

11 May 2001

URGENT MODIFICATION REPORT

MODIFICATION PROPOSAL P10

Eliminating Imbalance Price Spikes Caused by Truncating Effects

Prepared by ELEXON on behalf of the Balancing and
Settlement Code Panel

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b Distribution

Name	Organisation
Ofgem	
BSC Panel	
Modification Group	
Parties and interested third parties	

c Intellectual Property Rights and Copyright

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1 INTRODUCTION

This Report has been prepared by ELEXON Ltd., on behalf of the Balancing and Settlement Code Panel ('the Panel'), in accordance with the terms of the Balancing and Settlement Code ('BSC'). The BSC is the legal document containing the rules of the balancing mechanism and imbalance settlement process and related governance provisions. ELEXON is the company that performs the role and functions of the BSCCo, as defined in the BSC.

This Modification Report is addressed and furnished to the Gas and Electricity Markets Authority ('the Authority') and none of the facts, opinions or statements contained herein may be relied upon by any other person.

An electronic copy of this document can be found on the BSC website, at www.elexon.co.uk

2 EXECUTIVE SUMMARY

On 2nd May 2001 the Transmission Company submitted Modification Proposal P10, proposing that the rules for calculating System Sell Price (SSP) and System Buy Price (SBP) laid out in Section T4.4 of the BSC should be amended to prevent 'spurious' Bid/Offer Acceptances from causing price spikes. Such spurious Acceptances arise because the acceptance data used by the Grid Operator and passed to settlement can only be specified to a finite level of accuracy¹. The proposal is attached in Annex 5.

The Transmission Company recommended that this Modification Proposal be treated as an Urgent Code Modification, in accordance with section F2.9 of the BSC (see Section 6). The Panel Chairman and the Authority agreed this recommendation, and a Modification Group met on 9th May 2001 to discuss the Modification Proposal. The group discussed the solutions (Options 1 and 2) contained within the proposal and 2 variants thereof (Options 2a and 2b). The group recommended Option 2a as they felt that it better achieved the BSC objective (see Section 5) and proposed an effective date of the settlement day of 2nd May 2001 (the date proposal was raised).

The draft Modification Report was issued to BSC Parties for consultation on 9th May 2001, with responses due back by 08:00 hrs on Friday 11th May 2001. 12 responses were received with the majority supporting Option 2a and an effective date of the settlement day of 2nd May 2001.

The Panel met (by telephone conference) on 11th May 2001 (in accordance with Section B4.6 of the BSC) and considered the Modification Report, the views of the Modification Group and the consultation responses received.

The Panel recommends to the Authority that:

1. Option 2A (removal of any accepted bids and offers with an accepted volume below a threshold level, variant of Option 2 within the Modification Proposal) should be implemented as soon as possible, as it better meets the BSC objective of promoting efficiency in the implementation and administration of the Balancing and Settlement agreement." (Condition 7A (3) (d) of the Transmission Licence);
2. the threshold level should initially be set to 1MWh and that the Panel should be able to revise this value, from time to time subject to the approval of the Authority and subject to all interested parties being given 20 business days notice of the change;
3. all such bids and offers should be excluded from price setting mechanism regardless of the number of the offer pair;
4. such bids and offers should be excluded from all aspects of prices setting including, inter alia, being included as arbitrage bids and offers; and
5. the modification should be given effect from the start of the settlement day 11th May 2001 and that implementation of the modification should proceed as quickly as is possible consistent with the need to ensure that the impacted systems and software are adequately tested. The Panel noted the recommendation of the Modification Group for an effective date of the 2nd May. Whilst there had been incidences, these had caused no significant price spikes from 2-11th May.

¹ Specifically, times are specified to the nearest minute, and acceptance levels as a whole number of MW. However, the issue is a generic one, and would still arise even if acceptance data could be provided at a finer level of granularity.

6. it should be noted that there would be a number of settlement days prior to implementation of the software change in which prices reported on BMRA, the Interim Information (and potentially Settlement Final Runs) would not include the P10 changes (these will be correct at the next settlement run).

Furthermore, the Panel suggested that in the light of responses received and in accordance with the BSC section F2.9.7, the Modification Proposal be submitted to review by a Modification Group to see if an alternative modification could better facilitate the achievement of the BSC objectives. The Panel also noted the Modification Group's comment on the interaction of the Modification Proposal with the NGC incentive scheme.

3 PURPOSE AND SCOPE OF THE REPORT

BSC Section F sets out the procedures for progressing proposals to amend the BSC (known as 'Modification Proposals'). These include procedures for proposing, consulting on, developing, evaluating and reporting to the Authority on potential modifications.

The BSC Panel is charged with supervising and implementing the modification procedures. ELEXON provides the secretariat and other advice, support and resource required by the Panel for this purpose. In addition, if a modification to the Code is approved by the Authority, ELEXON is responsible for overseeing the implementation of that amendment (including any consequential changes to systems, procedures and documentation).

The modification procedures culminate in a modification report to the Authority, which normally contains the Panel's recommendation on whether or not a proposed modification should be approved and a proposed date for its implementation, together with a detailed assessment of the proposal in question. The report forms the basis upon which the Authority will decide whether to approve, direct or reject a modification proposal.

The Transmission Company or ELEXON may recommend that a Modification Proposal be treated as urgent, subject to approval by the Authority. The procedure for progressing an Urgent Modification Proposal is set out in Sections F2.9 and B4.6 of the Code. These urgent procedures allow the normal modification procedures to be circumvented as necessary to fit with the urgency of the matter. In such cases, the Authority will confirm the timetable and procedure that should apply. The timetable and procedure directed by the Authority must be adhered to, along with any other special instructions. A statement containing the reasons why the Panel (or Panel Chairman) consider the Proposal should be treated as urgent must be included in the Urgent Modification Report, together with a description of the extent to which the procedure followed deviated from the normal modification procedure.

Depending on the urgency of the matter, it may not be possible to establish a Modification Group or undertake detailed assessment of the modification proposal. The level of detail and analysis presented in this Urgent Modification Report therefore represents the full extent of relevant information regarding the modification proposal that could be collated within the time available.

4 DESCRIPTION OF PROPOSED MODIFICATION

On 2nd May 2001 the Transmission Company submitted Modification Proposal P10. The intention of this Proposal was to prevent the occurrence of price spikes caused by spurious Bid/Offer Acceptances registered by the settlement software as a result of truncating National Grid instructions to a whole number of minutes or an integer volume of megawatts. Attached to the Modification Proposal was a paper describing two possible options for amending the BSC (see Annex 5):

- Option 1 was to amend the settlement software so that it calculates the length of time corresponding to each accepted Bid/Offer pair, and excludes from the price setting calculation those with a duration of less than 1 minute.
- Option 2 was to invoke the default price calculation if the total volume of Bids or Offers in the Settlement Period was less than 1 MWh (for SBP), or greater than –1 MWh (for SSP). Currently the threshold is zero in each case.

The Modification Proposal stated that option 1 would be marginally more effective (in the sense of excluding spurious Acceptances, and not excluding genuine Acceptances). However, it also stated that this option would be more complex to implement, and therefore recommended option 2.

2 variants of Option 2 (2a and 2b) were presented and discussed at the Modification Group meeting:

- Option 2A was to remove from the system price calculation individual Acceptances whose volume was less than 1 MWh (for an Offer), or greater than –1 MWh (for a Bid); and
- Option 2B was the same as Option 2, but with an additional check to prevent spurious Acceptances that are tagged for arbitrage from setting the ceiling or floor for a default price.

The Modification Group (including the Proposer) agreed that Option 2A was the preferred option, in that it removed fully the price distortions caused by spurious Acceptances, thereby better achieving the BSC objective (see Section 5).

A copy of the Modification proposal is available on the ELEXON website (www.elexon.co.uk) and is replicated in Annex 5 of this document. Details of the Modification Proposal considered by the Modifications Group are described in Annex 1 of this document.

5 EXTENT TO WHICH THE PROPOSED MODIFICATION WOULD BETTER FACILITATE THE APPLICABLE BSC OBJECTIVES

The Proposer states that:

The proposal improves the transparency in the calculation of System Buy Price and System Sell Price by removing a potential cause of price spikes that is not related to the economics of system balancing. It therefore meets the objective of "promoting efficiency in the implementation and administration of the balancing and settlements agreement." (Condition 7A (3) (d) of the Transmission Licence).

