

## INITIAL WRITTEN ASSESSMENT for Modification Proposal P167 Erroneous Calculation of Bid Offer Acceptance (BOA) Volume

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**Reason for issue:** Decision

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This document has been distributed in accordance with Section F2.1.10<sup>2</sup> of the Balancing and Settlement Code.

### RECOMMENDATIONS

On the basis of the initial assessment BSCCo recommends that the Panel:

- **DETERMINE that Modification Proposal P167 should be submitted to the Assessment Procedure;**
- **AGREE the Assessment Procedure timetable such that an Assessment Report should be completed and submitted to the Panel for consideration at their meeting of 9 September 2004;**
- **DETERMINE that the Assessment Procedure should be undertaken by the Settlement Standing Modification Group (with additional membership from the Pricing Standing Modification Group); and**
- **AGREE any refinement to the Modification Group Terms of Reference.**

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<sup>2</sup> The current version of the Code can be found at [www.elexon.co.uk/ta/bscrel\\_docs/bsc\\_code.html](http://www.elexon.co.uk/ta/bscrel_docs/bsc_code.html)

## CONTENTS TABLE

<b>Summary of impacted parties and documents .....</b>	<b>3</b>
<b>1 Description of Proposed Modification.....</b>	<b>4</b>
1.1 Modification Proposal.....	4
1.2 Description of Issue.....	5
1.3 Issues raised by the Modification Proposal.....	7
1.3.1 Issue 7.....	7
1.3.2 Direct Impacts .....	8
1.3.3 Consequential Impacts.....	8
1.3.4 Analysis of live occurrences.....	9
1.3.5 Implementation Costs:.....	10
1.3.6 Potential for exploitation .....	11
1.3.7 Transmission Company Impact.....	12
1.3.8 Exception Rules.....	12
1.3.9 Interaction with CP921 .....	12
1.3.10 Pricing Review Interaction.....	12
1.3.11 Modification Group .....	13
<b>2 Costs .....</b>	<b>13</b>
<b>3 Initial assessment of impacts of Modification Proposal.....</b>	<b>13</b>
3.1 Impact on BSC Systems and processes .....	13
3.2 Impact on other systems and processes used by Parties.....	14
3.3 Impact on documentation .....	14
3.3.1 Impact on Balancing and Settlement Code.....	14
3.3.2 Impact on Code Subsidiary Documents .....	14
3.4 Impact on Core Industry Documents.....	14
3.5 Impact on other configurable items.....	15
<b>4 Impact on BSCCo .....</b>	<b>15</b>
<b>5 Impact on BSC Agent contractual arrangements .....</b>	<b>16</b>
<b>6 Rationale for BSCCo’s recommendations to the Panel .....</b>	<b>16</b>
<b>7 Process, timetable and cost for progressing the Modification Proposal .....</b>	<b>16</b>
<b>8 Document control .....</b>	<b>17</b>
8.1 Authorities.....	17
8.2 References .....	17
<b>Annex 1 Modification Proposal .....</b>	<b>17</b>
<b>Annex 2 Gantt chart.....</b>	<b>18</b>
<b>Annex 3 Clarification of costs .....</b>	<b>19</b>

## SUMMARY OF IMPACTED PARTIES AND DOCUMENTS

As far as BSCCo has been able to assess the following parties/documents have been initially identified as being potentially impacted by Modification Proposal P167.

Parties	Sections of the BSC	Code Subsidiary Documents	
Suppliers <input checked="" type="checkbox"/>	A <input type="checkbox"/>	BSC Procedures <input type="checkbox"/>	
Generators <input checked="" type="checkbox"/>	B <input type="checkbox"/>	Codes of Practice <input type="checkbox"/>	
Licence Exemptable Generators <input checked="" type="checkbox"/>	C <input type="checkbox"/>	BSC Service Descriptions <input checked="" type="checkbox"/>	
Transmission Company <input checked="" type="checkbox"/>	D <input type="checkbox"/>	Service Lines <input type="checkbox"/>	
Interconnector <input checked="" type="checkbox"/>	E <input type="checkbox"/>	Data Catalogues <input checked="" type="checkbox"/>	
Distribution System Operators <input type="checkbox"/>	F <input type="checkbox"/>	Communication Requirements Documents <input type="checkbox"/>	
<b>Party Agents</b>			
Data Aggregators <input type="checkbox"/>	G <input type="checkbox"/>	Reporting Catalogue <input checked="" type="checkbox"/>	
Data Collectors <input type="checkbox"/>	H <input type="checkbox"/>	MIDS <input type="checkbox"/>	
Meter Operator Agents <input type="checkbox"/>	J <input type="checkbox"/>	<b>Core Industry Documents</b>	
ECVNA <input type="checkbox"/>	K <input type="checkbox"/>	Grid Code <input checked="" type="checkbox"/>	
MVRNA <input type="checkbox"/>	L <input type="checkbox"/>	Supplemental Agreements <input type="checkbox"/>	
<b>BSC Agents</b>			
SAA <input checked="" type="checkbox"/>	M <input type="checkbox"/>	Ancillary Services Agreements <input type="checkbox"/>	
FAA <input type="checkbox"/>	N <input type="checkbox"/>	Master Registration Agreement <input type="checkbox"/>	
BMRA <input checked="" type="checkbox"/>	O <input type="checkbox"/>	Data Transfer Services Agreement <input type="checkbox"/>	
ECVAA <input type="checkbox"/>	P <input type="checkbox"/>	British Grid Systems Agreement <input type="checkbox"/>	
CDCA <input type="checkbox"/>	Q <input checked="" type="checkbox"/>	Use of Interconnector Agreement <input type="checkbox"/>	
TAA <input type="checkbox"/>	R <input type="checkbox"/>	Settlement Agreement for Scotland <input type="checkbox"/>	
CRA <input type="checkbox"/>	S <input type="checkbox"/>	Distribution Codes <input type="checkbox"/>	
Teleswitch Agent <input type="checkbox"/>	T <input checked="" type="checkbox"/>	Distribution Use of System Agreements <input type="checkbox"/>	
SVAA <input type="checkbox"/>	U <input type="checkbox"/>	Distribution Connection Agreements <input type="checkbox"/>	
BSC Auditor <input type="checkbox"/>	V <input type="checkbox"/>	<b>BSCCo</b>	
Profile Administrator <input type="checkbox"/>	W <input type="checkbox"/>	Internal Working Procedures <input checked="" type="checkbox"/>	
Certification Agent <input type="checkbox"/>	X <input checked="" type="checkbox"/>	<b>Other Documents</b>	
MIDP <input type="checkbox"/>		Transmission Licence <input type="checkbox"/>	
<b>Other Agents</b>			
SMRA <input type="checkbox"/>			
Data Transmission Provider <input type="checkbox"/>			

# 1 DESCRIPTION OF PROPOSED MODIFICATION

## 1.1 Modification Proposal

Modification Proposal P167 'Erroneous Calculation of Bid Offer Acceptance (BOA) Volume' (P167) was raised on 28 June 2004 by British Gas Trading (BGT). P167 seeks to amend the calculation of Acceptance Volumes to account for changes in BM Unit Maximum Export Level (MEL) and Maximum Import Level (MIL). The perceived defect was initially raised to the Settlement Standing Modification Group (SSMG) as Issue 7, a summary of the group's discussions was presented to the Panel at its meeting of 10 June 2004 (Reference 5).

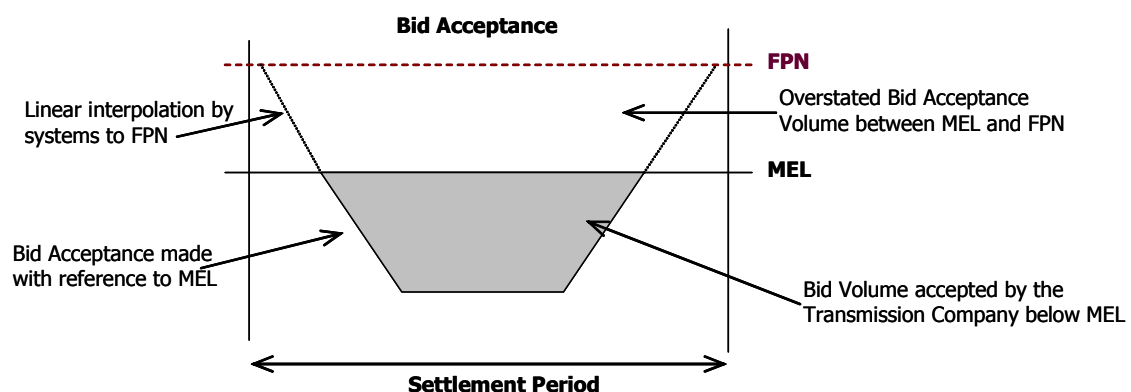
Currently the Balancing and Settlement Code (the 'Code') requires that Acceptance Volumes are calculated based on the Final Physical Notification (FPN) submitted by the Lead Party of the relevant BM Unit. The Proposer contends that this approach is not appropriate in all instances, specifically where a Party has re-declared MEL or MIL post Gate Closure, where MEL is re-declared below FPN, or MIL is re-declared above FPN, prior to an Acceptance being issued.

The issue that P167 seeks to address is that Transmission Company considers the physical dynamics of the BM Unit (i.e. its notified output; FPN, or MEL if MEL has been re-declared below FPN, or MIL if MIL has been re-declared above FPN) at the time the Acceptance is instructed, whereas the Code requires that the volume of the Acceptance is always calculated with reference to FPN.

