Single Electricity Market

FINAL RECOMMENDATION REPORT

MOD_01_21 REMOVAL OF DIFFERENCE CHARGES WHERE OPERATIONAL CONSTRAINTS ARE BINDING

21 MAY 2021

Document History

Version	Date	Author	Comment
1.0	21st May 2021	Modifications Committee Secretariat	Issued to Modifications Committee for review and approval
2.0	28th May 2021	Modifications Committee Secretariat	Issued to Regulatory Authorities for final decision

Reference Documents

Document Name
Trading and Settlement Code
Modification Proposal
Modification Proposal
Modifications meeting 103 minutes
Mod_01_21, Mod_02_21 and Mod_04_21 Working Group Report

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1.   MODIFICATIONS COMMITTEE RECOMMENDATION

RECOMMENDED FOR APPROVAL– MAJORITY VOTE

Recommended for Approval by Majority Vote		
Eamonn Boland	Supplier Alternate	Approve
Robert McCarthy	DSU Member	Approve
Sean McParland	Generator Alternate	Approve
Ian Mullins	Supplier Member	Approve
David Gascon	Generator Alternate	Approve
Stacy Feldmann	Generator Member	Approve
Paraic Higgins (Chair)	Generator Member	Approve
Bryan Hennessy	Supplier Member	Approve
Alan Mullane	Assetless Member	Reject
Philip Carson	Supplier Member	Abstain

2. BACKGROUND

This Modification Proposal was raised by Bord na Mona and was received by the Secretariat on 28th January 2021. The proposal was raised at Meeting 103 on 11th February 2021, discussed at the Working Group on 22nd March 2021 and voted on at Meeting 104 on 28th April 2021.This is the same proposal as previously submitted by the RAs as part of the consultation paper SEM-19-024 back in May 2019. This consultation set out the option to remove the exposure to Difference Charges of Generator Units whose scheduled output cannot be increased due to an Operational Constraint. This will cover all Operating and Replacement Reserves (except negative reserves) that limit an increase in a unit's output, these are:

- ✓ All Operating and Replacement Reserves (except Negative Reserves) – currently Replacement Reserve only;
- ✓ S_MWR_ROI, and S_MWR_NI – when transfers from Ireland to Northern Ireland and vice versa are at a maximum;
- ✓ S_SNSP_TOT – when the System Non-Synchronous Penetration (SNSP) level is equal to the SNSP limit;
- ✓ S_RoCoF – ensures Ireland and NI power systems do not exceed Rate of Change of Frequency (RoCoF) limits;
- ✓ S_INERTIA_TOT- Operational limit for inertia. Ensures that all island Inertia does not fall below 23,000 MWs.
- ✓ S_MWMIN_MOYLE, S_MWMAX_MOYLE, S_MWMIN_EWIC, S_MWMAX_EWIC. Ensures all flows do not exceed a predetermined value for imports to Ireland and exports to GB.

✓ S_MWMAX_NI_GT, S_REP_NI, S_REP_ROI, and S_MWMAX_ROI_GT – combined MW output of OCGTs must be less than set MW number in Ireland and NI. This is required for replacement reserve in NI and Ireland;

✓ S_MWMAX_CRK_MW , and S_MWMAX_STH_MW – generation restriction in the Cork area and Southern Region; and

✓ other constraints that may be added from time to time. Please refer to the latest list of operational constraints as published by the TSO.

Under this proposed option, units bound by a binding constraint would be flagged with a System Service Flag. This includes units that are included in the constraints that are available to deliver but OFF at the time.

Despite the support of the vast majority of respondents in favour of implementing this proposal, as a prudent approach the RAs decided to hold back any changes with the view of gathering additional operational experience over time. There has been over 15 months since the decision was taken, therefore, it is now time to reconsider this approach.

3. PURPOSE OF PROPOSED MODIFICATION

3A.) JUSTIFICATION OF MODIFICATION

As requested by the RAs in the minutes of TSC meeting 104, the Proposer has provided expanded justification to strengthen the need for this Modification.