The Panel and consultation responses supported this justification and that Option 2a better facilitated the above BSC objective.

6 STATEMENT OF URGENCY

The Modification Proposal has been treated as urgent on the basis that the proposal seeks to prevent perceived distortions in the imbalance price calculations. The supporting data in Annex 3 indicates that this issue is having a significant effect on prices. Furthermore, the issue has the potential at any point in the future to create an extreme distortion in prices (e.g. a price of £999,999/MWh). Not only would such a distortion be extremely disruptive to the efficient operation of the imbalance market, but the risk of such a distortion may act as a barrier to new entrants into the market.

It was therefore considered that a failure to address this issue urgently would be inconsistent with the achievement of the Applicable BSC Objectives.

The Transmission Company recommended that Modification Proposal P10 be treated as an Urgent Modification Proposal.

The BSC Panel Chairman sought the views of Panel Members all of whom supported the recommendation that the Modification Proposal be treated as urgent.

The Panel recommendation to treat the Modification as Urgent has been ratified by the Authority.

7 DETAIL OF PROCEDURE AND TIMETABLE FOLLOWED

The key steps that have been adopted in progressing this Urgent Modification Proposal are as follows:

- i) On 2nd May 2001 the Transmission Company raised Modification Proposal P10 - Eliminating Imbalance Price Spikes caused by truncating effects with ELEXON;
- ii) On 3rd May 2001, the Transmission Company recommended that Modification Proposal P10 be treated as an Urgent Modification Proposal;
- iii) On the 3rd May 2001, the BSC Panel Chairman sought the views of Panel Members all of whom supported the recommendation that the Modification Proposal be treated as urgent (In accordance with the procedures set out in F2.9 of the BSC).
- iv) On the 4th May, the Panel recommendation to treat the Modification as Urgent was ratified by the Authority. A Modification Group was established (based on the membership of group that considered Modification Proposal P3) with the membership agreed by the Panel Chairman and the Group were subsequently notified of a meeting date the following week;
- v) On the 8th May, the Authority agreed the process and timescale as described below:
- vi) An initial assessment of the proposal was prepared by ELEXON for consideration by a Modification Group.
- vii) This initial assessment was presented to a Modification Group on the 9th May 2001 and considered by the Group. The Group comprised the Proposer (NGC representative), Ofgem representatives, industry experts and ELEXON technical experts; a full listing of members is given in Annex 4;
- viii) Following discussion at the Modification Group meeting, this Urgent Modification Report was drafted and issued for consultation on 9th May 2001, with a request for comments by 08:00hrs on 11th May 2001;
- ix) Comments received as a result of the consultation were collated and are summarised in Annex 6. Annex 7 contains all consultation responses received;
- x) The Panel met (by telephone conference) a.m. on Friday 11th May and considered the recommendations of the Modification Group and the results of the consultation. The Panel agreed the recommendations contained within this report; and
- xi) This report is to be issued to Ofgem for consideration on 11th May 2001.

Deviations from the normal Modification Procedures (as prescribed by Section F of the BSC) were as follows:

- i) The Initial Written Assessment was presented directly to the Modification Group, rather than to the BSC Panel;

- ii) The membership of the Modification Group was agreed by the BSC Panel Chairman, rather than by the BSC Panel;
- iii) Representations of Parties and interested third parties were not obtained and assessed by the Modification Group. However, a consultation exercise was conducted on a draft of this report and responses were considered by ELEXON and presented to the Panel and Ofgem, following the Modifications Group deliberations;
- iv) No Assessment Report has been produced, but limited analysis, supporting the recommendations, has been undertaken and is included in Annex 3 of this document.

8 RECOMMENDATION

The Panel recommends to the Authority that:

1. Option 2A (removal of any accepted bids and offers with an accepted volume below a threshold level, variant of Option 2 within the Modification Proposal) should be implemented as soon as possible, as it better meets the BSC objective of promoting efficiency in the implementation and administration of the Balancing and Settlement agreement." (Condition 7A (3) (d) of the Transmission Licence);
2. the threshold level should initially be set to 1MWh and that the Panel should be able to revise this value, from time to time subject to the approval of the Authority and subject to all interested parties being given 20 business days notice of the change;
3. all such bids and offers should be excluded from price setting mechanism regardless of the number of the offer pair;
4. such bids and offers should be excluded from all aspects of prices setting including, inter alia, being included as arbitrage bids and offers; and
5. the modification should be given effect from the start of the settlement day 11th May 2001 and that implementation of the modification should proceed as quickly as is possible consistent with the need to ensure that the impacted systems and software are adequately tested. The Panel noted the recommendation of the Modification Group for an effective date of the 2nd May. Whilst there had been incidences, these had caused no significant price spikes from 2-11th May.
6. it should be noted that there would be a number of settlement days prior to implementation of the software change in which prices reported on BMRA, the Interim Information (and potentially Settlement Final Runs) would not include the P10 changes (these will be correct at the next settlement run).

ANNEX 1 – RESULTS OF MODIFICATION GROUP MEETING

The views of the Modification Group meeting on 9th May 2001 can be summarised as follows. (Further details can be found below):

- The Modifications Group (including the Modification Proposer) supported the implementation of an option in which individual Bid-Offer Acceptances are excluded from the price calculation if their volume is below a given level (with the option to adjust this level in light of experience). Other aspects of the settlement process would not be affected e.g. the Acceptances would still be subject to Balancing Mechanism payments. This option can be regarded as a variant of Option 2 (Option 2a, see below), as defined in the Modification Proposal. Its advantage over Option 2 is that it prevents spurious Acceptances having any impact on system prices (which Option 2 does not);
- The Group recommended that the change should become effective as early as possible. They therefore proposed that the effective date should be the settlement date on which the Modification Proposal was raised i.e. 2nd May 2001. However, the Group agreed that the software changes required and impacted systems should be adequately tested, and that the effective date should reflect the requirements of testing; and
- The Group noted that any change to the rules for setting system prices raised the issue of whether to include the same changes in the prices used for the Transmission Company incentive scheme, but recommended that implementation of the Modification should not be delayed pending resolution.

Options Considered

The Modification Group discussed the two options described in the attachment to Modification Proposal P10:

- Option 1 was to exclude from the price setting algorithm all Acceptances with a duration of less than one minute; and
- Option 2 was to invoke the default price calculation if the total volume of Bids or Offers in the Settlement Period was less than 1 MWh (for SBP), or greater than –1 MWh (for SSP).

The Group noted that these options have the following disadvantages:

- Option 1 is significantly more complex to implement in the systems operated by the Central Service Providers. It is believed that it may not remove all spurious Acceptances, particularly in cases where the Final Physical Notification (FPN) and the Acceptance are both ramping, and therefore have an extremely small megawatt difference over a significant period of time;
- Option 2 does not entirely remove the impact of spurious Acceptances on prices, in that a spurious Acceptance could still impact the price if the total volume of Acceptances exceeded 1 MWh, or if the spurious Acceptance was tagged for arbitrage and then set the level of a default price.

The Group therefore considered two further options, which can be considered as variants on Option 2:

- Option 2A was to remove from the system price calculation individual Acceptances whose volume was less than 1 MWh (for an Offer), or greater than –1 MWh (for a Bid);
- Option 2B was the same as Option 2, but with an additional check to prevent spurious Acceptances that are tagged for arbitrage from setting the ceiling or floor for a default price.

The Modification Group (including the Proposer) agreed that Option 2A was the preferred of the four options, in that it removed fully the price distortions caused by spurious Acceptances. The Group felt that

it better met the BSC objective of promoting efficiency in the implementation and administration of the balancing and settlements agreement.” (Condition 7A (3) (d) of the Transmission Licence).

The Group further agreed that:

- The “1 MWh” level should be a parameter set from time to time by the BSC Panel, rather than a value ‘hard-coded’ into the BSC (Initially set to ‘1MWh’). This would allow the threshold to be “fine-tuned” based on market experience;
- Prices that are below the threshold should be removed from all aspects of the price-setting calculation. In particular, they should not be treated as arbitrage tagged for purposes of calculating default prices.

The Modification Group noted the initial view of the Logica Consortium representative stated that option 2 was the simplest to implement; option 2A being slightly more complex; option 2B more complex; and option 1 the most complex.

Implementation Date

The Group recommended that the change be implemented on a Settlement Day basis, rather than a Calendar Day basis such that it did not apply to Reconciliation runs for settlement dates prior to the change coming into effect.

