



Single Electricity Market

FINAL RECOMMENDATION REPORT

MOD_21_21 UNDO INSTRUCTION SCENARIO 4

5 DECEMBER 2022

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Document History

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Reference Documents

Document Name
Trading and Settlement Code
Mod_21_21 Undo Instruction Scenario 4

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1. MODIFICATIONS COMMITTEE RECOMMENDATION

RECOMMENDED FOR APPROVAL– MAJORITY VOTE

Recommended for Approval by Majority Vote		
Paul McGuckin	Flexible Participant Member	Approve
Robert McCarthy	DSU Member	Approve
Eoghan Cudmore	Supplier Alternate	Approve
Sean McParland	Generator Alternate	Approve
Andrew Burke	Supplier Member	Approve
Rochelle Broderick	Supplier Member	Approve
Brigid Reilly	Supplier Alternate	Approve
Bryan Hennessy	Supplier Member	Approve
Stacy Feldmann	Generator Member	Approve
Paraic Higgins (Chair)	Generator Member	Reject
David Caldwell	Supplier Alternate	Approve
Cormac Fagan	Assetless Member	Approve
Cormac Daly	Generator Member	Reject

2. BACKGROUND

This Modification Proposal was raised by SEMO and received by the Secretariat on the 18th November 2021. The Proposal was raised at Meeting 108 on 2nd December 2021, discussed at Meeting 109 on 10th February 2022, Meeting 110 on 7th April 2022, Meeting 111 on 16th June 2022 and voted on at Meeting 112 on the 6th September 2022.

As mentioned at Modification meeting 106, the Committee is asked to review the need for progressing change requests in relation to four 'undo' scenarios where non-compliance with the T&SC was identified as part of the Imbalance Pricing Certification Report during I-SEM market trial.

[Mod_27_18](#) was raised and discussed to temporary change the Code while the issues, that could not be fixed in time for go live, were being explored further. The SEMC decision on Mod_27_18, while acknowledging the non-compliance, allowed SEMO to pursue the correction of those items at a later stage, in recognition of the rarity of the occurrence of such scenarios and the need to prioritise more impactful issues. Since then, there has been a long process of negotiation with the vendor resulting in a new classification to changes to the original requirements rather than defects.

A high-level impact assessment was then returned by the vendor of high risk and high cost for each of the individual scenarios. This initial assessment further highlighted that, due to the complexity of the work involved and the significant impact on systems and vendor's resources, detailed impact assessments will have to be provided for each of these scenarios individually and they can only be implemented in separate releases. Each detailed Impact Assessment alone has been estimated between 150 and 200 hours which is a substantial cost compared to previous projects at the same stage.

The four scenarios were described in details in the [presentation](#) associated with the original Modification. Further analysis has been carried out on production data as issues were being identified and a note was issued by the Modification team on October 18, 2021 in advance of Meeting 107. Further to that notification other instances were analysed but none of these new events pertained to the scenario covered by this Modification.

This Modification deals with:

Scenario 4 – SYNC with DESY before reaching MSG

- 2 instances identified in Settlement queries in 2018
- Materiality of approximately 190K and 580K respectively. The errors refer to excess payments that the PTs have received.

Please note that the above samples may not represent the totality of the affected events but just those that have been found to match the original scenario through various analysis or Settlement Queries. A full review to rule out the existence of other examples is not realistically possible.

Of the known materiality for this scenario, the examples to date have been found to result in additional payments to PTs that should be recovered if corrected but none occurred since 2018. It is not excluded that there could be other instances that have gone undetected; however, SEMO believes that should there be other cases, they would not be as material.

SEMO is also aware that, without system changes, the two upheld queries relating to this scenario will remain without remedy.

SEMO will pursue system changes for other scenarios where the issue is recurrent and material.

3. PURPOSE OF PROPOSED MODIFICATION

3A.) JUSTIFICATION OF MODIFICATION

Cases related to Scenario 4 'SYNC with DESY before reaching MSG' are not expected to happen often, as it is not often that the TSOs would issue instructions to a different target instruction level while a unit is still trying to reach a target instruction level from a previous instruction. The experience in Market Trial and the early days of I-SEM have made the TSO more aware of the impact of such dispatch decisions which are to be avoided where possible. The likelihood of these cases has also been reduced or altogether disappeared through issuing guidance to control centre operators for the TSOs about these situations.

