November 2001

MODIFICATION REPORT

MODIFICATION PROPOSAL P26 – Market - Driven Trading Neutrality Band

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

Document Reference	MR026
Version no.	0.3
Issue	DRAFT
Date of Issue	27 November 2001
Reason for Issue	**For Industry Consultation**
Author	ELEXON

I DOCUMENT CONTROL

a Authorities

Version	Date	Author	Signature	Change Reference
0.1	09/11/01	Mandi Francis		
0.2	21/11/01	Mandi Francis		
0.3	27/11/01	Mandi Francis		

Version	Date	Reviewer	Signature	Responsibility
0.1	12/11/01	PIMG		
0.1	12/11/01	Justin Andrews		PIMG Chair
0.2	22/11/01	Justin Andrews		PIMG Chair
0.3	27/11/01	Justin Andrews		PIMG Chair

b Distribution

Name	Organisation
Each BSC Party	Various
Each BSC Agent	Various
The Gas and Electricity Markets Authority	Ofgem
Each BSC Panel Member	Various
energywatch	Energywatch
Core Industry Document Owners	Various

c Related Documents

Reference	Document
Reference 1	Modification Proposal P26 'Market – Driven Trading Neutrality Band'
Reference 2	Initial Assessment of Modification Proposal P26 'Market – Driven Trading Neutrality Band' IWA026 11 July 2001
Reference 3	Requirements Specification for Modification P26: Trading Neutrality Band 020AAR 6 September 2001
Reference 4	Assessment Report Modification Proposal P26 – Market – Driven Trading Neutrality Band MAR026 18 October 2001

d Intellectual Property Rights and Copyright

II CONTENTS TABLE

1 SUMMARY AND RECOMMENDATIONS

1.1 Recommendation

Modification P26 seeks to amend the methodology for the application of Energy Imbalance Prices on Energy Imbalance volumes by the introduction of a 'Market - Driven Trading Neutrality Band'. The intent of such a Trading Neutrality Band is to allow, for each BSC Party and each Settlement Period, a defined volume of Energy Imbalance to be cashed out at a Neutral Price, with the remaining Energy Imbalance cashed out under existing arrangements, i.e. subject to either the System Buy Price or the System Sell Price, as appropriate.

On the basis of the analysis, consultation and assessment undertaken in respect of this Modification Proposal during the Assessment Phase, and the resultant findings of this report, the BSC Panel recommends to the Authority that:

1. **The Modification, as set out in Section 5 of this Report, be Approved;**
2. **The initial value of the Trading Neutrality Band be [x] MWh, in accordance with the analysis presented in Section 10 and 13 of this Modification Report;**
3. **The initial Neutral Price Methodology be [y], in accordance with the analysis presented in Section 11 and 12 of this Modification Report; and**
4. **That the Modification have an implementation date of 30 September 2002 and is implemented within the ELEXON BSC Systems Release 2 Project, (subject to Panel authority to commence work on 14 December 2001 and an Authority determination by the end of January 2002[1]).**

1.2 Background

Modification Proposal P26 'Market – Driven Trading Neutrality Band' was raised by BizzEnergy.com Limited on the 25 June 2001 and subsequently referred to the Pricing Issues Modification Group (PIMG) by the Panel under the Assessment Procedure. The Modification Group considered whether the Modification would better achieve the objectives of the Balancing and Settlement Code (the Code) and could not reach agreement as to whether the Modification did, in fact better facilitate achievement of the Applicable BSC Objectives. Therefore the Modification Group made a recommendation that the Panel determine whether the Modification would better achieve the objectives of the Code. In reaching this conclusion, the Modification Group took due account of the views of the proposer, all representations received from interested parties and the views of the Group itself.

The Panel considered the PIMG's Assessment Report at its meeting of 18 October 2001 and agreed that the Modification should proceed to the Report Phase, determined that the Modification would better achieve the objectives of the Code, and therefore that the draft Modification Report to be consulted on should contain a recommendation to the Authority that the Modification be approved and implemented either as part of the ELEXON BSC Systems Release 2 Project, or as a standalone Release, depending upon the date of the Authority decision. The Panel also recommended the initial value for the Trading Neutrality Band and methodology for determining the Neutral Price, with such recommendation based

[1] If the Authority determination is given later than the end of January 2002, then ELEXON proposes implementation of the Modification as a patch release and consequently may seek an extension to the implementation date of the Modification, under the provisions of the Code, Section F 2.11.8.

upon the analysis presented in this Modification Report (Sections 10, 11, 12 and 13, ANNEX 2 and ANNEX 3).

The Representations received in response to the consultation on the draft Modification Report [agreed / disagreed / other] with the proposal. The Panel therefore [confirmed / amended / other] their recommendations at their meeting of 13 December 2001.

1.3 Rationale for Recommendations

The Panel concluded that the Modification would better facilitate the Applicable BSC Objectives as set out in the Transmission Licence. In particular, it would meet Objective C3 (3) (c) 'promoting effective competition in the sale and purchase of electricity'. The Modification was not believed to impact on the remaining Applicable BSC Objectives set out in Condition C3 (3).

In reaching this conclusion, the Panel took due account of the views of the proposer, all representations received from interested parties and the views of the Pricing Issues Modification Group. This Modification Report should be read in conjunction with the Modification Group's Assessment Report (Reference 4), which forms Attachment 1 to this Modification Report.

1.4 Summary of Analysis

The analysis to support the Panel determination of the value of the Trading Neutrality Band and Neutral Price methodology is provided in (significantly) more detail in Sections 10, 11, 12 and 13, and ANNEX 2 and ANNEX 3 of this Modification Report. This is a very high level summary of the analysis, based upon the conclusions drawn in the relevant section.

At a high level, the analysis indicates that:

From Settlement Data (All Settlement Periods across Settlement Days 02 October to 17 October 2001, inclusive):

- Across all Parties, 40% of instances of Energy Imbalance are for volumes of <= 1MWh, and 52 % are <= 2MWh;
- Across the Production Accounts of all Parties, 45% of instances of Energy Imbalance are for volumes of <= 1MWh, and 58 % are <= 2MWh;
- Across all small Parties (QCEiaj (Account Credited Energy volumes)= -100 to +100 MWh), 64% of instances of Energy Imbalance are for volumes of <= 1MWh;
- Across the Production Accounts of all small Parties, 73% of instances of Energy Imbalance are for volumes of <= 1MWh; and
- Across the Consumption Accounts of small Parties, 53% of instances of Energy Imbalance are for volumes of <= 1MWh.

This indicates that a Trading Neutrality Band set to a value as low as 1 MWh would potentially exclude around half of the occurrences of imbalance entirely from imbalance settlement, i.e. the application of System Buy and System Sell Price.

From Exchange Data and Settlement Data (Settlement Periods on Settlement Days 01 October to 07 October 2001, inclusive):

The analysis indicates that any value for the Neutral Price based upon exchange prices has a material impact on the system cashflows.

- The analysis indicates that cashflows from the system (to Energy Imbalance volumes subject to the System Sell Price, and therefore cashflows from the system to Parties (unless the SSP is negative)), will increase proportionally if the Neutral Price is applied to Energy Imbalance Volumes instead of SSP; and
- Cashflows into the system (applied to Energy Imbalance volumes subject to the System Buy Price, and therefore cashflows into the system from Parties) will decrease proportionally for the vast majority of Settlement Periods if the Neutral Price is applied to Energy Imbalance volumes instead of SBP (unless the Neutral Price is greater than SBP).

Both of these factors, as they will operate in conjunction, will have an overall effect of decreasing the Residual Cashflow Reallocation Cashflow, to a point where it may increasingly be negative (and therefore become a charge) for the majority of Settlement Periods.

From UKPX Exchange Data (Across all Settlement Periods on Settlement Days 18, 19 and 20 November 2001):

Based on three days worth of data, the size of trades seem relatively steady, with around 20% less than, or equal to 5 MWh and 40 to 50% less than, or equal to 20 MWh.

A comparison of prices against traded volumes over time indicates that there appears to be relatively little correlation between price and volume. The price of a trade seems to be related more to the Settlement Period than the volume being traded.

From APX Exchange Data (trade volumes since Go –Live, and specifically for November 2001):

Approximately 12% of trades on the APX have been for volumes of less than or equal to 5MW, over both periods, and approximately 20% have fallen under 10MW (20 MWh).

2 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

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 or directed by the Authority, ELEXON is responsible for overseeing the implementation of that amendment (including any consequential changes to systems, procedures and documentation).

A Modification Report must be prepared and submitted to the Authority in respect of each proposed modification and must contain:

(a) The recommendation of the Panel as to whether or not the Proposed Modification or any Alternative Modification should be made;

(b) The proposed Implementation Date for implementation of the Proposed Modification or any Alternative Modification;

(c) The matters set out in Annex F-1 of the BSC. This will usually be in the form of the relevant Assessment Report where the Proposal has been submitted to a Modification Group prior to the Report Phase;

(d) An explanation of the Panel's rationale should the Panel form a different view of any matters contained in the Modification Group Report; and

(e) A summary of the representations made by Parties and interested third parties during the consultation undertaken in respect of the Proposed Modification and any Alternative Modification.

4 HISTORY OF PROPOSED MODIFICATION

Modification Proposal P26 'Market – Driven Trading Neutrality Band' (Reference 1), raised by BizzEnergy.com Limited on 25 June 2001, proposed the implementation of a Trading Neutrality Band intended to allow, for each BSC Party and each Settlement Period, a defined volume of Energy Imbalance to be cashed out at a Neutral Price, with the remaining Energy Imbalance cashed out under existing arrangements.

The Modification Proposal stated that the purpose of such amendment would be to introduce a mechanism to effectively account for the unavailability of smaller contract volumes in the forwards and spot markets by allowing any subsequent imbalance, within the limit defined by the Trading Neutrality Band to be subject to a neutral price. Such neutral price could be market based, utilising costs of trades from a power exchange, or another neutral price representing the value of short term energy. The Modification Proposal also proposed that the Trading Neutrality Band be set annually by the BSC Panel, and that the volume so defined be representative of the liquidity and granularity of the spot market.

The Initial Written Assessment for Modification Proposal P26 (Reference 2) was submitted to the BSC Panel meeting of 26 July 2001. The Panel recommended that Modification P26 be submitted to a three month assessment phase, to be undertaken by the Pricing Issues Modification Group.

The Pricing Issues Modification Group (PIMG) met initially on the 21 August 2001 in order to determine the definition of the Modification in sufficient detail for a Requirements Specification to be drafted and to initiate the assessment procedure for the Modification. The Requirements Specification for Modification P26 'Market – Driven Trading Neutrality Band' (Reference 3) was drafted and agreed by the PIMG and was issued for Industry wide impact assessment on 6 September 2001.

The PIMG met again on the 27 September 2001 to complete the assessment of the Modification and to assess the impact assessments received in order to define the recommendations and the rationale for the Modification. The PIMG determined that there was a lack of operational information regarding the granularity in the spot markets and the availability of imbalance exposure risk management services. Therefore a questionnaire was sent for consultation in order to obtain the requisite information. The PIMG reviewed the responses and agreed the Assessment Report (Reference 4) and the associated recommendations by e-mail.

The Panel considered the Assessment Report at their meeting of 18 October 2001 and determined that the Modification should proceed to the Report Phase and that the draft Modification Report to be consulted on should contain a recommendation to the Authority that the Modification be approved and implemented either as part of the ELEXON BSC Systems Release 2 Project, September 2002, or as a standalone release, depending upon the date of the Authority decision. The Panel also determined and recommended an initial value for the Trading Neutrality Band and the Neutral Price Methodology, based upon the analysis included in this Modification Report (Sections 10, 11, 12 and 13, ANNEX 2 and ANNEX 3). Representations received in response to the consultation on the draft report [supported / rejected / other] the Modification and the recommendations made. The Panel therefore [confirmed / amended / other] such recommendation at its meeting of 13 December 2001.

5 DESCRIPTION OF PROPOSED MODIFICATION

The Requirements Specification (Reference 3) and the Assessment Report (Reference 4) for this Modification Proposal provide the full specification of the amendments required to implement the Modification.

At a high level, the Modification proposes the following:

- The implementation of a Trading Neutrality Band (TNBj, MWh) into settlement calculations. The Trading Neutrality Band is the amount of energy imbalance for a Party to be cashed out at a Neutral Price) and is to be determined by the BSC Panel on an annual basis;
- The Trading Neutrality Band value is notified to the SAA, by ELEXON, via the existing (amended for this Modification) 'System Parameter' manual interface (SAA-I023)
- The determination of a Neutral Price (NPj, in £/MWh) to be applied to imbalance volumes within the Trading Neutrality Band. This is a single price, in £/MWh per Settlement Period variable, determined by ELEXON for each Settlement Period in accordance with a methodology agreed by the Panel, and notified to the SAA by ELEXON, via a new manual interface implemented for this Modification. The Neutral Price for each Settlement Period will also be published on the BSC Website;
- Settlement calculations (the Code, Section T, 4.7) are amended such that the energy imbalance in the Trading Neutrality Band for a BSC Party is cashed out at a Neutral Price for each Settlement Period. All energy imbalance in excess of the Trading Neutrality Band is cashed out under the System Buy or System Sell Prices, as defined under the existing arrangements;
- The Residual Cashflow Reallocation Proportion calculation, defined in BSC Section T 4.10.2, is to be amended such that each party's QCE is adjusted by a factor, derived on an account basis, to reflect the effect of the TNB on their imbalance exposure; and
- All sub-flows of the Settlement Report (SAA-I014) are to be amended to reflect the application of the Trading Neutrality Band and Neutral Price in the report, so that BSC Parties, the Transmission Company and ELEXON can replicate the settlement calculations, if required.

6 RATIONALE FOR PANEL RECOMMENDATIONS

On the basis of the analysis, consultation and assessment undertaken in respect of this Modification Proposal, the Panel recommends to the Authority that the proposed Modification be Approved, subject to further analysis of the value of the Trading Neutrality Band, and be implemented either as part of the ELEXON BSC Systems Release 2 Project, September 2002, or as a standalone Release, depending upon the date of the Authority decision.

The Panel believes, on consideration of the Assessment Report (Reference 4), that:

[*pending receipt of the consultation responses – this section may be amended in light of such responses and subsequent Panel discussion, therefore this represents a provisional view based upon the Panel views of the Assessment Report*]

- The Trading Neutrality Band should be implemented in settlement calculations; and
- Failure to implement the Trading Neutrality Band and associated Neutral Price would continue to disadvantage parties attempting to trade smaller volumes on the Forwards / Spot markets, as a consequence of both the inherent (larger) level of granularity in such forwards / spot markets, and the relatively uneconomic cost of trading smaller volumes in comparison to larger volumes on such exchanges. The combination of these factors meaning that it is not economic for these parties to trade out of imbalance.

In light of the above consideration, the Panel has concluded that the proposed Modification would better facilitate the Applicable BSC Objective C3 (3) (c) 'promoting effective competition in the generation and supply of electricity and (so far as is consistent therewith) promoting such competition in the sale and purchase of electricity'.

7 LEGAL TEXT TO GIVE EFFECT TO THE PROPOSED MODIFICATION

7.1 Modification Group Views

The Pricing Issues Modification Group (PIMG) met on 14 November 2001 to review and agree the final legal drafting required to support Modification P26. The PIMG agreed that either the rationale for the Trading Neutrality Band and Neutral Price should not be documented within the Code and therefore that the legal text be amended to remove reference to such rationale, or that where rationale had to be included, that the full rationale should be provided in the Code (for example, such rationale should include reference to such value / methodology allowing better achievement of the Applicable BSC Objectives).

The PIMG reached the decision to remove the rationale from the Code based upon the precedent of the manner in which the Balancing Reserve Level (BRL) is represented within the Code, i.e. no rationale documented in the Code. The PIMG agreed that the rationale could be represented in a subsidiary document which is referenced from the Code, which would enable amendments to such rationale in line with development of the operational market.

ELEXON's legal advisors reviewed the determination of the PIMG, however, the advice of the ELEXON legal advisors was that such rationale should be retained, as a consequence of the requirement for the rationale behind the setting of the Trading Neutrality Band and Neutral Price to be included in the Code in order to steer the Panel when setting the values / methodology. The ELEXON legal advisors also stated that the Balancing Reserve Level model is not an appropriate precedence in this instance and that therefore the reference to the rationale (presented in 1.8.3 below) should be retained. It was the view of the ELEXON legal advisors that due consideration had been given to the views of the Modification Group, but that in this instance the legal advice should take precedence unless the Panel direct otherwise.

7.2 Conformed Version

Section T 'Settlement and Trading Charges'

Insert new paragraph 1.3.8:

1.3.8 Data required from BSCCo are values of the Neutral Price.

Insert new paragraphs 1.8 and 1.9

1.8 Trading Neutrality Band and Neutral Price Methodology

1.8.1 In respect of each BSC Year (the "**relevant BSC Year**") the Panel shall establish at least 30 days prior to the start of such relevant BSC Year:

(a) the value of the Trading Neutrality Band to be used by the SAA in each Settlement Period in the relevant BSC Year for the purposes of this Section T, and (for the avoidance of doubt) such value:

(i) may but need not be different for some of or each of such Settlement Periods;

(ii) may be zero; and

(b) the methodology for determining, in respect of each Settlement Period, the Neutral Price (to be applied in accordance with this Section T to such Trading Neutrality Band) to be used by the SAA in the relevant BSC Year for the purposes of this Section T.

1.8.2 The value of the Trading Neutrality Band and the Neutral Price Methodology established each year by the Panel under paragraph 1.8.1 shall be, respectively, a positive or zero value (expressed in MWh) and a methodology determined by the Panel and approved by the Authority.

1.8.3 Without prejudice to the generality of Section B1.2.1, in any determination of the value of the Trading Neutrality Band and the Neutral Price Methodology, the Panel shall have regard to the need to further the purpose of mitigating, as far as the Panel considers appropriate, the effect on Trading Parties (in terms of actual or potential liability for or entitlement to Trading Charges) resulting from the absence, if any, of effective market(s) (external to the arrangements established by the Code) for the sale and purchase of very small quantities of Active Energy.

1.8.4 The Panel shall establish and may from time to time revise principles or guidance as to the matters which it would expect to take into account in determining the Trading Neutrality Band and Neutral Price Methodology for the purposes of this paragraph 1.8, such principles or guidance (and any revisions thereto) to be approved by the Authority and published by BSCCo in such manner as BSCCo thinks fit.

1.8.5 In determining the Neutral Price Methodology the Panel shall have regard to the need to ensure (through the inclusion of appropriate fallback mechanisms or otherwise) that it is always possible to determine a value for the Neutral Price, whatever circumstances may affect any particular market(s) or the availability of information as respects any such market(s).

1.8.6 The Panel may revise such values and method from time to time within any BSC Year subject to the approval of the Authority.