The main reasons for this are as follows:

- A Calendar Day based implementation would result in a retrospective amendment to the price setting mechanism which would date back to market start-up.
- Section U2.1.3 of the BSC states that any Reconciliation shall be carried out in accordance with the provisions of the Code prevailing at the Settlement Day in question, and not the provisions as modified by any subsequent Code Modification, unless the relevant Code Modification provided otherwise.

The Modification Group recommended that the change should be made effective on the earliest Settlement Date that is possible, subject to the above. The Group therefore proposed that the effective date should be the settlement date on which the Modification Proposal was raised i.e. 2nd May 2001.

However, the Group noted that the important of adequate testing of the changes to systems operated by the Central Service Providers, and recommended that the implementation approach should be reflect this.

Interaction with Transmission Company Incentive Scheme

The Group noted that the draft Transmission Company incentive scheme references system prices calculated in accordance with the BSC in effect at the start of the year. Any change to the price rules, such as P10, therefore raises possible questions in relation to this scheme. The view of the Group was that this issue was outside their terms of reference. They did however recommend that this potential issue should not cause the implementation of P10 in the BSC to be delayed.

ANNEX 2 – LEGAL TEXT TO GIVE EFFECT TO THE PROPOSED MODIFICATION

In order to give effect to the Modification, amendments are required to Section T, Annex X-1 and Annex X-2 of the BSC. These are defined in Attachment 1 to this report.

ANNEX 3 – AVAILABLE SUPPORTING INFORMATION AND DATA

In order to assess the impact of the P10 issue on prices, the ELEXON market monitoring team have used the data in their market monitoring database (for the first thirty days of NETA) to estimate the number of Settlement Periods affected. The results of this analysis can be summarised as follows:

- 32 of the 1440 Settlement Periods had a SBP calculated from less than 1MWh of trades, and the average price in these periods (excluding those before 5th April) was £37.65/MWh. If P010 was implemented these would be replaced by default prices. The average default price over the same period was £11.67/MWh.
- 16 of the 1440 Settlement Periods had a SSP calculated from less than 1MWh of trades, and the average price in these periods (excluding those before 5th April) was £6.94/MWh. If P010 was implemented these would be replaced by default prices. The average default price over the same period was £11.25/MWh.

The analysis also attempted to identify the largest price spikes caused by the P10 issue. The largest SBP values that were caused by spurious acceptances are shown in the following table. Note that the extremely high price spike on 30th March was caused by a combination of the P010 issue and the P003 issue, and so wouldn't have occurred under the current BSAD Methodology:

SBP Spikes Caused by Spurious Acceptances			
Date	Period	TQPAO	SBP
30 th March	25	0.483	1771.83
11 th April	31	0.408	275.00
1 st April	14	0.017	87.89
1 st April	16	0.427	70.00
1 st April	17	0.025	70.00

Similarly, the following are the smallest (i.e. most negative) SSP values caused by spurious acceptances:

SSP Spikes Caused by Spurious Acceptances			
Date	Period	TQPAB	SSP
28 th March	6	-0.005	-100.00
29 th March	6	-0.004	-100.00
22 nd April	42	-0.435	-59.88
25 th April	4	-0.078	-33.80
8 th April	38	-0.383	0.00

It would therefore appear that the P10 issue is causing price spikes with a material impact on settlement; but that it is not responsible for the most extreme price spikes (which are caused by genuinely intended acceptances of high-priced Bids or Offers).

The change to the BSC will require corresponding changes to the Settlement Administration Agent (SAA) and Balancing Mechanism Reporting Agent (BMRA) software.

It should be noted, however, that there will be a period prior to implementation of the software change in which prices reported on BMRA and the Interim Information run will not include the P10 changes.

The Modification Group did not explicitly discuss the issue of whether any Acceptance below the threshold should be excluded from the price calculation, or only those with a Bid-Offer Pair Number of +1 or -1. Views on this point were therefore sought as part of the ELEXON consultation. All of the responses that expressed a view on this point were in favour of including all Acceptances, not just those with a Bid-Offer Pair Number of +1 or -1.

ANNEX 4 – ATTENDEES OF MODIFICATIONS GROUP**P10 Modifications Group Attendance**

Member	Organisation	Attendance
Ian Moss	APX	X
Andrew Murray	Axia Energy	X
Mark Trott	BGT	Yes
Martin Mate	British Energy Group	X (email: supports mod)
Maurice Smith	Campbell Carr	Yes
Libby Glazebrook	Edison Mission Energy	X
Paul Dawson	Enron	Christopher Day
Paul Mott	London Electricity	X
Tony Diccico	Powergen	James Hawkins
Steve Wilkin	St Clements Services	Yes
Ben Willis	Yorkshire Electricity	Yes
Peter Bingham	Transmission Company (Proposer)	Yes
Adam Higginson	Ofgem	Yes
Andrew Shaw	Ofgem (Caminus)	Yes

Attendees	
Justin Andrews	ELEXON (Chairman)
Gwilym Rowlands	ELEXON
John Lucas	ELEXON
Nigel Ellis	Logica Consortium

ANNEX 5 – COPY OF MODIFICATION PROPOSAL

Modification Proposal	MP No: P10 <i>(mandatory by BSCCo)</i>
Title of Modification Proposal <i>(mandatory by proposer)</i> : Eliminating Imbalance Price Spikes Caused By Truncating Effects	
Submission Date <i>(mandatory by proposer)</i> : 2 May 2001	
Description of Proposed Modification <i>(mandatory by proposer)</i> : Modification of the SBP and SSP calculations to remove price spikes caused by spurious Bid/Offer Acceptances registered by the settlement software as a result of truncating National Grid instructions to a whole number of minutes or an interger volume of megawatts	
Description of Issue or Defect that Modification Proposal Seeks to Address <i>(mandatory by proposer)</i> : See the attachement	
Impact on Code <i>(optional by proposer)</i> : Modification required to calculation of System Buy Price and System Sell Price in Section T Paragraphs 4.4 of the Code	
Impact on Core Industry Documents <i>(optional by proposer)</i> : None	
Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties <i>(optional by proposer)</i> : The software calculating System Sell Price and System Buy Price will need to be altered	
Impact on other Configurable Items <i>(optional by proposer)</i> : None	
Justification for Proposed Modification with Reference to Applicable BSC Objectives <i>(mandatory by proposer)</i> : The proposal improves the transparency in the calculation of System Buy Price and System Sell Price by removing a potential cause of price spikes that is not related to the economics of system balancing. It therefore meets the objective of "promoting efficiency in the implementation and administration of the balancing and settlements agreement."	
Details of Proposer: Name: Mike Calviou Organisation: National Grid Telephone Number: 02476 423958 Email Address: mike.calviou@uk.ngrid.com	

Modification Proposal	MP No: P10 <i>(mandatory by BSCCo)</i>
Details of Proposer's Representative:	
Name: Mike Calviou	
Organisation: National Grid	
Telephone Number: 02476 423958	
Email Address: mike.calviou@uk.ngrid.com	
Details of Representative's Alternate:	
Name: Peter Bingham	
Organisation: National Grid	
Telephone Number: 02476 423054	
Email Address: peter.bingham@uk.ngrid.com	
Attachments: YES	
If Yes, Title and No. of Pages of Each Attachment:	
Imbalance Price Calculations - BSC Modification Proposal, Eliminating imbalance price spikes caused by truncating effects, 9 Pages	

The following paper was attached to the Modification Proposal:

2 May 2001

THE NATIONAL GRID COMPANY plc

**Imbalance Price Calculations - BSC Modification Proposal
Eliminating imbalance price spikes caused by truncating effects
(Paper by National Grid)**

The paper describes two options for modifying the BSC to remove imbalance price spikes that can occur as a result of spurious Bid/Offer Acceptances caused by truncating National Grid instructions to a whole number of minutes or an integer volume of megawatts. The first option targets these spurious effects by removing Bid/Offer acceptances of less than 1 minute in duration. This is our preferred solution but requires complex modifications to the BSC and the associated settlement software.

The second option removes Bid/Offer acceptances with a total volume less than 1 MWh. This solution should eliminate the spurious effects, provided by a very simple modification to the BSC and associated settlement software. The disadvantage of this option is that it could also eliminate any genuine, albeit unlikely, Bid/Offer acceptances with a volume less than 1MWh. However, given the need for a short-term solution to remove price spikes, we propose that the BSC be modified in accordance with this option.

