Single Electricity Market

FINAL RECOMMENDATION REPORT

MOD_12_22 EXTENSION OF SYSTEM SERVICE FLAG TO COVER REPLACEMENT RESERVE RESOURCES

16 SEPTEMBER 2022

Document History

Version	Date	Author	Comment
1.0	21 Sept 2022	Modifications Committee Secretariat	Issued to Modifications Committee for review and approval
2.0	23 Sept 2022	Modifications Committee Secretariat	Issued to Regulatory Authorities for final decision

Reference Documents

Document Name
Trading and Settlement Code
Mod_12_22 Extension of System Service Flag to cover Replacement Reserve Resources

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1. MODIFICATIONS COMMITTEE RECOMMENDATION

RECOMMENDED FOR APPROVAL– UNANIMOUS VOTE

Recommended for Approval by Unanimous Vote		
Sean McParland	Generator Member	Approve
David Caldwell	Supplier Alternate	Approve
Nick Heyward	Flexible Participant Member	Approve
Andrew Burke	Renewable Generator Member	Approve
Robert McCarthy	DSU Member	Approve
Paraic Higgins (Chair)	Generator Member	Approve
Stacy Feldmann	Generator Member	Approve
Cormac Daly	Generator Member	Approve
Ian Mullins	Supplier Member	Approve
Brigid Reilly	Supplier Alternate	Approve
Cormac Fagan	Assetless Alternate	Approve

2. BACKGROUND

This Urgent Modification Proposal was raised by EPUKI and received by the Secretariat on the 13th September 2022. The Proposal was raised and voted on at Meeting 112B on the 16th September 2022.

The Modification Proposal states that currently the market rules are not delivering the detailed design as intended as flexible peaking generators are unreasonably and unfairly exposed to Reliability Obligation Difference Payments (RODPs) due to actions by the TSOs at times of system stress.

SEM-15-103 established clear principals and criteria that ISEM needed to deliver including:

Security of supply promotes the objective of security of supply by ensuring that only reliable capacity is rewarded, and unreliable capacity which fails to deliver at times of system stress will be penalised.

Delivering system services*:*

System Services: For any capacity utilised for DS3 System Services such as capacity providing reserve, difference payments will be paid based on the difference between the contracted utilisation payment *(likely to be zero – implying no difference payments in respect of the provision of DS3 System Services)* for that service and the Strike Price.

Section 3.3.80 of the Detailed Design states that the SEM Committee wished to make it clear that capacity providers who are providing reserve or other system services in accordance with TSO instruction will have the relevant part of their RO commitment settled with reference to their reserve/system services income.

In section 3.3.97 the SEM Committee also recognises that work needs to be done to determine appropriate arrangements to ensure that capacity providers directed to provide operating reserve or other DS3 System Services are not inappropriately disadvantaged when acting on instruction of the TSO. In this context the RAs will work with the TSOs to develop proposed arrangements and algebra.

A significant number of flexible peaking generators have been penalised not because they failed to deliver (as they were available), rather during system stress events these units were either not dispatched (despite being more economical than other TSO options) or were not System Service Flagged and therefore have been subject to RODPs. This exposure is significant and disproportionately and unfairly impacts flexible peaking units. It is likely, given the concerns of the TSOs in relation to system distress in the coming winters, that this exposure is likely to increase unless the issue is addressed urgently.

Market Design Development

In December 2016, a Market Rules presentation (by the MRG team) identified this issue from the detailed design as follows:

'Problem trying to resolve:

- The detailed design allows for any capacity utilized for DS3 System Services such as capacity providing reserve to count towards obligations.

- Units which are desynchronised and providing replacement reserves, who would not normally clear in the market and who may not be able to clear in the market if they tried without creating unintended outcomes.'

This means that peaking generating units would be subject to RODPs if this problem is not resolved and the problem is likely to escalate over winter 2021/22 and beyond.

