



Single Electricity Market

FINAL RECOMMENDATION REPORT

MOD_17_22 SYSTEM ACTION REPRICING V2

22 FEBRUARY 2023

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Document History

Version	Date	Author	Comment
1.0	9 th March 2023	Modifications Committee Secretariat	Issued to Modifications Committee for review and approval
2.0	16 th March 2023	Modifications Committee Secretariat	Issued to Regulatory Authorities for final decision

Reference Documents

Document Name
Trading and Settlement Code
Mod_17_22 System Action Repricing
Mod_17_22 System Action Repricing v2
Supporting Data
Presentation

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1. MODIFICATIONS COMMITTEE RECOMMENDATION

RECOMMENDED FOR APPROVAL– MAJORITY VOTE

Recommended for Approval by Majority Vote		
Cormac Daly	Generator Member	Approve
Robert McCarthy	DSU Member	Approve
Eamonn Boland	Renewable Generator Alternate	Approve
Eoghan Cudmore	Supplier Alternate	Approve
Stacy Feldmann (Chair)	Generator Member	Approve
Colm Oireachtaigh	Supplier Member	Approve
David Morrow	Generator Alternate	Approve
Therese Murphy	Generator Alternate	Approve
Cormac Fagan	Assetless Alternate	Reject
David Caldwell	Supplier Alternate	Approve

2. BACKGROUND

This Modification Proposal was raised by SSE and received by the Secretariat on 17th November 2022. The Proposal was raised at Meeting 114 on 1st December 2022 and voted on at Meeting 115 on 22nd February 2023 with a version 2 of the proposal received by the Secretariat on 8th February 2023.

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.

To ensure that that cash-out is reflective of energy actions we are proposing a straightforward modification to the calculation of the PMEAs 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.

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.

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.

We have seen the real life need for this mod in 2022:

Instance of Market Events July 2022:

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:

- 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.
- 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.

StartTime	System	Jurisdiction	Unit ID	Unit Name	PCEA	QBOA	SO Flag	NIV Tag	Filtered PBOAS	Filtered QBOAS	PMEA	BOA
12/07/2022 18:25:00	Short	NI	LROEWIC	EWIC Interconnector Designated Activity Company Rotan Converter Station	839.93	104.00	SO Flag					11,581.37 Offer
12/07/2022 18:25:00	Short	NI	LROEWIC	EWIC Interconnector Designated Activity Company Rotan Converter Station	839.93	710.00	SO Flag	839.93	839.93	120.70		11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0168	Powerhouse Generation Limited SAL	610.83	3.00	SO Flag	610.83				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0149	Veolia Alternative Energy Ireland Limited (NOC)	500.00	2.87	SO Flag	500.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A01010	Cumulating Power Limited ED 3	500.24	20.00	SO Flag	500.24				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0218	Enelcon - Wirralia Sensors Limited SAL	500.00	8.00	SO Flag	500.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0153	Enelcon - Wirralia Sensors Limited SAL	500.00	13.00	SO Flag	500.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A01011	Cumulating Power Limited ED 5	498.96	20.00	SO Flag	498.96				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00780	SSE Generation Ireland Ltd Bunnings 1	488.50	12.00	SO Flag	488.50				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00770	SSE Generation Ireland Ltd Rhodri	488.00	12.00	SO Flag	488.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0330	Electricity Exchange Limited ETO D1U4	482.30	2.90	SO Flag	482.30				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0330	Electricity Exchange Limited ETO D1U4	482.30	8.10	SO Flag	482.30				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0140	Electricity Exchange Limited ETO D1U4	482.15	30.00	SO Flag	482.15				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00360	ESB TH	404.00	5.00	SO Flag	404.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0127	EnelHCC Ireland Limited GU_A04580	393.32	18.00	SO Flag	393.32				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0133	ESB ABHP	350.00	7.91	SO Flag	350.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0160	EnelHCC Ireland Limited GU_A04580	307.88	9.00	SO Flag	307.88				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00183	ESB AT14	306.00	36.00	SO Flag	306.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0112	EnelHCC Ireland Limited EN5	266.63	5.00	SO Flag	266.63				11,581.37 Offer
12/07/2022 18:25:00	Short	NI	GU_A00041	ESB DT8	264.95	30.00	SO Flag	264.95				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00183	ESB AT14	246.73	40.00	SO Flag	246.73				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00182	ESB AT12	233.44	39.08	SO Flag	233.44				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	DSU_A0347	EnelHCC Ireland Limited EN5	149.32	14.88	SO Flag	149.32				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00210	ESB ER1	120.00	10.00	SO Flag	120.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00200	ESB AA1	120.00	12.00	SO Flag	120.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00251	ESB L2	120.00	15.00	SO Flag	120.00				11,581.37 Offer
12/07/2022 18:25:00	Short	ROI	GU_A00220	ESB ER3	120.00	23.00	SO Flag	120.00				11,581.37 Offer

3. PURPOSE OF PROPOSED MODIFICATION

3A.) JUSTIFICATION OF MODIFICATION

This Modification 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 Modification 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.