Based on comments received from the Working Group 1 held on the 22nd of March 2021, it was agreed to implement Mod_01_21 without reversing Mod_09_19. To achieve this, some small changes to the legal drafting are required from v1 of the proposal to ensure maintaining MWR Constraint off in Pricing and applying the System Service flag to all other constraints that are 'on'.

This proposal is needed to remove the unintended consequence of exposing plants holding a Reliability Option to Capacity Market difference payments, in circumstances beyond their control due to an unforeseen operational constraints where they are in merit and available to deliver but are not dispatched by the System Operator.   This Modification was previously presented as part of consultation SEM-19-024 and received significant support by Market Participants at the time. However, the SEM Committee decided not to implement it at the time to gain more market experience and gain additional operational experience. There has been over 15 months since the decision was taken; therefore, it is now time to reconsider this approach.

One of the key concerns raised by implementing this Modification is the potential adverse impact on the socialization fund. SEMO confirmed that even though the implementation of this modification would reduce the charges by 40% it would not have a negative impact on the socialisation fund.

It was suggested at Meeting 104 that the most appropriate way to avoid difference payments, would be to have an ex-ante position. This is not a feasible approach for low utilisation plants, which would regularly enter the Balancing Market with no ex-ante position due to the high variable costs.

Another consideration was that the risks that units incur, should be mitigated by appropriately factoring them into their bidding. Frist of all, this was an unforeseen circumstance at the time of the bidding by low utilisation plants, as the expectation was that flexible plants would be dispatched in the Balancing Markets if available when the imbalance price is higher than the RO strike price.   In addition, this is extremely difficult to predict and not capable of being remedied by the affected generator. Therefore, if it were to be priced into the bidding it would significantly increase the bid price to the ultimate detriment of the Consumers.

As part of consultation SEM-19-024 it was argued by the TSO that the removal of difference charges, could present a risk of introducing a locational element to the Capacity Market auction in that the

reduced risk of exposure to RO Difference Charges would potentially incentivise new plant build to locate behind an export constraint instead of inside a constrained area. In the overall considerations of an investment case this is not significant enough to determine an investment case. The main signal would be to invest in an area where there are constraint issues and therefore the possibility of increased physical running and to maximise the capture of infra marginal rent. In addition, other considerations such as TLAFs and locational multipliers for DS3 services are likely to weigh higher in the investment case.

Finally in terms of implementation, this Mod does not require any system changes and could be easily implemented without reversing Mod_09_19.

3B.) IMPACT OF NOT IMPLEMENTING A SOLUTION

If this Modification proposal is not implemented, Generator Units which hold Reliability Option (RO) obligations will continue to be exposed by facing Difference Charges (where the imbalance price is higher than the RO strike price) while being unable to be dispatched up by the System Operators due to the presence of an Operational Constraint on the system. These affected units were in merit (in the balancing energy market), and available but were dispatched up to their RO MW level.

3C.) IMPACT ON CODE OBJECTIVES

The aim of this Modification is to facilitate the achievement of the following 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;

(d)   to promote competition in the Single Electricity Market;

(e)   to provide transparency in the operation of the Single Electricity Market; and

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

4. WORKING GROUP AND/OR CONSULTATION

N/A

5. IMPACT ON SYSTEMS AND RESOURCES

Upon approval of this modification the decision could be implemented relatively quickly through configuration settings in the Central Market Systems avoiding the longer timelines needed for system charges.

6. IMPACT ON OTHER CODES/DOCUMENTS

N/A

7. MODIFICATION COMMITTEE VIEWS

MEETING 103 – 11TH FEBRUARY 2021

The Proposer delivered a presentation on this Modification noting under this proposed option, units bound by a binding constraint would be flagged with a System Service Flag. It was noted that there were issues with the number of units exposed to payments due to operational constraints. It was advised that this Modification was initially presented in the consultation paper SEM-19024 in 2019 and although it had received support from the vast majority of the industry, the SEMC decision to hold back any changes until experience was gained over time.

