

Single Electricity Market

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| Final REcommendation ReportMod\_10\_12: Amendment to Appendix P to ensure correct treatment of Interconnector Unit Offer Data11 june 2012 |

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Document History

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| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Comment** |
| 0.3 | 11 June 2012 | Modifications Committee Secretariat | Issued to Modifications Committee for review and approval |
| 1.0 | 19 June 2012 | Modifications Committee Secretariat | Issued to Regulatory Authorities for final decision |

Reference Documents

|  |
| --- |
| **Document Name** |
| [Trading and Settlement Code](http://semopub/MarketDevelopment/MarketRules/TSC.doc)  |
| [Mod\_10\_12: Amendment to Appendix P to ensure correct treatment of Interconnector Unit Offer Data](http://semopub/MarketDevelopment/ModificationDocuments/Mod_10_12%20PQ%20Pairs.docx) |
| [Meeting 42 Slides](http://semopub/MarketDevelopment/ModificationDocuments/Mod_10_12%20slides.ppt) |

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# MODIFICATIONS COMMITTEE RECOMMENDATION

## Recommended for rejection – majority Vote

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| --- |
| **Mod\_10\_12: Recommended for Rejection by majority vote** |
| Brian Mongan | Generator Alternate  | Reject |
| Derek Scully | Generator Alternate | Approve |
| Emeka Chukwureh | Supplier Alternate | Reject |
| Jill Murray-Chair | Supplier Member | Approve |
| Mary Doorly | Generator Alternate | Reject  |
| Niamh Quinn | Generator Member | Reject |
| Sean Doolin | Supplier Alternate | Reject |
| William Steele | Supplier Member | Reject |

# Background

This Modification Proposal was raised by SEMO and was received by the Secretariat on 15 May 2012. It proposed changes to Appendix P as set out in Mod\_18\_10\_v2 Intra-Day Trading. The proposal was raised in order to address a scenario which had been identified during System Integration Testing of the Intra Day Trading design which is not accounted for in Mod\_18\_10\_V2 and the associated Central Market System.

This modification proposes an additional paragraph in Appendix P of Mod\_18\_10v2 and a corresponding update to the Central Market System in order to ensure that Interconnector Unit offers that do not pose a credit risk are included in all cases. The Modification Proposal was presented and discussed at Meeting 42 on 29 May 2012 where it was voted on.

# PURPOSE OF PROPOSED MODIFICATION

## 3A.) explanation of Modification

A scenario was identified during System Integration Testing of the Intra Day Trading design which was not accounted for in Mod\_18\_10\_V2 and the associated Central Market System implementation. It arose where an Interconnector Unit submits a (P,Q) pair in the top left quadrant of bidding (i.e. positive P, negative Q, where the Interconnector Unit offers to pay to export), but does not submit a (P,Q) pair in the top right quadrant as part of its offer data. The red areas in Figure 1 below denote the areas of Interconnector Unit bidding which can cause SEM to have a Credit Exposure.



**Figure 1**

During the credit cover sufficiency check, Available Credit Cover (ACC) is calculated and compared to the Offered Exposure at each Gate Window Closure (GWC). If the ACC is insufficient, the elements of COD that create an unsecured credit risk will be excluded at the relevant GWC. The remaining non-excluded (P,Q) pairs are then renumbered.

An example of this is seen in Figure 2 below.

**Figure 2**

In such a scenario, no export will be allowed for that Interconnector Unit (the blue striped area in Figure 2), based on its ACC, but an import may still be possible. If, as part of the Interconnector Unit’s offer, there are (P,Q) pairs in the top right quadrant of bidding (i.e. positive P, positive Q) , where the Interconnector Unit offers to pay to import, these will be renumbered and will be admissible as the Offered Modified PQ Pairs (as in Figure 2 above). The indices of these so renumbered Offered Modified PQ Pairs will be the Included Interconnector Unit Offers Indices. The way in which these indices are determined is set out in P.18.2.e of Mod\_18\_10V2. P.18.2.eii accounts for the case where there are excluded offers and the highest P index is negative or zero and within the set of Offered Modified PQ pairs there is no other PQ pair with a Price of zero, then a PQ pair is inserted with a Price of zero and a Q Quantity equal to the Quantity associated with the Price Quantity Pair contained in the Excluded Interconnector Unit Offers Indices having an index equal to the Largest Credit Exposure Quantity Index. This ensures that offers which have no credit exposure associated with them are not excluded.