It is expected that the exposure in cases where they do occur would be relatively low. It primarily affects the "undo payment" a participant receives, i.e. the difference between the unit's incremental and decremental prices for a positive and negative QBOA which covers the same output range. The net volumes in the majority of the cases considered would be the same. In some cases where the net volume would be different (such as the MWOFF instruction profile reaching the target instruction level at the same time as its Instruction Effective Time, or the SYNC instructions being ignored), for MWOFF instructions the amounts would be related to changing outputs and therefore could result in increased or decreased charges, increased or decreased payments, and could be over smaller or larger MW amounts depending on the details of the instructions.

3B.) IMPACT OF NOT IMPLEMENTING A SOLUTION

In light of the vendor assessment of the adjustments needed to the system, it is SEMO opinion that the interest of the market would be best served by leaving the system unchanged.

If this change to the T&SC should not be implemented therefore there would not be substantive compliance between the systems and the rules in certification, and the outcomes in the scenario included in the modification proposal would not be transparent to participants.

3C.) IMPACT ON CODE OBJECTIVES

This Modification furthers Code Objectives A.2.1.4(a) and A.2.1.4(e):

- (a) *to facilitate the efficient discharge by the Market Operator of the obligations imposed upon it by its Market Operator Licences;*
- (e) *to provide transparency in the operation of the Single Electricity Market;*

4. WORKING GROUP AND/OR CONSULTATION

N/A

5. IMPACT ON SYSTEMS AND RESOURCES

n/a

6. IMPACT ON OTHER CODES/DOCUMENTS

N/A

7. MODIFICATION COMMITTEE VIEWS

MODIFICATIONS MEETING 108 – 2ND DECEMBER 2021

The Proposer's presentation on Mod_20_21 covered all scenarios including Scenario 4. It was noted that the discussion from Mod_20_21 below also applied to this Modification.

The Proposer delivered a [presentation](#) on this Modification noting that a number of scenarios were identified in Market trial and were not rectified due to the constraints of go-live, other priorities emerging and a disagreement with the vendor on whether they were defects or change requests. The scenarios were considered to be quite infrequent and of mixed material value. It was advised that the vendor disputed they were defects and they were reclassified as change requests needing a high level impact assessment which was delivered in September 2021 stating that a detailed impact assessment would be needed for each scenario at a considerable cost between 150 and 200 hours each. Also given the resources needed and the risky approach of changing the instruction profiler, the vendor could only implement changes in staggered releases leading to long implementation timelines. Following a review of the cases affected and their materiality, the SEMO proposal would require 1 change to the T&SC where there was no event identified in the live data, while the remaining scenarios (3 No.) would require system changes with the option, subject to vendor approval, of considering scenario 4 a subset of scenario 1 and therefore dealing with them as a single change request and implementation. The Proposer noted that they were open to alternative approaches and highlighted what those could be.

The Proposer went through the presentation detailing what is the intention of the rules as currently drafted and what is happening in the system with an indication of the impacted areas. The scenarios were uniformed for ease of comparison and simplified to show the raw issue without having to add further layers of complexity. That was achieved by keeping the Final Physical Notifications to zero and

concentrating the profile in a single period so that the boundary Pseudo Instruction (PISP) would not have to be considered.

A discussion ensued around the likelihood of introducing new errors by fixing the systems, especially in light of lost expertise in the area by the vendor, MO and Participants alike. Also, a question was raised on whether affected Participants had been informed.

SEMO confirmed that all cases identified had Settlement queries assigned to them therefore the affected Participant would have been aware of them, and with regards to the introduction of errors this would be the case for any system deployment but more so for an area of such complexity as this one. For that reason, SEMO choose not to pursue all 4 scenarios but only those that appeared with more frequency and produced events of significant materiality.

The RA Member summarized their view by stating that they would prefer to have the system aligned to the rules at all times and if there were reasons to justify otherwise that they would clearly be supported with a cost benefit analysis. The hybrid approach proposed by SEMO seemed to balance the two requirements of avoid costly actions and fix those that had the largest impact. Changing the code to match the systems was never ideal but it had been useful to hear the Participant's point of view and they would consider the relevant practicalities of the case.

SEMO summarized that they were proposing to proceed with Mod_20_21 and get a detailed impact assessment for the other 3 scenarios by grouping together 2 of them therefore Mod_21_21 would be deferred until confirmation by the vendor that this could be done.

