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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** | **12 November 2019** | | **Standard** | | **Mod\_21\_19** |
| **Contact Details for Modification Proposal Originator** | | | | | |
| **Name** | | **Telephone number** | | **Email address** | |
| **Lauren Skillen-Baine** | |  | | **Laurenskillen.baine@soni.ltd.uk** | |
| **Modification Proposal Title** | | | | | |
| **Loss Adjustment Factor Application for Interconnectors** | | | | | |
| **Documents affected**  *(delete as appropriate)* | | **Section(s) Affected** | | **Version number of T&SC or AP used in Drafting** | |
| **T&SC Part B** | | **F.4.3.3** | | **V21** | |
| **Explanation of Proposed Change**  *(mandatory by originator)* | | | | | |
| For any values in MW or MWh for an Interconnector, positive values relate to imports to the Pool and negative values relate to exports from the Pool.  TSC F.4.3.3 currently contains a distinct rule for the application of Combined Loss Adjustment Factors (CLAF) for Interconnector Units. When the quantity required to be loss-adjusted is ≥ 0 (interconnector is importing), the variable before application of losses is multiplied by the CLAF. When the quantity to be loss-adjusted is negative for (i.e. exporting); the variable before application of losses is divided by is the CLAF.  During development of a system change request to correct omitted provisions in relation to system application of F.4.3.3, SEMO has considered all aspects of the treatment of losses for Interconnectors and has identified four distinct requirements for Code Change:   * Application of losses to Accepted Offer Quantity (QAO) and Accepted Bid Quantity (QAB) for Interconnector Units * Application of losses to the Capacity Quantity (qC) for Interconnector Units * Application of losses otherwise * Housekeeping changes   **Application of losses to Accepted Offer Quantity (QAO) and Accepted Bid Quantity (QAB) for Interconnector Units**  Bid Offer Acceptances (BOAs) are the actions taken by the TSOs in the Balancing Market, to dispatch a unit away from its Final Physical Notification (FPN). The calculation for Interconnectors is not as per F.6.2 but instead the System Operator submits those QAB/QAO values under TSC F.2.4.8 as SO trades.  Interconnector QAB/QAO are based on the Connection Point (i.e. the remote end in GB) and therefore need to have losses applied to translate to the I-SEM side for settlement.  Current settlement algebra does not correctly apply loss factors; as QAO/QAB quantities (the SO trades) may have a direction which is actually a reduction in the overall flow in the opposite direction. For example, where there are negative SO trades being used by the TSO to reduce the overall import (positive) flow on the Interconnector. The predominant direction of flow must be considered, represented by the Dispatch Quantity (QD) for the Interconnector.  If QD>=0 then the interconnector is importing, QAO and QAB should be multiplied by CLAF and where QD<0 (exporting) QAB and QAB should be divided by CLAF.  Whereas applying the current logic only the direction of the trade itself is considered when determining whether to multiply or divide by CLAF.  **Application of losses to the Capacity Quantity (qC) for Interconnector Units**  Capacity Quantity (qC) for Interconnectors is based on the Connection Point (i.e. the remote end in GB) and therefore needs to have losses applied to translate to the I-SEM side for settlement. However, loss factor application should always be a multiplication by qC, as qC always reflects an import (i.e. capacity provided to the I-SEM).  Capacity performance for an Interconnector is measured against the derated capacity, based on Interconnector availability, not the actual flow. For Interconnectors, derated capacity is always representing an import (irrespective of the sign). As a result, negative quantities (such as secondary trading to remove exposure to capacity performance measures) represent a reduction in import and should therefore have the import loss factor applied. In order to apply the correct losses to qC for Interconnectors, the calculation should always be based on qC multiplied by CLAF.  Whereas the current treatment considers the signage of the qC volume and therefore divides where this is negative in error. Application of losses otherwise Interconnector Reference Programme data (ICRP is used for provision of the FPN and qD to the MO) and the Metered Quantity (QM) are based on the Connection Point (i.e. the remote end in GB) and therefore need to have losses applied to translate to the I-SEM side for settlement. Current settlement algebra correctly multiplies by the loss factor when importing. For all Interconnector quantities that are not QAO, QAB or qC, the quantities relate to a single value related to the direction of “flow” on an Interconnector and therefore evaluate correctly under current logic.  For example, Metered Quantity (QM) related to the meter value at the remote (GB) end of the Interconnector and therefore losses can be applied so that positive quantities are multiplied by the CLAF and negative quantities are divided by the CLAF. TSC F.4.3.3 addresses this correctly but wording is required to state that this should exclude the application of losses to the items set out above; qC and QAO/QAB for interconnectors.  **Housekeeping changes**  Clarification in F.4.3.2 of application to Capacity Market Units (except in the case of a CMU related to an Interconnector).  Clarification in F.4.3.3 of application to an Interconnector and Capacity Market Units related to an Interconnector (except for qC and QAB/QAO).  **Summary**   |  |  |  |  | | --- | --- | --- | --- | | **Section** | **Loss-Adjusted Variable to be determined** | **Treatment** | **Change** | | F.4.3.2 | Relates to a Generator (excludes IEU,IRCU) a Capacity Market Unit (excluding CMU related to IC ) and Supplier Unit | Variable \* FCLAF | to include CMU which wasn’t specified previously | | F.4.3.3 | Relates to IC, IEU IRCU or a CMU related to IC, (excluding qC and QAB/QAO) | If Variable ≥ 0 then \*FCLAF, else /FCLAF | to exclude qC and QAB/QAO which are now covered by F.4.3.4 and F.4.3.5 | | F.4.3.4 | QAB and QAO related to an IRCU | If QD ≥0 then \* FCLAF else /FCLAF | test against QD instead of direction of variable previously covered in F.4.3.3 | | F.4.3.5 | qC which relates to a CMU related to an Interconnector | qC\* FCLAF | always multiply rather than test direction of variable previously covered in F.4.3.3 | | | | | | |
