

Rule modification title	New Vesting Regime Framework
Submitted By: Date:	Energy Market Authority (EMA) 1 June 2023
Rules Version/ Chapter/ Section	<p><u>Market Rules</u> (Version 1 January 2023):</p> <ul style="list-style-type: none"> <li>• Chapter 6 Appendix J</li> <li>• Chapter 7 section 2.5</li> <li>• Chapter 7 section 3.6</li> </ul> <p><u>Market Manuals</u> (Version 23 May 2022)</p> <ul style="list-style-type: none"> <li>• Market Operations - Settlement (Chapter 7 Market Rules) section 3.5</li> </ul>
Description of Market Rules	<p>Please refer to <b>Annex 1</b> for the proposed modifications to the market rules.</p> <p>Please refer to <b>Annex 2</b> for the proposed modifications to the market manuals.</p>
Reasons for amendment	<p>The EMA is launching the Vesting Regime Framework (“New Framework”) for non-contestable consumer load to be in force from 1 July 2023 to 30 June 2028, and has published (available <a href="#">here</a><sup>1</sup>) the corresponding “Procedures for Calculating the Components of the Vesting Contracts for 1 July 2023 to 30 June 2028”.</p> <p>Under the New Framework, EMA may issue vesting contracts under various schemes which will include, in the first instance, the Base Vesting Scheme and Tender Vesting Scheme.</p> <p>In order to facilitate the timely roll-out of the Base Vesting Scheme and the Tender Vesting Scheme under the New Framework, EMC proposes to adapt from the existing settlement framework for Balance Vesting Scheme and the LNG Vesting Scheme to settle the base vesting and tender vesting contracts.</p> <p>Modifications to the Market Rules and Market Manuals are proposed to facilitate the implementation of this New Framework.</p>
Impact of proposed amendment on MPs, MO, PSO and general public	

<sup>1</sup> [https://www.ema.gov.sg/cmsmedia/Licensees/VCP\\_1\\_Jul\\_2023-30\\_Jun\\_2028\\_2.0.pdf](https://www.ema.gov.sg/cmsmedia/Licensees/VCP_1_Jul_2023-30_Jun_2028_2.0.pdf)

EMC's Comments

The proposed modifications are made pursuant to the EMA's directive made under Section 46(3)(b) of the Electricity Act.

The modifications have been approved by the EMA and will take effect on 1 July 2023.

**ANNEX 1: Proposed Changes to Market Rules**

Existing Market Rules (1 January 2023)	Proposed Rule Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reasons for Modification
Chapter 7	Chapter 7	
2 SETTLEMENT DATA	2 SETTLEMENT DATA	
<p><b>2.5 <u>VESTING CONTRACT DATA</u></b></p> <div style="border: 1px solid black; padding: 10px;"> <p><b>Explanatory Note:</b></p> <p>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 of the following vesting quantity or vesting quantities:</p> <ul style="list-style-type: none"> <li>(i) tender vesting quantity, being the vesting quantity awarded by the Authority pursuant to the Authority’s Tendering Regime and subsequently allocated by the MSSL under a vesting contract;</li> <li>(ii) LNG vesting quantity, being the vesting quantity determined by the Authority pursuant to the Authority’s LNG Vesting Scheme and subsequently allocated by the MSSL under a vesting contract; and</li> <li>(iii) balance vesting quantity, being the vesting quantity allocated as such by the MSSL under a vesting contract.</li> </ul> </div>	<p><b>2.5 <u>VESTING CONTRACT DATA</u></b></p> <div style="border: 1px solid black; padding: 10px;"> <p><b>Explanatory Note:</b></p> <p>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 <del>both to control generator market power and to hedge consumers</del> <u>to hedge non-contestable consumers</u> against “uncontrollable” variations in the USEP. The total vesting contract quantity for each generator may comprise one or more of the following vesting quantity or vesting quantities:</p> <ul style="list-style-type: none"> <li><del>(i) tender vesting quantity, being the vesting quantity awarded by the Authority pursuant to the Authority’s Tendering Regime and subsequently allocated by the MSSL under a vesting contract;</del></li> <li><del>(ii) LNG vesting quantity, being the vesting quantity determined by the Authority pursuant to the Authority’s LNG Vesting Scheme and subsequently allocated by the MSSL under a vesting contract; and</del></li> <li><del>(iii) balance vesting quantity, being the vesting quantity allocated as such by the MSSL under a vesting contract.</del></li> </ul> </div>	<p>To update with the references used under the New Vesting Regime, and to align with the intent thereunder.</p>

