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| **MODIFICATION PROPOSAL FORM** |
| **Proposer***(Company)* | **Date of receipt***(assigned by Secretariat)* | **Type of Proposal***(delete as appropriate)* | **Modification Proposal ID***(assigned by Secretariat)* |
| **SEMO** | **07 June 2018** | **Standard** | **Mod\_22\_18** |
| **Contact Details for Modification Proposal Originator** |
| **Name** | **Telephone number** | **Email address** |
| **Christopher Goodman** |  | **Christopher.Goodman@sem-o.com** |
| **Modification Proposal Title** |
| **Part B Credit Cover Signage and Subscript Correction** |
| **Documents affected***(delete as appropriate)* | **Section(s) Affected** | **Version number of T&SC or AP used in Drafting** |
| **T&SC Part B**  | **Part B Section G.14****Part B Glossary List of Subscripts** | **Version 20** |
| **Explanation of Proposed Change***(mandatory by originator)* |
| While reviewing the Credit Cover calculation rules within Section G for other Modification Proposals and against the application of these rules in the market systems we have identified an incorrect signage issue and an issue with a subscript which we propose corrections for here.The subscript b, which is already used to denote a Billing Period in Part B, has been used to denote the Historical Assessment Period in error in paragraph G.14.2.2 where Part A used gamma (γ). Gamma is unavailable in Part B due to being used for Imbalance Settlement Period so that it was no longer available for Historical Assessment Period and this appears have resulted in the subscript b being used in error for calculations relating to the Credit Assessment Price. The Part B list of subscripts does not currently have a definition for a subscript for the Historical Assessment Period. We propose using a Capital H for this purpose noting that Lowercase h is already in use. Note also that paragraphs G.14.2.3 and G.14.2.4 use the Undefined Exposure Period subscript g for a sum over a Historical Assessment Period and describe this as a sum over all days in the Historical Assessment Period *to be applied for the Undefined Exposure Period*. This is incorrect, or at the very least is unclear, so we propose to use H as the subscript for the Historical Assessment Period here also.In terms of the signage issue, we aim to correct three instances where the application of the product of the Analysis Percentile Parameter and the Standard Deviation for a volume/Cash amount is prescriptively applied in a single direction which is incorrect for a number of scenarios.In Part A, Metered Demand volumes were considered to be positive values labelled demand and similarly charges were considered positive values labelled as charges and it was under this approach that the credit algebra was developed. After the credit drafting in Part B Section G was completed paragraph A.4.2.1 was introduced which states that demand volumes and charges are a negative value which means that the application of standard deviation in paragraph G.14.7.6 is now in the wrong direction (added rather than taken away from a negative demand volume). We propose introducing a minus sign ahead of the standard deviation where demand is negative. In paragraphs G.14.10.4 and G.14.12.4 standard deviation is applied to average Billing Period Cashflow amounts for Generator Units and Assetless Units respectively. There is no treatment in either these two paragraphs for Generator and Assetless Units or in paragraph G.14.7.6 for Supplier Units to apply the standard deviation in a different direction where demand is positive (e.g. in an export only supplier set up) or where Billing Period Cashflow for a Generator or Assetless Unit is negative for long imbalance positions. With the new Imbalance arrangements payables for Generator/Assetless Units will be more prevalent as will receivables for Supplier Units with the growth in export only Supplier Units. Since the design intent here is unchanged from Part A in that the standard deviation is applied to a projected average figure to increase the credit liability or benefit in the Undefined Exposure Period, we propose a change which adheres to this principal by applying the standard deviation in the same direction as the volume or cash amount to which it is being applied. This is aligned to the approach in the current system build.Note that, while the same issue could theoretically manifest for the calculation of the Credit Assessment Price we do not propose making a similar change there. This is because the average Imbalance Settlement Price would have to be negative over a Historical Assessment Period for the issue to manifest there which is extremely improbable. The market systems have been designed to calculate based on the change we propose for volumes and payment/charge amounts but have not been designed to calculate based on a similar change for the Credit Assessment Price. It would not be possible to make such a change on time for I-SEM go live and, in any event, the cost of making such a change is not justified in SEMOs view given that it would cater for a scenario which is unlikely ever to occur so that it would not be prudent to propose such a change. |
| **Legal Drafting Change***(Clearly show proposed code change using* ***tracked*** *changes, if proposer fails to identify changes, please indicate best estimate of potential changes)* |
| **Part B Glossary List of Subscripts;**

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| H | Historical Assessment Period. |

