

MODIFICATION PROPOSAL FORM			
Proposer (Company)	Date of receipt (assigned by Secretariat)	Type of Proposal (delete as appropriate)	Modification Proposal ID (assigned by Secretariat)
SSE	8 <sup>th</sup> February 2023	Standard	Mod_17_22 v2
Contact Details for Modification Proposal Originator			
Name	Telephone number	Email address	
Therese Lannon Crean		<a href="mailto:Therese.Lannoncrean@sse.com">Therese.Lannoncrean@sse.com</a>	
Modification Proposal Title			
V2 System action repricing during periods where there is no energy action in the same direction as the Net Imbalance Volume.			
Documents affected (delete as appropriate)	Section(s) Affected	Version number of T&SC or AP used in Drafting	
T&SC Part B		Version 26.0	
Explanation of Proposed Change (mandatory by originator)			
<p>This Modification aims to address system action repricing during periods when an energy action has not been taken on the same direction as the NIV. High volume TSO redispatch of the Interconnectors in the Balancing Market has become a more frequent system event. Whilst there have been some measures to address this, there remains the potential for largest in-feed volumes, such as those provided by ICs, to make NIV tagging ineffective.</p> <p>To ensure that that cash-out is reflective of energy actions we are proposing a straightforward modification to the calculation of the PMEA to reflect the max of Strike Price PSTR and the Market Back Up PMBU rather than PCAP during period where no energy action has been identified in the direction of the NIV.</p> <p>The proposal in the legal drafting is only to target the use of PCAP which as per the formula, only applies 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 the true price.</p> <p>It is the view of SSE that the use of PMBU helps to provide a value of energy (based on a standard expression of that value, commonly used in the market), where no energy balancing actions exist.</p> <p>We have seen the real life need for this mod in 2022:</p> <p><b>Instance of Market Events July 2022:</b></p> <p>On 12th July and 13th July, the impact arising from system IC actions could be seen, in the triggering of the RO, as detailed below:  On 12/7/22 the RO was triggered between 15:30 to 17:30 local time by system IC actions over EWIC. The significant volume of IC trades meant the system would flip in the direction of the IC trades and these trades were extremely likely to form the entire PAR stack (as NIV tagging becomes ineffectual handling large IC actions).  On 13/07/22, the same thing occurred though the Interconnector Price was lower. You can see below an example from 17:25:</p> <ul style="list-style-type: none"> <li>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 consisted of this IC action.</li> </ul>			

- 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 is currently 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 W-22-23.

Start/Time	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	GUJ016WC	ESGrid Interconnector Designated Activity Company Portan Converter Station	839.93	104.00	SO Flag				11.58137	Offer
12/07/2022 18:25:00	Short	NI	UK016WC	ESGrid Interconnector Designated Activity Company Portan Converter Station	839.93	710.00	SO Flag	839.93	839.93	120.70	11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0166	Powerhouse Generation Limited SAL	610.63	3.00	SO Flag	610.63			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0149	Vanilla Alternative Energy Ireland Limited NCI1	580.00	2.87	SO Flag	580.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A01010	Cumshingaun Power Limited ED 3	500.34	20.00	SO Flag	500.34			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0218	Enelco - Wihelma Sensors Limited SAL	500.00	8.00	SO Flag	500.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0153	Enelco - Wihelma Sensors Limited SAL	500.00	13.00	SO Flag	500.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A01011	Generation Power Limited ED 5	486.96	20.00	SO Flag	486.96			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00780	SSE Generation Ireland Ltd Tannaighmore 1	486.50	12.00	SO Flag	486.50			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00770	SSE Generation Ireland Ltd Rhoose1	486.00	12.00	SO Flag	486.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0352	Electricity Exchange Limited ETD D044	492.30	2.90	SO Flag	492.30			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0352	Electricity Exchange Limited ETD D044	492.30	8.10	SO Flag	492.30			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0140	Electricity Exchange Limited ETD D044	492.15	30.00	SO Flag	492.15			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00360	ESB TH	404.00	6.00	SO Flag	404.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0127	EnerHOC Ireland Limited GU_A04650	363.32	16.00	SO Flag	363.32			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0133	ESB ABWF	350.00	7.81	SO Flag	350.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0162	EnerHOC Ireland Limited GU_A04650	307.88	9.00	SO Flag	307.88			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00163	ESB AT14	306.00	35.00	SO Flag	306.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0312	EnerHOC Ireland Limited EN5	266.63	5.00	SO Flag	266.63			11.58137	Offer
12/07/2022 18:25:00	Short	NI	GU_50044	ESB OT8	264.95	30.00	SO Flag	264.95			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00163	ESB AT14	246.73	40.00	SO Flag	246.73			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00162	ESB AT12	233.44	39.06	SO Flag	233.44			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0347	EnerHOC Ireland Limited EN5	149.32	14.58	SO Flag	149.32			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00210	ESB ER1	120.00	10.00	SO Flag	120.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00200	ESB AA1	120.00	12.00	SO Flag	120.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00251	ESB L2	120.00	15.00	SO Flag	120.00			11.58137	Offer
12/07/2022 18:25:00	Short	ROI	GU_A00220	ESB ER3	120.00	23.00	SO Flag	120.00			11.58137	Offer