Existing Market Rules (1 January 2023)	Proposed Rule Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reasons for Modification
<p>“Tendering Regime” means all those agreements and arrangements referred to in the Authority’s final determination paper of “Tendering of a portion of the non-contestable load” circulated to the industry on 26 October 2009 and “LNG Vesting Scheme” means the policy to encourage the uptake of regasified liquefied natural gas (“LNG”) through the existing Vesting Contracts Regime as indicated in the Authority’s final policy of “LNG Vesting Scheme” dated 30 October 2009 and all subsequent notifications by the Authority.</p> <p>The MSSL will provide the EMC an electronic file containing vesting quantity and vesting price information for each settlement interval and for each vesting contract generator settlement account for each vesting period (i.e. a calendar quarter).</p> <p>A generator subject to vesting contracts will receive a positive vesting contract settlement credit when its weighted average MEP (or Vesting Contract Reference Price) is “low” relative to the relevant vesting prices in the vesting contract, and the MSSL will receive a corresponding negative vesting contract settlement credit. Conversely, the generator will receive a negative vesting contract settlement credit when its weighted average MEP (or Vesting Contract Reference Price) is “high” relative to the relevant vesting prices in the vesting contract, and the MSSL will receive a corresponding positive vesting contract settlement credit.</p> <p>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</p>	<p>(i) <u>base vesting quantity, being the vesting quantity determined by the Authority and subsequently allocated by the MSSL under a vesting contract; and</u></p> <p>(ii) <u>tender vesting quantity, being the vesting quantity determined by the Authority pursuant to the Authority’s Tender Vesting Scheme and subsequently allocated by the MSSL under a vesting contract.</u></p> <p><del>“Tendering Regime” means all those agreements and arrangements referred to in the Authority’s final determination paper of “Tendering of a portion of the non-contestable load” circulated to the industry on 26 October 2009 and “LNG Vesting Scheme” means the policy to encourage the uptake of regasified liquefied natural gas (“LNG”) through the existing Vesting Contracts Regime as indicated in the Authority’s final policy of “LNG Vesting Scheme” dated 30 October 2009 and all subsequent notifications by the Authority.</del></p> <p><u>“Base Vesting Scheme” and “Tender Vesting Scheme” means all those agreements and arrangements referred to in the Authority’s paper on the “Procedures for Calculating the Components of the Vesting Contracts for 1 July 2023 to 30 June 2028” on EMA’s website.</u></p> <p>The MSSL will provide the EMC an electronic file containing vesting quantity and vesting price information for each settlement interval and for each vesting contract generator settlement account for each vesting period (i.e. a calendar quarter).</p> <p>A generator subject to vesting contracts will receive a positive vesting contract settlement credit when its weighted average MEP (or Vesting Contract Reference Price) is “low” relative to the relevant vesting prices in the vesting contract, and the MSSL will receive a corresponding negative vesting contract settlement</p>	

