ASSESSMENT REPORT

MODIFICATION PROPOSAL P2 – Revision of the Methodology for Assessing Credit Indebtedness

Prepared by the Credit Modification Group on behalf of the Balancing and Settlement Code Panel

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c Related Documents

Reference 1	Modification Proposal P2 - Revision of the Methodology for Assessing Credit Indebtedness
Reference 2	Definition Report – Modification Proposal P2 – Revision of the Methodology for Assessing Credit Indebtedness, 24th May 2001 (MDR02)
Reference 3	MP2 Requirements Specification – Revision of the Methodology for Assessing Credit Indebtedness (016AAR), 28th June 2001
Reference 4	Modification Proposal P2 – Initial Views of the Credit Modification Group on Alternative Modification Proposals (005ABU), 3rd July 2001
Reference 5	Project Brief - Modification Proposal P2 - Revision of the Methodology for Assessing Credit Indebtedness

d Intellectual Property Rights and Copyright

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1 SUMMARY AND RECOMMENDATIONS

1.1 Recommendations

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 Credit Modification Group recommends to the BSC Panel that:

- Modification Proposal P2 should proceed to the Report Phase in accordance with BSC F2.7; and
- The Draft Modification Report should contain a recommendation to the Authority that the modification be approved, with a proposed implementation date of 1st June 2002.

1.2 Background

Modification Proposal P2 (Reference 1) was submitted by British Gas on 27th March 2001, and proposes that the calculation of indebtedness for credit-checking purposes should be enhanced to use actual prices and metered volumes. The proposal states that this would protect Parties from the expense of having to post inappropriate levels of credit cover, and also the risk of a defaulting Party having unsecured settlement liabilities. Section 5.3 of this report describes the Modification Proposal in detail.

The BSC Panel meeting on 5th April 2001 agreed that Modification Proposal P2 should be submitted to the Definition Procedure (as defined in section F2.5 of the Balancing and Settlement Code). This Definition Procedure was carried out by the Credit Modification Group, who concluded that Trading Parties are being exposed to significant risks and costs as a result of inaccuracies in the current credit-checking methodology.

The BSC Panel meeting on 31st May 2001 agreed the Definition Report (Reference 2) prepared by the Modification Group, and agreed that Modification Proposal P2 should be submitted to the Assessment Procedure (as defined in section F2.6 of the Balancing and Settlement Code). Details of the analysis, consultation and assessment undertaken during the Assessment Procedure can be found in the following sections of this report:

- Section 5 describes in detail Modification Proposal P2, and an Alternative Modification Proposal which was also assessed by the Group. It also assesses the extent to which each of the two Proposals would better facilitate the achievement of the Applicable BSC Objectives.
- Sections 6 to 10 assess the impact of P2 (and of the Alternative Modification Proposal) on the BSC and Code Subsidiary Documents; on BSC Systems; on Core Industry Documents; on ELEXON; and on Parties and Party Agents.
- Section 12 summarises the representations made by parties to the consultation undertaken during the Assessment Procedure, and the views and comments of the Modification Group in respect thereof.

1.3 Rationale for Recommendations

The rationale for recommending the approval of P2 is described in section 5 of this report, but can be summarised as follows:

- The current methodology for assessing credit indebtedness is over-estimating the indebtedness of certain Parties, potentially obliging them to post unwarrantedly high levels of credit cover. Analysis

suggests that these Parties may be having to provide up to £170 million of unwarranted credit cover, at an estimated cost per annum of £1.7 million.

- Conversely, the current methodology for assessing credit indebtedness is under-estimating the indebtedness of certain Parties by some £30 million in total. This potentially allows these Parties to post a level of credit cover that would be insufficient to cover their settlement liabilities in the event of default, with Parties in aggregate bearing the resultant risk. The magnitude of this risk depends upon how Parties are likely to behave prior to going into default, and is therefore hard to quantify precisely. However, the analysis did identify scenarios under which weaknesses in the current methodology allow a Trading Party to incur very large unsecured debts without the problem being detected by the credit-checking process[1]. Although the probability of such a scenario occurring cannot be determined with any accuracy, it does appear that Trading Parties are currently exposed to significant risks as a result of the current methodology for assessing credit indebtedness.
- Analysis suggests that Modification Proposal P2 would decrease the cost of unwarranted credit from £1.7 million to £0.3 million per annum, as well as reducing considerably the risk of a Party going into default with insufficient credit cover to pay their settlement liabilities. These benefits appear to outweigh the costs of implementing the Modification, which include £350,000 to amend BSC Systems, £43,000 in ELEXON testing and development costs, and additional costs for those Parties who elect to enhance their systems to model the new credit-checking methodology.
- Implementation of Modification Proposal P2 would therefore remove a significant and material inefficiency in the operation of the balancing and settlement arrangements, and hence facilitate achievement of the BSC Objective in condition 7A(3)(d) of the Transmission License i.e. promoting efficiency in the implementation and administration of the balancing and settlement arrangements.
- It would seem likely that the unnecessary costs and risks imposed on Trading Parties by the current methodology for assessing credit indebtedness may also act as a deterrent to participation in the electricity market, particularly for those organisations with limited ability to raise additional funds. Implementation of Modification Proposal P2 would therefore also facilitate achievement of the BSC Objective in condition 7A(3)(c) of the Transmission License (i.e. promoting effective competition in the generation and supply of electricity).

It should be noted that Modification Proposal P2 does not entirely remove the inaccuracies in the credit-checking methodology, and that it would be possible to implement an Alternative Modification Proposal that reduced still further the unnecessary costs and risks arising from participation in the balancing and settlement arrangements. However, the view of the Modification Group is that such an Alternative Modification Proposal would not further facilitate the Applicable BSC Objectives:

- One approach to increasing further the accuracy of credit checking would be to use actual system prices immediately after Gate Closure (rather than 5 Working Days later, as in Modification Proposal P2). However, this would cause any volatility in system prices to be immediately reflected in credit-checking, potentially causing unpredictable increases in calculated indebtedness, and significantly increasing the costs and risks incurred by Trading Parties in managing their credit cover.

[1] For example, if a large Generator became unable to generate prior to going into default, the credit-checking process would not detect this, as it makes no use of actual metered volumes. The Generator could therefore continue trading, effectively buying large amounts of energy from the system at System Buy Price, and hence incurring unsecured debts of tens or hundreds of millions of pounds before going into default twenty-nine days later. Even if the risk of the market experiencing a scenario this bad is assumed to be 1% per annum, the expected losses are still many hundreds of thousands of pounds per annum.

- Another possible approach to increasing further the accuracy of credit checking would be to obtain more accurate estimates of metered volumes. This is the approach underlying the Alternative Modification Proposal described in section 5.5 of this report. However, assessment by the Modification Group suggests that the additional cost savings achievable through such an approach are relatively minor, and are unlikely to justify the additional cost of implementation.

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.

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

2.1 Key Assumptions

Key assumptions made by the Modification Group in assessing the benefits of Modification Proposal P2 are as follows:

- Trading Parties will, on average, seek to keep their reported Credit Cover Percentage at 50% i.e. their credit cover will average twice their reported level of indebtedness at any one time.
- The cost of putting in place credit cover averages 1% per annum.

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).

The Panel may decide to submit a Modification Proposal to an 'Assessment Procedure'[2]. Under this procedure, a Modification Group is tasked with undertaking a detailed assessment of the proposal to evaluate whether it better facilitates achievement of the Applicable BSC Objectives[3]. The group may also develop an alternative proposal if it believes that the alternative would better facilitate achievement of the objectives.

The Modification Group must prepare a report for the Panel, setting out the results of the assessment of the modification proposal and any alternative. The following matter should be included (to the extent applicable to the proposal in question)[4]:

(a) an analysis of and the views and rationale of the Modification Group as to whether (and, if so, to what extent) the Proposed Modification would better facilitate achievement of the Applicable BSC Objective(s);

(b) a description and analysis of any Alternative Modification developed by the Modification Group which, as compared with the Proposed Modification, would better facilitate achievement of the Applicable BSC Objective(s) and the views and rationale of the Group in respect thereof;

(c) an assessment or estimate (as the case may be) of:

  (i) the impact of the Proposed Modification and any Alternative Modification on BSC Systems;

  (ii) any changes and/or developments which would be required to BSC Systems in order to give effect to the Proposed Modification and any Alternative Modification;

  (iii) the total development and capital costs of making the changes and/or delivering the developments referred to in paragraph (ii);

  (iv) the time period required for the design, build and delivery of the changes and/or developments referred to in paragraph (ii);

  (v) the increase or decrease in the payments due under the BSC Agent Contracts in consequence of the Proposed Modification and any Alternative Modification;

  (vi) the additional payments (if different from those referred to in paragraph (v)) due in connection with the operation and maintenance of the changes and/or developments to BSC Systems as a result of the Proposed Modification and any Alternative Modification;

[2] See BSC F2.6
[3] As defined in the Transmission Licence
[4] See BSC F2.6.4 and Annex F-1

(vii) any other costs or liabilities associated with BSC Systems attributable to the Proposed Modification and any Alternative Modification;

(d) an assessment of:

(i) the impact of the Proposed Modification and any Alternative Modification on the Core Industry Documents;

(ii) the changes which would be required to the Core Industry Documents in order to give effect to the Proposed Modification and any Alternative Modification;

(iii) the mechanism and likely timescale for the making of the changes referred to in paragraph (ii);

(iv) the changes and/or developments which would be required to central computer systems and processes used in connection with the operation of arrangements established under the Core Industry Documents;

(v) the mechanism and likely timescale for the making of the changes referred to in paragraph (iv);

(vi) an estimate of the costs associated with making and delivering the changes referred to in paragraphs (ii) and (iv),

together with a summary of representations in relation to such matters;

(e) an assessment of:

(i) the likely increase or decrease in BSC Costs (to the extent not already taken into account in paragraph (c) above) in consequence of the Proposed Modification and any Alternative Modification;

(ii) the changes required to Systems and processes of BSCCo in order to give effect to the Proposed Modification and any Alternative Modification; and

(iii) the BSC Costs which are expected to be attributable to the implementation of the Proposed Modification and any Alternative Modification, to the extent not taken into account under any other provision above;

(f) to the extent such information is available to the Modification Group, an assessment of the impact of the Proposed Modification and any Alternative Modification on Parties in general (or classes of Parties in general) and Party Agents in general, including the changes which are likely to be required to their internal systems and processes and an estimate of the development, capital and operating costs associated with implementing the changes to the Code and to Core Industry Documents;

(g) an assessment of the Proposed Modification and any Alternative Modification in the context of the statutory, regulatory and contractual framework within which the Code sits (taking account of relevant utilities, competition and financial services legislation);

(h) 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 and the views and comments of the Modification Group in respect thereof;

(i) a summary of the analysis and impact assessment prepared by the Transmission Company and the views and comments of the Modification Group in respect thereof;

(j) a summary of the impact assessment prepared by relevant BSC Agents and the views and comments of the Modification Group in respect thereof;

(k) a summary of any impact assessment prepared by Core Industry Document Owners and the views and comments of the Modification Group in respect thereof;

(l) a copy of the terms of reference and any report or analysis of external consultants or advisers engaged in respect thereof;

(m) a list of the key assumptions which the Modification Group has made in formulating its views;

(n) any other matters required by the terms of reference of such Modification Group;

(o) any other matters which the Modification Group consider should properly be brought to the attention of the Panel to assist the Panel in forming a view as to whether the Proposed Modification and any Alternative Modification would better facilitate achievement of the Applicable BSC Objective(s);

(p) subject to paragraph 2.6.8 and 2.6.9 of Section F of the BSC, the proposed text to modify the Code in order to give effect to the Proposed Modification and any Alternative Modification, together with a commentary setting out the nature and effect of such text and of other areas of the Code which would be affected by the changes;

(q) the Modification Group's proposed Implementation Date(s) for implementation (subject to the consent of the Authority) of the Proposed Modification and any Alternative Modification;

(r) an executive summary of the project brief prepared by BSCCo;

(s) a recommendation (where applicable) as to whether, if the Proposed Modification or Alternative Modification is approved, Settlement Runs and Volume Allocation Runs carried out after the Implementation Date of such Approved Modification in respect of Settlement Days prior to that date should be carried out taking account of such Approved Modification or not;

(t) the proposed text (if any) to modify the Memorandum and Articles of Association of BSCCo and/or the BSC Clearer in order to give effect to the Proposed Modification and any Alternative Modification, together with a commentary setting out the nature and effect of such text and of other areas of the Memorandum and Articles of Association and/or the Code which would be affected by the changes; and

(u) a summary of any changes which would be required to Code Subsidiary Documents as a consequence of such Proposed Modification or Alternative Modification.

This Assessment Report therefore addresses all of the above items to the extent relevant to the Modification Proposal in question.

4 MODIFICATION GROUP DETAILS

This Assessment Report has been prepared by the Credit Modification Group. The BSC Panel meeting on 3rd May 2001 agreed that the standard Modification Group Terms of Reference should apply to the Credit Modification Group, without the need for any variations or amendments. These standard Terms of Reference are laid out in BSC Panel Paper P/17/006, which is available from the ELEXON website (www.elexon.co.uk).

Details of the Membership of the Modification Group is as follows:

Name	Organisation	Role
Chris Rowell	ELEXON	Chairman
Gavin Ferguson / Catherine McNally	British Gas Trading	P2 Proposer
Andrew Foster / Xavier Bruckert	OM London Exchange	Mods Group Member
Libby Glazebrook	Edison Mission Energy	Mods Group Member
Ben Willis	Yorkshire Electricity	Mods Group Member
Sharif Islam	TotalFinaElf	Mods Group Member
Duncan Jack	St. Clements Services	Mods Group Member
Fiona Grandison / Marios Broustas	European Power Source	Mods Group Member
Richard Lavender	Transmission Company	Mods Group Member
Nick Simpson	Ofgem	Mods Group Member

It should be noted that all meetings of the Credit Modification Group to date have (with the agreement of the Chairman and Members) been open to all parties, and all attendees have been free to participate in the discussions.

5 DESCRIPTION AND ASSESSMENT AGAINST THE APPLICABLE BSC OBJECTIVES

5.1 Introduction

This section of the report describes and assesses both Modification Proposal P2, and an Alternative Modification Proposal:

- Sections 5.3 and 5.4 describe and assess Modification Proposal P2. Under this option, indebtedness for Settlement Periods for which the Interim Information run has taken place should take into account all Trading Charges (i.e. energy imbalance charges, information imbalance charges, BM payments, Non-Delivery charges and Residual Cashflow Reallocation Cashflow), based on actual CVA metered volumes, and estimated SVA metered volumes. For Settlement Periods for which the Interim Information run has not taken place, indebtedness should be calculated as currently.
- Section 5.5 and 5.6 describe and assess the Alternative Modification Proposal. Under this option, indebtedness for Settlement Periods for which the Interim Information run has taken place should be calculated in the same way as for Modification Proposal P2. However, for Settlement Periods for which the Interim Information run has not taken place, indebtedness should be calculated using average metered volumes from SAA, rather than CALF-based estimates as currently.