The similar case where the highest Q index in the excluded offers is negative or zero and within the set of Offered Modified PQ pairs there is no other PQ pair with a Quantity of zero is not accounted for in Mod\_18\_10V2 and it is this that is proposed to be amended by this modification. This would only be the case if there are no other offers in the top right quadrant and the Maximum Interconnector Unit Import Capacity is non-zero, as in Figure 3 below.

**Figure 3**

Under Mod\_18\_10V2, usually when the ACC< Total Offered Exposure, and the offer curve is similar to that of Figure 2, only export offers are excluded and import offers are renumbered.

However if the ACC<Total Offered Exposure and there are no offers in the right hand quadrant, as in Figure 3 above, all PQ pairs would be excluded, both import and export, as per Figure 4, even though the HLQ is non-zero and there is no credit risk to SEM for the import section.

**Figure 4**

This modification proposes to amend this so that the treatment is as in Figure 5, whereby in this situation an additional PQ pair will be added to ensure that import is allowed.

**Figure 5**

## 3B.) Impact of not Implementing a Solution

If this modification is not implemented, in the case where an Interconnector Unit bids in the top left quadrant (i.e. bids to pay to export with a positive P and a negative Q) and fails the credit risk sufficiency check, its offers to import may also be inadvertently excluded, even though they do not pose a credit risk. An alternative to making a Central Market System change is that Participants are aware of this issue and make sure that they submit a PQ pair in the top right quadrant to avoid it.

## 3c.) Impact on Code Objectives

This modification furthers Code Objective 1.3.1, namely

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;

# Assessment of Alternatives

An alternative to implementing the proposal and incurring a Central Market System change is that Participants are aware of the issue and make sure that they submit a PQ pair in the top right quadrant if their Maximum Interconnector Unit Import Capacity is non-zero.

# Working Group and/or Consultation

N/A

# impact on systems and resources

The proposal if implemented will incur a Market Systems cost of €43,660 plus testing.

# Impact on other Codes/Documents

N/A

# MODIFICATION COMMITTEE VIEWS

## Meeting 42 29 May 2012

SEMO Member presented slides outlining the proposal. A scenario was identified during System Integration Testing of the Intra Day Trading (IDT) design which is not accounted for in Mod\_18\_10\_V2 Intra-Day Trading and the associated Central Market System implementation. SEMO Member advised that the scenario described in the Modification Proposal is an unusual one and can be avoided if Participants are aware of it and ensure not to bid in this way (i.e. to ensure that they submit a PQ Pair in the top right quadrant of bidding in the case that they bid in the top left quadrant and their MIUIC is non-zero), or if they ensure that they have sufficient Credit Cover in place. SEMO Member provided results of the Impact Assessment as costing €43,660 excluding testing.

The Chair commented that in previous scenarios PQ Pairs had been cancelled, whereas in this scenario bids appear to be created. SEMO Member clarified that the proposal is not endeavouring to create bids; it is allowing bids which do not pose a credit exposure to SEM while excluding the credit exposure section.

Supplier Member raised a query regarding the timing of the proposal stating that IDT is going live in July 2012 without this change, therefore this issue could apply to Participants for a year until the change could be included in the next available release.

SEMO Member advised that this could be the case however, if the proposal was to be approved a discussion with the vendors would be held to ascertain whether it would be possible to incorporate it earlier given that that area of the system is undergoing significant change for IDT. However, there is no guarantee that it could be incorporated earlier.

Supplier Alternate raised a query relating to the submission of negative quantities and the intention to export. Supplier Alternate expressed concern that a trader could be exporting and importing at the same price. SEMO Member advised that the point raised was relating to the original design of the market and not specifically to the proposal.

Observer expressed preference of discarding bids rather than manipulating them. SEMO Member advised that this issue was documented during the IDT Working Groups. SEMO Member advised that although it would have been more straight-forward for SEMO to exclude all bids in the case where a Participant does not have sufficient Available Credit Cover and that this was the original design, but during the Working Groups the majority of Participants were in favour of retaining offers which did not pose a credit risk to SEM.

Supplier Alternate commented that importing and exporting at same price shouldn’t be a possibility. Supplier Alternate advised that a scenario where a Participant would be importing and exporting at the same time would never arise.

