78/001

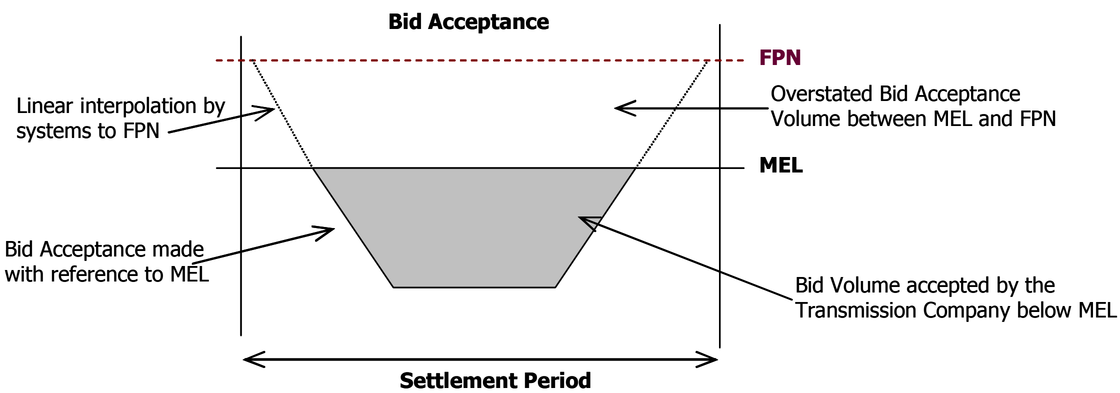
Meeting name	BSC Panel
Date of meeting	10 June 2004
Paper Title	SSMG ISSUE 7: Potential anomaly in respect of Bid Offer Acceptance (BOA) volume
Purpose of Paper	For Information
Synopsis	British Gas Trading (BGT) submitted Issue 7 to the SSMG to consider a perceived anomaly, identified operationally, in respect of Bid Offer Acceptance (BOA) volumes. This paper provides a summary of the issue, analysis and discussion of the SSMG to date. The SSMG have agreed that there is a genuine issue, however it was noted (by some) that the complexities of addressing the issue could potentially outweigh the benefits.

1. Background

1.1. British Gas Trading (BGT) submitted Issue 7 to the Settlement Standing Modification Group (SSMG) to consider a perceived anomaly in respect of Bid Offer Acceptance (BOA) volumes which had been identified operationally.

1.2. The issue, which has been present since NETA Go-Live, arises where a BM Unit varies its output away from its Final Physical Notification (FPN), by re-declaring its Maximum Export Limit (MEL, the maximum generation for the Settlement Period) or its Maximum Import Limit (MIL, the maximum demand in a Settlement Period) and the Transmission Company then makes a Bid – Offer Acceptance on the BM Unit.

1.3. The anomaly occurs because the Transmission Company (in accordance with the Balancing and Settlement Code (the Code)) makes the Acceptance in accordance with the prevailing dynamics of the BM Unit, i.e. the re-declared MEL or MIL. However, when the Settlement systems calculate the Acceptance volumes (again in accordance with the Code), the calculation is performed in relation to the notified FPN (not the amended output).



1.4. The anomaly is considered to be 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, as the Acceptance volumes derived by the Settlement system do not, under certain circumstances, reflect the Acceptance volumes the Transmission Company instructed.

1.5. The anomalous Acceptance volumes have the effect of protecting the Party from exposure to imbalance for the difference between the FPN and the re-declared output to the extent of the anomalous Acceptance volume, and furthermore, these anomalous Acceptance volumes feed into the Energy Imbalance Price derivation by inclusion in the Net Imbalance Volume (NIV), and therefore may affect the resulting Energy Imbalance Prices.

1.6. By far the commonest occurrence of the anomaly arises where MEL is re-declared below FPN, and the BM Unit has a Bid Acceptance made. This has the effect of overstating the Bid Acceptance volumes for the BM Unit, protecting the Party from some or all of the difference between FPN and MEL, and makes the system look longer than it was for the Settlement Period by inclusion of these anomalous Bid Acceptance volumes in the Net Imbalance Volume.

1.7. BGT have indicated that they are considering raising a Modification Proposal in order to rectify the perceived defect and sought initial views of the SSMG on the issue, in particular whether the extent of the issue could potentially warrant the cost of implementing a solution. BGT have confirmed that there is no intention of suggesting a retrospective change addressing previous occurrences of the anomaly.