1.8.7 In setting and revising the value of the Trading Neutrality Band and the Neutral Price Methodology from time to time:

(a) the Panel may request BSCCo to prepare an analysis to assist the Panel in making its determination;

(b) BSCCo shall prepare such analysis where so requested to do so by the Panel and shall comply with such further reasonable requests of the Panel for information or clarification in respect thereof;

(c) the Panel shall make available a copy of such analysis to each Party and to the Authority.

1.8.8 In setting and revising the value of the Trading Neutrality Band and the Neutral Price Methodology from time to time, the Panel shall consult with Parties and consider the views expressed in the course of such consultation prior to making its determination (and shall provide a detailed summary of such views to the Authority).

1.8.9 The Panel Secretary shall notify the values of the Trading Neutrality Band and the Neutral Price Methodology established and revised from time to time under this paragraph 1.8 to:

(a) each Party; and

(b) the SAA;

and shall copy such notice to the Authority.

1.9 Values of Neutral Price

1.9.1 In respect of each Settlement Day, BSCCo shall, no later than the end of the second Business Day after the Settlement Day:

(a) determine, in accordance with the Neutral Price Methodology, the value of the Neutral Price for each Settlement Period in the Settlement Day;

(b) notify such values to the SAA,

and shall publish such values on the BSC Website in accordance with Section V4.2.7.

Amend paragraph 4.7.1 to read as follows:

4.7.1 In respect of each Settlement Period, the Account Energy Imbalance Cashflow for each Energy Account, other than the TC (Non-IEA) Energy Accounts held by the Transmission Company, will be determined as follows:

(a) if $QAEI_{aj} > 0$ then $CAEI_{aj}$ ~~$= QAEI_{aj} * SSP_j$~~ is determined as follows:

$$CAEI_{aj} = - \{(QAEI_{ai<TNBi} * NP_i) + (QAEI_{ai>TNBi} * SSP_i)\}$$

where $QAEI_{ai<TNBi}$ is min $(QAEI_{aj}, TNB_i)$ and $QAEI_{ai>TNBi}$ is max $\{0, (QAEI_{aj} - TNB_i)\}$

(b) otherwise $CAEI_{aj}$ ~~$= QAEI_{aj} * SBP_j$~~ is determined as follows:

$$CAEI_{aj} = - \{(QAEI_{ai>-TNBi} * NP_i) + (QAEI_{ai<-TNBi} * SBP_i)\}$$

where $QAEI_{ai>-TNBi}$ is max $(QAEI_{aj}, -TNB_i)$ and $QAEI_{ai<-TNBi}$ is min $\{0, (TNB_i - QAEI_{aj})\}$

Amend paragraph 4.10.3 to read as follows:

4.10.3 In respect of each Settlement Period, for each Energy Account, other than the TC (Non-IEA) Energy Accounts held by the Transmission Company, the Residual Cashflow Reallocation Proportion will be determined as follows:

$$RCRP_{aj} = \{\{\Sigma^{+}_{i} (QCE_{aij}) + \Sigma^{-}_{i} (- QCE_{aij})\} - \min (|QAEI_{aj}|, |TNB_i|)\} / \{\Sigma_a \{\Sigma^{+}_{i} (QCE_{aij}) + \Sigma^{-}_{i} (- QCE_{aij})\} - \Sigma_a \{\min (|QAEI|_{aj}, |TNB_i|)\}\}$$

The rest of the paragraph is unamended.

Section V 'Reporting'

Insert new paragraph (v) in paragraph 4.1.1(b)

(v) the Trading Neutrality Band established and revised from time to time by the Panel pursuant to Section T1.8.

Insert new paragraph (e) in paragraph 4.2.2 and renumber existing paragraph (e) as paragraph (f):

(d) the values of Neutral Price as described in paragraph 4.2.7.

Insert new paragraph 4.2.7 and renumber existing paragraph 4.2.7 as paragraph 4.2.8:

4.2.7 The Neutral Price for each Settlement Period in a Settlement Day shall be published on the BSC Website (and displayed for a period of 30 days), as soon as reasonably practicable after BSCCo has determined such value in accordance with Section T1.9.

Annex X-2 'Technical Glossary'

Insert the following new definitions in Table X-2, alphabetically:

Neutral Price	NP_i	£/MWh	The amount determined in accordance with Section T1.9. *The Neutral Price is the price applied to energy imbalance falling within the Trading Neutrality Band for a Party, in accordance with Section T4.7.1*
Neutral Price Methodology			The methodology from time to time determined by the Panel in accordance with Section T1.8.
Trading Neutrality Band	TNB_i	MWh	The amount determined in accordance with Section T1.8. *The Trading Neutrality Band is the amount, in respect of a Settlement Period, of energy imbalance for a Party to be cashed out at a Neutral Price in accordance with Section T4.7.1*

7.3 Clean Version

Section T 'Settlement and Trading Charges'

Insert new paragraph 1.3.8:

1.3.8 Data required from BSCCo are values of the Neutral Price.

Insert new paragraphs 1.8 and 1.9

1.8 Trading Neutrality Band and Neutral Price Methodology

1.8.1 In respect of each BSC Year (the "**relevant BSC Year**") the Panel shall establish at least 30 days prior to the start of such relevant BSC Year:

(a) the value of the Trading Neutrality Band to be used by the SAA in each Settlement Period in the relevant BSC Year for the purposes of this Section T, and (for the avoidance of doubt) such value:

(i) may but need not be different for some of or each of such Settlement Periods;

(ii) may be zero; and

(b) the methodology for determining, in respect of each Settlement Period, the Neutral Price (to be applied in accordance with this Section T to such Trading Neutrality Band) to be used by the SAA in the relevant BSC Year for the purposes of this Section T.

1.8.2 The value of the Trading Neutrality Band and the Neutral Price Methodology established each year by the Panel under paragraph 1.8.1 shall be, respectively, a positive or zero value (expressed in MWh) and a methodology determined by the Panel and approved by the Authority.

1.8.3 Without prejudice to the generality of Section B1.2.1, in any determination of the value of the Trading Neutrality Band and the Neutral Price Methodology, the Panel shall have regard to the need to further the purpose of mitigating, as far as the Panel considers appropriate, the effect on Trading Parties (in terms of actual or potential liability for or entitlement to Trading Charges) resulting from the absence, if any, of effective market(s) (external to the arrangements established by the Code) for the sale and purchase of very small quantities of Active Energy.

1.8.4 The Panel shall establish and may from time to time revise principles or guidance as to the matters which it would expect to take into account in determining the Trading Neutrality Band and Neutral Price Methodology for the purposes of this paragraph 1.8, such principles or guidance (and any revisions thereto) to be approved by the Authority and published by BSCCo in such manner as BSCCo thinks fit.

1.8.5 In determining the Neutral Price Methodology the Panel shall have regard to the need to ensure (through the inclusion of appropriate fallback mechanisms or otherwise) that it is always possible to determine a value for the Neutral Price, whatever circumstances may affect any particular market(s) or the availability of information as respects any such market(s).

1.8.6 The Panel may revise such values and method from time to time within any BSC Year subject to the approval of the Authority.

1.8.7 In setting and revising the value of the Trading Neutrality Band and the Neutral Price Methodology from time to time:

(a) the Panel may request BSCCo to prepare an analysis to assist the Panel in making its determination;

(b) BSCCo shall prepare such analysis where so requested to do so by the Panel and shall comply with such further reasonable requests of the Panel for information or clarification in respect thereof;

(c) the Panel shall make available a copy of such analysis to each Party and to the Authority.

1.8.8 In setting and revising the value of the Trading Neutrality Band and the Neutral Price Methodology from time to time, the Panel shall consult with Parties and consider the views expressed in the course of such consultation prior to making its determination (and shall provide a detailed summary of such views to the Authority).

1.8.9 The Panel Secretary shall notify the values of the Trading Neutrality Band and the Neutral Price Methodology established and revised from time to time under this paragraph 1.8 to:

(a) each Party; and

(b) the SAA;

and shall copy such notice to the Authority.

1.9 Values of Neutral Price

1.9.1 In respect of each Settlement Day, BSCCo shall, no later than the end of the second Business Day after the Settlement Day:

(a) determine, in accordance with the Neutral Price Methodology, the value of the Neutral Price for each Settlement Period in the Settlement Day;

(b) notify such values to the SAA,

and shall publish such values on the BSC Website in accordance with Section V4.2.7.

Amend paragraph 4.7.1 to read as follows:

4.7.1 In respect of each Settlement Period, the Account Energy Imbalance Cashflow for each Energy Account, other than the TC (Non-IEA) Energy Accounts held by the Transmission Company, will be determined as follows:

(a) if $QAEI_{aj} > 0$ then $CAEI_{aj}$ is determined as follows:

$$CAEI_{aj} = - \{(QAEI_{aj \leq TNBj} * NP_j) + (QAEI_{aj > TNBj} * SSP_j)\}$$

where $QAEI_{aj \leq TNBj}$ is min $(QAEI_{aj}, TNB_j)$ and $QAEI_{aj > TNBj}$ is max $\{0, (QAEI_{aj} - TNB_j)\}$

(b) otherwise $CAEI_{aj}$ is determined as follows:

$$CAEI_{aj} = - \{(QAEI_{aj \geq -TNBj} * NP_j) + (QAEI_{aj < -TNBj} * SBP_j)\}$$

where $QAEI_{aj \geq -TNBj}$ is max $(QAEI_{aj}, - TNB_j)$ and $QAEI_{aj < -TNBj}$ is min $\{0, (TNB_j - QAEI_{aj})\}$

Amend paragraph 4.10.3 to read as follows:

4.10.3 In respect of each Settlement Period, for each Energy Account, other than the TC (Non-IEA) Energy Accounts held by the Transmission Company, the Residual Cashflow Reallocation Proportion will be determined as follows:

$$RCRP_{aj} = \{\{\Sigma^{+}_{i}(QCE_{aij}) + \Sigma^{-}_{i}(-QCE_{aij})\} - \min(|QAEI_{aj}|, |TNB_{j}|)\} / \{\Sigma_{a}\{\Sigma^{+}_{i}(QCE_{aij}) + \Sigma^{-}_{i}(-QCE_{aij})\} - \Sigma_{a}\{\min(|QAEI|_{aj}, |TNB_{j}|)\}\}$$

The rest of the paragraph is unamended.

Section V 'Reporting'

Insert new paragraph (v) in paragraph 4.1.1(b)

(v) the Trading Neutrality Band established and revised from time to time by the Panel pursuant to Section T1.8.

Insert new paragraph (e) in paragraph 4.2.2 and renumber existing paragraph (e) as paragraph (f):

(d) the values of Neutral Price as described in paragraph 4.2.7.

Insert new paragraph 4.2.7 and renumber existing paragraph 4.2.7 as paragraph 4.2.8:

4.2.7 The Neutral Price for each Settlement Period in a Settlement Day shall be published on the BSC Website (and displayed for a period of 30 days), as soon as reasonably practicable after BSCCo has determined such value in accordance with Section T1.9.

Annex X-2 'Technical Glossary'

Insert the following new definitions in Table X-2, alphabetically:

Neutral Price	NP_j	£/MWh	The amount determined in accordance with Section T1.9. *The Neutral Price is the price applied to energy imbalance falling within the Trading Neutrality Band for a Party, in accordance with Section T4.7.1*
Neutral Price Methodology			The methodology from time to time determined by the Panel in accordance with Section T1.8.
Trading Neutrality Band	TNB_j	MWh	The amount determined in accordance with Section T1.8. *The Trading Neutrality Band is the amount, in respect of a Settlement Period, of energy imbalance for a Party to be cashed out at a Neutral Price in accordance with Section T4.7.1*

8 ASSESSMENT

The following is a summary of the impacts identified in the Assessment Report for Modification proposal P26 (Reference 4) produced by the Pricing Issues Modification Group, which forms Attachment 1 to this report.

The proposed Modification will have the following impacts:

- Amendment to the Code, Section T 'Settlement and Trading Charges', new clauses 1.3.8, 1.8 and 1.9 to support the determination and provision of the value of the Trading Neutrality Band and the Neutral Price. Amendment to Section T 4.7.1 and 4.10.2 to reflect the application of the Trading Neutrality Band and associated Neutral Price in settlement calculations. The relevant legal drafting is provided in Section 7 of this Modification Report;
- Amendment to the Code, Section V 'Reporting' clauses 4.1.1, 4.2.2 and 4.2.7, to reflect the requirement to report out to SAA on the Trading Neutrality Band and Neutral Price, and publish the Neutral Price on the BSC Website. The relevant legal drafting is provided in Section 7 of this Modification Report;
- Amendment to the Code, Section X ANNEX X-2 'Technical Glossary' to define the Trading Neutrality Band variable and Neutral Price Methodology and variable. The relevant legal drafting is provided in Section 7 of this Modification Report;
- Amendment to the NETA Data File Catalogue (NDFC) to section 5.3.1 to amend the 'System Parameters' (SAA-I023) interface to include the Trading Neutrality Band variable, section 5.3.4 to introduce a new dataflow for the provision of the Neutral Price, and section 5.3.8 to reflect the amendments to the Settlement Report (all sub-flows, SAA-I014) required to support reporting on the Trading Neutrality Band and Neutral Price;
- Amendment to the Reporting Catalogue, sections 3.1.1, 3.1.2 and 3.1.3 to reflect the amendments to the Settlement Report (all sub-flows, SAA-I014) required to support reporting on the Trading Neutrality Band and Neutral Price;
- Amendment to the Settlement Administration Agent (SAA) Service Description, sections 1.4, 2.6, 3.36 and 3.51 to reflect the requirement to receive and load the Neutral Price, and revisions to the Trading Neutrality Band and utilise these in settlement calculations;
- Impact on the BSC Systems, specifically the Settlement Administration Agent (SAA) in the development and implementation of the proposed Modification;
- Potential increases in payments due under BSC Agent Contracts to support the requirements for receipt and loading of the Neutral Price and revisions to the value of the Trading Neutrality Band;
- Recovery, via Section D of the Code, of costs attributable to the implementation of the proposed Modification;
- Impact on ELEXON from the requirement to determine, notify to SAA and post on the BSC Website the Neutral Price, as well as notifying to SAA and parties any revisions to the value of the Trading Neutrality Band, as well as the requirement to manage any contracts with Exchanges required to determine the Neutral Price;
- Impact on parties as a consequence of the amendments to the Settlement Report (SAA-I014) to include the Neutral Price;

- Potential impact on the Connection Use of System Code (CUSC) as a consequence of the potential amendment to energy imbalance compensation payments resulting from the implementation of this Modification; and
- No impact on the statutory, regulatory and contractual framework within which the Code sits.

9 SUMMARY OF REPRESENTATIONS

Two responses have been received from Modification Group Members and the Panel has requested that these be included in this Modification Report for consultation. Therefore these responses are provided in ANNEX 1 for information. These will be summarised once the rest of the responses have been received.

10 TRADING NEUTRALITY BAND ANALYSIS

10.1 Introduction

Supporting information from both the Automated Power Exchange (APX) and UKPX is included in Section 13 of this Modification Report. Therefore the data presented in this section should be considered in conjunction with the exchange data.

All of the analysis in sections 10, 11 and 12 of this Modification Report is based upon the high level information available (freely in the case of APX, and as a member from UKPX[2]) on the UKPX and APX websites[3], and is therefore at a higher level than that required to support fully the analysis detailed here.

It should be noted that all referenced graphs are attached in a separate ANNEX, ANNEX 3 (in the form of Excel spreadsheets), and all of the supporting data that was used in plotting the graphs is attached in table form in ANNEX 2 of this Modification Report.

It should be noted that "UKPX" and "UKPX Reference Price Data" are trade marks of OM AB.

10.2 Trading Neutrality Band Analysis

In order to support the determination of the most appropriate value for the Trading Neutrality Band, the (absolute) volumes of Energy Imbalance (MWh) were collated for all Parties and Settlement Periods from 02 October to 17 October 2001 inclusive. This date range was chosen as it is:

1. A time period since the implementation of Modification P18A, and therefore Energy Imbalance prices are representative of this; and
2. A time period for which Initial Settlement information is available.

The analysis looked initially at the counts of Imbalance Volume level across all Parties and Settlement Periods in the chosen timescale, and provided a percentage value (a percentage over all counts, not volume) for each Imbalance Volume level. It should be noted that the analysis deliberately excluded zero Imbalance volumes, as these do not incur imbalance costs, and including them in the analysis gives unrepresentative results.

10.2.1 Graph 1: QAEI[4] Distribution from 02 to 17 October 2001 for All Parties.

From this graph and the supporting data, it can be seen that forty percent of instances of imbalance are 1 MWh or less, and over half (52%) of all instances of imbalance are less than 2 MWh. Note that the format of the graph is such that the scale of counts (relating to the bars) is on the left, and the percentage scale is on the right.

10.2.2 Graph 2: 'QAEI Distribution from 02 to 17 October 2001 for All Parties – Energy Imbalance Volume: 1 MWh to 25 MWh'.

This graph contains the same information as Graph 1, but over a reduced span of Imbalance volume (1 to 25 MWh, instead of 1 to >900 as represented in Graph 1), in order to provide a more detailed view of the information.

[2] "UKPX" is a trade mark of OM AB.
[3] www.ukpx.com and www.apx.com respectively.
[4] QAEI – Account Energy Imbalance Volume (MWh).

The same analysis was then applied in turn at each of the Production and Consumption Energy Accounts over all Parties.

10.2.3 Graph 3: QAEI Distribution over Production Energy Accounts: 02 to 17 October 2001.

10.2.4 Graph 4: QAEI Distribution over Consumption Energy Accounts: 02 to 17 October 2001.

10.2.5 Graph 5: QAEI Distribution 02 to 17 October 2001 for 'Small' Parties.

The analysis then centred on 'Small' Parties in order to determine whether the trends there were similar to those seen across all Parties. The boundary for being a 'small' Party was arbitrarily deemed to be an Account Credited Energy Volume of between –100 and +100 MWh in a Settlement Period. Therefore only accounts with a Credited Energy Volume in this range were subject to this analysis.

10.2.6 Graph 6: QAEI Distribution over 'Small' Party Production Accounts: 02 to 17 October 2001

The analysis then looked in turn at each of the Production and Consumption Energy Accounts of these small parties, and, therefore, at the counts of Imbalance Volume level across all small Parties Production Energy Account, Consumption Energy Account and Settlement Periods in the chosen timescale, and provided a percentage value (a percentage over all counts) for each Imbalance Volume level.

10.2.7 Graph 7: QAEI Distribution over 'Small' Party Consumption Accounts: 02 to 17 October 2001

From the analysis of the small party energy imbalance volume counts, it can be seen that there is a divergence from the trends noted across all Parties, in that the number of counts falling within 1 MWh Energy Imbalance Volume is significantly higher for smaller parties.

10.3 Trading Neutrality Band conclusions:

The analysis indicates that:

- Across all Parties, 40% of counts are <= 1MWh, and 52 % of counts are <= 2MWh;
- Across the Production Accounts of all Parties, 45% of counts are <= 1MWh, and 58 % of counts are <= 2MWh;
- Across all small Parties (QCEiaj = -100 to +100 MWh), 64% of counts are <= 1MWh;
- Across the Production Accounts of all small Parties, 73% of counts are <= 1MWh; and
- Across the Consumption Accounts of small Parties, 53% of counts are <= 1MWh.