I. INTRODUCTION

The truncating of National Grid acceptances to a whole number of minutes or an integer volume of megawatts can result in the settlement software registering a "spurious" Bid/Offer Acceptance of a very small Bid/Offer volume in addition to the intended acceptance. If this is the only volume 'accepted' in that direction, an extreme Bid/Offer price combined with a very small volume (typically a fraction of a MWh) can lead to a price spike that is totally unrelated to the economics of system balancing. For example, a volume of 50kWh at £1000/MWh might be registered, implying a balancing cost of £50, but the imbalance price would be set to £1000/MWh.

As with the price spikes caused by BSAD data which are currently being addressed, we do not regard such spikes as providing the correct economic message for participants to self-balance, and instead may create an artificial incentive for participants to adjust their position avoid exposure to imbalance price spikes. This paper describes two options for modifying the BSC to remove these effects.

II. OPTION 1 - REMOVE BID/OFFER VOLUMES < 1 MINUTE

The spurious Bid/Offer Acceptance volumes resulting from truncating National Grid instructions to the nearest minute or megawatt are themselves typically less than 1 minute in duration. Our preferred approach to the eliminating associated price spikes is to remove all individual Bid/Offer Acceptances less than 1 minute in duration from the calculation of imbalance prices. This could be achieved by modifying Section T of the BSC in accordance with Appendix A.

Under this option, Section T, Paragraph 3.8 of the BSC would be modified to identify the duration of all Bid and Offer Acceptances as the Price Period Accepted Offer Flag Volume (FLAGOknij) and Price Period Accepted Bid Flag Volume (FLAGBknij). The Imbalance Price Period Offer Volume (QAOPknij) or Imbalance Price Period Accepted Bid Volume (QABPknij) would be set to the volume of the corresponding Bid/Offer Acceptance unless the corresponding Flag Volume is less than 1 minute in duration, in which case it would be set to zero. The Imbalance Price Period Offer Volume (QAOPknij) or Imbalance Price Period Accepted Bid Volume (QABPknij) would be used to calculate Imbalance Prices SSP and SBP in Paragraph 4.4, replacing the Period Accepted Offer Volume (QAOknij) and Period Accepted Bid Volume (QABknij).

The key features of this option are:

- All spurious Bid/Offer Acceptances caused by truncating National Grid instructions should be removed from the calculation of imbalance prices.
- The de minimis check would be applied on an acceptance-by-acceptance basis, not all acceptances of a particular Bid-Offer Pair in a half-hour.
- Genuine Bid/Offer Acceptances with a duration of < 1 minute are highly unlikely, therefore this option is unlikely to eliminate any genuine Bid/Offer Acceptances.
- De minimis Bid/Offer Acceptances would be excluded from price calculation, but payments associated with Bid/Offer Acceptances would be unaffected.
- Complex modification to both the BSC and the associated settlement software would take time to implement, thus allowing price spikes relating to this effect to continue in the short-term.

III. OPTION 2 - REMOVE BID/OFFER VOLUMES < 1MWh

Spurious Bid/Offer Acceptances are typically very small in volume, and only make a notable impact on imbalance prices when they are the only Bid/Offer registered in a given direction. A simple approach to removing the resulting price spikes is to disregard total acceptance volumes < 1MWh when calculating imbalance prices, and set the imbalance price to a default value.

Modification to the SBP Calculation

Under Section T, Paragraph 4.4 of the BSC, System Buy Price is calculated as follows:

$$SBP_j = \left\{ \sum_i \sum^n \{ QAO_{ij}^n * PO_{ij}^n * TLM_{ij} \} + BCA_j \right\} / \left\{ \sum_i \sum^n \{ QAO_{ij}^n * TLM_{ij} \} + BVA_j \right\}$$

If there are no actual Offer acceptances or energy purchases, $\{ \sum_i \sum^n \{ QAO_{ij}^n * TLM_{ij} \} + BVA_j \}$ should equal zero and default rules for calculating SBP apply. However, the truncating of Bid Acceptance times can lead to the spurious acceptance of very small Offer volumes being registered by the settlement software. The equation above then applies, potentially setting the imbalance price to the price of the spurious Offer accepted.

This could be overcome by modifying Paragraph 4.4.5 as detailed in Appendix B to increase the de minimis volume for which the default rules apply from zero to 1 MWh. This should eliminate the spurious acceptance of Offer volumes and avoid the associated price spikes.

Modification to the SSP Calculation

It is also possible for the spurious acceptance of very small Bid volumes to occur and to affect the calculation of SSP. This could be overcome by modifying Paragraph 4.4.5 as detailed in Appendix B to increase the de minimis volume for which the default rules apply from zero to 1 MWh.

The key features of this option are:

All spurious Bid/Offer Acceptances caused by truncating National Grid instructions should be removed from the calculation of imbalance prices.

The de minimis check would be applied the aggregate of all acceptances in a given half-hour rather than on a more sophisticated acceptance-by-acceptance basis.

Genuine Bid/Offer Acceptances with a volume of < 1MWh , although unlikely, would also be removed from the imbalance calculation.

Payments associated with Bid/Offer Acceptances would be unaffected

The required minor modifications to the BSC and associated settlement software could be implemented quickly, thus eliminating price spikes caused by these distortional effects in the short-term.

IV. PROPOSAL

Option 1 provides a more sophisticated solution in identifying spurious Bid/Offer Acceptances and removing these from the imbalance calculations. It carries very little risk of removing genuine Bid/Offer Acceptances. Option 2 is far simpler, applying a default price if the total volume of Acceptances in a given half-hour is less than 1MW. However, this option would remove genuine Bid Offer Acceptances from the imbalance price calculation. For this reason Option 1 is our preferred option.

Although both options run the risk of excluding genuine Bid/Offer Acceptances, and not excluding all spurious Bid/Offer Acceptances, we regard Option 1 as being marginally more effective.

However, Option 1 is complex and will take time to implement. Rather than allowing these distortional effects and associated price spikes to continue, we propose that the more straightforward Option 2 modification be adopted as soon as possible.

In the longer-term, it should be considered whether Option 1 should be pursued, or whether National Grid's operational systems could be modified to remove the truncating effect altogether.

APPENDIX A - OPTION 1 MODIFICATION PROPOSAL

Under the Option 1 proposal, Section T, Paragraph 3.8 of the BSC would be replaced as follows:

3.8	Determination of Period Accepted Offer Volume (QAO^{kn}_{ij}) and Period Accepted Bid Volume (QAB^{kn}_{ij})
3.8.1	In respect of each Settlement Period, for each BM unit i , each Bid-Offer Pair n and each Acceptance k , the Period Accepted Offer Volume (QAO^{kn}_{ij}) shall be established by integrating the accepted Offer Volume ($qAO^{kn}_{ij}(t)$) over all spot times in the Settlement Period.
3.8.1	In respect of each Settlement Period, for each BM unit i , each Bid-Offer Pair n and each Acceptance k , the Period Accepted Bid Volume (QAB^{kn}_{ij}) shall be established by integrating the accepted Bid Volume ($qAB^{kn}_{ij}(t)$) over all spot times in the Settlement Period.
3.8A	Determination of Price Accepted Offer Volume ($qAOP^{kn}_{ij}(t)$) and Price Accepted Bid Volume ($qABP^{kn}_{ij}(t)$)
3.8A.1	If, in relation to each Bid-Offer Acceptance k and Bid-Offer Pair n , for any spot time t <ul style="list-style-type: none"> (i) $qAO^{kn}_{ij}(t) \neq 0$, then, $qAOP^{kn}_{ij}(t) = 1$, otherwise (ii) $qAOP^{kn}_{ij}(t) = 0$.
3.8A.2	If, in relation to each Bid-Offer Acceptance k and Bid-Offer Pair n , for any spot time t <ul style="list-style-type: none"> (i) $qAB^{kn}_{ij}(t) \neq 0$, then, $qABP^{kn}_{ij}(t) = 1$, otherwise (ii) $qABP^{kn}_{ij}(t) = 0$.
3.8B	Determination of Price Period Accepted Offer Flag Volume ($FLAGO^{kn}_{ij}$) and Price Period Accepted Bid Flag Volume ($FLAGB^{kn}_{ij}$)
3.8B.1	In respect of each Settlement Period, for each BM Unit i , each Bid-Offer Pair n and each Acceptance k , the Price Period Accepted Offer Flag Volume ($FLAGO^{kn}_{ij}$) shall be established by integrating the Price Accepted Offer Volume ($qAOP^{kn}_{ij}(t)$) over all spot times in the Settlement Period.
3.8B.2	In respect of each Settlement Period, for each BM Unit i , each Bid-Offer Pair n and each Acceptance k , the Price Period Accepted Bid Flag Volume ($FLAGB^{kn}_{ij}$) shall be established by integrating the Price Accepted Bid Volume ($qABP^{kn}_{ij}(t)$) over all spot times in the Settlement Period.
3.8C	Determination Imbalance Price Period Accepted Offer Volume ($QAOP^{kn}_{ij}$) and Imbalance Price Period Accepted Bid Volume ($QABP^{kn}_{ij}$)
3.8C.1	In respect of each Settlement Period, for each BM Unit i , each Bid-Offer Pair n

and each Acceptance k , the Imbalance Price Period Accepted Offer Volume ($QAOP^{kn}_{ij}$) shall be established as follows:

- (i) if $FLAGO^{kn}_{ij} > 1/30$ hours, then Imbalance Price Period Accepted Offer Volume ($QAOP^{kn}_{ij}$) shall be determined by integrating the Accepted Offer Volume ($qAO^{kn}_{ij}(t)$) over all spot times in the Settlement Period; otherwise
- (ii) the Imbalance Price Period Accepted Offer Volume ($QAOP^{kn}_{ij}$) shall be set to zero.

3.8C.2 In respect of each Settlement Period, for each BM Unit i , each Bid-Offer Pair n and each Acceptance k , the Imbalance Price Period Accepted Bid Volume ($QABP^{kn}_{ij}$) shall be established as follows:

- (i) if $FLAGB^{kn}_{ij} > 1/30$ hours, then Imbalance Price Period Accepted Bid Volume ($QABP^{kn}_{ij}$) shall be determined by integrating the Accepted Bid Volume ($qAB^{kn}_{ij}(t)$) over all spot times in the Settlement Period; otherwise
- (ii) the Imbalance Price Period Accepted Bid Volume ($QABP^{kn}_{ij}$) shall be set to zero.

3.8D Determination of Price Period BM Unit Total Accepted Offer Volume ($QAOP^n_{ij}$) and Price Period BM Unit Total Accepted Bid Volume ($QABP^n_{ij}$)

3.8D.1 In respect of each Settlement Period, for each BM Unit i , the total MWh volume each Offer accepted from all Acceptances shall, for the purposes of determination of energy imbalance prices, be the Price Period BM Unit Total Accepted Offer Volume ($QAOP^n_{ij}$) and shall be established as follows:

$$QAOP^n_{ij} = \sum^k QAOP^{kn}_{ij}$$

where \sum^k represents the sum over all Acceptances within the Settlement Period.

3.8D.2 In respect of each Settlement Period, for each BM Unit i , the total MWh volume each Bid accepted from all Acceptances shall, for the purposes of determination of energy imbalance prices, be the Price Period BM Unit Total Accepted Bid Volume ($QABP^n_{ij}$) and shall be established as follows:

$$QABP^n_{ij} = \sum^k QABP^{kn}_{ij}$$

where \sum^k represents the sum over all Acceptances within the Settlement Period.

Section T, Paragraphs 4.4 of the BSC would require modification to replace $QAOn_{ij}$ with $QAOPn_{ij}$ and $QABn_{ij}$ with $QABPn_{ij}$ as follows:

4.4 Determination of Imbalance Prices (SBP_i and SSP_i)

4.4.1 In respect of each Settlement Period, the System Total Accepted Offer Volume will be determined as follows:

$$TQAO_j = \sum_i \sum^n QAOP_{ij}^n$$

where \sum_i represents the sum over all BM units and \sum^n represents the sum over all Bid-Offer Pair Numbers for the BM Unit.

4.4.2 In respect of each Settlement Period, the System Total Accepted Bid Volume will be determined as follows:

$$TQAO_j = \sum_i \sum^n QABP_{ij}^n$$

where \sum_i represents the sum over all BM units and \sum^n represents the sum over all Bid-Offer Pair Numbers for the BM Unit.

4.4.3 Unchanged

4.4.4 Unchanged

4.4.5 In respect of each Settlement Period, if $\{ \sum_i \sum^n \{ QAOP_{ij}^n * TLM_{ij} \} + BVA_i \}$ not equal to zero then the System Buy Price will be determined as follows:

$$SBP_j = \frac{\sum_i \sum^n \{ QAOP_{ij}^n * PO_{ij}^n * TLM_{ij} \} + BCA_j}{\sum_i \sum^n \{ QAOP_{ij}^n * TLM_{ij} \} + BVA_j}$$

Where \sum_i represents the sum over all BM Units and where \sum^n represents the sum over those accepted Offers that are not Arbitrated Accepted Offers and not Trade Tagged Offers.

If for any Settlement Period $\{ \sum_i \sum^n \{ QAOP_{ij}^n * TLM_{ij} \} + BVA_i \}$ is equal to zero, then :

- (a) if for that Settlement Period $\{ \sum_i \sum^n \{ QABP_{ij}^n * TLM_{ij} \} + SVA_i \}$ is equal to zero, the System Buy Price for that Settlement Period will be equal to zero;
- (b) otherwise, the System Buy Price will be determined as the maximum of System Sell Price and:
 - (i) the Offer Price of the cheapest Offer available in that Settlement Period:
 - (1) which has a positive Bid-Offer Pair Number; and
 - (2) which has an Offer Price greater than the Offer Price of any Offer which is an Arbitrage Accepted Offer in respect of that Settlement Period; and
 - (3) for which the value of Bid-Offer Volume ($qBO_{ij}^n(t)$) is greater than zero for all spot times t in that Settlement Period;

(ii) or, if no such Offer exists, zero.

4.4.6 In respect of each Settlement Period, if $\{ \sum_i \sum^n \{ QABP_{ij}^n * TLM_{ij} \} + SVA_i \}$ is not equal to zero then the System Sell Price will be determined as follows:

$$SSP_j = \left\{ \sum_i \sum^n \{ QABP_{ij}^n * PB_{ij}^n * TLM_{ij} \} + SCA_j \right\} / \left\{ \sum_i \sum^n \{ QABP_{ij}^n * TLM_{ij} \} + SVA_j \right\}$$

Where \sum_i represents the sum over all BM Units and Where \sum^n represents the sum over those accepted Bids that are not Arbitrated Accepted Bids and not Trade Tagged Bids.

If for any Settlement Period $\{ \sum_i \sum^n \{ QABP_{ij}^n * TLM_{ij} \} + SVA_i \}$ is equal to zero, then:

- (a) if for that Settlement Period $\{ \sum_i \sum^n \{ QAOP_{ij}^n * TLM_{ij} \} + BVA_i \}$ is equal to zero, the System Sell Price for that Settlement Period will be equal to zero;
- (b) otherwise, the System Sell Price will be determined as the maximum of System Buy Price and:

- (i) the Bid Price of the most expensive Bid available in that Settlement Period:
- (1) which has a negative Bid-Order Pair Number; and
 - (2) which has an Bid Price less than the Bid Price of any Bid which is an Arbitrage Accepted Bid in respect of that Settlement Period; and
 - (3) for which the value of Bid-Order Volume ($qBO_{ij}^n(t)$) is less than zero for all spot times t in that Settlement Period;

(ii) or, if no such Bid exists, zero.

4.4.7 In respect of each Settlement Period, the Total Accepted Priced Offer Volume will be determined as follows:

$$TQPAO_i = \sum_i \sum^n QAOP_{ij}^n$$

Where \sum_i represents the sum over all BM units and \sum^n represents the sum over those accepted Offers that are not Arbitrated Accepted Offers and not Trade Tagged Offers.

4.4.8 In respect of each Settlement Period, the Total Accepted Priced Offer Volume will be determined as follows:

$$TQPAO_i = \sum_i \sum^n QABP_{ij}^n$$

Where \sum_i represents the sum over all BM units and \sum^n represents the sum over

those accepted Bids that are not Arbitrated Accepted Bids and not Trade Tagged Bids.

