

## Modification Proposal

**MP No: 104**  
(mandatory by BSCCo)

### Title of Modification Proposal (mandatory by proposer):

Amendments to the Solution to P78 'Revised Definitions of System Buy Price and System Sell Price'

**Submission Date** (mandatory by proposer): 17 October 2002

### Description of Proposed Modification (mandatory by proposer):

During the detailed development and implementation preparation for Modification Proposal P78, two issues with the legal drafting giving effect to the Proposed Modification P78 have arisen.

Both issues have an impact on the development and implementation of Proposed Modification P78 within the BSC Systems. Therefore, this Modification Proposal seeks to address the issues, such that Proposed Modification P78 can be implemented on 25 February 2003, with a 'correct' solution, in line with the intent of Proposed Modification P78.

**Issue 1** relates to the definition of the Net Imbalance Volume. This issue could result in no Energy Imbalance Price being calculated under certain circumstances. The documentation for Modification Proposal P78 describing the Net Imbalance Volume calculation (Assessment Report, Modification Report) is clear that De Minimis Tagging is applied prior to calculating the Net Imbalance Volume and undertaking Net Imbalance Volume Tagging.

However, the legal drafting to give effect to the derivation of the Net Imbalance Volume erroneously includes De Minimis volumes in the calculation. Therefore the calculation (Section T 4.4.4A) requires amendment to remove De Minimis volumes from the Net Imbalance Volume calculation, as follows:

4.4.4A In respect of each Settlement Period, the Net Imbalance Volume will be determined as follows:

$$NIV_j = \{\sum_i \sum^n QAPO_{ij}^n + EBVA_j + SBVA_j + TQUAO_j\} - \{\sum_i \sum^n (-QAPB_{ij}^n) + (-ESVA_j) + (-SSVA_j) + (-TQUAB_j)\}$$

where  $\sum_i$  is the sum over all BM Units and  $\sum^n$  is the sum over all Bid-Offer Pair Numbers for the BM Unit that are not De Minimis Accepted Bid – Offer Pairs and not Arbitrage Accepted Bid – Offer Pairs.

**Issue 2** relates to the Energy Imbalance Price calculation. This issue could result in no Energy Imbalance Price being calculated under certain circumstances. The issue arises where the only remaining volumes in the Net Imbalance Volume are system volumes – i.e. either, or both of the CADL'ed volume and the System Balancing Services Adjustment Data (BSAD). Volumes associated with these system volumes are excluded from the calculation of the Energy Imbalance Price. Therefore, an issue arises when there is a zero volume of energy balancing actions going forward to set the main Energy Imbalance Price, in that the legal drafting to give effect to the Energy Imbalance Price calculation is silent as to the course of action (i.e. the 'divide by zero' rules).

Therefore the calculation (Section T 4.4.5 and 4.4.6) requires amendment to reflect the required course of action. Under the circumstances detailed, this will be to default to the market based reverse price, i.e the Energy Imbalance Price set from the Market Index Data, as follows:

4.4.5 In respect of each Settlement Period:

- (a) if the Net Imbalance Volume is not equal to zero, and is a positive number, then the System Buy Price will be determined as follows:

$$SBP_j = \{\{\sum_i \sum^n \{QAPO_{ij}^n * PO_{ij}^n * TLM_{ij}\} + UEBCA_j\} / \{\sum_i \sum^n \{QAPO_{ij}^n * TLM_{ij}\} + UEBCA_j\}\} + \{BPA_j\}$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^n$  represents the sum over those accepted Offers that are not De Minimis Accepted Offers and not Arbitrage Accepted Offers and not NIV Tagged

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Offers;

Where  $\{\sum_i \sum^n \{QAPO_{ij}^n * TLM_{ij}\} + UEBVA_j\}$  is equal to zero, then  $SBP_j$  shall instead be equal to  $SSP_j$  as determined in accordance with paragraph 4.4.6(b).

...

