|  |
| --- |
| **MODIFICATION PROPOSAL FORM** |
| **Proposer***(Company)* | **Date of receipt***(assigned by Secretariat)* | **Type of Proposal***(delete as appropriate)* | **Modification Proposal ID***(assigned by Secretariat)* |
| **SEMO** | **30/08/18** | **Standard** | **MOD\_24\_18 V2** |
| **Contact Details for Modification Proposal Originator** |
| **Name** | **Telephone number** | **Email address** |
| **Martin Kerin** |  | **Martin.Kerin@EirGrid.com** |
| **Modification Proposal Title** |
| **Use of Technical Offer Data in Instruction Profiling / QBOA Version 2** |
| **Documents affected***(delete as appropriate)* | **Section(s) Affected** | **Version number of T&SC or AP used in Drafting** |
| **T&SC Part B****Appendices Part B** | **Chapter H****Appendix O** |  |
| **Explanation of Proposed Change***(mandatory by originator)* |
| As part of testing of the QBOA function as part of the MMS solution, and a review of system design and market rules as part of Certification activities, it has been identified that the drafting in Appendix O of the TSC is not specific in terms of the application of Technical Offer Data in Instruction Profiling.Technical Offer Data is submitted in respect of a Trading Day, whereas Instruction Profiling (and associated QBOA calculation) is performed on a Settlement Day basis. Currently, the TSC draft is not sufficiently specific as to how Technical Offer Data is applied for Instruction Profiling on a Settlement Day basis. As shown in the diagram below, Instruction Profiling uses the Accepted Technical Offer Data at the start of the Settlement Day for all instructions profiled during that Settlement Day.This Modification Proposal amends two clauses within Appendix O, to clarify which Technical Offer Data is used. A modification to the enduring text in that Appendix is intended to clarify that for a single Settlement Day run of the Instruction Profiling calculation, two sets of Trading Day Validated Technical Offer Data should be used with a change in the data occurring for any instructions with effective times after the change in the Trading Day (i.e. if an instruction has an effective time prior to this change, the previous Trading Day’s Technical Offer Data will be used for all of its profiling, this reflects the logic explained and approved in MOD\_15\_18). An interim measure is added to Chapter H in order to reflect the current system implementation which is to apply a single Technical Offer Data set for the whole Settlement Day, based on the set belonging to the first Trading Day within the Settlement Day. This is in order to align the rules and the systems for substantive compliance purposes in certification and in order to provide transparency as to the outcomes. |
| **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. INTERIM RULES TO APPLY FOR A FIXED PERIOD OF TIME FOR APPENDIX O: INSTRUCTION PROFILING CALCULATIONS
		1. Instruction Profiling and Bid Offer Acceptance Quantity Outcomes for use of Validated Technical Offer Data on a Settlement Day Basis
			1. Until the date that is the Day 2 Deployment Date, paragraph 10 of Appendix O shall be replaced with:

 “10. The Market Operator shall, for each entire Settlement Day, use the following Registration Data and Accepted Technical Offer Data for the Trading Day containing the start of that Settlement Day, provided in accordance with Appendix H: “Data Requirements for Registration” and Appendix I: “Offer Data” respectively, to calculate all Instruction Profile types for that Settlement Day:* + - * 1. Registered Capacity / Maximum Generation;