This indicates that a Trading Neutrality Band set to a value as low as 1 MWh would potentially exclude around half of the occurrences of imbalance entirely from imbalance settlement, i.e. the application of System Buy and System Sell Price.

Information on the granularity of the power exchanges was requested from the exchanges in order to provide a view of the actual level of trading granularity and liquidity in the forwards / spot markets, which could be utilised in conjunction with the settlement information to determine the most

appropriate level for the Trading Neutrality Band[5]. This information is provided in Section 13 of this Modification Report and therefore that analysis should be considered in conjunction with the information presented in Section 10 of this Modification Report.

[5] As the intent of the Trading Neutrality Band is to compensate for a perceived inability to (economically) trade smaller volumes of energy on the forwards and spot markets.

11 NEUTRAL PRICE ANALYSIS

The Pricing Issues Modification Group recommended that the Neutral Price be the last 'policed' trade price from the UKPX. Information on the last traded price was requested by ELEXON from UKPX, but at the time of issuing this report, the information has not been received, therefore no analysis has been undertaken using the last traded UKPX price as the Neutral Price.

In order to assist the Panel in the determination of the requisite methodology for the calculation of the Neutral Price, the Panel also requested that analysis be undertaken utilising a weighted average exchange price for each Settlement Period, and to this end, information on the volumes traded and the associated prices was requested from both UKPX and APX by ELEXON. However, at the time of issuing this report, the information received is at an insufficient level of detail to perform such analysis and therefore a true weighted average could not be calculated and utilised.

However, a comparison of available data was undertaken for each Settlement Period across the week 01 to 07 October 2001 (inclusive) – namely:

- System Buy and System Sell Price;
- UKPX Reference Price Data[6], taken from the UKPX website;
- APX Reference Price, taken from the APX website; and
- Weighted Average Price (WAP) calculated utilising information available on the UKPX and APX website.

The Weighted Average Price represents only a very rough approximation and was calculated as follows:

UKPX publish a total traded volume and UKPX Reference Price Data (weighted average) for each Settlement Period.

APX publish a total traded volume for each Settlement Day, and therefore to get an approximate traded volume for each Settlement Period, the total volume was divided by 48.

APX also publish a Reference Price (weighted average) across six blocks, each of 4 hours (Block 1 = 23:00 to 03:00, Block 2 = 03:00 to 07:00, Block 3 = 07:00 to 11:00, Block 4 = 11:00 to 15:00, Block 5 = 15:00 to 19:00, and Block 6 = 19:00 to 23:00).

For each Settlement Period, the weighted average was calculated by:

- Calculating a total traded volume – APX traded volume + UKPX traded volume;
- The APX and UKPX traded volumes were then calculated as a percentage of the total traded volume;
- The weighted Average Price was then calculated as – [UKPX Reference Price Data multiplied by the UKPX percentage traded volume] plus [APX Reference Price multiplied by the percentage APX traded volume].

The following graphs represent the comparison of the System Sell Price, System Buy Price, (SSP and SBP are referenced as EIP in the graph titles – i.e. Energy Imbalance Price) UKPX Reference Price Data, APX Reference Price and Weighted Average Price across all Settlement Periods for the week 01 October to 07 October 2001.

[6] "UKPX Reference Price Data" and "UKPX" are trademarks of OMAB.

Each of the graphs below represent the same information, but with different scales. Graphs 8, 9, 10, 11, 12, 13 and 14 all have the same scale for comparison (i.e. 'normalised' somewhat to enable accurate comparison across the whole week) and graphs 8a, 9a, 10a, 11a, 12a, 13a and 14a show the data on the scale most appropriate to include all the points.

11.1.1 Graph 8 and Graph 8a: 01 Oct 01 EIP vs Exchange RP

11.1.2 Graph 9 and Graph 9a: 02 Oct 01 EIP vs Exchange RP

11.1.3 Graph 10 and Graph 10a: 03 Oct 01 EIP vs Exchange RP

11.1.4 Graph 11 and Graph 11a: 04 Oct 01 EIP vs Exchange RP

11.1.5 Graph 12 and Graph 12a: 05 Oct 01 EIP vs Exchange RP

11.1.6 Graph 13 and Graph 13a: 06 Oct 01 EIP vs Exchange RP

11.1.7 Graph 14 and Graph 14a: 07 Oct 01 EIP vs Exchange RP

In summary:

- On the 1 October 2001 the WAP exceeded the SSP for all Settlement Periods, and the WAP was less than the SBP for all but 4 Settlement Periods;
- On the 2 October 2001 the WAP exceeded the SSP for all Settlement Periods, and the WAP was less than the SBP for all but 7 Settlement Periods;
- On the 3 October 2001 the WAP exceeded the SSP for all Settlement Periods, and the WAP was less than the SBP for all but 18 Settlement Periods;
- On the 4 October 2001 the WAP exceeded the SSP for all Settlement Periods but one (where SSP was negative), and the WAP was less than the SBP for all but 20 Settlement Periods;
- On the 5 October 2001 the WAP exceeded the SSP for all Settlement Periods, and the WAP was less than the SBP for all but 22 Settlement Periods;
- On the 6 October 2001 the WAP exceeded the SSP for all Settlement Periods, and the WAP was less than the SBP for all Settlement Periods; and
- On the 7 October 2001 the WAP exceeded the SSP for all but three Settlement Periods, and the WAP was less than the SBP for all but 5 Settlement Periods.

11.2 Neutral Price Conclusions

Without analysis of the information from the exchanges on the cost of trading energy, it is difficult to say whether the Neutral prices utilised for this analysis, namely the Weighted Average Price, is sufficiently representative of the cost of trading on the exchanges (which is the intent of the Neutral Price).

The analysis indicates that any value for the Neutral Price based upon exchange prices has a material impact on the system cashflows. The comparison of the Exchange Reference Prices and Weighted Average Price with the System Buy and System Sell Price indicate that the Neutral Price is often two to three times greater than the System Sell Price (although this reduces during daylight hours), and is, in

the majority of cases, materially less than the System Buy Price (although it is believed that as a consequence of the increasing tendency for the System Buy Price to default, the Neutral Price will exceed the System Buy Price more regularly).

Therefore, this has the implication that cashflows from the system (to Energy Imbalance volumes subject to the System Sell Price, and therefore cashflows from the system to Parties (unless the SSP is negative)), will increase proportionally if the WAP is applied to Energy Imbalance Volumes instead of SSP.

The comparison also indicates that cashflows into the system (applied to Energy Imbalance volumes subject to the System Buy Price, and therefore cashflows into the system from Parties) will decrease proportionally for the vast majority of Settlement Periods if the WAP is applied to Energy Imbalance volumes instead of SBP (unless the WAP is greater than SBP).

Both of these factors, as they will operate in conjunction, will have an overall effect of decreasing the Residual Cashflow Reallocation Cashflow, to a point where it may increasingly be negative (and therefore become a charge) for the majority of Settlement Periods.

12 EFFECT ON ENERGY IMBALANCE CASHFLOWS FROM THE IMPLEMENTATION OF VARIOUS VALUES OF THE TRADING NEUTRALITY BAND

The affect of applying the Weighted Average Price (WAP) (as calculated previously) onto Energy Imbalance Volumes and Energy Imbalance Cashflows, for various values of the Trading Neutrality Band was investigated by applying different values of Trading Neutrality Band to actual Energy Imbalance volumes and Energy Imbalance Cashflows for four Settlement Periods (7 (03:00 – 03:30), 19 (09:00 – 09:30), 32 (15:30 – 16:00) and 47 (23:00 – 23:30)) on Settlement Day 01 October 2001. These Settlement Periods were chosen as they represent early morning, peak morning, mid afternoon and late evening, and should therefore be relatively representative of the trading trends over the whole day.

Trading Neutrality Band values of 1 MWh, 2 MWh, 3 MWh, 4 MWh, 5 MWh, 10 MWh and 15 MWh[7] were applied to actual Energy Imbalance Volumes, and the Neutral Price (Weighted Average Price) applied accordingly. Energy Imbalance cashflows were recalculated to accord with the Trading Neutrality Band and Neutral Price calculations (as defined in the amendments to the Code required to support this Modification, Section T 4.7.1).

The results are displayed as a percentage variation on Energy Imbalance cashflows for both cashflows from the system (i.e. Energy Imbalance subject to the System Sell Price) and cashflows into the system (i.e. Energy Imbalance subject to the System Buy Price). It should be noted that each line in each table represents the change in cashflow for an actual volume of Energy Imbalance and the associated Energy Imbalance cashflow.

The graphs have TNB 0 represented on them for comparison (i.e. the current situation, without the application of TNB), and for clarification, this is represented in all cases as 100% for all count values.

The category axis (i.e. the bottom line of the graph) is a count of the parties who have a physical imbalance, and therefore an associated Energy Imbalance cashflow in that Settlement Period. The percentages are based on the difference from the original Energy Imbalance Cashflow for each value of the Trading Neutrality Band.

The tables supporting these graphs contain the percentages. However, for clarification, tables containing the actual cashflows and energy imbalance have been provided in ANNEX 2 (but not in graph format, as a consequence of the vast difference in the physical cashflows).

12.1.1 Graph 15: SP[8] 7 01 October 2001: Percentage Increase in Energy Imbalance Cashflows to Parties

12.1.2 Graph 15a: SP 7 01 October 2001: Percentage Decrease in Energy Imbalance Cashflows from Parties

12.1.3 Graph 16: SP19 01 October 2001: Percentage Increase in Energy Imbalance Cashflows to Parties

12.1.4 Graph 16a: SP19 01 October 2001: Percentage Decrease in Energy Imbalance Cashflows from Parties

[7] The Panel indicated that 20MWh was too high, as it excluded, in entirety, the vast majority (>80%) of Parties from the application of SSP and / or SSP. Therefore, only values of TNB less than 20MWh were investigated.
[8] SP = Settlement Period.

12.1.5 Graph 17: SP32 01 October 2001: Percentage Increase in Energy Imbalance Cashflows to Parties

12.1.6 Graph 17a: SP32 01 October 2001: Percentage Decrease in Energy Imbalance Cashflows from Parties

12.1.7 Graph 18: SP47 01 October 2001: Percentage Increase in Energy Imbalance Cashflows to Parties

12.1.8 Graph 18a: SP47 01 October 2001: Percentage Decrease in Energy Imbalance Cashflows from Parties

12.2 Affect on Energy Imbalance Cashflows Conclusions

The analysis undertaken to determine the affect of the application of different values of the Trading Neutrality Band and a Neutral Price (Weighted Average Price, calculated as defined in Section 11) on actual settlement cashflows for the relevant Settlement Periods, supports the conclusions drawn in Section 11.2, namely that (generally) for any value of Trading Neutrality Band, cashflows into the system decrease and cashflows out of the system increase.

13 EXCHANGE ANALYSIS

Information has been received from Automated Power Exchange (APX) and UKPX[9]. ELEXON have been requested by both exchanges to publish the data in graph format only, with the supporting data remaining confidential to ELEXON and the relevant exchange. Therefore there is no supporting data provided in table format in ANNEX 2 and the associated graphs are provided in Adobe Acrobat format (ANNEX 3).

The data provided was:

- APX provided a cumulative percentage of trades, by size, since go-live and for November 2001; and
- UKPX provided a breakdown by Settlement Period of all (individual) trades - volumes and associated price (£/MWh), for Within Day Sunday 18 and Monday 19 November and Day Ahead Monday 19 and Tuesday 20 November 2001 (traded on 18 and 19 November respectively).

As a consequence of the level of detail provided and the date range of such information, it has not been possible to provide an analysis which combines settlement data and exchange data.

13.1 UKPX Data Analysis

The analysis of the UKPX exchange data is aimed at providing an indicative view of the granularity and liquidity of the exchange for the dates provided.

For the dates provided (Sunday 18 November, within day, Monday 19 November day ahead[10], 19 November within day and Tuesday 20 November day ahead), the number of trades of specific volumes are represented, against a cumulative percentage for each volume.

13.1.1 Graph 19: 18 November 2001: UKPX Within Day Traded Volumes

13.1.2 Graph 20: 19 November 2001: UKPX Day Ahead Traded Volumes (Traded on 18 November)

13.1.3 Graph 21: 19 November 2001: UKPX Within Day Traded Volumes

13.1.4 Graph 22: 20 November 2001: UKPX Day Ahead Traded Volumes (Traded on 19 November)

In summary, these graphs indicate that:

- Within Day trading on the 18 November 2001 (for all Settlement Periods on the 18 November) – 20% of individual trades are for a trade volume of less than, or equal to, 5MWh, with 53% of individual trades falling within 20MWh;
- Day ahead trading on the 18 November 2001 (for all Settlement Periods on the 19 November) – 16% of individual trades are for a trade volume of less than, or equal to, 5MWh, with 41% of individual trades falling within 20MWh;
- Within Day trading on the 19 November 2001 (for all Settlement Periods on the 19 November) – 19% of individual trades are for a trade volume of less than, or equal to, 5MWh, with 41% of individual trades falling within 20MWh; and

[9] "UKPX" is a trade mark of OM AB.
[10] Although the trades are for Settlement Periods on the 19th October, they are traded day ahead on 18 October 2001.

- Day ahead trading on the 19 November 2001 (for all Settlement Periods on the 20 November) – 27% of individual trades are for a trade volume of less than, or equal to, 5MWh, with 59% of individual trades falling within 20MWh.

Based on three days worth of data, the size of trades seem relatively steady, with around 20% less than, or equal to 5 MWh and 40 to 50% less than, or equal to 20 MWh.

A price comparison was undertaken based upon the prices of individual trades. It should be noted that it is difficult to draw general conclusions, as prices are heavily dependent upon liquidity (and therefore Settlement Period). Prices can only be compared for different volumes where the associated trades are undertaken for the same / adjacent Settlement Period. This meant that the data could not be formatted and represented on volumes and price alone, but had to be represented in terms of the associated Settlement Periods.

To try and determine the trends of prices across traded volumes, (recognising the dependency upon the time of day the trade is being undertaken for), the traded volume, associated price and Settlement Period were represented on a set of graphs (for Within Day 18 November 2001 and Day Ahead 19 November 2001), as follows:

It should be noted that the graphs are split across groups of Settlement Periods to enable clarity in the representation of the data. The split is based upon the number of representations on the graph (avoiding overcrowding of data) and as a consequence the splits (and therefore the number of Settlement Periods represented on each graph) are arbitrary and not uniform.

13.1.5 Graph 23a: 18 November 2001: Traded Volume and Price for Settlement Periods 1 to 12 (00:00 – 06:00) - Within Day Trading

13.1.6 Graph 23b: 18 November 2001: Traded Volume and Price for Settlement Periods 13 to 18 (06:00 – 09:00) - Within Day Trading

13.1.7 Graph 23c: 18 November 2001: Traded Volume and Price for Settlement Periods 19 to 24 (09:00 – 12:00) Within Day Trading

13.1.8 Graph 23d: 18 November 2001: Traded Volume and Price for Settlement Periods 25 to 30 (12:00 – 15:00) - Within Day Trading

13.1.9 Graph 23e: 18 November 2001: Traded Volume and Price for Settlement Periods 31 to 34 (15:00 – 17:00) - Within Day Trading

13.1.10 Graph 23f: 18 November 2001: Traded Volume and Price for Settlement Periods 35 to 38 (17:00 – 19:00) - Within Day Trading

13.1.11 Graph 23g: 18 November 2001: Traded Volume and Price for Settlement Periods 39 to 42 (19:00 – 21:00) - Within Day Trading

13.1.12 Graph 23h: 18 November 2001: Traded Volumes and Price for Settlement Periods 43 to 46 (21:00 – 23:00) - Within Day Trading

13.1.13 Graph 23i: 18November 2001: Traded Volume and Price for Settlement Periods 47 to 48 (23:00 – 00:00) - Within Day Trading

13.1.14 Graph 24a: 19 November 2001: Traded Volume and Price for Settlement Periods 1 to 4 (00:00 – 02:00) - Day Ahead Trading (18 November 2001)

13.1.15 Graph 24b: 19 November 2001: Traded Volume and Price for Settlement Periods 5 to 8 (02:00 – 04:00) - Day Ahead Trading (18 November 2001)

13.1.16 Graph 24c: 19 November 2001: Traded Volume and Price for Settlement Periods 9 to 12 (04:00 – 06:00) - Day Ahead Trading (18 November 2001)

13.1.17 Graph 24d: 19 November 2001: Traded Volume and Price for Settlement Periods 13 to 16 (06:00 – 08:00) - Day Ahead Trading (18 November 2001)

13.1.18 Graph 24e: 19 November 2001: Traded Volume and Price for Settlement Periods 17 to 22 (08:00 – 11:00) - Day Ahead Trading (18 November 2001)

13.1.19 Graph 24f: 19 November 2001: Traded Volume and Price for Settlement Periods 23 to 26 (11:00 – 13:00) Day Ahead Trading (18 November 2001)

13.1.20 Graph 24g: 19 November 2001: Traded Volume and Price for Settlement Periods 27 to 30 (13:00 – 15:00) - Day Ahead Trading (18 November 2001)

13.1.21 Graph 24h: 19 November 2001: Traded Volume and Price for Settlement Periods 31 to 36 (15:00 – 18:00) - Day Ahead Trading (18 November 2001)

13.1.22 Graph 24i: 19 November 2001: Traded Volume and Price for Settlement Periods 37 to 40 (18:00 – 20:00) - Day Ahead Trading (18 November 2001)

13.1.23 Graph 24j: 19 November 2001: Traded Volume and Price for Settlement Periods 41 to 46 (20:00 – 23:00) - Day Ahead Trading (18 November 2001)

In summary, there appears to be relatively little correlation between price and volume. The price of a trade seems to be related more to the Settlement Period than the volume being traded.

This conclusion is further supported by the following graphs, which display the correlation between Trade Price (£/MWh) and Trade Volume (MWh) without the time association:

13.1.24 Graph 25: Graph 25: 18 November 2001 - UKPX Within Day (Trade Price vs Trade Volume)

13.1.25 Graph 26: Graph 26: 19 November 2001 - UKPX Day Ahead (Traded 18 November 2001) (Trade Price vs Trade Volume)

13.1.26 Graph 27: 19 November 2001 - UKPX Within Day (Trade Price vs Trade Volume)

13.1.27 Graph 28: 20 November 2001 - UKPX Day Ahead (Traded 19 November 2001) (Trade Price vs Trade Volume)

13.2 APX Data

APX provided their data in the form of a graph, as follows:

13.2.1 Graph 29: Number of Trades by Size (APX)

This graph provides a cumulative total of trade sizes since go-live, compared with November 2001. It can be seen that there is a marginal increase in smaller sized trades in November as compared to over the whole period, however, it should be noted that this increase is small. Approximately 12% of trades on the APX have been for volumes of less than or equal to 5MW, over both periods, and approximately 20% have fallen under 10MW (20 MWh).

