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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** | **21 November 2019** | **Standard** | **Mod\_17\_19 V2** |
| **Contact Details for Modification Proposal Originator** |
| **Name** | **Telephone number** | **Email address** |
| **Chris Goodman** |  | **Christopher.Goodman@soni.ltd.uk** |
| **Modification Proposal Title** |
| **DSU State Aid Compliance Interim Approach** |
| **Documents affected***(delete as appropriate)* | **Section(s) Affected** | **Version number of T&SC or AP used in Drafting** |
| **T&SC Part B** | **Sections F and H** | **Version 20** |
| **Explanation of Proposed Change***(mandatory by originator)* |
| On foot of the Demand Side Unit (DSU) state aid compliance decision paper ([SEM-19-029](https://www.semcommittee.com/sites/semc/files/media-files/SEM-19-029%20-%20DSU%20State%20aid%20compliance%20-%20Decision%20paper_0.pdf)), the SEM Committee have requested that the Regulatory Authorities engage with the TSOs to generate a Modification Proposal to enable the Modifications Committee to implement the decision within the Code. This proposal is intended to put in place the approach agreed via a previous provisional proposal at meeting 94.As detailed in the decision paper, an exemption of DSUs from Reliability Option (RO) payback obligations allowed for these units to have Difference Charges to apply only in the case of non-delivery where there is an RO event. This exemption was allowed as a temporary measure and state aid approval was given on the basis that this exemption would cease for the delivery period commencing October 2020. The SEM Committee decision acknowledged that the timescales involved in implementing a complete and enduring solution, which provides for a reliable measurement of the actual demand reduction delivered, in order to provide for energy settlement for this reduction to be applied to the DSUs so that Difference Charges can also apply, mean that it is necessary to implement an interim solution prior to the enduring approach. This interim solution provides for energy payments to be made to DSUs only where there is an RO event in order to provide the revenue with which to pay Difference Charges where such payments apply as well as changing the approach to Non Performance Difference Charges to align with the approach for other units.The decision provides for the Modifications Committee to determine an interim solution which:* provides for energy payments in the balancing arrangements to be made to DSUs only where there is an RO event in a market where demand reduction is traded or delivered (including where such trade is in the Ex Ante markets)
* provides for Difference Charges to apply where there is an RO event and a demand reduction has been traded/delivered or there is a non delivery and there is an RO event in the Imbalance Price
* socialises the cost of the new energy payments via a mechanism which is robust to the lumpy nature of DSU energy payments and ensures that all DSU energy payments are made
* allocates the costs of recovery for the new energy payments between suppliers in line with the equity assessment criteria applied in the design of the I-SEM, i.e. “that the market design should allocate the costs and benefits associated with the production, transportation and consumption of electricity in a fair and reasonable manner”
* can be implemented by 1st October 2020

The decision intentionally allowed for some flexibility so that the detail of the solution could be worked out as the implementation in the Code and the systems is investigated. As such, SEMO and the Regulatory Authorities have engaged to better understand the intent of the decision in some areas. This work, in conjunction with some of the more explicit details of the decision have led to the following set of guiding principles, considerations and options for the approach:* energy payments will continue to be netted out where Difference Charges are not triggered by retaining the Trading Site Supplier Unit and setting its energy volume to cancel the energy volume associated with the DSU
* difference Charges will apply in the same way as for other units by lifting the current dis-application of sub sections F.18.4, F.18.5 and F.18.6 and removing the special treatment for DSUs in relation to Non-Performance Difference Quantities under F.18.7.1 whilst introducing the standard approach under F.18.7.3
* the socialisation and recovery mechanism may be under either the Residual Error Volume Charge, via the capacity Socialisation fund or via the Imperfections Charge as deemed appropriate given their charging base and cost allocation
* confirmation has been provided by the Regulatory Authorities that Ex Ante Markets (as well as the Balancing Market) should also have Difference Charges and associated energy revenues introduced for DSUs and also that energy revenues should apply to the entire volume and price in periods/marketplaces where RO events occur