2. Implementation Costs:

2.1. The SSMG discussed potential solutions and agree that, although the requirements are fairly clear at a high level, the system and process changes required to implement any solution would need to be fairly extensive.

2.2. It was noted 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.

2.3. The SSMG noted that if Parties had implementation cost information prior to raising a Modification Proposal it would allow a more informed judgment to be made in respect of the cost benefit of any Modification Proposal and could potentially avoid the expenditure of taking any such Modification Proposal through the Modification Procedure when the implementation costs were restrictive. Therefore, the SSMG have assessed the cost of implementing a solution to Issue 7 as follows:

BSC Agent Costs

2.4. A requirement specification detailing potential solutions to the Issue 7 anomaly was developed by the SSMG. 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.

2.5. 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 Issue 7 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 Issue 7 changes.

Impact on Parties

2.6. There would be an impact on Parties as they would be required to update their systems if the solution to Issue 7 were implemented. 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 could be conducted under the scope of a Modification Proposal.

BSCCo Cost:

2.7. There would be an additional cost in terms of impact on BSCCo which would need to be considered, this could be assed under the scope of a Modification Proposal.

3. Analysis of live occurrences

3.1. The SSMG have considered the materiality of the issue, two separate areas have been discussed and the findings of the SSMG are summarised here. It should be noted that the SSMG performed its analysis in respect of overstated Bid volumes (MEL re-declared below FPN) as this is the commonest anomaly.

Assumptions

3.2. 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 under the scope of a Modification Proposal (for example refining/altering the assumptions which have been made), there will always be a significant element of uncertainty in the estimates produced.

Avoided Imbalance:

3.3. 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 may benefit from avoided imbalance. 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:

- Settlement Periods where the 'period' MEL is less than the 'period' FPN[1] were identified as potential occurrences of the anomaly. Initial analysis identified approximately 7,000 potential occurrences of the anomaly over a 12 month period. (NB: some of these occurrences are not genuine as it depends upon the sequence of issuing Bid/Offer Acceptance and MEL Re-declarations, manual investigation of a number of cases indicated that approximately 25% may not be genuine); and
- The estimated net benefit in terms of avoided imbalance to Parties directly affected by these occurrences was of the order of £1,500,000 pa (based on the assumption that the relevant Party account was short and would be subject to System Buy Price. However, in some of the cases the Party may actually have been long. In these situations the Party pays bid price and receives System Sell Price, in one example case this reduced the materiality by 90%).

3.4. It was acknowledged by the SSMG that it was not possible to calculate these estimates precisely and that a number of assumptions (which could not be verified fully) had been made when producing these estimates. Furthermore, it was noted that, as a result of the assumptions made, the materiality

[1] The average value of the MEL across the Settlement Period was compared to the average value of the FPN, however no allowance could be made for the timing of the MEL submissions.

would tend to be overestimated and the value of £1,500,000 should be considered the 'worst case' estimate.

3.5. In recognition that the materiality would tend to be overestimated as a result of the assumptions made in the 'worst case' estimate the SSMG conducted further analysis estimating the effect of these initial assumptions based on manual investigation of a subset of the date.

- Based on the manual investigation indicating that approximately 25% of the occurrences were false, a best estimate of the genuine number of occurrences in the 12 month period was made (75% of 7000=5250);
- On the basis that no analysis of the proportion of cases where the Party was long rather than short had been made it was assumed that 50% of occurrences would be subject to SBP and 50% to SSP;
- Based on the analysis of a single case where the Party had been long, it was assumed that, where a Party was long, the materiality would be reduced by 90%; and
- This gave a total 'mid range' estimate of the avoided imbalance materiality of £620,000 pa.

3.6. In addition the SSMG produced a 'best case' estimate as follows:

- Based on the manual investigation indicating that approximately 25% of the occurrences were false, a best estimate of the genuine number of occurrences in the 12 month period was made (75% of 7000 = 5250);
- It was assumed that in all cases the Party was long rather than short;
- Based on the analysis of a single case where the Party had been long, it was assumed that, where the Party was long, the materiality would be reduced by 90%; and
- This gave a 'best case' estimate of the materiality associated with avoided imbalance of £113,000 pa.