3B.) IMPACT OF NOT IMPLEMENTING A SOLUTION

Failure to implement this proposal will risk Reliability Options being triggered in instances of TSO interconnector actions.

If this Modification 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.

3C.) IMPACT ON 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;

4. WORKING GROUP AND/OR CONSULTATION

N/A

5. IMPACT ON SYSTEMS AND RESOURCES

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.

6. IMPACT ON OTHER CODES/DOCUMENTS

N/A

7. MODIFICATION COMMITTEE VIEWS

MODIFICATIONS MEETING 114 – 1ST DECEMBER 2022

The Proposer delivered a [presentation](#) on this Modification Proposal noting that the objective was to address the system action on pricing. It was noted that this proposal was like Mod_06_22 but it was coming from a more principle-based approach. The Proposer went through examples advising that the 12th and 13th of July were dates where the two previously approved Mod_01_20 and Mod_02_22 interacted creating a risk.

The Proposer thanked the Members for the feedback given and noted that there was an additional change included in the slide pack that should alleviate some of the concerns raised on this Mod. The change highlighted in this Modification Proposal were straightforward and potentially could be implemented easily.

DSU Member raised a few concerns relating to the fact that the Mod was only looking at periods where QNIV was greater than zero while it should applied for both directions; also it is now impacting all periods while before it was only when the PSTR was exceeded and the last minute change included in the presentation requires more analysis.

A Supplier Alternate stated that the additional last-minute change seemed to alleviate their concerns over the Price formation and the impact that this mod could have.

Assetless Member also echoed the comment but added that although this version would impact less Trading Period than the original version it still reflect the condition at the Ex-Ante stage and would effectively act as a cap similarly to Mod_06_22 because the Ex-Ante prices so rarely exceed the Strike Price.

A Generator Member expressed concerns on the intent to impact So-So trades and given the last-minute additional changes would not feel comfortable voting without further analysis in particular on how often this could be occurring.

A debate followed between the Proposer and the Committee on how frequently the circumstances addressed by the Modification would occur.

It was agreed that more time was needed to review this last-minute change and a request was made for more analysis on pricing the late change over the last 6 months and how frequently it would impact pricing.

MODIFICATIONS MEETING 115 – 22ND FEBRUARY 2023

The Proposer delivered a [presentation](#) on this Modification Proposal noting that when it was presented in September it deferred the issue because of the request for data analysis and confirmed that this version changes the setting of the price in only a very small number of TP affected. The Proposer went through the data on the presentation which was extracted over 10 months of prices and showed that the Modification impacts price formation in minimal time periods. It was advised that version 2 gave a more targeted limited approach.

Assetless Alternate noted that this Proposal acts the same as previous versions of the Mod_06_22, ruling out strike price events because in any of the data, the Market Back Up Price is greater than the Strike Price. He also voiced concerns that it was heavily weighted towards the day ahead market price and would not represent the volume of energy coming through in Balancing. Even if the Trading Periods affected are only few in number, the impact of each one could be substantial. The Proposer advised that extreme pricing had been seen this year and this Modification would prevent Non-Energy Actions unduly influencing cashout price setting and that this is a pragmatic solution as the Market Back Up Price is still the best price signal available in the SEM.

Supplier Member asked for clarity on what would happen if the Proposal was not implemented and made a point that the difference charges did not tally with examples in Excel. Also, it had been widely

discussed in Mod_02_21 that for Interconnectors it wasn't always possible to distinguish between Energy and Non-Energy actions. The Proposer provided assurance that the proposal was not linked to Interconnectors specifically but relates to all Non-Energy actions. A discussion ensued on the implications of the proposal. The Proposer advised that this Modification Proposal only related to non-energy actions and it was agreed to vote on it.

8. PROPOSED LEGAL DRAFTING

As per Appendix 1.

9. LEGAL REVIEW

N/A

10. IMPLEMENTATION TIMESCALE

It is recommended that this Modification is implemented on a Settlement Day basis on the second Settlement Day following publication of RAs decision.

1 APPENDIX 1: MOD_17_22 SYSTEM ACTION REPRICING V2

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	8 th February 2023	Standard	Mod_17_22 v2
Contact Details for Modification Proposal Originator			
Name	Telephone number	Email address	
Therese Lannon Crean		Therese.Lannoncrean@sse.com	
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 <i>(delete as appropriate)</i>	Section(s) Affected	Version number of T&SC or AP used in Drafting	
T&SC Part B		Version 26.0	
Explanation of Proposed Change <i>(mandatory by originator)</i>			
<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>			

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, 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 $FIPuk_{\varphi} = 1$, $PMEA_{\varphi} = PCAP$;

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 $FIPuk_{\varphi} = 1$, $PMEA_{\varphi} = \max(PSTR, PMBU_{\varphi})$

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

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.

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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.

Working Group <i>(State if Working Group considered necessary to develop proposal)</i>	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>
	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.
Please return this form to Secretariat by email to balancingmodifications@sem-o.com	