Given the change to Trading Site Supplier Unit Metered Quantity calculations we note that it was also necessary to consider the impact of any change in this volume for potential unintended consequences on other charge items that utilise this variable namely G.7.3.2 (CVMO) ; F.19.2.2 (CCC); F.12.2.3 (imperfection CIMP); F.20.3 (Difference Payments); F.19.4.2 (CSOCDIFFP). The energy payment option decided on at meeting 94, is considered to be unlikely to impact these items.While the DSU Difference Charge decision is relatively well defined and inflexible there were options in relation to energy payment to DSUs and recovery of this from Suppliers.***Recovery of energy payments from Suppliers:*****Recovery Option 1**Intuitively, recovery via the Residual Error Volume Charge seems logical given that the impact of the new energy payments is effectively a double counting of energy (against the DSU and the reduced consumption at the Supplier Unit(s)) and therefore an error in energy volume accounting). With that said, the design of this mechanism is such that it is charged disproportionately between interval and non-interval demand (currently entirely against non-interval) so that in order to achieve the equity assessment criteria a change to the parameters governing this split would be required. **Recovery Option 2**Recovery via the capacity Socialisation Fund is less intuitively logical given that it is intended to fund Difference Payments which are unrelated to energy balance. The application of the Capacity Charge Metered Quantity Factor so that Capacity Charges are not equally applied to all Imbalance Settlement Periods, is also a consideration in relation to the equity assessment criteria. With that said, this approach may be considered to more easily meet the equity assessment criteria in that all demand, at a given time of day, is treated equitably.**Recovery Option 3**Recovery via the Imperfections Charge, though not directly related to energy accounting per se, is intended to cover energy imperfections and would appear to most readily meet the equity assessment criteria as a result of being a flat rate against all demand volumes regardless of meter type or time of day. **Recovery Decision from Meeting 94**At meeting 94 it was agreed to pursue Option 3, recovery via the Imperfections Charge. This is on the basis that it is considered the most elegant way to meet the equity assessment criteria and because it is logical to recover via a charge which is intended to cover energy imperfections. Since section F.12 already details the proposal of and approval of the Imperfections Price and paragraph F.12.2.1 in particular notes that its purpose is to cover imbalance between Trading Payments and Charges we consider that no change is required to those provisions and suggest that it may be sufficient to note the inclusion of this recovery via Imperfections in any decision on the proposal for clarity.***Energy Payment to DSUs:***The detail in the decision implies that new energy revenue is only required whenever there is a dispatch above the Ex Ante position on the basis that Ex Ante revenue is already paid to DSUs where they trade in those markets; however, we note that this revenue can be netted off the DSU if traded against the associated Trading Site Supplier Unit, albeit that the changes to the Metered Quantity for the Trading Site Supplier Unit could mean that there would be some additional revenue in balancing where this occurs. That being the case we suggest that we proceed on the basis that the solution must also ensure that DSUs have the energy revenue to make RO paybacks for Day Ahead and Intraday Difference Quantities where these apply to an RO event in these markets since the decision provides for the associated Difference Charges to apply in order to be compliant with the state aid decision and also requires that all DSU energy payments be made.These considerations led to the crystallisation of two implementation options for the energy payments as follows:**Payment Option 1**Where an RO event occurs in any market, set the Metered Quantity for the Trading Site Supplier Unit to metered volume submitted by the Meter Data Providers (usually zero but occasionally represents consumption where there is self-supply at one or more Individual Demand Sites aggregated under a DSU).This would necessitate the introduction of a sophisticated new charge item to make adjustments to account for complexity based on the market in which the RO event occurred and what the traded positions were for the DSU and TSSU. **Payment Option 2**Where an RO event occurs in any market, set the Metered Quantity for the Trading Site Supplier Unit the appropriate value of either the submitted volume by the Metered Data Provider, the Ex Ante Quantity or the negative of the Dispatch Quantity at the DSU as appropriate depending on what was traded Ex Ante/submitted in Physical Notifications/Dispatched away from PN.This would necessitate the introduction of a less sophisticated but still fairly complex new charge item to make adjustments to account for complexity based on the market in which the RO event occurred and what the traded positions were for the DSU.It is not yet clear whether either option addresses all possible scenarios but initial testing has indicated that there is at least one scenario which can be correctly catered for via option 2 but not option 1. See justification for more detail.**Payment Decision from Meeting 94**At meeting 94 it was agreed to pursue option 1 because it is not likely to require additional supplementary changes to other charge items and is likely to be closer to the enduring approach than option 2 and is therefore considered the more elegant approach. This is despite the scenario that it doesn’t cater for and on the basis that follow up scenario testing doesn’t indicate that there are any prohibitive concerns regarding any other DSU trading scenarios. This scenario testing has now been completed and circulated. This indicates that there are six scenarios not appropriately catered for via option 1 and two not catered for via option 2. SEMO are of the view that these scenarios are of sufficiently low likelihood to occur and of sufficiently low impact to warrant proceeding with option 1 unchanged given the benefits it carries.The legal drafting below has been updated to reflect the approaches agreed at meeting 94. |
| **Legal Drafting Change***(Clearly show proposed code change using* ***tracked*** *changes, if proposer fails to identify changes, please indicate best estimate of potential changes)* |
| Text in green indicates that this is explanatory drafting text rather than change tracked legal drafting.**Difference Charges**The following changes allow for the treatment of Difference Quantities and Charges equivalent to other units.**F.18.4 Calculation of Day-ahead Difference Quantities and Charges**F.18.4.1 The following provisions of section F.18.4 do not apply to any Capacity Market Unit which represents  an Interconnector.**F.18.5 Calculation of Within-day Difference Quantities and Charges**F.18.5.1 The following provisions of section F.18.5 do not apply to any Capacity Market Unit which represents  an Interconnector.**F.18.6 Calculation of System Service Difference Quantities**F.18.6.1 The following provisions of section F.18.6 do not apply to any Capacity Market Unit which represents  an Interconnector.1. * 1. Calculation of Non-performance Difference Quantities and Charges
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			1. The Market Operator shall calculate the Non-performance Difference Quantity (QDIFFCNPΩγ) for each Capacity Market Unit, Ω, that is an Interconnector, in each Imbalance Settlement Period, γ, as follows:

where:* + - * 1. QCOBΩγ is the Obligated Capacity Quantity for Capacity Market Unit, Ω, in Imbalance Settlement Period, γ;
				2. qCMAMAXILFlγ is the Loss-Adjusted Maximum Import Capacity Market Availability Quantity for Interconnector, l, which comprises the Capacity Market Unit, Ω, in Imbalance Settlement Period, γ, submitted in accordance with section D.6.5;
				3. DISP is the Imbalance Settlement Period Duration; and
				4. QMLFlγ is the Loss-Adjusted Metered Quantity for Interconnector, l, in Imbalance Settlement Period, γ.
			1. For all cases not covered by paragraph F.18.7.2, the Market Operator shall calculate the Non-performance Difference Quantity (QDIFFCNPΩγ) for each Capacity Market Unit, Ω, which does not represent an Autoproducer Unit, in each Imbalance Settlement Period, γ, as follows:

where:* + - * 1. QCOBΩγ is the Obligated Capacity Quantity for Capacity Market Unit, Ω, in Imbalance Settlement Period, γ; and
				2. QDIFFTRACKΩγ is the final Tracked Difference Quantity for Capacity Market Unit, Ω, in Imbalance Settlement Period, γ.

**Energy Payments (Option 1)**Paragraph F.2.5.6 currently details the setting of Metered Quantity for Trading Site Supplier Units associated with Demand Side Units to the negative of the Dispatch Quantity at the DSU. This will need to be changed to reflect payment option 1. We propose this as a permanent change as opposed to an interim section H change as it is considered to likely move closer to the enduring solutions since option 1 is being pursued.An interim provision in section H for a new charge item to make necessary adjustments to get the correct energy payment outcomes depending on trading and where the RO occurs, as detailed in the explanation, will also be required. This variable is unlikely to be used for an enduring solution.F.2.5.6 If the value for any Day-ahead Trade Price (PTDAxuh), Intraday Trade price (PTIDxuh) or Balancing Trade Price (PTBuγk) associated with a trade, x, or position, k, in the ranked set, for Generator Unit, u, which is a Demand Side Unit, is greater than the value of the Strike Price (PSTRm), then the value of the Metered Quantity (QMuγ) for each Trading Side Supplier Unit, v, which is on a Trading Site, s, associated with that Generator Unit, in each Imbalance Settlement Period, γ, associated with the relevant Balancing Trade Price or partially or wholly within the relevant Day-ahead Trading Period or Intraday Trading Period, shall be the value as submitted by the Meter Data Providers in accordance with Section C.6ction C.6y, thanks Chris.st to delete this and the last paragraph of Option 3. same thing, and GU\_500823hen GU\_500822 lower pr. Otherwise, the value of the Metered Quantity (QMvγ) for each Trading Site Supplier Unit, v, which is on a Trading Site, s, associated with a Generator Unit, u, which is a Demand Side Unit, shall be deemed to be equal to the negative of the Dispatch Quantity (QDuγ) of that Demand Side Unit.1.
2. Interim Arrangements
	1. Interim Rules To Apply For a Fixed Period Of Time For Demand Side Unit Settlement
		1. Settlement of Ex-ante Market
			1. Until the date that is the Mod\_17\_19 Deployment Date, the following paragraph shall apply:

The Market Operator shall calculate the Demand Side Unit Energy Adjustment Payment or Charge (CEADSUvγ) for each Trading Site Supplier Unit, v, which is associated with a Demand Side Unit, u, which is associated with a Capacity Market Unit, Ω, in each Imbalance Settlement Period, γ, as follows:where:* + - * 1. QMLFvγ is the Loss-Adjusted Metered Quantity for Supplier Unit, v, in Imbalance Settlement Period, γ;
				2. QEXvγ is the Ex-Ante Quantity for Supplier Unit, v, in Imbalance Settlement Period, γ;
				3. PSTRm is the Strike Price for Month, m, which contains Imbalance Settlement Period, γ.
				4. PIMBγ is the Imbalance Settlement Price in Imbalance Settlement Period, γ, calculated in accordance with Chapter E (Imbalance Pricing);
				5. qTDAxvh is the Day-ahead Trade Quantity in respect of Supplier Unit v for Day-ahead Trading Period h for Trade x;
				6. qTIDxvh is the Intraday Trade Quantity in respect of Supplier Unit v for Intraday Trading Period h for Trade x;
				7. DISP is the Imbalance Settlement Period Duration;
				8. DTDAx is the Day-ahead Trade Duration of Trade, x;
				9. DTIDx is the Intraday Trade Duration of Trade, x;
				10. PTDAxvh is the Day-ahead Trade Price for Trade, x, for Supplier Unit, v, within whose Day-ahead Trading Period, h, the Imbalance Settlement Period, γ, falls in whole or in part;
				11. PTIDxvh is the Intraday Trade Price associated with the Intraday Trade Quantity (QTIDxvh) for Trade, x, for Supplier Unit, v, within whose Intraday Trading Period, h, the Imbalance Settlement Period, γ, falls in whole or in part;
				12. PTBuγk is the Balancing Trade Price associated with the Balancing Trade Quantity (QTBuγk) for Generator Unit, u, in the position, k, in the ranked set, in Imbalance Settlement Period, γ;
				13. is a summation over all Trades, x, where the price associated with that trade, PTDAxvh, is greater than the Strike Price for month, m, PSTRm;
				14. is a summation over all Trades, x, where the price associated with that trade, PTIDxvh, is greater than the Strike Price for month, m, PSTRm.

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| **Mod\_17\_19 Deployment Date** | means the date proposed by the Market Operator following discussion with the Modifications Committee, and approved by the Regulatory Authorities for the purpose of H.13, such date to be published on the Market Operator web site at least three Working Days in advance of the date concerned. |

**Recovery Charging**Interim changes in section H referencing section F to account for recovery were noted as potentially being necessary, this should not now be required due to the Imperfections approach being progressed. Since section F.12 already details the proposal of and approval of the Imperfections Price and paragraph F.12.2.1 in particular notes that its purpose is to cover imbalance between Trading Payments and Charges we consider that no change is required to those provisions and suggest that it may be sufficient to note the inclusion of this recovery via Imperfections in any decision on the proposal for clarity.**Additional Considerations**It was considered that changes may be required for G.7.3.2 (CVMO) ; F.19.2.2 (CCC); F.12.2.3 (imperfection CIMP); F.20.3 (Difference Payments); F.19.4.2 (CSOCDIFFP) depending on the impact of changing Trading Site Supplier Unit volumes depending on which energy payment option was pursued. Since option 1 is being progressed it should not be necessary to make any changes to these items. |
| **Modification Proposal Justification***(Clearly state the reason for the Modification)* |
| This proposal is required to ensure compliance with the state aid decision on the Capacity Market and, as such, has been directed by the SEM Committee. The following assumptions and interpretations of the DSU state aid and SEM Committee decision were made in determining the logic required:* Only units subject to difference charges should have this treatment apply, i.e. if the unit does not have a capacity position or trades entirely out of that capacity position in secondary trading, then this logic does not apply;
* Only quantities with prices above the strike price should retain their energy revenue;
* Quantities in all market trading timeframes are eligible (i.e. the day-ahead, intraday and balancing timeframes);
* When affected Demand Side Units need to retain their revenue, they need to retain all of their revenue regardless of the actual volume to which they are exposed to difference charges (i.e. trades in excess of the obligated capacity quantity can receive this revenue).