Subsequent to this, within the Market Rules Working Group Comments and Feedback which were circulated 20170111 No 894 (ESB) it was identified that there are units that have the ability to be dispatched on to provide reserve after Gate Closure but may not be dispatched by the TSOs in a scarcity event due to an operational constraint (e.g. the combined OCGT output limitation for replacement reserve). As such there is no explicit instruction from the TSO to the unit. Consequently, as per the current algebra the unit is exposed to the non-performance charge even though it is being held/utilised for reserve.

The updated algebra was designed to enable a capacity provider to be flagged based on information from the most recent Indicative Operations Schedule to identify whether a Generator Unit's scheduled output is bound by the presence of an Operational Constraint relating to the provision of Replacement Reserve, and where they determine that the Generator Unit is so bound, shall set the System Service Flag ($FSSu\varphi$) for that Generator Unit, u, equal to zero for that Imbalance Pricing Period, φ.

This flagging process does not identify all units affected by the problem. The consequence of this is that some flexible peakers have been exposed to RODPs even though they were available and priced in merit relative to actions taken by the TSOs.

The TSOs, as part of their Operational Constraints, identify resources as providers of Replacement Reserve. As a group their total output is curtailed to enable a minimum of 450MWs of Replacement Reserve. These resources are effectively being utilised continuously for DS3 System Services when they are available. These units are the flexible peakers that represent the problem the market design was trying to resolve in December 2016 as defined above.

The impact of the Cross Zonal Actions for System Security reasons is an example of the exposure that flexible peakers have experienced.

Taking the 12th Jan 2021 as an example of a Cross Zonal Action.

- the BM price was €1,474.23 at 17:00 to 17:30 and €1,720.50 from 17:30 to 18:30
- The price was set by the Cross Zonal Action taken for System Security Reasons in NI
- Actual Available Capacity from the Replacement Reserve providers averaged 961MWs but 701MWs of this capacity was not dispatched.
- In the first hour, some of this capacity was flagged as providing replacement reserve. No units were flagged in the final half hour.
- It is evident that the RODPs recovered from the capacity holders exceeded the amount required to keep Suppliers whole. The Socialisation Fund has reached an estimated €24.2M for September 2021, due to the difference charges being above difference payments and termination charges received (SEM-21-063).

The intention of the detailed design was not to penalise capacity when it is available and reliable but was designed to penalise unreliable capacity and units that cannot provide flexibility to the TSOs. These Replacement Reserve units (peaking plants) were available but not dispatched and either wholly or partially not flagged leaving them exposed to RODPs.

Another example of when this exposure would arise would be an Administered Scarcity Pricing event. The current FSS is unlikely to identify all providers of Replacement Reserve as it is focused purely on the identification of the specific binding constraint.

The identification of the potential inequitable treatment of peaking plants (Replacement Reserve Resources) as capacity providers in circumstances when they are not dispatched was raised during the establishment of the market rules (Market Rules Working Group Comments and Feedback circulated 20170111 - No. 855 (BNM)). It highlighted that the capacity revenue stream is the main income for this type of unit. If the frequency of unmanageable RODPs increases, it will lead to the erosion of this capacity revenue and could undermine their economic viability.

The TSOs have indicated that they expect very tight generation capacity margins this winter. Therefore, there is a material risk that the frequency of RODPs will increase, reducing their economic viability.

The solution proposed is to simply expand the system services flag to include those generator units that are classified as a resource in the latest published TSOs Operational Constraints Update as a Replacement Reserve Resource and are available at or above their obligated capacity quantity only if their incremental price is at or below the Strike Price set. Thus, protecting peaking units from RODPs if they are providing replacement reserve and are ‘in merit’.

3. PURPOSE OF PROPOSED MODIFICATION

3A.) JUSTIFICATION OF MODIFICATION

We have had a significant number of pricing events since November 2020. High prices are a sign of a functioning market, but the nature of the Irish network means that the TSO only selects those peaking units from the location of the shortage. In addition, the TSO has been holding back energy from peaking units due to the fact that they are flexible and can provide replacement reserve at all times.

