

| MODIFICATION PROPOSAL FORM | | | |
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| Proposer <i>(Company)</i> | Date of receipt <i>(assigned by Secretariat)</i> | Type of Proposal <i>(delete as appropriate)</i> | Modification Proposal ID <i>(assigned by Secretariat)</i> |
| SSE | 24 th August 2022 | Standard | Mod_06_22 v2 |
| Contact Details for Modification Proposal Originator | | | |
| Name | Telephone number | Email address | |
| Stacy Feldmann | | Stacy.Feldmann@sse.com | |
| Modification Proposal Title | | | |
| Housekeeping Alignment Modification | | | |
| Documents affected <i>(delete as appropriate)</i> | Section(s) Affected | Version number of T&SC or AP used in Drafting | |
| T&SC Part B | | Version 25.0 | |
| Explanation of Proposed Change <i>(mandatory by originator)</i> | | | |
| <p>Mod_01_20 sought to address the systems logic that only required a single energy action to be present in the stack in order to set the PMEAs, by ensuring that PMEAs are set to price cap/floor when there are no energy actions in the same direction as the NIV. However, this modification increased the periods when PMEAs are not set by an energy action and the likelihood of a SO Action setting cashout price. Since Mod 01_20 approval, high volume TSO redispatch of the Interconnectors in the BM has become a more frequent system event. Mod 02_21 (approved in August/2021) sought to mitigate this effect, by introducing a flag for Cross Zonal Actions by setting the System Operator Flag to zero for Interconnector Residual Capacity Units. However, this action is being affected by Mod 01_20 since this unintended interaction with an existing and active modification was not assessed beforehand.</p> <p>Both modifications have value in the market, however, the effect of both mods together, has given rise to an unintended consequence relating to system actions. NIV tagging under Mod 01_20 would have been expected to moderate the impact of SO actions setting the imbalance, but it is clear that the large physical volume behind IC actions would make NIV tagging ineffectual, potentially allowing for System IC actions to inappropriately trigger RO obligation - as was experienced in September 2021 and in July 2022 (see example below). Mod 02_21 on the other hand is seeking to ensure that SO actions are flagged out on the principle that system actions should not be allowed to affect cashout.</p> <p>To ensure alignment between these two modifications and that cashout continues to be unaffected by non-energy actions as intended by Mod 02_21, we are proposing a straightforward modification to the calculation of the PMEAs to reflect the Strike Price rather than PCAP. We consider this would be in keeping with the intent of Mod_01_20 whilst preventing unintended consequences. The proposal in the legal drafting is only to target the use of PCAP which was used in cases of system/non-energy actions in the algebra below. This is the only target of the modification. Not on price formation or depressing of true price.</p> <p><u>Instance of market events:</u></p> <p>On 12th July and 13th July, we can see the evidence of the impact arising from the interaction of Mod 02_21 and Mod 01_20, with system IC actions triggering the RO as detailed below:</p> <p>The RO was triggered between 15:30 to 17:30 local time on the 12/07/22 by system IC actions over EWIC. The sheer volume of IC trades means they will flip the system in their direction and are extremely</p> | | | |

likely to form the entire PAR stack (as NIV tagging becomes ineffectual handling large IC actions). On the 13/07/22, the same thing occurred though the Interconnector Price was lower.

You can see below an example from 17:25:

- Below over 800MW of actions have been taken over EWIC at €839/MWh with no system offers. The bid stack was around 100MW meaning the full PAR stack was consisted of this IC action
- Pre-Mod 01_20 this IC action would have been repriced to the highest priced energy bid or offer which here was €173, as below. This would have set cash-out in this example below.
- As PMEA was set to PCEILING or €11.5k, the IC action kept its price, and this set cash-out.
- The BOA's stacks below are relevant for one 5-minute period but the same thing happened in 19 of 24 five minute periods in the 2 hours when the RO was called.