**Energy payment (option 1):**The intention of the additional payment or charge CEADSU is to ensure two things:* Typically the energy revenue is removed from DSUs through ensuring their Metered Quantity is equal to the negative of their dispatch value. This means that whatever they are paid at the imbalance price on the DSU is removed at the imbalance price through the TSSU. However, for some units who trade to have their DSU on and operating, they may opt to have the energy revenue removed from them through trading the equivalent of that quantity in the ex-ante markets – this removes the risk of making a loss through the spread in the ex-ante market prices and imbalance price.

**For example**, if the DSU trading in ex-ante is paid 70, but the TSSU does not trade and therefore has an imbalance at a price of 90 for the equal and opposite volume as the DSU being paid 70, then they have made a net loss of 20 across that volume. The TSSU could trade to buy that volume ex-ante, get charged 70 for it, leaving them net neutral in energy revenue when considered against the DSU, and without an imbalance so the price of 90 doesn’t get charged to them. While the part of this modification which makes the Meter value of the TSSU equal to the input meter value from the MDPs in times of price spikes (typically a 0MWh meter value) ensures that the DSU balancing market volumes are paid the imbalance price without it being removed from them through the TSSU imbalance, it does not ensure that the energy revenue the unit should retain through an ex-ante market trade priced above the strike price is retained at the ex-ante price, rather it settles it at the Imbalance Settlement Price. * Therefore an adjustment is needed to either increase or decrease the net payment in addition to what the unit has received in CIMB at the Imbalance Settlement Price to ensure they are net settled for those volumes at the relevant ex-ante market price;
* There will be ex-ante volumes which are not eligible to receive any payment for being subject to a difference charge, but which will receive the Imbalance Settlement Price through CIMB because of changing QM to be the actual TSSU meter value (i.e. typically 0MWh), and therefore there needs to be a further adjustment which ensures those payments are again removed.

This approach has a few disadvantages:* In order to simplify the logic, it does not take into account whether the volume being reimbursed is traded multiple times, the logic for which is included in the difference charge calculation where only the first trade to reach the QEX of the unit is charged. In order to more accurately determine which trades should be reimbursed and which should not, and the proportion of the trades which should be reimbursed up to ex-ante quantity, a further instance of a number of new tracking variables and ranked set calculations would need to be set up similar to what was done for within-day / intraday difference payments and charges. It was felt that this increase in complexity of the solution was not warranted given the potential rarity of the event giving rise to its need (i.e. that a participant would trade the same output range multiple times ex-ante at prices above the strike price);
* This method also cannot correctly deal with the scenario where a unit is exposed to difference charges in ex-ante but not exposed to them for balancing – because QM turns to actual TSSU QM (typically zero), there is nothing to remove the balancing revenue at the imbalance price received by the DSU.
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| **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 facilitate the efficient, economic and coordinated operation, administration and development of the Single Electricity Market in a financially secure manner;

By ensuring that the capacity arrangements can continue to be compliant with the state aid decision so that they can continue and also ensuring that the change to facilitate this is done in a financially secure way.* + - * 1. to ensure no undue discrimination between persons who are parties to the Code; and

By ensuring that the necessary change to facilitate state aid compliance is done in a way which does not unduly discriminate between Demand Side Unit Participants and other Participants. |
| **Implication of not implementing the Modification Proposal***(State the possible outcomes should the Modification Proposal not be implemented)* |
| If this proposal is not implemented then the SEM may become non-compliant with state aid provisions, once the exception for DSUs expires, if no further exception is in place. |
| **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.)* |
| Not Required | Impacts on Market Operator, DSU and Supplier Settlement systems and Settlement processes |
| ***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.**