This results in the calculation and creation of Acceptance volumes, in Settlement, that were essentially not instructed by the Transmission Company, and therefore P167 seeks to ensure that Acceptance Volumes are calculated with reference to the output level the Transmission Company actually instructed against (i.e. FPN or MEL / MIL), and thus the 'correct' Acceptance Volumes feed into the Settlement calculations.

For clarification P167 is not proposing to amend the actions undertaken by the Transmission Company, as the Transmission Company is acting in accordance with its obligations (as set out in the Grid Code and the BSC). Furthermore, the calculation of Acceptance Volumes for Settlement is being undertaken in accordance with the current baseline. However, the Proposer of P167 is of the view there is an anomaly in the baseline and therefore seeks to amend the settlement calculation to ensure that the calculation of Acceptance Volumes accounts for MEL and MIL re-declarations post Gate Closure.

At a high level, the perceived defect can be illustrated via the simple example of a Party which re-declares its MEL below FPN after Gate Closure (once the FPN cannot be amended) and subsequently has a Bid accepted. The Transmission Company accepts the Bid with reference to the MEL at the time the Bid was taken. However, the Acceptance Volume is calculated by Settlement with reference to the FPN prevailing at Gate Closure for the Settlement Period, as illustrated diagrammatically below.



As a result of calculating the Acceptance Volume in relation to the FPN, the Accepted Bid Volume for the BM Unit is overstated. Overstating the Acceptance Volume has consequential effects on the Credited Energy for

the Party by removing some, or all, of the imbalance between FPN and MEL, i.e. the Party is essentially protected from exposure to imbalance to the extent of the overstated Bid volume. Furthermore, overstating the Accepted Bid Volume has implications on the Net Imbalance Volume (NIV) calculation, and therefore on the resulting Energy Imbalance Price. This has implications on other Settlement calculations, such as the Residual Cashflow Reallocation Cashflow (RCRC) derivation, directly for the affected Party, and indirectly for all other Parties.

The Proposer is of the view that P167 would better facilitate Applicable BSC Objective (c) "Promoting effective competition in the generation and supply of electricity and promoting such competition in the sale and purchase of electricity" in the following ways:-

- Imbalance positions are being incorrectly calculated under the current baseline, mitigating Party exposure to imbalance prices. Correcting the perceived defect would improve the accuracy to which imbalance positions are reported and level of imbalance Parties are exposed to;
- Correcting the perceived defect will help to ensure that all Parties are receiving appropriate RCRC payments; and
- Amending the methodology for calculating Acceptance Volumes will result in a more appropriate calculation of imbalance prices.

## 1.2 Description of Issue

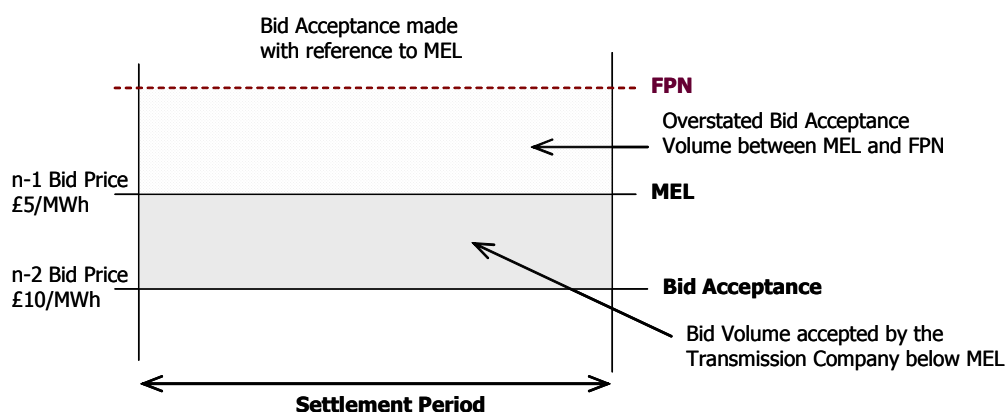
This section provides details of the perceived defect identified under P167, and a simplified example is provided to illustrate the effects on Settlement calculations.

The Code, Section Q 5.1.3(a)(ii)(1) obliges the Transmission Company to ensure Bid – Offer Acceptance data is consistent with the following data prevailing at the time the Bid – Offer Acceptance is made:

- The Physical Notification,
- Dynamic Data set,
- MEL and MIL, and
- Quiescent Physical Notification (QPN).

As a result, where the MEL or MIL for a BM Unit is re-declared below / above FPN, respectively, and the Transmission Company accepts a Bid or Offer, the volume the Transmission Company expects to be delivered is from the MEL or MIL rather than the FPN. However, the Code currently derives Bid – Offer Acceptance data in relation to FPN, and does not take into consideration amendments to MEL or MIL, this can cause the Acceptance volume to be overstated. The following simplified example is provided to illustrate the effect on Settlement calculations.

BM Unit A has an FPN of 500 MW in place for a Settlement Period. After Gate Closure, the MEL is re-declared to 400 MW. A Bid is then accepted taking the BM Unit down to 300 MW, as illustrated below:



The Transmission Company has accepted a Bid volume of -50 MWh (100 MW \* Settlement Period Duration (SPD)), hence the BM Unit operating at a MEL of 400MW is reduced to the Bid level of 300MW. At the Bid Price of £5 / MWh (i.e. the price of the n-1 Bid) accepted by the Transmission Company, the Party is 'expected' to pay the system £250 for the Bid.

Settlement calculates Acceptance Volumes with reference to FPN, therefore the Bid Volume is calculated as the difference between the FPN of 500MW and the final level 300MW, i.e. -100 MWh (200 MW \* SPD). As a result, the Party will actually pay the system £750 for the Bid (50 MWh at £5/MWh and 50 MWh at £10/MWh), i.e. the Party has to pay the relevant Bid Price for the over stated Acceptance Volume.

Had the Bid price been negative, the system would have paid out more for the Bid Acceptance. Furthermore, it is assumed that the Transmission Company did not consider the Bid Price of the overstated volume (i.e. the difference between MEL and FPN) when issuing the Acceptance<sup>3</sup>. This may lead to issues where the Bid Price for the 'additional' portion of volume (effectively that between FPN and MEL) is unfavourable, and the Transmission Company may have taken a Bid on a different BM Unit had the Bid Price of the volume between FPN and MEL been considered.

Looking at the Settlement calculations, the effect of overstating the Bid volume can be illustrated (simplistically) as follows:

1. Settlement calculates the Period BM Unit Balancing Services Volume (QBS) as -100 MWh (FPN to Bid level), rather than -50MWh (MEL to Bid level);
2. The QBS is used to derive the Expected Metered Volume for the BM Unit, which is calculated to be 150 MWh instead of 200 MWh (Expected Metered Volume = FPN – QBS);
3. Had the BM Unit been subject to any percentage Metered Volume Reallocation Notifications (MVRNs), the reallocated volume would be adjusted for the incorrect volume;
4. In the absence of any MVRNs, the Lead Party has a Credited Energy of 150 MWh (i.e. the Metered Volume for the BM Unit);
5. The Energy Imbalance Volume is calculated as the Credited Energy Volume, minus the Balancing Services and Contracted Volumes. Assuming the Party contracted to FPN, this would give  $150 - (-100) - (250) = \underline{0 \text{ MWh}}$ , rather than  $150 - (-50) - (250) = \underline{-50 \text{ MWh}}$ ;
6. Given the negative Imbalance Volume, the Party should have an Energy Imbalance Volume of -50MWh exposed to System Buy Price (SBP) (as they did not meet the contracted level). Assuming an average SBP of £18/MWh (using the Credit Assessment Price), the Party is protected from exposure to £900 worth of SBP. This avoided imbalance more than offsets the 'over' payment for the Bid, hence the affected Party receives a net benefit. It is likely that directly affected Parties will benefit in the majority of circumstances, since SBP is usually above contract price and Bid Prices are likely to be below contract price in order to maximise the commercial benefit of delivering a Bid.
7. Avoided imbalance for the directly affected Party impacts all Parties via the RCRC, as there is a 'missing' imbalance volume and thus an impact on Imbalance charges;
8. Had the Party had MVRNs in place, then its Credited Energy is incorrect, and this will affect its RCRP (Residual Cashflow Reallocation Proportion), and thus have implications for other Parties.

Aside from the implications on Parties directly affected, the overstated Bid volume will be used in the derivation of the Net Imbalance Volume (NIV), overstating the market length. The NIV will include a Bid volume that was not instructed by the Transmission Company, and thus the Energy Imbalance Price

<sup>3</sup> NB: Bid Prices are derived in relation to a movement away from a specified starting point, therefore the Transmission Company only considers the Bid Prices for the volumes they are instructing. If the Transmission Company believes they are instructing 100MW they would look at the price of 100MW change in output. If the instruction is then found to be 200MW in settlement, going into the next Bid Price band, the Bid price generated differs to that actually accepted by the Transmission Company.  
Issue/Version number: FINAL/1.0

calculated from the NIV will be incorrect. Typically the market would appear longer than it is in reality, and in extreme cases may be switched from short to long by the overstated Acceptance Volume(s).

The 'over payment' by the Party (or where the Bid price was negative, the 'over payment' to the Party) for the overstated Bid volume will also be reflected in Balancing Services Use of System (BSUoS) charges.