A discussion ensued around the cost for fixing these scenarios and the time it will take. A Generator Member queried if there was enough of a reason to do this and would the DRB consider these issues could be resolved 3 to 4 months down the line.

SEMO advised there were a number of other settlement calculations that depend on QBOA and that it wouldn't be easy to arrive at a definite final figure for each case. Some of these cases did not produce Instruction Profiles at all and therefore it would not be possible to assess them. As per the timelines SEMO advised that the earliest release these could be scheduled for would be Release K (Spring 2023) for the first possible scenario(s) followed by the second one in Release L (Autumn 2023). Given that some of the affected dates are in 2018, Market Participants should also consider if they wish to maintain 2018 settlement opened for that length of time, although this would not be an urgent decision but one that could be taken once clarity around the timelines of implementations are confirmed. A Generator Member made a point that once changes are made there would be a high risk of new issues. In relation to dispute resolution it was queried if SEMO could calculate the resettlement value and invoice it. SEMO advised that the calculated amount would be a best approximation and currently they could only produce invoices where the data is fed from the system. However, the facility of generating separate invoices was there if this was appropriately included in the Code. A number of Members agreed that although the DRB process could be a lengthy one this route would cause less of a financial loss than others. It was queried what would be required for SEMO to release invoices if they were made aware of an event. SEMO noted that this would be a new approach and a new invoice type it would need to be looked at as a separate Modification with a legal assessment required also.

Appreciation was given for clearly showing all 4 scenarios given the length of time elapsed since they first came to light and the lack of familiarity from most on the Committee.

A Supplier Member re-iterated the previous point made that preference should be given to an alignment between the code and systems and didn't believe it was good policy to change the Code to what the system was doing. It was noted that these issues were discovered and were not resolved straight away and lessons should be learned from it. Going forward it was advised that something needed to be put in place to ensure this didn't happen again. The Proposer agreed with the points made and that lessons were learnt but the Committee is now faced with the reality of the situation as it stands.

Clarifications were asked on the materiality: Generator Member stated that they could understand how a Generator could be adversely affected but could not understand how it could benefit by those scenarios as some of the materiality analysis suggested. SEMO explained that the materiality could go either way depending on the position of the Generator's Physical Notifications and the Meter Generation which were excluded on purpose from the infographic to show the issue at its core. It was requested if possible, to have a generalized example of a case where the Generator had benefitted.

The Chair summarized the 4 possible options that could be progressed:

- Request a breakdown of the detailed cost for each scenario therefore proceeding with 4 change requests;
- Draft Modifications for each of the 4 scenarios so that the systems would be left unchanged;
- Leave all scenarios as they are in the Code and in the system as a non-compliance issue to be recognized in an updated RA's decision;
- Add amendments to the Code to provide a mandate to SEMO to add a new invoice type that could be used to remedy those scenarios based on the MO analysis of materiality in out of market systems

It was advised that this Modification Mod_20_21 and related Mod_21_21 should be deferred to review the above options. SEMO cautioned that if a decision was delayed the risk was to miss the deadline for Release K. SEMO provided assurance that additional requirements for a new Modification of an additional Invoice type would be reviewed and an option would be progressed for Meeting 109 in February 2022.

Committee Members agreed that more time was needed for review of more options and further detail on scenarios.

MODIFICATIONS MEETING 109 – 10TH FEBRUARY 2022

The Proposer discussed this Modification in line with Mod_20_21 as detailed below. It was noted that this Modification would require a more detailed Impact Assessment and therefore it was agreed it would be deferred.

The Proposer delivered a [presentation](#) on this Modification noting that the slides focused on overpayment examples as requested by Members at meeting 108. The presentation explained overpayments occur as a result of impact and magnitude of error and prices or when issues are protracted for a long time. It was advised that there had been a change in the way the two Modifications were approached, and this was because SEMO had further engagements with the vendor and there was more comfort that the changes will not be as risky. In addition to that an increase in the number of instances verified has made the change to the system more cost effective as there were 19 occurrences in 2021 alone and the materiality of all the issues had increased to 1.7M in underpayments and 450K approximately of overpayments. This made the second action requested at meeting 108 (investigating solution for invoicing out of system) less appropriate and as such it had not progressed pending the result of the detailed impact assessment.