ANNEX 1 – REPRESENTATIONS

Pending consultation

Two responses have been received from Members of the Pricing Issues Modification Group and these are attached for information:

Representation 1: Transmission Company

Incentives to Forward Contract for Energy with a Market Driven Trading Neutrality Band

At the BSC Panel meeting on 18 October the proposal for a Market Driven Trading Neutrality Band was discussed and further analysis was requested on the appropriate size of the Neutrality Band. A number of issues were raised at the Panel including the reduced incentive to Forward Contract.

Analysis of the interaction between the size of the Neutrality Band, the incentive to Forward Contract and the trading options available to BSC Parties has identified the following issue. All the energy traded by any size of Generator or Supplier could be traded within a Neutrality Band by using Multiple Energy Accounts. Even energy from individual BM Units can be shared between a number of Energy Accounts (each with its own Neutrality Band) using Metered Volume Reallocation (MVRNs).

Trading with Multiple Energy Accounts would allow any Company to trade all its energy at the Neutral Price without any imbalance exposure and without having any Forward Contracts in place. The remainder of this note gives two examples of how this could be implemented with a 20MWh Neutrality Band and examines the consequences of this approach on incentives to Forward Contract. The final part of the note lists suggestions for maintaining the incentive to Forward Contract.

Example A) Large Generator Multiple Energy Accounts

A Generating Company owns 2000MW of Generation in 400MW Generating Units. The Company establishes 50 Affiliate Companies which each register as BSC Parties with Energy Accounts. It is then able to use Proportional (or Fixed) MVRNs to allocate 10% of the energy output (or 40MW) from any one of the 400MW Generating Units to each of the 50 Affiliate Company Energy Accounts.

With a Trading Neutrality Band of 20MWh (40MW) per energy account then the company can spill all its output at the Neutral Price without any Forward Contracts or exposure to Imbalance Prices.

Example B) Large Supplier Multiple Energy Accounts

A large Supplier with a peak demand of 2000MW can adopt the same strategy as in Example A, buying all its demand at Neutral Price without any Forward Contracts or exposure to Imbalance Prices. In fact a Supplier has additional flexibility due to the rules for Supplier BM Units. A Supplier can reduce the size of almost any Supplier BM unit below the size of the Trading Neutrality Band, then by registering these to separate Affiliate Companies could achieve the same benefits without needing MVRNs.

Consequences of Multiple Energy Accounts to Maximise Trading Neutrality Band Benefits

1. No need to Forward Contract. Depending on the level of the Neutral Price (above or below the contract prices) this will either be attractive to generators or the suppliers. Hence it is likely that there would be significant reduction in the volume of Forward Contracts.
2. No exposure to the imbalance prices. All energy will be settled at the Neutral Price if the amount of energy traded in each account is less the magnitude of the Trading Neutrality Band.

3. If the Neutral Price is too high then a combination of the Neutrality Band and self-despatch would allow every Generator to schedule (and receive payment at the Neutral Price) for full output from their plant irrespective of the forecast system demand. If the Neutral Price is too low then insufficient generation may be scheduled by self-despatch to meet the forecast system demand, as Suppliers would be better off paying the Neutral Price. Any mismatches between self-despatch and demand will need to be met in the Balancing Mechanism, leading to a potential increase to Trading Parties in the sum of BSUoS and RCRC costs.

4. The only required extra BSC Charge to the BSC Party is the Base Monthly Charge for each Affiliate Company. This is £3k per year per BSC Party. There would some internal costs for the company in running the Affiliate Companies but these are unlikely to be prohibitive.

5. If a significant number of Parties adopt this approach the number of BSC Parties and Energy Accounts could increase to several thousands, increasing Central Systems costs.

Alternative Suggestions to Preserve to Incentive to Forward Contract

1. Reduce the Size of the Trading Neutrality Band

   This would increase the costs of implementing a Multiple Energy Account solution by requiring more energy account with smaller amounts in each account. However a lower Neutrality Band may just encourage the setting up of even more Affiliate Companies to gain the benefit.

2. Trading Neutrality Band Limited to Percentage of Credited Energy Volume

   This was an alternative proposal previously rejected by the Modification Group. It would limit the Trading Neutrality Band to the minimum of a fixed value (20MWh) and a percentage of the Credited Energy Volumes allocated to each Energy Account. This proposal would lead to optimal Energy Account size equal to the (fixed value * percentage/100). In order to overcome the identified problems the percentage would need to be low but this would result in small tolerance bands for Energy Accounts with low Credited Energy Volumes. Special provisions would need to be made for Interconnector Error Administrator Energy Accounts containing the Error Volumes associated with Interconnector User contracts without the Credited Energy Volumes.

3. Neutrality Band Associated with BM Units

   The alternative would prevent Large Generators from gaining a benefit from splitting the output between a number of energy accounts. The implementation of this solution would be complex and it would not prevent Suppliers from gaining benefits by registering Additional BM Units.

4. Restrict MVRN to 100% of BM Unit Metered Volume

   The alternative would prevent large Generators from gaining a benefit from splitting the output between a number of Energy Accounts. MVRNs currently in place may need to be withdrawn, and Suppliers would still be able to gain the benefits by registering Additional BM Units.

5. Groups of Affiliate Companies Can Only Have One Energy Account

This alternative would prevent benefits being achieved by using Affiliate Companies. Only one Energy Account (and hence only one Trading Neutrality Band) would be allowed for each group of Affiliate Companies. However, similar benefits could be achieved (albeit with increased costs) between Non-Affiliate Companies by appropriate contractual arrangements. Affiliate Companies currently trading independently from each other would be affected by this alternative.

Representation 2: The Proposer's Representative (Campbell-Carr)

Modification P26 - Incentives to Forward Contract for Energy with a Market Driven Trading Neutrality Band

A review of the NGC paper on splitting of energy accounts to take advantage of the trading neutrality band

Introduction

This is a short note written on behalf of the Proposer that reviews the NGC paper. In this note, the following is reviewed:

- Impact of not contracting forward on market prices
    - Impact on PN data and incentives to not generate
- True trading costs of taking an ex post position
    - Registration costs
    - Beer fund allocation
- NGC suggestions and their impact
- NGC's legitimate interest in the outcome

Impact of not contracting forward on market prices

Impact on market prices

Market prices tend to be driven by expected outcomes in the BM. If generators expect to make all their revenues by delivering on BM Offers in the BM then the market price will be heavily influenced by expected SBP. If generators do not contract ahead and submit zero PNs, then NGC will essentially be buying 100% of energy in the BM. Therefore, energy would only be offered in the power exchange at a price representing expected SBP and so the effect of going short would be to buy at SBP anyway in this type of market.

Under the Pool, at least 80% of delivered energy was covered by a future financial contract – a CfD. There is an obvious incentive on the market to seek such price risk avoidance and, in the market postulated in the NGC paper, CfDs would be struck, covering this price risk. The nature of a CfD as against a NETA contract is essentially that it is settled on ex post metered volume rather than ex ante contract volume. There is a potential exposure on a generator who's BM offer is not accepted if there is a CfD based on their metered output, which could be covered by spilling.

Impact on PN data and incentives to not generate

A generator that spilled would be in breach of Grid Code unless that spill was covered by a PN. There is therefore a reasonable expectation that, to the extent to which CfDs are struck, PNs will be in place. This will particularly cover slower ramping generation. For all rational parties:

$$PN = Ó \text{ contracts} + Ó \text{ CfDs}$$

The concern is therefore about additional spot energy being offered to NGC under this type of market. However, the market, in this scenario remains under-contracted – generators are only offering suppliers top-up via the BM. As stated, the market price will have moved close to SBP, with generators spilling at this price and suppliers topping up at the same price – an essentially one-price market.

However, in this scenario, we are in the same position as at present. There is an overwhelming incentive on suppliers to over-contract in the CfD market to avoid the price exposure. This will have an influence on overall CfD pricing but the general position is that the generators will submit PNs to match their CfD positions and the spill price will tend to sag towards SSP (an over-contracted market in which market price reflects over-deliveries).

It is far from clear that avoidance of exposure to SSP or SBP by sub-dividing your portfolio will lead to any different physical outcome.

True trading costs of taking an ex post position

Registration costs

Based on NGC's figure of £3k per year to register a 40MW account, this represents an approximate 10p/MWh trading charge, assuming about 90% load factor. For a supplier on a de facto 70% load factor, this represents about 12p. For a portfolio of peaking gensets, this could increase to about 20p. This must be compared to the potential imbalance price avoidance.

Beer fund allocation

This has been ignored by the NGC paper. Under the paper's view, nobody will be paying for imbalance and so there will be no beer fund. It is far likelier that most will not incur the management cost of portfolio subdivision in order to avoid imbalance and so the question is: what is the marginal cost of portfolio subdivision? This has to include beer fund foregone.

Beer fund is not payable on imbalances within the trading neutrality band (new T4.10.2). RCRP is calculated as:

a parties proportion of credited energy volume not within TNB /

national proportion of QCE not within TNB

The more that portfolios fall entirely with TNB, the greater the beer fund leverage in RCRP.

On current beer fund, likely to be about 60p on an annual basis, this is money foregone by portfolio subdivision.

NGC suggestions and their impact

1. Reduce the size of TNB

   This does obviously raise the cost of subdivision but there is no objective "optimal size" and there seems no good reason, if the Modification is deemed to better facilitate applicable objectives, why subdivision risk should be considered within the scope anyway.

2. Trading Neutrality Band limited to a percentage of QCE

   This seems to offer some form of incentive to not sub-divide accounts but at the expense of increasing the aggregate TNB pot. It was rejected by the Mod Group on the basis that it was not an alternative that addressed the defect the Mod was designed to correct.

3. Neutrality Band Associated with BM Units

   The defects are as pointed out in the NGC paper and it does not address the defect the Mod was designed for. Indeed, it makes the position worse because a small supplier already has 12 BMUs anyway.

4. Restrict MVRN to 100% of BM Unit Metered Volume

   Again, this is full of holes. It prevents legitimate risk sharing, which will make consolidation more difficult to implement.

5. Groups of affiliate companies can only have one energy account

   As noted, this affects freedom of contract in that independent affiliates will be prevented from trading separately.

NGC's legitimate interest in the outcome

In the final analysis, the BSC objectives are about efficient and economic operation. The judgement criteria in this case boil down to the questions:

1. Will imbalances increase?
   - There is no reason to suppose that larger participants will sub-divide their portfolios in order to not contract ahead and to rely more heavily on sales into the BM. They face increased price risk by so doing and suppliers will have an increased incentive to contract because the market price against which they are exposed will move.
   - There is good reason to assume that ex post contract notification (which is what is actually implied) will show up in FPNs that closely follow expected demand and so no reason to expect imbalance costs to increase.
2. Will many parties sub-divide their portfolios
   - There are manageable transaction costs in subdividing and these will pose a small potential increase in central systems by increasing the number of accounts. However, in ignoring the beer fund effect, the paper comes to misleading conclusions.
   - The phenomenon was never observed in the gas market because of the internal transaction costs (there were not even the equivalent of the £3k external transaction costs identified by NGC) and it seems unlikely that it will be worth portfolio's while to take advantage here – it is an all or nothing strategy: lots of little accounts to completely avoid imbalance costs or else aggregated accounts to get portfolio benefit (and a leveraged beer fund).
   - The benefits to generator portfolios are particularly poor because imbalances are usually small (except for trip risk).

ANNEX 2 – SUPPORTING ANALYSIS: DATA

Graph 1: QAEI Distribution from 01 to 17 October 2001 for All Parties.

Absolute Imbalance Volume (MWh)	Counts	Cumulative Total	Percentage
1	21448	21448	40%
2	5988	27436	52%
3	3138	30574	57%
4	2090	32664	61%
5	1712	34376	65%
6	1075	35451	67%
7	815	36266	68%
8	695	36961	69%
9	641	37602	71%
10	538	38140	72%
15	1995	40135	75%
20	1441	41576	78%
25	1141	42717	80%
30	977	43694	82%
35	760	44454	83%
40	658	45112	85%
45	482	45594	86%
50	456	46050	86%
60	669	46719	88%
70	619	47338	89%
80	640	47978	90%
90	571	48549	91%
100	602	49151	92%
110	537	49688	93%
120	510	50198	94%
130	469	50667	95%
140	447	51114	96%
150	405	51519	97%
160	234	51753	97%
170	237	51990	98%
180	208	52198	98%
190	149	52347	98%
200	157	52504	99%
300	401	52905	99%
400	142	53047	100%
500	84	53131	100%
600	41	53172	100%
700	40	53212	100%
800	29	53241	100%
900	6	53247	100%

Graph 2: 'QAEI Distribution from 01 to 17 Ocotber 2001 for All Parties – Energy Imbalance Volume: 1 MWh to 25 MWh' contains the same information as Graph 1, but over a reduced span of Imbalance volume (1 to 25 MWh, instead of 1 to >900 as represented in Graph 1), in order to provide a more detailed view of the information.

Graph 3: QAEI Distribution over Production Energy Accounts: 01 to 17 October 2001.

Absolute Imbalance Volume (MWh)	Counts	Cumulative Total	Percentage
1	14745	14745	45%
2	4329	19074	58%
3	2063	21137	65%
4	1416	22553	69%
5	1255	23808	73%
6	762	24570	75%
7	627	25197	77%
8	472	25669	78%
9	421	26090	80%
10	353	26443	81%
15	1362	27805	85%
20	914	28719	88%
25	626	29345	90%
30	529	29874	91%
35	365	30239	92%
40	269	30508	93%
45	166	30674	94%
50	127	30801	94%
60	184	30985	95%
70	164	31149	95%
80	166	31315	96%
90	108	31423	96%
100	91	31514	96%
110	113	31627	97%
120	95	31722	97%
130	81	31803	97%
140	112	31915	97%
150	129	32044	98%
160	45	32089	98%
170	79	32168	98%
180	96	32264	99%
190	69	32333	99%
200	35	32368	99%
300	194	32562	99%
400	66	32628	100%
500	31	32659	100%
600	37	32696	100%
700	28	32724	100%
800	15	32739	100%
900	2	32741	100%

Graph 4: QAEI Distribution over Consumption Energy Accounts: 01 to 17 October 2001.

Absolute Imbalance Volume (MWh)	Counts	Cumulative Total	Percentage
1	6704	6704	33%
2	1659	8363	41%
3	1075	9438	46%
4	674	10112	49%
5	457	10569	52%
6	313	10882	53%
7	188	11070	54%
8	223	11293	55%
9	220	11513	56%
10	185	11698	57%
15	633	12331	60%
20	527	12858	63%
25	515	13373	65%
30	448	13821	67%
35	395	14216	69%
40	389	14605	71%
45	316	14921	73%
50	329	15250	74%
60	485	15735	77%
70	455	16190	79%
80	474	16664	81%
90	463	17127	84%
100	511	17638	86%
110	424	18062	88%
120	415	18477	90%
130	388	18865	92%
140	335	19200	94%
150	276	19476	95%
160	189	19665	96%
170	158	19823	97%
180	112	19935	97%
190	80	20015	98%
200	122	20137	98%
300	207	20344	99%
400	76	20420	100%
500	53	20473	100%
600	4	20477	100%
700	12	20489	100%
800	14	20503	100%
900	4	20507	100%

Graph 5: QAEI Distribution 01 to 17 October 2001 for 'Small' Parties.

Absolute Imbalance Volume (MWh)	Counts	Cumulative Total	Percentage
1	12476	12476	64%
2	2540	15016	77%
3	1509	16525	85%
4	826	17351	89%
5	674	18025	93%
6	316	18341	94%
7	156	18497	95%
8	185	18682	96%
9	151	18833	97%
10	103	18936	97%
15	251	19187	99%
20	73	19260	99%
25	43	19303	99%
30	42	19345	99%
35	48	19393	100%
40	19	19412	100%
45	8	19420	100%
50	10	19430	100%
60	8	19438	100%
70	10	19448	100%
80	17	19465	100%
90	8	19473	100%

Graph 6: QAEI Distribution over 'Small' Party Production Accounts: 01 to 17 October 2001

Absolute Imbalance Volume (MWh)	Counts	Cumulative Total	Percentage
1	7691	7691	73%
2	972	8663	82%
3	524	9187	87%
4	246	9433	90%
5	334	9767	93%
6	123	9890	94%
7	56	9946	95%
8	72	10018	95%
9	56	10074	96%
10	47	10121	96%
15	158	10279	98%
20	57	10336	98%
25	37	10373	99%
30	40	10413	99%
35	48	10461	99%
40	10	10471	100%
45	8	10479	100%
50	9	10488	100%
60	4	10492	100%
70	7	10499	100%
80	15	10514	100%
90	5	10519	100%
100	2	10521	100%

Graph 7: QAEI Distribution over 'Small' Party Consumption Accounts: 01 to 17 October 2001

Absolute Imbalance Volume (MWh)	Counts	Cumulative Total	Percentage
1	4785	4785	53%
2	1568	6353	71%
3	985	7338	82%
4	580	7918	88%
5	340	8258	92%
6	193	8451	94%
7	100	8551	95%
8	113	8664	97%
9	95	8759	98%
10	56	8815	98%
15	93	8908	99%
20	16	8924	100%
25	6	8930	100%
30	2	8932	100%
35	0	8932	100%
40	9	8941	100%
45	0	8941	100%
50	1	8942	100%
60	4	8946	100%
70	3	8949	100%
80	2	8951	100%
90	3	8954	100%
100	3	8957	100%

Graph 8 and Graph 8a: 01 Oct 01 EIP vs Exchange RP

01 October 2001

SP	SSP	SBP	UKPX RPD[11]	APX RP	WAP
1	4.73	21.72	11.13	13.00	11.31
2	2.44	21.48	7.79	13.00	8.51
3	5.06	20.08	9.40	13.00	9.79
4	6.53	17.25	10.36	13.00	10.76
5	7.02	16.06	10.64	13.00	10.96
6	6.21	14.99	9.81	13.00	10.14
7	5.76	14.64	8.83	10.25	8.99
8	5.91	12.78	8.76	10.25	8.90
9	4.41	12.86	7.48	10.25	7.78
10	3.45	13.09	7.62	10.25	7.92
11	1.62	14.72	8.59	10.25	8.85
12	2.42	15.17	11.75	10.25	11.52
13	6.60	17.51	15.56	10.25	14.56
14	3.18	23.14	19.06	10.25	17.71
15	9.36	24.39	12.94	18.19	13.94
16	10.95	22.55	17.38	18.19	17.55
17	12.90	22.59	18.02	18.19	18.06
18	11.40	22.59	16.34	18.19	16.83
19	11.93	23.18	18.14	18.19	18.15
20	12.63	22.84	18.56	18.19	18.49
21	12.49	22.81	17.48	18.19	17.59
22	12.32	22.81	18.22	18.19	18.22
23	11.81	22.79	18.09	17.97	18.06
24	11.61	22.65	19.90	17.97	19.52
25	11.20	22.42	21.09	17.97	20.55
26	11.44	22.75	17.41	17.97	17.54
27	11.38	22.81	16.63	17.97	16.79
28	11.17	19.50	16.31	17.97	16.49
29	10.88	19.50	16.72	17.97	16.86
30	10.67	19.50	16.35	17.97	16.51
31	12.07	25.59	15.58	18.74	15.76
32	11.89	27.14	15.07	18.74	15.30
33	12.52	22.55	15.46	18.74	15.72
34	12.08	22.59	16.26	18.74	16.40
35	12.01	22.48	16.69	18.74	16.81
36	11.58	22.81	16.57	18.74	16.72
37	11.03	22.87	14.83	18.74	15.15
38	10.97	22.95	17.03	18.74	17.22
39	9.41	22.75	19.03	20.75	19.18
40	9.89	24.34	18.55	20.75	18.70
41	10.09	28.31	15.08	20.75	15.59
42	10.26	10.26	13.77	20.75	14.40
43	10.07	10.07	16.86	20.75	17.26
44	9.77	9.77	10.98	20.75	11.81
45	7.55	7.55	11.89	20.75	12.64
46	7.41	30.00	11.53	20.75	12.06
47	5.49	25.16	17.47	12.79	16.88
48	6.89	18.06	15.77	12.79	15.17

[11] "UKPX Reference Price Data" is a trademark of OM AB.