- 4.4.9 In respect of each Settlement Period, the Total Arbitrage Volume will be determined as follows:

$$TAQ_i = \sum_i (\sum_{n'} QABP_{ij}^{n'} - \sum_{n^*} QAOP_{ij}^{n^*}) / 2$$

Where \sum_i represents the sum over all BM units and $\sum_{n'}$ represents the sum over those accepted Bids that are Arbitrated Accepted Bids and \sum_{n^*} represents the sum over those accepted Offers that are Arbitrated Accepted Offers.

- 4.4.9 In respect of each Settlement Period, the Total Trade Tagged Volume will be determined as follows:

$$TCQ_i = \sum_i (\sum_{n'} QABP_{ij}^{n'} - \sum_{n^*} QAOP_{ij}^{n^*}) / 2$$

Where \sum_i represents the sum over all BM units and $\sum_{n'}$ represents the sum over those accepted Bids that are Trade Tagged Bids and \sum_{n^*} represents the sum over those accepted Offers that are Trade Tagged Offers.

Annex T-1 would also require modification to align with the modifications detailed above.

APPENDIX B - OPTION 2 MODIFICATION PROPOSAL

Under the Option 2 proposal, Section T, Paragraph 4.4.5 and 4.4.6 of the BSC would be modified as follows:

4.4.5 In respect of each Settlement Period, if $\{ \sum_i \sum^n \{QAO_{ij}^n * TLM_{ij}\} + BVA_i \}$ is **greater than 1MWh** then the System Buy Price will be determined as follows:

$$SBP_j = \left\{ \sum_i \sum^n \{QAO_{ij}^n * PO_{ij}^n * TLM_{ij}\} + BCA_j \right\} / \left\{ \sum_i \sum^n \{QAO_{ij}^n * TLM_{ij}\} + BVA_j \right\}$$

Where \sum_i represents the sum over all BM Units and where \sum^n represents the sum over those accepted Offers that are not Arbitrated Accepted Offers and not Trade Tagged Offers.

If for any Settlement Period $\{ \sum_i \sum^n \{QAO_{ij}^n * TLM_{ij}\} + BVA_i \}$ is **less than or equal to 1MWh**, then :

- (a) if for that Settlement Period $\{ \sum_i \sum^n \{QAB_{ij}^n * TLM_{ij}\} + SVA_i \}$ is greater than or equal to $-1MWh$, the System Buy Price for that Settlement Period will be equal to zero;
- (b) otherwise, the System Buy Price will be determined as the maximum of System Sell Price and:
 - (i) the Offer Price of the cheapest Offer available in that Settlement Period:
 - (1) which has a positive Bid-Offer Pair Number; and
 - (2) which has an Offer Price greater than the Offer Price of any Offer which is an Arbitrage Accepted Offer in respect of that Settlement Period; and
 - (3) for which the value of Bid-Offer Volume ($qBO_{ii}^n(t)$) is greater than zero for all spot times t in that Settlement Period;
 - (ii) or, if no such Offer exists, zero.

4.4.6 In respect of each Settlement Period, if $\{ \sum_i \sum^n \{QAB_{ij}^n * TLM_{ij}\} + SVA_i \}$ is **less than -1MWh** then the System Sell Price will be determined as follows:

$$SSP_j = \left\{ \sum_i \sum^n \{QAB_{ij}^n * PB_{ij}^n * TLM_{ij}\} + SCA_j \right\} / \left\{ \sum_i \sum^n \{QAB_{ij}^n * TLM_{ij}\} + SVA_j \right\}$$

Where \sum_i represents the sum over all BM Units and Where \sum^n represents the sum over those accepted Bids that are not Arbitrated Accepted Bids and not Trade Tagged Bids.

If for any Settlement Period $\{ \sum_{ij} \{QAB_{ij}^n * TLM_{ij}\} + SVA_i \}$ is greater than or equal to $-1MWh$, then :

- (a) if for that Settlement Period $\{ \sum_{ij} \{QAO_{ij}^n * TLM_{ij}\} + BVA_i \}$ less than or equal to $1MWh$, the System Sell Price for that Settlement Period will be equal to zero;
- (b) otherwise, the System Sell Price will be determined as the maximum of System Buy Price and:
 - (i) the Bid Price of the most expensive Bid available in that Settlement Period:
 - (1) which has a negative Bid-Offer Pair Number; and
 - (2) which has an Bid Price less than the Bid Price of any Bid which is an Arbitrage Accepted Bid in respect of that Settlement Period; and
 - (3) for which the value of Bid-Offer Volume ($qBO_{ij}^n(t)$) is less than zero for all spot times t in that Settlement Period;
 - (ii) or, if no such Bid exists, zero.

ANNEX 6 – SUMMARY OF RESPONSES TO ELEXON CONSULTATION ON P10

The results of the ELEXON consultation exercise (based on the report of the Modifications Group above) were that:

- A total of 9 responses were received at ELEXON by the deadline of 8 am Friday 11th May;
- 7 supported the Modification Proposal and the solution “Removal of any accepted bids and offers with an accepted volume below a threshold level (initially set to 1 MWh) (Option 2a);
- 2 respondents did not support any of the proposed solutions to the Modification Proposal. However they supported the principle of preventing the occurrence of price spikes caused by spurious Bid/Offer Acceptances. Concerns were raised re the removal of genuine offers/bids and that a solution was required to fix the root cause;
- 5 respondents supported an effective date of 2nd May 2001, 2 were against any retrospective changes and 2 provided no comment.

2 further responses were received after the deadline. 1 supported the Modification proposal, Option 2a solution and an effective date of the 2nd May 2001. The other response provided no comment.

Representations were received from the following parties (Please Note that there is no P10_UMR_003):

No	Company	File Number	Recommended Option 2A	Retrospection	Other	Comment
1.	Seaboard	P10_UMR_001	Yes	Yes, Effective date 2 nd May	-	Threshold apply to all bid/offer pairs
2.	London Electricity	P10_UMR_002	Yes (confirmed by phone)	No	Option 2 (in response)	Agree as interim solution, pursue complete solution in medium term. NGC incentive scheme should reflect actual prices
3.	Powergen	P10_UMR_004	No	No	No change required at present	Concerns re removing genuine offers/bids. Further analysis into issues and implementation costs before implementing an change.
4.	Edison Mission Energy	P10_UMR_005	No (only as interim solution, subject to further analysis)	No Comment	-	Solution to fix root cause. Moved too far away from original mods proposal. Further analysis required. Concerns re "arbitrary" setting of level.
5.	Accord	P10_UMR_006	Yes	Yes, Effective date 2 nd May	-	Threshold apply to all bid/offer pairs. Further confirmation of level. System testing should not significantly effect effective date
6.	British Gas Trading	P10_UMR_007	Yes	Yes, Effective date 2 nd May	-	Threshold apply to all bid/offer pairs. Further confirmation of level. System testing should not significantly effect effective date
7.	Innogy Group	P10_UMR_008	Yes	Yes, Effective date 2 nd May	-	Review level after 3 months. NGC incentive scheme should reflect actual prices
8. s	TXU Europe	P10_UMR_009	Yes	Yes, Effective date 2 nd May	-	Recognise that implementation may mean that different prices are reported on BMRA and SAA runs for a number of settlement days. Threshold apply to all bid/offer pairs
9.	ScottishPower	P10_UMR_010	Yes	No comment	-	Threshold apply to all bid/offer pairs

Late responses received

No	Company	File Number	Recommended Option 2A	Retrospection	Other	Comment
10.	NGC	P10_UMR_011	Yes	Yes, Effective date 2 nd May	-	Threshold apply to all bid/offer pairs. Consider combining software changes for Modification Proposal P8
11.	GPU POWER UK	P10_UMR_012	No Comment	No Comment	No Comment	No Comment
12.	Enron Europe	P10_UMR_013	Yes	No comment	-	Propose that Option 1 and Option 2a be pursued simultaneously

ANNEX 7 – RESPONSES TO ELEXON CONSULTATION ON P10

(Please Note that there is no P10_UMR_003)

P10_UMR_001 - Seeboard

From: Fraser, Sue[SMTP:SFraser@seeboard.com]
Sent: 10 May 2001 15:06
To: 'modifications@elexon.co.uk'
Subject: P10 Modification Report Comments - Seeboard's Response

Seeboard's response is as follows:

Seeboard supports the recommendation in the Modification Report and also that it should apply to all acceptances below the threshold (not just those with a Bid Offer pair number of +1 or -1). A single parameter should suffice.

