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| Rule Change Title: | Market Rules Modification For Tendering Of The Non-Contestable  Load |
| Submitted By : Company: Date: Telephone No. | Ms Nerine Teo Energy Market Company Pte Ltd 5 March 2010 67793000 |
| Rules Version/Chapter/Section No. | Version 01 Jan 2010 Chapter 7, Sections 2.5, 3.6, 5.4 Version 17 June 2009 Market Manual, Market Operations – Settlements, Section 3.3 |
| Description of Market Rule | See first column of the table in Annex 1 and Annex 2. |
| Reasons for amendment | Pursuant to Section 46(2)(b) of the Electricity Act, the EMA has directed the EMC to modify the Market Rules to give effect to the EMA's policy decision to tender out a portion of the non-contestable electricity demand for the generation companies to bid on a competitive basis. |
| Proposed Amendment | See second column of the table in Annex 1 and Annex 2. |
| Impact of proposed amendment on MP, MO, PSO and general public | Under the proposed rule modifications, <br><br> − MPs will have additional settlement items in their vesting contract debits/credits, namely Tender Vesting Price (TVP), Tender Vesting Quantity (TVQ) as well as a re-name of the existing Hedge Price (HP) and Hedge Quantity (HQ) to Allocated Vesting Price (AVP) and Allocated Vesting Quantity(AVQ) <br><br> − MSSL will have to include data on TVP and TVQ in the vesting contract data submitted to EMC <br><br> − MSSL will have a revised Vesting Contract Reference Price. <br><br> − EMC will be required to undertake system changes to incorporate the new settlement items as a result of this tender process. |

| EMC's Comments | - The proposed rule amendments are made pursuant to the EMA's directive made under Section 46(2)(b) of the Electricity Act.<br><br>- The EMA circulated the rule changes for industry comments on 23 February 2010 and no comments were received.<br>- EMA has on 5 March 2010  approved the market rules/market manual modifications to take effect on  1 April 2010 |
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| Existing Rules (Release 1 Oct 2009) | Proposed Rules (Deletions represented by strikethrough text and additions underlined) | Reasons for Modification |
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| **CHAPTER 7** | **CHAPTER 7** | |
| **2.5.**     **VESTING CONTRACT DATA**<br><br>**Explanatory Note: It is assumed that there will only ever be one MSSL that deals with the EMC for the purpose of settling vesting contracts with generators and that no assignment of these contracts will be permitted by the MSSL. This MSSL will be a party to vesting contracts with generators that are intended both to control generator market power and to hedge consumers against "uncontrollable" variations in the USEP. Under the vesting contracts, the MSSL will provide the EMC an electronic file containing contract quantity and strike price information for each settlement interval and for each vesting contract generator settlement account for 3 months at a time. In its settlement process the EMC will, for each settlement interval, determine the settlement adjustment required so that the vesting contract generators are effectively paid, and the MSSL effectively pays, the contract strike price on the contract quantity. This is done in such a way as to require no other payments between the MSSL and the generators for the purpose of settling the vesting contracts. A generator subject to vesting contracts will receive vesting contract payments when its weighted average MEP (or Vesting Contract Reference Price) is "low" relative to prices in the vesting contracts and will make vesting contract payments when its weighted average MEP (or Vesting Contract Reference Price) is "high" relative to these prices. The MSSL will determine the** | **2.5.**     **VESTING CONTRACT DATA**<br><br>**Explanatory Note: It is assumed that there will only ever be one MSSL that deals with the EMC for the purpose of settling vesting contracts with generators and that no assignment of these contracts will be permitted by the MSSL. This MSSL will be a party to vesting contracts with generators that are intended both to control generator market power and to hedge consumers against "uncontrollable" variations in the USEP. The total vesting contract quantity for each generator may comprise one or more vesting quantity or vesting quantities:**<br><br>**(i)**     **awarded by the Authority and subsequently allocated by MSSL under a vesting contract (each such vesting quantity is referred to in this Section 2.5 as a "tender vesting quantity"); and**<br><br>**(ii)**     **allocated by the MSSL under a vesting contract (other than tender vesting quantities) (each such vesting quantity is referred to in this Section 2.5 as a "allocated vesting quantity").**<br><br>**For the purposes of this Section 2.5, a vesting quantity is regarded as "awarded" if it is either awarded by the Authority to a market participant in respect of a successful tender offer, or otherwise directed by the Authority to be allocated by the MSSL to the market participant in respect of any tender offer, made by that market participant in respect of a given tender called by** | Updated to clarify that the total vesting contract quantity that a genco holds may be comprised of one or more vesting quantity or quantities:<br><br>(i) awarded by the Authority pursuant to the Authority's tendering regime and subsequently allocated by the MSSL under a vesting contract (such vesting quantities are hereafter referred to in these Reasons for Modifications as vesting quantities which are "awarded by tender"); and<br><br>(ii) allocated by the MSSL under a vesting contract (otherwise than as described in (i)) (such vesting quantities are hereafter referred to in these Reasons for Modifications as vesting quantities which are "directly allocated").<br><br>To make clear that a vesting quantity will be regarded as |