### **1.3 Issues raised by the Modification Proposal**

An initial assessment of Modification Proposal P167 has identified the following areas potentially impacted and issues which will need to be considered and addressed during the Modification Procedure. These issues can be summarised as follows:

- Issue 7;
- The Code and BSC Systems require amendment to account for MEL and MIL resubmissions in the calculation of Acceptance and Non-Delivery volumes;
- Consequential impacts on Party imbalance positions, imbalance prices, and RCRC require assessment;
- Initial analysis performed under the scope of Issue 7 and potential for refinement of this analysis;
- Party, Transmission Company and BSCCo impact assessment is required;
- The potential for exploitation of the issue (i.e. deliberate avoidance of imbalance via re-declaration of MEL or MIL post Gate Closure) requires assessment; and
- Exception rules for specific circumstances where it would be inappropriate for the Acceptance Volume to be calculated from MEL / MIL requires consideration.

These issues are considered in detail in the remainder of this section.

#### **1.3.1 Issue 7**

BGT initially raised the perceived defect identified under P167 to the SSMG as Issue 7 (Reference 1). On consideration of Issue 7, the SSMG agreed that there is a discrepancy in the way Acceptance Volumes are calculated in the specific circumstances identified. However, it was considered by some members of the SSMG that the complexities of addressing the issue could potentially outweigh the benefits. Therefore, the SSMG conducted some initial work to establish the extent of the issue and the potential costs of implementing a solution.

Under Issue 7, the SSMG considered some initial analysis of the materiality, both in terms of avoided imbalance and the impact on Energy Imbalance Prices (Reference 3). The analysis conducted to date and requirement for further investigation are considered in section 1.3.4 of this document. A requirements specification (Reference 4) was also developed and BSC Agent impact assessment conducted to establish the cost of the BSC System changes required to implement a solution to Issue 7. This work can be utilised to support the Modification Procedures for P167.

On consideration of the initial analysis conducted under the scope of Issue 7, SSMG members were split regarding the extent of the issue. The differing views expressed resulted, to some extent, from the uncertainty in the materiality estimates that had been made (see section 1.3.4). Therefore, the SSMG agreed that, should any Modification Proposal be raised in this area, further refinement of the materiality estimates would be required in addition to the initial analysis that has been performed to date.

### 1.3.2 Direct Impacts

The perceived defect identified under P167 directly impacts the following areas:

#### Calculation of Acceptance Volumes:

Both the Code and BSC Systems would require amendment to calculate Acceptance Volumes in accordance with the P167 methodology.

#### Calculation of Non-Delivery Volumes:

Currently Non – Delivery Volume calculations are performed against the Period Expected Metered Volume for a BM Unit ( $QME_{ij}$ ), where the Period Expected Metered Volume is defined as  $FPN_{ij} + QBS_{ij}$ , i.e. the FPN for the BM Unit adjusted for Bid – Offer Acceptance volumes and delivered Applicable Balancing Services volumes.

Use of FPN as the baseline for deriving the expected Acceptance delivery could create discrepancies where the Transmission Company made an Acceptance against a level other than FPN. Where this occurs, then the expected Acceptance Volume will be overstated if the comparison is made to FPN for all Acceptances. Therefore, as for Acceptance Volumes, Non – Delivery should be determined according to the Acceptance Volume the Transmission Company was expecting. Therefore, the Code and BSC Systems would need to be amended to derive Non – Delivery volumes for each Settlement Period in accordance with the P167 methodology.

#### Reporting:

Under P167 new reporting requirements may be required to indicate (to Parties and the Transmission Company in the Settlement Report) the level from which Acceptance Volumes have been calculated.

#### Implementation Options:

Under the scope of Issue 7 the SSMG prepared a Requirements Specification (Reference 4) for addressing the perceived defect identified under P167. This document considers the definition of the calculation of Acceptance and Non Delivery Volumes and the Reporting Requirements in detail. Two implementation options are considered within the Issue 7 Requirements Specification, assessment of each of these options will be required.

### 1.3.3 Consequential Impacts

In addition to the direct impact on the calculation of Acceptance and Non-Delivery Volumes, P167 has a consequential impact in several areas as discussed in this section. It should be noted that the changes to the Acceptance and Non-Delivery Volume calculations would be the only amendments required, once these volumes were derived according to the P167 methodology they would flow through the remainder of the calculations, i.e. for the avoidance of doubt the calculations for the following will not change, they will be impacted by the amended volumes derived from the changed functionality described in section 1.3.2.

#### Party Imbalance Positions:

The imbalance position is impacted for directly affected Parties. The effect of overstating the Acceptance Volume(s) for the BM Unit has consequential effects on the Credited Energy for the Party (by removing some, or all, of the imbalance between FPN and MEL/MIL). Depending on the imbalance position of the Party prior to the acceptance, this could result in the Party being less short and therefore reducing the SBP liability or alternatively the Party could made more long resulting in a greater exposure to System Sell Price (SSP).

Initial analysis of the impact in this area was considered by the SSMG under the scope of Issue 7 as discussed in section 1.3.4, however further assessment of the impact in terms of avoided imbalance is required, if possible.



### Imbalance Prices:

Overstating Acceptance Volumes has the potential to impact on the calculation of imbalance prices, as these overstated volumes are used in the derivation of the Net Imbalance Volume (NIV). The NIV will be incorrect, as the netting is including an Acceptance Volume which was not instructed by the Transmission Company, thus the Energy Imbalance Price calculated from the NIV will be incorrect. For example an overstated Bid Volume may cause the market to appear longer, and in extreme cases cause the market to switch from short to long.

Initial analysis of the impact in this area was considered by the SSMG under the scope of Issue 7 as discussed in section 1.3.4, however further assessment of the impact on imbalance prices is required, if possible.

### Impact on RCRC:

The impact on the imbalance position of directly affected Parties will also impact the RCRC. The RCRC is dependent upon the total system imbalance and the differential between the two imbalance prices. An overstatement of Parties' credited energy will result in RCRC being under or over stated, impacting all Parties with a physical position. Assessment of the impact on RCRC is required, if possible.

### BSUoS:

The perceived defect impacts on the calculation of BSUoS costs. The Transmission Company recovers the costs of its balancing actions via BSUoS. The 'over payment' by the Party (or where the price was negative, the 'over payment' to the Party) for the overstated Acceptance Volume will be reflected in Balancing Services Use of System (BSUoS) charges. Generally, those Parties directly affected will be paying more to the Transmission Company for delivering overstated Acceptances and the remaining Parties will pay less in BSUoS costs. If the Modification Group believes that assessment of the impact on BSUoS is essential to understanding the implications of P167 within the Code, and therefore believe that further assessment is required, then the Transmission Company can be requested to provide their opinion of the impact of the P167 defect on BSUoS as part of their analysis in respect of P167.

## **1.3.4 Analysis of live occurrences**

Under Issue 7, the SSMG considered initial analysis of live occurrences of the perceived defect. This section summarises the work conducted to date and outlines the requirement for further assessment in this area. The SSMG considered the materiality of the issue in terms of avoided imbalance and impact on imbalance prices. It should be noted that the SSMG performed its analysis in respect of overstated Bid volumes (MEL re-declared below FPN) as this is by far the commonest form of the perceived defect (as a consequence of the scarcity of demand side participation in the Balancing Mechanism, which would be required for the MIL side of the perceived defect to manifest itself).

### Assumptions:

It should be noted that identifying genuine occurrences of the anomaly requires timing information (in respect of MIL / MEL re-declarations) that is not currently available; therefore it is only possible to produce a best estimate of the materiality of the issue. Although it may be possible to perform further analysis of the materiality of the issue (for example refining/altering the assumptions which have been made), there will always be a significant element of uncertainty in the estimates produced.

### Further Analysis:

As outlined in section 1.3.1, on consideration of the initial analysis conducted under the scope of Issue 7, views of SSMG members were split regarding the extent of the issue. The differing views expressed resulted, to some degree, from the uncertainty in the materiality estimates that had been made. Therefore, the SSMG

agreed that, should any Modification Proposal be raised in this area, further refinement of the materiality estimates would be required in addition to the initial analysis that has been performed to date.

It should be noted that the uncertainty in the initial analysis in respect of the perceived defect results primarily from a lack of timing information for MIL / MEL re-declarations. In the absence of such information, the extent to which the uncertainties in analysis performed under Issue 7 can be reduced is limited. Therefore, it will be important that a cost effective approach to analysis of the materiality is agreed by the Modification Group.

#### Avoided Imbalance:

Overstating the Accepted Bid Volume for the BM Unit has a consequential effect on the Credited Energy for the Party (by removing some, or all, of the imbalance between FPN and MEL). As a result, Parties directly affected by the anomaly will typically receive a net benefit via decreased imbalance payments and increased Bid payments (see section 1.2). In recognition of the difficulties in accurately estimating the impact in terms of avoided imbalance the SSMG produced a worst case, best case and mid range estimate of the materiality as follows:

- Worst Case = £1,500,000 pa
- Mid range = £620,000 pa.
- Best Case = £113,000 pa

Detail of the assumptions made and sources of uncertainty in the derivation of these values can be found in Reference 5. The wide range of these estimates is representative of the level of uncertainties introduced by the assumptions made, in order to assess P167 it will be necessary to refine, wherever possible, the assumptions to reduce this uncertainty (NB: it is not a given that these assumptions can be refined).

#### Energy Imbalance Prices:

The perceived defect has a consequential impact on the calculation of the Energy Imbalance Prices as it affects the volume of Acceptances going forward to the Energy Imbalance Price calculation. Under the scope of Issue 7, the materiality of the impact on Energy Imbalance Prices was considered by the SSMG. Analysis for the period 20 March 2004 to 12 April 2004 was conducted as follows (although given the inaccuracy inherent in identifying the overstated Bid volumes, these can only be estimates the accuracy of which cannot be quantified):

- Settlement Periods where the 'period' MEL is less than the 'period' FPN were identified as potential occurrences of the anomaly (279 of the 1150 Settlement Periods considered, 23%) and the impact on Energy Imbalance Prices for the affected Settlement Periods estimated;
- Of these 279 Settlement Periods, recalculation of the Energy Imbalance Prices indicated a change of +/- £0.24 or more in 21 cases (7.5% of the 279 Settlement Periods, and 1.8% of the total number of Settlement Periods (1150)); and
- From these 21 cases, all were manually investigated, 4 were identified as genuine occurrences of the anomaly (noting that other cases may also be genuine occurrences, however this cannot be verified in the absence of timing information).

