

Single Electricity Market

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| Final REcommendation Report  Mod\_07\_18 clarifications of use of “b” in niv and par tAGGING SCENARIOS  14 June 2018 |

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Document History

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| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Comment** |
| 1.0 | 14 June 2018 | Modifications Committee Secretariat | Issued to Modifications Committee for review and approval |
| 2.0 | 22 June 2018 | Modifications Committee Secretariat | Issued to Regulatory Authorities for final decision |

Reference Documents

|  |
| --- |
| **Document Name** |
| [Trading and Settlement Code](http://www.sem-o.com/MarketDevelopment/MarketRules/TSC.docx) |
| [Modification Proposal](http://www.sem-o.com/MarketDevelopment/ModificationDocuments/Mod_07_18%20-%20Clarifications%20of%20use%20of%20variable%20b%20in%20NIV%20and%20PAR%20Tagging%20scenarios.docx) |
| [Presentation](http://www.sem-o.com/MarketDevelopment/ModificationDocuments/Mod_07_18%20Presentation.pptx) |
| [RA decision](http://www.sem-o.com/MarketDevelopment/ModificationDocuments/SEMC%20Decision%20for%20the%20RAs%20in%20relation%20to%20Mod_07_18.pdf) |
| [Modification Proposal](http://www.sem-o.com/MarketDevelopment/ModificationDocuments/Mod_07_18%20-%20Clarifications%20of%20use%20of%20variable%20b%20in%20NIV%20and%20PAR%20Tagging%20scenarios%20version%202.docx) |
| [Powerpoint Presentation](http://www.sem-o.com/MarketDevelopment/ModificationDocuments/April%20Meeting%20Mod_07_18%20v2.pptx) |

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# MODIFICATIONS COMMITTEE RECOMMENDATION

## Recommended for approval - Unanimous Vote

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| --- | --- | --- |
| **Recommended for Approval by Unanimous Vote** | | |
| Derek Scully | Generator Alternate | Approved |
| David Gascon | Generator Alternate | Approved |
| Brian Mongan | Generator Member | Approved |
| William Steele | Supplier Member | Approved |
| Jim Wynne | Supplier Member | Approved |
| Julie-Anne Hannon (Chair) | Supplier Member | Approved |
| Eamonn O’Donoghue | Interconnector Member | Approved |
| Paraic Higgins | Generator Alternate | Approved |
| Robert McCarthy | DSU Alternate | Approved |

# Background

This Modification Proposal was raised by Eirgrid and was received by the Secretariat on 14 February 2018.

A number of situations have been identified during the testing process and through participant queries where an outcome is ambiguous in the rules but there is a system implementation to reflect the intended design for the flagging and tagging component of the Imbalance Pricing function. This modification intends to clarify the algebra around the determination of Net Imbalance Volume (NIV) and Price Average Reference (PAR) Tags in the determination of the Imbalance Price. The two primary things which influence these outcomes are what values the variables b and β (beta) have, and the relationship between the different ranks (k) of actions in relation to action b. The proposals allow variable b to have a wider range so that they can account for situations where the entirety of the first Accepted Bid or last Accepted Offer needs to be untagged (from 1 <= b <= N to 0 <= b <= N+1). The proposals also removes situations where a single offer or bid could be required to have two different values of TNIV in the same period based on the action overlapping with two separate clauses setting the value of TNIV.

Note that the intention is to have the text including any other modifications to this section of the rules, e.g. it is known that there is a parallel proposal on changing other language concerning these sections. The current Code text is used as the basis of this modification proposal, but it assumes that these changes can be incorporated into any other raised proposals.

The adjustments to this modification proposal now also cover the situation when there is a need to unflag an action within the middle of the ranked set, which was not sufficient covered in the previous version. It does this by allowing beta to equal 1 in certain specific situations, with wording that ensures that if two solutions can resolve the equation, one with a value of beta equal to zero and the other with a value of beta equal to one, then the sole solution shall be the one with the value of beta equal to one.

