participant Settlement Credit (NPSC) of a Market Participant (MP), such that when a MP has more than one settlement account, its NPSC will be the aggregate of the net account settlement credits (NASC) over all of its settlement accounts.

The RCP recommend that the EMC Board **adopt** this proposal.

## 1. Introduction

This paper assesses the rules change proposal to amend the settlement formula that is used to calculate the Net Participant Settlement Credit (NPSC).

## 2. Background

Currently, under Market Rules (section 3.7 of Chapter 7), EMC is required to calculate the net account settlement credit (NASC) for each given settlement account and for each given settlement interval. NASC is the aggregate of the various settlement amounts for transactions in/for a given settlement interval in respect of a given settlement account. Specifically, such settlement amounts include (among others) the settlement amounts in respect of the following:

- Energy
- Regulation
- Reserve
- Financial Transmission Rights (not in effect)
- Forward Sales Contracts
- Vesting Contracts
- Half-hourly Energy Uplift Charge
- Monthly Energy Uplift Charge

In addition to NASC, the Market Rules also require a Net Participant Settlement Credit (NPSC) to be calculated for each MP<sup>1</sup>. The formula used for the calculation of NPSC, as prescribed in the Market Rules, is as shown below.

Section 3.7.2 of Chapter 7

Subject to section 1.3, the *EMC* shall determine the net participant *settlement* credit (NPSC) for each *market participant* and *market support services licensee* in each *settlement interval* in accordance with the following formula:

$$\text{NPSC}_h^k = \text{NASC}_h^{a(k)}$$

where:

- $h$  = a *settlement interval*
- $k$  = a *market participant* or *market support services licensee*
- $a(k)$  = the *settlement account*  $a(k)$  associated with *market participant* or *market support services licensee*  $k$

Based on the above formula, the net settlement credit for a MP is the same as the net settlement credit for the settlement account that is associated with the MP.

## 3. Analysis

In accordance with Market Rules (Section 2.1.2 of Chapter 7), EMC is required to establish and maintain a settlement account for each MP. Based on original market design, by default there is only one settlement account for each MP. The MP shall be responsible for the settlement payments made into or from that account and all payments in respect of that MP shall be made through that settlement account only.

<sup>1</sup> In the context of this paper, a reference to a MP includes a reference to the Market Support Services Licensee.

An exception is required when a MP has embedded generation facilities (EGF). Under section 2.1.2 of Chapter 7 of Market Rules, a separate settlement account is required to be established for each group of EGF. Therefore, a MP could have more than one settlement account if he has

- two or more groups of EGF; or
- one group of EGF and other facilities.

As the NPSC is meant to reflect the net settlement credit that is payable or receivable by the MP, when a MP has multiple settlement accounts, NPSC should be the aggregate of the net settlement credits of all settlement accounts associated with this MP.

Thus the correct formula should be

$$NPSC_h^k = \sum_{a(k)} NASC_h^{a(k)}$$

where:

$h$  = a *settlement interval*

$k$  = a *market participant or market support services licensee*

$a(k)$  = the *settlement account a(k) associated with market participant or market support services licensee k*

$\sum_{a(k)}$  = sum over all settlement accounts  $a(k)$  associated with market participant or market support services licensee  $k$

#### 4. Conclusion

The formula for calculating Net Participant Settlement Credit (NPSC) in section 3.7.2 of Chapter 7 of the Market Rules is proposed to be amended to be the aggregate of net account settlement credits (NASC) over all of the settlement accounts associated with the MP.

#### 5. Implementation process

With this rules change, EMC will prepare a summary for each MP, which will show the aggregate settlement amount, including NPSC, for each MP.

To minimize the implementation cost, system changes will be made together with those for the implementation of the Demand Response Program. The estimated implementation effort is shown below.

<u>Time Estimates</u>	Man days(s)
1. Change Requirement Scoping and Analysis	2
2. Development/Testing/Deployment/Documentation	6
3. User Acceptance Testing (UAT)	2
Total Effort Required	10
<u>Cost</u>	
1. EMC Manpower	\$1,395
2. Vendor cost	\$4,550
Total Cost	\$5,945 (Within EMC's Budget)

## 6. Consultation

We have published the rule modification proposal on the EMC website for comments. The following comments have been received.

Comments from SP PowerAssets

1) We note that an exception occur when a MP has embedded generation facilities. We would like to understand how EMC handle a MP with embedded generation facilities now based on the current drafting of the Market Rules?

### EMC's response

A MP may have two or more settlement accounts if he has embedded generation facilities. Currently, one set of settlement statements will be issued for each settlement account. Each set will just show the net account settlement credit associated with corresponding settlement account. NPSC is not shown in any settlement statements.