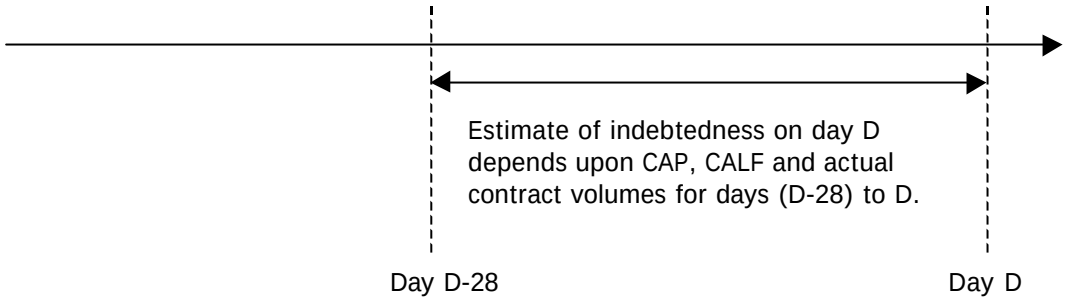
The process by which the Modification Group arrived at the Alternative Modification Proposal can be summarised as follows:

- During the Definition Procedure, the Modification Group identified a number of possible Alternative Modification Proposals which were candidates for further assessment. These were described in the P2 Definition Report (Reference 2).
- The BSC Panel meeting on 31st May 2001 agreed the Definition Report, and recommended that the solutions described in the report be pared down to a maximum of two, then consulted on within the industry.
- In light of this recommendation from the BSC Panel, the Modification Group met on 20th June 2001, and discussed the Alternative Modification Proposals described in the Definition Report. They concluded that the option most likely further to facilitate achievement of the Applicable BSC Objectives was the Alternative Modification Proposal described in section 5.5 of this report.
- It should be noted that:
  - i) The Alternative Modification Proposal developed by the Modification Group (and described in section 5.5 of this report) was not one of those described in the P2 Definition Report. It can however be regarded as a variant on "Option A", as defined in that report.
  - ii) The document *Initial Views of the Credit Modification Group on Alternative Modification Proposals* (Reference 4) describes the rationale for the Modification Group's decision not to progress further the other Alternative Modification Proposals described in the Definition Report.
- Modification Proposal P2 and the Alternative Modification Proposal were then issued for consultation and assessment. The results of this consultation process are described in Section 12 of this report.

- The Modification Group met again on 13th July 2001, in order to discuss the assessments of Modification Proposal P2, and the Alternative Modification Proposal.

5.2 Current Methodology for Assessing Credit Indebtedness

Under the current methodology, credit indebtedness for each Settlement Period in the 29-day credit period is assessed by applying a Credit Assessment Price (CAP) to the difference between actual contract volumes and estimated metered volumes. These estimated metered volumes are calculated using a Credit Assessment Load Factor, and are therefore constant (for a given BM Unit) over a whole BSC Season. This is illustrated in the following diagram, which illustrates the basis on which indebtedness is estimated on a given day D:



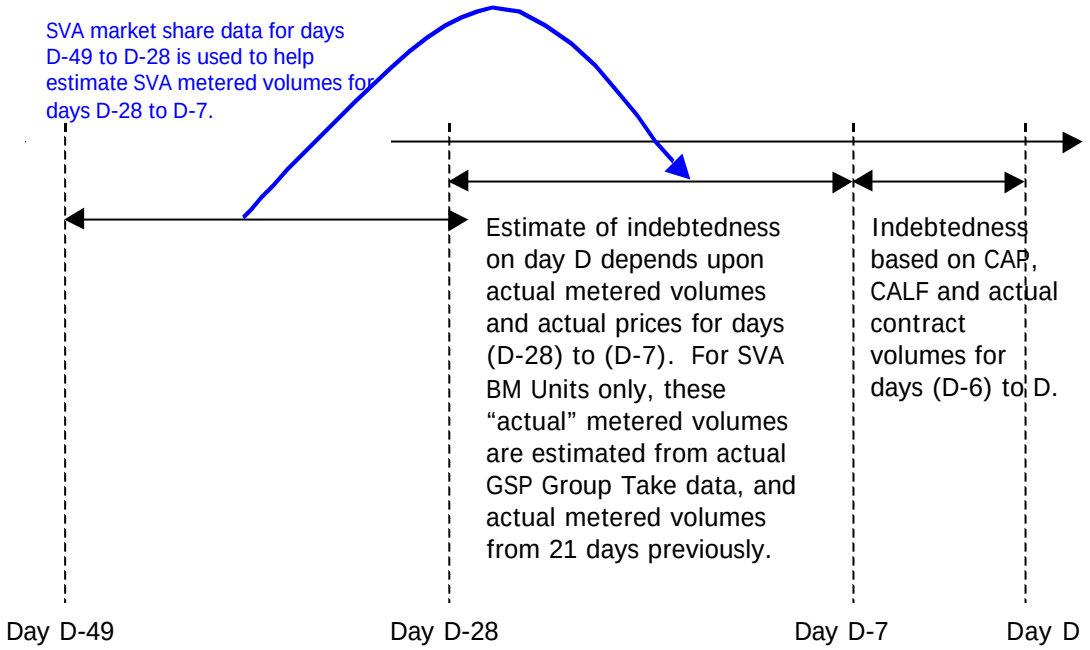
The weakness of this methodology is that the estimate of indebtedness does not make any allowance for the actual prices or actual metered volumes in the 29-day credit period.

5.3 Description of Modification Proposal P2

Modification Proposal P2 seeks to improve the accuracy of the credit-checking process by using actual prices and metered volumes once they become available (with CAP continuing to be used in the meantime). This proposal was further clarified during the P2 Definition Procedure, and at the Modification Group meeting on 20th June:

- In order to ensure accurate calculation of indebtedness, credit-checking should take into account not just Energy Imbalance charges, but also all the other Trading Charges calculated by the SAA system i.e. Residual Cashflow Reallocation Cashflow, BM Unit Cashflow, Non-Delivery Charges and Information Imbalances.
- Clearly it is not desirable to build a new system to calculate all of these Trading Charges. It is therefore proposed to use the SAA Interim Information run for this purpose i.e. indebtedness will be based on Trading Charges calculated by SAA for that portion of the 29-day credit period for which an Interim Information run has been performed. For the remainder of the 29-day credit period, indebtedness will be estimated on the basis of CAP and CALF as currently.
- Using Trading Charges calculated by SAA ensures that indebtedness is calculated using actual price data, and actual metered volumes for CVA BM Units. However, it doesn't address the problem of metered volumes for Supplier BM Units (which aren't available until the Initial Settlement run). It is proposed to solve this issue by enhancing the SAA software to estimate metered volumes for Supplier BM Units in the Interim Information run. This will be done by apportioning the GSP Group Take for day D between Supplier BM Units in proportion to their market share on a recent comparable day for which data is available.

- The Modification Group meeting on 20th June discussed a number of options for what should constitute a "recent comparable day". The recommendation of the meeting was that the GSP Group Take should be apportioned between BM Units in proportion to their market share on the most recent Settlement Day which is a whole number of weeks ago (to allow for metered volumes varying by day of the week), and for which Initial Settlement has been performed. Given that SAA typically performs the Interim Information run 5 Working Days after the event, and the Initial Settlement run 16 Working Days after the event, this means that SVA metered volumes for Day D will typically be estimated using data from three weeks ago (calendar day D-21):



Under this methodology, indebtedness is calculated using the best estimates available for that part of the credit period which has had an Interim Information run (i.e. D-28 to D-7 approximately). For the remainder of the credit period (i.e. D-6 to D approximately), indebtedness is based on estimated prices and volumes, as currently. The following table summarises this:

Data Used to Calculate Indebtedness Under Modification Proposal P2		
	Days With Interim Information Data (i.e. D-28 to D-7)	**Days Without Interim Information Data (i.e. D-6 to D)**
Price Used to Estimate Energy Imbalance	Actual SSP/SBP	Credit Assessment Price
Contract Volume Used to Estimate Energy Imbalance	Actual Contract Volumes	Actual Contract Volumes
Metered Volume Used to Estimate Energy Imbalance	CVA – actual metered volumes SVA – estimated volumes (derived from GSP Group Take, and actual market share 21 days previously)	CALF-based estimate (i.e. $BMCAEC_i$ or $BMCAIC_i$)

Data Used to Calculate Indebtedness Under Modification Proposal P2		
	Days With Interim Information Data (i.e. D-28 to D-7)	**Days Without Interim Information Data (i.e. D-6 to D)**
Method Used to Estimate Other Trading Charges	Trading Charges calculated directly by SAA	None (although arguably the Panel can take these other charges into account when setting CAP)

For the avoidance of doubt, it is **not** proposed to use data from Initial Settlement in the credit-checking process. Only at the Interim Information stage will Trading Charge data be passed from SAA to ECVAA.

5.4 Assessment of Modification Proposal P2

Modification Proposal P2 identifies two possible issues arising from inaccuracies in the current methodology:

- If the estimate of indebtedness used by the credit checking process is too high, parties may be obliged to post unwarrantedly high levels of credit cover, and will incur unnecessary costs as a result.
- If the estimate of indebtedness used by the credit checking process is too low, parties may be able to post insufficient credit cover, exposing other BSC Parties to the risk that, should they default on their settlement liabilities, up to twenty-nine days of imbalance charges and other settlement liabilities may not be paid.

In order to assess the materiality of these issues, the Modification Group requested ELEXON to collate data on the accuracy (or otherwise) of the current credit checking methodology, and the extent to which its accuracy would be improved by Modification Proposal P2. Full details of this analysis are in Annex 4 of this report. However, the key findings can be summarised as follows:

- The analysis in Annex 4 suggests that the levels of indebtedness calculated by the current methodology are significantly in excess of actual indebtedness for some Trading Parties. The extent to which this affects those Parties depends upon the extent to which they take their reported indebtedness levels into account when deciding how much credit cover to post. However, if one assumes that Parties post sufficient credit cover to keep their reported Credit Cover Percentage at 50%, then those Parties whose indebtedness is being over-estimated would be required to post an estimated £171 million of excess credit cover, at an estimated cost of £1.7 million per annum. (Conversely, other Parties would be required to post insufficient levels of credit cover. The estimated shortfall for these Parties is £23 million, which means that BSC Parties in total are having to post £148 million of excess credit cover due to inaccuracies in the methodology for assessing credit indebtedness).
- The levels of indebtedness calculated under Modification Proposal P2 would be significantly closer to actual levels of indebtedness. However, some errors would remain, for the following reasons:

  i) As P2 continues to use the current methodology for those days which have not had an Interim Information Run, roughly 25% of the existing errors will continue under P2 (as seven days out of twenty-nine is roughly 25%).

ii) As P2 uses actual indebtedness data from the Interim Information run, rather than the Initial Settlement run, the savings achievable under P2 will be reduced by any error in the Trading Charges calculated by the Interim Information run. This issue is discussed further in section 12.5.1 of this report. In summary, it is believed that errors in the Interim Information run will be small, once functionality is added to estimate SVA metered volumes, and hence the savings arising from Modification P2 will not be substantially reduced.

- Based on the analysis in Annex 4, it is estimated that Modification Proposal P2 would reduce the level of unwarranted credit cover from £171 million to £29 million (based on the assumption that Parties aim to keep their Credit Cover Percentage at 50%). This equates to an estimated cost saving of £1.42 million per annum. (It should be noted that this analysis does not take into account the effect of inaccuracies in the Interim Information Trading Charges. However, as noted above, it is anticipated that these would be small once Modification Proposal P2 was implemented.
- As the current methodology allows certain Parties to post too little credit cover, Trading Parties are currently exposed to additional risks, in addition to the additional costs described above. Although this risk is harder to quantify accurately, consideration of possible defaulting scenarios (described in Annex A4.2 of this report) suggests that the materiality could be extremely high in a 'worst-case' scenario. For example, one of the scenarios described in Annex 4 is a large Generator who becomes unable to generate prior to going into default. Assuming a 10% market share, the Generator could accrue £60m liabilities over 29 days trading, even assuming a modest SBP value of £25/MWh. If the risk of the market experiencing a scenario this bad or worse is assumed to be 1% per annum, it would add £600,000 per annum to the expected costs faced by the industry as a result of inaccuracies in the current methodology.

In summary, then, it is estimated that implementation of Modification Proposal P2 would reduce the cost of unwarranted credit cover by some £1.4 million per annum. It would also reduce significantly the risk of financial loss to Trading Parties arising from a party going into default with insufficient credit cover to pay their Settlement liabilities.

These benefits appear to outweigh significantly the costs of implementing the Modification, which are described in sections 6 through 10 of this report, and include the following:

- £350,000 to amend BSC Systems;
- £43,000 in ELEXON testing and development costs; and
- Additional costs for those Parties who elect to enhance their systems to model the new credit-checking methodology.

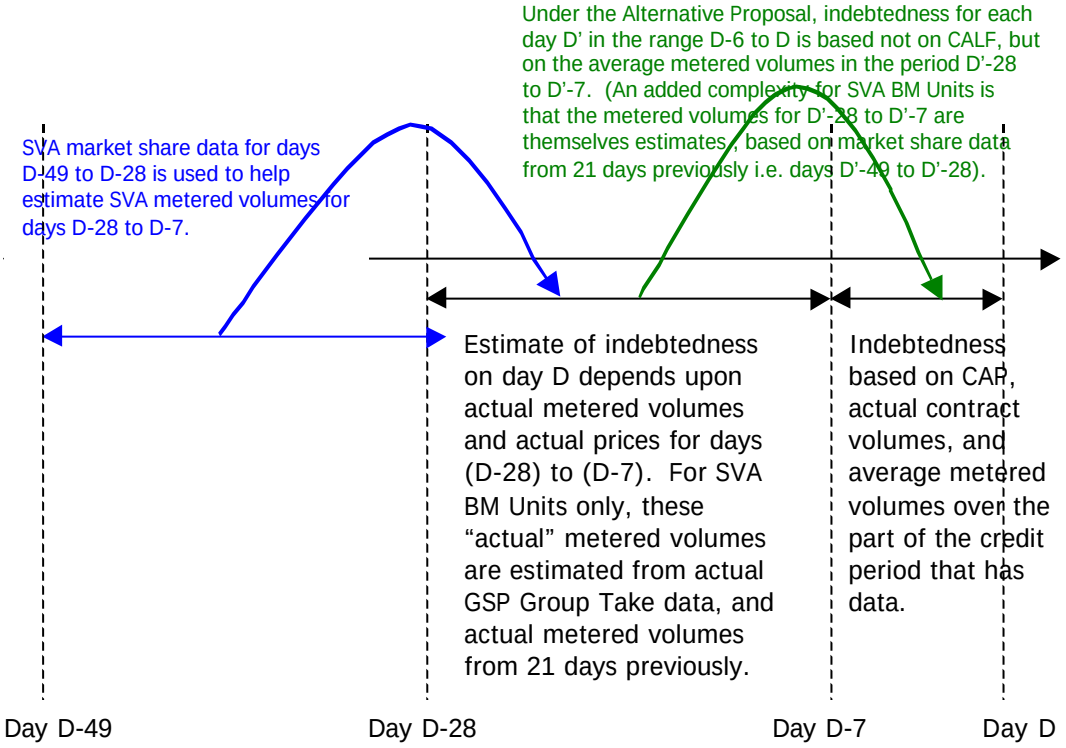
The Modification Group therefore believe that implementation of Modification Proposal P2 would remove a significant and material inefficiency in the operation of the balancing and settlement arrangements, and hence facilitate achievement of the BSC Objective in condition 7A(3)(d) of the Transmission License i.e. promoting efficiency in the implementation and administration of the balancing and settlement arrangements.

It would also seem likely that the unnecessary costs and risks imposed on Trading Parties by the current methodology for assessing credit indebtedness may also act as a deterrent to participation in the electricity market, particularly for those organisations with limited ability to raise additional funds. Implementation of Modification Proposal P2 would therefore also facilitate achievement of the BSC Objective in condition 7A(3)(c) of the Transmission License (i.e. promoting effective competition in the generation and supply of electricity).