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| **expected cost of these vesting contract payments to generators before the beginning of the 3 month period, modifying this by any shortfall or surplus between what it expected to pay and what it actually paid in the previous 3 months, and will use this information to determine a uniform price for non-contestable consumers and a partial hedge for contestable consumers. Contestable consumers will receive a hedge as it is likely that the required level of contracting of generators to manage market power will exceed the total level of non-contestable load.** | **<u>the Authority pursuant to or in connection with a tendering regime implemented by the Authority for the supply of energy for non-contestable load.</u> Under the vesting contracts, the MSSL will provide the EMC an electronic file containing contract quantity and strike price information for each settlement interval and for each vesting contract generator settlement account for 3 months at a time. In its settlement process the EMC will, for each settlement interval, determine the settlement adjustment required so that the vesting contract generators are effectively paid, and the MSSL effectively pays, the contract strike price on the contract quantity. This is done in such a way as to require no other payments between the MSSL and the generators for the purpose of settling the vesting contracts. A generator subject to vesting contracts will receive vesting contract payments when its weighted average MEP (or Vesting Contract Reference Price) is "low" relative to prices in the vesting contracts and will make vesting contract payments when its weighted average MEP (or Vesting Contract Reference Price) is "high" relative to these prices. The MSSL will determine the expected cost of these vesting contract payments to generators before the beginning of the 3 month period, modifying this by any shortfall or surplus between what it expected to pay and what it actually paid in the previous 3 months, and will use this information to determine a uniform price for non-contestable consumers and a partial hedge for contestable consumers. Contestable consumers will receive a hedge as it is likely that the required level of contracting of generators to manage market power will exceed the total level of non-contestable load.** | awarded if it is either awarded in respect of a successful tender offer, or directed by the Authority to be allocated by the MSSL to a genco in respect of the genco's tender offer made in respect of a given tender called by the Authority pursuant to or in connection with a tendering regime implemented by the Authority.<br><br>For vesting contract quantities awarded by tender for a period more than 3 months, MSSL will send to EMC the relevant data for only the upcoming quarter.<br><br>No change to MSSL's existing 3-month timeline for the submission of the electronic file as vesting quantities awarded under a tender will follow existing vesting contract duration. |

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| 2.5.1 The *PSO* and the *EMC* shall, as directed and in such form and at such times as may be specified by the *Authority*, provide to the *MSSL counterparty* such data as *the Authority* may specify as being necessary for the determination by the *MSSL counterparty* of hedge quantities and hedge prices under each *vesting contract* in accordance with section 2.5.2. | 2.5.1 The *PSO* and the *EMC* shall, as directed and in such form and at such times as may be specified by the *Authority*, provide to the *MSSL counterparty* such data as *the Authority* may specify as being necessary for the determination by the *MSSL counterparty* of ~~hedge~~ vesting quantities and ~~hedge~~ vesting prices under each *vesting contract* in accordance with section 2.5.2. | To re-name "hedge quantity" and "hedge price" to "vesting quantity" and "vesting price" respectively. |
| 2.5.2 The *MSSL counterparty* shall, in accordance with such procedures and at such times as may be specified in the applicable *vesting contract*, determine for each *settlement account* associated with a *market participant* that is subject to a *vesting contract* the hedge quantity (HQ) and the hedge price (HP) applicable to that *settlement account* for each *settlement interval* in the *vesting period* as follows:<br><br>$HQ_h{}^a$ = hedge quantity (in MWh) for *settlement interval* h and *settlement account* a<br><br>$HP_h{}^a$ = hedge price (in \$/MWh) for *settlement interval* h and *settlement account* a | 2.5.2 The *MSSL counterparty* shall, in accordance with such procedures and at such times as may be specified in the applicable *vesting contract*, determine for each *settlement account* associated with a *market participant* that is subject to a *vesting contract*, each vesting quantity (with its associated vesting price) for ~~the hedge quantity (HQ) and the hedge price (HP) applicable to~~ that *settlement account* for each *settlement interval* in the *vesting period* as follows:<br><br>~~$HQ_h{}^a$~~ $\underline{AVQ_h{}^a}$ = ~~hedge~~ allocated vesting quantity (in MWh) for *settlement interval* h ~~and~~ for *settlement account* a<br><br>~~$HP_h{}^a$~~ $\underline{AVP_h{}^a}$ = ~~hedge~~ allocated vesting price (in \$/MWh) associated with a given allocated vesting quantity for *settlement interval* h ~~and~~ for *settlement account* a<br><br>$\underline{TVQ_{h,b}{}^a}$ = tender vesting quantity (in MWh) awarded for *settlement interval* h for *settlement account* a, for tender | To re-name "hedge quantity" and "hedge price" to "vesting quantity" and "vesting price" respectively. To make clear that vesting quantities and their associated prices could be awarded by tender or directly allocated.<br><br>To introduce tender vesting quantities (TVQ) (and their associated tender vesting prices (TVP)) that are awarded by tender. To change the existing "HQ" notation to refer to vesting quantities which are directly allocated (AVQ) and to change the existing "HP" notation to refer to vesting prices associated with vesting quantities which are directly allocated (AVP). |