The impact for peaking units is that it is likely to become uneconomic for them to continue to operate as they continue to be subject to this largely uncontrollable dispatch risk, leading to large RODPs.

This is of particular concern given the TSOs expect winter 2021 to have very tight generation capacity margins. This is contrary to the detailed system design objectives. Instead of flexibility being rewarded,

it is being discriminated against due to their nature as a very flexible resource to the TSOs in a constrained market.

3B.) IMPACT OF NOT IMPLEMENTING A SOLUTION

Failure to implement this modification will continue to see unfair discrimination against peaking assets and undermine their economic viability and would be inconsistent with the clearly stated aims set out in SEM-15-103.

3C.) IMPACT ON CODE OBJECTIVES

Part B

(b) to facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner;

(a) 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;

(f) to ensure no undue discrimination between persons who are parties to the Code; and

(g) to promote the short-term and long-term interests of consumers of electricity on the island of Ireland with respect to price, quality, reliability, and security of supply of electricity.

4. WORKING GROUP AND/OR CONSULTATION

This modification is a development on Mod_14_21 – Extension of the System Service Flag to cover Cross Zonal Actions for System Security. This Modification was presented at the Balancing Modification Committee Meeting 103 on 11th February 2021.

It was not voted on at this meeting but was deferred for further analysis at the Working Group meeting held on 22nd March 2021. At this meeting it was agreed that Mod_01_21 and 02_21 be progressed to be voted on at the Modifications Committee Meeting 104 in April 2021 with further deliberation required for Mod_14_21. It was deferred at the Modifications Committee Meeting 104 and an update was presented at the Modifications Committee Meeting held on the 17th June 2021. An updated presentation on Mod_14_21 was given at the Modifications Committee Meeting in October 2021 and a further update was discussed at the industry wide call held on the 8th Nov 2021. There has been constructive engagement with the RAs, TSOs and SEMO to progress this modification both pre and post these meetings.

5. IMPACT ON SYSTEMS AND RESOURCES

N/A

6. IMPACT ON OTHER CODES/DOCUMENTS

N/A

7. MODIFICATION COMMITTEE VIEWS

MODIFICATIONS MEETING 112B – 16TH SEPTEMBER 2022

The Proposer delivered a presentation on this Modification Proposal and discussed the new legal drafting and the changes from Mod_14_21 to Mod_12_22. The Proposer advised that a new definition was necessary in the revised legal drafting.

The Proposer went through the slides and the rational on why P1 was used and following analysis that took place, it showed how P1 covered the vast majority (between 80 and 100%) of the affected unit maximum capacity. It was noted that complex bids are subject to compliance. Assurance was given that the use of P1 was easier and the manual workaround would allow for Mod_14_21 to be effective as soon as possible.

DSU Member gave support for this Modification Proposal but commented that there was a disconnect on replacement reserve and a new Modification may be needed in the future to look further at system services. The Proposer agreed that this Modification only addressed one area and follow up may be needed.

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 first Settlement Day following publication of RAs decision.

1 APPENDIX 1: MOD_12_22 EXPANSION OF THE SYSTEM SERVICE FLAG TO INCLUDE UNITS PROVIDING REPLACEMENT RESERVE IN LINE WITH THE DETAILED DESIGN

Proposer *(Company)*	**Date of receipt** *(assigned by Secretariat)*	**Type of Proposal** *(delete as appropriate)*	**Modification Proposal ID** *(assigned by Secretariat)*
EP Kilroot & EP Ballylumford	**13th September 2022**	**Urgent**	**Mod_12_22**

Contact Details for Modification Proposal Originator		
Name	**Telephone number**	**Email address**
Paul Hutchinson		**Paul.hutchinson@epuki.co.uk**

Modification Proposal Title
Expansion of the System Service flag to include units providing Replacement Reserve in line with the detailed design

Documents affected *(delete as appropriate)*	**Section(s) Affected**	**Version number of T&SC or AP used in Drafting**
Appendices Part B	**N.2**	**Version 23, November 2020**