5.5 Description of Alternative Modification Proposal

The Alternative Modification Proposal refines Modification Proposal P2 as follows:

- For days which have had an Interim Information run (i.e. D-28 to D-7 approximately), indebtedness is calculated as for P2.
- For days which have not had an Interim Information run (i.e. D-6 to D approximately), indebtedness is still estimated using CAP. However, the metered volume is no longer estimated using CALF. Instead, the credit-checking process will estimate the metered volumes for each Settlement Period by calculating an average metered volume over that portion of the 29-day credit that has Interim Information data available:



It should be noted that this Alternative Modification Proposal was not described in the P2 Definition Report (Reference 2), but can be regarded as a variant of Alternative Proposal A, as defined in that report. Alternative Proposal A proposed that the indebtedness calculated for days D-28 to D-7 should be 'scaled up' to a full 29 days. The disadvantage of this proposal is that indebtedness for days D-6 to D is no longer based on actual contract volumes. The Alternative Modification Proposal defined in this document is intended to address this deficiency, by 'scaling up' metered volumes only.

The following table summarises how indebtedness is calculated under the Alternative Modification Proposal:

Data Used to Calculate Indebtedness Under the Alternative Modification Proposal		
	Days With Interim Information Data (i.e. D-28 to D-7)	**Days Without Interim Information Data (i.e. D-6 to D)**
Price Used to Estimate Energy Imbalance	Actual SSP/SBP	Credit Assessment Price
Contract Volume Used to Estimate Energy Imbalance	Actual Contract Volumes	Actual Contract Volumes
Metered Volume Used to Estimate Energy Imbalance	CVA – actual metered volumes SVA – estimated volumes (derived from GSP Group Take, and actual market share 21 days previously)	Average metered volume for that BM Unit over period D-28 to D-7
Method Used to Estimate Other Trading Charges	Trading Charges calculated directly by SAA	None (although arguably the Panel can take these other charges into account when setting CAP)

5.5.1 Handling of MVRN Under Alternative Modification Proposal

Under the current credit-checking methodology, the calculation of credit indebtedness for a Party in each Settlement Period accurately reflects any Metered Volume Reallocation Notification (MVRN) relevant to that Party (even though the BM Unit metered data to which the MVRN is applied is only an estimate). In order to maintain this level of accuracy, the metered data passed across from SAA to ECVAA must be prior to the application of MVRNs, in order that ECVAA can apply the MVRNs itself.

The accurate equations (as used by SAA) for applying MVRN to metered volumes are as follows:

$$QCE_{iaj} = \{(QM_{ij} - QBO_{ij}) * (QMPR_{iaj}/100) + QMFR_{iaj} \} * TLM_{ij} \quad \text{(Subsidiary Party)}$$

$$QCE_{iAj} = (QM_{ij} * TLM_{ij}) - \Sigma_{a \neq A} QCE_{iaj} \quad \text{(Lead Party)}$$

There are therefore a number of options for implementing MVRN under the Alternative Modification Proposal, depending upon the extent to which the full complexity of these equations needs to be reflected in EVCAA.

Option A, the most accurate option, would be to pass average values of QM, QBO and TLM from SAA to ECVAA, allowing the above equations to be implemented directly. This has the disadvantage of increasing the amount of data passed between SAA and ECVAA, and the complexity of the equations in the ECVAA system.

Option B, which would be less accurate, but significantly less complex, would be to pass a single average value of Credit Assessment Metered Volume (CAQMij) from SAA to ECVAA, where CAQM is defined as follows:

$$CAQM_{ij} = (QM_{ij} - QBO_{ij}) * TLM_{ij}$$

and then use the following simplified equations:

$$QCE_{iaj} = CAQM_{i} * (QMPR_{iaj}/100) + QMFR_{iaj} \quad \text{(Subsidiary Party)}$$

$QCE_{iAj} = CAQM_i - \Sigma_{a \neq A} QCE_{iaj}$ (Lead Party)

This simplification introduces the following errors into the calculation (in addition to the fundamental inaccuracy that metered volumes are an average over the credit period, rather than the actual metered volume in each Settlement Period):

i) The QCEiAj values calculated for the Lead Party will not include Bid-Offer volumes

ii) In calculating QCEiaj values for Subsidiary Parties, any values of Metered Volume Fixed Reallocation (QMPRiaj) will not have Transmission Losses applied to them.

The first of these disadvantages in particular could be material for some BM Units. For this reason, the preferred option is Option C, which is of intermediate complexity. Under this option, average values are passed from SAA to ECVAA of Credit Assessment Metered Volume (CAQMij) and Credit Assessment Bid-Offer Volume (CAQBOij), defined as follows:

$CAQM_{ij} = QM_{ij} * TLM_{ij}$

$CAQBO_{ij} = QBO_{ij} * TLM_{ij}$

The average values can then be used in the following simplified equations:

$QCE_{iaj} = (CAQM_i - CAQBO_i) * (QMPR_{iaj}/100) + QMFR_{iaj}$ (Subsidiary Party)

$QCE_{iAj} = CAQM_i - \Sigma_{a \neq A} QCE_{iaj}$ (Lead Party)

5.6 Assessment of Alternative Modification Proposal

The Alternative Modification Proposal seeks to reduce further the costs and risks arising from inaccuracies in the credit-checking methodology by increasing the accuracy of the estimated metered data used prior to the Interim Information run. The Alternative Modification Proposal uses the average metered volume over the period from (roughly) day D-7 to day D-29, while P2 uses CALF and GC/DC, which is in effect the average metered volume over the corresponding Season in the previous year.

In order to compare the relative accuracy of these two methods, ELEXON compared the estimated metered volumes produced by each of the two methods with actual metered volumes (using data for a 29 day period between 21 May 2001 and 18 June 2001). The results of this analysis can be found in Annex 5. However, in summary, the Alternative Modification Proposal did appear to produce significantly more accurate estimates of the daily total of metered volumes (for the period from day D to day D-6) than Modification Proposal P2.

Despite this analysis, however, the Modification Group considered it unlikely that the benefits of the Alternative Modification Proposal would justify the additional costs, for the following reasons:

- The impact assessment from the Logica Consortium (see Annex 3) indicated that the Alternative Modification Proposal would require significant additional software changes. It would require a new interface from SAA to ECVAA (rather than simply re-using the interface to FAA); and it would require changes to the internals of the credit-checking module rather than just the module that calculates daily indebtedness values. For this reason both software development and regression testing costs would be significantly higher for the Alternative Modification Proposal. The impact assessment indicated that this difference in costs would be in the range £165,000 to £200,000. ELEXON costs (for additional testing, project management, audit etc.) would also be significantly higher.

- In comparison, the Modification Group believed that the additional reduction in unwarranted credit cover costs arising from the Alternative Modification Proposal would be modest. As described in section 5.4 above, the residual unwarranted credit cover under P2 is estimated to be £300,000 per annum. This therefore constitutes the theoretical maximum cost saving that could be achieved by a more sophisticated solution. However, the Modification Group believed that the additional cost savings under the Alternative Modification Proposal would be very much less than this, for the following reasons:

  i) Both P2 and the Alternative Modification Proposal are similar, in that a single average value of metered volumes is used for all the Settlement Periods in a given day. Both methods therefore fail to take into account variation in metered volumes within the day. As the overall demand for electricity varies much more within a Settlement Day than it does between Settlement Days in a season, the Alternative Modification Proposal is unlikely to increase accuracy significantly compared to P2.

  ii) Although the Alternative Modification Proposal is on average more accurate, it would be significantly less accurate for BM Units returning from outages. Under a CALF-based methodology (such as P2), the effect of an outage is to reduce the CALF value for the following year i.e. the outage does reduce estimated metered volumes for subsequent Settlement Days, but this reduction is smeared across a whole Season. Under the Alternative Modification Proposal, the effect of an outage is to create a much larger reduction in estimated volumes over a much shorter period of time. Hence both approaches reduce estimates of metered consumption in response to previous outages (which is arguably the correct thing to do), but the Alternative Modification Proposal applies a large reduction to the period immediately after the outage. This would result in unwarrantedly volatile credit cover requirements for generators returning from outages (and other generators whose level of output varies from day to day), obliging them either to post an unwarrantedly high level of credit-cover for the year as a whole, or to put in place additional credit cover for the period immediately after a return from outage. It could be argued that this in itself represents an inefficiency in the operation of the balancing and settlement arrangements, and that therefore the Alternative Modification Proposal hinders the achievement of the BSC Objective in condition 7A(3)(d) of the Transmission License.

The Modification Group did recognise that additional cost savings might arise from the Alternative Modification Proposal through removing the overhead of maintaining Credit Assessment Load Factor (CALF) values. However, the Modification Group did not believe that the savings would be sufficiently large to justify the cost of the Alternative Modification Proposal, for the following reasons:

- The impact assessment from the Logica Consortium (see Annex 3) indicated that the Alternative Modification Proposal would increase rather than reduce ongoing operational costs (despite the savings arising from CALF values no longer being required). Although it might be possible to challenge the Logica Consortium on this point, and seek to understand the reasoning behind their conclusion, the Modification Group nonetheless had to assume, based on the information available, that there would not be significant savings on BSC Agent costs.
- There would also be a saving in the ELEXON costs for maintaining CALF (e.g. the cost of calculating CALF values from historical data, the cost of assisting the BSC Panel in resolving appeals relating to CALF values). As the enduring processes for calculating CALF values are not yet in place, it is difficult to assess these savings. However, based on experience to date, ELEXON

believe that the effort required to maintain CALF values is between 0.5 and 1.0 full time equivalent (FTE) staff:

i) It is estimated that, to date, the process of administering CALF has required 0.6 FTE, plus a contract with a third party to calculate the first year's CALF values. The estimated cost of this contract is approximately £45,000.

ii) Next year, no external contract will be required, as ELEXON will have the data to perform the calculation in-house. This will clearly increase the amount of ELEXON resource required. Conversely, it is anticipated that some aspects of the CALF process will have "bedded down", reducing the operational and management overhead.

iii) Taking all these factors into account, ELEXON believe that the effort required to maintain CALF values, should neither P2 nor the Alternative Modification Proposal be approved, will be in the range 0.5 to 1.0 FTE staff.

- However, ELEXON anticipate that the number of CALF appeals, and hence the cost of administering the process, will fall if P2 is implemented. The reason for this is that under P2, CALF values will only be used for calculating indebtedness for seven out of the twenty-nine days. The materiality of any anomaly in CALF values will therefore be reduced to approximately one quarter of the materiality under the current Trading Arrangements, and the level of appeals can therefore be expected to fall.

It should also be noted that the removal of the appeals process for CALF values under the Alternative Modification Proposal, although a source of cost savings, is in itself an undesirable feature of the Alternative Modification Proposal. The reason for this is that the ability of Parties to request that the Panel re-determines CALF values (in accordance with section M1.5.6 of the BSC) is an important counterbalance to the potential inefficiencies of the CALF mechanism. Any technique for estimating metered volumes (be it the calculation of CALF, or the Alternative Modification Proposal) will sometimes produce inappropriate results, through not taking into account the individual circumstances of a particular Party or BM Unit. In such cases, the ability of a Party to request that the Panel re-determines the CALF value is an important safeguard to ensure that Trading Parties are not obliged to provide unfair levels of credit cover. However, because the Alternative Modification Proposal is an automated process without a manually configurable parameter such as CALF, there can be no equivalent mechanism for allowing the Panel to take into account the circumstances of a specific case, and adjust the estimates of metered volumes accordingly. As a result, there is a very real risk that the Alternative Modification Proposal would result in unwarranted levels of credit cover being required from certain Trading Parties, and this is likely to hinder rather than facilitate achievement of the Applicable BSC Objectives.

6 IMPACT ON BSC AND BSCCO DOCUMENTATION

6.1 BSC

Draft text to implement Modification Proposal P2 can be found in Annex 1. However, in summary, the changes required are as follows:

- New paragraph in Section M to define Actual Energy Indebtedness (AEI_p) as the energy indebtedness corresponding to the Trading Charges calculated by the SAA Interim Information run.
- Definition of Energy Indebtedness (EI_{pj}) in Section M1.2.1 amended to use Actual Energy Indebtedness (AEI_p) in place of Credit Energy Indebtedness (CEI_{pj}) where available.
- Section M1.4.2 amended to ensure that the ECVAA is informed of the value of Credit Assessment Price (CAP).
- New section T4.2.2 defining the method by which values of BM Unit Metered Volume (QM_{ij}) are determined for Supplier BM Units in the Interim Information run.
- New section T5.3.5 describing the obligation on the SAA to provide Trading Charge data to the ECVAA.
- Definition of Actual Energy Indebtedness added to Annex X-2.
- Minor amendments to definitions of BM Unit Metered Volume (QM_{ij}) and Credit Assessment Energy Indebtedness (CEI_{pj}) in Annex X-2.

6.2 Code Subsidiary Documents

Minor changes would be required to BSCP01, to describe the new interface from SAA to ECVAA.

6.3 BSCCo Memorandum and Articles of Association

No changes would be required to the BSCCo Memorandum and Articles of Association.

7 IMPACT ON BSC SYSTEMS

This section of the report describes the changes required to BSC Systems in order to implement either Modification Proposal P2 or the Alternative Modification Proposal.

7.1 Cost and Timescales

Annex 3 to this report contains the Logica Consortium's impact assessment of the costs and timescales required to implement Modification Proposal P2 or the Alternative Modification Proposal. However, the assessment can be summarised as follows:

Summary of Logica Consortium Costs and Timescales		
	Modification Proposal P2	**Alternative Modification Proposal**
Cost to develop and implement as patch	£ 295,400 to £354,480	£ 461,263 to £553,516
Elapsed time required to develop and implement	23 weeks	30 weeks
Cost per month to maintain	£4,431 to 5317 per month	£6,919 to £8303 per month

7.2 Registration

No changes required.

7.3 Contract Notification

No changes required.

7.4 Credit Checking Systems

Modification Proposal P2 requires the following changes to the credit-checking process:

- The ECVAA system should load Trading Charge data from the SAA Interim Information run, and convert it to values of Actual Energy Indebtedness (AEI_p) for each Party.
- The credit check for the first Settlement Period of the following day, and subsequent Settlement Periods, should then use these value in calculating Energy Indebtedness for each Party.

The Alternative Modification Proposal would additionally require the following changes:

- The ECVAA system should load values of Daily Average Credit Assessment Metered Volume ($DACAQM_{id}$) and Daily Average Credit Assessment Bid-Offer Volume ($DACAQBO_{id}$) from the SAA Interim Information run.
- The credit-checking process should retrieve the values of $DACAQM_{id}$ and $DACAQBO_{id}$ for each day in the 29-day credit period for which data is available. These values should then be averaged over all the days to produce values of Credit Assessment Metered Volume ($CAQM_i$) and Credit Assessment Bid-Offer Volume ($CAQBO_i$):

$$CAQM_i = \Sigma_d\ DACAQM_{id} \text{ / (number of days with data available)}$$
$$CAQBO_i = \Sigma_d\ DACAQBO_{id} \text{ / (number of days with data available)}$$

- These values of $CAQM_i$ and $CAQBO_i$ should then be used in the calculation of QCE_{iaj} (instead of $BMCAIC_i$ and $BMCAEC_i$ as currently), as follows:

  For Subsidiary Accounts (a<>A) for Settlement Period j:

  $$QCE_{iaj} = (CAQM_i - CAQBO_i) * (QMPR_{iaj}/100) + QMFR_{iaj}$$

  For Lead Energy Accounts (a=A) for Settlement Period j:

  $$QCE_{iAj} = CAQM_i - \Sigma_{a \neq A} QCE_{iaj}$$

Note that further information on the rationale behind these changes can be found in the *MP2 Requirements Specification* (Reference 3).

7.5 Balancing Mechanism Activities

No changes required.

7.6 Collection and Aggregation of Metered Data

No changes required.

7.7 Supplier Volume Allocation

No changes required.