The Modification Proposal was discussed at Meeting 78 and Meeting 79 and voted on at Meeting 80 on 7th February 2018.

# PURPOSE OF PROPOSED MODIFICATION

**3A.) justification of Modification**

NIV Tags and PAR Tags are used to determine which set of actions taken by the SO can influence the final Imbalance Price, and the proportion to which they can influence the price. The formulas used to calculate these tags rely on determining values for b (the rank of a particular action) and beta (the proportion of that action) needed in order to satisfy the equation. There a small number of situations that could have multiple correct answers or that could have no correct answers, due to the way the algebra is formulated at the moment. It is the design intent that every situation would only have one unique answer for b, beta, TNIV and TPAR. These are items where the intended outcome from a design point of view is well known and is being implemented correctly in systems, but a clarification to the algebra is needed in the TSC in order to correctly align with that.

Firstly, the design intent is that when there are only actions in one direction, all those actions need to have a value of TNIV = 1, as the sum of them all by definition equals the NIV. This required that the entirety of an action is untagged, which intuitively may appear that the action b must have an associated value for beta of one, or it was initially thought that this can also be satisfied by having b be the action before or after the one which needs to be entirely untagged, with an associated value for beta of zero. However if all actions are flagged, this requires that the entirety of the action found to be the first one which needs to be untagged in NIV Tagging needs to be untagged in its entirety, and intuitively this looks like action b, which is b = N or b = 1 because we are looking at the first action which needs to be untagged, needs an associated value of beta equal to 1, which is not possible in the rules as they are currently drafted and it is not possible to fulfil by having b be the next or previous action given the constraints stated in the equation.

One potential solution, which the previous version of this proposal outlined, is to change the constraints on the value to which b can be set, where it can be set to a rank which allows for the intended effect to occur for all actions, with beta equal to zero, by allowing b to be a value which is before the first bid (b = 0) or after the last offer (b = N+1). Then the rules around setting TNIV for all actions where k < b or where k > b will ensure that the intended result occurs. This fixes the issue when the action to be entirely unflagged is the final one in the direction, as it gives a buffer and allows all actions up to the buffer to be unflagged. However when there is a need to unflag an action within the middle of the ranked set, the approach of simply allowing b to be the next action and beta to equal zero creates the incorrect value of TNIV for action at rank b. For example, when we want all actions to be unflagged, with TNIV = 1, having beta equal zero and then the rules stating that for action b TNIV is equal to beta creates a problem where we have a value of 1 for all actions up to b, then zero for b, then 1 for all actions after b, instead of all actions having a value for TNIV = 1.

Based on this, the approach brought up by attendees at the modification panel meeting where this modification proposal was discussed of allowing beta to equal 1 in certain specific situations was investigated. The previous reason for not allowing this was because it could give rise to situations where there is more than one valid solution to the equation, whereas only a single unique solution for b and beta can be used for the following steps in the calculation. For example a solution of b = 3 and beta = 1 would be equally as valid as a solution of b = 4 and beta = 0. Therefore in order to incorporate this approach some additional wording is needed which clarifies which solution should be the unique one used. In order to create the correct outcome for TNIV calculations, if two solutions can resolve the equation, one with a value of beta equal to zero and the other with a value of beta equal to one, then the sole solution should be the one with the value of beta equal to one.

It is not as theoretically neat as an approach which determines a unique solution in all cases without a need for additional clarifications, but it would cover the situations not already covered by the previous version of this modification proposal. It should also allow for easier replicatability, where the approach in the systems of searching in a direction for action b which meets the criteria of the sum of the previous tagged/untagged actions and then determining the proportion of that action which needs to be flagged or unflagged in the form of the value for beta – the value for beta can now be equal to 1 which is more intuitive to replicate than going to the next action after b in order to have the previous action which meets the criteria be entirely unflagged.