Detail of the assumptions made and sources of uncertainty in the derivation of these values can be found in Reference 3. Consideration of the impact on imbalance prices will be required during the assessment of P167

### **1.3.5 Implementation Costs:**

The requirements for P167 are clear at a high level, and if the solution for Issue 7 stands then the detailed requirements are clear. However, the system and process changes required to implement any solution would be fairly extensive. The SSMG considered the potential costs of these changes under Issue 7.

It was noted by the SSMG that there would be a significant impact on Parties (verifying the amended Settlement calculations) and on the BSC Systems associated with the inclusion of MIL and MEL into the Settlement Calculation (as these are not currently used in Settlement). Furthermore, BSC Systems would need to be amended to take into account the timings of MIL and MEL submissions / re-declarations.

### **BSC Agent Costs**

A requirement specification detailing potential solutions to the Issue 7 anomaly was developed by the SSMG (Reference 4). Impact Assessment of the requirement specification by the BSC Agents indicated the following costs for amending their systems to address the anomaly:

- Change Specific Costs of the order of £350k;
- Incremental Costs of the order of £20k; and
- Fixed Release Costs of the order of £250k.

It was noted by the SSMG that the actual BSC Agent cost associated with implementing a solution would lie somewhere between the Total Cost (~£620k) and the sum of the Change Specific and Incremental Costs (~£370k) (the difference between these values being the Fixed Release cost). The Fixed Release cost is an amount associated with any Release of the Central Systems, this value is independent of the changes included in the release. Hence, the proportion of the fixed release cost realised by an individual change is dependent on the scope of the Release. For example were the solution implemented on its own it would realise the entire Fixed Release Cost (£250k). However, if implemented with 3 other significant changes, 1/4 of the cost would be associated with the change.

Provided the solution is aligned with the requirements as developed under Issue 7 this impact assessment will be valid for P167. However, should any Alternative Modification be raised, or any amendments to the solution identified it would be necessary to commission further BSC Agent impact assessment.

### **Party Costs**

There could be a significant impact on Parties, as they would be required to update their systems (in particular to account for the timing of MEL and MIL submissions). Under Issue 7, one member of the SSMG indicated that addressing the anomaly would require changes to one individual Party's systems at an estimated cost of £75K. It was suggested by another SSMG member that the total cost to Parties could be of the order of 10 times the central costs. Full Party impact assessment of P167 is required.

### **BSCCo Cost:**

There would be an additional cost in terms of impact on BSCCo to be assessed, both in terms of implementation effort and operational impact. In particular the impact on BSCCo's Market Monitoring system (TOMAS) requires assessment. Under P167 significant changes to TOMAS to allow calculation of Bid – Offer Acceptance volumes from spot point data in respect of the relevant output level (MIL / MEL) and with the correct acceptance / declaration timings applied would be required. Not doing so could introduce a risk into any implementation from the inability to robustly verify the results of system testing. Furthermore, there is an operational risk of BSCCo being unable to support Trading Queries / Disputes on an enduring basis if the amendment to TOMAS is not made. Full BSCCo impact assessment is required.

### **1.3.6 Potential for exploitation**

Under Issue 7, the SSMG considered the potential for exploiting the perceived defect (i.e. avoiding imbalance via re-declaration of MEL or MIL post Gate Closure). It was the view of the SSMG that the opportunity for a Party to gain a commercial advantage by targeting the anomaly would be limited for the following reasons:

- It cannot be predicted whether the Transmission Company is going to take the Bid on that BM Unit;
- The Bid Price would have to be favourable to the Transmission Company to make the Bid

attractive and increase the possibility of it being called (potentially reducing the 'profit' for the BM Unit when the Bid is called outside of the circumstances when this issue arises);

- The Bid Price would have to be below the SBP for there to be any advantage from re-declaring MEL below FPN; and
- Even if a Bid is accepted, the overstated Bid Acceptance volume may not 'cover' the imbalance volume (i.e. FPN minus MEL), still exposing the Party to imbalance for the 'uncovered' volume.

It was also noted that the Transmission Company has procedures in place to check, as far as possible, the veracity of MEL and MIL re-declarations. Furthermore, the SSMG noted that analysis of live occurrences did not show any indication of Parties exploiting the anomaly. The potential for exploiting the perceived defect requires assessment.

### **1.3.7 Transmission Company Impact**

Under Issue 7, it was noted by the SSMG that MEL and MIL are currently defined within the Grid Code and there is no commercial driver on submissions. In order to address the perceived defect it would be necessary to include MEL and MIL submissions within the Settlement calculation, this could place a commercial driver on, and affect Parties' approach to, such submissions. As a consequence, there is a potential impact on the use of MEL and MIL submissions by the Transmission Company to be considered.

Furthermore, the Transmission Company are best placed to determine the robustness of any solution in terms of the relative timings of Acceptances and re-declarations, the Transmission Company is also impacted by the amendment to the Settlement Report to reflect the amended Bid – Offer Acceptance Volume calculation. Therefore, full impact assessment by the Transmission Company is required.

### **1.3.8 Exception Rules**

On consideration of Issue 7 at the Panel meeting 10 June 2004, a Panel Member noted that a representative of one Party raised additional points in relation to Issue 7. The comment raised related to specific circumstances where it would be inappropriate for the Acceptance Volume to be calculated from MEL despite the Party reducing its MEL prior to the Transmission Company issuing the Acceptance (Reference 6). Suitable exception rules for such scenarios require assessment.

### **1.3.9 Interaction with CP921**

CP921 'Changes to Ensure Correct Processing of MIL / MEL Messages by BMRS' (v2.0) was implemented in the June 2004 BSC Systems Release, and addresses an anomaly in the way in which MIL and MEL data is received and processed by the BMRA. CP921 ensures that files are time and sequence stamped by the Transmission Company at the time the data was received from the Party so that they can be processed as received but applied such that the correct net profile is displayed on the BMRA. CP921 therefore provides timing information in relation to MEL and MIL submissions which can be utilised under any solution to P167. In addition, the functionality of CP921 may support further analysis of the materiality of the perceived defect, see section 1.3.4.

### **1.3.10 Pricing Review Interaction**

The Authority is currently conducting a review of cash-out pricing in the electricity and gas markets. Any Modification Proposal raised as a consequence of this pricing review (i.e. amending the Energy Imbalance Price calculations) will impact the same / a similar area of functionality as P167, namely the BMRA and the SAA software and documentation. The implementation approach developed under P167 should therefore consider the potential efficiency benefits available via aligning any changes to the BSC Systems should such a proposal be raised. However, it should be noted that P167 must be assessed against the existing baseline.

### 1.3.11 Modification Group

The SSMG have conducted initial analysis of the issues raised by P167 under the scope of Issue 7. It was noted by the SSMG that there was a consequential impact on the calculation of the Energy Imbalance Prices and it was the view of the SSMG that members of the Pricing Standing Modification Group (PSMG) should be involved in the assessment of any Modification Proposal in this area. Therefore, it is recommended that the SSMG consider P167 with support from the PSMG.

## 2 COSTS<sup>4</sup>

### PROGRESSING MODIFICATION PROCEDURES

<b>Demand Led Cost</b>	£1,500
<b>ELEXON Resource</b>	50 Man days £10,500

## 3 INITIAL ASSESSMENT OF IMPACTS OF MODIFICATION PROPOSAL

### 3.1 Impact on BSC Systems and processes

An initial assessment has been undertaken in respect of all BSC Systems and processes and the following have been identified as potentially being impacted by the Modification Proposal.

<b>BSC System / Process</b>	<b>Potential Impact of Proposed Modification</b>
Registration	No Impact Identified
Contract Notification	No Impact Identified
Credit Checking	No Impact Identified
Balancing Mechanism Activities	There is a potential impact on the submission of Acceptance, MEL and MIL data to be considered.
Collection and Aggregation of Metered Data	No Impact Identified
Supplier Volume Allocation	No Impact Identified
Settlement	Settlement calculations would be amended such that the derivation of Acceptance and Non-Delivery Volumes accounts for MEL and MIL submissions.
Clearing, Invoicing and Payment	No Impact Identified
Reporting	New reporting requirements will be introduced to indicate the level from which Acceptance Volumes have been calculated.
Contingencies	No Impact Identified
Dispute Resolution	No Impact Identified

<sup>4</sup> Clarification of the meanings of the cost terms in this section can be found in annex 3 of this report  
Issue/Version number: FINAL/1.0

### 3.2 Impact on other systems and processes used by Parties

An initial assessment has been undertaken in respect of systems and processes used by Parties and the following have been identified as potentially being impacted by P167.

System / Process	Potential Impact of Proposed Modification
Settlement Calculations	Parties may be required to amend their systems to account for the timings of MEL and MIL submissions and resulting approach to Acceptance and Imbalance Volume calculation.
Reporting	Party systems and process would require amendment in line with the new reporting requirements.

### 3.3 Impact on documentation

#### 3.3.1 Impact on Balancing and Settlement Code

An initial assessment has been undertaken in respect of all Sections of the Code and the following Sections have been identified as potentially impacted by the Modification Proposal.