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<div style="border: 1px solid black; padding: 5px;"> <p><b>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.</b></p> </div> <p>2.5.2 The <i>MSSL counterparty</i> shall, in accordance with such procedures and at such times as may be specified in the applicable <i>vesting contract</i>, determine for each <i>settlement account</i> associated with a <i>market participant</i> that is subject to a <i>vesting contract</i>, each vesting quantity (with its associated vesting price) for that <i>settlement account</i> for each <i>settlement interval</i> in the <i>vesting period</i> as follows:</p> <p>BVQ<sub>h</sub><sup>a</sup> = balance vesting quantity (in MWh) allocated for <i>settlement interval</i> h for <i>settlement account</i> a</p> <p>BVP<sub>h</sub><sup>a</sup> = balance vesting price (in \$/MWh) associated with a given balance vesting quantity allocated for <i>settlement interval</i> h for <i>settlement account</i> a</p> <p>LVQ<sub>h</sub><sup>a</sup> = LNG vesting quantity (in MWh) allocated for <i>settlement interval</i> h for <i>settlement account</i> a</p> <p>LVP<sub>h</sub><sup>a</sup> = LNG vesting price (in \$/MWh) associated with a given LNG vesting quantity allocated for <i>settlement interval</i> h for <i>settlement account</i> a</p> <p>TVQ<sub>h,b</sub><sup>a</sup> = tender vesting quantity (in MWh) allocated for <i>settlement interval</i> h for <i>settlement account</i> a, for tender tranche b</p>	<div style="border: 1px solid black; padding: 5px;"> <p><b>credit. Conversely, the generator will receive a negative vesting contract settlement credit when its weighted average MEP (or Vesting Contract Reference Price) is “high” relative to the relevant vesting prices in the vesting contract, and the MSSL will receive a corresponding positive vesting contract settlement credit.</b></p> <p><b>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.</b></p> </div> <p>2.5.2 The <i>MSSL counterparty</i> shall, in accordance with such procedures and at such times as may be specified in the applicable <i>vesting contract</i>, determine for each <i>settlement account</i> associated with a <i>market participant</i> that is subject to a <i>vesting contract</i>, each vesting quantity (with its associated vesting price) for that <i>settlement account</i> for each <i>settlement interval</i> in the <i>vesting period</i> as follows:</p> <p>BVQ<sub>h</sub><sup>a</sup> = <u>balance</u> <u>base</u> vesting quantity (in MWh) allocated for <i>settlement interval</i> h for <i>settlement account</i> a</p> <p>BVP<sub>h</sub><sup>a</sup> = <u>balance</u> <u>base</u> vesting price (in \$/MWh) associated with a given base vesting quantity allocated for <i>settlement interval</i> h for <i>settlement account</i> a</p>	

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<p><math>TVP_{h,b^a}</math> = tender vesting price (in \$/MWh) associated with a given tender vesting quantity allocated for <i>settlement interval</i> h for <i>settlement account</i> a, for tender tranche b</p> <p>where “tender tranche” means a tranche in a tender called by the Authority pursuant to the Tendering Regime for the supply of energy for non-contestable load.</p>	<p><del><math>LVQ_{h^a}</math> = LNG vesting quantity (in MWh) allocated for <i>settlement interval</i> h for <i>settlement account</i> a</del></p> <p><del><math>LVP_{h^a}</math> = LNG vesting price (in \$/MWh) associated with a given LNG vesting quantity allocated for <i>settlement interval</i> h for <i>settlement account</i> a</del></p> <p><math>TVQ_{h,b^a}</math> = tender vesting quantity (in MWh) allocated for <i>settlement interval</i> h for <i>settlement account</i> a, for tender tranche b</p> <p><math>TVP_{h,b^a}</math> = tender vesting price (in \$/MWh) associated with a given tender vesting quantity allocated for <i>settlement interval</i> h for <i>settlement account</i> a, for tender tranche b</p> <p>where “tender tranche” means a tranche in a tender called by the Authority pursuant to the <del>Tendering Regime</del> <u>Tender Vesting Scheme</u> for the supply of energy for non-contestable load.</p>	