Graph 9 and Graph 9a: 02 Oct 01 EIP vs Exchange RP

02 October 2001

SP	SSP	SBP	UKPX RPD	APX RP	WAP
1	7.51	16.33	11.54	12.79	11.61
2	7.14	16.77	8.35	12.79	8.60
3	6.90	17.00	10.41	12.79	10.59
4	7.00	17.00	12.84	12.79	12.83
5	7.26	7.26	10.58	12.79	10.76
6	7.21	7.21	10.60	12.79	10.83
7	4.99	5.00	10.78	12.30	10.96
8	3.75	5.00	10.50	12.30	10.71
9	3.06	5.00	8.16	12.30	8.72
10	2.92	5.00	7.94	12.30	8.58
11	2.15	18.12	9.77	12.30	10.07
12	0.62	17.77	10.96	12.30	11.08
13	2.48	18.00	16.20	12.30	15.77
14	3.97	18.09	21.44	12.30	20.91
15	7.10	25.21	15.38	15.85	15.41
16	11.99	39.20	20.03	15.85	19.46
17	12.39	43.03	18.82	15.85	18.49
18	12.03	45.35	17.42	15.85	17.31
19	11.99	45.14	18.38	15.85	18.15
20	11.51	46.60	20.56	15.85	20.14
21	11.41	46.60	19.62	15.85	19.35
22	11.37	46.59	20.36	15.85	19.99
23	11.44	49.23	20.47	18.86	20.37
24	12.08	51.78	20.09	18.86	20.02
25	13.20	51.78	20.20	18.86	20.10
26	10.97	46.60	19.46	18.86	19.41
27	10.53	24.48	18.40	18.86	18.42
28	10.74	21.17	18.89	18.86	18.89
29	10.71	21.17	18.37	18.86	18.40
30	10.73	21.17	18.17	16.55	18.09
31	11.07	21.17	15.37	16.55	15.40
32	11.40	20.28	15.52	16.55	15.56
33	11.94	23.62	15.75	16.55	15.79
34	11.47	21.73	15.81	16.55	15.84
35	11.30	22.36	15.67	16.55	15.71
36	11.16	22.36	14.88	16.55	14.94
37	11.59	22.27	14.74	16.55	14.78
38	11.40	22.51	15.96	16.55	15.98
39	10.14	26.03	20.15	19.00	20.12
40	9.79	33.15	20.10	19.00	20.06
41	9.98	39.46	19.18	19.00	19.18
42	10.15	24.27	18.41	19.00	18.45
43	9.86	19.72	17.27	19.00	17.36
44	9.63	51.46	13.85	19.00	13.98
45	8.71	91.31	14.36	19.00	14.49
46	7.80	17.02	12.49	19.00	12.62
47	5.34	27.32	18.33	11.00	17.99
48	6.64	21.09	18.79	11.00	18.35

Graph 10 and Graph 10a: 03 Oct 01 EIP vs Exchange RP

03 October 2001

SP	SSP	SBP	UKPX RPD	APX RP	WAP
1	5.48	18.93	10.53	11.00	10.55
2	4.16	15.62	10.10	11.00	10.13
3	4.90	17.02	10.62	11.00	10.63
4	6.90	6.90	12.75	11.00	12.65
5	6.29	6.29	12.13	11.00	12.08
6	5.03	12.00	10.57	11.00	10.59
7	4.98	17.00	9.95	10.50	9.98
8	4.77	16.31	10.09	10.50	10.11
9	4.23	16.23	9.66	10.50	9.70
10	3.80	17.03	9.20	10.50	9.25
11	4.37	17.35	9.78	10.50	9.80
12	3.29	17.62	12.75	10.50	12.62
13	3.33	18.18	19.38	10.50	19.04
14	4.31	18.56	20.05	10.50	19.91
15	8.06	18.31	14.68	15.25	14.70
16	8.96	8.96	19.34	15.25	19.21
17	10.15	10.15	18.29	15.25	18.21
18	9.94	9.94	15.76	15.25	15.74
19	9.76	25.17	16.52	15.25	16.48
20	9.76	17.69	17.71	15.25	17.62
21	9.62	18.13	16.38	15.25	16.35
22	9.65	19.03	17.05	15.25	16.99
23	9.65	19.25	16.11	18.33	16.20
24	9.90	9.90	16.43	18.33	16.52
25	10.49	10.49	16.18	18.33	16.26
26	10.51	10.51	14.66	18.33	14.81
27	10.54	10.54	13.77	18.33	13.92
28	10.42	14.79	12.65	18.33	12.82
29	10.39	15.92	13.52	18.33	13.68
30	10.45	12.00	13.19	18.33	13.40
31	10.66	24.51	13.12	16.56	13.17
32	10.95	23.34	13.48	16.56	13.54
33	11.44	27.58	15.25	16.56	15.28
34	11.22	20.96	14.40	16.56	14.43
35	11.09	11.09	14.88	16.56	14.91
36	10.94	10.94	15.16	16.56	15.18
37	10.47	10.47	13.80	16.56	13.87
38	10.36	19.29	16.21	16.56	16.22
39	10.79	18.03	22.60	19.62	22.53
40	10.46	18.29	22.35	19.62	22.26
41	9.72	9.72	18.78	19.62	18.81
42	10.04	88.31	14.08	19.62	14.24
43	9.90	85.00	13.72	19.62	13.88
44	10.01	76.73	11.65	19.62	11.83
45	8.60	30.72	10.54	19.62	10.77
46	5.28	22.00	11.84	19.62	11.95
47	7.06	19.39	18.29	12.61	18.15
48	7.71	17.94	17.28	12.61	17.06

Graph 11 and Graph 11a: 04 Oct 01 EIP vs Exchange RP

04 October 2001

SP	SSP	SBP	UKPX RPD	APX RP	WAP
1	5.99	18.08	11.21	12.61	11.54
2	2.83	18.45	9.77	12.61	10.51
3	3.60	5.00	11.34	12.61	11.66
4	7.55	7.55	14.37	12.61	13.68
5	7.39	7.39	13.39	12.61	13.18
6	7.74	7.74	12.11	12.61	12.26
7	7.75	17.38	11.79	12.65	12.03
8	7.26	17.65	12.43	12.65	12.50
9	6.51	6.51	10.96	12.65	11.40
10	7.33	7.33	12.12	12.65	12.25
11	7.45	7.45	10.84	12.65	11.37
12	1.57	5.00	12.20	12.65	12.33
13	2.60	5.00	14.83	12.65	14.50
14	4.34	17.76	17.80	12.65	17.30
15	10.10	21.26	15.41	17.75	15.87
16	-1.49	31.23	23.64	17.75	22.46
17	3.74	5.00	18.85	17.75	18.62
18	9.66	9.66	17.47	17.75	17.60
19	11.60	15.31	19.63	17.75	19.04
20	11.56	18.29	19.31	17.75	18.80
21	11.44	11.44	17.98	17.75	17.93
22	10.96	15.31	18.65	17.75	18.41
23	11.75	17.00	18.67	16.50	18.29
24	11.84	53.31	18.92	16.50	18.45
25	11.96	20.31	18.80	16.50	18.35
26	11.90	20.31	18.52	16.50	18.22
27	11.68	18.63	18.44	16.50	18.05
28	11.80	16.24	16.56	16.50	16.54
29	10.95	29.29	15.13	16.50	15.46
30	10.92	62.66	14.81	16.50	15.16
31	10.84	17.42	14.10	15.88	14.27
32	10.61	17.58	14.00	15.88	14.20
33	11.74	21.61	15.45	15.88	15.52
34	12.57	19.37	14.59	15.88	14.72
35	13.04	18.29	15.13	15.88	15.23
36	12.08	12.08	15.43	15.88	15.47
37	11.60	19.87	14.14	15.88	14.31
38	12.75	23.19	17.55	15.88	17.32
39	10.95	28.26	23.72	20.75	23.32
40	10.22	49.54	22.73	20.75	22.51
41	10.18	123.89	19.80	20.75	19.96
42	10.03	21.27	18.11	20.75	18.66
43	9.92	14.86	16.37	20.75	17.28
44	9.94	23.90	11.68	20.75	12.66
45	8.89	18.17	13.99	20.75	15.00
46	6.05	17.69	12.30	20.75	13.23
47	5.13	16.46	18.61	13.78	18.14
48	6.79	16.94	16.78	13.78	16.39

Graph 12 and Graph 12a: 05 Oct 01 EIP vs Exchange RP

05 October 2001

SP	SSP	SBP	UKPX RPD	APX RP	WAP
1	6.58	17.39	11.05	13.78	11.49
2	4.96	17.40	11.00	13.78	11.33
3	3.04	17.44	11.33	13.78	11.68
4	5.29	17.36	15.06	13.78	14.69
5	3.66	17.50	11.20	13.78	12.02
6	5.85	17.50	10.35	13.78	11.25
7	6.07	17.47	10.43	12.50	11.03
8	4.65	17.49	9.83	12.50	10.35
9	4.75	17.50	9.75	12.50	10.24
10	5.16	17.50	9.14	12.50	9.80
11	5.27	17.44	9.96	12.50	10.50
12	6.38	16.79	13.70	12.50	13.45
13	3.66	17.71	15.23	12.50	14.79
14	6.81	17.44	20.08	12.50	19.31
15	11.96	30.25	14.64	19.35	15.13
16	12.37	29.72	18.11	19.35	18.23
17	11.96	17.00	18.42	19.35	18.58
18	13.01	13.01	18.85	19.35	18.97
19	13.08	13.08	19.97	19.35	19.88
20	12.64	12.64	19.92	19.35	19.82
21	12.54	12.54	20.75	19.35	20.47
22	12.57	12.57	21.30	19.35	20.93
23	12.60	23.84	20.52	16.39	19.95
24	13.02	22.41	21.35	16.39	20.44
25	13.52	24.16	22.19	16.39	21.40
26	12.62	12.62	20.99	16.39	20.44
27	11.91	19.32	19.55	16.39	19.17
28	11.51	11.00	17.24	16.39	17.14
29	11.54	11.00	17.07	16.39	16.95
30	12.84	11.00	16.75	16.39	16.71
31	12.99	11.50	14.99	15.42	15.04
32	12.82	12.82	15.09	15.42	15.13
33	12.65	12.65	15.68	15.42	15.63
34	12.78	90.31	15.95	15.42	15.91
35	12.42	12.42	16.16	15.42	16.06
36	11.57	11.57	15.76	15.42	15.70
37	11.65	11.65	15.97	15.42	15.92
38	12.29	17.70	20.00	15.42	19.57
39	10.30	16.08	27.37	19.85	26.76
40	10.31	15.61	26.75	19.85	26.05
41	10.11	23.39	21.84	19.85	21.59
42	10.21	98.13	19.58	19.85	19.65
43	7.78	17.02	13.02	19.85	14.22
44	6.46	6.46	13.03	19.85	13.70
45	9.68	18.50	13.57	19.85	14.81
46	8.62	30.00	13.91	19.85	14.35
47	9.80	17.04	19.51	13.60	18.82
48	9.71	25.31	19.22	13.60	18.40

Graph 13 and Graph 13a: 06 Oct 01 EIP vs Exchange RP

06 October 2001

SP	SSP	SBP	UKPX RPD	APX RP	WAP
1	5.85	27.21	12.26	13.60	12.38
2	11.69	24.94	10.22	13.60	10.55
3	10.72	26.40	11.79	13.60	12.02
4	7.69	28.30	13.79	13.60	13.75
5	5.03	26.80	11.34	13.60	11.81
6	4.17	27.04	10.12	13.60	10.64
7	3.88	27.03	10.59	13.58	11.39
8	4.23	25.50	9.36	13.58	10.35
9	3.48	22.91	9.87	13.58	10.51
10	3.24	21.00	8.94	13.58	9.74
11	3.71	21.00	10.80	13.58	11.16
12	2.67	21.00	10.64	13.58	11.30
13	1.34	19.14	13.64	13.58	13.62
14	3.23	18.66	16.90	13.58	16.20
15	6.07	22.65	11.52	18.50	11.86
16	6.81	24.30	16.48	18.50	16.78
17	9.45	21.51	14.67	18.50	15.25
18	9.58	22.06	16.02	18.50	16.51
19	14.54	22.89	19.40	18.50	19.19
20	10.16	24.11	19.08	18.50	19.01
21	10.13	24.26	18.58	18.50	18.56
22	13.02	24.68	19.76	18.50	19.56
23	12.32	24.76	19.60	17.19	19.29
24	12.24	23.96	18.14	17.19	17.99
25	11.52	24.78	19.98	17.19	19.55
26	10.14	29.08	16.77	17.19	16.85
27	9.91	24.93	15.38	17.19	15.71
28	10.38	19.29	15.26	17.19	15.58
29	4.11	23.12	15.20	17.19	15.51
30	2.29	25.48	13.36	17.19	13.74
31	5.70	30.23	11.17	13.50	11.31
32	5.94	28.40	13.44	13.50	13.44
33	5.96	32.14	13.66	13.50	13.65
34	8.17	27.60	12.45	13.50	12.49
35	9.54	31.76	13.14	13.50	13.16
36	9.67	45.04	14.72	13.50	14.64
37	10.02	36.84	14.07	13.50	14.03
38	10.21	30.63	20.27	13.50	19.83
39	13.17	38.13	24.69	18.41	24.30
40	11.36	36.84	23.63	18.41	23.32
41	9.90	44.82	19.33	18.41	19.28
42	8.34	78.30	17.35	18.41	17.39
43	7.26	58.84	16.39	18.41	16.48
44	7.17	75.00	13.28	18.41	13.44
45	8.15	17.87	12.67	18.41	12.95
46	7.97	30.00	12.68	18.41	12.88
47	6.62	19.65	17.86	13.60	17.74
48	4.65	19.90	17.99	13.60	17.82

Graph 14 and Graph 14a: 07 Oct 01 EIP vs Exchange RP

07 October 2001

SP	SSP	SBP	UKPX RPD	APX RP	WAP
1	3.15	19.65	15.15	13.60	15.09
2	2.96	26.05	12.93	13.60	12.96
3	3.85	22.91	13.50	13.60	13.51
4	4.06	5.00	16.69	13.60	16.57
5	4.59	5.00	17.15	13.60	17.02
6	3.35	32.00	15.99	13.60	15.87
7	2.62	32.00	12.73	11.50	12.67
8	1.60	24.37	10.79	11.50	10.84
9	2.08	23.80	11.18	11.50	11.20
10	1.96	22.58	8.92	11.50	9.06
11	2.17	20.40	9.39	11.50	9.52
12	2.49	18.02	9.50	11.50	9.61
13	2.19	17.19	10.73	11.50	10.77
14	2.61	18.13	11.50	11.50	11.50
15	2.12	21.29	9.09	17.80	9.24
16	1.39	18.88	9.78	17.80	9.96
17	3.80	19.22	11.12	17.80	11.31
18	5.49	19.87	11.43	17.80	11.79
19	7.60	14.20	15.76	17.80	16.05
20	8.79	15.40	19.32	17.80	18.97
21	10.09	39.14	19.49	17.80	19.34
22	9.71	82.59	22.48	17.80	21.63
23	9.49	77.76	18.94	18.00	18.86
24	9.52	69.63	22.04	18.00	21.75
25	10.33	47.94	21.32	18.00	21.15
26	10.29	53.38	20.89	18.00	20.69
27	10.38	52.83	16.40	18.00	16.56
28	10.11	59.58	14.84	18.00	15.14
29	10.52	29.30	16.13	18.00	16.25
30	11.02	32.83	13.16	18.00	13.45
31	10.37	33.60	11.96	12.75	11.98
32	10.40	25.44	12.11	12.75	12.12
33	10.99	26.13	12.65	12.75	12.65
34	14.04	36.33	12.43	12.75	12.44
35	19.00	42.42	13.11	12.75	13.10
36	7.29	64.77	12.87	12.75	12.87
37	8.51	88.25	13.94	12.75	13.89
38	10.22	103.04	16.95	12.75	16.73
39	9.86	119.62	23.08	17.20	22.67
40	10.26	84.99	21.36	17.20	21.08
41	20.00	55.05	18.32	17.20	18.25
42	10.40	25.90	20.71	17.20	20.54
43	10.18	24.51	16.51	17.20	16.53
44	9.90	18.79	15.09	17.20	15.14
45	9.31	18.19	15.78	17.20	15.82
46	3.06	5.00	14.85	17.20	14.88
47	6.31	19.00	17.20	13.00	17.07
48	5.94	26.19	15.47	13.00	15.39

Graph 15: SP 7 01 October 2001: Percentage Increase in Energy Imbalance Cashflows to Parties