Item	Potential Impact of Proposed Modification
<b>T</b>	<ul style="list-style-type: none"> <li>The calculation of Acceptance Volumes would be amended</li> <li>The calculation of non-Delivery Volumes would be amended</li> </ul>
<b>Q</b>	<ul style="list-style-type: none"> <li>Rules for the submission of Acceptance, MEL and MIL may be impacted.</li> </ul>
<b>X</b>	<ul style="list-style-type: none"> <li>A new parameter may be required indicating the level from which Acceptance Volumes are calculated.</li> </ul>

#### 3.3.2 Impact on Code Subsidiary Documents

An initial assessment has been undertaken in respect of all Code Subsidiary Documents and the following documents have been identified as potentially impacted by the Modification Proposal.

Item	Potential Impact of Proposed Modification
NDFC	Changes to reporting requirements would impact the NETA Data File Catalogue
Reporting Catalogue	Changes to reporting requirements would impact the Reporting Catalogue.
SAA SD	The Settlement Administration Agent Service Description would need to be amended in line with changes to the calculation of Acceptance and Non-Delivery Volumes.
BMRA SD	The Balancing Mechanism Reporting Agent Service Description would need to be amended in line with changes to the calculation of Acceptance Volumes.

### 3.4 Impact on Core Industry Documents

An initial assessment has been undertaken in respect of Core Industry Documents and the following documents have been identified as potentially impacted by the Modification Proposal.

Item	Potential Impact of Proposed Modification
Grid Code	There could be a potential impact on the submission of MEL and MIL values as defined under the Grid

	Code, as considered in section 1.3.7 of this document.
Supplemental Agreements	No Impact Identified
Ancillary Services Agreements	No Impact Identified
Master Registration Agreement	No Impact Identified
Data Transfer Services Agreement	No Impact Identified
British Grid Systems Agreement	No Impact Identified
Use of Interconnector Agreement	No Impact Identified
Settlement Agreement for Scotland	No Impact Identified
Distribution Codes	No Impact Identified
Distribution Use of System Agreements	No Impact Identified
Distribution Connection Agreements	No Impact Identified

### 3.5 Impact on other configurable items

An initial assessment has been undertaken in respect of other configurable items and the following areas have been identified as potentially impacted by the Modification Proposal.

Item	Potential Impact of Proposed Modification
IDD Part 1 and 2	Changes to reporting requirements would impact the Logica Interface Definition and Design document (IDD).
SAA URS and supporting documentation	The Settlement Administration Agent User Requirements Specification and supporting system documentation would need to be amended in line with changes to the calculation of Acceptance and Non-Delivery Volumes.
BMRA URS and supporting documentation	The Balancing Mechanism Reporting Agent User Requirements Specification and supporting system documentation would need to be amended in line with changes to the calculation of Acceptance Volumes.

## 4 IMPACT ON BSCCO

An initial assessment has been undertaken in respect of BSCCo and the following areas have been identified as potentially impacted by the Modification Proposal.

Area of Business	Potential Impact of Proposed Modification
BSCCo Systems	There would be a significant impact on the BSCCo Market Monitoring system (TOMAS) potentially requiring changes to: <ul style="list-style-type: none"> <li>• TOMAS Requirement Catalogue</li> <li>• TOMAS DATA Catalogue</li> <li>• TOMAS System Design</li> <li>• TOMAS User Guide</li> </ul>
BSCCo Procedures	There is a potential impact on the working practices supporting the Manifest Error and

	Trading Disputes process as a result of the proposed changes to the way Bid – Offer Acceptance volumes are calculated to be considered.
BSCCo Contracts (Excluding BSC Agent Contracts)	No Impact Identified
Other (e.g. costs, staffing, etc.)	The resource required to support implementation requires should be considered.

## 5 IMPACT ON BSC AGENT CONTRACTUAL ARRANGEMENTS

An initial assessment has been undertaken in respect of BSC Agent contractual arrangements and the following areas have been identified as potentially impacted by the Modification Proposal.

BSC Agent Contract	Potential Impact of Proposed Modification
Logica (BMRA, CRA, CDCA, SAA, ECVAA, TAA(CVA))	No Impact Identified
EPFAL (FAA)	No Impact Identified
ESIS (TAA(SVA))	No Impact Identified
Cap Gemini (SVAA)	No Impact Identified
PwC (BSC Auditor, Certification Agent)	No Impact Identified
EASL (Teleswitch Agent, Profile Administrator)	No Impact Identified

## 6 RATIONALE FOR BSCCO'S RECOMMENDATIONS TO THE PANEL

In light of the initial assessment conducted, BSCCo recommends to the Panel that:

- Modification Proposal P167 should be submitted to the Assessment Procedure to allow further analysis of the materiality and the impact on participants to be considered;
- A 2 month Assessment Procedure should be conducted, recognising both the work conducted under Issue 7 and the requirement for addition analysis, consultation and assessment; and
- The SSMG has previously considered the perceived defect under the scope of Issue 7 and should conduct the Assessment Procedure, with support from the PSMG (in recognition of the impact on imbalance prices).

## 7 PROCESS, TIMETABLE AND COST FOR PROGRESSING THE MODIFICATION PROPOSAL

BSCCo recommends that this Modification Proposal be submitted to the SSMG (with support from the PSMG) for further assessment. The Modification Group should be actioned to provide its report to the Panel by 9 September 2004.



It is estimated that the SSMG will be required to meet three times during a two month assessment procedure (a detailed proposed timetable is provided in Annex 2). Furthermore, it is estimated that progression of the Modification Proposal through the Modification Procedures will require 50 man days effort on behalf of ELEXON and £1,500 from the demand led budget.

## 8 DOCUMENT CONTROL

### 8.1 Authorities

Version	Date	Author	Reviewer	Reason for Review
0.1	1/07/04	Change Delivery	Change Delivery	Technical Review
0.2	1/07/04	Change Delivery	Change Delivery	Quality Review

### 8.2 References

Ref No.	Document Title	Owner	Issue Date	Version
1	Paper: Potential Anomaly in respect of Bid Offer Acceptance (BOA) Volume	BGT		1.0
2	SSMG Issue 7 -Meeting notes 23/04/04	ELEXON	23/04/04	1.0
3	SSMG Issue 7- Analysis of impact on Energy Imbalance Prices	ELEXON	26/04/04	1.0
4	Issue 7- Requirements specification for Correction of MEL vs FPN Acceptance Volume Discrepancies	ELEXON	18/05/04	1.1
5	Panel Paper 78/001 (e) SSMG Issue 7: Potential anomaly in respect of Bid Offer Acceptance (BOA) volume	ELEXON	10/06/04	1.0
6	Issue 7 – Additional point raised by industry member			1.0

Issue 7 documentation is available for published on the BSC Website at:

[www.elexon.co.uk/changeimplementation/ModificationProcess/groups/issues/issues.aspx?issueID=7](http://www.elexon.co.uk/changeimplementation/ModificationProcess/groups/issues/issues.aspx?issueID=7)

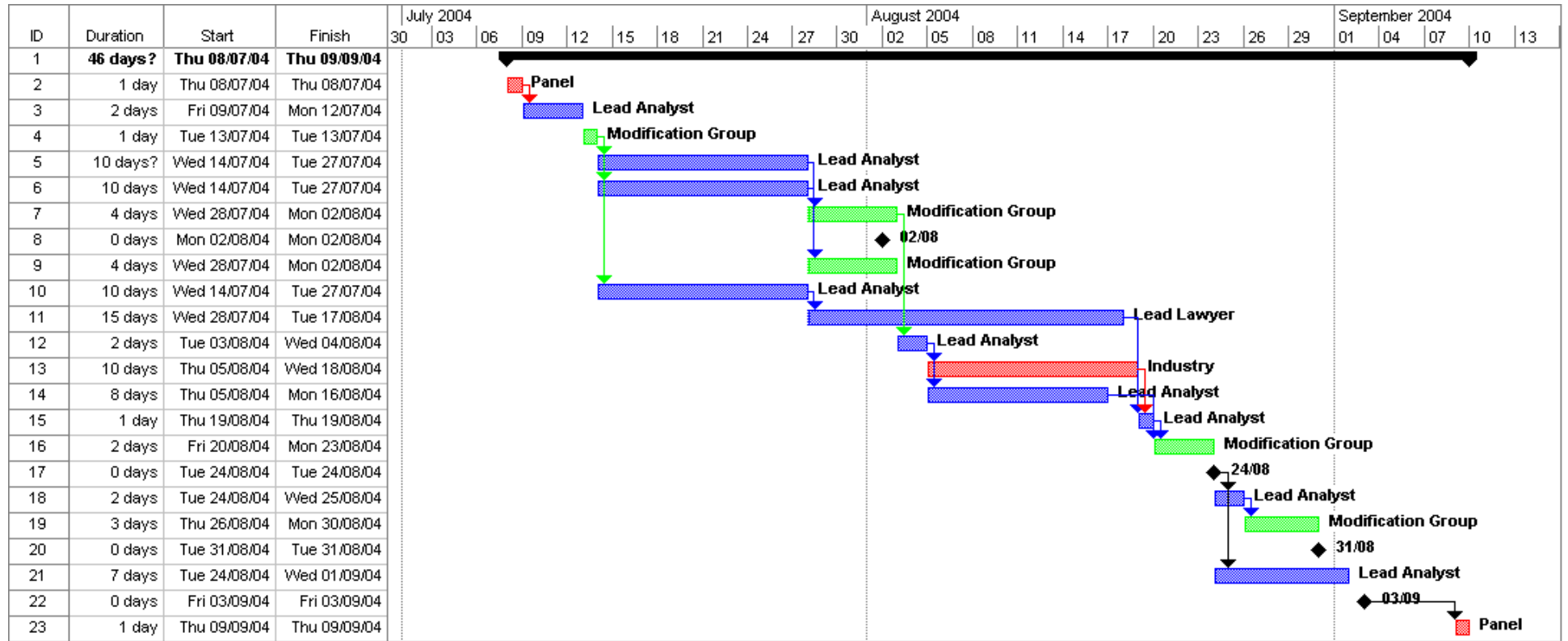
P167 Document is available on the BSC Website at:

[www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=176](http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=176)

## ANNEX 1 MODIFICATION PROPOSAL

P167 is included as Attachment 1 to this document.