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| | tranche b<br><br>$\underline{TVP_{h,b}}^{\underline{a}}$ = tender vesting price (in $/MWh) associated with a given tender vesting quantity (in MWh) awarded for *settlement interval* h for *settlement account* a, for tender tranche b<br><br>where "tender tranche" means a tranche in a tender called by the *Authority* pursuant to a tendering regime implemented by the *Authority* for the supply of *energy* for non-contestable *load*. | To reflect that each tender vesting quantity awarded by the Authority would be specific to a given tender tranche and that each tender vesting price would be associated with a given tender vesting quantity. |
| 2.5.3 The *MSSL counterparty* shall, in accordance with such procedures and at such times as may be specified in the applicable *market manual*, provide the EMC with an electronic data file containing the hedge quantities and prices referred to in section 2.5.2 pertaining to each *vesting contract* for a given *vesting period*. Such *vesting contract* data shall describe, for each *vesting contract*, the hedge quantity and the hedge price applicable to each applicable *settlement account* for each *settlement interval* in the *vesting period*. | 2.5.3 The *MSSL counterparty* shall, in accordance with such procedures and at such times as may be specified in the applicable *market manual*, provide the *EMC* with an electronic data file containing ~~the~~ all relevant ~~hedge~~ vesting quantities and prices referred to in section 2.5.2 pertaining to each *vesting contract* for a given *vesting period*. Such *vesting contract* data shall describe, for each *vesting contract*, ~~the hedge quantity and the hedge price applicable to each applicable settlement account~~ for ~~each settlement interval~~ in the ~~vesting period~~ each relevant vesting quantity with its associated vesting price for that *settlement account* for each *settlement interval* in the *vesting period.* | To clearly specify that the MSSL is required to submit to the EMC each vesting quantity with its associated vesting price for each settlement account for each settlement interval in a given vesting period. |
| **3.6 VESTING CONTRACT SETTLEMENT CREDITS** | **3.6 VESTING CONTRACT SETTLEMENT CREDITS** | |
| 3.6.1 The *EMC* shall determine the *vesting contract settlement* credit (VCSC) applicable to each *settlement account* in each *settlement interval* in | 3.6.1 The *EMC* shall determine the *vesting contract settlement* credit (VCSC) applicable to each *settlement account* in each *settlement interval* in accordance with the following | This section sets out the methodology used to calculate the vesting contract settlement |

# ANNEX 1: MARKET RULE MODIFICATIONS

accordance with the following formula:

$$VCSC_h^a = (HP_h^a - VCRP_h^a) \times HQ_h^a$$

for all a≠k

where:

$$VCRP_h^a = \sum_{m(a)} MEP_h^{m(a)} \times MAX[IEQ_h^{m(a)}, 0] / \sum_{m(a)} MAX[IEQ_h^{m(a)}, 0]$$

= Vesting Contract Reference Price (VCRP) for *settlement account* a, and

if $\sum_{m(a)} MAX[IEQ_h^{m(a)}, 0] = 0$, then $VCRP_h^a$ equals to the simple average of its MEPs.