Sue Fraser
For Dave Morton 0190 328 3465

P10_UMR_002 – London Electricity

London Electricity,
Templar House,
81-87 High Holborn,
London.
WC1V 6NU

10th May 2001

Dear Mr Andrews,

RE: Consultation on Mod P10

We welcome the opportunity to respond to the consultation on Mod P10. The current situation where-by the NGC obligation to balance the system at the minimal level of a single minute and single MWh is inconsistent with the Settlement Software is causing price spikes in the market. Although the best solution would be to ensure that both settlement and operational obligations run from the same basis, and indeed these processes should have been aligned before go-live, the imperative is to have well operating market in which the participants have confidence. The solutions of having a 1 minute or 1 MWh cut-off level should be seen as expedient rather than perfect. Of the two options we note NGC's comment that the second (Option B) would be quicker to implement and therefore should be the favoured solution.

We note that the NGC incentive scheme refers specifically to the current arrangements. It is inconsistent (should this Mod be passed in the current format) for NGC to incentivised on prices that are not used in the market and Core Documents should be altered to reflect the prices in use.

We believe that this modification should not be retrospective because changes to market rules, as this is, would potentially have influenced the behaviour of participants and consequently the market as a whole.

In conclusion we view this modification as very urgent and wholeheartedly support Option B on the assumption that more a more complete solution should be pursued in the medium term.

Yours sincerely,

Liz Anderson
General Manager, Energy Strategy and Regulation

P10_UMR_004 - Powergen

25th April 2001

Dear Justin,

Proposed Variation to BSC - Modification Proposal No: P10

Powergen welcomes this opportunity to comment on the proposed modification - P10 Urgent - Eliminating Imbalance Price Spikes Caused By Truncating Effects.

Powergen would like to see further analysis into the issues raised in the modification proposal and in particular an analysis of the costs associated with the implementation of the options proposed. The decision process would then benefit from a view of the full costs of the price spikes and could then draw conclusions for an appropriate solution to the problem based on the costs and benefits of each proposal.

Powergen would like to see the implementation of a solution that would ensure that valid bid offer acceptances were not removed. This may not be the case under the proposal option 2 and its variants where valid BOA's from OCGT plant coming on for low volumes may be removed.

Therefore of the two options proposed by NGC, Powergen would prefer option 1 : removal of bid offer acceptances of less than 1 minute, as genuine BOA's are unlikely to have a duration of less than a minute.

Powergen would agree however that any changes made in respect of this proposal should be based from a future settlement day and not be retrospective effects.

Yours Sincerely
Tony Dacicco

Strategy & Regulation
Energy Trading

P10_UMR_005 - Edison Mission Energy

10

May 2001

Dear ELEXON

Comments on Modification P10

Summary

Like other market participants, Edison Mission Energy has concerns about the rationality of some of the imbalance prices and considers that robust solutions need to be implemented for dealing with such spurious prices. We therefore support the need to correct the problems raised in this modification P10. However, we consider that option 2A has moved too far away from NGC's initial modification proposal and would like to see more analysis of its impact on before this modification is taken any further. Until further analysis is made available, we are unable to support option 2A and in any case would only see it as an interim solution. In the longer term we would like to see the implementation of a solution that fixes the root cause of the problem.

General comments

The original motivation for this Modifications was to eliminate problems caused by truncating National Grid instructions to the earlier minute or lower MW level, resulting in a bid acceptance occasionally generating a 'spurious' offer and vice versa. i.e. the problem was genuinely due to 'spurious' bid/offer acceptances created by the truncation process.

NGC's proposal (option 2) did not directly address this problem, but proposed a modification whereby if the total BOA volume in a direction in a period is less than 1MWh, this volume should be ignored and the relevant imbalance price set to the default value.

We support the need to remove imbalance prices caused by spurious acceptances registered by the settlement software but consider that option 2A as proposed by the Modification Group has moved too far away from NGC's initial modification proposal. Insufficient analysis of this revised option has been carried out to allow participants to assess the impact on imbalance prices.

Option 2A will remove genuine high volume short duration acceptances at the end of a settlement period from the imbalance price. ELEXON's analysis of the affect on imbalance prices in Annex 3 was based on option 2 for settlement periods where there were less than 1 MWh of

total trades. ELEXON does not appear to have examined the effect on prices if all trades of less than 1MWh are removed from the imbalance calculation. In most cases the impact of this will be minimal, but in some it could be large. We would like to see more analysis take place before this modification is taken any further. Subject to this analysis we would support option 2A as an interim solution. In parallel we would also like to see a proper impact assessment and the implementation of a solution that fixes the root cause of the problem.

We are concerned that the proposal to allow 'fine-tuning' of the Spurious Acceptance Threshold (SAT) could be applied in an arbitrary fashion in future to allow the removal of undesirable imbalance prices. This is highly subjective, could be used to substantially reduce price volatility and weaken the incentive for players to be balanced. If option 2A is seen to be only an interim solution, there will be no need to fine tune the SAT.

Only acceptances with a Bid-Offer Pair number of +1 or -1 should be excluded from the price calculation. This modification should apply to the total volume of acceptances for a BM Unit and not to each part of the Bid-Offer ladder.

In summary, I would like to re-iterate that we fully support a modification that removes such spurious acceptances but would like to see a robust process for dealing with them.

Yours faithfully

Phil Edgington

P10_UMR_006 - Accord

Gareth Forrester
ELEXON Ltd
1 Triton Square
London
NW1 3DX
10 May 2001

Dear Gareth

Urgent Modification Proposal 10 - Eliminating Imbalance Price Spikes
Caused by Truncating Effects

Thank you for the opportunity for commenting on this Modification
Proposal.

Accord supports the Modification Group's recommendation of Option 2a.
We agree that the threshold level should be left open to adjustment
on the basis of market experience. The proposed limit of less than 1
MWh for an Offer or greater than -1 MWh for a Bid sets a starting
point but we would look for further confirmation of the validity of
that level in the final report.

We believe any Acceptance below the threshold be excluded from the
price calculation.

Accord support the earliest possible implementation of this
modification. We agree with Modification Group's assessment and
proposal that the effective date should be the settlement date on
which the Modification Proposal was raised. We note and agree that
system changes should be adequately tested before implementation.
However, we do not believe that the effective date should be
significantly influenced by such testing of changes to systems
operated by Central Service Providers.

Yours sincerely

Eldon Pethybridge
Director, Legal/Regulatory Affairs

P10_UMR_007 - British Gas Trading

50 Windsor Road
Slough
Berkshire
SL1 2HA

Tel. (01753) 758
Fax (01753) 758
10 May 2001

Our Ref.
Your Ref.

11 May 2001

Dear Gareth

Urgent Modification Proposal 10 - Eliminating Imbalance Price Spikes
Caused by Truncating Effects

Thank you for the opportunity for commenting on this Modification
Proposal.

British Gas Trading (BGT) supports the Modification Group's
recommendation of Option 2a. We agree that the threshold level
should be left open to adjustment on the basis of market experience.
The proposed limit of less than 1 MWh for an Offer or greater than -1
MWh for a Bid sets a starting point but we would look for further
confirmation of the validity of that level in the final report.

We believe any Acceptance below the threshold be excluded from the
price calculation.

BGT support the earliest possible implementation of this
modification. We agree with Modification Group's assessment and
proposal that the effective date should be the settlement date on
which the Modification Proposal was raised. We note and agree that
system changes should be adequately tested before implementation.
However, we do not believe that the effective date should be
significantly influenced by such testing of changes to systems
operated by Central Service Providers.

Yours sincerely
Danielle Lane
Transportation Analyst

P10_UMR_008 - Innogy Group

From: ben.willis@yeg.co.uk[SMTP:ben.willis@yeg.co.uk]
Sent: 10 May 2001 23:48
To: modifications@elexon.co.uk
Cc: david.tolley@innogy.com; Richard.Harrison@npower.com;
terry.ballard@npower.com; Barbara.Vest@yeg.co.uk
Subject: Innogy Group response to P10 consultation

The Innogy Group supports the recommendations made by the Modification

Group on P10 "Eliminating Imbalance Price Spikes Caused by Truncating Effects". We agree with the proposer that spurious acceptances created by systems quirks should not be included in the price-setting algorithm.

The proposed solution, to remove all individual trades with an acceptance volume of less than a specified level, nicely balances the practicalities of implementation with the need to prevent prices being influenced by trades that were never intended. We acknowledge that the proposed solution would, in extreme cases, also remove some real trades with small acceptance volumes, but we believe these very small volumes cannot be representative of actions to counteract energy imbalances, and therefore must be due to system balancing actions, and should therefore be removed from price-setting as well. We agree that the parameter used to set this small volume should not be hardwired into the systems, but would then like to see this parameter reviewed after an initial period of, say, 3 months.