## ANNEX 2 GANTT CHART



### ANNEX 3 CLARIFICATION OF COSTS

<b>PROGRESSING MODIFICATION PROCEDURES</b>	
<b>Demand Led Cost</b>	This is the third party cost of progressing a Modification Proposal through the Modification Procedures in accordance with Section F of the Code. Service Provider Impact Assessments are covered by a contractual charge and so the Demand Led cost will typically be zero unless external Legal assistance or external consultancy is required.
<b>ELEXON Resource</b>	This is the ELEXON Resource requirement to progress the Modification Proposal through the Modification Procedures. This is estimated using a standard formula based on the length of the Modification Procedure.

<b>Modification Proposal – F76/01</b>	<b>MP No:167</b> <i>(mandatory by BSCCo)</i>
<b>Title of Modification Proposal</b> <i>(mandatory by originator):</i>	
<b>Erroneous Calculation of Bid Offer Acceptance (BOA) Volume</b>	
<b>Submission Date</b> <i>(mandatory by originator):</i> <b>28 June 2004</b>	
<b>Description of Proposed Modification</b> <i>(mandatory by originator)</i>	
<p>The Balancing Settlement Code (BSC) calculates BOA volume based on the Final Physical Notification (FPN) submitted by the Party. In the majority of settlement periods it is appropriate to calculate the BOA volume based upon the FPN. However British Gas Trading (BGT) have identified an anomaly in the calculation of the BOA volume in a specific circumstance. This anomaly occurs when a Party re-declares its Maximum Export Limit (MEL) below its FPN after Gate Closure and the System Operator (SO) then accepts a Bid from the Balancing Mechanism Unit (BMU).</p> <p>The SO instructs the Bid against the re-declared MEL, however the settlement calculation in the BSC calculates the volume of the acceptance back to the FPN level. This has the effect of overstating the volume of the delivered acceptance. For clarification this modification proposal is not proposing to amend the actions undertaken by the SO, the SO is acting in accordance with its obligations and the Code. The calculation is being undertaken in accordance with the current baseline, however BGT believe there is an anomaly in the baseline and therefore this modification proposal is recommending changing the settlement calculation to ensure that the volume associated with the acceptance is not erroneously calculated. This could be achieved by amending the settlement calculation to take into account MEL and MIL re-declarations when calculating BOA volumes.</p> <p>BGT initially raised this as an issue to the Settlement Standing Modification Group (SSMG) issue 7. The group discussed the issue and agreed there was an anomaly, however there were mixed views from within the group mainly surrounding the cost of correcting the error. Due to these concerns the group asked ELEXON to undertake a High Level Impact Assessment (HLIA) so the group could gain an indication of the costs of making changes to the central systems. The implementation costs were significantly lower than the anticipated level of costs and BGT therefore believes a modification proposal should be raised to address this anomaly.</p> <p>Issue 7 was presented to the June Panel meeting (78/001(e)). Included within the paper, based upon ELEXON analysis an estimation of the materiality of the issue was provided. The 'best case' estimate was £113,000 the 'mid-range' £620,000 and the 'worst case' £1,500,000. BGT believe based on our own analysis that the materiality of the error is somewhere between the mid-range and the worst case.</p> <p>As part of the discussions of Issue 7 it became apparent that there was a converse issue in terms of MIL re-declarations. This leads to an overstatement of the Offer volume. In raising this proposal BGT is looking to address both cases of the anomaly.</p>	

**Modification Proposal – F76/01****MP No:167**  
(mandatory by BSCCo)**Description of Issue or Defect that Modification Proposal Seeks to Address** (mandatory by originator)

BGT believe the anomaly identified has a direct impact on the calculation of BOA volume and therefore Party's credited energy volume. As a result of the anomaly this consequentially impacts on a number of different areas:-

- As the calculated volume is based upon the FPN level and not the MEL parameter the volume of the BOA is overstated. This has an impact on the volume of credited energy attributed to the Party delivering the BOA. Dependent upon the imbalance position of the Party prior to the acceptance this anomaly could result in the Party being less short and therefore reducing the SBP liability or alternatively the Party could made more long resulting in a greater SSP payment.
- The impact on the imbalance position of the Party will also impact on the Residual Cashflow Reallocation Cashflow (RCRC). The reallocation is dependent upon the total system imbalance and the differential between the 2 imbalance prices. The RCRC is calculated based on these parameters and overstatement of a Party's credited energy will impact on the overall system imbalance position. This will then result in the RCRC being under or over stated and this will impact all BSC Party's with a physical position.
- The increased volume associated with these erroneous acceptances also has the potential to impact on the calculation of imbalance prices. This impact results from the volume of the stack being overstated which means the tagging actions undertaken are overstated, potentially removing too much volume from the stack. ELEXON's initial analysis of this area suggests that a number of settlement periods have been impacted although the magnitude of the effect on imbalance prices has been minimal.
- This anomaly also impacts on the calculation of Balancing Services Use of System (BSUoS) costs. The SO recovers the costs of its balancing actions via BSUOS. Due to the anomaly, generally the Party will be paying more to the SO for delivering the acceptance. This means Parties are paying less in BSUoS costs than they should be, if the volume of the acceptance was being calculated based on the MEL parameter.
- This reduction in the level of BSUoS could also impact on the SO incentive scheme. BGT has not been able to calculate this impact.

<b>Modification Proposal – F76/01</b>	<b>MP No:167</b> <i>(mandatory by BSCCo)</i>
<b>Impact on Code</b> <i>(optional by Originator)</i>  BGT is of the view that Section Q of the BSC will need amending. This is to ensure that in the cases when MEL/MIL is re-declared below/above FPN the acceptance volume is calculated based upon MEL/MIL rather than FPN.	
<b>Impact on Core Industry Documents</b> <i>(optional by Originator)</i>  	
<b>Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties</b> <i>(optional by originator)</i>  BGT believes that there will need to be some changes made to BSC Systems. This is based upon the HLIA provided by the Logica consortium as part of the considerations of the SSMG.	
<b>Impact on other Configurable Items</b> <i>(optional by originator)</i>  	

**Modification Proposal – F76/01****MP No:167**  
(mandatory by BSCCo)**Justification for Proposed Modification with Reference to Applicable BSC Objectives** (mandatory by originator)

BGT believe this modification proposal will better facilitate Applicable BSC Objective (c) “Promoting effective competition in the generation and supply of electricity and promoting such competition in the sale and purchase of electricity” in the following ways:-

- BSC Party’s imbalance positions are being incorrectly calculated under the current baseline, which is mitigating their exposure to imbalance prices. The overstatement of the credited energy means that Party’s are not paying the correct imbalance costs. Party’s are either being protected from the prevailing SBP by appearing less short or they are receiving too much SSP as their long position is being overstated. This is impacting on the amount of RCRC Party’s are receiving or having to pay. Correcting this anomaly will ensure that Party’s imbalance positions are being reported correctly and they are being exposed to the right level of imbalance costs, be that a positive or a negative.
- This in turn will ensure that the remaining BSC Party’s are receiving or paying the right level of RCRC payments.
- The amendment to the methodology will also ensure that the prevailing imbalance price is correctly calculated. BGT acknowledge that the impact on the cash-out prices appears to have been relatively minor to date but the impact could be more significant in the future if the anomaly remains.

**Details of Proposer:****Name** Mark Manley**Organisation** British Gas Trading (BGT)**Telephone Number** 01753 431137**Email Address** [mark.manley@centrica.co.uk](mailto:mark.manley@centrica.co.uk)**Details of Proposer’s Representative:****Name** Mark Manley**Organisation** BGT**Telephone Number** 01753 431137**Email address** [mark.manley@centrica.co.uk](mailto:mark.manley@centrica.co.uk)

<b>Modification Proposal – F76/01</b>	<b>MP No:167</b> <i>(mandatory by BSCCo)</i>
<b>Details of Representative's Alternate:</b>	
<i>Name</i> Danielle Lane	
<i>Organisation</i> BGT	
<i>Telephone Number</i> 01753 431156	
<i>Email address</i> <a href="mailto:danielle.lane@centrica.co.uk">danielle.lane@centrica.co.uk</a>	
<b>Attachments:</b> Yes	
<ul style="list-style-type: none"><li>• Trading Arrangements Issue (TAI) produced by ELEXON for the SSMG</li><li>• A calculation of the materiality of the issue for May 04 against System Buy Price (SBP) and System Sell Price (SSP). BGT have also tried to introduce some sensitivities to try and give a more accurate materiality of the issue. BGT have excluded all instances of the anomaly when the duration is only 1 settlement period. BGT believes that this results in a more accurate representation of the materiality of the issue. Using the figures presented for May the SBP liability for the month of May is approximately £101,000 and the SSP is approximately £72,000. If these are extrapolated across a 12-month period the materiality of the issue ranges from £1.2 million to £864,000.</li></ul>	