MAX[X, 0] = maximum of X or 0

a = a *settlement account*

h = a *settlement interval*

k = the *settlement account* associated with the *MSSL counterparty*

$\sum m(a)$ = sum over all *GRFs* m(a) and *GSFs* m(a) associated with *settlement account* a

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formula:

$$VCSC_h^a = \cancel{(HP_h^a - VCRP_h^a) \times HQ_h^a}$$
$$\underline{\left(AVP_h^a - VCRP_h^a\right) \times AVQ_h^a +}$$
$$\underline{\sum_{b=1}^{n} \left[\left(TVP_{h,b}^a - VCRP_h^a\right) \times TVQ_{h,b}^a\right]}$$

for all a≠k

where:

$$VCRP_h^a = \sum_{m(a)} MEP_h^{m(a)} \times MAX[IEQ_h^{m(a)}, 0] / \sum_{m(a)} MAX[IEQ_h^{m(a)}, 0]$$

= Vesting Contract Reference Price (VCRP) <u>for settlement interval h</u> for *settlement account* a, and

if $\sum_{m(a)} MAX[IEQ_h^{m(a)}, 0] = 0$, then $VCRP_h^a$ equals to the simple average of its MEPs.

$$MAX[\underline{IEQ_h^{m(a)}}, \cancel{X}, 0] = $$
maximum of $\underline{IEQ_h^{m(a)}}$ $\cancel{X}$ or 0

a = a *settlement account*

<u>b = a tender tranche as defined in section 2.5.2</u>

h = a *settlement interval*

k = the *settlement account* associated with the *MSSL counterparty*

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credit for each MP.

The first portion of the equation redefines the notation for the existing vesting price (HP) and vesting quantity (HQ) to allocated vesting price (AVP) and allocated vesting quantity (AVQ), to distinguish them from tender vesting quantities and their associated tender vesting prices.

The second portion of the equation provides tender vesting quantities (TVQ), awarded by tender under one or more tender tranches, and their associated tender vesting prices (TVP).

The equation is structured such that when the 2 portions are combined together, only one vesting contract settlement credit will be determined for each settlement account.

To define the notation, b, to refer to a tender tranche as defined in section 2.5.2.

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| **Explanatory Note: $VCRP_h^a$ is infinite when the sum of $MAX[IEQ_h^{m(a)}, 0]$ is zero. In this instance, the $VCRP_h^a$ will be the simple average of the settlement account's MEPs.** $$VCSC_h^k = -\sum_{a \neq k} VCSC_h^a$$ where: a= a *settlement account* h = a *settlement interval* k= the *settlement account* associated with the *MSSL counterparty* | $\sum_{m(a)}$ = sum over all *GRFs* m(a) and *GSFs* m(a) associated with *settlement account* a **Explanatory Note: $VCRP_h^a$ is infinite when the sum of $MAX[IEQ_h^{m(a)}, 0]$ is zero. In this instance, the $VCRP_h^a$ will be the simple average of the settlement account's MEPs.** $$VCSC_h^k = -\sum_{a \neq k} VCSC_h^a$$ where: a= a *settlement account* h = a *settlement interval* k= the *settlement account* associated with the *MSSL counterparty* | |
| **Explanatory Note: To enable MSSL to allocate $VCSC_h^k$ among the relevant parties, EMC will compute a uniform vesting contract reference price for MSSL ($VCRP_h^k$)as follows:** $$VCRP_h^k = (VCSC_h^k / \sum_{a \neq k} HQ_h^a) + HP_h$$ | **Explanatory Note: To enable MSSL to allocate $VCSC_h^k$ among the relevant parties, EMC will compute a uniform vesting contract reference price for MSSL ~~($VCRP_h^k$)~~ $\underline{VCRP_h^k}$ as follows:** $$\cancel{VCRP_h^k = (VCSC_h^k / \sum_{a \neq k} HQ_h^a) + HP_h}$$ $$\underline{VCRP_h^k} = \frac{\sum_a \left[(VCRP_h^a)(AVQ_h^a)\right]}{\sum_a AVQ_h^a}$$ | The equation is amended to comprise allocated vesting prices/quantities, and exclude the effects of tender vesting prices/quantities. |
| **5.4 PRELIMINARY STATEMENT COVERAGE** | **5.4 PRELIMINARY STATEMENT COVERAGE** | |
| 5.4.2.12 the hedge price and hedge quantity referred to in section 2.5 applying to each applicable *market participant's settlement account* in | 5.4.2.12 ~~the hedge price~~ and ~~hedge quantity~~ <u>all vesting prices and vesting quantities,</u> referred to in section 2.5 applying to each applicable *market participant's* | To re-name the hedge quantity and hedge price to vesting quantity and vesting price |

| each *settlement interval* in that *trading day*; | *settlement account* in each *settlement interval* in that *trading day*; | respectively, and to reflect that more than one vesting quantity (and its associated vesting price) may apply to an MP's settlement account for each given settlement interval. |
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**ANNEX 2: MARKET MANUAL MODIFICATIONS**