With regards to Mod_20_21 the Proposer believed that a system change was not required because no event had been identified so far and even if an occurrence were to be identified it would be time limited therefore likely not material. It was suggested that the best course of action for Mod_20_21 would be to address the non-compliance through changes to the T&SC to match the system and even if this would not be the course of action normally recommended, it would be the most appropriate in this case for practical reasons and to avoid unnecessary costs.

For the remaining scenarios the advice was to progress the detailed impact assessment, verify whether scenario 4 could be covered under scenario 1 and proceed with prioritizing the implementation of changes for scenario 3 which was the one occurring most frequently and with the highest materiality.

A DSU Member provided a recap on the Modification Proposal noting that for Mod_20_21 there were no examples of overpayment or underpayment so the Modification would be advanced for compliance purposes and a more detailed Impact Assessment would be required before being able to take a vote on Mod_21_21.

A Supplier Member questioned why instances were going up between 2020 and 2021. MO Observer advised that they had been tracking these occurrences better and more instances of small materiality had been found as opposed to previous years where only the larger ones would be picked up.

The Proposer concluded the presentation by going through how to identify these issues and advised Participants to always raise Settlement queries going forward because these instances were no longer treated as defects and needed to be raised as formal queries for SEMO to fix them. The Proposer also advised that so far there had been a lot of focus on the TSO dispatching outside TODS as a potential cause for these events, while the analysis seem to show that often these cases are due to units not updating their TODs appropriately. The presentation showed an example where PNs and MG were matching closely while the DQs derived by the Technical Data would be significantly different. The problem would not have occurred were the TODs updated to match the unit actual capability. A reminder to Participant to make sure that all data submitted would be accurate to avoid the recurrence of such issues.

The Proposer discussed this Modification in line with Mod_20_21 as detailed above. It was noted that this Modification would require a more detailed Impact Assessment and therefore it was agreed it would be deferred.

MODIFICATIONS MEETING 110 – 7TH APRIL 2022

The Proposer provided an update on this Modification Proposal noting that it would be deferred until the Impact Assessment for the change request was received. The Proposer provided assurance to the Committee that they were working towards having something back by Modifications Committee Meeting 111 in June.

MODIFICATIONS MEETING 111 – 16TH JUNE 2022

The Proposer provided an update on this Modification Proposal as per above action review noting that the Modification proposal would still need to be deferred.

MODIFICATIONS MEETING 112 – 6TH SEPTEMBER 2022

The Proposer provided an update on this Modification Proposal relating to one of the Undo Scenarios which relates to a specific scenario when a DSYN is issued soon after the sync instruction and prior to the unit reaching MINGEN. The text of the Modification had been verified as conformed to the current system implementation and therefore a vote was required to relieve SEMO of a non-compliance on the matter.

A Generator Member raised a question in relation to a unit that had been given a sync instruction and if the unit would receive a start-up cost. MO Member advised that in all scenarios where the output was 'error in slope' no profile would be calculated therefore no start-up cost. If an incorrect profile were to be produced as a result of the defect SEMO's testing showed the start would not be recognized as MINGEN was not reached and start up would not be assigned however, the heat status of the unit would also remain unchanged. Generator Member queried if the Modification was not in place and the event occurred would it be possible to raise it as a settlement query or dispute to recover the missed payments. MO Member confirmed this, and that should the Modification be voted it would not be possible to raise queries in those scenarios.

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_21_21 UNDO INSTRUCTION SCENARIO 4

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>
SEMO	18th November 2021	Standard	Mod_21_21
Contact Details for Modification Proposal Originator			
Name	Telephone number	Email address	
Katia Compagnoni		balancingmodifications@sem-o.com	
Modification Proposal Title			
Undo instructions – scenario 4			
Documents affected <i>(delete as appropriate)</i>	Section(s) Affected	Version number of T&SC or AP used in Drafting	
Appendices Part B	Appendix O.23 table 5	V24	
Explanation of Proposed Change <i>(mandatory by originator)</i>			
<p>As mentioned at Modification meeting 106, the Committee is asked to review the need for progressing change requests in relation to four ‘undo’ scenarios where non-compliance with the T&SC was identified as part of the Imbalance Pricing Certification Report during I-SEM market trial.</p> <p>Mod_27_18 was raised and discussed to temporary change the Code while the issues, that could not be fixed in time for go live, were being explored further. The SEMC decision on Mod_27_18, while acknowledging the non-compliance, allowed SEMO to pursue the correction of those items at a later stage, in recognition of the rarity of the occurrence of such scenarios and the need to prioritise more impactful issues. Since then, there has been a long process of negotiation with the vendor resulting in a new classification to changes to the original requirements rather than defects.</p> <p>A high level impact assessment was then returned by the vendor of high risk and high cost for each of the individual scenarios. This initial assessment further highlighted that, due to the complexity of the work involved and the significant impact on systems and vendor’s resources, detailed impact assessments will have to be provided for each of these scenarios individually and they can only be implemented in separate</p>			