WAP = £8.99/MWh SSP = £5.76 / MWh

TNB 0	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
100.00	100.51	100.93	101.36	101.78	102.20	104.31	106.43
100.00	100.51	100.94	101.37	101.79	102.22	104.36	106.49
100.00	100.54	100.99	101.44	101.89	102.34	104.60	106.86
100.00	100.64	101.20	101.75	102.31	102.87	105.65	108.43
100.00	100.82	101.55	102.28	103.01	103.74	107.39	111.05
100.00	100.86	101.63	102.41	103.18	103.95	107.82	111.68
100.00	100.89	101.69	102.49	103.30	104.10	108.11	112.12
100.00	101.03	101.98	102.92	103.87	104.82	109.55	114.27
100.00	102.00	103.91	105.81	107.72	109.63	119.17	128.71
100.00	103.67	107.25	110.83	114.41	118.00	135.91	153.83
100.00	104.62	109.14	113.67	118.20	122.72	145.35	156.22
100.00	104.97	109.86	114.75	119.64	124.53	148.97	156.21
100.00	105.35	110.62	115.88	121.14	126.40	152.71	156.22
100.00	106.41	112.72	119.03	125.34	131.65	156.23	156.23
100.00	107.14	114.18	121.22	128.26	135.30	156.23	156.23
100.00	109.00	117.91	126.83	135.74	144.66	156.20	156.20
100.00	111.03	121.99	132.95	143.90	154.86	156.20	156.20
100.00	112.37	124.67	136.97	149.27	156.18	156.18	156.18
100.00	115.33	130.57	145.80	156.22	156.22	156.22	156.22
100.00	115.36	130.64	145.93	156.19	156.19	156.19	156.19
100.00	121.55	143.02	156.19	156.19	156.19	156.19	156.19
100.00	130.20	156.28	156.28	156.28	156.28	156.28	156.28
100.00	144.82	156.30	156.30	156.30	156.30	156.30	156.30
100.00	146.90	156.22	156.22	156.22	156.22	156.22	156.22
100.00	156.35	156.35	156.35	156.35	156.35	156.35	156.35
100.00	156.18	156.18	156.18	156.18	156.18	156.18	156.18
100.00	156.06	156.06	156.06	156.06	156.06	156.06	156.06
100.00	156.13	156.13	156.13	156.13	156.13	156.13	156.13
100.00	156.12	156.12	156.12	156.12	156.12	156.12	156.12
100.00	156.20	156.20	156.20	156.20	156.20	156.20	156.20
100.00	156.14	156.14	156.14	156.14	156.14	156.14	156.14
100.00	156.08	156.08	156.08	156.08	156.08	156.08	156.08
100.00	156.71	156.71	156.71	156.71	156.71	156.71	156.71
100.00	155.76	155.76	155.76	155.76	155.76	155.76	155.76
100.00	157.93	157.93	157.93	157.93	157.93	157.93	157.93
100.00	155.28	155.28	155.28	155.28	155.28	155.28	155.28
100.00	179.80	179.80	179.80	179.80	179.80	179.80	179.80

Graph 15a: SP 7 01 October 2001: Percentage Decrease in Energy Imbalance Cashflows from Parties

WAP = £8.99/MWh SBP = £14.64 / MWh

TNB 0	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
100.00	59.93	59.93	59.93	59.93	59.93	59.93	59.93
100.00	62.24	62.24	62.24	62.24	62.24	62.24	62.24
100.00	61.13	61.13	61.13	61.13	61.13	61.13	61.13
100.00	61.34	61.34	61.34	61.34	61.34	61.34	61.34
100.00	61.43	61.43	61.43	61.43	61.43	61.43	61.43
100.00	61.58	61.58	61.58	61.58	61.58	61.58	61.58
100.00	61.38	61.38	61.38	61.38	61.38	61.38	61.38
100.00	61.48	61.48	61.48	61.48	61.48	61.48	61.48
100.00	61.47	61.47	61.47	61.47	61.47	61.47	61.47
100.00	61.43	61.43	61.43	61.43	61.43	61.43	61.43
100.00	61.41	61.41	61.41	61.41	61.41	61.41	61.41
100.00	61.39	61.39	61.39	61.39	61.39	61.39	61.39
100.00	61.41	61.41	61.41	61.41	61.41	61.41	61.41
100.00	61.41	61.41	61.41	61.41	61.41	61.41	61.41
100.00	72.05	61.40	61.40	61.40	61.40	61.40	61.40
100.00	72.89	61.38	61.38	61.38	61.38	61.38	61.38
100.00	72.96	61.41	61.41	61.41	61.41	61.41	61.41
100.00	77.06	61.38	61.38	61.38	61.38	61.38	61.38
100.00	78.54	61.39	61.39	61.39	61.39	61.39	61.39
100.00	86.87	73.78	61.38	61.38	61.38	61.38	61.38
100.00	90.25	80.52	70.80	61.39	61.39	61.39	61.39
100.00	91.64	83.31	74.98	66.66	61.39	61.39	61.39
100.00	92.33	84.70	77.06	69.43	61.79	61.39	61.39
100.00	93.56	87.15	80.74	74.33	67.91	61.39	61.39
100.00	93.86	87.74	81.63	75.51	69.39	61.39	61.39
100.00	94.34	88.70	83.06	77.42	71.78	61.39	61.39
100.00	97.64	95.32	92.99	90.67	88.34	76.72	65.09
100.00	98.16	96.35	94.53	92.72	90.91	81.85	72.78
100.00	99.39	98.81	98.24	97.66	97.08	94.18	91.29
100.00	99.79	99.61	99.43	99.25	99.07	98.16	61.39

Graph 16: SP19 01 October 2001: Percentage Increase in Energy Imbalance Cashflows to Parties

WAP = £18.15/MWh SSP = £11.93 / MWh

TNB 0	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
100.00	100.02	100.10	100.18	100.26	100.34	100.75	101.16
100.00	100.20	100.46	100.71	100.97	101.23	102.53	103.82
100.00	100.25	100.56	100.86	101.17	101.48	103.03	104.57
100.00	100.26	100.58	100.90	101.21	101.53	103.13	104.72
100.00	100.26	100.59	100.91	101.24	101.56	103.19	104.82
100.00	100.33	100.72	101.10	101.49	101.88	103.82	105.76
100.00	100.78	101.62	102.47	103.31	104.15	108.37	112.59
100.00	100.82	101.69	102.57	103.45	104.32	108.71	113.09
100.00	101.10	102.26	103.42	104.58	105.74	111.55	117.35
100.00	101.25	102.57	103.88	105.20	106.51	113.09	119.66
100.00	101.42	102.90	104.38	105.85	107.33	114.73	122.13
100.00	102.18	104.43	106.68	108.92	111.17	122.41	133.64
100.00	102.41	104.88	107.35	109.81	112.28	124.63	136.97
100.00	103.49	107.04	110.59	114.14	117.69	135.43	152.04
100.00	104.91	109.88	114.85	119.82	124.79	149.64	152.05
100.00	105.30	110.66	116.02	121.38	126.74	152.04	152.04
100.00	105.73	111.53	117.32	123.12	128.91	152.04	152.04
100.00	106.98	114.03	121.07	128.11	135.16	152.05	152.05
100.00	108.84	117.74	126.64	135.54	144.45	152.05	152.05
100.00	109.47	119.00	128.53	138.07	147.60	152.05	152.05
100.00	110.35	120.77	131.19	141.62	152.04	152.04	152.04
100.00	110.37	120.79	131.22	141.64	152.06	152.06	152.06
100.00	115.49	131.04	146.59	152.06	152.06	152.06	152.06
100.00	120.29	140.64	152.05	152.05	152.05	152.05	152.05
100.00	121.55	143.16	152.06	152.06	152.06	152.06	152.06
100.00	125.05	150.16	152.04	152.04	152.04	152.04	152.04
100.00	128.38	152.01	152.01	152.01	152.01	152.01	152.01
100.00	138.03	152.05	152.05	152.05	152.05	152.05	152.05
100.00	148.65	152.10	152.10	152.10	152.10	152.10	152.10
100.00	152.01	152.01	152.01	152.01	152.01	152.01	152.01
100.00	152.04	152.04	152.04	152.04	152.04	152.04	152.04
100.00	151.97	151.97	151.97	151.97	151.97	151.97	151.97
100.00	152.14	152.14	152.14	152.14	152.14	152.14	152.14
100.00	152.00	152.00	152.00	152.00	152.00	152.00	152.00
100.00	151.90	151.90	151.90	151.90	151.90	151.90	151.90
100.00	152.27	152.27	152.27	152.27	152.27	152.27	152.27
100.00	151.97	151.97	151.97	151.97	151.97	151.97	151.97
100.00	152.46	152.46	152.46	152.46	152.46	152.46	152.46
100.00	152.84	152.84	152.84	152.84	152.84	152.84	152.84
100.00	181.50	181.50	181.50	181.50	181.50	181.50	181.50
100.00	181.50	181.50	181.50	181.50	181.50	181.50	181.50
100.00	181.50	181.50	181.50	181.50	181.50	181.50	181.50

Graph 16a: SP19 01 October 2001: Percentage Decrease in Energy Imbalance Cashflows from Parties

WAP = £18.15/MWh SBP = £23.18 / MWh

TNB 0	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
100.00	90.75	90.75	90.75	90.75	90.75	90.75	90.75
100.00	90.75	90.75	90.75	90.75	90.75	90.75	90.75
100.00	75.63	75.63	75.63	75.63	75.63	75.63	75.63
100.00	78.09	78.09	78.09	78.09	78.09	78.09	78.09
100.00	78.29	78.29	78.29	78.29	78.29	78.29	78.29
100.00	78.29	78.29	78.29	78.29	78.29	78.29	78.29
100.00	78.23	78.23	78.23	78.23	78.23	78.23	78.23
100.00	78.32	78.32	78.32	78.32	78.32	78.32	78.32
100.00	78.36	78.36	78.36	78.36	78.36	78.36	78.36
100.00	78.35	78.35	78.35	78.35	78.35	78.35	78.35
100.00	78.34	78.34	78.34	78.34	78.34	78.34	78.34
100.00	78.30	78.30	78.30	78.30	78.30	78.30	78.30
100.00	78.33	78.33	78.33	78.33	78.33	78.33	78.33
100.00	85.52	78.29	78.29	78.29	78.29	78.29	78.29
100.00	86.24	78.30	78.30	78.30	78.30	78.30	78.30
100.00	89.22	78.44	78.29	78.29	78.29	78.29	78.29
100.00	90.51	81.01	78.30	78.30	78.30	78.30	78.30
100.00	97.46	94.91	92.37	89.82	87.28	78.30	78.30
100.00	97.60	95.20	92.79	90.39	87.98	78.31	78.31
100.00	97.69	95.38	93.06	90.75	88.43	78.30	78.30
100.00	98.33	96.66	94.99	93.32	91.65	83.29	78.30
100.00	98.96	97.92	96.88	95.84	94.80	89.60	84.40
100.00	99.58	99.15	98.72	98.29	97.86	95.72	93.58
100.00	99.73	99.46	99.18	98.91	98.63	97.26	95.89
100.00	99.73	99.46	99.18	98.91	98.63	97.26	95.89
100.00	99.75	99.49	99.23	98.97	98.71	97.42	96.12
100.00	99.75	99.49	99.23	98.97	98.71	97.42	96.13
100.00	99.93	99.85	99.77	99.69	99.61	99.22	98.82
100.00	99.97	99.93	99.90	99.86	99.82	99.64	99.46

Graph 17: SP32 01 October 2001: Percentage Increase in Energy Imbalance Cashflows to Parties

WAP = £15.30/MWh SSP = £11.89 / MWh

TNB 0	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
100.00	100.13	100.29	100.45	100.61	100.77	101.57	102.38
100.00	100.18	100.39	100.59	100.80	101.01	102.04	103.08
100.00	100.19	100.41	100.62	100.84	101.06	102.15	103.24
100.00	100.20	100.42	100.64	100.87	101.09	102.21	103.34
100.00	100.21	100.46	100.70	100.94	101.19	102.41	103.62
100.00	100.31	100.64	100.98	101.31	101.65	103.32	105.00
100.00	100.31	100.64	100.98	101.31	101.65	103.33	105.01
100.00	100.62	101.28	101.93	102.59	103.24	106.51	109.77
100.00	100.70	101.42	102.15	102.87	103.60	107.23	110.85
100.00	100.70	101.43	102.17	102.90	103.63	107.29	110.94
100.00	100.74	101.51	102.29	103.06	103.83	107.69	111.55
100.00	100.79	101.61	102.43	103.25	104.07	108.16	112.26
100.00	100.94	101.91	102.87	103.84	104.81	109.65	114.49
100.00	101.06	102.14	103.23	104.31	105.40	110.83	116.26
100.00	101.45	102.92	104.40	105.88	107.35	114.73	122.11
100.00	103.31	106.66	110.00	113.34	116.68	128.64	128.64
100.00	103.48	106.98	110.48	113.98	117.48	128.65	128.65
100.00	104.32	108.67	113.02	117.37	121.72	128.65	128.65
100.00	105.18	110.40	115.62	120.83	126.05	128.64	128.64
100.00	105.70	111.43	117.17	122.90	128.64	128.64	128.64
100.00	105.74	111.53	117.31	123.10	128.62	128.62	128.62
100.00	109.36	118.76	128.15	128.62	128.62	128.62	128.62
100.00	111.32	122.69	128.62	128.62	128.62	128.62	128.62
100.00	128.68	128.68	128.68	128.68	128.68	128.68	128.68
100.00	128.65	128.65	128.65	128.65	128.65	128.65	128.65
100.00	128.56	128.56	128.56	128.56	128.56	128.56	128.56
100.00	128.58	128.58	128.58	128.58	128.58	128.58	128.58
100.00	128.62	128.62	128.62	128.62	128.62	128.62	128.62
100.00	128.68	128.68	128.68	128.68	128.68	128.68	128.68
100.00	128.79	128.79	128.79	128.79	128.79	128.79	128.79
100.00	128.40	128.40	128.40	128.40	128.40	128.40	128.40
100.00	128.88	128.88	128.88	128.88	128.88	128.88	128.88
100.00	128.52	128.52	128.52	128.52	128.52	128.52	128.52
100.00	128.52	128.52	128.52	128.52	128.52	128.52	128.52
100.00	127.50	127.50	127.50	127.50	127.50	127.50	127.50
100.00	153.00	153.00	153.00	153.00	153.00	153.00	153.00

Graph 17a: SP32 01 October 2001: Percentage Decrease in Energy Imbalance Cashflows from Parties

WAP = £15.30/MWh SBP = £27.14 / MWh

TNB 0	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
100.00	61.20	61.20	61.20	61.20	61.20	61.20	61.20
100.00	57.38	57.38	57.38	57.38	57.38	57.38	57.38
100.00	56.93	56.93	56.93	56.93	56.93	56.93	56.93
100.00	56.24	56.24	56.24	56.24	56.24	56.24	56.24
100.00	56.26	56.26	56.26	56.26	56.26	56.26	56.26
100.00	56.46	56.46	56.46	56.46	56.46	56.46	56.46
100.00	56.32	56.32	56.32	56.32	56.32	56.32	56.32
100.00	56.46	56.46	56.46	56.46	56.46	56.46	56.46
100.00	56.41	56.41	56.41	56.41	56.41	56.41	56.41
100.00	56.42	56.42	56.42	56.42	56.42	56.42	56.42
100.00	56.41	56.41	56.41	56.41	56.41	56.41	56.41
100.00	56.37	56.37	56.37	56.37	56.37	56.37	56.37
100.00	56.36	56.36	56.36	56.36	56.36	56.36	56.36
100.00	56.40	56.40	56.40	56.40	56.40	56.40	56.40
100.00	56.40	56.40	56.40	56.40	56.40	56.40	56.40
100.00	56.39	56.39	56.39	56.39	56.39	56.39	56.39
100.00	58.62	56.39	56.39	56.39	56.39	56.39	56.39
100.00	61.74	56.35	56.35	56.35	56.35	56.35	56.35
100.00	66.66	56.39	56.39	56.39	56.39	56.39	56.39
100.00	68.38	56.40	56.40	56.40	56.40	56.40	56.40
100.00	69.29	56.39	56.39	56.39	56.39	56.39	56.39
100.00	78.17	56.38	56.38	56.38	56.38	56.38	56.38
100.00	82.63	65.25	56.38	56.38	56.38	56.38	56.38
100.00	91.70	83.37	75.05	66.73	58.41	56.38	56.38
100.00	93.14	86.26	79.38	72.50	65.62	56.38	56.38
100.00	93.41	86.80	80.20	73.59	66.98	56.39	56.39
100.00	93.57	87.11	80.66	74.20	67.75	56.39	56.39
100.00	97.92	95.82	93.72	91.62	89.52	79.03	68.53
100.00	97.95	95.89	93.82	91.75	89.69	79.35	69.02
100.00	98.39	96.77	95.14	93.51	91.89	83.76	75.63
100.00	98.48	96.95	95.41	93.88	92.34	84.66	76.98
100.00	98.56	97.11	95.66	94.20	92.75	85.47	78.20
100.00	98.86	97.70	96.54	95.38	94.22	88.43	82.63
100.00	99.14	98.26	97.38	96.51	95.63	91.24	86.84

Graph 18: SP47 01 October 2001: Percentage Increase in Energy Imbalance Cashflows to Parties

WAP = £16.88 / MWh **SSP = £5.49 / MWh**

TNB 0	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
100.00	101.27	102.45	103.63	104.81	106.00	111.90	117.81
100.00	102.22	104.36	106.49	108.62	110.76	121.42	132.09
100.00	102.74	105.40	108.05	110.71	113.36	126.63	139.91
100.00	103.12	106.15	109.17	112.20	115.23	130.36	145.50
100.00	103.42	106.74	110.07	113.40	116.72	133.36	149.99
100.00	104.46	108.83	113.19	117.56	121.93	143.76	165.59
100.00	105.06	110.04	115.02	119.99	124.97	149.85	174.73
100.00	108.39	116.70	125.01	133.31	141.62	183.15	224.68
100.00	114.01	127.94	141.86	155.79	169.71	239.33	307.74
100.00	119.27	138.46	157.64	176.82	196.00	291.91	307.75
100.00	128.11	156.13	184.15	212.17	240.19	307.74	307.74
100.00	133.51	166.95	200.38	233.81	267.24	307.72	307.72
100.00	136.16	172.21	208.27	244.33	280.38	307.78	307.78
100.00	146.08	192.06	238.04	284.02	307.75	307.75	307.75
100.00	148.90	197.72	246.55	295.37	307.72	307.72	307.72
100.00	148.94	197.80	246.66	295.53	307.69	307.69	307.69
100.00	168.20	236.28	304.36	307.84	307.84	307.84	307.84
100.00	174.68	249.27	307.75	307.75	307.75	307.75	307.75
100.00	175.31	250.54	307.72	307.72	307.72	307.72	307.72
100.00	205.64	307.72	307.72	307.72	307.72	307.72	307.72
100.00	274.31	307.92	307.92	307.92	307.92	307.92	307.92
100.00	307.47	307.47	307.47	307.47	307.47	307.47	307.47
100.00	307.79	307.79	307.79	307.79	307.79	307.79	307.79
100.00	307.90	307.90	307.90	307.90	307.90	307.90	307.90
100.00	308.09	308.09	308.09	308.09	308.09	308.09	308.09
100.00	307.93	307.93	307.93	307.93	307.93	307.93	307.93
100.00	307.95	307.95	307.95	307.95	307.95	307.95	307.95
100.00	307.88	307.88	307.88	307.88	307.88	307.88	307.88
100.00	307.15	307.15	307.15	307.15	307.15	307.15	307.15
100.00	307.15	307.15	307.15	307.15	307.15	307.15	307.15
100.00	307.56	307.56	307.56	307.56	307.56	307.56	307.56
100.00	308.41	308.41	308.41	308.41	308.41	308.41	308.41
100.00	308.03	308.03	308.03	308.03	308.03	308.03	308.03
100.00	307.72	307.72	307.72	307.72	307.72	307.72	307.72
100.00	305.95	305.95	305.95	305.95	305.95	305.95	305.95
100.00	253.20	253.20	253.20	253.20	253.20	253.20	253.20
100.00	253.20	253.20	253.20	253.20	253.20	253.20	253.20