This is a material risk during low wind into Q3 and over W-22.

| StartTime | System | Jurisdiction | Unit ID | Unit Name | PBOA | QBOA | SO Flag | NIV Tag | Filtered PBOAs | Filtered QBOAs | PMEA | BOA | StartTime | System | Jurisdiction | Unit ID | Unit Name | PBOA | QBOA | SO Flag | NIV Tag | Filtered PBOAs | Filtered QBOAs | PMEA | BOA | |
|---------------------|--------|--------------|-----------|---------------------------------------------------------------------------|--------|--------|---------|---------|----------------|----------------|--------|-----------|-----------|---------------------|--------------|---------|-----------|--------------------------------------|--------|---------|---------|----------------|----------------|------|-----------|-----|
| 12/07/2022 18:25:00 | Short | NI | LROBMC | ErGrid Interconnector Designated Activity Company Roman Converter Station | 839.99 | 104.00 | SO Flag | | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420163 | ESB TH | 80.00 | -8.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | NI | LROBMC | ErGrid Interconnector Designated Activity Company Roman Converter Station | 839.99 | 710.00 | SO Flag | 839.99 | 839.99 | | 120.70 | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420163 | ESB TH | 70.00 | -19.94 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0166 | Powerhouse Generation Limited SAL | 610.63 | 3.00 | SO Flag | 610.63 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420324 | ESB P8A | 100.00 | -31.99 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0146 | Veolia Alternative Energy Ireland Limited SIC1 | 580.00 | 2.87 | SO Flag | 580.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420325 | ESB P8B | 100.00 | -31.99 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A01010 | Cumhaling Power Limited ED 3 | 500.24 | 20.00 | SO Flag | 500.24 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420930 | Bord Gas Energy Limited GU_420930 | 110.00 | -20.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0218 | Enveco - Viratite Sensors Limited SAL | 500.00 | 8.99 | SO Flag | 500.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420930 | Bord Gas Energy Limited GU_420930 | 140.40 | -27.74 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0193 | Enveco - Viratite Sensors Limited SAL | 500.00 | 13.00 | SO Flag | 500.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420950 | ESB A02 | 179.27 | -45.94 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A01011 | Cumhaling Power Limited ED 5 | 499.96 | 20.00 | SO Flag | 499.96 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | NI | GU_520130 | NIE Power Procurement Business B31 | 143.07 | -30.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A02700 | SSE Generation Ireland Ltd | 498.50 | 12.00 | SO Flag | 498.50 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | NI | GU_520131 | NIE Power Procurement Business B32 | 143.07 | -30.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A02770 | SSE Generation Ireland Ltd Rhode1 | 498.00 | 12.00 | SO Flag | 498.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | NI | GU_520130 | NIE Power Procurement Business B31 | 143.08 | -4.71 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0292 | Electricity Exchange Limited LTD DSU4 | 492.30 | 2.80 | SO Flag | 492.30 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | NI | GU_520131 | NIE Power Procurement Business B32 | 143.08 | -4.71 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0292 | Electricity Exchange Limited LTD DSU4 | 492.30 | 8.10 | SO Flag | 492.30 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | NI | GU_520140 | NIE Power Procurement Business B10 | 192.69 | -12.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0140 | Electricity Exchange Limited LTD DSU4 | 492.15 | 30.00 | SO Flag | 492.15 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | NI | GU_520140 | NIE Power Procurement Business B10 | 192.69 | -12.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A03060 | ESB TH | 404.00 | 5.00 | SO Flag | 404.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0127 | EnerHCC Ireland Limited GU_A04050 | 393.32 | 16.00 | SO Flag | 393.32 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0193 | ESB ARWP | 350.00 | 7.91 | SO Flag | 350.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0162 | EnerHCC Ireland Limited GU_A04050 | 307.88 | 9.00 | SO Flag | 307.88 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A03168 | ESB ART14 | 306.00 | 35.00 | SO Flag | 306.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0312 | EnerHCC Ireland Limited EN5 | 266.63 | 5.00 | SO Flag | 266.63 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | NI | GU_520044 | ESB OT8 | 244.95 | 30.00 | SO Flag | 244.95 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A02163 | ESB ART14 | 244.73 | 40.00 | SO Flag | 244.73 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A03162 | ESB ART12 | 233.44 | 39.98 | SO Flag | 233.44 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | DSU_A0347 | EnerHCC Ireland Limited EN5 | 149.32 | 14.83 | SO Flag | 149.32 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A02210 | ESB ER1 | 120.00 | 10.00 | SO Flag | 120.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A03200 | ESB AA1 | 120.00 | 12.00 | SO Flag | 120.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A03251 | ESB L2 | 120.00 | 15.00 | SO Flag | 120.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |
| 12/07/2022 18:25:00 | Short | RI | GU_A03220 | ESB ER3 | 120.00 | 23.00 | SO Flag | 120.00 | | | | 11.581.37 | Offr | 12/07/2022 18:25:00 | Short | RI | GU_420640 | Energia Power Generation Limited NIQ | 222.45 | -31.00 | SO Flag | | | | 11.581.37 | Bid |

