MODIFICATION PROPOSAL FORM			
Proposer *(Company)*	**Date of receipt** *(assigned by Secretariat)*	**Type of Proposal** *(delete as appropriate)*	**Modification Proposal ID** *(assigned by Secretariat)*
EP Kilroot & EP Ballylumford	**30th November 2021**	**Standard**	**Mod_14_21v2**

Contact Details for Modification Proposal Originator		
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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)

Background

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 ($FSSu\phi$) 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’.

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 Incremental Price ($PINC_{ui\varphi}$) ≤ Strike Price ($PSTR_m$)

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

i. 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

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;

(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;

(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.

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

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.**

Appendix 1: TSOs Operational Constraints

Extracts from TSOs May 2021 Operational Constraints Update

Relevant Resources to this modification are classified in the Replacement Reserve

3.5.3 Active Ireland Constraints

[A] Scenario A: In this scenario if PBA or PBB are operating in combined cycle mode they will be considered as constraint resources

[B] Scenario B: In this scenario if PBA or PBB are configured to synchronise in 10 minutes they will be considered as constraint resources

Name	TCG Type	Limit Type	Limit	Resources	Description
System Stability (S_NBMIN_ROImin)	NB	N:>=	5 Units	AD2, DB1, GI4, HNC, HN2, MP1, MP2, MP3, PBA [A], PBB [A], TB3, TB4, TYC, WG1	There must be at least 5 machines on-load at all times in Ireland. Required for dynamic stability. [A] See Scenario A
Replacement Reserve (S_REP_ROI) (S_MWMAX_ROI_GT)	MW	X:<=	698 MW [B]	AT1, AT2, AT4, ED3, ED5, RP1, RP2, TP1, TP3, PBA [B], PBB [B]	Combined MW output of OCGTs must be less than 698 MW (out of a total of 1023 MW) in Ireland at all times. 325 MW required for replacement reserve. The limit is subject to change based on the availability of the units and transmission constraints that may limit their output. [B] See Scenario B

3.5.2 Active Northern Ireland Constraints

Name	TCG Type	Limit Type	Limit	Resources	Description
System Stability (S_NBMIN_MINNIU)	NB	N:>=	3 Units at all times	B10, B31, B32, C30, K1, K2	There must be at least 3 machines on-load at all times in Northern Ireland. Required for dynamic stability.
System Stability (S_NBMIN_MINNI3)	NB	N:>=	1 Unit at all times	C30, K1, K2	There must be a least 1 machine on-load at all times in Northern Ireland. Required for dynamic stability.
Replacement Reserve (S_REP_NI) (S_MWMAX_NI_GT)	MW	X:<=	272 MW	BGT1, BGT2, CGA, CGT8, EMPOWER , iPOWER, KGT1, KGT2, KGT3, KGT4	Combined MW output of OCGTs and AGUs must be less than 272 MW (out of a total of 397 MW) in Northern Ireland at all times. 125 MW required for replacement reserve. The limit is subject to change based on the availability of the units and transmission constraints that may limit their output.