7.8 Settlement

In order to implement Modification Proposal P2, the SAA software should estimate metered volumes for Supplier BM Units (for Interim Information runs only) as follows:

- Identify the most recent day D' which has the same day of the week as the Settlement Day D, and for which Initial Settlement has been performed. (Given the current settlement timetable, this is in practice likely to be the day 21 Calendar Days prior to day D.)
- For each Settlement Period j on day D, identify the corresponding Settlement Period j' on the previous day D'. This mapping process is entirely trivial (period 1 mapping to period 1, period 2 mapping to period 2, and so on), except in the case where the two days contain different numbers of Settlement Periods (due to a clock change on one of the days). In this case, the mapping should use a simple and appropriate algorithm (e.g. the one used to apply 'ever-green' ECVN to a short or long day).
- For each Settlement Period j and Supplier BM Unit i, estimate the BM Unit Metered Volume QM_{ij} by apportioning the GSP Group Take in period j between Supplier BM Units in proportion to their Metered Volumes in the previous period j':

  $$QM_{ij} = GSPGT_{Hj} * QM_{ij'} / GSPGT_{Hj'}$$

  where:

  $GSPGT_{Hj}$ is the GSP Group Take in period j for the GSP Group H in which BM Unit i is registered; and

  $QM_{ij'}$ and $GSPGT_{Hj'}$ are the values of the BM Unit Metered Demand and GSP Group Take in Settlement Period j'.

Note that:

- No specific processing is required to account for Bank Holidays i.e. volumes for a Bank Holiday Monday will be estimated in the same way as those for a working day. The Modification Group meeting on 20th June 2001 took the view that the level of inaccuracy this introduces is acceptable in the overall context of the indebtedness calculation.
- Because GSP Group Take is apportioned in proportion to market share three weeks before the Settlement Day, the estimated volumes for a newly-registered Supplier BM Unit will be zero for a period of three weeks after the first metering system is registered to it. The Modification Group meeting on 20th June 2001 took the view that the level of inaccuracy this introduces is acceptable in the overall context of the indebtedness calculation.
- The above processing should apply only to the Interim Information run (i.e. the SAA system should not allow these estimated volumes to be used in Initial Settlement or subsequent Reconciliation runs).

Modification Proposal P2 also requires an interface from SAA to ECVAA. However, the DLIA (see Annex 3) proposes reusing the existing interface from SAA to FAA, so no software changes are required.

Implementing the Alternative Modification Proposal would require all of the above changes, plus an interface from SAA to ECVAA containing the Daily Average Credit Assessment Metered Volume ($DACAQM_{id}$) and Daily Average Credit Assessment Bid-Offer Volume ($DACAQBO_{id}$) for each BM Unit, where these data items are defined as follows:

$$DACAQM_{id} = \Sigma_j (QM_{ij} * TLM_{ij}) / \text{(number of periods in day)}$$
$$DACAQBO_{id} = \Sigma_j (QBO_{ij} * TLM_{ij}) / \text{(number of periods in day)}$$

Further information on the rationale behind these changes can be found in the *MP2 Requirements Specification* (Reference 3).

7.9 Clearing, Invoicing and Payment

No changes required.

7.10 Reporting

No additional reporting required, for the reasons described in section 12.3 of this report.

8 IMPACT ON CORE INDUSTRY DOCUMENTS AND SUPPORTING ARRANGEMENTS

The Modification Group believes that neither Modification Proposal P2 nor the Alternative Modification Proposal would require amendments to Core Industry Documents. In particular, none of the following documents would be affected:

- Grid Code;
- Master Connection and Use of System Agreement (MCUSA);
- Supplemental Agreements;
- Ancillary Services Agreements (ASAs);
- Master Registration Agreement (MRA);
- Data Transfer Services Agreement (DTSA);
- British Grid Systems Agreement (BGSA);
- Use of Interconnector Agreement;
- Pooling and Settlement Agreement (PSA);
- Settlement Agreement for Scotland (SAS);
- Distribution Codes;
- Distribution Use of System Agreements (DUoSAs); and
- Distribution Connection Agreements

9 IMPACT ON ELEXON

Modification Proposal P2 is not anticipated to have any impact on ELEXON operational costs.

Alternative Modification Proposal P2 would reduce ELEXON operational costs, by removing the need to maintain CALF values. These cost savings cannot be estimated accurately, because the enduring processes for maintaining CALF values are not yet in place. Section 5.6 discusses further the issue of cost savings arising from the removal of CALF from the Trading Arrangements.

10 IMPACT ON PARTIES AND PARTY AGENTS

10.1 Parties

Both Modification Proposal P2 and the Alternative Modification Proposal change the way in which BSC Systems calculate Energy Indebtedness, without changing any of the surrounding processes or data flows. The implementation of either Modification Proposal would not therefore require Parties to amend their systems or processes. However, those Parties who wish to predict or verify the levels of Energy Indebtedness calculated by BSC Systems would need to update their systems and processes in order to reflect the amended algorithms.

10.2 Party Agents

Neither Modification Proposal is expected to require changes to Party Agent systems or processes.

11 LEGAL ISSUES

Neither Modification Proposal P2 nor the Alternative Modification Proposal is believed to raise any issues with regard to the statutory, regulatory and contractual framework within which the Code sits.

12 SUMMARY OF REPRESENTATIONS

Following the meeting of the Credit Modification Group on 20th June 2001, Modification Proposal P2 and the Alternative Modification Proposal (as described in sections 5.1 and 5.2 of this document) were issued for assessment and consultation:

- On 28th June 2001, the *MP2 Requirements Specification* (Reference 3) was circulated to BSC Change Administrators and Party Agent Change Administrators for Detailed Level Impact Assessment. This document described the proposed changes in detail, and was issued as a formal Change Proposal Circular (CPC023) in accordance with the BSC Procedure for Change Management (BSCP40).
- On 3rd July, the following documents related to Modification Proposal P2 were issued for consultation to parties:

  i) The *MP2 Requirements Specification* (Reference 3).

  ii) A document entitled *Modification Proposal P2 – Initial Views of the Credit Modification Group on Alternative Modification Proposals* (Reference 4). This document explained the thinking of the Modification Group on which Alternative Modification Proposal to include in the Requirements Specification, and listed a number of issues on which views were sought.

  iii) A pro-forma, summarising the issues on which responses were sought.

12.1 Summary of Responses Received

The Credit Modification Group met on 13th July to consider the following responses to the consultation and assessment:

- Completed pro-formas from London Electricity, Seeboard, British Energy and Powergen.
- Responses to Change Proposal Circular CPC023 from Siemens Metering DataCare, Yorkshire Electricity / Npower / Npower Direct Ltd, GPU Power Distribution, Magnox, Logica EPFAL, Scottish and Southern Energy Group, TXU and Scottish Power / Manweb. (A response was also received from Seeboard, but this duplicated the pro-forma response, and was not therefore considered separately).
- Emails from Nigel Burrows of Magnox and Ben Willis of Yorkshire Electricity. These were sent directly to members of ELEXON staff, and were presumably not intended to form part of the formal consultation response. However, as they raise issues relevant to the consultation, it seemed appropriate for the Modification Group to consider them.

Annex 2 of this document contains the full text of these responses. The remainder of this section describes the responses, and the views and comments of the Modification Group in respect thereof, as follows:

- Section 12.2 discusses which Modification Proposal (if any) best meets the Applicable BSC Objectives. Responses to questions A to D on the pro-forma are discussed in this section.
- Section 12.3 discusses additional reporting requirements (i.e. question E on the pro-forma).
- Section 12.4 discusses the issue of whether Generation Capacity (GC) and Demand Capacity (DC) values would still be required, should the Alternative Modification Proposal be implemented (i.e. question F on the pro-forma).

- Section 12.5 discusses other issues raised in the consultation responses.

12.2 Choice of Modification Proposal

Questions A to D on the pro-forma related to the issue of which Modification Proposal best met the Applicable BSC Objectives. The following views were expressed:

- London Electricity stated that either Modification would achieve BSC objectives better than the current arrangements, by providing a more accurate reflection of the actual credit risks involved, and hence reducing the risks and potential costs to other market participants. They preferred Modification Proposal P2 to the Alternative Modification Proposal, but believe there is little difference between the modification and its alternative and would accept either.
- SEEBOARD also supported both alternatives while expressing a preference for P2, on the grounds that it appears simpler and, therefore, likely to represent best value for money. It would also be easier to replicate and check calculations. However, they reserved final judgement until a full business case is presented.
- Powergen supported the alternative modification proposal, as this estimates credit cover requirements using data that is much closer to real time, and will therefore result in the more accurate and timely estimation and collection of credit cover data. This should result in the credit position of BSC parties being more accurately determined and hence reduce the risks to the industry as a whole. Note however that Powergen's response included the following caveats:
  - i) They stated that Elexon have still to demonstrate their ability to accurately determine the trading charges for the consumption account. This issue is discussed further in section 12.5 below.
  - ii) They suggested alternatives that might better meet the BSC Objectives, as discussed in section 12.2.1 below.
- The response from Yorkshire Electricity, NPower and NPower Direct agreed to P2 with the following caveat: "It needs to be confirmed that the proposed new arrangements would not impose unreasonable constraints or impacts on the Credit Cover requirements of Suppliers seeking to merge or exit the market in a controlled manner".
- Scottish and Southern Energy Group stated that they prefer the Alternatative Modification Proposal, as this removes the long-term need to maintain DCs/GCs for credit monitoring.
- The email from Magnox to ELEXON stated that they do not favour the Alternative Proposal, as the application of the Average metered volume from the period D-28 to D-7 to the period D-6 to D will provide an appropriate estimate of actual metered volume during the latter period - for example where plant is returning to service after outages.

In summary, both options had their supporters, but slightly more responses were in favour of Modification Proposal P2.

For the reasons described in sections 5.4 and 5.6 of this report, the view of the Modification Group was that Modification Proposal P2 best facilitated achievement of the Applicable BSC Objectives.

12.2.1 Other Alternatives

In response to question D on the pro-forma, PowerGen suggested the following additional alternatives:

- The Alternative Modification Proposal could be further improved by replacing CAP with SBP and SSP in the period D to D-6. The improved estimates of volumes calculated for this period would then be matched to the best view of imbalance costs. The industry as a whole would then be better protected as the credit position of any Party would be affected by its trading position in a much shorter timescale. This would require all parties to be more proactive in managing their credit cover. Any distressed trading party would be identified much more quickly and would then have to either immediately increase its credit cover, or have further trading restricted much more quickly than at present. In either case, the risk from such a party to the rest of the industry would be greatly reduced.
- Powergen believes that the way forward for the treatment of credit cover under the BSC is to adapt the margining methodologies employed by the various power exchanges to the BM. Such an approach would see the setting of position limits, a BM margin requirement and monitoring against the collateral provided by each party. The basis of this approach would be that Elexon (or some other party) would be responsible for managing and monitoring a limit based regime and provide routine reports to each party to ensure the required amount of collateral is provided.

The Modification Group's views on these alternatives were as follows:

- On the first proposal, the Group's view was that using actual system prices immediately after real time has the disadvantage that any volatility in system prices would be immediately reflected in credit-checking, potentially causing unpredictable increases in calculated indebtedness. If this happened outside banking hours, the Party might be unable to increase their credit cover. Managing this risk could significantly increase the costs incurred by Trading Parties in managing their credit cover.
- It was also noted that Modification Proposal P2 explicitly excluded the use of actual prices in this way, and that therefore the Powergen proposal could not be considered as an Alternative Modification Proposal.
- On the second proposal, the Group's view was that the current credit-cover arrangements did in effect constitute a system of position limits and margin requirements (albeit not described in those terms in the BSC). They therefore decided not to progress the proposal further as an Alternative Modification Proposal.

12.3 Additional Reporting Requirements

The following responses were in favour of no change to reporting:

- SEEBOARD stated that "any change to the ECVAA-I014 would have implications for several of our systems. As long as existing format is retained and IDD record continues to report Indebtedness % we would not require any additional reporting."
- Scottish and Southern Energy Group stated that "Which ever option is agreed we want to minimise the cost of change. Consequently we do not agree to any changes in format to reporting on the E0141 flow, on the basis that all additional information required will be available via the S0141 flow if anyone wants to replicate and check the Central Agent's calculations."
- The British Energy response stated "Minimum requirement - information which is already being published".

The following responses did favour additional reporting:

- The response from Yorkshire Electricity, NPower and NPower Direct stated that "adequate reporting of relevant parameters such that participants can actively manage their credit in a timely manner and allow appropriate actions to be taken would be helpful."
- PowerGen stated that "it would be necessary for estimates of metered data and trading (imbalances & RCRC) charges to be provided. This would then enable individual companies to self validate and hence challenge their credit position as is currently possible under the present arrangements using CAP/CALF."
- The email from Magnox stated that "additional reporting should be included in the Notification Report to show:

  (a) the overall indebtedness
  (b) the indebtedness arising from D-28 to D-7
  (c) the indebtedness arising from D-7 to D
  (d) for P2, the CALF based estimate of volume
  (e) For the alternative modification, the averaged metered volume for the relevant periods

  The above requirements represent our view notwithstanding the fact that some of these quantities can in principle be derived from information in other reports."
- The email from Ben Willis asked "will participants (i.e. suppliers) know what their market share on the 'latest equivalent day', since this should feed into their credit calculations. My fear is that they will know they GSP Group take from the relevant SF run, but will not know the total GSP Group take, from which their share can be calculated. Come to think of it, will they know the GSP Group Take from the II run, that is used for the actual credit calculation? These figures are vital for suppliers to be able to manage their credit risk. Clear reporting will assist this, and minimise any chance of participants erroneously going into credit default.

The view of the Modification Group was that, if Modification Proposal P2 is to be implemented, it is essential that Suppliers should receive GSP Group Take data, to allow them to validate their estimated SVA metered volumes. However, subsequently to the meeting, ELEXON confirmed with the Logica Consortium that GSP Group Take values are already reported to all Suppliers who are Lead Parties for BM Units in the GSP Group via the CDCA-I029 flow, from both the Interim Information and Initial Settlement runs. This gives Suppliers access to the GSP Group Take data used to estimate their metered volumes in SAA, and therefore no additional reporting from SAA is proposed.

The Modification Group also discussed the additional reporting of indebtedness data (as proposed for example in the email from Magnox). Of the items proposed, overall indebtedness and the CALF-based estimate of volume are already reported on the ECVAA-I014 flow. The only new information is how the total indebtedness splits into the ECVAA-estimated and SAA-calculated components. There would potentially be two different options for reporting this data:

1. Add new fields to the ECVAA-I014 report, showing how much of the overall indebtedness derives from the SAA, and how much from ECVAA. This has the disadvantage of potentially requiring change to the systems of all parties who read the ECVAA-I014 report, including those who aren't interested in the new data.
2. Producing a new report that just contains the additional data items. This has the disadvantage of requiring a whole new report to be created by ECVAA and loaded by parties, potentially making it an expensive solution for all concerned.

The view of the Group was that the benefits of either approach were minimal, given that all the information the new report would contain can in any case be derived from the Trading Charge data in the SAA-I014 flow. They therefore proposed no additional reporting.

12.4 Continued Requirement for GC and DC

Responses were as follows:

- London Electricity suggested that "should the Alternative modification be approved, GC and DC values should be retained within the BSC for as long as they are required for other calculations within the trading arrangements."
- SEEBOARD suggested that GC/DC "should be retained even if there are no technical reasons for keeping them:
  - (a) Presumably there is a cost to remove these items, change IDD etc...
  - (b) A future modification could find these values of use.
- PowerGen stated that "Removal of DC & GC will result in file format changes and hence costs being incurred by BSC parties. If it cannot be proven that their removal will result in substantial future savings then Powergen does not support their removal. NGC also use GC and DC. Their removal from the BSC will result in additional costs as NGC would need to implement substitutes."

Scottish and Southern Energy Group presumably took the opposite view, as their reason for preferring the Alternative Modification Proposal over P2 was that "it removes the long-term need to maintain DCs/GCs for credit monitoring."