Legal Drafting Change

(Clearly show proposed code change using **tracked** changes, if proposer fails to identify changes, please indicate best estimate of potential changes)

Original text from Mod_01_20:

E.3.4.2 For each Imbalance Pricing Period, φ , the Market Operator shall calculate the

Marginal Energy Action Price (PMEA φ) as follows:

If $QNIV\varphi > 0$ and there are no PBOuk φ in the same direction as the NIV where $FIPuk\varphi = 1$, $PMEA\varphi = PCAP$;

Where, PCAP is the Market Price Cap

Proposed updated legal drafting:

E.3.4.2 For each Imbalance Pricing Period, φ , the Market Operator shall calculate the

Marginal Energy Action Price (PMEA φ) as follows:

If $QNIV_{\varphi} > 0$ and there are no $PBOuk_{\varphi}$ in the same direction as the NIV where $FIPuk_{\varphi} = 1$, $PMEA_{\varphi} = PSTR_m$;

Where:

- (a) $QNIV_{\varphi}$ is the Net Imbalance Volume Quantity;
- (b) $PBOuk_{\varphi}$ is the Bid Offer Price for Generator Unit, u , and rank, k ;
- (c) $FIPuk_{\varphi}$ is the Imbalance Price Flag for Generator Unit, u , and rank, k ;
- (d) $PSTR_m$ is the Strike Price for Month, m , which contains Imbalance Settlement Period, y

Modification Proposal Justification

(Clearly state the reason for the Modification)

This change will address and unintended consequence of the proposed change under Mod_01_20 whilst preserving the intent of this previous proposal to change the systems logic. This also aligns with the logic of ensuring that constraint actions taken by the TSO do not trigger the Reliability Option, in the same way as 02_21 will do.

Code Objectives Furthered

(State the Code Objectives the Proposal furthers, see Section 1.3 of Part A and/or Section A.2.1.4 of Part B of the T&SC for Code Objectives)

- (b) to facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner;
- (c) to facilitate the participation of electricity undertakings engaged in the generation, supply or sale of electricity in the trading arrangements under the Single Electricity Market;

Implication of not implementing the Modification Proposal

(State the possible outcomes should the Modification Proposal not be implemented)

Failure to implement this proposal will risk Reliability Options being triggered in instances of SO Actions.

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| <p>Working Group <i>(State if Working Group considered necessary to develop proposal)</i></p> | <p>Impacts <i>(Indicate the impacts on systems, resources, processes and/or procedures; also indicate impacts on any other Market Code such as Capacity Market Code, Grid Code, Exchange Rules etc.)</i></p> |
| | <p>We would propose that this is a change in mapping with no new parameters being created. Therefore, we consider the change to be potentially minor.</p> |

Please return this form to Secretariat by email to balancingmodifications@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:
 - 1.1 to the Market Operator and the Regulatory Authorities to publish and/or distribute the Modification Proposal for free and unrestricted access;
 - 1.2 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;
 - 1.3 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.