The Proposer went through the slides noting that the legal drafting only affected Appendix N.

The Proposer advised that figures for the impacts to the socialization fund were not included as they had been requested to SEMO. SEMO provided assurance to the Committee that the fund has been overfunded and the view was that, should this Mod be implemented, the charges would have been reduced by 40% in the 3 dates in January where the Imbalance Price was greater than the Strike Price; but was still an amount sufficient to cover, on a daily basis, the payments due out. However, during explorative testing from the System Operator, it appeared that System Service flag can't be turned on for a constraint that is off in pricing such as the MWR constraint which had been switched off with the implementation of Mod_09-19. This will need to factor in heavily to any decision that is made on this Mod.

WORKING GROUP – 22ND MARCH 2021

The Chair opened the floor for discussion on each of the Modifications individually. A question was raised if it was the general view of the Working Group that it was appropriate for a Modification to protect generators from RO exposure when they are available.

A number of Participants agreed with this statement, noting it was their belief that if a unit was subject to an operational constraint, it should be protected. The RAs advised they were conscious that most Market Participants are in favour of this change and when it was brought up first it was in the early days of the market with not many events happening and therefore not much data available. This has changed now and they are open to give further consideration to the issue.

It was queried if any of the 3 Modifications would be preferred to the others. It was the opinion of a Generator Participant that all 3 Modifications have individual merits and all three could be voted on. It was also noted that Mod_02_21 should be looked at on its own and Mod_01_21 and Mod_04_21 are more concerned with exposure so they could be discussed together.

Solutions

Mod_01_21

The Proposer reminded the Working Group that this Modification looks at the CRM position and aims to strip out the lack of flexibility.

A Generator Participant agreed that there was a clear justification for this Modification and it holds a lot of merit because it puts the emphasis on a unit's flexibility, which was at the core of the Detailed Design and it doesn't appear that the intent of the Detailed Design is achieved with the current implementation. There was also an agreement that Mod_01_21 and Mod_04_21 have a connection and both Proposers provided support for the two of them to be looked at together. It was also appreciated that Mod_01_21 is clearer and there is a consultation behind it already.

Another Generator Participant expressed doubts on Mod_04_21 because it is specific to Interconnector only, which means that if an issue with other constraints arises in the future, there could be similar unfair outcomes. The Proposer of Mod_04_21 explained that the Modification was part of TSO tools to accept cross-zonal pricing. It was noted that in settlement the use of the System Service flag was not taken into merit thus enabling the market price to reflect the market value.

Support was given for Mod_04_21 concerning its piece about flexibility and detailed design. The DSU Participant agreed that Mod_04_21 targets specific cross-zonal actions and flexibility, as per the detailed design. It was also queried as to whether there could be other ways of looking at a unit's flexibility, such as within the TOD sets.

A discussion ensued around the implications of Mod_01_21 on previously approved Mod_09_19 and the MWR constraint. SEMO confirmed that individual constraints can be turned on or off; however, the full impact of switching MWR back on would require a large modelling analysis, similar to that provided in 2019, which would require significant time and resources. It was confirmed that if the

MWR constraint (and all other constraints currently set to 'off' in Pricing) was omitted, then the System Service Flag could be changed for all others in the configuration, without vendor intervention. The Chair asked the Working Group if they were happy to implement Mod_01_21 without \reversing Mod_09_19 SEMO confirmed that by maintaining MWR Constraint off in Pricing and applying the System Service flag to all other constraints that are 'on', Mod_01_21 could be easily tackled with a simple change to the legal drafting in Appendix N.

A Generator Participant queried how the system flag worked through settlement and how did this process work for a unit which is turned off all of the time? The System Operator advised that in relation to the System Service Flag, the constraints are determined in RTD and some of these constraints will flag units that are off. The TSO agreed to look at this separately and provide further details for the next Mods panel.