12.5 Other Issues Raised

12.5.1 Accuracy of Trading Charges Calculated by Interim Information Run

The following responses noted that the Trading Charges calculated by the Interim Information run are inaccurate, and therefore questioned the appropriateness of using them in credit-checking:

- The British Energy response stated that they are concerned about the use of initial data as it can be unreliable. At settlement, figures can be out by as much as +/- £250,000.
- The Powergen response noted that Elexon have yet to demonstrate their ability to accurately determine the trading charges for the consumption account.
- The email from Magnox to ELEXON stated that the Group needs to be satisfied that the estimated data to be incorporated within the Interim Information Settlement Report proposed under P2 (re Trading Charges) will be sufficiently accurate and reliable as a basis for the assessment.

In order to assess this issue, ELEXON analysed the differences in Daily Trading Charges between Interim Information and Initial Settlement, over the latest month for which data is available (i.e. 19th May to 18th June). Note that all the averages exclude Energy Accounts that aren't trading (i.e. have all Trading Charges zero):

	Energy Account Type	Average at II (absolute values, ignoring signs)	Average at II (netting positive and negative values)	Average Change Between II and SF (absolute values, ignoring signs)	Average Change Between II and SF (netting positive and negative values)
Energy Imbalance Volume	Prod	398 MWh	-17.8 MWh	23.5 MWh	13.2 MWh
Energy Imbalance Volume	Cons	24,686 MWh	24,209 MWh	23,407 MWh	-23,407 MWh
Energy Imbalance Charge	Prod	£ 11,563	£ 8,852	£ 3,103	£ 1,664
Energy Imbalance Charge	Cons	£ 211,092	- £ 210,483	£ 206,387	£ 206,386
Residual Cashflow Reallocation Cashflow	Prod	£ 122,229	- £ 117,628	£ 127,130	£ 121,689
Residual Cashflow Reallocation Cashflow	Cons	£ 4,009	- £ 4,009	£ 10,873	£ 10,449

It can be seen from this table that there are significant differences between the Interim Information Trading Charges and the Initial Settlement Trading Charges. ELEXON believe that the reasons for these discrepancies are, in decreasing order of materiality:

i) No SVA data is available for the Interim Information run, and therefore the Trading Charges are calculated using zero metered volumes for SVA BM Units. As a result, the SAA system will calculate negative Imbalance Charges for Stage 2 Suppliers, which are then smeared across Parties with CVA metering systems through the mechanism of Residual Cashflow Reallocation Cashflow (RCRC). This explains the extreme inaccuracy of the imbalance charges for Consumption accounts and the RCRC values for Production accounts in the Interim Information run.

ii) The values of System Sell Price and System Buy Price used in the Interim Information run are not necessarily the same as those used in the Initial Settlement run. In particular:

- The component of BSAD relating to option fees is not currently included in system prices until the Initial Settlement run. This is a feature of the NGC BSAD Methodology introduced in response to Modification Proposal P3, and would cease to be true if Modification Proposal P8 were implemented.

- In the future, any workaround introduced for Modification Proposal P18A could also cause differences between the prices at Interim Information and those at Initial Settlement.

The values of System Sell Price and System Buy Price used in the Interim Information run are not necessarily the same as those used in the Initial Settlement run. In particular:

iii) By definition, the input data to the Interim Information run (e.g. CVA metered volumes, Bid-Offer Acceptances) is provisional, and subject to correction prior to Initial Settlement. For example, workaround W018 provides a mechanism by which National Grid can correct Bid-Offer and Bid-Offer acceptance data up until Initial Settlement.

iv) In calculating Transmission Losses, the Interim Information run treats the whole of the GSP Group Take as Consumption, which is equivalent to assuming that all Supplier BM Units (i.e. BM Units registered in SVA) are assigned to consumption Energy Accounts. To the extent that this is not true, small changes will occur in Transmission Loss Multiplier (TLM) values between the Interim Information and Initial Settlement runs.

Of these four issues, (ii) and (iii) would remain under P2 (or its Alternative). Issues (i) and (iv) would be solved (at least in part) by the estimation of SVA metered volumes.

Quantifying the accuracy with which SVA metered volumes could be estimated is difficult without repeating major parts of the settlement process for a large number of Settlement Days. However, ELEXON have performed some analysis (albeit on relatively small volumes of data), as described in Annex 6 to this report. Based on this limited analysis, it would appear that:

(a) Because it uses actual GSP Group Take, the total error in imbalance volumes introduced by the estimation will by definition be zero (i.e. individual Energy Accounts will have volume errors, but the GSP Group as a whole will not).

(b) For the sample of data looked at, the errors in SVA metered volumes were as follows:

- For the dominant Base BM Unit in the GSP Group, the error was less than 1%
- For those BM Units with 2% or more of the GSP Group Take, the errors ranged from 0.6% to 12.2%, with the average being 4.75%
- For the remaining Base BM Units (excluding those not trading in the GSP Group), the errors ranged from 0.8% to 59.27, with the average being 22.1%
- For the two Additional BM Units in the GSP Group, the errors were in excess of 100% in each case.

The Modification Group therefore believe that any errors arising from the estimation of SVA metered volumes will be small in comparison to the errors in the existing methodology.

12.5.2 Other Issues

- The response from Yorkshire Electricity, NPower and NPower Direct agreed to P2 with the following caveat: "It needs to be confirmed that the proposed new arrangements would not impose unreasonable constraints or impacts on the Credit Cover requirements of Suppliers seeking to merge or exit the market in a controlled manner". The Modification Group believe that Modification Proposal P2 is at least as good as the current methodology in this respect.

- PowerGen suggest a relationship with P18: “acceptance of Modification P18 could result in a Party’s credit position fluctuating once the new SBP and SSP values are re-calculated at D-22.” This issue is discussed in section 12.5.1 above.

13 PROJECT BRIEF

ELEXON have prepared a Project Brief (reference 5), which sets out in high level terms a proposed Project for implementation of the changes required to increase the accuracy of the estimate of indebtedness. The key points of this Project Brief can be summarised as follows:

- The NETA Central Service Agent has provided costs and timescales for the development of the Modification. On the basis that the development commences on 1st August 2001, the NETA Central Service Agent estimates that the development would take approximately 6 months and cost £295,400. This cost does not include the costs of Market Participant testing. Monthly operation and maintenance costs would be £4,400.
- In addition to the NETA Central Service Agent's costs there will be ELEXON costs of £43,000 which include those for making changes to Code Subsidiary Documents and Market Participant testing. The costs do not include any project management or audit costs.
- ELEXON will be responsible for managing implementation of the Modification. It is likely that the Modification will be implemented by including it as part of the BSC Systems Release 2 Project. On the basis that the implementation of the Modification is included in the BSC Systems Release 2 Project and that development starts in October 2001 the proposed Implementation Date for Modification Proposal P2 is 1st June 2002. (It should be noted that if P2 were developed as a stand-alone project, the implementation date could be brought forward but this would then delay implementation of the BSC Systems Release 2 Project.)

ANNEX 1 – PROPOSED TEXT TO MODIFY THE BSC

Proposed text to amend the BSC is as follows. It should be noted that this has not yet been legally reviewed, and is subject to change during the Reporting Phase.

A1.1 Section M

M1.2 Energy Indebtedness

1.2.1 For the purposes of the Code:

(a) in relation to a Settlement Period the "**Energy Indebtedness**" (EI_{pj}, in MWh) of a Trading Party shall be the algebraic sum of the:

(i) Actual Energy Indebtedness for those days d within the 29 day period for which (at Gate Closure for period j), Gate Closure has passed for the first Settlement Period of the day following that on which the Settlement Timetable specifies the Interim Information Settlement Run for day d is to take place (subject to paragraph T1.4).

(ii) Credit Assessment Energy Indebtedness for those periods in a day d within the 29 day period that doesn't meet the above condition.

(b) a reference to a Trading Party's Energy Indebtedness at any time is to its Energy Indebtedness in relation to the latest Settlement Period for which Gate Closure occurred before such time.

1.2.2 For the purposes of paragraph 1.2.1, the Credit Assessment Energy Indebtedness (CEI_{pj}, in MWh) of a Trading Party in relation to a Settlement Period shall be determined as follows:

$$CEI_{pj} = - (\sum_{a,i} CAQCE_{iaj} - \sum_{a} QABC_{aj})$$

where:

(c) summation on 'a' extends to the Production Energy Account and Consumption Energy Account of the Trading Party, and

(d) $CAQCE_{iaj}$ is the Credit Assessment Credited Energy Volume in accordance with paragraph 1.2.3.

1.2.3 The Credit Assessment Credited Energy Volume ($CAQCE_{iaj}$, in MWh) shall be determined:

(a) for each BM Unit which is a Consumption BM Unit, and for each Energy Account which is a Subsidiary Energy Account for that BM Unit, as follows:

$$CAQCE_{iaj} = (SPD * BMCAIC_i) * (QMPR_{iaj}/100) + QMFR_{iaj}$$

(b) for each BM Unit which is a Production BM Unit, and for each Energy Account which is a Subsidiary Energy Account for that BM Unit, as follows:

$$CAQCE_{iaj} = (SPD * BMCAEC_i) * (QMPR_{iaj}/100) + QMFR_{iaj}$$

(c) for each BM Unit which is a Consumption BM Unit, for the Energy Account which is the Lead Energy Account for that BM Unit, as follows:

$$CAQCE_{iaj} = (SPD * BMCAIC_i) - \sum_{a} CAQCE_{iaj}$$

(d) for each BM Unit which is a Production BM Unit, for the Energy Account which is the Lead Energy Account for that BM Unit, as follows:

$$CAQCE_{iaj} = (SPD * BMCAEC_i) - \Sigma_a CAQCE_{iaj}$$

where, for the purposes of paragraphs 1.2.3(c) and 1.2.3(d) only, Σ_a represents the sum over all Energy Accounts other than the Lead Energy Account.

1.2.4 Upon any change in the value of BM Unit Credit Assessment Export Capability or BM Unit Credit Assessment Import Capability for a BM Unit, values of Energy Indebtedness (for relevant Trading Parties) shall be determined (in relation to Settlement Periods in and from the day on which, in accordance with paragraph 1.6, the change becomes effective) as though such change were effective with effect from the first of the 29 days referred to in paragraph 1.2.1.

1.2.5 For the purposes of paragraph 1.2.1, the Actual Energy Indebtedness (AEI_p in MWh) shall be determined as follows:

AEI_p = Trading Charges / CAP

Where:

(a) CAP is the Credit Assessment Price in accordance with paragraph 1.4, and
(b) The Trading Charges are the net credit and debit amount, determined by the Interim Information Settlement Run, for the Settlement Day for all Trading Charges in accordance with paragraph T5.3.3 (c).

1.2.6 The ECVAA shall determine each Trading Party's Energy Indebtedness in relation to each Settlement Period as soon as reasonably practicable after Gate Closure for that Settlement Period.

1.3 Authority for steps under Sections M and P

1.3.1 In relation to the provisions of this Section M and Section P (and without prejudice to the generality of Section U2.6, but without prejudice to the ability of a Trading Party to raise a Trading Dispute), each Trading Party:

(a) acknowledges that the calculation of Energy Indebtedness and other matters to be calculated under this Section M involves the possibility of error;

(c) agrees that (subject to paragraph 3.2.4) the steps provided for in paragraph 3 and Sections P2.4 and P3.4 are to be taken notwithstanding any such error;

(d) acknowledges that such Trading Party may avoid any such steps being taken, including by providing additional Credit Cover (on the basis that it may withdraw such additional Credit Cover in accordance with paragraph 2.3.3 following resolution of such error).

1.3.2 Each Trading Party:

(a) hereby authorises the Panel, any Panel Committee, BSCCo, the ECVAA and the SAA to take any step contemplated by paragraph 3 and Sections P2.4 and P3.4; and

(b) agrees that (without prejudice to the generality of any other provision of the Code which limits or excludes liability), the Panel, each Panel Committee, BSCCo, and each BSC Agent shall have no liability (in contract or tort including negligence or otherwise) to such Trading Party for the taking of any such step,

except as provided in paragraph 4, and waives any such liability that any such body or person might otherwise have.

1.3.3 Nothing in paragraph 1.3.2(b) shall exclude or limit the liability of any person for death or personal injury resulting from that person's negligence.

1.4 Credit Assessment Price

1.4.1 For the purposes of the Code the "**Credit Assessment Price**" shall be such amount (in £/MWh) as the Panel shall from time to time determine, after consultation with Trading Parties, as the price which it would be appropriate to use to determine the equivalent financial amount of Trading Parties' Energy Indebtedness for the purposes of this Section M.

A1.2 Section T

T4.2.2 For the purposes of the Interim Information Settlement Run only, the BM Unit Metered Volume for Supplier BM Units will be determined as follows:

$QM_{ij} = \underline{GSPGT_{Hj} * QM_{ij'} / GSPGT_{Hj'}}$

Where:

(a) $\underline{GSPGT_{Hj}}$ is the GSP Group Take in period j for the GSP Group H in which BM Unit i is registered, and

(b) $QM_{ij'}$ and $GSPGT_{Hj'}$ are the values of BM Unit Metered Volume and GSP Group Take in Settlement Period j', and

(c) Settlement Period j' is the equivalent Settlement Period on Settlement Day d', to Settlement Period j on Settlement Day d, and

(d) Settlement Day d' is the most recent Settlement Day, that is the same week day as Settlement Day d, for which the Initial Settlement Run has taken place.

T5.3.5 In relation to each Settlement Day, following the Interim Information Run, the SAA shall provide to the ECVAA the data and information specified in paragraphs 5.3.2 to 5.3.4, relating to each Interim Information Run, on the day that the Settlement Calendar specifies the Interim Information Run for the Settlement Day is to take place (subject to paragraph 1.4).

A1.3 Section X Annex 2

Actual Energy Indebtedness	AEI_p	MWh	The amount determined as such in accordance with Section M1.2.5. *The Actual Energy Indebtedness is the net energy contribution determined to be allocated to a Trading Party for Settlement Periods as defined in Section M1.2.1.*
BM Unit Metered Volume	QM_{ij}	MWh	In respect of a Settlement Period: (i) in relation to a BM Unit (other than

			an Interconnector BM Unit) comprising CVA Metering Systems, the Metered Volume (as determined in accordance with Section R); (ii) in relation to an Interconnector BM Unit of an Interconnector User, the quantity determined in accordance with Section R7.4.2 (but without prejudice to Section T1.4.6); (iii) in relation to an Interconnector BM Unit allocated to an Interconnector Error Administrator, the quantity determined in accordance with Section T4.1; and (iv) in relation to a Supplier BM Unit, the quantity determined in accordance with Section T4.2.1 and T4.2.2.
Credit Assessment Energy Indebtedness	CEI_{pj}	MWh	The amount determined as such in accordance with Section M1.2.2. *The Credit Assessment Energy Indebtedness is the net energy contribution determined to be allocated to a Trading Party for Settlement Periods as defined in Section M1.2.1.*

ANNEX 2 – CONSULTATION RESPONSES

This annex contains the responses received to the P2 consultation and impact assessment:

- Section A2.1 contains the responses to the consultation received from London Electricity, Seeboard, British Energy and Powergen.
- Section A2.2 contains the responses to Change Proposal Circular CPC023 received from Siemens Metering DataCare, Yorkshire Electricity / Npower / Npower Direct Ltd, GPU Power Distribution, Magnox, Logica EPFAL, Scottish and Southern Energy Group, TXU, Scottish Power / Manweb and Seeboard.
- Section A2.3 contains the text of emails received from Magnox, and from a member of the Modification Group. These were sent directly to members of ELEXON staff, and were presumably not intended to form part of the formal consultation response. However, as they raised issues relevant to the consultation, they were also considered by the Modification Group meeting on 13th July 2001.