| Existing Market Operations Market Manual - Settlements (Release 17 June 2009) | Proposed Market Operations Market Manual Settlement Rules (Deletions represented by strikethrough text and additions double underlined) | Reasons for Change |
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| **3.3    FORMAT OF VESTING CONTRACT DATA**<br><br>The *MSSL* shall provide the *EMC* with *vesting contract data* in ASCII format via the Market Participant Server ("MPS").<br><br>In the event that there is a failure in the *electronic information system*, the *MSSL* shall submit the *vesting contract data* to the *EMC* in CSV file format through secure email to settdata@emcsg.com, and telephone EMC-Settlement personnel to confirm receipt prior to deadline stipulated in this market manuals.  As the last resort, the *MSSL* may submit *vesting contract data* in CD format. | **3.3    FORMAT OF VESTING CONTRACT DATA**<br><br>The *MSSL* shall provide the *EMC* with *vesting contract data* in ASCII format via the Market Participant Server ("MPS").<br><br>In the event that there is a failure in the *electronic information system*, the *MSSL* shall submit the *vesting contract data* to the *EMC* in CSV file format through secure email to settdata@emcsg.com, and telephone EMC-Settlement personnel to confirm receipt prior to deadline stipulated in this market manuals.  As the last resort, the *MSSL* may submit *vesting contract data* in CD format. | No change. For reference purposes.<br><br>Rule indicates that MSSL shall submit the vesting contract data to EMC in ASCII format.<br><br>States the alternative forms and channels that the vesting contract data that may be sent to EMC by the MSSL in the event of a failure in the electronic communication network used for exchange of settlement information. |

**ANNEX 2: MARKET MANUAL MODIFICATIONS**

Format of the vesting contract data in CSV file:

## Table Format Example

| Data Item | Field Description | Field Format | Field Type and Length | M/O | Valid Field Values |
|---|---|---|---|---|---|
| Reference | An arbitrary value used to ~~uniquely~~ identify ~~a~~ Vesting Contract <u>data</u>. | | ~~Varchar2(12)~~ <u>VARCHAR2(12)</u> | M | <u>Each vesting contract data reference would be represented in the form "GGYYMMDD-CCC", where:</u><br><br><u>GG refers to the unique generator;</u><br><br><u>YYMMDD refers to given year, month and date;</u><br><br><u>A CCC that starts with a number refers to Vesting Contract data with an Allocated Vesting Quantity with an associated Allocated Vesting Price;</u><br><br><u>A CCC that begins with "T" refers to Vesting Contract data with a Tender Vesting Quantity and an associated Tender Vesting Price;</u><br><br><u>The running numbers that follow "T" distinguishes between Tender Vesting Quantities under different tranches.</u> |
| Name | ~~A description of the contract~~<br><br><u>Name of Generation Company</u> | | ~~VarChar2(12)~~ <u>VARCHAR2(30)</u> | M | . |
| Settlement Account ~~Id~~ | The unique Settlement Account identifier that matches that within the NEM System. | | ~~VarChar2(12)~~ <u>VARCHAR2(12)</u> | M | |
| Settlement Date | ~~date~~ <u>The Settlement Date</u> | DD-Mon-YYYY | DATE | M | ~~The Settlement Account ID's are yet to be defined.~~ |
| <u>Settlement</u> Period | The period number the quantity relates to. | | ~~number~~ <u>NUMBER(2)</u> | M | 1 to 48 |
| Contract | ~~The Vesting Contract~~ | | ~~Number(13,2)~~ | M | ~~Within each quarter the price~~ |

**ANNEX 2: MARKET MANUAL MODIFICATIONS**

| Data Item | Field Description | Field Format | Field Type and Length | M/O | Valid Field Values |
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| Price | ~~Price in $MWh~~<br><br>The Allocated Vesting Price or Tender Vesting Price in $/MWh | | NUMBER(13,2) | | ~~must be fixed. Though the price can be negative.~~<br><br>The Allocated Vesting Price is fixed for the quarter, but could vary across quarters.<br><br>The Tender Vesting Price could vary across tender tranches and quarters. |
| Contract Quantity | ~~The Vesting Contract Quantity~~<br><br>The Allocated Vesting Quantity or Tender Vesting Quantity<br>This should be a positive number in kWh in each half-hour period. | | ~~number(13,2)~~<br>NUMBER(13,2) | M | ~~The Vesting Contract Quantity can vary over each Settlement Interval.~~<br><br>The Allocated Vesting Quantity can vary over each Settlement Interval, and the quantity cannot be negative.<br><br>The Tender Vesting Quantity can vary over each Settlement Interval and the quantity cannot be negative. |