| **Legal Drafting Change**  *(Clearly show proposed code change using* ***tracked*** *changes, if proposer fails to identify changes, please indicate best estimate of potential changes)* | | | | | |
| * + - 1. Where the Market Operator is required to calculate or determine a Loss-Adjusted variable which relates to a Generator Unit, u, other than an Interconnector Error Unit or an Interconnector Residual Capacity Unit, a Capacity Market Unit (except in the case of a Capacity Market Unit related to an Interconnector where Loss-Adjusted variables are calculated as set out in F.4.3.3 and F.4.3.5) and each Supplier Unit, v, in respect of an Imbalance Settlement Period, γ, and where XXXγ is the variable before the application of Transmission Losses and Distribution Losses, it shall apply the following calculation:   where:   * + - * 1. XXXLFγ is the relevant Loss-Adjusted variable to be determined; and         2. FCLAFγ is the Combined Loss Adjustment Factor for Generator Unit, u, or Supplier Unit, v, in Imbalance Settlement Period, γ, determined under section F.4.2.   F.4.3.3 Where the Market Operator is required to calculate a Loss-Adjusted variable which relates to an Interconnector, Interconnector Error Unit, Interconnector Residual Capacity Unit or a Capacity Market Unit related to an Interconnector, (except in the case of the variables set out under F.4.3.4 and F.4.3.5), in respect of an Imbalance Settlement Period, γ, and where XXXuγ is the variable before application of Transmission Losses and Distribution Losses, it shall apply the following calculation:  where:   1. XXXLFuγ is the relevant Loss-Adjusted variable to be determined; and 2. FCLAFlγ is the Combined Loss Adjustment Factor for the relevant Interconnector, l, in Imbalance Settlement Period, γ, determined under section F.4.2   F.4.3.4 Where the Market Operator is required to calculate or determine Loss Adjusted variables QABLF and QAOLF in accordance with F.2.4.8 which relate to an Interconnector Residual Capacity Unit, in respect of an Imbalance Settlement Period, γ, and where QABuγ and QAOuγ is the variable before application of Transmission Losses and Distribution Losses, it shall apply the following calculation:  *where:*   * + - * 1. *QDlγ is the Dispatch Quantity for the Interconnector, l, in Imbalance Settlement Period, γ*         2. *QAOLFuoiγ is the Loss-Adjusted Accepted Offer Quantity for Interconnector Residual Capacity Unit, u, for Bid Offer Acceptance, o, for Band, i, in Imbalance Settlement Period, γ; and*         3. *QABLFuoiγ is the Loss-Adjusted Accepted Bid Quantity for Interconnector Residual Capacity Unit, u, for Bid Offer Acceptance, o, for Band, i, in Imbalance Settlement Period, γ.*         4. *FCLAFlγ is the Combined Loss Adjustment Factor for the relevant Interconnector, l, in Imbalance Settlement Period, γ, determined under section F.4.2*   F.4.3.5 Where the Market Operator is required to calculate Loss Adjusted variable qCLF which relates to a Capacity Market Unit related to an Interconnector, in respect of an Imbalance Settlement Period, γ, and where qCuγ is the variable before application of Transmission Losses and Distribution Losses, it shall apply the following calculation:  where:   1. qCLFΩn is the Loss-Adjusted Capacity Quantity to be determined 2. is the Capacity Quantity for Capacity Market Unit, Ω, for Contract Register Entry, n, determined in accordance with the Capacity Market Code; 3. FCLAFlγ is the Combined Loss Adjustment Factor for the relevant Interconnector, l, in Imbalance Settlement Period, γ, determined under section F.4.2 | | | | | |
| **Modification Proposal Justification**  *(Clearly state the reason for the Modification)* | | | | | |
| This Modification has been raised to address two issues in Settlement algebra applying Loss Factors to Interconnector variables:   1. QAB/QAO are based on the Connection Point (i.e. the remote end in GB) and therefore need to have losses applied to translate to the I-SEM side for settlement.   Current settlement algebra does not correctly apply loss factors, as QAO/QAB quantities (SO trades) may have a direction but is actually a reduction in the overall flow in the opposite direction. For example, where there are negative SO trades being used by the TSO to reduce the overall import (positive) flow on the Interconnector.   1. qC for Interconnectors is based on the Connection Point (i.e. the remote end in GB) and therefore needs to have losses applied to translate to the I-SEM side for settlement.   However, loss factor application should always be a multiplication by qC, as qC always reflects an import (i.e. capacity provided to the I-SEM). Current settlement algebra does not address this. | | | | | |
| **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)* | | | | | |
| * + - * 1. to ensure no undue discrimination between persons who are parties to the Code;   By correcting the error in the current drafting of Interconnector Loss factor application, Interconnector units will be settled according to the intention of the market design and Settlement algebra will apply loss factors fairly to Interconnector variables qC and QAO/QAB by giving consideration to whether the unit is importing or exporting. | | | | | |
| **Implication of not implementing the Modification Proposal**  *(State the possible outcomes should the Modification Proposal not be implemented)* | | | | | |
| If this modification is not implemented Settlement algebra to incorrectly address loss factor application to Interconnectors (QAB/QAB and qC). | | | | | |
| **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 | | | Impact Assessment required for system impacts | | |
| ***Please return this form to Secretariat by email to*** [balancingmodifications@sem-o.com](mailto: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.**