# TAI

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Version No: 0.1

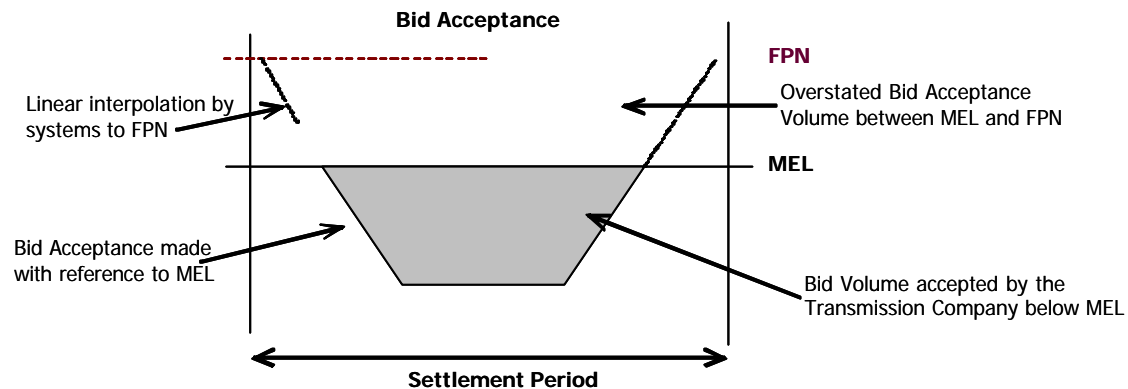
## Title (mandatory by originator)

Issues with Bid Acceptance Volumes where Re-declaration of MEL is below FPN

## Description of Problem/Issue (mandatory by originator)

### Summary

In summary, an issue arises where a Party re-declares its Maximum Export Limit (MEL) below its Final Physical Notification (FPN) after Gate Closure (i.e. cannot amend the FPN), and has a Bid Acceptance made. The Transmission Company accept the Bid with reference to the MEL at the time the Bid was taken. However, the Acceptance Volume is calculated by the Settlement systems, (in accordance with the Code), with reference to the FPN prevailing at Gate Closure for the Settlement Period, illustrated diagrammatically below.



This has the effect of overstating the Accepted Bid Volume for the BM Unit, which has consequential effects on the Credited Energy for the Party (by removing some, or all, of the imbalance between FPN and MEL). Furthermore, the overstating of the Accepted Bid Volume has implications on the Net Imbalance Volume (NIV) calculation, and therefore on the resulting Energy Imbalance Price.

It should be noted that re-declarations to MEL are not an issue where no Bid is taken, as the MEL will reflect the metered volume for the BM Unit, and therefore the BM Unit will be in imbalance for the difference between FPN and MEL.

For the avoidance of doubt, the Transmission Company is operating in line with its obligations and the Code, and the Settlement Calculations are being run in accordance with the Code. Given that the Transmission Company takes Bid – Offer Acceptances in line with the physical attributes of the BM Unit at the point of making the Acceptance, it appears that this is potentially a Settlement issue in respect of the way Bid – Offer Acceptance volumes are calculated, rather than an issue with the way in which Bid – Offer Acceptances are taken and reported.

### Detail of the Issue

The following explores this issue in more detail:

The Code, Section Q 5.1.3(a)(ii)(1) obliges the Transmission Company to ensure that Bid – Offer Acceptance data for Bid – Offer Acceptances made is consistent with the following data, prevailing at the time the Bid –

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TAI No:

Version No: 0.1

Offer Acceptance is made (data is specified in Q 5.2.1): The Physical Notification, Dynamic Data set, Maximum Export Limit (MEL) and Maximum Import Limit (MIL), and Quiescent Physical Notification (QPN).

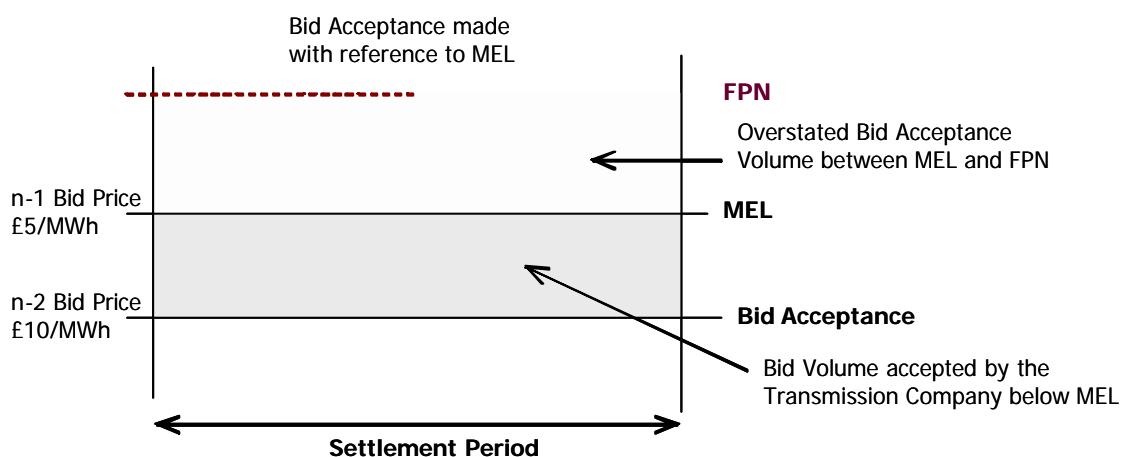
This effectively means that where MEL for a BM Unit is re-declared below FPN, and the Transmission Company accepts a Bid, the volume the Transmission Company expects to be delivered is from MEL (not FPN), and the implication is that the price the Bid is accepted in respect of is the Bid – Offer pair(s) at and below the re-declared MEL.

However, the Code derives Bid – Offer Acceptance data in relation to FPN, and does not take into consideration amendments to MEL (or other data specified in Q5.2.1). Thus overstating, as illustrated above, the Bid Acceptance volume.

### Simplistic Example to Illustrate the Implications of the Issue on Settlement Calculations

Working through a simplistic example illustrates the effect this has on the Settlement calculations:

BM Unit A has an FPN of 500 MW in place for a Settlement Period. After Gate Closure, the MEL is re-declared to 400 MW. A Bid is accepted that takes the BM Unit down to 300 MW, illustrated below:



The Transmission Company has accepted a Bid volume of -50 MWh (100 MW / 2), i.e. MEL to Bid level, at a Bid Price of £5 / MWh, i.e. the Transmission Company 'expects' the Party to pay the system £250 for the Bid.

However, the Settlement systems calculate a Bid volume of -100 MWh (200 MW / 2) with 50 MWh at £5 / MWh and 50 MWh at £10 / MWh, i.e. the Party pays the system £750 for the Bid. Thus the Party has to pay the relevant Bid Price for the undelivered volume (i.e. FPN – MEL).

Had the Bid price have been negative, the system would have paid out more for the Bid Acceptance. Furthermore, it is assumed that the Transmission Company did not consider the Bid Price of the portion of volume above MEL when taking the Acceptance. Therefore this may lead to issues where the Bid Price for the portion of volume between FPN and MEL is unfavourable, and which could have potentially led the Transmission Company to have taken a Bid on a different unit, had the Bid Price of the volume between FPN and MEL been considered.

Looking at the Settlement Calculations, and following the effect of overstating the Bid volume through them:

1. The Settlement systems calculate the Period BM Unit Balancing Services Volume (OBS) as -100 MWh (i.e.

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Version No: 0.1

FPN to Bid level);

2. The QBS is used to derive the Expected Metered Volume for the BM Unit, which is calculated to be 150 MWh [FPN (250 MWh) + QBS (- 100 MWh)], instead of 200 MWh (FPN of 250MWh + QBS of -50 MWh);
3. Had the BM Unit been subject to any MVRNs, the volume MVRN'ed across is adjusted for the incorrect volume, so assuming a 100% MVRN, the recipient Subsidiary Party would receive 250 MWh (QM of 150 MWh minus a QBS of -100 MWh) instead of 200 MWh (150MWh - - 50 MWh), and the Lead Party would have a Credited Energy of - 100 MWh (QM of 150 MWh – QCE to Sub Party of 250 MWh) instead of -50 MWh (QM of 150 MWh – QCE of 200 MWh);
4. Otherwise, the Lead Party has a Credited Energy of 150 MWh (i.e. the QM for the BM Unit);
5. The Account Energy Imbalance Volume (QAEI) is calculated as QACE – QABS – QABC, assuming the Party contracted to FPN, the QAEI would be  $150 - -100 - 250 = 0 \text{ MWh}$ , instead of  $150 - - 50 - 250 = -50 \text{ MWh}$ ;
6. Given the negative QAEI, the Party would have - 50MWh exposed to the SBP, (as they did not meet the contracted level). Assuming an average SBP of £18 / MWh (using the Credit Assessment Price (CAP)), the Party is protected from exposure to £900 worth of SBP. This more than offsets the 'over' payment of the Bid Price for the overstated Bid volume, and this is likely to be the case in the majority of circumstances (given that SBP is usually above contract price, and Bid Prices will be below contract price in order to maximise the commercial benefit of delivering a Bid). This will affect the amount of RCRC (Residual Cashflow Reallocation Cashflow) as there is 'missing' imbalance volume and thus an impact on Imbalance charges;
7. Had the Party had MVRNs in place, then its Credited Energy is incorrect, and this will affect its RCRP (Residual Cashflow Reallocation Proportion), and thus have implications for other Parties.