2) We note that this Rule Change is not simply proposing an amendment to the Market Rules but also system changes. Can EMC provide further clarity on the extent of changes required in the system and the associated incremental costs?

### EMC's response

With this rules change, EMC will prepare a participant summary report for each MP in addition to existing settlement statements. The participant summary report will show the aggregate settlement amount (including NPSC) at participant level. Correspondingly, EMC's instruction to the clearing bank to debit/credit MP's bank account will be also based on the net settlement amount at participant level.

The estimated implementation cost is \$5945 within EMC's budget.

3) Can EMC provide a Cost-Benefit analysis to support the implementation of this Rules Change?

### EMC's response:

This proposal aims to correct an error in the settlement formula. With this change, MPs will be able to see the settlement amount at participant level. This would benefit especially those MPs who have multiple settlement accounts.

The implementation cost is minimal.

## 7. Legal sign off

EMC's external legal counsel has indicated that because of the technical nature of the rule modification proposal he is not able to provide a legal signoff.

## 8. RCP's Decision at the 82<sup>nd</sup> RCP Meeting

At the 82<sup>nd</sup> RCP meeting, the RCP by majority vote **supported** the proposed rule modifications. The details of the votes are as follows:

The RCP members who voted to support:

- |    |                    |  |
|----|--------------------|--|
| 1. | Ms. Priscilla Chua | Representatives of Generation Licensee         |
| 2. | Mr. Marcus Tan     | Representatives of Generation Licensee         |
| 3. | Ms. Grace Chiam    | Representatives of Generation Licensee         |
| 4. | Mr. Sean Chan      | Representatives of Retail Electricity Licensee |
| 5. | Mr. Daniel Lee     | Representatives of Retail Electricity Licensee |

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| 6.  | Mr. Luke Peacocke | Representatives of Retail Electricity Licensee          |
| 7.  | Mr. Dallon Kay    | Representative of Wholesale Electricity Trader          |
| 8.  | Mr. Lawrence Lee  | Representative of the market support services licensees |
| 9.  | Dr. Toh Mun Heng  | Representative of Consumers of Electricity in Singapore |
| 10. | Ms. Frances Chang | Representative of Consumers of Electricity in Singapore |

The RCP member who voted to abstain:

1. Mr Soh Yap Choon Representative of PSO

## 9. Recommendations

The RCP recommends that the EMC Board

- a. **adopt** the rule modification proposal to amend Section 3.7.2, Chapter 7 as set out in the Annex 1;
- b. **seek** EMA's approval of the rule modification proposal; and
- c. **recommend** that the rule modification proposal come into force together with the roll-out of the Demand Response Program project.

**ANNEX 1 Proposed Rules Modification**

Existing Rules (Release 1 July 2015)	Proposed Rules (Deletions represented by strikethrough text and addition double underlined)	Reason for Modification
<p>Chapter 7 Settlement</p> <p><b>3.7 <u>NET SETTLEMENT INTERVAL CREDITS</u></b></p> <p>...</p> <p>3.7.2 Subject to section 1.3, the <i>EMC</i> shall determine the net participant <i>settlement</i> credit (NPSC) for each <i>market participant</i> and <i>market support services licensee</i> in each <i>settlement interval</i> in accordance with the following formula:</p> $NPSC_h^k = NASC_h^{a(k)}$ <p>where:</p> <p>h = a <i>settlement interval</i></p> <p>k = a <i>market participant</i> or <i>market support services licensee</i></p> <p>a(k) = the <i>settlement account</i> a(k) associated with <i>market participant</i> or <i>market support services licensee</i> k</p>	<p>Chapter 7 Settlement</p> <p><b>3.7 <u>NET SETTLEMENT INTERVAL CREDITS</u></b></p> <p>...</p> <p>3.7.2 Subject to section 1.3, the <i>EMC</i> shall determine the net participant <i>settlement</i> credit (NPSC) for each <i>market participant</i> and <i>market support services licensee</i> <del>in</del><u>for</u> each <i>settlement interval</i> in accordance with the following formula:</p> $NPSC_h^k = \sum_{a(k)} NASC_h^{a(k)}$ <p>where:</p> <p>h = a <i>settlement interval</i></p> <p>k = a <i>market participant</i> or <i>market support services licensee</i></p> <p>a(k) = the <i>settlement account</i> a(k) associated with <i>market participant</i> or <i>market support services licensee</i> k</p> <p><u><math>\sum_{a(k)}</math></u> <u>= sum over all</u> <u><i>settlement accounts</i></u> <u>a(k)</u> <u>associated with</u> <u><i>market participant</i></u> <u>or</u> <u><i>market support services licensee</i></u> <u>k</u></p>	<p>To amend the formula for NPSC such that it is the sum of the NASC over all of the settlement accounts associated with a given market participant or market support services licensee (as the case may be).</p>