**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 Trading and Settlement Code

*E.3.4.2 For each Imbalance Pricing Period,  $\varphi$ , the Market Operator shall calculate the*

*Marginal Energy Action Price (PMEA $\varphi$ ) as follows:*

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

Where, PCAP is the Market Price Cap

Proposed updated legal drafting

*E.3.4.2 For each Imbalance Pricing Period,  $\varphi$ , the Market Operator shall calculate the*

Marginal Energy Action Price (PMEA $\phi$ ) as follows:

If  $QNIV\phi > 0$  and there are no  $PBOuk\phi$  in the same direction as the NIV where  $FIPuk\phi = 1$ ,  $PMEA\phi = \max(PSTR, PMBU\phi)$

Where PSTR is the Strike price, PMBU $\phi$  is the Market Back Up Price for the relevant Imbalance Pricing Period  $\phi$

**Modification Proposal Justification**  
(Clearly state the reason for the Modification)

This Mod addresses structural flaws associated with high volume system IC actions within the relatively small ISEM Balancing market.

As above, it remedies something we have seen happen in the market, at a time where we can expect greater volatility due to security of supply issues. We consider it would be a straightforward change that could be implemented quickly.

The proposal uses the max of the Strike Price, reference price used to calculate Difference charges and payments, and the Market Backup Price which is a market determined value of energy in periods for repricing system actions when a value of energy cannot be determined from balancing actions. This approach is dynamic (since it is calculated on a 5-minute basis), and reflective of conditions on the system. It is also similar to the use of the Market Index Price in GB, where there are no energy actions available during a particular trading period.

Included with this Mod is a spreadsheet which contains data at 5 minutes Imbalance Pricing Periods level from SEMO Public API for dates from April 2022 to January 2023 to capture the price impact of this proposed mod.

The data compares the impact of keeping the current formula (using PCAP) when an energy action has not been taken on the same side as the NIV, compared with adopting the new formula (max Strike Price, Market Backup Price) in 14,279 5 minutes pricing periods in the 10 months. It only impacts price formation in 19 of these 5 minute periods. This is equivalent to 0.1% of the 5 minute periods. Using MBP alone (original version) would have an impact in 69% of the 5 minute periods.

The max of Pstrike or MBP is a much more targeted and limited approach to address this issue as this only impacts 0.1% of the 5 minute periods over the chosen timescale.

It is our view that this change can provide the potential for the market to trade through the RO strike level and ensure uncontracted units face scarcity pricing exposure during these periods of stress. It will ensure periods of RO exposure is evident in the balancing mechanism at times of true scarcity as determined by the market or energy lead balancing activity.

**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 TSO interconnector actions.

If this Mod proposal is not implemented, Generator Units which hold RO obligations will continue to be exposed to Difference Charges (where the imbalance price is higher than the RO strike price) at a time where a large volume being imported would likely be accompanied by such units being dispatched down.

<p style="text-align: center;"><b>Working Group</b> <i>(State if Working Group considered necessary to develop proposal)</i></p>	<p style="text-align: center;"><b>Impacts</b> <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 changing in mapping with no new parameters being created. Therefore, we consider the change to be potentially minor.</p>
<p><b>Please return this form to Secretariat by email to <a href="mailto:balancingmodifications@sem-o.com">balancingmodifications@sem-o.com</a></b></p>	

### 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.