Mod_04_21

The discussion then continued on Mod_04_21 and there was initial agreement from a number of Participants that this Modification correctly raises the question as to whether the detailed design as intended is considered in the rules and in the systems correctly.

A Generator Participant queried if Mod_01_21 already addresses the recognition of flexibility of plants specified in Mod_04_21? The Proposer agreed it would in terms of being part of a constraint but questioned if it would work in terms of the pricing mechanism.

The Proposer voiced a concern that Mod_01_21 may not address the question of whether it is correct that a flag is created when reserve is available. Is it correct to connect the Flag to the Reserve? A Generator Participant agreed that was a good question and gave his belief that no Modification addressed this issue. Mod_04_21 raises this matter and could be changed, to reflect that issue about detailed design, not being reflected correctly.

A DSU Participant continued the discussion around detailed design and voiced concern that the SEMC decision was not implemented correctly. Clarity was sought from the RAs on what the intention was of the decision. Was it intended to cover flexibility or system services? It was also asked if it was the SEM Committee's intention that units shouldn't be exposed to penalties, only during price events when there is not enough reserve and if unit is otherwise providing reserve should it be exposed? This should be reflective of flexibility for all System Services and not just provision of a single service (reserve). The RAs were queried as to whether the decision reflected either or both and they agreed to take these questions away for consideration, in particular around the impact of widening RO exemptions for the Capacity Market and the potential impact on the Socialisation Fund, and will provide further feedback for the next meeting.

Mod_02_21

A Generator Participant gave a summary of this Modification, noting that it points to the Balancing Market Principle Statement. It was also queried as to whether an SO-SO trade can be an energy action. In relation to CACM Article 35, it was noted that SO-SO trades are not energy actions and should be flagged out altogether, regardless of whether the price was greater than 500€/MWh.

The Proposer mentioned that this was discussed with TSOs, who had confirmed that SO-SO trades had been done mainly for the security of the system. The functionality of securing the system would be open to the above argument. From the documentation prior to go live it seems that there was intent to consider those as non-energy actions so the question arises of what did change subsequently. The DSU Participant agreed that there was definite merit in considering the above, on whether S0-SO trades were energy or not. A point was made that if these actions were taken for system security reasons they were therefore non-energy actions. The SO flags currently come from RTD, while the Trades are created in advance and are fixed, so they don't take part in the scheduling process. This is something that could be potentially looked at from an implementation point of view.

It was agreed amongst Participants that this was a grey area and more clarity was needed on whether all SO-SO actions were being treated as energy. The Proposer of Mod_02_21 advised that this Modification does not have an impact on the Socialisation Fund but would have an impact on Imperfections. It is their view that this is an interim solution, while the discussion of trades being Energy or Non-Energy would be a wider discussion.

MEETING 104 – 28TH APRIL 2021

The Proposer provided a background on this Modification Proposal advising that a small piece of wording was required to avoid any conflict with the previously implemented Mod_09_19 'Removal of Locational Constraints from Imbalance Pricing Calculation'.

An update was given on version 2 of this proposal noting that a further sentence was added to the legal drafting as agreed in the Working Group.

The RAs stated they understood there had been extensive discussion on this Modification, which was also the subject of a previous consultation, and that analysis provided by SEMO showed no impact on the socialization fund for the dates affected by the issue in January. The RAs requested that the FRR would need to go to the SEM Committee with a good level of justification, in addition to what was provided in the Mod form, on why units should not be exposed to difference payments and in which circumstances. It would also be beneficial to address the arguments that were given in the previous consultation, for not implementing the Mod at that time. Finally the RAs asked for comments, in response to the statement, that the most appropriate way for a unit to avoid difference Payments, would be to have an ex-ante position and whether all opposing arguments have been carefully considered, such as the comment raised at meeting 103, that the risk that units incur, should be mitigated by appropriately factoring them into their bidding.

Secretariat advised they would provide support to the Proposer in updating the justification piece of the Modification.