<p style="text-align: center;"><b>Existing Market Rules</b> (1 January 2023)</p>	<p style="text-align: center;"><b>Proposed Rule Changes</b> (Deletions represented by strikethrough text and additions represented by double underlined text)</p>	<p style="text-align: center;"><b>Reasons for Modification</b></p>
<p><b>3 NET SETTLEMENT INTERVAL CREDITS</b></p>	<p><b>3 NET SETTLEMENT INTERVAL CREDITS</b></p>	
<p><b>3.6 VESTING CONTRACT SETTLEMENT CREDITS</b></p> <p>3.6.1 The <i>EMC</i> shall determine the vesting contract settlement credit (VCSC) for each <i>settlement account</i> for each <i>settlement interval</i> in accordance with the following formula:</p> $VCSC_h^a = (LVP_h^a - VCRP_h^a) \times LVQ_h^a + (BVP_h^a - VCRP_h^a) \times BVQ_h^a + \sum_{b=1}^n [(TVP_{h,b}^a - VCRP_h^a) \times TVQ_{h,b}^a]$ <p>...</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Explanatory Note: To enable the MSSL to allocate <math>VCSC_h^k</math> among the relevant parties, the EMC will compute a uniform vesting contract reference price for the MSSL's <math>VCRP_h^k</math> as follows:</b></p> <math display="block">VCRP_h^k = \frac{\sum_{a \neq k} [(VCRP_h^a)(LVQ_h^a + BVQ_h^a)]}{\sum_{a \neq k} (LVQ_h^a + BVQ_h^a)}</math> </div>	<p><b>3.6 VESTING CONTRACT SETTLEMENT CREDITS</b></p> <p>3.6.1 The <i>EMC</i> shall determine the vesting contract settlement credit (VCSC) for each <i>settlement account</i> for each <i>settlement interval</i> in accordance with the following formula:</p> <del> <math display="block">VCSC_h^a = (LVP_h^a - VCRP_h^a) \times LVQ_h^a + (BVP_h^a - VCRP_h^a) \times BVQ_h^a + \sum_{b=1}^n [(TVP_{h,b}^a - VCRP_h^a) \times TVQ_{h,b}^a]</math> </del> $VCSC_h^a = (BVP_h^a - VCRP_h^a) \times BVQ_h^a + \sum_{b=1}^n [(TVP_{h,b}^a - VCRP_h^a) \times TVQ_{h,b}^a]$ <p>...</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Explanatory Note: To enable the MSSL to allocate <math>VCSC_h^k</math> among the relevant parties, the EMC will compute a uniform vesting contract reference price for the MSSL's <math>VCRP_h^k</math> as follows:</b></p> <del> <math display="block">VCRP_h^k = \frac{\sum_{a \neq k} [(VCRP_h^a)(LVQ_h^a + BVQ_h^a)]}{\sum_{a \neq k} (LVQ_h^a + BVQ_h^a)}</math> </del> <math display="block">VCRP_h^k = \frac{\sum_{a \neq k} [(VCRP_h^a)(BVQ_h^a + \sum_{b=1}^n TVQ_{h,b}^a)]}{\sum_{a \neq k} (BVQ_h^a + \sum_{b=1}^n TVQ_{h,b}^a)}</math> </div>	<p>To update vesting contract settlement credit (VCSC) calculation in accordance with the New Vesting Regime.</p>

Existing Market Rules (1 January 2023)	Proposed Rule Changes (Deletions represented by strikethrough text and additions represented by double underlined text)	Reasons for Modification
APPENDIX 6J PRICE LIMITS AND CONSTRAINT VIOLATION PENALTIES	APPENDIX 6J PRICE LIMITS AND CONSTRAINT VIOLATION PENALTIES	
<p><b>J.1 <u>MAXIMUM AND MINIMUM PRICES</u></b></p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Explanatory Note:</b></p> <p>“Value of Lost Load” (VoLL) is specified in section J.2.</p> <p>“Cost of Decommitment” (CDC) is specified in section J.2.</p> <p>“Balance Vesting Price” (BVP) is determined by the MSSSL counterparty pursuant to section 2.5.2 of Chapter 7. The rationale for setting the lower bound of the restricted energy bid as such can be found in the Authority’s final determination paper on “Implementing Demand Response in the National Electricity Market of Singapore” dated 28 October 2013.</p> <p>Price bounds are applied at Market Network Nodes.</p> <p>Energy price bounds should be less than the first block of the violation penalties for deficit energy, by at least the maximum expected marginal loss between any two points in the system. Otherwise load shedding could be recommended by the market clearing engine at some nodes because of the losses between those nodes and the generation facility nodes, even though not all generation capacity has been utilised.</p> </div>	<p><b>J.1 <u>MAXIMUM AND MINIMUM PRICES</u></b></p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Explanatory Note:</b></p> <p>“Value of Lost Load” (VoLL) is specified in section J.2.</p> <p>“Cost of Decommitment” (CDC) is specified in section J.2.</p> <p>“<del>Balance</del> <u>Base</u> Vesting Price” (BVP) is determined by the MSSSL counterparty pursuant to section 2.5.2 of Chapter 7. The rationale for setting the lower bound of the restricted energy bid as such can be found in the Authority’s final determination paper on “Implementing Demand Response in the National Electricity Market of Singapore” dated 28 October 2013.</p> <p>Price bounds are applied at Market Network Nodes.</p> <p>Energy price bounds should be less than the first block of the violation penalties for deficit energy, by at least the maximum expected marginal loss between any two points in the system. Otherwise load shedding could be recommended by the market clearing engine at some nodes because of the losses between those nodes and the generation facility nodes, even though not all generation capacity has been utilised.</p> </div>	<p>To update with the references used under the New Vesting Regime.</p>