Further information on the consultation and assessment process leading to these responses is contained in section 12 of this report.

A4.1 – Consultation Responses

P2_IS_001 – London Electricity

LONDON ELECTRICITY CONSULTATION RESPONSE		
	Question	**Response**
A	Are there any specific issues which you feel the Modification Group should take into account when deciding whether or not to recommend to the Panel Modification Proposal P2 (as described in sections 2.2 and 3 of the attached document 016AAR). For example, do you believe that any specific feature of this Modification Proposal either facilitates, or fails to facilitate, achievement of the Applicable BSC Objectives?	We feel that this modification does facilitate BSC objectives better than the current arrangements and as such support the modification. This is because the proposed modification is a more accurate reflection of the actual credit risks involved and will reduce the risks and potential costs to other market participants.
B	Are there any specific issues which you feel the Modification Group should take into account when deciding whether or not to recommend to the Panel the Alternative Modification Proposal described in sections 2.3 and 4 of the attached document 016AAR. For example, do you believe that any specific feature of this Modification Proposal either facilitates, or fails to facilitate, achievement of the Applicable BSC Objectives?	We feel that this modification does facilitate BSC objectives better than the current arrangements but prefer using the CAP and CALF calculation for the days where metered data is not available and so prefer the original modification above this version. However, we believe there is little difference between the modification and its alternative and would accept either.
C	To the extent that you feel able to express a view in the absence of any	***Delete as appropriate:*** Modification Proposal P2. However we

LONDON ELECTRICITY CONSULTATION RESPONSE		
	Question	**Response**
	assessment of costs, do you prefer: • Modification Proposal P2 (as described in sections 2.2 and 3 of the attached document 016AAR); • The Alternative Modification Proposal (as described in sections 2.3 and 4 of the attached document 016AAR); or • The existing methodology for assessing credit indebtedness (i.e. no change)?	would find the alternative modification acceptable if the majority of participants preferred this. It is difficult to wholeheartedly support a modification without seeing its cost first so, although we support this modification in theory, we reserve the right to remove that support if we judge the cost to be too high.
D	Are there any other Alternative Modification Proposals that would, in your view, better achieve the Applicable BSC Objectives? (Note that section 2 of the attached document 005ABU describes the preliminary views of the Modification Group on why a number of the Alternative Modification Proposals described in the P2 Definition Report would not facilitate achievement of these Objectives.)	No
E	Section 2.4 of the attached document 016AAR raises the question of what additional reporting (if any) would be required, were the methodology for assessing credit indebtedness to be amended. Do you believe that additional reporting of the data used to calculate indebtedness would be required, should P2 or the Alternative Modification Proposal be implemented? If so, what additional data items would be required?	We envisage no problems with the implementation of this modification.
F	In the event that the Modification Group recommended a solution to the issues raised by Modification Proposal P2 that removed the need to use values of Generation Capacity (GC) and Demand Capacity (DC) in credit checking, would you support the removal of these data items from the BSC, or do you believe that they should be retained for other purposes?	Should the Alternative modification be approved, GC and DC values should be retained within the BSC for as long as they are required for other calculations within the trading arrangements.

P2_IS_002 – Seeboard

SEEBOARD CONSULTATION RESPONSE		
	Question	**Response**
A	Are there any specific issues which you feel the Modification Group should take into account when deciding whether or not to recommend to the Panel Modification Proposal P2 (as described in sections 2.2 and 3 of the attached document 016AAR). For example, do you believe that any specific feature of this Modification Proposal either facilitates, or fails to facilitate, achievement of the Applicable BSC Objectives?	We support both alternatives offered under P2. Given information available at this point our preference would be to implement the main modification. This appears simpler and, therefore, likely to represent best value for money. It would also be easier to replicate and check calculations. We reserve final judgement until a full business case is presented.
B	Are there any specific issues which you feel the Modification Group should take into account when deciding whether or not to recommend to the Panel the Alternative Modification Proposal described in sections 2.3 and 4 of the attached document 016AAR. For example, do you believe that any specific feature of this Modification Proposal either facilitates, or fails to facilitate, achievement of the Applicable BSC Objectives?	Please see comment above The alternative modification may well give a "better" result but at what additional cost? The effect of both alternatives would hopefully make amount of credit required more closely relate to risk created by a participant. Any choice then boils down to a value for money decision.
C	To the extent that you feel able to express a view in the absence of any assessment of costs, do you prefer: • Modification Proposal P2 (as described in sections 2.2 and 3 of the attached document 016AAR); • The Alternative Modification Proposal (as described in sections 2.3 and 4 of the attached document 016AAR); or • The existing methodology for assessing credit indebtedness (i.e. no change)?	Please see comment above.
D	Are there any other Alternative Modification Proposals that would, in your view, better achieve the Applicable BSC Objectives? (Note that section 2 of the attached document 005ABU describes the preliminary views of the Modification Group on why a number of the Alternative Modification Proposals described in the P2 Definition Report would not facilitate achievement of these Objectives.)	No
E	Section 2.4 of the attached document 016AAR raises the question of what	Any change to ECVAA-I014 would have implications for several of our systems.

SEEBOARD CONSULTATION RESPONSE		
	Question	**Response**
	additional reporting (if any) would be required, were the methodology for assessing credit indebtedness to be amended. Do you believe that additional reporting of the data used to calculate indebtedness would be required, should P2 or the Alternative Modification Proposal be implemented? If so, what additional data items would be required?	As long as existing format is retained and IDD record continues to report Indebtedness % we would not require any additional reporting.
F	In the event that the Modification Group recommended a solution to the issues raised by Modification Proposal P2 that removed the need to use values of Generation Capacity (GC) and Demand Capacity (DC) in credit checking, would you support the removal of these data items from the BSC, or do you believe that they should be retained for other purposes?	We suggest that they should be retained even if there are no technical reasons for keeping them: 1. Presumably there is a cost to remove these items, change IDD etc… 2. A future modification could find these values of use.

P2_IS_003 – British Energy

BRITISH ENERGY CONSULTATION RESPONSE		
	Question	**Response**
A	Are there any specific issues which you feel the Modification Group should take into account when deciding whether or not to recommend to the Panel Modification Proposal P2 (as described in sections 2.2 and 3 of the attached document 016AAR). For example, do you believe that any specific feature of this Modification Proposal either facilitates, or fails to facilitate, achievement of the Applicable BSC Objectives?	No Comment
B	Are there any specific issues which you feel the Modification Group should take into account when deciding whether or not to recommend to the Panel the Alternative Modification Proposal described in sections 2.3 and 4 of the attached document 016AAR. For example, do you believe that any specific feature of this Modification Proposal either facilitates, or fails to facilitate, achievement of the Applicable BSC Objectives?	No Comment
C	To the extent that you feel able to	***Delete as appropriate:***

BRITISH ENERGY CONSULTATION RESPONSE		
	Question	**Response**
	express a view in the absence of any assessment of costs, do you prefer: • Modification Proposal P2 (as described in sections 2.2 and 3 of the attached document 016AAR); • The Alternative Modification Proposal (as described in sections 2.3 and 4 of the attached document 016AAR); or • The existing methodology for assessing credit indebtedness (i.e. no change)?	Alternative Modification Proposal - British Energy is concerned about the use of initial data as it can be unreliable. At settlement, figures can be out by as much as +/- £250,000.
D	Are there any other Alternative Modification Proposals that would, in your view, better achieve the Applicable BSC Objectives? (Note that section 2 of the attached document 005ABU describes the preliminary views of the Modification Group on why a number of the Alternative Modification Proposals described in the P2 Definition Report would not facilitate achievement of these Objectives.)	No comment
E	Section 2.4 of the attached document 016AAR raises the question of what additional reporting (if any) would be required, were the methodology for assessing credit indebtedness to be amended. Do you believe that additional reporting of the data used to calculate indebtedness would be required, should P2 or the Alternative Modification Proposal be implemented? If so, what additional data items would be required?	Minimum requirement - information which is already being published
F	In the event that the Modification Group recommended a solution to the issues raised by Modification Proposal P2 that removed the need to use values of Generation Capacity (GC) and Demand Capacity (DC) in credit checking, would you support the removal of these data items from the BSC, or do you believe that they should be retained for other purposes?	No Comment

P2_IS_004 – Powergen

POWERGEN CONSULTATION RESPONSE		
	Question	**Response**
A	Are there any specific issues which you feel the Modification Group should take into account when deciding whether or not to recommend to the Panel Modification Proposal P2 (as described in sections 2.2 and 3 of the attached document 016AAR). For example, do you believe that any specific feature of this Modification Proposal either facilitates, or fails to facilitate, achievement of the Applicable BSC Objectives?	The current arrangements for calculating credit cover are not satisfactory at reflecting the credit cover position of BSC parties. Therefore, Powergen supports implementing processes that will promote the timely and accurate estimation and collection of the data required for credit checking. This should lead to BSC parties becoming more proactive in managing their credit cover position. Powergen believes that this Modification should improve the accuracy in calculating the credit position of BSC parties as it uses actual prices and volumes as they become available. The inherent inaccuracies that result from the use of CAP/CALF should be substantially reduced. Powergen notes that the improvements expected by this modification have yet to be quantified. In addition, Elexon have yet to demonstrate their ability to accurately determine the trading charges for the consumption account. Powergen notes that acceptance of Modification P18 could result in a Party's credit position fluctuating once the new SBP and SSP values are re-calculated at D-22.
B	Are there any specific issues which you feel the Modification Group should take into account when deciding whether or not to recommend to the Panel the Alternative Modification Proposal described in sections 2.3 and 4 of the attached document 016AAR. For example, do you believe that any specific feature of this Modification Proposal either facilitates, or fails to facilitate, achievement of the Applicable BSC Objectives?	The alternative modification proposal should provide further improvements in determining the credit cover required by a BSC Party by removing completely CALF and DC/GC. Powergen has the same reservations as in A above that the ability of Elexon to estimate trading charges has yet to be demonstrated.
C	To the extent that you feel able to express a view in the absence of any assessment of costs, do you prefer: • Modification Proposal P2 (as described in sections 2.2 and 3 of the	***Delete as appropriate:*** Alternative Modification Proposal Powergen supports the alternative modification proposal as this estimates credit cover requirements using data that

POWERGEN CONSULTATION RESPONSE		
	Question	**Response**
	attached document 016AAR); • The Alternative Modification Proposal (as described in sections 2.3 and 4 of the attached document 016AAR); or • The existing methodology for assessing credit indebtedness (i.e. no change)?	is much closer to real time. The current arrangements are wholly unsatisfactory in this respect. The alternative modification proposal will result in the more accurate and timely estimation and collection of credit cover data. This should result in the credit position of BSC parties being more accurately determined and hence reduce the risks to the industry as a whole. However, Powergen believes that Elexon have still to demonstrate their ability to accurately determine the trading charges for the consumption account.
D	Are there any other Alternative Modification Proposals that would, in your view, better achieve the Applicable BSC Objectives? (Note that section 2 of the attached document 005ABU describes the preliminary views of the Modification Group on why a number of the Alternative Modification Proposals described in the P2 Definition Report would not facilitate achievement of these Objectives.)	The Alternative Modification Proposal could be further improved by replacing CAP with SBP and SSP in the period D to D-6. The improved estimates of volumes calculated for this period would then be matched to the best view of imbalance costs. The industry as a whole would then be better protected as the credit position of any Party would be affected by its trading position in a much shorter timescale. This would require all parties to be more proactive in managing their credit cover. Any distressed trading party would be identified much more quickly and would then have to either immediately increase its credit cover, or have further trading restricted much more quickly than at present. In either case, the risk from such a party to the rest of the industry would be greatly reduced. Powergen believes that the way forward for the treatment of credit cover under the BSC is to adapt the margining methodologies employed by the various power exchanges to the BM. Such an approach would see the setting of position limits, a BM margin requirement and monitoring against the collateral provided by each party. The basis of this approach would be that Elexon (or some other party) would be responsible for managing and monitoring a limit based regime and provide routine reports to each party to ensure the required

POWERGEN CONSULTATION RESPONSE		
	Question	**Response**
		amount of collateral is provided.
E	Section 2.4 of the attached document 016AAR raises the question of what additional reporting (if any) would be required, were the methodology for assessing credit indebtedness to be amended. Do you believe that additional reporting of the data used to calculate indebtedness would be required, should P2 or the Alternative Modification Proposal be implemented? If so, what additional data items would be required?	Powergen believes that it would be necessary for estimates of metered data and trading (imbalances & RCRC) charges to be provided. This would then enable individual companies to self validate and hence challenge their credit position as is currently possible under the present arrangements using CAP/CALF. This additional reporting could include all data that passes from the SSA to ECVAA being simultaneously passed to the BSC party. In addition, regular reports from ECVAA would be required to enable each party to track both its own and its counterparties credit positions
F	In the event that the Modification Group recommended a solution to the issues raised by Modification Proposal P2 that removed the need to use values of Generation Capacity (GC) and Demand Capacity (DC) in credit checking, would you support the removal of these data items from the BSC, or do you believe that they should be retained for other purposes?	Removal of DC & GC will result in file format changes and hence costs being incurred by BSC parties. If it cannot be proven that their removal will result in substantial future savings then Powergen does not support their removal. NGC also use GC and DC. Their removal from the BSC will result in additional costs as NGC would need to implement substitutes.

A4.2 – Impact Assessment Responses

The responses received to CPC023 were as follows:

CPC023 RESPONSES			
Organisation	**Agree**	**Disagree**	**Comments**
Victoria Riley Siemens Metering DataCare	-	-	I neither agree nor disagree with the proposed changes. This does not impact on our business.
Dave Morton Seeboard	✓		Agree with the proposed changes. 21 Working Days. Impacted. Comments: SEEBOARD supports both alternatives offered under this proposal. Given information available at this point our preference would be to implement the main modification. This appears simpler and therefore likely to represent the best value for money. It would also be easier to replicate and check all calculations. However, we

CPC023 RESPONSES			
Organisation	**Agree**	**Disagree**	**Comments**
			reserve our final judgement until a full business case is presented. Any change to the ECVAA-I014 would have implications for several of our systems. As long as existing format is retained and IDD record continues to report Indebtedness % we would not require any additional reporting.
Emma Coates Yorkshire Electricity Npower Npower Direct Ltd	✓		We agree to Option 1 with the following caveat "It needs to be confirmed that the proposed new arrangements would not impose unreasonable constraints or impacts on the Credit Cover requirements of Suppliers seeking to merge or exit the market in a controlled manner". We estimate that it will take us 350 man-days to implement. We feel that adequate reporting of relevant parameters such that participants can actively manage their credit in a timely manner and allow appropriate actions to be taken would be helpful.
Jason Guest GPU Power Distribution	-	-	No Comment.
Nigel Burrows Magnox	-	-	The changes will impact our organisation. We would require 90 days notice of changes.
SARAH HOOLEY LOGICA EPFAL	-	-	No Impact. The changes are of interest to EPFAL. EPFAL would like to be informed of any developments relating to the proposal.
Sue Macklin Scottish and Southern Energy Group.	-	-	We prefer the alternate proposal as this removes the long-term need to maintain DCs/GCs for credit monitoring. Which ever option is agreed we want to minimise the cost of change. Consequently we do not agree to any changes in format to reporting on the E0141 flow, on the basis that all additional information required will be available via the S0141 flow if anyone wants to replicate and check the Central Agent's calculations. If changes to the E0141 are agreed we

CPC023 RESPONSES			
Organisation	**Agree**	**Disagree**	**Comments**
			estimate our implementation period to be 3 months.
Edward Coleman TXU	✓		Agree with the proposed changes. 5 Working Days required. No Impact.
David Nawrath (pp James Nixon) ScottishPower/ Manweb	✓		Agree with the proposed changes. 90 Working Days required. Impacted. Comments: The main holiday period left us unable to canvass the opinions of certain key staff members with regard to the most suitable option. We must, therefore, defer any definite decision on this matter to a later date.