				2. Hot Cooling Boundary;
				3. Warm Cooling Boundary;
				4. Block Load Flag;
				5. Block Load Cold, Block Load Warm and Block Load Hot;
				6. Loading Rate Hot 1, 2 & 3;
				7. Loading Rate Warm 1, 2 & 3;
				8. Loading Rate Cold 1, 2 & 3;
				9. Load Up Break Point Hot 1 & 2;
				10. Load Up Break Point Warm 1 & 2;
				11. Load Up Break Point Cold 1 & 2;
				12. Soak Time Hot 1 & 2;
				13. Soak Time Warm 1 & 2;
				14. Soak Time Cold 1 & 2;
				15. Soak Time Trigger Point Hot 1 & 2;
				16. Soak Time Trigger Point Warm 1 & 2;
				17. Soak Time Trigger Point Cold 1 & 2;
				18. Ramp Up Rate 1, 2, 3, 4 & 5;
				19. Ramp Up Break Point 1, 2, 3 & 4;
				20. Dwell Time Up 1, 2 & 3;
				21. Dwell Time Down 1, 2 & 3;
				22. Dwell Time Up Trigger Point 1, 2 & 3;
				23. Dwell Time DownTrigger Point 1, 2 & 3;
				24. Ramp Down Rate 1, 2, 3, 4 & 5;
				25. Ramp Down Break Point 1, 2, 3 & 4;
				26. Deloading Rate 1 & 2;
				27. Deload Break Point;
				28. Maximum Ramp Up Rate (applicable to Demand Side Units);
				29. Maximum Ramp Down Rate (applicable to Demand Side Units);
				30. Dispatchable Quantity (Maximum Generation applicable to Demand Side Units);
				31. Start of Restricted Range 1;
				32. End of Restricted Range 1;
				33. Start of Restricted Range 2;
				34. End of Restricted Range 2;
				35. Short Term Maximisation Capability;
				36. Registered Minimum Stable Generation;
				37. Registered Minimum Output;
				38. Pumping Capacity;
				39. Pumped Storage and Battery Storage Flag;
				40. Battery Storage Capacity; and
				41. Fuel Type.”
			1. Until the date that is the Day 2 Deployment Date, paragraph 26 of Appendix O shall be replaced with:

“10. The normal operating modes for a Synchronised Generator Unit are load up mode, ramp up mode, ramp down mode and deload mode. Each operating mode of a Generator Unit is described by a piecewise linear Operating Trajectory that describes the theoretical Output of a Generator Unit over time. The Technical Offer Data used to determine the piecewise linear Operating Trajectory shall be the Accepted Technical Offer Data for the Trading Day containing the start of that Settlement Day containing the Instruction Effective Time of the Dispatch Instruction.”Appendix O: Instruction Profiling Calculations10. The Market Operator shall, for each Settlement Day, use the following Registration Data and Accepted Technical Offer Data for each Trading Day which falls within that Settlement Day in whole or in part, provided in accordance with Appendix H: “Data Requirements for Registration” and Appendix I: “Offer Data” respectively, to calculate all Instruction Profile types for that Settlement Day:* + - * 1. Registered Capacity / Maximum Generation;