A Supplier Member noted that questions were raised in the last meeting regarding the socialization fund and if it would be affected. SEMO gave assurance that it would not be impacted in the examples of the affected dates in January but this may not be guaranteed under different circumstances.

The RAs noted that some of the concerns raised at the SEM Committee on Mod_09_19 will be raised again with this Modification. A Generator Member noted the benefit of having the Working Group report included with the FRR to the SEM Committee. Secretariat gave assurance that a link for this Working Group Report would be included in the FRR together with the minuted discussion of all meetings where the issue had been discussed.

An Assetless Member noted his opposition to the all 3 related Modifications discussed in the Working Group. It was stated that CRM is one of the most generous of its kind in Europe and paying money back is part of the design of a Market with these features and the potential of Price events well known. Repaying back money is part of the design and that risk should be factored in by Generators. It was added that this change did not take account of the impact that these exemptions would have on consumers' costs, who would ultimately pay for them. The unexpected scenarios should be well covered by the high premiums allowed in CRM.

Generator Member replied that at go-live certain scenarios were not envisaged and those have created unfair consequences for Generators. The Proposer gave assurance to the RAs that more rationale would be provided on the justification of the Modification.

8. PROPOSED LEGAL DRAFTING

As per legal drafting section of Appendix 1.

9. LEGAL REVIEW

N/A

10.IMPLEMENTATION TIMESCALE

It is recommended that this Modification should be implemented and made effective from the first available Trading Period in the Trading Date following publication of the SEM Committee decision.

Please note that this parameter change can't be forward dated and must be carried out at the exact time of the first applicable five minute run taking place. Therefore it would be appropriate that this is carried out within trading operational hours (between 07:00am and 19:00) and not at the beginning of a Trading Day.

1   APPENDIX1: MOD_01_21 REMOVAL OF DIFFERENCE CHARGES WHERE OPERATIONAL CONSTRAINTS ARE BINDING V2

MODIFICATION PROPOSAL FORM			
Proposer *(Company)*	**Date of receipt** *(assigned by Secretariat)*	**Type of Proposal** *(delete as appropriate)*	**Modification Proposal ID** *(assigned by Secretariat)*
BnM	**14th April 2021**	**Standard**	**Mod_01_21 v2**

Contact Details for Modification Proposal Originator		
Name	**Telephone number**	**Email address**
David Gascon		**David.gascon@bordnamona.com**

Modification Proposal Title
Removal of difference charges where operational constraints are binding v2

Documents affected *(delete as appropriate)*	**Section(s) Affected**	**Version number of T&SC or AP used in Drafting**
Appendices Part B		

Explanation of Proposed Change *(mandatory by originator)*

This is the same proposal as previously submitted by the RAs as part of the consultation paper SEM-19-024 back in May 2019. This consultation set out the option to remove the exposure to Difference Charges of Generator Units whose scheduled output cannot be increased due to an Operational Constraint. This will cover all Operating and Replacement Reserves (except negative reserves) that limit an increase in a unit's output, these are:

- ✓ All Operating and Replacement Reserves (except Negative Reserves) – currently Replacement Reserve only;
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- ✓ S_SNSP_TOT – when the System Non-Synchronous Penetration (SNSP) level is equal to the SNSP limit;
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- ✓ S_INERTIA_TOT- Operational limit for inertia. Ensures that all island Inertia does not fall below 23,000 MWs.

- ✓ S_MWMIN_MOYLE, S_MWMAX_MOYLE, S_MWMIN_EWIC, S_MWMAX_EWIC. Ensures all flows do not exceed a predetermined value for imports to Ireland and exports to GB.
- ✓ S_MWMAX_NI_GT, S_REP_NI, S_REP_ROI, and S_MWMAX_ROI_GT – combined MW output of OCGTs must be less than set MW number in Ireland and NI. This is required for replacement reserve in NI and Ireland;
- ✓ S_MWMAX_CRK_MW , and S_MWMAX_STH_MW – generation restriction in the Cork area and Southern Region; and
- ✓ other constraints that may be added from time to time. Please refer to the latest list of operational constraints as published by the TSO.