SEMO Member advised that if the Participant has no intention of importing they should set their Maximum Interconnector Unit Import Capacity (MIUIC) to zero. Supplier Alternate advised that traders always set their MIUIC and MIUEC to the limits of their Active Interconnector Unit Capacity Holdings. SEMO Member advised that with the advent of IDT it would be necessary to set values for the MIUIC and MIUEC in EA2 and WD1 runs as there will be no Active Interconnector Unit Capacity Holdings associated with them and that in the current design of the SEM the MIUIC and MIUEC form part of the Interconnector Unit’s Commercial Offer Data.

Chair advised that it will be imperative for traders to be cognisant of this issue when trading.

IWEA Generator Alternate noted following a vote to reject the proposal that the decision was on the basis of cost.

# Proposed Legal Drafting

As set out in Appendix 1.

#  LEGAL REVIEW

Complete

# IMPLEMENTATION TIMESCALE

It is proposed that this Modification is not implemented.

# Appendix 1: Mod\_10\_12

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| --- |
| **MODIFICATION PROPOSAL FORM** |
| **Proposer** | **Date of receipt** | **Type of Proposal** | **Modification Proposal ID** |
| **SEMO** | **15 May 2012** | **Standard** | **Mod\_10\_12** |
| **Contact Details for Modification Proposal Originator** |
| **Name** | **Telephone number** | **Email address** |
| **Niamh Delaney** | **+353 1 2370321** | **niamh.delaney@sem-o.com** |
| **Modification Proposal Title** |
| **Amendment to Appendix P to ensure correct treatment of Interconnector Unit Offer Data** |
| **Documents affected** | **Section(s) Affected** | **Version number of T&SC or AP used in Drafting** |
| **T&SC** | **Appendix P** | **V.10 (and approved modification Mod\_18\_10V2)** |
| **Explanation of Proposed Change***(mandatory by originator)* |
| A scenario has been identified during System Integration Testing of the Intra Day Trading design which is not accounted for in Mod\_18\_10V2 and the associated Central Market System implementation. It arises where an Interconnector Unit submits a (P,Q) pair in the top left quadrant of bidding (i.e. positive P, negative Q, where the Interconnector Unit offers to pay to export), but does not submit a (P,Q) pair in the top right quadrant as part of its offer data. The red areas in Figure 1 below denote the areas of Interconnector Unit bidding which can cause SEM to have a Credit Exposure.  **Figure 1**During the credit cover sufficiency check, Available Credit Cover (ACC) is calculated and compared to the Offered Exposure at each Gate Window Closure (GWC). If the ACC is insufficient, the elements of COD that create an unsecured credit risk will be excluded at the relevant GWC. The remaining non-excluded (P,Q) pairs are then renumbered.An example of this is seen in Figure 2 below.  **Figure 2**In such a scenario, no export will be allowed for that Interconnector Unit (the blue striped area in Figure 2), based on its ACC, but an import may still be possible. If, as part of the Interconnector Unit’s offer, there are (P,Q) pairs in the top right quadrant of bidding (i.e. positive P, positive Q) , where the Interconnector Unit offers to pay to import, these will be renumbered and will be admissible as the Offered Modified PQ Pairs (as in Figure 2 above). The indices of these so renumbered Offered Modified PQ Pairs will be the *Included Interconnector Unit Offers Indices*. The way in which these indices are determined is set out in P.18.2.e of Mod\_18\_10V2. P.18.2.eii accounts for the case where there are excluded offers and the highest P index is negative or zero and within the set of Offered Modified PQ pairs there is no other PQ pair with a Price of zero, then a PQ pair is inserted with a Price of zero and a Q Quantity equal to the Quantity associated with the Price Quantity Pair contained in the Excluded Interconnector Unit Offers Indices having an index equal to the Largest Credit Exposure Quantity Index. This ensures that offers which have no credit exposure associated with them are not excluded. The similar case where the highest Q index in the excluded offers is negative or zero and within the set of Offered Modified PQ pairs there is no other PQ pair with a Quantity of zero is not accounted for in Mod\_18\_10V2 and it is this that is proposed to be amended by this modification. This would only be the case if there are no other offers in the top right quadrant and the Maximum Interconnector Unit Import Capacity is non-zero, as in Figure 3 below.  **Figure 3**Under Mod\_18\_10V2, usually when the ACC< Total Offered Exposure, and the offer curve is similar to that of Figure 2, only export offers are excluded and import offers are renumbered. However if the ACC<Total Offered Exposure and there are no offers in the right hand quadrant, as in Figure 3 above, all PQ pairs would be excluded, both import and export, as per Figure 4, even though the HLQ is non-zero and there is no credit risk to SEM for the import section.   **Figure 4**This modification proposes to amend this so that the treatment is as in Figure 5, whereby in this situation an additional PQ pair will be added to ensure that import is allowed.  **Figure 5** |
| **Legal Drafting Change***(Clearly show proposed code change using* ***tracked*** *changes, if proposer fails to identify changes, please indicate best estimate of potential changes)* |
| P.18 The Market Operator shall carry out the following steps for each Interconnector Unit u registered to Participant p, for which Price Quantity Pairs were Accepted during the corresponding Gate Window, in the order of priority as set out in paragraph P.17:1. The value of Remaining Available Credit Cover (RACCp) shall be calculated by the Market Operator as follows in respect of offered credit exposure for each Interconnector Unit u for which Price Quantity Pairs were Accepted during the corresponding Gate Window:

Where:* + - 1. ACCp is the Available Credit Cover for Participant p.
			2. IUEOEuhm is the Interconnector Unit Energy Offered Exposure for Interconnector Unit u in Trading Period h in respect of MSP Software Run m.
			3. IUCOEuhm is the Interconnector Unit Capacity Offered Exposure for Interconnector Unit u in Trading Period h in respect of MSP Software Run m.
			4. is the sum of all Trading Periods h in Trading Window τ.
1. If the resulting value of Remaining Available Credit Cover (RACCp) is less than zero, then the Market Operator shall make no adjustment to the Available Credit Cover (ACCp) value for Participant p and shall:
2. Identify, for each Trading Period h in the Trading Window τ, the set of Offered Modified Price Quantity Pairs for each Interconnector Unit u for which Price Quantity Pairs were Accepted during the corresponding Gate Window having Quantities less than or equal to the largest Quantity for which the product with the corresponding Price is negative as follows:

Where:1. denotes ‘for all’.
2. OfferedModifiedPQPairs denotes the set of Offered Modified Price Quantity Pairs.
3. : denotes ‘such that’.
4. Puhmj is the jth Offered Modified Price for Interconnector Unit u in Trading Period h, where the value of Quhmi is greater than or equal to the Quantity associated within the Low Limit Quantity point and the value of Quhmi is less than or equal to the Quantity associated within the High Limit Quantity point.
5. Quhmj is the jth Offered Modified Quantity for Interconnector Unit u in Trading Period h, where the value of Quhmi is greater than or equal to the Quantity associated within the Low Limit Quantity point and the value of Quhmi is less than or equal to the Quantity associated within the High Limit Quantity point.
6. is a subset of the set j of indices of the Offered Modified Price Quantity Pairs for Trading Period h of the MSP Software Run m for Interconnector Unit u where there is a credit exposure identified.
7. Calculate the Largest Credit Exposure Quantity Index for Interconnector Unit u in Trading Period h as the largest member of the set ouhm:

 1. Determine the set of Excluded Interconnector Unit Offers Indices (EIUOIuhm) for Interconnector Unit u in Trading Period h to include:
2. All Offered Modified Price Quantity Pairs where the index j of the Price Quantity Pair is less than or equal to the Largest Credit Exposure Quantity Index for the relevant Interconnector Unit u in Trading Period h; and
3. Each Quantity Axis Crossing Point, Price Axis Crossing Point, Low Limit Quantity point and High Limit Quantity point within the set of Offered Modified Price Quantity Pairs.
4. Where the set of Excluded Interconnector Unit Offers Indices (EIUOIuhm) for Interconnector Unit u in Trading Period h contains any elements, the Lower Operating Limit (LOLuh) for Interconnector Unit u in Trading Period h for the corresponding MSP Software Run m relating to the relevant Trading Day shall be set to zero.
5. Determine the set of Included Interconnector Unit Offers Indices (IIUOIuhm) for Interconnector Unit u in Trading Period h as follows:
6.