A4.3 – Other Responses from Parties and Group Members

Email from Magnox

The following email was sent from Magnox to one of the ELEXON attendees at the Modification Group:

Question A:

The Group needs to be satisfied that the estimated data to be incorporated within the Interim Information Settlement Report proposed under P2 (re Trading Charges) will be sufficiently accurate and reliable as a basis for the assessment

Question B:

See above. However, we do not favour the Alternative Proposal as we do not believe the application of the Average metered volume from the period D-28 to D-7 to the period D-6 to D will provide an appropriate estimate of actual metered volume during the latter period - for example where plant is returning to service after outages.

Question C:

Prefer P2

Question D:

Yes. Additional reporting should be included in the Notification Report to show:

(a) the overall indebtedness
(b) the indebtedness arising from D-28 to D-7
(c) the indebtedness arising from D-7 to D
(d) for P2, the CALF based estimate of volume
(e) For the alternative modification, the averaged metered volume for the relevant periods

The above requirements represent our view notwithstanding the fact that some of these quantities can in principle be derived from information in other reports.

Question E:

No view

Email from Modification Group Member

The following email was sent from one of the Modification Group Members to one of the ELEXON attendees at the Modification Group:

A thought on using the 'latest equivalent day' as an indication of market share:

Will participants (i.e. suppliers) know what their market share on the 'latest equivalent day', since this should feed into their credit calculations. My fear is that they will know they GSP Group take from the relevant SF run, but will not know the total GSP Group take, from which their share can be calculated.

Come to think of it, will they know the GSP Group Take from the II run, that is used for the actual credit calculation?

These figures are vital for suppliers to be able to manage their credit risk. Clear reporting will assist this, and minimise any chance of participants erroneously going into credit default.

ANNEX 3 – BSC AGENT IMPACT ASSESSMENTS

To be completed by the Originator						
Change Request ID (to be provided by the Customer) P2 Logica reference: ICR119			Service affected BMRA/SAA			
Change Request Name:			Modification P02 – Revision of the Methodology for Assessing Credit Indebtedness			
Agreement by the customer to proceed to the next stage						
	High Level Assessment	Detailed Level Assessment	Change Quotation	Implement Change	Emergency Fix Report	Change Request under Clause 14.2 (delay)
Tick which stage is being requested		✓				
Signed by Customer Baseline Manager						
Signed by Customer Contract Manager						
Date of agreement to proceed to next stage					n/a	n/a
Date this stage to be completed by		12/07/01				
Configuration of Service(s) (baseline affected)						
Assumed Changes (over baseline)	.					
Priority	High/Medium/Low					
Identified by : Sandy Blows			Date Submitted: 28/06/01			
Description of Change See attached Requirements Specification for MP2 .						
Reason for Change (benefits) See attached Requirements Specification for MP2						
Implications of not making the change See attached Requirements Specification for MP2						
Attachments/references	016AAR (ELEXON Requirements Specification Revision of the Methodology for Assessing Credit Indebtedness Version no. 1.0)					
Competition Item Yes/No/n/a	Reasons for Competition					
If Change Request made under Clause 14.2 (delay)	Required supporting information attached					

To be completed by the Service Provider			
	High Level Assessment	Detailed Level Assessment	Change Quotation
Tick which stage is being completed		✓	
Signed by Service Provider Contract Manager			
Date		12/07/01	

Validity period of costs/prices	Change Quotation	
	Change	30 days

Does the change involve any changes to the System or Services	No
Would the undertaking of a Detailed Level Assessment or Change Quotation delay the Trigger Milestone or the Planned Go-Live Date before Go Live or any Release Date after Go Live	N/a
If Yes – specify which Milestones/Release Dates would be affected	N/a
Impact on any Milestones of incorporation of change	N/a

Indicative impact on resources for change incorporation	Phase of the work			
	Design	Build	Test & Trial	Operate
Labour				
Materials/3rd Party				
Impact on Service Levels	None			
Impact on IDD	Yes			

Price for Detailed Level Assessment		Indicative/firm
Price for Change Quotation		Indicative/firm
Price for Change	£ 295,400 to £354,480 (ex VAT) – to develop and implement Option 1 as a patch.	Firm
	£ 461,263 to 553,516 (ex VAT) – to develop and implement Option 2 as a patch.	Firm
	£4,431 to 5317 (ex VAT) per month to Maintain Option 1	Firm
	£6,919 to £8303 (ex VAT) per month to Maintain Option 2	Firm

Assumptions for the above Price:

- Logica will invoice 30% on receipt of CN or authorised start of work, 15% when the URS and IDD have been updated, 15% at the start of Regression Testing, 20% on completion of testing, 20% on deployment or one month after completion of testing, whichever is sooner.
- Work will commence by 1st September, 2001
- Only one of the two option is chosen.
- Price does not include provision for indexation of daily fee rates with effect from 1st April 2002. It is assumed all work within this quote will be completed by that date in accordance with the attached plan.
- The Service Description will have been updated by ELEXON and agreed with Logica prior to deployment.
- Only document updates will be submitted for review by ELEXON during the development of this change and a maximum of one working day has been allowed for ELEXON to review and comment on the updates. No allowance is included for addressing comments from ELEXON and only one iteration of all reviewed documents has been included in this price.
- Within reasonable levels, Elexon will make available appropriate staff to assist Logica during the development of this change
- As requested no allowance has been made for Elexon to witness testing.
- Regression testing will only be performed on our own system, with external interfaces being simulated as necessary. No allowance has been made for testing with external systems.
- The cost and durations provided in this DLIA assume that only the CP to which the estimate relates is being implemented. No account has been taken of any possible effects of implementing other changes.
- There will be no new Service Levels.
- Performance implications will impose additional load on servers and other equipment. No allowance has been made for any performance implications, as this will be assessed as part of MP4.

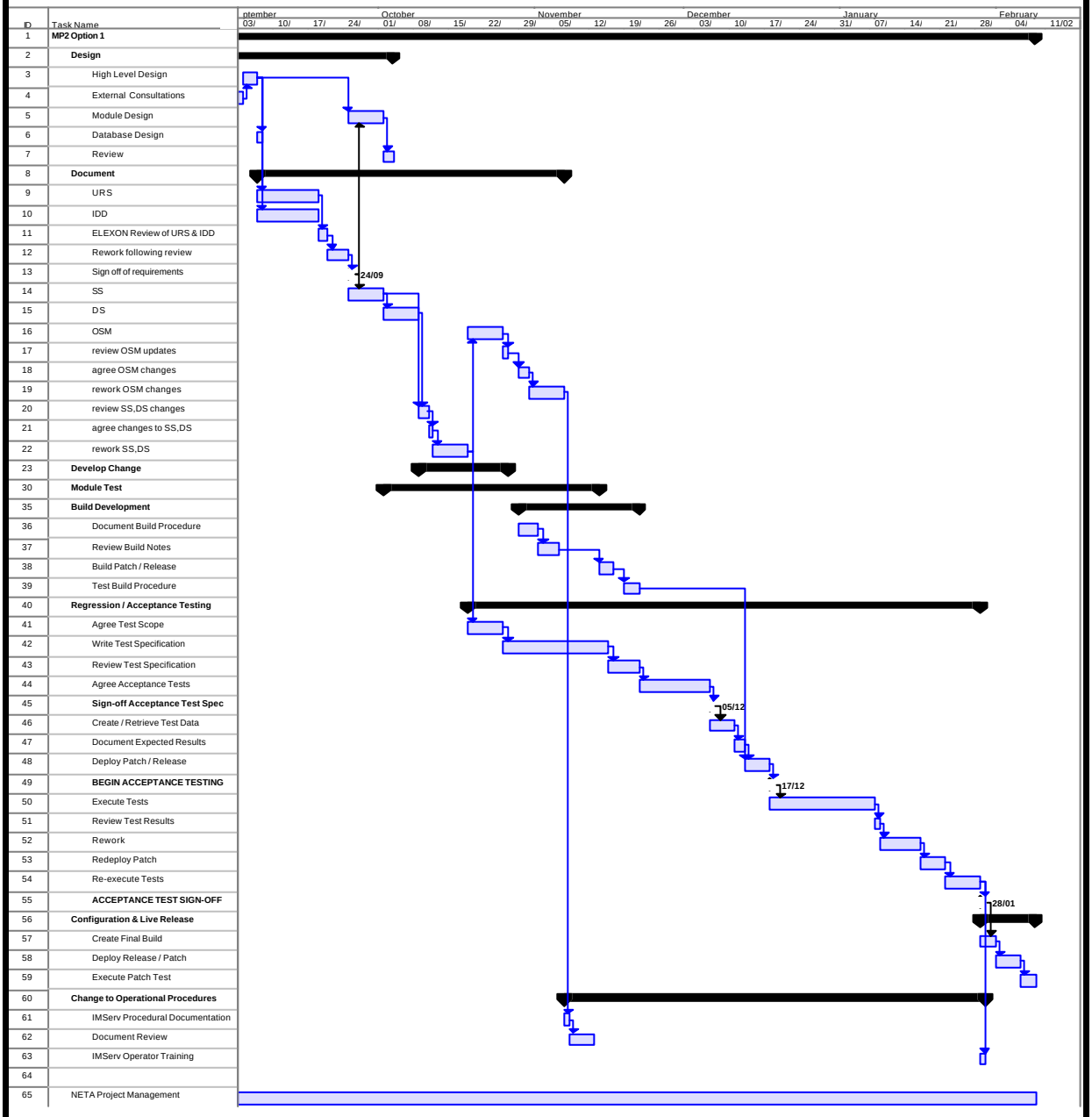
If the change is to be incorporated after Go Live, is this change proposed to be a patch or release		patch
If patch, expected time of incorporation	The estimated time to complete the development of this change is 23 weeks for Option 1 and 30 weeks for Option 2	
If release - what release number	Release number	
Date	Release Date	
For High Level Assessment only – is it a Detailed Level AssessmentYes/No	If No, estimate of time and resources required to complete	

Resources Required to undertake	Detailed Level Assessment	Change Quotation
Labour		
Materials		

Consequential amendments to base line:	
Proposed method of Change/ Work statement	

Proposed Plan for Change

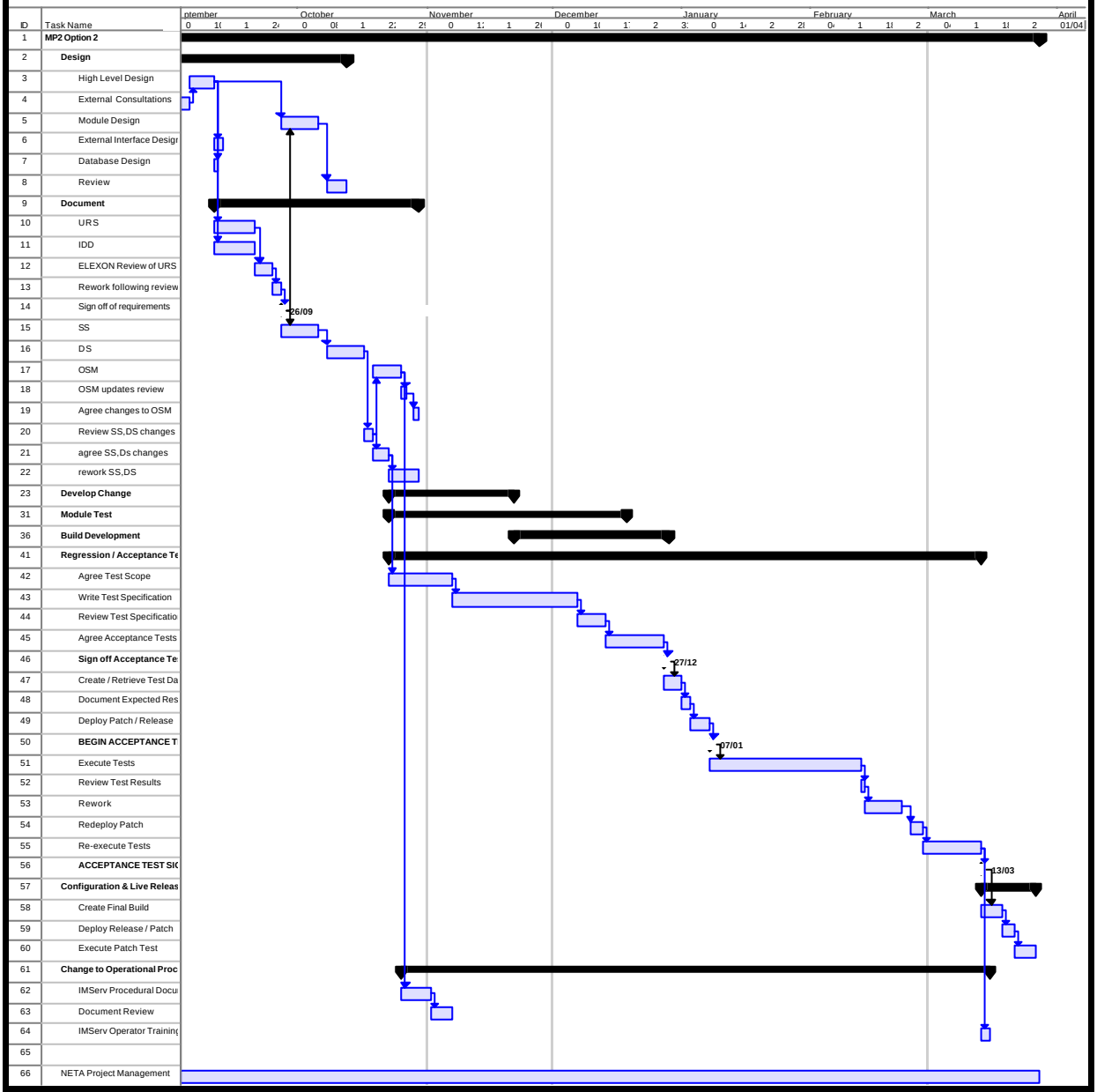
Option 1



ID	Task Name
1	**MP2 Option 1**
2	**Design**
3	High Level Design
4	External Consultations
5	Module Design
6	Database Design
7	Review
8	**Document**
9	URS
10	IDD
11	ELEXON Review of URS & IDD
12	Rework following review
13	Sign off of requirements
14	SS
15	DS
16	OSM
17	review OSM updates
18	agree OSM changes
19	rework OSM changes
20	review SS,DS changes
21	agree changes to SS,DS
22	rework SS,DS
23	**Develop Change**
30	**Module Test**
35	**Build Development**
36	Document Build Procedure
37	Review Build Notes
38	Build Patch / Release
39	Test Build Procedure
40	**Regression / Acceptance Testing**
41	Agree Test Scope
42	Write Test Specification
43	Review Test Specification
44	Agree Acceptance Tests
45	**Sign-off Acceptance Test Spec**
46	Create / Retrieve Test Data
47	Document Expected Results
48	Deploy Patch / Release
49	**BEGIN ACCEPTANCE TESTING**
50	Execute Tests
51	Review Test Results
52	Rework
53	Redeploy Patch
54	Re-execute Tests
55	**ACCEPTANCE TEST SIGN-OFF**
56	**Configuration & Live Release**
57	Create Final Build
58	Deploy Release / Patch
59	Execute Patch Test
60	**Change to Operational Procedures**
61	IMServ Procedural Documentation
62	Document Review
63	IMServ Operator Training
64	
65	NETA Project Management

Proposed Plan for Change

Option 2



Has the customer has indicated this is a competitive change		No
	Service Provider Plan for competition	
	Risks/Constraints of competition	
	Service Provider plan for incorporation of change including testing	
	Documentation to be produced by Service Provider to enable competition according to plan above	
	Indicative costs of Service Provider role in competition	

For Change Notice only – to be completed by the Customer

Basis for payment

Agreed Customer Caused Delay: Yes/No **If Yes, amount of delay**	
Date Change to become effective.	**Is this to be a Release Date? Yes/No**
Other items as required under the Change Management Procedures	

Detailed Level Impact Assessment

MP2 – Revision of the Methodology for Assessing Credit Indebtedness

manner:

n Party and sets the credit limit accordingly. This is far from ideal, being based on estimated data, and could be improved through the use of as much actual data as can be retrieved from the services. This change proposal addresses this issue.