Another ambiguity arises in the situation where the action that is b is the first Accepted Offer or the last Accepted Bid in the ranked set, i.e. if b is the action at rank M+1 or M. It seems in some situations the way the rules are stated creates ambiguity about what the value of TNIV should be for the BOA before the one to be partially tagged/untagged, where two of the rules apply to it at the same time, meaning TNIV should have a value of both 1 and 0. For example, where QNIV is positive and QRTAG is negative, using rule Appendix N 9(a)(ii), with b = M+1 (the first inc) the value for the TNIV for the last dec (M) should be both zero (because it is between 1 and M, and its TINIV is zero) and one (because it is between M+1 and b-1, and these need to have a value of 1). The obvious right answer from the design perspective is that its tag should be zero (in a positive QNIV situation, all opposite actions are tagged), but the algebra seems to work out this way where it could be both zero and one, the M+1 to b-1 flips directions when b = M+1 causing this unintended consequence.

The intended outcome from the design perspective is known, and the proposal just clarifies in the wording of the rules to remove the ambiguity and ensure that there cannot be an overlap of situations.

While this discussion has been focussing on TNIV, the same functionality is used for determining TPAR and therefore similar changes need to be made there for the same reasons also.

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

N/A

**3c.) Impact on Code Objectives**

* to provide transparency in the operation of the Single Electricity Market;
* to ensure no undue discrimination between persons who are parties to the Code.

This modification proposal if implemented would ensure that participants unambiguously understand the intended functioning of the Net Imbalance Volume and Price Average Reference Volume Tagging functionality, including those who have not been part of the market design process and therefore may only have the Code as their source of understanding.

1. **Assessment of Alternatives**

N/A

# Working Group and/or Consultation

N/A

# impact on systems and resources

N/A

# Impact on other Codes/Documents

N/A

# MODIFICATION COMMITTEE VIEWS

## Meeting **81 – 13 March 2018**

Proposer delivered a [presentation](http://www.sem-o.com/MarketDevelopment/ModificationDocuments/Mod_07_18%20Presentation.pptx) summarising the requirement for this proposal. Examples were discussed in detail illustrating the proposal. Proposer advised that the need for this proposal was identified through testing. Concerns were expressed regarding the implementation of this proposal. Proposer advised that the level of detail required was contained in the modification process and considerable time had been spent analysing this issue and developing a proposal. Reference was made to a general query that had been raised with the SEMO helpdesk regarding the ability of replicating the outcome/ results of pricing using the proposed modification algebra compared to the algebra that already exists. Secretariat advised that this query would be escalated and the originator gave permission for the content of this query’s outcome to be shared publically.

Alternative options were suggested (which would require taking away and assessment) however the RA’s were keen to point out that this proposal had already been tested and that the systems are already in the certification phase with the vendor. It was also highlighted that this option was least intrusive to the code. Proposer added that while there may be a number of ways of mitigating the issues this Proposal was seeking to address, this proposed modification was deemed appropriate and in line with systems. Members raised the possibility of a plain English guide to assist with the understanding of the complex algebra (particularly the need for the “theoretical” rank of N+1). Proposer advised that it would not be feasible in the short term but would be considered at a later date. The Committee also noted a minor typo in the legal drafting whereby clause 9(a)(i)(A) is missing an ‘i’ from the word “if” which should be corrected in the Final Recommendation Report.

Committee were in agreement to vote on this proposal stressing the importance of the resolution of the general query re replication of results (the RAs acknowledged that the points contained in the general query should be addressed and that if, on resolution of the query, it was determined that there were issues with the proposed legal drafting, this would be taken into account in their final decision) and the future provision of a plain English guide as discussed (incorporation of further plain English explanation regarding this modification, into the flagging and tagging explanatory document, to be considered by Proposer). The minor “if” typo noted above is also to be addressed. Some members expressed their position of wishing to abstain in the voting process whilst acknowledging the need for the proposal and agreeing with the rationale but having concerns regarding the implementation.

The proposal was Recommended for Approval.