Where: ‘\’ denotes ‘not in’and {OfferedModifiedPQPairs} denotes the set of Offered Modified Price Quantity Pairs.1. If  and there is no Offered Modified Price Quantity Pair with a Price value which is equal to zero:
	1. An additional Price Quantity Pair shall be included within the set of Offered Modified Price Quantity Pairs with a Price set to zero and a Quantity equal to the Quantity associated with the Price Quantity Pair contained in the Excluded Interconnector Unit Offers Indices having an index equal to the Largest Credit Exposure Quantity Index.
	2. Such additional Price Quantity Pair shall be included such that the resulting set of Offered Modified Price Quantity Pairs shall be monotonically increasing in both Price and Quantity.
	3. The resulting index of the additional Price Quantity Pair shall be included in the set of Included Interconnector Unit Offers Indices (IIUOIuhm) for Interconnector Unit u in Trading Period h in respect of MSP Software Run m.

Where:* Puhm(J=LCEQIumh) is the Offered Modified Price for Interconnector Unit u in Trading Period h in respect of MSP Software m, where the index of the Price Quantity Pair is equal to the Largest Credit Exposure Quantity Index for Interconnector Unit u in Trading Period h.

iii. If  and there is no Offered Modified Price Quantity Pair with a Quantity value which is equal to zero:1. An additional Price Quantity Pair shall be included within the set of Offered Modified Price Quantity Pairs with a Quantity set to zero and a Price equal to the Price associated with the Price Quantity Pair contained in the Excluded Interconnector Unit Offers Indices having an index equal to the Largest Credit Exposure Quantity Index.
2. Such additional Price Quantity Pair shall be included such that the resulting set of Offered Modified Price Quantity Pairs shall be monotonically increasing in both Price and Quantity.
3. The resulting index of the additional Price Quantity Pair shall be included in the set of Included Interconnector Unit Offers Indices (IIUOIuhm) for Interconnector Unit u in Trading Period h in respect of MSP Software Run m.

Where:* Quhm(J=LCEQIumh) is the Offered Modified Quantity for Interconnector Unit u in Trading Period h in respect of MSP Software m, where the index of the Price Quantity Pair is equal to the Largest Credit Exposure Quantity Index for Interconnector Unit u in Trading Period h.
1. If the resulting value of Remaining Available Credit Cover (RACCp) is greater than or equal to zero, then the Market Operator shall set the value of Available Credit Cover (ACCp) value for Participant p equal to the value of the corresponding Remaining Available Credit Cover (RACCp) as follows:

1. If the resulting value of Remaining Available Credit Cover (RACCp) is less than zero, then the Market Operator shall make no adjustment to the latest calculated value of Available Credit Cover (ACCp) for Participant p.
2. Following the calculation of set of Excluded Interconnector Unit Offers Indices and set of Included Interconnector Unit Offers Indices, the Market Operator shall re-define the set of Offered Modified Price Quantity Pairs as follows:
3. The Offered Modified Price Quantity Pairs shall be re-defined to include only those Price Quantity Pairs with indices which correspond with those contained in the Included Interconnector Unit Offers Indices.
4. The indices of the remaining Modified Price Quantity Pairs shall be re-numbered in order of increasing index, starting at 1 (i.e. P1Q1, P2Q2, etc).
 |
| **Modification Proposal Justification***(Clearly state the reason for the Modification)* |
| This modification proposes an additional paragraph in Appendix P of Mod\_18\_10v2 and a corresponding update to the Central Market System in order to ensure that Interconnector Unit offers which do not pose a credit risk are included in all cases. |
| **Code Objectives Furthered***(State the Code Objectives the Proposal furthers, see Section 1.3 of T&SC for Code Objectives)* |
| This modification furthers Code Objective 1.3.1, namelyto facilitate the participation of electricity undertakings engaged in the generation, supply or sale of electricity in the trading arrangements under the Single Electricity Market; |
| **Implication of not implementing the Modification Proposal***(State the possible outcomes should the Modification Proposal not be implemented)* |
| If this modification is not implemented, in the case where an Interconnector Unit bids in the top left quadrant (i.e. bids to pay to export with a positive P and a negative Q) and fails the credit risk sufficiency check, it s offers to import may also be inadvertently excluded, even though they do not pose a credit risk. An alternative to making a Central Market System change is that Participants are aware of this issue and make sure that they submit a PQ pair in the top right quadrant to avoid it. |
| **Working Group***(State if Working Group considered necessary to develop proposal)* | **Impacts***(Indicate the impacts on systems, resources, processes and/or procedures)* |
| Not required.  | Would require a change to the Central Market System.  |
| ***Please return this form to Secretariat by email to*** *modifications@sem-o.com* |