**Part B Section G.14;**1. * + 1. The number of all Daily Average Imbalance Settlement Prices (NDAPIMBg) in the Historical Assessment Period H to be applied for the Undefined Exposure Period g shall be calculated as follows:

$$NDAPIMB\_{g}=count\left(DAPIMB\_{d} : \begin{matrix}∀\\d in \end{matrix}\right)$$where:* + - * 1. DAPIMBd is the Daily Average Imbalance Settlement Price for Settlement Day d calculated in accordance with paragraph G.14.2.1; and;
				2. $ count\left(DAPIMB\_{d} : \begin{matrix}∀\\d in \end{matrix}\right)$ is the number of all Daily Average Imbalance Settlement Prices in the Historical Assessment Period H.
			1. The mean value of Daily Average Imbalance Settlement Prices (UMPIMBg) in the Historical Assessment Period H to be applied for the Undefined Exposure Period g shall be calculated by the Market Operator as follows:

$$UMPIMB\_{g}=\frac{\sum\_{d in }^{}DAPIMB\_{d}}{NDAPIMB\_{g}}$$where:* + - * 1. DAPIMBd is the Daily Average Imbalance Settlement Price for Settlement Day d calculated in accordance with paragraph G.14.2.1;
				2. $\sum\_{d in }^{} $is a summation over all Settlement Days d in the Historical Assessment Period H; and
				3. NDAPIMBg is the number of all Daily Average Imbalance Settlement Prices in the Historical Assessment Period H to be applied for the Undefined Exposure Period g calculated in accordance with paragraph G.14.2.2.
			1. The standard deviation of the Daily Average Imbalance Settlement Price (SDPIMBg) in the Historical Assessment Period H to be applied for the Undefined Exposure Period g shall be calculated by the Market Operator as follows:

$$SDPIMB\_{g}=\sqrt{\frac{NDAPIMB\_{g}×\sum\_{d in g}^{}\left(DAPIMB\_{d}\right)^{2}-\left(\sum\_{d in }^{}DAPIMB\_{d}\right)^{2}}{NDAPIMB\_{g}×\left(NDAPIMB\_{g}-1\right)}}$$where:* + - * 1. NDAPIMBg is the number of all Daily Average Imbalance Settlement Prices in the Historical Assessment Period H to be applied for the Undefined Exposure Period g as calculated in accordance with paragraph G.14.2.2;
				2. DAPIMBd is the Daily Average Imbalance Settlement Price for Settlement Day d as calculated in accordance with paragraph G.14.2.1; and
				3. $\sum\_{d in }^{} $is a summation over all Settlement Days d in the Historical Assessment Period.
				4. Period g, as calculated in accordance with paragraph .
		1. 1. The Billing Period Undefined Potential Exposure Quantity (QUPEBpg) to be applied for Participant p in respect of its Supplier Units for the Undefined Exposure Period g shall be calculated as follows:

*If QMBMpg ≥ 0 then*$$QUPEB\_{pg}=QMBM\_{pg}+AnPP\left(QMBSD\_{pg}\right)$$*Else*$$\_{}\_{}\left(\_{}\right)$$where:* + - * 1. QMBMpg is the mean of the Billing Period Metered Demand for Participant p in respect of its Supplier Units for all Sample Undefined Exposure Periods ω in the Historical Assessment Period to be applied for the Undefined Exposure Period g as calculated in accordance with paragraph G.14.7.4;
				2. AnPP is the Analysis Percentile Parameter applicable for Undefined Exposure Period g; and
				3. QMBSDpg is the standard deviation of the Billing Period Metered Demand for Participant p in respect of its Supplier Units for all Sample Undefined Exposure Periods ω in the Historical Assessment Period to be applied for Undefined Exposure Period g as calculated in accordance with paragraph G.14.7.5.
		1. 1. The Billing Period Undefined Potential Exposure for Trading Payments (EUPEGpg) for Undefined Exposure Period g for Standard Participant p in respect of its Generator Units shall be calculated by the Market Operator as follows:

*If CUBMpg ≥ 0 then*$$EUPEG\_{pg}=CUBM\_{pg}+AnPP\left(CUBSD\_{pg}\right)$$*Else*$$\_{}\_{}\left(\_{}\right)$$where:* + - * 1. CUBMpg is the mean of the Billing Period Cashflow for Participant p in respect of its Generator Units for all Sample Undefined Exposure Periods ω in the Historical Assessment Period to be applied for the Undefined Exposure Period g, as calculated in accordance with paragraph G.14.10.2;
				2. AnPP is the Analysis Percentile Parameter applicable for Undefined Exposure Period g; and
				3. CUBSDpg is the standard deviation of the Billing Period Cashflow for Participant p in respect of its Generator Units for all Sample Undefined Exposure Periods ω in the Historical Assessment Period to be applied for the Undefined Exposure Period g, as calculated in accordance with paragraph G.14.10.3.
		1. 1. The Billing Period Undefined Potential Exposure (EUPEGpg) for Undefined Exposure Period g for Participant p in respect of its Assetless Units shall be calculated as follows:

If CUBMpg *≥ 0 then*$$EUPEG\_{pg}=CUBM\_{pg}+AnPP\left(CUBSD\_{pg}\right)$$*Else*$$\_{}\_{}\left(\_{}\right)$$where:* + - * 1. CUBMpg is the mean of the Billing Period Cashflow for Participant p in respect of its Assetless Units for all Sample Undefined Exposure Periods ω in the Historical Assessment Period to be applied for the Undefined Exposure Period g, as calculated in accordance with paragraph G.14.12.2;
				2. AnPP is the Analysis Percentile Parameter applicable for Undefined Exposure Period g; and
				3. CUBSDpg is the standard deviation of the Billing Period Cashflow for Participant p in respect of its Generator Units for all Sample Undefined Exposure Periods ω in the Historical Assessment Period to be applied for the Undefined Exposure Period g, as calculated in accordance with paragraph G.14.12.3.
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| **Modification Proposal Justification***(Clearly state the reason for the Modification)* |
| This proposal aims to correct a subscript error contained within the Part B drafting to add clarity. It also seeks to address an issue whereby the application of standard deviation to average Billing Period Cashflow amounts and Metered Quantities for undefined exposure calculations does not account correctly for the signage of the average values or for the fact that the averages can be either positive or negative and will be more likely to apply in both directions under imbalance arrangements.This change is intended to correct errors and enhance clarity in the affected paragraphs. |
| **Code Objectives Furthered***(State the Code Objectives the Proposal furthers, see Section 1.3 of T&SC for Code Objectives)* |
| 1. to facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner;
2. to provide transparency in the operation of the Single Electricity Market;
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| **Implication of not implementing the Modification Proposal***(State the possible outcomes should the Modification Proposal not be implemented)* |
| If this proposal is not implemented the subscript issue it aims to address will remain resulting in inaccuracy and a lack of clarity in the paragraphs which use variables with a Historical Assessment Period subscript.In addition, undefined exposure period calculations will contain algebra which applies the Standard deviation in the incorrect direction for scenarios where the credit requirement is negative indicating an exposure. |
| **Working Group***(State if Working Group considered necessary to develop proposal)* | **Impacts***(Indicate the impacts on systems, resources, processes and/or procedures; also indicate impacts on any other Market Code such as Capacity Marker Code, Grid Code, Exchange Rules etc.)* |
| Not required | No Impacts anticipated for SEMO or Participant processes or systems. |
| ***Please return this form to Secretariat by email to*** ***modifications@sem-o.com*** |

**Notes on completing Modification Proposal Form:**

1. **If a person submits a Modification Proposal on behalf of another person, that person who proposes the material of the change should be identified on the Modification Proposal Form as the Modification Proposal Originator.**
2. **Any person raising a Modification Proposal shall ensure that their proposal is clear and substantiated with the appropriate detail including the way in which it furthers the Code Objectives to enable it to be fully considered by the Modifications Committee.**
3. **Each Modification Proposal will include a draft text of the proposed Modification to the Code unless, if raising a Provisional Modification Proposal whereby legal drafting text is not imperative.**
4. **For the purposes of this Modification Proposal Form, the following terms shall have the following meanings:**

**Agreed Procedure(s): means the detailed procedures to be followed by Parties in performing their obligations and functions under the Code as listed in either Part A or Part B Appendix D “List of Agreed Procedures”. The Proposer will need to specify whether the Agreed Procedure to modify refers to Part A, Part B or both.**

**T&SC / Code: means the Trading and Settlement Code for the Single Electricity Market. The Proposer will also need to specify whether all Part A, Part B, Part C of the Code or a subset of these, are affected by the proposed Modification;**

**Modification Proposal: means the proposal to modify the Code as set out in the attached form**

**Derivative Work: means any text or work which incorporates or contains all or part of the Modification Proposal or any adaptation, abridgement, expansion or other modification of the Modification Proposal**

**The terms “Market Operator”, “Modifications Committee” and “Regulatory Authorities” shall have the meanings assigned to those terms in the Code.**

**In consideration for the right to submit, and have the Modification Proposal assessed in accordance with the terms of Section 2 of Part A or Chapter B of Part B of the Code (and Part A Agreed Procedure 12 or Part B Agreed Procedure 12) , which I have read and understand, I agree as follows:**

**1. I hereby grant a worldwide, perpetual, royalty-free, non-exclusive licence:**

* 1. **to the Market Operator and the Regulatory Authorities to publish and/or distribute the Modification Proposal for free and unrestricted access;**
	2. **to the Regulatory Authorities, the Modifications Committee and each member of the Modifications Committee to amend, adapt, combine, abridge, expand or otherwise modify the Modification Proposal at their sole discretion for the purpose of developing the Modification Proposal in accordance with the Code;**
	3. **to the Market Operator and the Regulatory Authorities to incorporate the Modification Proposal into the Code;**

**1.4 to all Parties to the Code and the Regulatory Authorities to use, reproduce and distribute the Modification Proposal, whether as part of the Code or otherwise, for any purpose arising out of or in connection with the Code.**

**2. The licences set out in clause 1 shall equally apply to any Derivative Works.**

**3. I hereby waive in favour of the Parties to the Code and the Regulatory Authorities any and all moral rights I may have arising out of or in connection with the Modification Proposal or any Derivative Works.**

**4. I hereby warrant that, except where expressly indicated otherwise, I am the owner of the copyright and any other intellectual property and proprietary rights in the Modification Proposal and, where not the owner, I have the requisite permissions to grant the rights set out in this form.**

**5. I hereby acknowledge that the Modification Proposal may be rejected by the Modifications Committee and/or the Regulatory Authorities and that there is no guarantee that my Modification Proposal will be incorporated into the Code.**