



Single Electricity Market

FINAL RECOMMENDATION REPORT

MOD_03_21 SPLITTING CEADSU VARIABLE

9 MARCH 2021

COPYRIGHT NOTICE

All rights reserved. This entire publication is subject to the laws of copyright. This publication may not be reproduced or transmitted in any form or by any means, electronic or manual, including photocopying without the prior written permission of EirGrid plc and SONI Limited.

DOCUMENT DISCLAIMER

Every care and precaution is taken to ensure the accuracy of the information provided herein but such information is provided without warranties express, implied or otherwise howsoever arising and EirGrid plc and SONI Limited to the fullest extent permitted by law shall not be liable for any inaccuracies, errors, omissions or misleading information contained herein.

Document History

Version	Date	Author	Comment
1.0	19 March 2021	Modifications Committee Secretariat	Issued to Modifications Committee for review and approval
2.0	26 March 2021	Modifications Committee Secretariat	Issued to Regulatory Authorities for final decision

Reference Documents

Document Name
Trading and Settlement Code
Modification Proposal
Presentation

Table of Contents

1. MODIFICATIONS COMMITTEE RECOMMENDATION	3
RECOMMENDED FOR APPROVAL– UNANIMOUS VOTE	3
2. BACKGROUND.....	3
3. PURPOSE OF PROPOSED MODIFICATION	4
3A.) JUSTIFICATION OF MODIFICATION	4
3B.) IMPACT OF NOT IMPLEMENTING A SOLUTION	4
3C.) IMPACT ON CODE OBJECTIVES	4
4. WORKING GROUP AND/OR CONSULTATION.....	4
5. IMPACT ON SYSTEMS AND RESOURCES.....	4
6. IMPACT ON OTHER CODES/DOCUMENTS.....	4
7. MODIFICATION COMMITTEE VIEWS.....	4
MEETING 103 – 11 FEBRUARY 2021	4
8. PROPOSED LEGAL DRAFTING.....	4
9. LEGAL REVIEW.....	4
10. IMPLEMENTATION TIMESCALE	5
1 APPENDIX1: MOD_03_21 SPLITTING OF CEADSU VARIABLE	6

1. MODIFICATIONS COMMITTEE RECOMMENDATION

RECOMMENDED FOR APPROVAL– UNANIMOUS VOTE

Recommended for Approval by Unanimous Vote		
Paraic Higgins (Chair)	Generator Member	Approve
Sean McParland	Generator Alternate	Approve
Stacy Feldmann	Generator Member	Approve
Bryan Hennessy	Supplier Member	Approve
Ian Mullins	Supplier Member	Approve
Andrew Burke	Supplier Member	Approve
Alan Mullane	Assetless Member	Approve
Cormac Daly	Generator Member	Approve
Robert McCarthy	DSU Member	Approve
Philip Carson	Supplier Member	Approve

2. BACKGROUND

This Modification Proposal was raised by SEMO and was received by the Secretariat on 28th January 2021. The proposal was raised and voted on at Meeting 103 on 11th February 2021.

A new variable to calculate the Demand Side Unit Energy Adjustment Payment or Charge (CEADSU) has been introduced in the Market Systems following approval on Mod_17_19. During Vendor implementation it was noted that the variable needed to be split into 3 separate components (one for Day Ahead volumes, one for Intraday and one for Imbalance) due mainly to different VAT rates to be applied. The end result is unaffected with the original variable split into three sub-variables that are added up.

The functionality is rarely used and was not called upon until the high price event on November 26th 2020 where it emerged that the three sub-variables were included in the Settlement Documents while the original CEADSU variable wasn't. This creates an inconsistency that might cause difficulties to Participants replicating and shadowing the settlement in those events. The issue was raised by affected DSU Member at the December Meeting 102 and this Modification seeks to clarify the Trading and Settlement Code accordingly. There is no requirement for Market Systems or output reports to be updated; this Modification simply seeks to align the Legal Drafting of the Code to the implementation for full clarity.

3. PURPOSE OF PROPOSED MODIFICATION

3A.) JUSTIFICATION OF MODIFICATION

This Modification seeks to clarify the correct steps used in the calculation of CEADSU variable as published in the Settlement Documents therefore removing an inconsistency between the Code and the published Invoice in case of high price events which trigger this functionality.

3B.) IMPACT OF NOT IMPLEMENTING A SOLUTION

If this Modification is not implemented there would still be an inconsistency between the T&SC and the Settlement Documents which would create confusion to Participant's trying to shadow settle the calculations of CEADSU in cases of high price events.