Furthermore, aside from the implications on Parties, the overstated Bid volume will be used in the derivation of the NIV, overstating the market length – the market will appear to be longer than it is in reality, and in extreme cases may be switched from short to long by the overstated Bid volume(s). The NIV will be incorrect, as the netting is including a Bid volume that was not instructed by the Transmission Company, and thus the Energy Imbalance Price calculated from the NIV will be incorrect.

The 'over payment' by the Party (or where the Bid price was negative, the 'over payment' to the Party) for the overstated Bid volume will be reflected in Balancing Services Use of System (BSUoS) charges.

### **Further Analysis of 'Live' Occurrence of the Issue**

The magnitude of this issue is not clear. However, analysis provided by Centrica (the Party that identified the issue) indicates that there were approximately 500 instances of this happening in January 2004 alone. An example of DRAXX-5, on 20 January 2004 Settlement Period 32 was provided.

FPN was 645 MW, with a MEL of 510 MW. A Bid to 465 MW was accepted across the entire Settlement Period. The Bid volume was calculated as 90 MWh (180 MW, i.e.  $645 - 465$ ), as it was calculated relative to FPN.

The MEL at 510 MW means that only 22.5 MWh (45 MW, i.e.  $510 - 465$ ) of Bid was actually delivered.

Bid Price was £15.80 / MWh, which means that DRAXX-5 paid out (ignoring TLMS) £1422. The cashflow should have been £355.50, so DRAXX-5 paid out £1066.50 too much for delivering the Bid.

However, the SBP for Settlement Period 32 was £23.21. Given that DRAXX-5 was protected from imbalance for

## TAI

TAI No:

Version No: 0.1

the difference between FPN and MEL ( $645 - 510 = 135$  MW) i.e. 67.5 MWh, DRAXX-5 should have paid out £1566.68 in imbalance charges.

Therefore the additional Bid payment was offset by the removal of exposure to imbalance, and thus DRAXX-5 "saved" £431.50.

The Indicative NIV for Settlement Period 32 was -348.6685 MWh. Therefore given that the NIV contained -67.5 MWh too much (the overstated Bid Volume), (and assuming that DRAXX-5 was the only occurrence of this issue), the Indicative NIV should have been -281.1685 MWh, making the market less long, and potentially having quite an impact on the System Sell Price, by removing 67.5 MWh of the most expensive balancing actions in the NIV.

Clearly if all 500 instances of this issue arising in January were of this order of magnitude, then this indicates that there is a material issue in terms of the impact on the Settlement cashflows. However, the Transmission Company do not believe there to be any operational issues arising from this issue, i.e. this issue does not impact the ability of the Transmission Company to balance the system.

### **Potential for Exploiting the Issue, i.e. Gaming Possibilities**

It should be noted that the potential for deliberately 'exploiting' this loophole could be considered to be relatively limited, as it is expected that the MEL re-declaration would be made post Gate Closure (otherwise the PN would have been re-declared (given the points below, it is unlikely that the PN would not be re-declared if at all possible)), and thus the Bid Prices in place prior to the Settlement Period would prevail. Since:

- (1) It cannot be predicted whether the Transmission Company is going to take the Bid on that BM Unit;
- (2) The Bid Price would have to be favourable to the Transmission Company to make the Bid attractive and increase the possibility of it being called (potentially reducing the 'profit' for the BM Unit when the Bid is called outside of the circumstances when this issue arises);
- (3) The Bid Price would have to be below the SBP for there to be any advantage from re-declaring MEL below FPN; and
- (4) Even if a Bid is accepted, the overstated Bid Acceptance volume may not 'cover' the imbalance volume (i.e. FPN minus MEL), still exposing the Party to imbalance for the 'uncovered' volume;

It is unlikely that a Party would take the risk of the exposure to the System Buy Price to attempt the commercial advantage. Therefore it is believed that this loophole mainly provides an accidental advantage to the affected Party. However, concerns have been raised that there may be an advantage to be gained under certain circumstances, however it is felt that since the Transmission Company is aware of the issue and monitor MEL re-declarations, there are procedures in place to check any such exploitation.

### **Issue with MIL Re-declarations**

There appears to be a converse issue, in terms of re-declarations of Maximum Import Limit (MIL) (i.e. the maximum demand limit in the Settlement Period), where the MIL is re-declared above the FPN (i.e. the MIL is less negative than the FPN). If the Transmission Company then takes an Offer on the BM Unit (perhaps to move it further away from MIL to allow more foot room), the Offer Acceptance volume is calculated from FPN, and the Offer volume is overstated. The Party is paid more than it should be for the Accepted Offer, but misses out in terms of the imbalance volume exposed to the System Sell Price (as the MIL re-declaration would make the

## TAI

TAI No:

**Version No: 0.1**

Party longer). However, given the relative paucity of demand side participation in the Balancing Mechanism, it is suspected that this is not a material issue at this time.

### **Proposed Solution(s)** *(mandatory by originator)*

To rectify this issue requires a Modification Proposal to be raised. If a Modification Proposal is raised, then any Modification Group should consider the cost benefit of addressing this issue carefully, as the system changes required are likely to be complex.

The Party that raised this as an issue indicates that the solution would be to amend the Code (via a Modification Proposal) such that the Bid – Offer Acceptance volumes are calculated in relation to the MEL, where MEL is below FPN. Similarly given the potential issue with MIL re-declarations, by implication, Bid – Offer Acceptance volumes should be calculated in relation to the MIL where the MIL is above the FPN, in order to ensure the symmetry of the trading arrangements and to ‘future proof’ in the event of increased demand side participation.

A point to note when defining the solution is that where the MEL / MIL is re-declared following the Transmission Company taking a Bid – Offer Acceptance, the Transmission Company takes no further action, i.e. the Transmission Company expects the Bid – Offer volume requested to be delivered, and therefore the processing of Bid – Offer volumes should not be amended under this circumstance.

### **Potential Solution**

Simplistically:

1. Where there has been a Bid Accepted, then the FPN should be compared to the MEL;
2. Where the MEL is less than the FPN (and both are positive numbers (noting that MEL may be zero)), then:
  - a. Where the MEL was re-declared (from the timestamp in the received file (CP921)) after the Bid – Offer Acceptance was made, then process the Bid – Offer Acceptance as normal;
  - b. Where the MEL was re-declared before the Bid – Offer Acceptance was made, then the FPN used for determining Bid – Offer Acceptance volumes (and QBS) should be adjusted to the re-declared MEL, following the profile of the MEL for the Settlement Period.
1. Where there has been an Offer Accepted, then the FPN should be compared to the MIL;
2. Where the MIL is greater (i.e. less negative) than the FPN (and both are negative numbers (noting that MIL may be zero)), then:
  - c. Where the MIL was re-declared (from the timestamp in the received file (CP921)) after the Bid – Offer Acceptance was made, then process the Bid – Offer Acceptance as normal;
  - d. Where the MIL was re-declared before the Bid – Offer Acceptance was made, then the FPN used for determining Bid – Offer Acceptance volumes (and QBS) should be adjusted to the re-declared MIL, following the profile of the MIL for the Settlement Period.

However, this is an example of the potential solution and other solutions may be identified.

### **Justification for Change** *(mandatory by originator)*

Clearly the impact on the Settlement Calculations could be significant. However, if this amendment is to be

<b>TAI</b>	<b>TAI No:</b>  <b>Version No: 0.1</b>
progressed, then the justification for the amendment will be part of the assessment of the issue.	
<b>Configurable Items Potentially Affected by Proposed Solution(s)</b> <i>(optional by Originator)</i> SAA and BMRA software, and supporting documentation (User Requirements Specifications and supporting documentation).	
<b>Impact on Core Industry Documents</b> <i>(optional by originator)</i> The SAA and BMRA Service Descriptions will be impacted by the amendments to the processing of Bid – Offer Acceptances, as will Section T of the Code (and potentially Section Q, depending on the solution progressed).	
<b>Related Changes and/or Projects</b> <i>(mandatory by BSCCo)</i> CP921 'Changes to Ensure Correct Processing of MIL / MEL Messages by BMRS' (v2.0) is being implemented in the June 2004 BSC Systems Release, and it seeks to address an anomaly in the way in which MIL and MEL data is received and processed by the BMRA. There is the potential for post Gate Closure re-declarations to be made that cross with the Gate Closure notification of data for the Settlement Period, due to the relative size of the files, and the source (pre Gate Closure comes from EDT, and post from EDL). Thus the post Gate Closure re-declaration can be subsequently overwritten by the pre Gate Closure value, as the BMRA is obliged (by the Code, Section V, Annex V-1) to publish the MIL / MEL data 'as received'. Furthermore, BMRA cannot publish data for part of a Settlement Period (a re-declaration) until data for the whole Settlement Period has been loaded. CP921 seeks to ensure that files are time and sequence stamped by the Transmission Company at the time the data was received from the Party so that they can be processed as received but applied correctly so that the correct net profile is displayed on the BMRA.	
<b>Requested Implementation Date</b> <i>(mandatory by originator)</i> Not Applicable. <b>Reason:</b> As a Modification would be required to make this change, the Implementation Date will be determined as part of any Assessment of the relevant Modification Proposal.	
<b>Agreed Release/Implementation Date</b> <i>(mandatory by BSCCo)</i>	
<b>Originator's Details:</b> <b>BCA Name</b> ..... <i>Mandi Francis</i> ..... <b>Organisation</b> ..... <i>ELEXON</i> ..... <b>Email Address</b> ..... <i>mandi.francis@elexon.co.uk</i> .....	

<b>TAI</b>	TAI No:  <i>Version No: 0.1</i>
<i>Date.....14/04/04.....</i>	
Attachments: N*      (If Yes, No. of Pages attached:.....) <i>(delete as appropriate)</i>	