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| **MODIFICATION PROPOSAL FORM** |
| **Proposer***(Company)* | **Date of receipt***(assigned by Secretariat)* | **Type of Proposal***(delete as appropriate)* | **Modification Proposal ID***(assigned by Secretariat)* |
| **SEMO** | **5 April 2019** | **Urgent** | **Mod\_09\_19** |
| **Contact Details for Modification Proposal Originator** |
| **Name** | **Telephone number** | **Email address** |
| **Brendan O’Sullivan** | **01 2370142** | **Brendan.osullivan@sem-o.com** |
| **Modification Proposal Title** |
| **Removal of locational constraints from Imbalance Pricing calculation** |
| **Documents affected***(delete as appropriate)* | **Section(s) Affected** | **Version number of T&SC or AP used in Drafting** |
| **Appendices Part B** | **Appendix N.1** | **20** |
| **Explanation of Proposed Change***(mandatory by originator)* |
| Locational constraints are not considered in the ex-ante market design of the new SEM arrangements; however, the drafting of paragraph N.1 of the Trading & Settlement Code meant that these same constraints could be brought to bear on the calculation of the Imbalance Price and exert a level of influence on the Imbalance Price beyond that considered during the market design. This was most prevalent in the market on January 24th where the Imbalance Settlement Price exceeded the RO Strike Price in four Imbalance Settlement Periods.SEMO have completed detailed analysis on key high price events since the transition to the new SEM arrangement and have concluded, following further feedback from industry and discussions with the SEM RAs, that the application of locational constraints in the Imbalance Price calculation where these same restrictions are not present in the ex-ante markets has been a contributing factor to some market outcomes.This modification sets out to remove these specific constraints from the Imbalance Pricing calculation. For the avoidance of doubt, these constraints will still be used by the TSOs in their scheduling and dispatch processes. To achieve this, it is necessary to address the concept of “Operational Constraints” as they appear in Appendix N of Part B of the T&SC. The modification seeks to amend the wording of Paragraph N.1 to exclude upper MW limits on the Transmission System, which under the TSC includes both Ireland and Northern Ireland transmission systems and the tie-line.* “upper MW limit” includes any max MW thermal constraints but not min MW thermal constraints, which are effectively, must run constraints (e.g. Cork Min) or must run thermal constraints (e.g., some Dublin must runs).
* “on the Transmission System” is Cork and South MW constraint and also network model DC load flow constraints, which are also upper MW constraints. This is to distinguish from MW limits that may apply for reserve reasons.
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| **Legal Drafting Change***(Clearly show proposed code change using* ***tracked*** *changes, if proposer fails to identify changes, please indicate best estimate of potential changes)* |
| N.1 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 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 (FSOuφ) for that Generator Unit, u, equal to zero for that Imbalance Pricing Period, φ. Otherwise, the System Operators shall set the System Operator Flag (FSOuφ) for that Generator Unit, u, equal to one for that Imbalance Pricing Period, φ. |
| **Modification Proposal Justification***(Clearly state the reason for the Modification)* |
| The following paragraphs explain in more detail the main justification, which can be summarised as follows:* The market design did not foresee the inclusion of locational signals in the single imbalance price to have a significant impact on price formation;
* The locational signals in the imbalance price cannot be acted upon in ex-ante trading in a way which makes things better (by reducing congestion) and in fact it could be made worse while attempting to make it better, so the locational signal appears to have unintended consequences;
* Other units whose output is influenced by locational congestion in the network model have not been flagged to date.

During the development of the wholesale market rules, it was the position, based on the SEMC decisions and industry feedback, that any units whose output could be identified as constrained for non-energy reasons should be flagged out of the pricing process. This resulted in any possible transmission system based constraint being flagged on the units whose output is restricted by the constraint.However, it was found that it was not possible to accurately identify which units contribute to which thermal limit constraints on the transmission network model. This is because on a meshed network every generator has some influence on every network line and without a locational signal to determine where an imbalance arises, it is not possible to determine the units which should be flagged out. Therefore, network constraints highlighted through the network model are not flagged.For other network constraints a Transmission Constraint Group is modelled, which includes the MWR constraint on the North South tie-line and the MW Max constraints for certain locations which limit the output of units in a certain area of the system. Because of how these are modelled, it is possible to identify which units are contributing to the constraint (i.e., the list of units stated in the Transmission Constraint Group); therefore, based on the position that any actions influenced by non-energy reasons should be flagged out of pricing, these constraints were included in the list of those for whom SO Flags are calculated in pricing.The intent of the market design for SO Flagging was to remove the influence of non-energy actions from the Imbalance Settlement Price. It should be possible for Market Participants to react to the signals provided in the imbalance price in the ex-ante markets, trading in a way which prevents the same thing happening again.However, locational restrictions are not modelled in the ex-ante markets. As a result, it may not be possible for Market Participants to act on the locational signals in the imbalance price through ex-ante trading. It can be suggested that there is no practical means by which participants can act on this locational market signal to correct it, which would be an unintended consequence of the inclusion of this signal in the price calculation.Based on industry feedback, discussions with the SEM RAs, we believe that the flagging of locational constraints can be removed without affecting the detailed market design. This would align with the approach taken already for the network model thermal limit constraints, where units whose output is influenced by the network model are not flagged.Note separately that since SO Flags are an input to the methodology for determining if a unit has potential market power and therefore should be settled based on its Complex Bid Offer Data, the decision not to SO Flag for the locational constraints would have an influence on the COD used for settlement and, therefore, on Dispatch Balancing Costs.  |
| **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 serves to further the following objectives by removing elements indirectly included in the Imbalance Price calculation which are directly excluded from the ex-ante wholesale market –