Graph 18a: SP47 01 October 2001: Percentage Decrease in Energy Imbalance Cashflows from Parties

WAP = £16.88 / MWh **SBP = £25.16 / MWh**

TNB 0	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
100.00	67.52	67.52	67.52	67.52	67.52	67.52	67.52
100.00	67.52	67.52	67.52	67.52	67.52	67.52	67.52
100.00	67.52	67.52	67.52	67.52	67.52	67.52	67.52
100.00	64.92	64.92	64.92	64.92	64.92	64.92	64.92
100.00	67.16	67.16	67.16	67.16	67.16	67.16	67.16
100.00	67.02	67.02	67.02	67.02	67.02	67.02	67.02
100.00	67.16	67.16	67.16	67.16	67.16	67.16	67.16
100.00	67.20	67.20	67.20	67.20	67.20	67.20	67.20
100.00	67.21	67.21	67.21	67.21	67.21	67.21	67.21
100.00	67.11	67.11	67.11	67.11	67.11	67.11	67.11
100.00	67.06	67.06	67.06	67.06	67.06	67.06	67.06
100.00	67.06	67.06	67.06	67.06	67.06	67.06	67.06
100.00	67.09	67.09	67.09	67.09	67.09	67.09	67.09
100.00	67.08	67.08	67.08	67.08	67.08	67.08	67.08
100.00	69.30	67.09	67.09	67.09	67.09	67.09	67.09
100.00	74.36	67.08	67.08	67.08	67.08	67.08	67.08
100.00	76.81	67.09	67.09	67.09	67.09	67.09	67.09
100.00	78.57	67.08	67.08	67.08	67.08	67.08	67.08
100.00	80.90	67.08	67.08	67.08	67.08	67.08	67.08
100.00	81.50	67.08	67.08	67.08	67.08	67.08	67.08
100.00	90.14	80.29	70.44	67.09	67.09	67.09	67.09
100.00	92.68	85.37	78.05	70.74	67.09	67.09	67.09
100.00	93.12	86.23	79.35	72.47	67.09	67.09	67.09
100.00	94.59	89.19	83.78	78.37	72.97	67.09	67.09
100.00	94.75	89.50	84.25	79.00	73.75	67.09	67.09
100.00	97.40	94.80	92.21	89.61	87.01	74.03	67.09
100.00	97.42	94.84	92.25	89.67	87.09	74.19	67.09
100.00	97.44	94.89	92.34	89.78	87.23	74.46	67.09
100.00	97.56	95.13	92.69	90.26	87.83	75.66	67.09
100.00	99.24	98.49	97.74	96.99	96.24	92.48	88.72
100.00	99.28	98.56	97.84	97.12	96.40	92.81	89.21
100.00	99.80	99.60	99.40	99.20	99.00	98.01	97.02

Supporting Data for Graph 15 - SP 7 01 October 2001, indicating the change in Energy Imbalance Cashflows to Parties

QAEI (MWh)	TNB 0 (£)	TNB 1 (£)	TNB 2 (£)	TNB 3 (£)	TNB 4 (£)	TNB 5 (£)	TNB 10 (£)	TNB 15 (£)
0.0010	0.0000	-0.0090	-0.0090	-0.0090	-0.0090	-0.0090	-0.0090	-0.0090
0.0020	-0.0100	-0.0180	-0.0180	-0.0180	-0.0180	-0.0180	-0.0180	-0.0180
0.0190	-0.1100	-0.1708	-0.1708	-0.1708	-0.1708	-0.1708	-0.1708	-0.1708
0.0650	-0.3700	-0.5844	-0.5844	-0.5844	-0.5844	-0.5844	-0.5844	-0.5844
0.1490	-0.8600	-1.3395	-1.3395	-1.3395	-1.3395	-1.3395	-1.3395	-1.3395
0.1900	-1.0900	-1.7081	-1.7081	-1.7081	-1.7081	-1.7081	-1.7081	-1.7081
0.2500	-1.4400	-2.2475	-2.2475	-2.2475	-2.2475	-2.2475	-2.2475	-2.2475
0.3630	-2.0900	-3.2634	-3.2634	-3.2634	-3.2634	-3.2634	-3.2634	-3.2634
0.6620	-3.8100	-5.9514	-5.9514	-5.9514	-5.9514	-5.9514	-5.9514	-5.9514
0.7450	-4.2900	-6.6976	-6.6976	-6.6976	-6.6976	-6.6976	-6.6976	-6.6976
0.7850	-4.5200	-7.0572	-7.0572	-7.0572	-7.0572	-7.0572	-7.0572	-7.0572
0.8350	-4.8100	-7.5067	-7.5067	-7.5067	-7.5067	-7.5067	-7.5067	-7.5067
0.9520	-5.4800	-8.5585	-8.5585	-8.5585	-8.5585	-8.5585	-8.5585	-8.5585
1.0000	-5.7500	-8.9900	-8.9900	-8.9900	-8.9900	-8.9900	-8.9900	-8.9900
1.1990	-6.9000	-10.1362	-10.7790	-10.7790	-10.7790	-10.7790	-10.7790	-10.7790
1.2570	-7.2300	-10.4703	-11.3004	-11.3004	-11.3004	-11.3004	-11.3004	-11.3004
1.8670	-10.7400	-13.9839	-16.7843	-16.7843	-16.7843	-16.7843	-16.7843	-16.7843
2.6130	-15.0400	-18.2809	-21.5109	-23.4909	-23.4909	-23.4909	-23.4909	-23.4909
3.6710	-21.1300	-24.3750	-27.6050	-30.8350	-33.0023	-33.0023	-33.0023	-33.0023
3.6840	-21.2000	-24.4498	-27.6798	-30.9098	-33.1192	-33.1192	-33.1192	-33.1192
4.5620	-26.2600	-29.5071	-32.7371	-35.9671	-39.1971	-41.0124	-41.0124	-41.0124
5.1220	-29.4800	-32.7327	-35.9627	-39.1927	-42.4227	-45.6527	-46.0468	-46.0468
6.2950	-36.2300	-39.4892	-42.7192	-45.9492	-49.1792	-52.4092	-56.5921	-56.5921
7.9730	-45.8800	-49.1545	-52.3845	-55.6145	-58.8445	-62.0745	-71.6773	-71.6773
8.8940	-51.1800	-54.4594	-57.6894	-60.9194	-64.1494	-67.3794	-79.9571	-79.9571
10.6660	-61.3800	-64.6662	-67.8962	-71.1262	-74.3562	-77.5862	-93.7362	-95.8873
11.4820	-66.0800	-69.3663	-72.5963	-75.8263	-79.0563	-82.2863	-98.4363	-103.2232
12.4000	-71.3600	-74.6540	-77.8840	-81.1140	-84.3440	-87.5740	-103.7240	-111.4760
15.6640	-90.1500	-93.4546	-96.6846	-99.9146	-103.1446	-106.3746	-122.5246	-138.6746
29.4170	-169.2900	-172.6719	-175.9019	-179.1319	-182.3619	-185.5919	-201.7419	-217.8919
59.3360	-341.4800	-345.0054	-348.2354	-351.4654	-354.6954	-357.9254	-374.0754	-390.2254
69.9600	-402.6200	-406.1996	-409.4296	-412.6596	-415.8896	-419.1196	-435.2696	-451.4196
72.5970	-417.7900	-421.3887	-424.6187	-427.8487	-431.0787	-434.3087	-450.4587	-466.6087
76.8220	-442.1100	-445.7247	-448.9547	-452.1847	-455.4147	-458.6447	-474.7947	-490.9447
100.9680	-581.0700	-584.8057	-588.0357	-591.2657	-594.4957	-597.7257	-613.8757	-630.0257
124.3930	-715.8800	-719.7337	-722.9637	-726.1937	-729.4237	-732.6537	-748.8037	-764.9537
131.5090	-756.8300	-760.7218	-763.9518	-767.1818	-770.4118	-773.6418	-789.7918	-805.9418
132.7850	-764.1700	-768.0716	-771.3016	-774.5316	-777.7616	-780.9916	-797.1416	-813.2916

Supporting Data for Graph 15a - SP 7 01 October 2001, indicating the change in Energy Imbalance Cashflows from Parties

QAEI (MWh)	TNB 0 (£)	TNB 1 (£)	TNB 2 (£)	TNB 3 (£)	TNB 4 (£)	TNB 5 (£)	TNB 10 (£)	TNB 15 (£)
-212.6450	3113.980	3107.4728	3101.823	3096.173	3090.5228	3084.873	3056.623	1911.6786
-66.6270	975.6900	969.7693	964.1193	958.4693	952.8193	947.1693	918.9193	890.6693
-21.2850	311.7000	305.9624	300.3124	294.6624	289.0124	283.3624	255.1124	226.8624
-16.5940	243.0100	237.2862	231.6362	225.9862	220.3362	214.6862	186.4362	158.1862
-6.8420	100.1900	94.5169	88.8669	83.2169	77.5669	71.9169	61.5096	61.5096
-6.3080	92.3700	86.6991	81.0491	75.3991	69.7491	64.0991	56.7089	56.7089
-6.0170	88.1100	82.4389	76.7889	71.1389	65.4889	59.8389	54.0928	54.0928
-5.0530	74.0000	68.3259	62.6759	57.0259	51.3759	45.7259	45.4265	45.4265
-4.6330	67.8500	62.1771	56.5271	50.8771	45.2271	41.6507	41.6507	41.6507
-3.9670	58.0900	52.4269	46.7769	41.1269	35.6633	35.6633	35.6633	35.6633
-2.9470	43.1600	37.4941	31.8441	26.4935	26.4935	26.4935	26.4935	26.4935
-1.8000	26.3600	20.7020	16.1820	16.1820	16.1820	16.1820	16.1820	16.1820
-1.6850	24.6800	19.0184	15.1482	15.1482	15.1482	15.1482	15.1482	15.1482
-1.4270	20.8900	15.2413	12.8287	12.8287	12.8287	12.8287	12.8287	12.8287
-1.4250	20.8700	15.2120	12.8108	12.8108	12.8108	12.8108	12.8108	12.8108
-1.3810	20.2200	14.5678	12.4152	12.4152	12.4152	12.4152	12.4152	12.4152
-0.9590	14.0400	8.6214	8.6214	8.6214	8.6214	8.6214	8.6214	8.6214
-0.8450	12.3700	7.5966	7.5966	7.5966	7.5966	7.5966	7.5966	7.5966
-0.7990	11.7000	7.1830	7.1830	7.1830	7.1830	7.1830	7.1830	7.1830
-0.7050	10.3200	6.3380	6.3380	6.3380	6.3380	6.3380	6.3380	6.3380
-0.4790	7.0100	4.3062	4.3062	4.3062	4.3062	4.3062	4.3062	4.3062
-0.2530	3.7000	2.2745	2.2745	2.2745	2.2745	2.2745	2.2745	2.2745
-0.2250	3.2900	2.0228	2.0228	2.0228	2.0228	2.0228	2.0228	2.0228
-0.1980	2.9000	1.7800	1.7800	1.7800	1.7800	1.7800	1.7800	1.7800
-0.1000	1.4600	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990	0.8990
-0.0820	1.2000	0.7372	0.7372	0.7372	0.7372	0.7372	0.7372	0.7372
-0.0580	0.8500	0.5214	0.5214	0.5214	0.5214	0.5214	0.5214	0.5214
-0.0170	0.2500	0.1528	0.1528	0.1528	0.1528	0.1528	0.1528	0.1528
-0.0090	0.1300	0.0809	0.0809	0.0809	0.0809	0.0809	0.0809	0.0809
-0.0020	0.0300	0.0180	0.0180	0.0180	0.0180	0.0180	0.0180	0.0180

Supporting Cashflow Data for Graph 16 - SP 19 01 October 2001, indicating the change in Energy Imbalance Cashflows to Parties

QAEI (MWh)	TNB 0 (£)	TNB 1 (£)	TNB 2 (£)	TNB 3 (£)	TNB 4 (£)	TNB 5 (£)	TNB 10 (£)	TNB 15 (£)
0.001	-0.02	-0.01815	-0.01815	-0.01815	-0.01815	-0.01815	-0.01815	-0.01815
0.002	-0.02	-0.0363	-0.0363	-0.0363	-0.0363	-0.0363	-0.0363	-0.0363
0.003	-0.03	-0.05445	-0.05445	-0.05445	-0.05445	-0.05445	-0.05445	-0.05445
0.003	-0.03	-0.05445	-0.05445	-0.05445	-0.05445	-0.05445	-0.05445	-0.05445
0.064	-0.76	-1.1616	-1.1616	-1.1616	-1.1616	-1.1616	-1.1616	-1.1616
0.105	-1.25	-1.90575	-1.90575	-1.90575	-1.90575	-1.90575	-1.90575	-1.90575
0.211	-2.52	-3.82965	-3.82965	-3.82965	-3.82965	-3.82965	-3.82965	-3.82965
0.25	-2.98	-4.5375	-4.5375	-4.5375	-4.5375	-4.5375	-4.5375	-4.5375
0.272	-3.25	-4.9368	-4.9368	-4.9368	-4.9368	-4.9368	-4.9368	-4.9368
0.407	-4.86	-7.38705	-7.38705	-7.38705	-7.38705	-7.38705	-7.38705	-7.38705
0.539	-6.43	-9.78285	-9.78285	-9.78285	-9.78285	-9.78285	-9.78285	-9.78285
0.602	-7.19	-10.9263	-10.9263	-10.9263	-10.9263	-10.9263	-10.9263	-10.9263
0.893	-10.66	-16.208	-16.208	-16.208	-16.208	-16.208	-16.208	-16.208
1	-11.94	-18.15	-18.15	-18.15	-18.15	-18.15	-18.15	-18.15
1.071	-12.78	-18.997	-19.4387	-19.4387	-19.4387	-19.4387	-19.4387	-19.4387
1.368	-16.33	-22.5402	-24.8292	-24.8292	-24.8292	-24.8292	-24.8292	-24.8292
1.83	-21.85	-28.0519	-33.2145	-33.2145	-33.2145	-33.2145	-33.2145	-33.2145
2.075	-24.77	-30.9748	-37.1948	-37.6613	-37.6613	-37.6613	-37.6613	-37.6613
2.412	-28.79	-34.9952	-41.2152	-43.7778	-43.7778	-43.7778	-43.7778	-43.7778
2.561	-30.57	-36.7727	-42.9927	-46.4822	-46.4822	-46.4822	-46.4822	-46.4822
3.352	-40.01	-46.2094	-52.4294	-58.6494	-60.8388	-60.8388	-60.8388	-60.8388
4.999	-59.67	-65.8581	-72.0781	-78.2981	-84.5181	-90.7319	-90.7319	-90.7319
5	-59.69	-65.87	-72.09	-78.31	-84.53	-90.75	-90.75	-90.75
5.467	-65.26	-71.4413	-77.6613	-83.8813	-90.1013	-96.3213	-99.2261	-99.2261
5.854	-69.88	-76.0582	-82.2782	-88.4982	-94.7182	-100.938	-106.25	-106.25
7.398	-88.31	-94.4781	-100.698	-106.918	-113.138	-119.358	-134.274	-134.274
8.99	-107.32	-113.471	-119.691	-125.911	-132.131	-138.351	-163.169	-163.169
9.717	-116	-122.144	-128.364	-134.584	-140.804	-147.024	-176.364	-176.364
10.485	-125.16	-131.306	-137.526	-143.746	-149.966	-156.186	-187.286	-190.303
14.679	-175.23	-181.34	-187.56	-193.78	-200	-206.22	-237.32	-266.424
21.107	-251.96	-258.027	-264.247	-270.467	-276.687	-282.907	-314.007	-345.107
23.19	-276.83	-282.877	-289.097	-295.317	-301.537	-307.757	-338.857	-369.957
35.221	-420.45	-426.407	-432.627	-438.847	-445.067	-451.287	-482.387	-513.487
39.627	-473.04	-478.97	-485.19	-491.41	-497.63	-503.85	-534.95	-566.05
44.889	-535.86	-541.746	-547.966	-554.186	-560.406	-566.626	-597.726	-628.826
59.426	-709.39	-715.172	-721.392	-727.612	-733.832	-740.052	-771.152	-802.252
61.79	-737.61	-743.375	-749.595	-755.815	-762.035	-768.255	-799.355	-830.455
134.151	-1601.41	-1606.64	-1612.86	-1619.08	-1625.3	-1631.52	-1662.62	-1693.72
160.19	-1912.25	-1917.29	-1923.51	-1929.73	-1935.95	-1942.17	-1973.27	-2004.37
163.378	-1950.3	-1955.32	-1961.54	-1967.76	-1973.98	-1980.2	-2011.3	-2042.4
168.717	-2014.04	-2019.01	-2025.23	-2031.45	-2037.67	-2043.89	-2074.99	-2106.09
201.331	-2403.36	-2408.1	-2414.32	-2420.54	-2426.76	-2432.98	-2464.08	-2495.18
640.923	-7650.93	-7652.43	-7658.65	-7664.87	-7671.09	-7677.31	-7708.41	-7739.51

Supporting Cashflow Data for Graph 16a - SP 19 01 October 2001, indicating the change in Energy Imbalance Cashflows from Parties