## Meeting **83 – 25 April 2018**

Proposer delivered a [presentation](http://www.sem-o.com/MarketDevelopment/ModificationDocuments/April%20Meeting%20Mod_07_18%20v2.pptx) summarising how and why the proposal was revised. Proposer thanked observers and members for there feedback which contributed to version 2.0 of this proposal. Proposer confirmed that this version of the proposal will address the issue in a more replicable way and is more closely aligned with what the system does and will address every possible scenario. Proposer provided detailed examples illustrated in the [presentation](http://www.sem-o.com/MarketDevelopment/ModificationDocuments/April%20Meeting%20Mod_07_18%20v2.pptx).

Observer confirmed they had put this into practice and it worked successfully. Committee were in

agreement to vote on this proposal.

# Proposed Legal Drafting

As set out in Appendix 1.

# LEGAL REVIEW

N/A

# IMPLEMENTATION TIMESCALE

It is proposed that this Modification is implemented on a Trading Day basis with effect from one Working Day after an RA Decision.

# Appendix 1 – Mod\_07\_18 v 2.0 Clarifications of use of variable “b” in NIV and PAR Tagging scenarios version 2

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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)* |
| **EirGrid** | **14 February 2018** | | **Standard** | | **Mod\_07\_18** |
| **Contact Details for Modification Proposal Originator** | | | | | |
| **Name** | | **Telephone number** | | **Email address** | |
| **Martin Kerin** | |  | | **Martin.Kerin@EirGrid.com** | |
| **Modification Proposal Title** | | | | | |
| **Clarifications of use of variable “b” in NIV and PAR Tagging scenarios version 2** | | | | | |
| **Documents affected**  *(delete as appropriate)* | | **Section(s) Affected** | | **Version number of T&SC or AP used in Drafting** | |
| **Appendices Part B** | | **Appendix N** | | **20** | |
| **Explanation of Proposed Change**  *(mandatory by originator)* | | | | | |
| A number of situations have been identified during the testing process and through participant queries where an outcome is ambiguous in the rules but there is a system implementation to reflect the intended design for the flagging and tagging component of the Imbalance Pricing function. This modification intends to clarify the algebra around the determination of Net Imbalance Volume (NIV) and Price Average Reference (PAR) Tags in the determination of the Imbalance Price. The two primary things which influence these outcomes are what values the variables b and β (beta) have, and the relationship between the different ranks (k) of actions in relation to action b. The proposals allow variable beta to have a value of one so that they can account for situations where the entirety of an Accepted Bid or Accepted Offer needs to be untagged (from 0 <= β < 1 to 0 <= β <= 1). The proposals also removes situations where a single offer or bid could be required to have two different values of TNIV in the same period based on the action overlapping with two separate clauses setting the value of TNIV.  Note that the intention is to have the text including any other modifications to this section of the rules, e.g. it is known that there is a parallel proposal on changing other language concerning these sections. The current Code text is used as the basis of this modification proposal, but it assumes that these changes can be incorporated into any other raised proposals.  The adjustments to this modification proposal now also cover the situation when there is a need to unflag an action within the middle of the ranked set, which was not sufficient covered in the previous version. It does this by allowing beta to equal 1 in certain specific situations, with wording that ensures that if two solutions can resolve the equation, one with a value of beta equal to zero and the other with a value of beta equal to one, then the sole solution shall be the one with the value of beta equal to one. | | | | | |
| **Legal Drafting Change**  *(Clearly show proposed code change using* ***tracked*** *changes, if proposer fails to identify changes, please indicate best estimate of potential changes)* | | | | | |