3C.) IMPACT ON CODE OBJECTIVES

This Modification has been raised to fulfil mainly the following obligation:

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

As it remove an inconsistency between the T&SC Legal Drafting and the published Settlement Document and clarifies the calculation in the T&SC for the benefit of affected Participants

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

MEETING 103 – 11 FEBRUARY 2021

The Proposer gave a [presentation](#) on the Modification noting that this was a minor housekeeping issue initially raised at Meeting 102 in December by the DSU Member. Variable CEADSU has been created in Mod_17_19 however at implementation stage the vendor advised that for VAT purposes, sales and purchases from EU and no-EU countries had to be separated therefore the variable had to be split in 2 sub-variables to account for trades in the Day Ahead, Intra Day and Imbalance periods. These 3 sub-variables are included in the Settlement Documents but the Code needs to be amended to reflect this.

The Proposer went through the slides showing the formulas that would be used with the 3 separate components of variable CEADSU highlighted and described individually. DSU confirmed they are happy with this housekeeping modification which aligns the Code with system implementation.

8. PROPOSED LEGAL DRAFTING

As per Appendix 1 below

9. LEGAL REVIEW

N/A

10. IMPLEMENTATION TIMESCALE

It is recommended that this Modification should be made effective from the first Settlement Date following publication of the SEM Committee decision.

1 APPENDIX1: MOD_03_21 SPLITTING OF CEADSU VARIABLE**MODIFICATION PROPOSAL FORM**

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	28th January 2021	Standard	Mod_03_21
Contact Details for Modification Proposal Originator			
Name	Telephone number	Email address	
Katia Compagnoni			
Modification Proposal Title			
Splitting CEADSU variable			
Documents affected <i>(delete as appropriate)</i>	Section(s) Affected	Version number of T&SC or AP used in Drafting	
T&SC Part A/Part B/Part C Appendices Part A/Part B Glossary Part A/Part B/Part C Agreed Procedures Part A/Part B	H.14.1	V23	
Explanation of Proposed Change <i>(mandatory by originator)</i>			
<p>A new variable to calculate the Demand Side Unit Energy Adjustment Payment or Charge (CEADSU) has been introduced in the Market Systems following approval on Mod_17_19. During Vendor implementation it was noted that the variable needed to be split into 3 separate components (one for Day Ahead volumes, one for Intraday and one for Imbalance) due mainly to different VAT rates to be applied. The end result is unaffected with the original variable split into three sub-variables that are added up.</p> <p>The functionality is rarely used and was not called upon until the high price event on November 26th 2020 where it emerged that the three sub-variables where included in the Settlement Documents while the original CEADSU variable wasn't. This creates an inconsistency that might cause difficulties to Participants replicating and shadowing the settlement in those events. The issue was raised by affected DSU Member at the December Meeting 102 and this Modification seeks to clarify the Trading and Settlement Code accordingly. There is no requirement for Market</p>			

Systems or output reports to be updated; this Modification simply seeks to align the Legal Drafting of the Code to the implementation for full clarity.

Legal Drafting Change

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

H.14.1 Settlement of Ex-ante Market

H.14.1.1 Until the date that is the Mod_17_19 Deployment Date, the following paragraph shall apply:

The Market Operator shall calculate the Demand Side Unit Energy Adjustment Payment or Charge (CEADSU_{vγ}) for each Trading Site

Supplier Unit, v, which is associated with a Demand Side Unit, u, which is associated with a Capacity Market Unit, Ω, in each

Imbalance Settlement Period, γ, as follows:

If $QCNET_{\Omega\gamma} = 0$, then $CEADSU_{v\gamma} = 0$,

Else if for all Trades, x, and all positions, k, in the ranked set, $PTDA_{xuh} \leq PSTR_m$, and $PTID_{xuh} \leq PSTR_m$, and $PTB_{u\gamma k} \leq PSTR_m$, then $CEADSU_{v\gamma} = 0$,

Else

$$\begin{aligned}
 & \text{CEADSU}_{v\gamma} \\
 &= \frac{\sum_{x \in PTDA_{xvh} > PSTR_m} (-qTDA_{xvh} \times \text{Min}(DTDA_x, DISP)) \times (PTDA_{xvh} - PIMB_\gamma)}{+ \frac{\sum_{x \in PTID_{xvh} > PSTR_m} (-qTID_{xvh} \times \text{Min}(DTID_x, DISP)) \times (PTID_{xvh} - PIMB_\gamma)}{\left(QMLF_{v\gamma} - QEX_{v\gamma} + \left(\frac{\sum_{x \in PTDA_{xvh} > PSTR_m} (qTDA_{xvh} \times \text{Min}(DTDA_x, DISP))}{+ \frac{\sum_{x \in PTID_{xvh} > PSTR_m} (qTID_{xvh}) \times \text{Min}(DTID_x, DISP)} \right) \right)} \times PIMB_\gamma}
 \end{aligned}$$

where:

- (a) ~~QMLF_{vγ} is the Loss-Adjusted Metered Quantity for Supplier Unit, v, in Imbalance Settlement Period, γ;~~
- (b) ~~QEX_{vγ} is the Ex-Ante Quantity for Supplier Unit, v, in Imbalance Settlement Period, γ;~~
- (c) ~~PSTR_m is the Strike Price for Month, m, which contains Imbalance Settlement Period, γ.~~
- (d) ~~PIMB_γ is the Imbalance Settlement Price in Imbalance Settlement Period, γ, calculated in accordance with Chapter E (Imbalance Pricing);~~
- (e) ~~qTDA_{xvh} is the Day-ahead Trade Quantity in respect of Supplier Unit v for Day-ahead Trading Period h for Trade x;~~
- (f) ~~qTID_{xvh} is the Intraday Trade Quantity in respect of Supplier Unit v for Intraday Trading Period h for Trade x;~~
- (g) ~~DISP is the Imbalance Settlement Period Duration;~~
- (h) ~~DTDA_x is the Day-ahead Trade Duration of Trade, x;~~
- (i) ~~DTID_x is the Intraday Trade Duration of Trade, x;~~
- (j) ~~PTDA_{xvh} is the Day-ahead Trade Price for Trade, x, for Supplier Unit, v, within whose Day-ahead Trading Period, h, the Imbalance Settlement Period, γ, falls in whole or in part;~~
- (k) ~~PTID_{xvh} is the Intraday Trade Price associated with the Intraday Trade Quantity (QTID_{xvh}) for Trade, x, for Supplier Unit, v, within whose Intraday Trading Period, h, the Imbalance Settlement Period, γ, falls in whole or in part;~~
- (l) ~~PTB_{uyk} is the Balancing Trade Price associated with the Balancing Trade Quantity (QTB_{uyk}) for Generator Unit, u, in the position, k, in the ranked set, in Imbalance Settlement Period, γ;~~
- (m) ~~$\sum_{x \in PTDA_{xvh} > PSTR_m}$ is a summation over all Trades, x, where the price associated with that trade, PTDA_{xvh}, is greater than the Strike Price for month, m, PSTR_m;~~
- (n) ~~$\sum_{x \in PTID_{xvh} > PSTR_m}$ is a summation over all Trades, x, where the price associated with that trade, PTID_{xvh}, is greater than the Strike Price for month, m, PSTR_m;~~

$$CEADSU_{v\gamma} = CEADSUDA_{v\gamma} + CEADSUIDT_{v\gamma} + CEADSUIMB_{v\gamma}$$

Where

(a) CEADSUDA_{vγ} is the Day Ahead component of CEADSU_{vγ} calculated as follows:

$$CEADSUDA_{v\gamma} = \sum_{x \in PTDA_{xvh} > PSTR_m} \left(-qTDA_{xvh} \times \text{Min}(DTDA_x, DISP) \times (PTDA_{xvh} - PIMB_\gamma) \right)$$

Where

- (i) $qTDA_{xvh}$ is the Day-ahead Trade Quantity in respect of Supplier Unit v for Day-ahead Trading Period h for Trade x;
- (ii) $DTDA_x$ is the Day-ahead Trade Duration of Trade, x;
- (iii) $DISP$ is the Imbalance Settlement Period Duration;
- (iv) $PTDA_{xvh}$ is the Day-ahead Trade Price for Trade, x, for Supplier Unit, v, within whose Day-ahead Trading Period, h, the Imbalance Settlement Period, γ , falls in whole or in part;
- (v) $PIMB_\gamma$ is the Imbalance Settlement Price in Imbalance Settlement Period, γ , calculated in accordance with Chapter E (Imbalance Pricing);
- (vi) $\sum_{x \in PTDA_{xvh} > PSTR_m}$ is a summation over all Trades, x, where the price associated with that trade, $PTDA_{xvh}$, is greater than the Strike Price for month, m, $PSTR_m$

(b) $CEADSUIDT_{v\gamma}$ is the Intra Day component of $CEADSU_{v\gamma}$ calculated as follows:

$$CEADSUIDT_{v\gamma} = \sum_{x \in PTID_{xvh} > PSTR_m} \left(-qTID_{xvh} \times \text{Min}(DTID_x, DISP) \times (PTID_{xvh} - PIMB_\gamma) \right)$$