QAEI (MWh)	TNB 0 (£)	TNB 1 (£)	TNB 2 (£)	TNB 3 (£)	TNB 4 (£)	TNB 5 (£)	TNB 10 (£)	TNB 15 (£)
-601.106	13933.03	13928.61	13923.58	13918.55	13913.52	13908.49	13883.34	13858.19
-275.793	6392.6	6387.852	6382.822	6377.792	6372.762	6367.732	6342.582	6317.432
-83.938	1945.59	1940.653	1935.623	1930.593	1925.563	1920.533	1895.383	1870.233
-83.845	1943.44	1938.497	1933.467	1928.437	1923.407	1918.377	1893.227	1868.077
-79.187	1835.47	1830.525	1825.495	1820.465	1815.435	1810.405	1785.255	1760.105
-79.153	1834.69	1829.737	1824.707	1819.677	1814.647	1809.617	1784.467	1759.317
-50.654	1174.11	1169.13	1164.1	1159.07	1154.04	1149.01	1123.86	1098.71
-20.866	483.65	478.6439	473.6139	468.5839	463.5539	458.5239	433.3739	408.2239
-12.986	301	295.9855	290.9555	285.9255	280.8955	275.8655	250.7155	235.6959
-9.377	217.35	212.3289	207.2989	202.2689	197.2389	192.2089	170.1926	170.1926
-9.023	209.14	204.1231	199.0931	194.0631	189.0331	184.0031	163.7675	163.7675
-8.527	197.65	192.6259	187.5959	182.5659	177.5359	172.5059	154.7651	154.7651
-2.286	52.99	47.95948	42.92948	41.4909	41.4909	41.4909	41.4909	41.4909
-2.014	46.69	41.65452	36.62452	36.5541	36.5541	36.5541	36.5541	36.5541
-1.578	36.58	31.54804	28.6407	28.6407	28.6407	28.6407	28.6407	28.6407
-1.499	34.75	29.71682	27.20685	27.20685	27.20685	27.20685	27.20685	27.20685
-0.801	18.56	14.53815	14.53815	14.53815	14.53815	14.53815	14.53815	14.53815
-0.692	16.04	12.5598	12.5598	12.5598	12.5598	12.5598	12.5598	12.5598
-0.382	8.85	6.9333	6.9333	6.9333	6.9333	6.9333	6.9333	6.9333
-0.256	5.93	4.6464	4.6464	4.6464	4.6464	4.6464	4.6464	4.6464
-0.253	5.86	4.59195	4.59195	4.59195	4.59195	4.59195	4.59195	4.59195
-0.23	5.33	4.1745	4.1745	4.1745	4.1745	4.1745	4.1745	4.1745
-0.1	2.32	1.815	1.815	1.815	1.815	1.815	1.815	1.815
-0.088	2.04	1.5972	1.5972	1.5972	1.5972	1.5972	1.5972	1.5972
-0.066	1.53	1.1979	1.1979	1.1979	1.1979	1.1979	1.1979	1.1979
-0.037	0.86	0.67155	0.67155	0.67155	0.67155	0.67155	0.67155	0.67155
-0.005	0.12	0.09075	0.09075	0.09075	0.09075	0.09075	0.09075	0.09075
-0.001	0.02	0.01815	0.01815	0.01815	0.01815	0.01815	0.01815	0.01815

Supporting Cashflow Data for Graph 17 - SP 32 01 October 2001, indicating the change in Energy Imbalance Cashflows to Parties

QAEI (MWh)	TNB 0 (£)	TNB 1 (£)	TNB 2 (£)	TNB 3 (£)	TNB 4 (£)	TNB 5 (£)	TNB 10 (£)	TNB 15 (£)
0.005	-0.06	-0.0765	-0.0765	-0.0765	-0.0765	-0.0765	-0.0765	-0.0765
0.021	-0.25	-0.3213	-0.3213	-0.3213	-0.3213	-0.3213	-0.3213	-0.3213
0.105	-1.25	-1.6065	-1.6065	-1.6065	-1.6065	-1.6065	-1.6065	-1.6065
0.203	-2.41	-3.1059	-3.1059	-3.1059	-3.1059	-3.1059	-3.1059	-3.1059
0.214	-2.55	-3.2742	-3.2742	-3.2742	-3.2742	-3.2742	-3.2742	-3.2742
0.25	-2.97	-3.825	-3.825	-3.825	-3.825	-3.825	-3.825	-3.825
0.291	-3.46	-4.4523	-4.4523	-4.4523	-4.4523	-4.4523	-4.4523	-4.4523
0.401	-4.77	-6.1353	-6.1353	-6.1353	-6.1353	-6.1353	-6.1353	-6.1353
0.516	-6.14	-7.8948	-7.8948	-7.8948	-7.8948	-7.8948	-7.8948	-7.8948
0.605	-7.2	-9.2565	-9.2565	-9.2565	-9.2565	-9.2565	-9.2565	-9.2565
0.65	-7.73	-9.945	-9.945	-9.945	-9.945	-9.945	-9.945	-9.945
1	-11.89	-15.3	-15.3	-15.3	-15.3	-15.3	-15.3	-15.3
2.522	-30	-33.3966	-36.8066	-38.5866	-38.5866	-38.5866	-38.5866	-38.5866
3.05	-36.28	-39.6745	-43.0845	-46.4945	-46.665	-46.665	-46.665	-46.665
4.955	-58.94	-62.325	-65.735	-69.145	-72.555	-75.8115	-75.8115	-75.8115
5	-59.47	-62.86	-66.27	-69.68	-73.09	-76.5	-76.5	-76.5
5.497	-65.38	-68.7693	-72.1793	-75.5893	-78.9993	-82.4093	-84.1041	-84.1041
6.593	-78.41	-81.8008	-85.2108	-88.6208	-92.0308	-95.4408	-100.873	-100.873
8.188	-97.38	-100.765	-104.175	-107.585	-110.995	-114.405	-125.276	-125.276
8.576	-102	-105.379	-108.789	-112.199	-115.609	-119.019	-131.213	-131.213
19.425	-231.03	-234.373	-237.783	-241.193	-244.603	-248.013	-265.063	-282.113
26.401	-314	-317.318	-320.728	-324.138	-327.548	-330.958	-348.008	-365.058
29.61	-352.17	-355.473	-358.883	-362.293	-365.703	-369.113	-386.163	-403.213
35.012	-416.41	-419.703	-423.113	-426.523	-429.933	-433.343	-450.393	-467.443
37.125	-441.55	-444.826	-448.236	-451.646	-455.056	-458.466	-475.516	-492.566
39.199	-466.21	-469.486	-472.896	-476.306	-479.716	-483.126	-500.176	-517.226
39.523	-470.06	-473.338	-476.748	-480.158	-483.568	-486.978	-504.028	-521.078
43.873	-521.8	-525.06	-528.47	-531.88	-535.29	-538.7	-555.75	-572.8
85.336	-1014.94	-1018.06	-1021.47	-1024.88	-1028.29	-1031.7	-1048.75	-1065.8
85.549	-1017.47	-1020.59	-1024	-1027.41	-1030.82	-1034.23	-1051.28	-1068.33
117.764	-1400.62	-1403.62	-1407.03	-1410.44	-1413.85	-1417.26	-1434.31	-1451.36
127.796	-1519.94	-1522.9	-1526.31	-1529.72	-1533.13	-1536.54	-1553.59	-1570.64
131.677	-1566.1	-1569.05	-1572.46	-1575.87	-1579.28	-1582.69	-1599.74	-1616.79
138.387	-1645.9	-1648.83	-1652.24	-1655.65	-1659.06	-1662.47	-1679.52	-1696.57
178.777	-2126.28	-2129.07	-2132.48	-2135.89	-2139.3	-2142.71	-2159.76	-2176.81

Supporting Cashflow Data for Graph 17a - SP 32 01 October 2001, indicating the change in Energy Imbalance Cashflows from Parties

QAEI (MWh)	TNB 0 (£)	TNB 1 (£)	TNB 2 (£)	TNB 3 (£)	TNB 4 (£)	TNB 5 (£)	TNB 10 (£)	TNB 15 (£)
QAEI	CAEI	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
-49.676	1347.95	1336.367	1324.527	1312.687	1300.847	1289.007	1229.807	1170.607
-37.648	1021.57	1009.927	998.0867	986.2467	974.4067	962.5667	903.3667	844.1667
-30	814.05	802.36	790.52	778.68	766.84	755	695.8	636.6
-28.411	770.93	759.2345	747.3945	735.5545	723.7145	711.8745	652.6745	593.4745
-26.831	728.05	716.3533	704.5133	692.6733	680.8333	668.9933	609.7933	550.5933
-21.112	572.87	561.1397	549.2997	537.4597	525.6197	513.7797	454.5797	395.3797
-20.785	564	552.2649	540.4249	528.5849	516.7449	504.9049	445.7049	386.5049
-6.76	183.43	171.6264	159.7864	147.9464	136.1064	124.2664	103.428	103.428
-6.603	179.17	167.3654	155.5254	143.6854	131.8454	120.0054	101.0259	101.0259
-6.342	172.09	160.2819	148.4419	136.6019	124.7619	112.9219	97.0326	97.0326
-5.244	142.3	130.4822	118.6422	106.8022	94.96216	83.12216	80.2332	80.2332
-2.51	68.11	56.2814	44.4414	38.403	38.403	38.403	38.403	38.403
-1.997	54.19	42.35858	30.5541	30.5541	30.5541	30.5541	30.5541	30.5541
-1.42	38.53	26.6988	21.726	21.726	21.726	21.726	21.726	21.726
-1.378	37.38	25.55892	21.0834	21.0834	21.0834	21.0834	21.0834	21.0834
-1.308	35.49	23.65912	20.0124	20.0124	20.0124	20.0124	20.0124	20.0124
-1.141	30.98	19.12674	17.4573	17.4573	17.4573	17.4573	17.4573	17.4573
-1.054	28.6	16.76556	16.1262	16.1262	16.1262	16.1262	16.1262	16.1262
-0.774	21	11.8422	11.8422	11.8422	11.8422	11.8422	11.8422	11.8422
-0.557	15.11	8.5221	8.5221	8.5221	8.5221	8.5221	8.5221	8.5221
-0.522	14.16	7.9866	7.9866	7.9866	7.9866	7.9866	7.9866	7.9866
-0.424	11.51	6.4872	6.4872	6.4872	6.4872	6.4872	6.4872	6.4872
-0.371	10.07	5.6763	5.6763	5.6763	5.6763	5.6763	5.6763	5.6763
-0.33	8.95	5.049	5.049	5.049	5.049	5.049	5.049	5.049
-0.281	7.62	4.2993	4.2993	4.2993	4.2993	4.2993	4.2993	4.2993
-0.271	7.35	4.1463	4.1463	4.1463	4.1463	4.1463	4.1463	4.1463
-0.124	3.36	1.8972	1.8972	1.8972	1.8972	1.8972	1.8972	1.8972
-0.12	3.26	1.836	1.836	1.836	1.836	1.836	1.836	1.836
-0.1	2.71	1.53	1.53	1.53	1.53	1.53	1.53	1.53
-0.082	2.23	1.2546	1.2546	1.2546	1.2546	1.2546	1.2546	1.2546
-0.068	1.85	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404	1.0404
-0.016	0.43	0.2448	0.2448	0.2448	0.2448	0.2448	0.2448	0.2448
-0.009	0.24	0.1377	0.1377	0.1377	0.1377	0.1377	0.1377	0.1377
-0.002	0.05	0.0306	0.0306	0.0306	0.0306	0.0306	0.0306	0.0306

Supporting Cashflow Data for Graph 18 - SP 47 01 October 2001, indicating the change in Energy Imbalance Cashflows to Parties

QAEI (MWh)	TNB 0 (£)	TNB 1 (£)	TNB 2 (£)	TNB 3 (£)	TNB 4 (£)	TNB 5 (£)	TNB 10 (£)	TNB 15 (£)
0.003	-0.02	-0.05064	-0.05064	-0.05064	-0.05064	-0.05064	-0.05064	-0.05064
0.003	-0.02	-0.05064	-0.05064	-0.05064	-0.05064	-0.05064	-0.05064	-0.05064
0.029	-0.16	-0.48952	-0.48952	-0.48952	-0.48952	-0.48952	-0.48952	-0.48952
0.206	-1.13	-3.47728	-3.47728	-3.47728	-3.47728	-3.47728	-3.47728	-3.47728
0.25	-1.37	-4.22	-4.22	-4.22	-4.22	-4.22	-4.22	-4.22
0.391	-2.14	-6.60008	-6.60008	-6.60008	-6.60008	-6.60008	-6.60008	-6.60008
0.43	-2.36	-7.2584	-7.2584	-7.2584	-7.2584	-7.2584	-7.2584	-7.2584
0.464	-2.55	-7.83232	-7.83232	-7.83232	-7.83232	-7.83232	-7.83232	-7.83232
0.464	-2.55	-7.83232	-7.83232	-7.83232	-7.83232	-7.83232	-7.83232	-7.83232
0.518	-2.84	-8.74384	-8.74384	-8.74384	-8.74384	-8.74384	-8.74384	-8.74384
0.54	-2.96	-9.1152	-9.1152	-9.1152	-9.1152	-9.1152	-9.1152	-9.1152
0.602	-3.3	-10.1618	-10.1618	-10.1618	-10.1618	-10.1618	-10.1618	-10.1618
0.71	-3.89	-11.9848	-11.9848	-11.9848	-11.9848	-11.9848	-11.9848	-11.9848
0.819	-4.49	-13.8247	-13.8247	-13.8247	-13.8247	-13.8247	-13.8247	-13.8247
0.826	-4.53	-13.9429	-13.9429	-13.9429	-13.9429	-13.9429	-13.9429	-13.9429
1	-5.49	-16.88	-16.88	-16.88	-16.88	-16.88	-16.88	-16.88
1.193	-6.54	-17.9396	-20.1378	-20.1378	-20.1378	-20.1378	-20.1378	-20.1378
1.967	-10.79	-22.1888	-33.203	-33.203	-33.203	-33.203	-33.203	-33.203
2.76	-15.14	-26.5424	-37.9324	-46.5888	-46.5888	-46.5888	-46.5888	-46.5888
2.784	-15.27	-26.6742	-38.0642	-46.9939	-46.9939	-46.9939	-46.9939	-46.9939
3.051	-16.73	-28.14	-39.53	-50.92	-51.5009	-51.5009	-51.5009	-51.5009
4.249	-23.31	-34.717	-46.107	-57.497	-68.887	-71.7231	-71.7231	-71.7231
4.253	-23.33	-34.739	-46.129	-57.519	-68.909	-71.7906	-71.7906	-71.7906
4.516	-24.77	-36.1828	-47.5728	-58.9628	-70.3528	-76.2301	-76.2301	-76.2301
5.76	-31.59	-43.0124	-54.4024	-65.7924	-77.1824	-88.5724	-97.2288	-97.2288
6.211	-34.07	-45.4884	-56.8784	-68.2684	-79.6584	-91.0484	-104.842	-104.842
7.411	-40.65	-52.0764	-63.4664	-74.8564	-86.2464	-97.6364	-125.098	-125.098
10.826	-59.38	-70.8247	-82.2147	-93.6047	-104.995	-116.385	-173.335	-182.743
14.913	-81.8	-93.2624	-104.652	-116.042	-127.432	-138.822	-195.772	-251.731
25	-137.13	-148.64	-160.03	-171.42	-182.81	-194.2	-251.15	-308.1
41.733	-228.91	-240.504	-251.894	-263.284	-274.674	-286.064	-343.014	-399.964
47.556	-260.84	-272.472	-283.862	-295.252	-306.642	-318.032	-374.982	-431.932
62.423	-342.39	-354.092	-365.482	-376.872	-388.262	-399.652	-456.602	-513.552
68.594	-376.24	-387.971	-399.361	-410.751	-422.141	-433.531	-490.481	-547.431
78.229	-429.09	-440.867	-452.257	-463.647	-475.037	-486.427	-543.377	-600.327
97.336	-533.89	-545.765	-557.155	-568.545	-579.935	-591.325	-648.275	-705.225
175.828	-964.42	-976.686	-988.076	-999.466	-1010.86	-1022.25	-1079.2	-1136.15

Supporting Cashflow Data for Graph 18a - SP 47 01 October 2001, indicating the change in Energy Imbalance Cashflows from Parties

QAEI (MWh)	TNB 0 (£)	TNB 1 (£)	TNB 2 (£)	TNB 3 (£)	TNB 4 (£)	TNB 5 (£)	TNB 10 (£)	TNB 15 (£)
QAEI	CAEI	TNB 1	TNB 2	TNB 3	TNB 4	TNB 5	TNB 10	TNB 15
-165.724	4169.78	4161.336	4153.056	4144.776	4136.496	4128.216	4086.816	4045.416
-45.776	1151.77	1143.444	1135.164	1126.884	1118.604	1110.324	1068.924	1027.524
-43.777	1101.47	1093.149	1084.869	1076.589	1068.309	1060.029	1018.629	977.2293
-13.523	340.26	331.9587	323.6787	315.3987	307.1187	298.8387	257.4387	228.2682
-12.887	324.25	315.9569	307.6769	299.3969	291.1169	282.8369	241.4369	217.5326
-12.749	320.77	312.4848	304.2048	295.9248	287.6448	279.3648	237.9648	215.2031
-12.675	318.92	310.623	302.343	294.063	285.783	277.503	236.103	213.954
-6.27	157.76	149.4732	141.1932	132.9132	124.6332	116.3532	105.8376	105.8376
-6.087	153.15	144.8689	136.5889	128.3089	120.0289	111.7489	102.7486	102.7486
-4.781	120.29	112.01	103.73	95.44996	87.16996	80.70328	80.70328	80.70328
-4.499	113.2	104.9148	96.63484	88.35484	80.07484	75.94312	75.94312	75.94312
-3.34	84.04	75.7544	67.4744	59.1944	56.3792	56.3792	56.3792	56.3792
-1.78	44.79	36.5048	30.0464	30.0464	30.0464	30.0464	30.0464	30.0464
-1.724	43.38	35.09584	29.10112	29.10112	29.10112	29.10112	29.10112	29.10112
-1.536	38.65	30.36576	25.92768	25.92768	25.92768	25.92768	25.92768	25.92768
-1.419	35.7	27.42204	23.95272	23.95272	23.95272	23.95272	23.95272	23.95272
-1.284	32.31	24.02544	21.67392	21.67392	21.67392	21.67392	21.67392	21.67392
-1.072	26.97	18.69152	18.09536	18.09536	18.09536	18.09536	18.09536	18.09536
-0.862	21.69	14.55056	14.55056	14.55056	14.55056	14.55056	14.55056	14.55056
-0.469	11.8	7.91672	7.91672	7.91672	7.91672	7.91672	7.91672	7.91672
-0.441	11.1	7.44408	7.44408	7.44408	7.44408	7.44408	7.44408	7.44408
-0.41	10.32	6.9208	6.9208	6.9208	6.9208	6.9208	6.9208	6.9208
-0.227	5.71	3.83176	3.83176	3.83176	3.83176	3.83176	3.83176	3.83176
-0.131	3.29	2.21128	2.21128	2.21128	2.21128	2.21128	2.21128	2.21128
-0.084	2.11	1.41792	1.41792	1.41792	1.41792	1.41792	1.41792	1.41792
-0.074	1.86	1.24912	1.24912	1.24912	1.24912	1.24912	1.24912	1.24912
-0.054	1.36	0.91152	0.91152	0.91152	0.91152	0.91152	0.91152	0.91152
-0.037	0.93	0.62456	0.62456	0.62456	0.62456	0.62456	0.62456	0.62456
-0.005	0.13	0.0844	0.0844	0.0844	0.0844	0.0844	0.0844	0.0844
-0.004	0.1	0.06752	0.06752	0.06752	0.06752	0.06752	0.06752	0.06752
-0.002	0.05	0.03376	0.03376	0.03376	0.03376	0.03376	0.03376	0.03376
-0.002	0.05	0.03376	0.03376	0.03376	0.03376	0.03376	0.03376	0.03376

ANNEX 3 – SUPPORTING ANALYSIS: GRAPHS

See attached documents – '**ANNEX 3 Graphs.xls**' (graphs 1 to 18 inclusive) and '**ANNEX 3 Graphs 19 to 29.pdf**' (graphs 19 to 29 inclusive).