Under this proposed option, units bound by a binding constraint would be flagged with a System Service Flag. This includes units that are included in the constraints that are available to deliver but OFF at the time.

Despite the support of the vast majority of respondents in favour of implementing this proposal, as a prudent approach the RAs decided to hold back any changes with the view of gathering additional operational experience over time. There has been over 15 months since the decision was taken, therefore, it is now time to reconsider this approach.

Legal Drafting Change

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

In terms of implementation, a TSC modification (Appendix N: Flagging and Tagging) would need to be progressed through the Modification process together with a revision to the TSOs' Methodology for Determining System Operator and Non-Marginal Flags. See proposed wording below:

APPENDIX N: FLAGGING AND TAGGING

SYSTEM OPERATOR AND NON-MARGINAL

1.   For each Imbalance Pricing Period, ф, the System Operators shall 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 with the exception of those Operational Constraints relating to upper MW limits on the Transmission System and where they determine that the Generator Unit is so bound, shall set the System Operator Flag (FSOuф) for that Generator Unit, u, equal to zero for that Imbalance Pricing Period, ф. Otherwise, the System Operators shall set the System Operator Flag (FSOuф) for that Generator Unit, u, equal to one for that Imbalance Pricing Period, ф.

2.   For each Imbalance Pricing Period, ф, the System Operators shall 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, or any other Operational constraint which has a setting of 'ON' in the Imbalance Pricing System and which limits the potential

output the Generator's unit ~~or any other Operational constraint which limits the potential output the Generator's unit and for that a constraint that it is Off in pricing~~ and where they determine that the Generator Unit is so bound, shall set the System Service Flag (FSSuφ) for that Generator Unit, u, equal to zero for that Imbalance Pricing Period, φ. Otherwise, the System Operators shall set the System Service Flag (FSSuφ) for that Generator Unit, u, equal to one for that Imbalance Pricing Period, φ.

3.   For each Imbalance Pricing Period, φ, the System Operators shall use information from the most recent Indicative Operations Schedule to identify whether a Generator Unit's scheduled output is bound by the presence of a Unit Constraint and where they determine that the Generator Unit is so bound, shall set the Non-Marginal Flag (FNMuφ) for that Generator Unit, u, equal to zero for that Imbalance Pricing Period, φ. Otherwise, the System Operators shall set the Non-Marginal Flag (FNMuφ) for that Generator Unit, u, equal to one for that Imbalance Pricing Period, φ.

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

Based on comments received from the Working Group 1 held on the 22nd of March 2021, it was agreed to implement Mod_01_21 without reversing Mod_09_19. To achieve this, some small changes to the legal drafting are required from v1 of the proposal to ensure maintaining MWR Constraint off in Pricing and applying the System Service flag to all other constraints that are 'on'.

This proposal is needed to remove the unintended consequence of exposing plants holding a Reliability Option to Capacity Market difference payments, in circumstances where they are in merit and available to deliver and are not dispatched by the System Operator.

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)

The aim of this Modification is to facilitate the achievement of the following 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;

(d)   to promote competition in the Single Electricity Market;

(e)   to provide transparency in the operation of the Single Electricity Market; and

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

Implication of not implementing the Modification Proposal *(State the possible outcomes should the Modification Proposal not be implemented)*	
If this Modification proposal is not implemented, Generator Units which hold Reliability Option (RO) obligations will continue to be exposed by facing Difference Charges (where the imbalance price is higher than the RO strike price) while being unable to be dispatched up by the System Operators due to the presence of an Operational Constraint on the system. These affected units were in merit (in the balancing energy market), and available but were dispatched up to their RO MW level.	
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.)*
No	Upon approval of this modification the decision could be implemented relatively quickly through configuration settings in the Central Market Systems avoiding the longer timelines needed for system charges.
Please return this form to Secretariat by email to balancingmodifications@sem-o.com	