Impact on Parties:

3.7. The SSMG have considered how the materiality in terms of avoided imbalance affects Parties. It was recognised by the SSMG that the estimated materiality could not be considered as a saving to Parties which can simply be weighed up directly against the cost of implementing a solution. Rather it is a measure of the impact on the cash flows between Parties.

3.8. In the majority of cases, the impact of the anomaly is that a BM Unit that has a Bid accepted when its MEL is less than FPN will pay more than it should for the Bid Acceptance (as the Bid Acceptance Volume is overstated), however the Party that owns the BM Unit will typically benefit in terms of imbalance payments (especially if the Party was short and protected from exposure to SBP). As the benefit in terms of imbalance payments will tend to be greater than the payment for the overstated portion of the Acceptance Volume, the Party will be at a net benefit. This net benefit impacts on the rest of the market via the System Operator balancing action cost recovery mechanism (Balancing Service Use of System charges, which is simplistically impacted by the overpayment for delivered Bids) and the Residual Cashflow Reallocation Cashflow (RCRC) (which is simplistically impacted by the reduced 'payments' into RCRC as a consequence of the reduced exposure to imbalance). Due to the complexity and interrelations of the cash flows involved it is difficult/ impossible to quantify this impact.

3.9. It was noted by the SSMG that, as the most common occurrences of the issue were where the MEL was re-declared below FPN, it is mainly Production BM Units that are benefiting from the anomaly.

Therefore rectification may result in an overall flow of cash from Parties with generation assets to those with retail assets.

Energy Imbalance Prices:

3.10. It was noted that addressing the anomaly would have a consequential impact on the calculation of the Energy Imbalance Prices as it would affect the volume of Acceptances going forward to the Energy Imbalance Price calculation (i.e. an indirect impact on the price calculation). It was the view of the SSMG that members of the Pricing Modification Group should be involved in the Modification Procedure for any Modification Proposal raised in this area.

3.11. The materiality of the impact on Energy Imbalance Prices has been considered by the SSMG (20 March 2004 to the 12 April 2004), as follows (noting that given the inaccuracy inherent in identifying the overstated Bid volumes, these estimates of materiality are subject to the same caveats set out above):

- Settlement Periods where the 'period' MEL is less than the 'period' FPN[1] 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 using BMRA, 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).

4. Potential for exploitation of the issue

4.1. The SSMG considered the potential for exploiting the issue. 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.

4.2. 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 ELEXON analysis of live occurrences did not show any indication of Parties exploiting the anomaly.

5. MEL and MIL Submissions:

5.1. 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 issue 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, the SSMG noted there would be a potential impact on the use of MEL and MIL submissions by the Transmission Company under any solution to Issue 7.

6. Conclusions:

6.1. The SSMG agreed that there is a discrepancy in the way in which Acceptance volumes are calculated where there has been a MIL / MEL re-declaration away from FPN before an Acceptance is instructed by the Transmission Company. However it was considered by some of the SSMG that the complexities of addressing the issue could potentially outweigh the benefits.

6.2. Noting that any conclusion drawn by the SSMG does not affect a Party's ability to raise a Modification Proposal in this area, SSMG members were invited to comment on whether they believe the issue warrants further consideration/assessment under the scope of a Modification Proposal, views expressed in this area were split.

6.3. Based on the estimated materiality of avoided imbalance charges and the results of BSC Agent impact assessment some members of the group were of the view that there is sufficient potential cost-benefit to warrant further consideration of the issue under the scope of a Modification Proposal.

6.4. Some members of the group were of the opinion that analysis of the materiality had been significantly over estimated as a result of several assumptions which had been made. The view was also expressed that the impact on Party's systems could be significant. Therefore, these members were of the view that there is insufficient potential cost-benefit to warrant further consideration of the issue under the scope of a Modification Proposal.

6.5. The differing views expressed result, to some extent, from the uncertainty in the materiality estimates that have 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 analysis that has been performed to date.

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References

The following documents were developed during the progression of Issue 7:

- Issue 7 - SSMG - Paper: Potential anomaly in respect of Bid Offer Acceptance (BOA) volume;
- Issue 7 - SSMG - Meeting Notes 23/04/04;
- SSMG - Issue 7: Requirement Specification; and
- SSMG MEMO- Issue 7 Pricing Impact.

These documents are available in the SSMG section of the BSC Website (***www.elexon.co.uk***).