4.4.6 In respect of each Settlement Period:

- (a) if the Net Imbalance Volume is not equal to zero, and is a negative number, then the System Sell Price will be determined as follows:

$$SSP_j = \{ \{ \sum_i \sum^n \{ QAPB_{ij}^n * PB_{ij}^n * TLM_{ij} \} + UESCA_j \} / \{ \sum_i \sum^n \{ QAPB_{ij}^n * TLM_{ij} \} + UESVA_j \} \} + \{ SPA_j \}$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^n$  represents the sum over those accepted Bids that are not De Minimis Accepted Bids and not Arbitrage Accepted Bids and not NIV Tagged Bids;

Where  $\{\sum_i \sum^n \{QAPB_{ij}^n * TLM_{ij}\} + UESVA_j\}$  is equal to zero, then  $SSP_j$  shall instead be equal to  $SBP_j$  as determined in accordance with paragraph 4.4.5(b).

...

It should be noted that the amendments to the legal drafting proposed here reflect the intent of the solution. The actual legal drafting required to give effect to the solution requires finalisation and may differ in representation, but not in effect.

**Description of Issue or Defect that Modification Proposal Seeks to Address** (mandatory by proposer):

### Issue 1

The issue that has arisen here is related to the equation for calculating the Net Imbalance Volume (Section T 4.4.4A). The equation is as follows:

4.4.4A In respect of each Settlement Period, the Net Imbalance Volume will be determined as follows:

$$NIV_j = \{ \sum_i \sum^n QAPO_{ij}^n + EBVA_j + SBVA_j + TQUAO_j \} - \{ \sum_i \sum^n (-QAPB_{ij}^n) + (-ESVA_j) + (-SSVA_j) + (-TQUAB_j) \}$$

where  $\sum_i$  is the sum over all BM Units and  $\sum^n$  is the sum over all Bid-Offer Pair Numbers for the BM Unit.

However, the  $\sum_i \sum^n QAPO_{ij}^n$  and  $\sum_i \sum^n (-QAPB_{ij}^n)$  variables include De Minimis Acceptance volumes, as these have not excluded by limiting the ' $\sum^n$ ' to those Acceptances that are not De Minimis Acceptances.

In order for the Energy Imbalance Price rules to work as intended, the Net Imbalance Volume must equal the difference in size between the Bid and Offer stacks in the NIV Tagging process. However, this is not currently the case, because De Minimis Acceptances are included in the Net Imbalance Volume, but excluded from the Bid and Offer stacks. This may have the effect of meaning that under certain circumstances no

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Energy Imbalance Price can be calculated.

The description of Proposed Modification P78 (Assessment Report, Requirements Specification and Modification Report) is very clear that the Net Imbalance Volume is calculated following the application of CADL, DMAT and Arbitrage, (and following the re-inclusion of the CADL'ed volume into the stacks). Therefore this issue is an inconsistency in the legal drafting of T 4.4.4A, which requires correction.

### Issue 2

During the detailed implementation and development work on Proposed Modification P78, it was noted that the proposed Energy Imbalance Price mechanism is silent on the circumstances where there are no balancing actions (and therefore volume) eligible for use in the (main) Energy Imbalance Price calculation.

During the Assessment of Modification Proposal P78, the formulation of the Energy Imbalance Price calculations were considered at length, especially what to do with untagged system volumes (i.e. 'known' system (CADL / SBSAD) contributing to the Net Imbalance Volume). The principle behind Modification Proposal P78 is the exclusion of system balancing actions from setting the Energy Imbalance Prices, and therefore system balancing actions reflected in the Net Imbalance Volume (i.e. system volumes (CADL'ed Acceptances and System BSAD) were excluded from going forward to set the Energy Imbalance Price.

During the assessment of Proposed Modification P78, the Modification Group considered incorporating the current default rules (or a variation of them, recognising the concerns raised by P79), but agreed that this would not be in keeping with the principle of the Modification, as the key feature of P78 is the differentiation between system and energy balancing and the subsequent targeting of the costs of energy balancing at those in imbalance in the same direction as the NIV.