Explanation of Proposed Change

(mandatory by originator)

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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 Appendix N

2 For each Imbalance Pricing Period, φ, the System Operators shall:

~~i. use information from the most recent Indicative Operations Schedule to identify whether a Generator Unit's scheduled output is bound by the presence of an Operational Constraint relating to the provision of Replacement Reserve, and where they determine that the Generator Unit is so bound, shall set the System Service Flag ($FSS_{u\varphi}$) for that Generator Unit, u, equal to zero for that Imbalance Pricing Period, φ. Otherwise, the System Operators shall set the System Service Flag ($FSS_{u\varphi}$) for that Generator Unit, u, equal to one for that Imbalance Pricing Period, φ.~~

i. where the Generator unit, u,

i. is listed by the TSO in its latest published Operational Constraints Update as a resource providing Replacement Reserve; and

ii. its Minimum Complex Price ($PCMIN_{u\varphi}$) ≤ Strike Price ($PSTR_m$)

then the System Service Flag ($FSS_{u\gamma}$) for that Generator Unit, u, shall be set equal to zero for that Imbalance Pricing Period, φ.

Where:

(a) PCMIN is the Minimum Complex Price for that unit in that Imbalance Pricing Period, φ.

(b) $PSTR_m$ is the Strike Price for Month, m, which contains Imbalance Settlement Period, γ

ii. Where not covered by (i), the System Operators shall set the System Service Flag ($FSS_{u\varphi}$) for that Generator Unit, u, equal to one for that Imbalance Settlement Period

Glossary

Minimum Complex Price is the price associated with the first set of Incremental Price Quantity Pairs, where the quantity is greater than zero, submitted in the Generator's Complex Bid Offer Data for each Period, h.

Modification Proposal Justification

(Clearly state the reason for the Modification)

We have had a significant number of pricing events since November 2020. High prices are a sign of a functioning market, but the nature of the Irish network means that the TSO only selects those peaking units from the location of the shortage. In addition, the TSO has been holding back energy from peaking units due to the fact that they are flexible and can provide replacement reserve at all times.

The impact for peaking units is that it is likely to become uneconomic for them to continue to operate as they continue to be subject to this largely uncontrollable dispatch risk, leading to large RODPs.

This is of particular concern given the TSOs expect winter 2021 to have very tight generation capacity margins. This is contrary to the detailed system design objectives. Instead of flexibility being rewarded, it is being discriminated against due to their nature as a very flexible resource to the TSOs in a constrained market.

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)

Part B

(b) to facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner;

(h) 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;

(i) to ensure no undue discrimination between persons who are parties to the Code; and

(j) to promote the short-term and long-term interests of consumers of electricity on the island of Ireland with respect to price, quality, reliability, and security of supply of electricity.

Implication of not implementing the Modification Proposal

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

Failure to implement this modification will continue to see unfair discrimination against peaking assets and undermine their economic viability and would be inconsistent with the clearly stated aims set out in SEM-15-103.

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 Market Code, Grid Code, Exchange Rules etc.)*
This modification is a development on Mod_04_21 – Extension of the System Service Flag to cover Cross Zonal Actions for System Security. This Mod was presented at the Balancing Modification Committee Meeting 103 on 11th February. It was not voted on at this meeting but was deferred for further analysis at the Working Group meeting held on 22nd March 21. At this meeting it was agreed that Mod_01_21 and 02_21 be progressed to be voted on at the April 21 BM Mod Meeting with further deliberation required for Mod_04_21. It was deferred at the BM Committee Meeting 104 and an update was presented at the Mods Meeting held on the 17th June. An updated presentation on Mod_14_21was given at the Oct 21 Committee and a further update was discussed at the industry wide call held on the 8th Nov. There has been constructive engagement with the RAs, TSOs and SEMO to progress this modification both pre and post these meetings.	

Please return this form to Secretariat by email to balancingmodifications@sem-o.com