We agree that the earliest implementation date has been recommended, this is in line with the Urgent status of the modification, and are pleased to see that Elexon has asked for due diligence within the development and testing of the solution.

We would encourage NGC and Ofgem to address the issue of the Imbalances prices used within NGC's Incentive Scheme, and ask that these prices be changed to reflect this and further Code modifications that make changes to the price-setting algorithm.

We are curious as to the reasoning behind Ofgem deciding to treat this modification as Urgent. Whilst we recognise the potential for these spurious acceptances to cause spikes in price, we note that Elexon's analysis shows that only one occurrence has caused a 3-figure imbalance price, all others are below the £100/MWh mark. We would therefore be interested to see the criteria the Modification met to be treated as Urgent.

Ben Willis
Representation Co-ordinator

Yorkshire Electricity
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P10_UMR_009 - TXU Europe

Justin Andrews
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Wherstead Park
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IP9 2AQ

10th May 2001

P10 - Eliminating Imbalance Price Spikes Caused By Truncating Effects

Dear Justin

In response to the draft Modification report in respect of the above;

- * We support the revised proposal referred to as option 2A.
- * We support the idea that it should be explicitly stated that any Acceptance below the threshold should be excluded from the price calculation (as opposed to only those with a Bid-Offer number of +1 or -1).
- * As regards the implementation, we agree that the change should have an Implementation Date of the first Settlement period on 2nd May 2001. We accept that it may not be possible to change the SAA software such that the revised calculation of SBP & SSP is implemented in the SF Run for such Settlement Day and that the new rules would be effected when subsequent Reconciliation Runs are performed for this Date. Similary we accept that BMRA will report incorrect values for ISBP and ISSP until the revised software can be implemented.

Yours Sincerely
Philip Russell

P10_UMR_010 - ScottishPower

From: NETA_SPOC[SMTP:NETA_SPOC@Scottishpower.plc.uk]
Sent: 11 May 2001 08:06
To: 'modifications@elexon.co.uk'
Subject: ScottishPower Comments on Mod Proposal P10
Importance: High

ScottishPower has the following comment to make on Modification Proposal P10

- Eliminating Imbalance Price Spikes Caused by Truncating Effects:

We support the P10 Mod recommendation that each individual Bid/Offer acceptance of less than 1MWh should be excluded from price setting.

In addition, we believe that the threshold value should apply to all bid/offer pairs (not just +1 and -1) and a that single value for SAT, adjustable by the Panel, should be used for all settlement runs applicable to settlement days going forward from the implementation date.

If you have any questions regards this response, please feel free to contact me.

Regards,

Cheryl Hulston
Design Authority, Deregulation Services
Calanais Limited for ScottishPower plc
Int-700 2312 Ext-0141 568 2312

P10_UMR_011 – National Grid Company

Registered Office:
National Grid House
Kirby Corner Road
Coventry CV4 8JY
Registered in
England and Wales
No 2366977

Date: 11 May 2001

SENT BY E-MAIL

David McNair
ELEXON Limited
1 Triton Square
London NW1 3DX

**Market Development
Strategy & Portfolio
Management
The National Grid
Company plc
National Grid House
Kirby Corner Road
Coventry
CV4 8JY
Tel No: 02476 423054**

Dear David,

P10 Modification Report Comments

Following the publication of the draft Urgent Modification Report - Modification Proposal P10, we have the following comments on the recommendations of the report:

- We support the implementation of Option 2a as defined in the modification proposals, this being a variant to our Option 2, to exclude only those individual Bid-Offer Acceptances < 1MWh from imbalance price calculations. We had originally considered proposing this option, but felt that this would be more difficult to implement in a short timescale compared to Option 2. However, on the basis that the incremental complexity of Option 2a will not delay implementation, we support variant Option 2a as the most pragmatic and effective solution.

We recognise that this option does remove genuine Bid-Offer acceptances < 1MWh from the imbalance price calculations and a more complex solution may be considered appropriate for the longer term. However, we do not regard this as an issue at present since there are currently very few genuine Bid-Offer acceptances of such small magnitude.

- We support the change becoming effective from 2 May 2001, subject to the modified software being available, adequately tested and implemented in time for the Initial Settlement run for that day. This will ensure that we can issue BSUoS charging statements that use imbalance prices calculated in accordance with the new methodology.
- We would, however, urge Elexon to consider combining any software changes associated with P10 with any changes required as a result of modification P8. Workaround 24 (which is required until the changes associated with P8 are introduced) is becoming increasingly unsustainable, and is increasing the risk of delays to Initial Settlement Runs, and/or errors in System Sell Price and System Buy Price.
- We believe that all non-arbitrated/non-tagged Bid-Offer Acceptances < 1MWh should be excluded from imbalance price calculations. Limiting the exclusion to Bid-Offer Pair Numbers +1 or -1 has the potential for a spurious volume being registered for a higher Bid-Offer Pair Number. This could occur, for example, when Bid-Offer Pair Numbers +1 or -1 are arbitrated. Furthermore, to identify specific pair numbers would make the modification to the settlement software unnecessarily more complex than it need be at this stage.
- We agree that the threshold value should be a single parameter initially.

However, because final reconciliation runs prior to the effective date would need to use the current methodology, we believe that the software should refer to a lookup table that sets the threshold value to zero for settlement runs relating to periods prior to the effective date. This represents a more complex modification, and we therefore support a simple approach for the initial release of the software, but with the more complex modification agreed as part of this proposal.

I trust that you will find these comments useful. Please contact me if you wish to discuss further.

Yours Sincerely

Peter Bingham

P10_UMR_012 – GPU POWER UK

From: Gardener, Rachael[SMTP:rachael.gardener@gpupower.co.uk]
Sent: 11 May 2001 11:25
To: 'modifications@elexon.co.uk'
Subject: Consultation on Urgent Modification Proposal P10

Hello

GPU POWER UK would like to return a response of 'No Comment' to Consultation on Urgent Modification Proposal P10.

Regards
Deborah Hayward
(On behalf of)
Rachael Gardener

Deregulation Control Group &
Disribution Support Office
GPU POWER.CO.UK

* 08457 353637 Ext: 09 - 3802
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This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify gpupower.co.uk or postmaster@npower.com

This outgoing e-mail (and any attachments) has been checked (using Sophos Sweep 3.45 + patches) before leaving us (UK 08457 353637), and has been found to be clean from any virus infection.

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P10_UMR_013 – ENRON Europe

From: Paul.Dawson@enron.com[SMTP:Paul.Dawson@enron.com]
Sent: 11 May 2001 12:55
To: modifications@elexon.co.uk
Subject: Consultation on Urgent Modification Proposal P10

Please accept my apologies for not getting a response in by the 8am deadline - I had not appreciated that the timetable was quite as tight. I hope nevertheless that our views feature in the modification report to Ofgem. While recognising the urgency attached to some modifications, less than 24 hours to review and respond to a modification group's proposals is unnecessarily tight (especially since 9 days have already elapsed since the modification was submitted on 2 May). In future, thought should be given to extending this period to at least 48 hours and establishing a more appropriate balance between the need for urgency and the need for adequate consultation.

Enron support Option 2A to exclude individual bid-offer acceptances BOA's of less than 1MWh and agree that this parameter should be reviewed regularly and, if necessary, revised. Option 2A provides a pragmatic solution to the problem of truncating effects. We do, however, feel that it would be inappropriate to discard option 1 solely on the grounds that it is more complex to implement. As National Grid have argued Option 1 clearly provides a more sophisticated solution in identifying spurious bid/offer acceptances. We would therefore recommend that both options 1 and option 2A are pursued simultaneously. This approach would also provide the maximum flexibility to amend either a time or a volume parameter to exclude spurious acceptances from imbalance price calculations in future.

We agree that the interaction with the transmission company incentive scheme is outside of the terms of reference for the modifications group. Nevertheless, we would ask that Ofgem - in preparing it's decision report on the modification proposal - provide further clarity on the implications of the modification for NGC's incentive scheme and any actions that they may take as a consequence of the modification.

Kind regards,

Paul Dawson
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Enron Europe
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E-mail: paul.dawson@enron.com