**ANNEX 2: Proposed Changes to Market Operations Market Manual (Settlement)**

Proposed Changes (Deletions represented by strikethrough text and additions represented by double underlined text)					Reasons for Modification
<b>Chapter 7</b>					
<b>3 VESTING CONTRACT DATA</b>					
<b>3.5 <u>FORMAT OF SUBMISSION OF VESTING CONTRACT DATA</u></b>					
Data Item	Field Description	Field Type and Length	Mandatory/ Optional	Valid Field Values	
Reference	<p>A value used to identify the <i>vesting contract</i> data which is being submitted.</p> <p>Each <i>vesting contract</i> data reference would be represented in the form “GGYYMMDD-CCC”, where:</p> <p>GG represents the particular <i>market participant</i> to which the <i>vesting contract</i> data submission relates;</p> <p>YYMMDD represents the given year, month and day of the first day of the <i>vesting period</i> to which the <i>vesting contract</i> data relates;</p> <p>a CCC that starts with a number represents <i>vesting contract</i> data that is being submitted with a <del>balance base</del> <u>balance base</u> vesting quantity (BVQ) with its associated <del>balance base</del> <u>balance base</u> vesting price (BVP); <u>and</u></p> <p>a CCC that starts with “L” represents <i>vesting contract</i> data that is being</p>	VARCHAR2(12)	Mandatory	GGYYMMDD-CCC	To update with the references used under the New Vesting Regime.

Proposed Changes					Reasons for Modification
(Deletions represented by strikethrough text and additions represented by double underlined text)					
	submitted with a <del>LNG tender</del> <u>vesting quantity (LVQ TVQ)</u> with its associated <del>LNG tender</del> <u>vesting price (LVP TVP)</u> ; and  a <del>CCC that starts with "T" and 2 digits alphanumeric characters</del> <u>represents vesting contract data that is being submitted with a tender vesting quantity (TVQ) with its associated tender vesting price (TVP).</u>				
Name	The name of the <i>market participant</i> to which the <i>vesting contract</i> data submission relates.	VARCHAR2(30)	Mandatory		
Settlement Account	The applicable account identifier for the <i>settlement account</i> of the <i>market participant</i> to which the <i>vesting contract</i> data submission relates.	VARCHAR2(12)	Mandatory		
Settlement Date	The <i>trading day</i> to which the <i>vesting contract</i> data submission relates.	DATE	Mandatory	DD-MMM-YYYY	
Settlement Period	The <i>settlement interval</i> on the specified <i>trading day</i> in the <i>vesting period</i> , to which the relevant vesting quantity with its associated vesting price relate. There are 48 such <i>settlement intervals</i> which must be included for each of such <i>trading day</i> .  With regard to any settlement period in relation to which there is no <i>vesting contract</i> data to be submitted, the field	NUMBER(2)	Mandatory	1 to 48.	

Proposed Changes							Reasons for Modification
(Deletions represented by strikethrough text and additions represented by double underlined text)							
		value of the "quantity" field shall be specified as "0".					
	Contract Price	The <del>balance</del> <u>base</u> vesting price (BVP), <u>or</u> <del>LNG tender</del> vesting price ( <del>LVP</del> <u>TVP</u> ) <del>or</del> tender vesting price (TVP), in \$/MWh.	NUMBER(13,2)	Mandatory	<p>The BVP is fixed for each <i>vesting period</i>, but could vary across different <i>vesting periods</i>.</p> <p>The <del>LVP</del> is fixed for each <i>vesting period</i>, but could vary across different <i>vesting periods</i>. <u>TVP could vary across settlement intervals and tender tranches.</u></p> <p>The <del>TVP</del> could vary across tender tranches and different <i>vesting periods</i>.</p>		To align with the design of the new tender vesting scheme, where tender vesting price could vary across different settlement intervals.

Proposed Changes (Deletions represented by strikethrough text and additions represented by double underlined text)					Reasons for Modification
Contract Quantity	The <del>balance base</del> <u>base</u> vesting quantity (BVQ), or <del>LNG tender</del> <u>tender</u> vesting quantity (LVQ <u>TVQ</u> ) or <del>tender vesting quantity (TVQ)</del> , in kWh.	NUMBER(13,2)	Mandatory	<p>The BVQ can vary for each <i>settlement interval</i>, and the quantity cannot be negative.</p> <p>The LVQ <u>TVQ</u> can vary for each <i>settlement interval</i>, and the quantity cannot be negative.</p> <p><del>The TVQ can vary for each <i>settlement interval</i> and the quantity cannot be negative.</del></p>	