| Setting the Net Imbalance Volume Tag in the Case of a Positive Net Imbalance Volume Quantity   * + - 1. For each Imbalance Pricing Period φ, where the Net Imbalance Volume Quantity (QNIVukφ) is a positive value, the Market Operator shall:          1. Where the Residual Tagged Quantity (QRTAGφ) is a negative value:   determine the value of b and β to satisfy the following equation:  where:  b is a positive integer in the range 1 ≤ b ≤ N and β is a positive real number in the range 0 ≤ β ≤ 1, where if there are more than one valid solutions to the equation, the solution with a value of β = 1 shall be taken to be the unique solution used in all following steps;  QAOukφ is the Accepted Offer Quantity for Generator Unit u and rank k;and  TINIVukφ is the Initial Net Imbalance Volume Tag for each Generator Unit u and rank k.  set the value of each Net Imbalance Volume Tag (TNIVukφ) to a value equal to the value of each corresponding Initial Net Imbalance Volume Tag for each rank k where k ≤ M and each rank k where k > b, to a value of one for each rank k where M < k < b, and to a value of β for rank k where k = b.   * + - * 1. Where the Residual Tagged Quantity (QRTAGφ) is a positive value:   determine the value of b and β to satisfy the following equation:  where:  b is a positive integer in the range 1 ≤ b ≤ N and β is a positive real number in the range 0 ≤ β ≤ 1, where if there are more than one valid solutions to the equation, the solution with a value of β = 1 shall be taken to be the unique solution used in all following steps;  QAOukφ is the Accepted Offer Quantity for Generator Unit u and rank k; and  TINIVukφ is the Initial Net Imbalance Volume Tag for each Generator Unit u and rank k.  set the value of each Net Imbalance Volume Tag (TNIVukφ) to a value equal to the value of each corresponding Initial Net Imbalance Volume Tag for each rank k where k < b, to a value of 1 – β for rank k where k = b, and to a value of zero for each rank k where k > b.  Setting the Net Imbalance Volume Tag in the Case of a Negative Net Imbalance Volume Quantity   * + - 1. For each Imbalance Pricing Period φ, where the Net Imbalance Volume Quantity (QNIVukφ) is a negative value, the Market Operator shall:          1. Where the Residual Tagged Quantity (QRTAGφ) is a positive value:   determine the value of b and β to satisfy the following equation:  where:  b is a positive integer in the range 1 ≤ b ≤ N and β is a positive real number in the range 0 ≤ β ≤ 1, where if there are more than one valid solutions to the equation, the solution with a value of β = 1 shall be taken to be the unique solution used in all following steps;  QABukφ is the Accepted Bid Quantity for Generator Unit u and rank k; and  TINIVukφ is the Initial Net Imbalance Volume Tag for each Generator Unit u and rank k.  set the value of each Net Imbalance Volume Tag (TNIVukφ) to a value equal to the value of each corresponding Initial Net Imbalance Volume Tag for each rank k where k < b and each rank k where k > M, to a value of β for rank k where k = b, and to a value of one for each rank k where b < k < M.   * + - * 1. Where the Residual Tagged Quantity (QRTAGφ) is a negative value:   determine the value of b and β to satisfy the following equation:  where:  b is a positive integer in the range 1 ≤ b ≤ N and β is a positive real number in the range 0 ≤ β ≤ 1,, where if there are more than one valid solutions to the equation, the solution with a value of β = 1 shall be taken to be the unique solution used in all following steps;  QABukφ is the Accepted Bid Quantity for Generator Unit u and rank k; and  TINIVukφ is the Initial Net Imbalance Volume Tag for each Generator Unit u and rank k.  set the value of each Net Imbalance Volume Tag (TNIVukφ) to a value of zero for each rank k where k < b, to a value of 1 – β for rank k where k = b, and to a value equal to the value of each corresponding Initial Net Imbalance Volume Tag for each rank k where k > b.   * 1. Price Average Reference Tagging   Setting the Price Average Reference Tag if –QPAR ≤ QNIVφ ≤ QPAR   * + - 1. For each Imbalance Pricing Period φ where the Net Imbalance Volume Quantity (QNIVφ) is greater than or equal to the negative of the Price Average Reference Quantity (-QPAR) and less than or equal to the Price Average Reference Quantity (QPAR), the Market Operator shall set the value of the Price Average Reference Tag (TPARukφ) equal to one for all k.   Setting the Price Average Reference Tag if QNIVφ > QPAR   * + - 1. For each Imbalance Pricing Period φ where the Net Imbalance Volume Quantity (QNIVφ) is greater than the Price Average Reference Quantity (QPAR), the Market Operator shall:          1. Determine the value of b and β to satisfy the following equation:   where:  b is a positive integer in the range 1 ≤ b ≤ N and β is a positive real number in the range 0 ≤ β ≤ 1, where if there are more than one valid solutions to the equation, the solution with a value of β = 1 shall be taken to be the unique solution used in all following steps ;  QAOukφ is the Accepted Offer Quantity for Generator Unit u and rank k; and  TNIVukφ is the Net Imbalance Volume Tag for Generator Unit u and rank k.   * + - * 1. Set the value of the Price Average Reference Tag (TPARukφ) equal to zero for each rank k where M < k < b, to a value of β for rank k where k = b, and to a value of one for each rank k where k ≤ M and each rank k where k > b.   Setting the Price Average Reference Tag if QNIVφ < -QPAR   * + - 1. For each Imbalance Pricing Period φ where the Net Imbalance Volume Quantity (QNIVφ) is less than the negative of the Price Average Reference Quantity (QPAR), the Market Operator shall:          1. Determine the value of b and β to satisfy the following equation:   where:  b is a positive integer in the range 1 ≤ b ≤ N and β is a positive real number in the range 0 ≤ β ≤ 1, where if there are more than one valid solutions to the equation, the solution with a value of β = 1 shall be taken to be the unique solution used in all following steps ;  QABukφ is the Accepted Bid Quantity for Generator Unit u and rank k; and  TNIVukφ is the Net Imbalance Volume Tag for Generator Unit u and rank k.   * + - * 1. Set the value of the Price Average Reference Tag (TPARukφ) equal to zero for each rank k where b < k ≤ M, to a value of β for rank k where k = b, and to a value of one for each rank k where k < b and each rank k where k > M. | | | | | |
| **Modification Proposal Justification**  *(Clearly state the reason for the Modification)* | | | | | |
| NIV Tags and PAR Tags are used to determine which set of actions taken by the SO can influence the final Imbalance Price, and the proportion to which they can influence the price. The formulas used to calculate these tags rely on determining values for b (the rank of a particular action) and beta (the proportion of that action) needed in order to satisfy the equation. There a small number of situations that could have multiple correct answers or that could have no correct answers, due to the way the algebra is formulated at the moment. It is the design intent that every situation would only have one unique answer for b, beta, TNIV and TPAR. These are items where the intended outcome from a design point of view is well known and is being implemented correctly in systems, but a clarification to the algebra is needed in the TSC in order to correctly align with that.  Firstly, the design intent is that when there are only actions in one direction, all those actions need to have a value of TNIV = 1, as the sum of them all by definition equals the NIV. This required that the entirety of an action is untagged, which intuitively may appear that the action b must have an associated value for beta of one, or it was initially thought that this can also be satisfied by having b be the action before or after the one which needs to be entirely untagged, with an associated value for beta of zero. However if all actions are flagged, this requires that the entirety of the action found to be the first one which needs to be untagged in NIV Tagging needs to be untagged in its entirety, and intuitively this looks like action b, which is b = N or b = 1 because we are looking at the first action which needs to be untagged, needs an associated value of beta equal to 1, which is not possible in the rules as they are currently drafted and it is not possible to fulfil by having b be the next or previous action given the constraints stated in the equation.  One potential solution, which the previous version of this proposal outlined, is to change the constraints on the value to which b can be set, where it can be set to a rank which allows for the intended effect to occur for all actions, with beta equal to zero, by allowing b to be a value which is before the first bid (b = 0) or after the last offer (b = N+1). Then the rules around setting TNIV for all actions where k < b or where k > b will ensure that the intended result occurs. This fixes the issue when the action to be entirely unflagged is the final one in the direction, as it gives a buffer and allows all actions up to the buffer to be unflagged. However when there is a need to unflag an action within the middle of the ranked set, the approach of simply allowing b to be the next action and beta to equal zero creates the incorrect value of TNIV for action at rank b. For example, when we want all actions to be unflagged, with TNIV = 1, having beta equal zero and then the rules stating that for action b TNIV is equal to beta creates a problem where we have a value of 1 for all actions up to b, then zero for b, then 1 for all actions after b, instead of all actions having a value for TNIV = 1.  