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| *(b) to facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner:* | we believe that the removal of locational constraints will remove potential financial uncertainty which can arise when price events are driven by design elements not present consistently across the market; |
| *(d) to promote competition in the Single Electricity Market:* | the removal of these elements from the imbalance price calculation should remove any potential disconnect between the formulation of ex-ante market prices and imbalance prices, thereby removing any perverse incentives that could affect public trading; |
| *(e) to provide transparency in the operation of the Single Electricity Market:* | the undue influence of locational constraints has the potential to create imbalance prices that are not predictable by market participants and that cannot be responded to in the ex-ante markets. The removal of these elements will provide an imbalance price that participants should find more transparent; |
| *(g) to promote the short-term and long-term interests of consumers of electricity on the island of Ireland with respect to price, quality, reliability, and security of supply of electricity:* | the application of locational constraints have driven extreme pricing events which have potentially negative impacts on consumers on the island or Ireland. Their removal should see a reduction of extreme prices which will better serve the interests of consumers; |

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| **Implication of not implementing the Modification Proposal***(State the possible outcomes should the Modification Proposal not be implemented)* |
| The Imbalance Price calculation will still be subject to locational constraints with the potential for a repeat of the events where the Imbalance Settlement Prices are produced are unduly impacted by these constraints while participants are unable to react appropriately in the available trading platforms of the ex-ante markets. |
| **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 Marker Code, Grid Code, Exchange Rules etc.)* |
| N/A | This change may be implemented by the Market Operator through a system configuration without any need for a change request to the system vendors. The choice of approach (e.g., whether changing Appendix N or the Glossary) indicates where this is a global change to how Operational Constraints are applied under the Code (which will affect all of Appendix N) or whether it is just intended to apply specifically in the calculation of Imbalance Price. |
| ***Please return this form to Secretariat by email to*** balancingmodifications@sem-o.com |

**Notes on completing Modification Proposal Form:**

1. **If a person submits a Modification Proposal on behalf of another person, that person who proposes the material of the change should be identified on the Modification Proposal Form as the Modification Proposal Originator.**
2. **Any person raising a Modification Proposal shall ensure that their proposal is clear and substantiated with the appropriate detail including the way in which it furthers the Code Objectives to enable it to be fully considered by the Modifications Committee.**
3. **Each Modification Proposal will include a draft text of the proposed Modification to the Code unless, if raising a Provisional Modification Proposal whereby legal drafting text is not imperative.**
4. **For the purposes of this Modification Proposal Form, the following terms shall have the following meanings:**

**Agreed Procedure(s): means the detailed procedures to be followed by Parties in performing their obligations and functions under the Code as listed in either Part A or Part B Appendix D “List of Agreed Procedures”. The Proposer will need to specify whether the Agreed Procedure to modify refers to Part A, Part B or both.**

**T&SC / Code: means the Trading and Settlement Code for the Single Electricity Market. The Proposer will also need to specify whether all Part A, Part B, Part C of the Code or a subset of these, are affected by the proposed Modification;**

**Modification Proposal: means the proposal to modify the Code as set out in the attached form**

**Derivative Work: means any text or work which incorporates or contains all or part of the Modification Proposal or any adaptation, abridgement, expansion or other modification of the Modification Proposal**

**The terms “Market Operator”, “Modifications Committee” and “Regulatory Authorities” shall have the meanings assigned to those terms in the Code.**

**In consideration for the right to submit, and have the Modification Proposal assessed in accordance with the terms of Section 2 of Part A or Chapter B of Part B of the Code (and Part A Agreed Procedure 12 or Part B Agreed Procedure 12) , which I have read and understand, I agree as follows:**

**1. I hereby grant a worldwide, perpetual, royalty-free, non-exclusive licence:**

* 1. **to the Market Operator and the Regulatory Authorities to publish and/or distribute the Modification Proposal for free and unrestricted access;**
	2. **to the Regulatory Authorities, the Modifications Committee and each member of the Modifications Committee to amend, adapt, combine, abridge, expand or otherwise modify the Modification Proposal at their sole discretion for the purpose of developing the Modification Proposal in accordance with the Code;**
	3. **to the Market Operator and the Regulatory Authorities to incorporate the Modification Proposal into the Code;**

**1.4 to all Parties to the Code and the Regulatory Authorities to use, reproduce and distribute the Modification Proposal, whether as part of the Code or otherwise, for any purpose arising out of or in connection with the Code.**

**2. The licences set out in clause 1 shall equally apply to any Derivative Works.**

**3. I hereby waive in favour of the Parties to the Code and the Regulatory Authorities any and all moral rights I may have arising out of or in connection with the Modification Proposal or any Derivative Works.**

**4. I hereby warrant that, except where expressly indicated otherwise, I am the owner of the copyright and any other intellectual property and proprietary rights in the Modification Proposal and, where not the owner, I have the requisite permissions to grant the rights set out in this form.**

**5. I hereby acknowledge that the Modification Proposal may be rejected by the Modifications Committee and/or the Regulatory Authorities and that there is no guarantee that my Modification Proposal will be incorporated into the Code.**