Where

- (i) $qTID_{xvh}$ is the Intraday Trade Quantity in respect of Supplier Unit v for Intraday Trading Period h for Trade x;
- (ii) $DTID_x$ is the Intraday Trade Duration of Trade, x;
- (iii) $DISP$ is the Imbalance Settlement Period Duration;
- (iv) $PTID_{xvh}$ is the Intraday Trade Price associated with the Intraday Trade Quantity ($qTID_{xvh}$) for Trade, x, for Supplier Unit, v, within whose Intraday Trading Period, h, the Imbalance Settlement Period, γ , falls in whole or in part;
- (v) $PIMB_\gamma$ is the Imbalance Settlement Price in Imbalance Settlement Period, γ , calculated in accordance with Chapter E (Imbalance Pricing);
- (vi) $\sum_{x \in PTID_{xvh} > PSTR_m}$ is a summation over all Trades, x, where the price associated with that trade, $PTID_{xvh}$, is greater than the Strike Price for month, m, $PSTR_m$

(c) $CEADSUIMB_{v\gamma}$ is the Imbalance component of $CEADSU_{v\gamma}$ calculated as follows:

$$\begin{aligned}
 CEADSUIMB_{vy} &= - \left(QMLF_{vy} - QEX_{vy} \right. \\
 &+ \left(\sum_{x \in PTDA_{xvh} > PSTR_m} (qTDA_{xvh} \times \text{Min}(DTDA_x, DISP)) \right. \\
 &\left. \left. + \sum_{x \in PTID_{xvh} > PSTR_m} (qTID_{xvh}) \times \text{Min}(DTID_x, DISP) \right) \right) \times PIMB_{\gamma}
 \end{aligned}$$

Where

- (i) $QMLF_{vy}$ is the Loss-Adjusted Metered Quantity for Supplier Unit, v, in Imbalance Settlement Period, γ ;
- (ii) QEX_{vy} is the Ex-Ante Quantity for Supplier Unit, v, in Imbalance Settlement Period, γ ;
- (iii) $qTDA_{xvh}$ is the Day-ahead Trade Quantity in respect of Supplier Unit v for Day-ahead Trading Period h for Trade x;
- (iv) $DTDA_x$ is the Day-ahead Trade Duration of Trade, x;
- (v) $qTID_{xvh}$ is the Intraday Trade Quantity in respect of Supplier Unit v for Intraday Trading Period h for Trade x;
- (vi) $DTID_x$ is the Intraday Trade Duration of Trade, x;
- (vii) $DISP$ is the Imbalance Settlement Period Duration;
- (viii) $PIMB_{\gamma}$ is the Imbalance Settlement Price in Imbalance Settlement Period, γ , calculated in accordance with Chapter E (Imbalance Pricing);
- (ix) $\sum_{x \in PTDA_{xvh} > PSTR_m}$ is a summation over all Trades, x, where the price associated with that trade, $PTDA_{xvh}$, is greater than the Strike Price for month, m, $PSTR_m$
- (x) $\sum_{x \in PTID_{xvh} > PSTR_m}$ is a summation over all Trades, x, where the price associated with that trade, $PTID_{xvh}$, is greater than the Strike Price for month, m, $PSTR_m$

H.14.1.2 The total Demand Side Unit Energy Adjustment Payment or Charge ($CEADSU_{vd}$) for Trading Site Supplier Unit v, which is associated with a Demand Side Unit u, for Settlement Day d shall be calculated by the Market Operator as follows:

$$CEADSU_{vd} = \sum_{\gamma \text{ in } d} CEADSU_{vy}$$

<i>(Clearly state the reason for the Modification)</i>	
This Modification seeks to clarify the correct steps used in the calculation of CEADSU variable as published in the Settlement Documents therefore removing an inconsistency between the Code and the published Invoice in case of high price events which trigger this functionality.	
Code Objectives Furthered <i>(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)</i>	
This Modification has been raised to fulfil mainly the following obligation: (e) <i>to provide transparency in the operation of the Single Electricity Market;</i> As it remove an inconsistency between the T&SC Legal Drafting and the published Settlement Document and clarifies the calculation in the T&SC for the benefit of affected Participants	
Implication of not implementing the Modification Proposal <i>(State the possible outcomes should the Modification Proposal not be implemented)</i>	
If this Modification is not implemented there would still be an inconsistency between the T&SC and the Settlement Documents which would create confusion to Participant's trying to shadow settle the calculations of CEADSU in cases of high price events.	
Working Group <i>(State if Working Group considered necessary to develop proposal)</i>	Impacts <i>(Indicate the impacts on systems, resources, processes and/or procedures; also indicate impacts on any other Market Code such as Capacity Market Code, Grid Code, Exchange Rules etc.)</i>
No	N/A
Please return this form to Secretariat by email to balancingmodifications@sem-o.com	