Based on this, the approach brought up by attendees at the modification panel meeting where this modification proposal was discussed of allowing beta to equal 1 in certain specific situations was investigated. The previous reason for not allowing this was because it could give rise to situations where there is more than one valid solution to the equation, whereas only a single unique solution for b and beta can be used for the following steps in the calculation. For example a solution of b = 3 and beta = 1 would be equally as valid as a solution of b = 4 and beta = 0. Therefore in order to incorporate this approach some additional wording is needed which clarifies which solution should be the unique one used. In order to create the correct outcome for TNIV calculations, if two solutions can resolve the equation, one with a value of beta equal to zero and the other with a value of beta equal to one, then the sole solution should be the one with the value of beta equal to one.  It is not as theoretically neat as an approach which determines a unique solution in all cases without a need for additional clarifications, but it would cover the situations not already covered by the previous version of this modification proposal. It should also allow for easier replicatability, where the approach in the systems of searching in a direction for action b which meets the criteria of the sum of the previous tagged/untagged actions and then determining the proportion of that action which needs to be flagged or unflagged in the form of the value for beta – the value for beta can now be equal to 1 which is more intuitive to replicate than going to the next action after b in order to have the previous action which meets the criteria be entirely unflagged.  Another ambiguity arises in the situation where the action that is b is the first Accepted Offer or the last Accepted Bid in the ranked set, i.e. if b is the action at rank M+1 or M. It seems in some situations the way the rules are stated creates ambiguity about what the value of TNIV should be for the BOA before the one to be partially tagged/untagged, where two of the rules apply to it at the same time, meaning TNIV should have a value of both 1 and 0. For example, where QNIV is positive and QRTAG is negative, using rule Appendix N 9(a)(ii), with b = M+1 (the first inc) the value for the TNIV for the last dec (M) should be both zero (because it is between 1 and M, and its TINIV is zero) and one (because it is between M+1 and b-1, and these need to have a value of 1). The obvious right answer from the design perspective is that its tag should be zero (in a positive QNIV situation, all opposite actions are tagged), but the algebra seems to work out this way where it could be both zero and one, the M+1 to b-1 flips directions when b = M+1 causing this unintended consequence.  The intended outcome from the design perspective is known, and the proposal just clarifies in the wording of the rules to remove the ambiguity and ensure that there cannot be an overlap of situations.  While this discussion has been focussing on TNIV, the same functionality is used for determining TPAR and therefore similar changes need to be made there for the same reasons also. | | | | | |
| **Code Objectives Furthered**  *(State the Code Objectives the Proposal furthers, see Section 1.3 of T&SC for Code Objectives)* | | | | | |
| * to provide transparency in the operation of the Single Electricity Market; * to ensure no undue discrimination between persons who are parties to the Code.   This modification proposal if implemented would ensure that participants unambiguously understand the intended functioning of the Net Imbalance Volume and Price Average Reference Volume Tagging functionality, including those who have not been part of the market design process and therefore may only have the Code as their source of understanding. | | | | | |
| **Implication of not implementing the Modification Proposal**  *(State the possible outcomes should the Modification Proposal not be implemented)* | | | | | |
|  | | | | | |
| **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 | | |  | | |
| ***Please return this form to Secretariat by email to*** [***modifications@sem-o.com***](mailto: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.**