releases. Each detailed Impact Assessment alone has been estimated between 150 and 200 hours which is a substantial cost compared to previous projects at the same stage.

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This Modification deals with:

Scenario 4 – SYNC with DESY before reaching MSG

- 2 instances identified in Settlement queries in 2018
- Materiality of approximately 190K and 580K respectively. The errors refer to excess payments that the PTs have received.

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Of the known materiality for this scenario, the examples to date have been found to result in additional payments to PTs that should be recovered if corrected but none occurred since 2018. It is not excluded that there could be other instances that have gone undetected; however SEMO believes that should there be other cases, they would not be as material.

SEMO is also aware that, without system changes, the two upheld queries relating to this scenario will remain without remedy.

SEMO will pursue system changes for other scenarios where the issue is recurrent and material.

Legal Drafting Change

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

Changes to Part B Appendix O: 'INSTRUCTION PROFILING CALCULATIONS' (new row added)

23. The sorted Dispatch Instructions for each Generator Unit shall be validated by the Market Operator using the rules in Table 1, **Error! Reference source not found.** and **Error! Reference source not found.**

Table 1 – Validation Rules for Dispatch Instructions issued by the System Operator

<u>SYNC</u>	<u>DESY</u>	<p><u>If a subsequent DESY Dispatch Instruction has an Instruction Effective Time which is between the Instruction Effective Time of a prior SYNC Dispatch Instruction and the time when the Physical Notification Instruction Profile for the SYNC Dispatch Instruction reaches the Generator Unit's Registered Minimum Stable Generation, then the Dispatch Instruction having the preceding SYNC Instruction Code shall be ignored.</u></p>
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Modification Proposal Justification
(Clearly state the reason for the Modification)

Cases related to Scenario 4 ‘SYNC with DESY before reaching MSG’ are not expected to happen often, as it is not often that the TSOs would issue instructions to a different target instruction level while a unit is still trying to reach a target instruction level from a previous instruction. The experience in Market Trial and the early days of I-SEM have made the TSO more aware of the impact of such dispatch decisions which are to be avoided where possible. The likelihood of these cases has also been reduced or altogether disappeared through issuing guidance to control centre operators for the TSOs about these situations.

It is expected that the exposure in cases where they do occur would be relatively low. It primarily affects the “undo payment” a participant receives, i.e. the difference between the unit’s incremental and decremental prices for a positive and negative QBOA which covers the same output range. The net volumes in the majority of the cases considered would be the same. In some cases where the net volume would be different (such as the MWOFF instruction profile reaching the target instruction level at the same time as its Instruction Effective Time, or the SYNC instructions being ignored), for MWOFF instructions the amounts would be related to changing outputs and therefore could result in increased or decreased charges, increased or decreased payments, and could be over smaller or larger MW amounts depending on the details of the instructions.

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)

This Modification furthers Code Objectives A.2.1.4(a) and A.2.1.4(e):

- (a) *to facilitate the efficient discharge by the Market Operator of the obligations imposed upon it by its Market Operator Licences;*
- (e) *to provide transparency in the operation of the Single Electricity Market;*

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

In light of the vendor assessment of the adjustments needed to the system, it is SEMO opinion that the interest of the market would be best served by leaving the system unchanged.

If this change to the T&SC should not be implemented therefore there would not be substantive compliance between the systems and the rules in certification, and the outcomes in the scenario included in the modification proposal would not be transparent to participants.

Working Group	Impacts <i>(Indicate the impacts on systems, resources, processes and/or procedures; also indicate impacts on any other</i>
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<i>(State if Working Group considered necessary to develop proposal)</i>	<i>Market Code such as Capacity Market Code, Grid Code, Exchange Rules etc.)</i>
n/a	n/a
<i>Please return this form to Secretariat by email to balancingmodifications@sem-o.com</i>	