				2. Hot Cooling Boundary;
				3. Warm Cooling Boundary;
				4. Block Load Flag;
				5. Block Load Cold, Block Load Warm and Block Load Hot;
				6. Loading Rate Hot 1, 2 & 3;
				7. Loading Rate Warm 1, 2 & 3;
				8. Loading Rate Cold 1, 2 & 3;
				9. Load Up Break Point Hot 1 & 2;
				10. Load Up Break Point Warm 1 & 2;
				11. Load Up Break Point Cold 1 & 2;
				12. Soak Time Hot 1 & 2;
				13. Soak Time Warm 1 & 2;
				14. Soak Time Cold 1 & 2;
				15. Soak Time Trigger Point Hot 1 & 2;
				16. Soak Time Trigger Point Warm 1 & 2;
				17. Soak Time Trigger Point Cold 1 & 2;
				18. Ramp Up Rate 1, 2, 3, 4 & 5;
				19. Ramp Up Break Point 1, 2, 3 & 4;
				20. Dwell Time Up 1, 2 & 3;
				21. Dwell Time Down 1, 2 & 3;
				22. Dwell Time Up Trigger Point 1, 2 & 3;
				23. Dwell Time DownTrigger Point 1, 2 & 3;
				24. Ramp Down Rate 1, 2, 3, 4 & 5;
				25. Ramp Down Break Point 1, 2, 3 & 4;
				26. Deloading Rate 1 & 2;
				27. Deload Break Point;
				28. Maximum Ramp Up Rate (applicable to Demand Side Units);
				29. Maximum Ramp Down Rate (applicable to Demand Side Units);
				30. Dispatchable Quantity (Maximum Generation applicable to Demand Side Units);
				31. Start of Restricted Range 1;
				32. End of Restricted Range 1;
				33. Start of Restricted Range 2;
				34. End of Restricted Range 2;
				35. Short Term Maximisation Capability;
				36. Registered Minimum Stable Generation;
				37. Registered Minimum Output;
				38. Pumping Capacity;
				39. Pumped Storage and Battery Storage Flag;
				40. Battery Storage Capacity; and
				41. Fuel Type.
 |
| **Modification Proposal Justification***(Clearly state the reason for the Modification)* |
| Currently, the TSC does not clarify which Technical Offer Data is used for each dispatch instruction profiled within Instruction Profiling, which is performed on a Settlement Day basis. The change of Technical Offer Data for the Bid Offer Acceptance Quantity calculation as part of the Imbalance Pricing process also occurs on a Settlement Day basis. This Modification Proposal includes a modification to the enduring Code text to clarify that the Technical Offer Data for each Trading Day which overlaps with the Settlement Day should be used (the existing text in Paragraph 26 already clarifies that the data used is that for the Trading Day containing the effective time of the instruction), and it also includes an interim modification which aligns with the current Central Market Systems implementation, which is intended to be in place until such time as the enduring approach is implemented in the Central Market Systems.The approach used in both the enduring and interim modification proposals ensures that a single set of VTOD is used to process the profile for a Dispatch or Pseudo Dispatch Instruction, rather than having the potential for two sets of data to apply to a single profile. This ensures that there can be no conflicts arising through changing the data which applies to determining a trajectory of a profile in the middle of that profile.However the Central Market Systems at the moment use a single set of VTOD to calculate all profiles considered within the run, and since the run is carried out on a Settlement Day (00:00 – 00:00) basis to align with the data requirements for the downstream settlement systems, the VTOD for the first Trading Day within the Settlement Day is used for the whole Settlement Day. This differs with the theoretical approach to determining which set of data is used, which is that a different set of data is used in the last hour of the Settlement Day because the Trading Day changes at 23:00. Including this as an interim modification prevents the need for following a potentially costly process of manual settlement/resettlement for amounts arising from differences between the rules and the system calculations, for what would be expected to be a relatively small exposure and in a relatively small number of cases.The use of single set of Technical Offer Data across an entire settlement QBOA calculation run for a Settlement Day (00:00 to 00:00) does create a theoretical misalignment, as changes in Technical Offer Data occur on a Trading Day (23:00 to 23:00) basis. The situation where such misalignment would have the most noticeable impact would be if **BOTH** of the following occur:* A Unit changes Technical Offer Data between two Trading Days; AND
* The Unit receives a Dispatch Instruction in the period from 23:00 and 00:00.

It would have a smaller impact on cases where a unit changes their Technical Offer Data between two Trading Days, and there are Bid Offer Acceptance orders closing and opening over that period keeping the unit at its previous output level. This is because the overall volume for all of the orders would be the same as if the new Technical Offer Data were used from 23:00 to 00:00, but the volumes in each individual order would be different due to the different trajectories of the profiles of closing orders. It is not expected that there would be a noticeable impact in cases other than these.The Trading and Settlement Code already contains provisions which govern changes in Technical Offer Data for instructions which are effective prior to the start of a Trading Day but extend into the new Trading Day (i.e. the Technical Offer Data at the Effective Time of the instruction is applied). This already means that the “theoretical” Technical Offer Data for the Trading Day is not being applied in certain circumstances. The proposed modification is added to these provisions also to clarify which Technical Offer Data is used.Because the areas considered in this proposed modification will not be fixed in time for I-SEM go-live, it is necessary to have interim arrangements which align the rules with the system implementation for a fixed period of time until the approach intended by the rules can be implemented in the systems. The approach taken is to maintain in the main body of the Code the intended approach, while having an interim arrangement in Chapter H which prevails over the period of time from market cutover until the fixed time stated on the clause. This should make it clear that the approach in the Code is intended to be implemented when it is possible to do so following priority items being fixed for I-SEM go-live. |
| **Code Objectives Furthered***(State the Code Objectives the Proposal furthers, see Section 1.3 of 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)* |
| The Trading and Settlement Code will continue to be ambiguous with respect to the application of Technical Offer Data within Instruction Profiling. |
| **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 Market Code, Grid Code, Exchange Rules etc.)* |
|  | No impact on systems as they will exist for the Cutover Time, initial timeline indicated for work required to implement the system which would achieve the outcomes of the main body of the text which will require resources, in the absence of this modification then there is a possibility of additional resource requirements for settlement processes. |
| ***Please return this form to Secretariat by email to*** ***modifications@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.**