Therefore, where there is a zero volume of balancing actions in the Energy Imbalance Price calculation, the most appropriate course of action is to default to the Energy Imbalance Price calculated from the Market Index Data. It is believed that this is consistent with the principle and intent of the Modification.

As an additional aside, it should be noted that under these sorts of circumstances, the current mechanisms for differentiating between system and energy balancing (CADL and Transmission Company assessment of the BSAD) could be considered to have failed at identifying system balancing actions (as the Net Imbalance Volume Tagging has left system volumes in the Net Imbalance Volume). Therefore, the NIV Tagged system volumes are reported, so that the volumes could be monitored to determine whether there were consistently 'system' volumes (i.e. CADL and SBSAD) remaining untagged, and therefore contributing to the Net Imbalance Volume, such that the mechanisms for setting these volumes could be reviewed and amended where relevant.

### Impact on Code *(optional by proposer):*

Section T, Paragraph 4.4.4A and T 4.4.5 and 4.4.6 would need to be revised.

### Impact on Core Industry Documents *(optional by proposer):*

None identified.

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### **Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties** *(Optional by proposer):*

Amendments are required to the BSC Systems for calculating the Net Imbalance Volume and Energy Imbalance Price. However, it should be noted that as Proposed Modification P78 is currently being developed and implemented, it is expected that the amendments outlined in this Modification Proposal could be incorporated into the solution under development, such that there is little additional development and implementation effort required.

However, if the solution set out in this Modification Proposal cannot be made expeditiously, then there may be a material impact on the BSC Systems, in terms of 'backing out' the solution that incorporates the inconsistencies in the legal drafting, and amending the solution to correct the inconsistencies.

Under the circumstances where the solution set out in this Modification Proposal is required to be implemented after a material amount of development on P78, there is a material impact on the BSC Systems which may endanger the current Implementation for Proposed Modification P78, namely 25 February 2003, and incur significant additional development and implementation costs.

If the solution can be approved expeditiously, then it is expected that there will be no impact on BSC Parties development and implementation of their solution to Proposed Modification P78. However, if the solution set out in this Modification Proposal is required to be implemented after a material amount of development on P78, there is the potential for this to have a material impact on BSC Parties development to support Proposed Modification P78.

### **Impact on other Configurable Items** *(optional by proposer):*

None identified

### **Justification for Proposed Modification with Reference to Applicable BSC Objectives** *(mandatory by proposer):*

The issues set out in this Modification Proposal result from minor inconsistencies in the legal drafting to give effect to Proposed Modification P78. However, if these inconsistencies are not addressed in the implementation and development of Proposed Modification P78 in the BSC Systems, they may lead to material errors in the implementation of Proposed Modification P78, which may result in circumstances where no Energy Imbalance Price can be calculated. Therefore, it is paramount to ensure that the Energy Imbalance Price calculations are sufficiently robust to enable a price to be calculated under all potential circumstances.

In terms of the Applicable BSC Objectives, it is proposed that this Modification Proposal would better facilitate achievement of the Applicable BSC Objective 3(d) 'Promoting efficiency in the implementation and administration of the balancing and settlement arrangements'. The rationale is that a swift resolution of the issues set out in this Modification Proposal would prevent further expenditure by BSCCo in the development and implementation of Proposed Modification P78, as the solution can be incorporated at this stage of development with little additional burden, and enabling the development and implementation timetable to be adhered to.

It could also be considered to be more efficient for BSCCo and the BSC Central Systems to 'go live' with the correct and consistent solution to Proposed Modification P78 on the scheduled Implementation Date (25 February 2003), rather than delaying the Implementation Date, or 'going live' with an inconsistent and insufficiently robust solution, requiring further change.

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**Attachments:** No

**If Yes, Title and No. of Pages of Each Attachment:**