Change Assessment Criteria

The MP2 Change proposal requests an assessment on a more accurate means for the credit checking process to be conducted. It proposes two algorithms for the calculation of indebtedness which should be assessed for their cost:

- Option – 1: That the calculation be based upon the actual charges calculated within the SAA system at the initial interim settlement run time (where data exists) and the current mechanism be applied for other days.
- Option – 2: That the calculation be as above for days where data exists and upon the recent historical metered volumes rather than the values calculated through the use of BMCAIC and BMCAEC (which remain static for a whole BSC season) for other days.

In addition, in the latter case, an assessment of the operational cost savings which could be gained by the implementation of this methodology is requested which may then be factored into any decision upon the most appropriate algorithm.

Overview Solution - Option 1

The change proposal aims to make the estimate of indebtedness more accurate than the current. After the initial interim settlement run on SD+5, the SAA system has been provided with all of the meter readings read by the CDCA system as well as estimates of the metered volumes, where none has been recovered. The aggregated GSP group take volumes for the supplier BM units are also available at this point and the settlement run produces the financial costs for each party. It is proposed that for days where this value is available, SD+5 out to the 29 day limit for credit checking, the financial data be converted to a MW value through scaling by the Credit Assessment Price (CAP). This would result in a more accurate assessment of indebtedness, taking into account most fiscal factors (energy imbalance charges, BM payments, non-delivery charges and residual cashflow reallocation cashflow) for the majority of days affecting a participant's credit level.

Impact on Individual Services

BMRA

No impact

CDCA

Although the CDCA system forms the source of the metered volumes for the calculation, there is no change to the manner in which it operates. Existing flows, destined for the SAA system, provide the metered volumes and no feedback is required from any new SAA process.

CRA

No Impact

ECVAA

The service is required to now accept a new flow from the SAA, containing the financial information calculated during the SAA interim initial settlement run. This new loader should accept the existing I013 report, process and store the data ready for use by the credit checker.

The database for the ECVAA schema will need to be amended to contain records to store the new data against BSC party agent and on a day by day basis. In the existing schema, the table DAILY_INDEBTEDNESS stores the historical 29 days worth of credit data. As contract notifications are entered into the system, the current days indebtedness for each party is updated. At the end of the day, this data is then stored persistently in this table and a new days indebtedness calculation commenced. In addition, a total of the last 29 (not counting the current days indebtedness) is calculated once a day (as the sum of the last 29 DAILY_INDEBTEDNESS records) and maintained against a BSC Party for performance reasons in the CUMMULATIVE_INDEBTEDNESS table

It is proposed that the following changes be made to the schema and database processes.

1. That an additional record element be added to the DAILY_INDEBTEDNESS table to contain the financial data from the SAA. This would be populated from the business loader that loads the I013 financial data, scaled by the CAP to MWh
2. That the calculation of cumulative indebtedness be re-structured such that where data is found in the new field of a DAILY_INDEBTEDNESS record, this value be used rather than the currently stored notification based indebtedness.

This has the following benefits:

1. The credit check process is unaffected by the new methodology, rather the data populating the CUMMULATIVE_INDEBTEDNESS table is changed upstream of the process, buffering any change impact and consequent need for extensive regression testing.
2. The time at which (during a day) that the new data becomes usable by the credit checker is well defined. This is potentially important because of the following reasons:
    - As with any formula created from two different algorithms spanning consequetive time periods, there is exists the potential for a step discontinuity at the boundary point. In this case, the credit level would be derived from estimated data from days SD0 – SD-5 and then more accurate (“real”) data from SD-6 out to 29 days ago. When new data comes from the SAA, the credit checker will cut over at one instant to using actual data for what was SD-6 rather than the old estimated data for what was SD-5. Should these be very different values, the potential exists for participants to experience a large step change in their credit level.
    - It is thus desirable for the time of this cut-over to be well defined and maybe even published to participants so that they may monitor any potential sharp changes in credit level and take appropriate remedial action.

By putting the SAA data into the DAILY_INDEBTEDNESS table alongside the previously calculated estimates the cut-over can be controlled accurately. Regardless of when the flow arrived and was loaded within the ECVAA system, it will only be used in the credit checked when the process that populates the CUMMULATIVE_INDEBTEDNESS table is run and consequently reads the data. This is a cron scheduled job executed on the first gate closure check after midnight each night. Only after this (00:30am) will the new, more accurate data be used and supersede the estimated data.

In concert with the change to the database schema, the Maintain Daily Indebtedness oracle form would need to be amended to allow for the amendment (manually) of both the estimated and new, accurate, indebtedness data for the day.

MP2, section 2.4 brings to Logica's attention the potential need for additional reporting upon the new credit level data. It is our opinion that it is unnecessary, at this stage, to amend existing or build new reporting flows to participants. Partly, this opinion is based upon the fact that the effect of the difference in credit level between the estimated and accurate values can be derived from existing reports (should this be required), but also upon the basis of cost to participants for upgrading current, in place, systems. Logica's assessment assumes no additional reporting is required.

It would be more appropriate to continue with the reporting structures and data for the time being. Should , after a number of months, such additional data be required to be published to participants, then it could be then added to the ECVAA web site, initially proposed under MP4. By using this, alternative web-based, information dispersal mechanism, participants who do not wish to have access to the new data do not have to change their IDD automatic flows. This not only saves unnecessary re-development costs but also significant regression testing to any externally visible, impacted, flows.

SAA

The SAA service is impacted in two manners by the change.

1. The calculated data from the initial interim settlement report is distributed on the I013 flow and must now be sent to the ECVAA system as well. This is a minor change in the distribution list of interested parties.
2. Though metered volumes through CDCA are unaffected by the change, the SAA must, at SD+5 have accurate data on the deemed take of each 2nd tier supplier based upon the proportion of each GSP group take. CDCA supplies the individual GSP Group Takes and this figure must then be converted to a usage per supplier by some means.

It is proposed that a new data processor module be created that takes the individual GSP Group Takes and allocates a proportion to each of the second tier suppliers based upon their proportional usage on a recent comparable day.

The algorithm for "a recent comparable day" will be based upon looking for the Group Take and individual 2nd tier volumes for the day 21 days prior to the current day with the following exceptions (not exclusive):

- If the current day is a non-working day and the day 21 days prior to the date in question is a working day, the first non-working day prior to 21 days ago will be used instead;
- If the current day is a working day and the day 21 days prior to the date in question is a non-working day, the first working day prior to 21 days ago will be used instead;
- If either the day in question or the day 21 days prior to the day in question is a clock change day, the basic algorithm will be used and this will not be regarded as a special case.

TAA

No impact

COMMS

The new flow from SAA to ECVAA adds volume to the internal inter-service communications network as well as requiring processing power to operate. However, given that this flow occurs only once a day, this is expected to have negligible impact.

Impact to External Participants - Parties and Agents

The changes proposed above are all internal. Given the assumption of no additional reporting requirements upon the data used in the calculation of the more accurate credit level, there is no additional impact to participant systems.

Cost Estimate

See attached assessment

Assumptions, Issues & Risks

1. **ASSUMPTION** - The cost and gantt chart estimate are based upon the design laid out in this document.
2. **ASSUMPTION** - There is no additional reporting requirement to provide data to participants over and above the current information
3. **ASSUMPTION** – The I013 flow contains all of the data required by the ECVAA system and will not need amendment.

Overview Solution – Option 2

The option uses an identical mechanism as option 1 for the determination of credit level base information for SD+5 to the 29 day credit limit. It thus requires the same process and database changes as laid out above.

However, for the estimate of indebtedness for SD – SD+5 a different mechanism is proposed. Rather than determining the indebtedness from the contract notifications multiplied by a static modification based upon the CALF and generation and demand capacity (e.g. BMCAIC and BMCAEC), the proposal aims to make this segment of the calculation more accurate through utilising the actual demand and generation for a BM Unit from a recent timescale (21 days previously). This would replace BMCAEC and BMCAIC with a dynamic rolling equivalent which should more accurately mirror market trends.

By effectively removing BMCAEC and BMCAIC the need to maintain CALF on a regular basis is removed from NETA which potentially allows an ongoing maintenance cost saving.

Impact on Individual Services

BMRA

No impact

CDCA

As per Option 1

CRA

No Impact

ECVAA

As per Option1 above but the option also includes a number of additional changes.

Options 1 effectively allowed the credit check process to be divorced from the changes. Options 2 would require the algorithm for indebtedness to be changed with the removal of BMCAIC and BMCAEC and the introduction of the new formulae specified within the MP 2 requirements specification. This would require changes to the manner in which cumulative notification indebtedness is calculated and this would impact the credit checker.

Though the formulae are similar, there would have to be a significant regression testing activity for the processing of MVRN data and its affect on credit checking. This activity alone would significantly increase the costs of the option.

SAA

As per Option 1, but also noting that, as stated under options A & B of the MP2 requirements specification, section 2.3.1, additional data would now have to be transferred from the SAA system to the ECVAA system. One of the advantages of Option 1 was that the existing initial interim settlement run credit-debit report could be utilised to transfer the required data from the SAA to ECVAA. In requiring additional data elements to be transferred, it is now necessary to make a custom flow from SAA which adds to the cost of implementing the solution.

TAA

No impact

COMMS

As per Option 1

Impact to External Participants - SVAA

As per Option 1

Parties and Agents

As per Option 1

Cost Estimate

See attached assessment.

Assumptions, Issues & Risks

1. **ASSUMPTION** - The cost and gantt chart estimate are based upon the design laid out in this document.
2. **ASSUMPTION** - There is no additional reporting requirement to provide data to participants over and above the current information
3. **ASSUMPTION** – The change to the credit check formulae will be implemented using Option C
4. **ASSUMPTION** – BMCAIC, BMCAEC, GC, DC, CALF will not be maintained within NETA, as specified within section 4.3 of the requirements specification. GC and DC are in fact still needed for other parts of NETA.

Recommendations

Of the options set out within the detailed level Impact Assessment, it is our considered opinion that:

1. Option 1 forms the better choice from the point of view minimising risk to the existing system as well as providing a cost effective solution.

2. Option 2 would require greater effort than Option 1 and the cost savings from the elimination of the need to use BMCAEC and BMCAIC would not in themselves warrant this expenditure on a purely fiscal basis. However, it is appreciated that Option 2 would, for the SD0 – SD +5 timescale provide potentially better estimate of the credit level of a party over this period.

Overall though, it is felt that, and considering that this forms only a small (1/3) of the credit range of 29 days, this is still introducing additional complexity and consequent needs for regression testing at a gain of little in accuracy.

Further Clarification of DLIA

The following email from the Logica Consortium clarifies a number of aspects of the DLIA that had been raised by ELEXON:

The following clarifications to our DLIA for P2 are a result of discussions between Nigel Ellis and John Lucas. These are only minor functional clarifications and do not have any impact on the other aspects of the impact assessment that we submitted.

1. USE OF CUMULATIVE INDEBTEDNESS

The Cumulative Indebtedness figure will be recalculated to take into account the latest daily SAA II run figures, as part of the credit check function for the first settlement period in the day (i.e. at 20.30 at current Gate Closure setting, not at 00.30 as indicated erroneously on our DLIA).

2. HANDLING OF CLOCK CHANGE

We propose the following algorithm for allocating a proportion of the GSP group take to a supplier for a day where either of the following occurs:

- the day in question is a clock change day
- the day in question has a clock change day 21 days previously.

Rule 1: If the day in question is a clock change day (LONG DAY) then we assign the proportion of GSP group take for period 5 equal to that ascertained for period 3 (21 days ago) and period 6 equal to period 4 (21 days ago). Equally, periods 7 - 50 would be based on periods 5 - 48 from 21 days previously.

Rule 2: If the day in question is a clock change day (SHORT DAY) then we assign the proportion of GSP group take for periods 1 & 2 as normal and then the remaining (3-46) are equal to the split based upon periods 5-48 from 21 days ago.

Rule 3: If the day in question has a clock change day 21 days previously, then rather than use this day for the estimation of proportions, we will go back a further 7 days (e.g. 28 days previously).

3. CHOICE OF RECENT COMPARABLE DAY

We will select the day 21 days previously (with the clock change provisos above). If for any reason data is not available for that day for the SF run then we will go back a further 7 days and then apply the clock change rules.

4. PROVISION OF GSP GROUP TAKE DATA

The CDCA-I029 flow does currently provide the required Group Take information - note however that this is actually achieved by the NGC variant of the report, which includes all GSP Group Takes, being redirected through the flexible reporting mechanism to those who have requested it.

ANNEX 4 – COMPARISON OF P2 WITH CURRENT METHODOLOGY

In order to assess the materiality of the issues raised by Modification Proposal P2, the Modification Group requested ELEXON to estimate the following:

- The direct cost to Trading Parties of having to post additional credit cover, as a result of inaccuracies in the methodology for calculating indebtedness under the current methodology.
- The risk to Trading Parties of financial loss due to a Trading Party going into default with unsecured liabilities, as a result of inaccuracies in the methodology for calculating indebtedness.
- The direct cost saving to Trading Parties of having to post credit cover under the methodology proposed by P2 compared to the current methodology.
- The direct cost to Trading Parties of having to post credit cover, as a result of inaccuracies in the methodology for calculating indebtedness under the methodology proposed by P2.

The analysis in this version of the report is based upon Initial Settlement (SF) for Settlement Dates from 21st May 2001 to 18th June 2001 inclusive.

A4.1 - Analysis of Additional Direct Costs of the Current Methodology

The direct cost to a Trading Party (in terms of additional credit cover) of any inaccuracy in the methodology for assessing credit indebtedness clearly depends upon the method that Trading Party uses to decide how much credit cover to post. For example, the following hypothetical scenarios could be considered:

- Scenario (a) is that Trading Parties always post sufficient credit cover to keep their indebtedness (as reported by the ECVAA system) at a fixed level (e.g. 50%). Under this scenario, Trading Parties are directly impacted by any inaccuracy in the ECVAA indebtedness calculation.
- Scenario (b) is that Trading Parties form their own view of the level of credit cover required, and don't take into account the ECVAA indebtedness calculation (except where necessary to avoid being placed into Credit Default). Under this scenario, the impact of any error in the ECVAA indebtedness calculation would clearly be much less than under scenario (a).

A4.1.1 - Analysis of Scenario (a)

Scenario (a) above is a 'worst case' scenario, in that it maximises the additional costs incurred as a result of inaccuracies in the methodology for calculating credit indebtedness. In order to estimate the cost to Trading Parties under this worst case assumption, ELEXON collated data comparing actual indebtedness and calculated indebtedness defined as follows:

- Actual Indebtedness – refers to the total cashflow that is calculated during the Initial Settlement (SF) run, for an individual Trading Party. This takes into account the Energy Imbalance Cashflow, Information Imbalance Cashflow, BM Unit Cashflow, Non Delivery Charges, and Residual Cashflow Reallocation Cashflow.
- Calculated Indebtedness – refers to the indebtedness value calculated by the ECVAA in the credit check at Gate Closure.

Explanation of Figure A4-1 and A4-2

A graphical representation of the relationship between actual and calculated indebtedness is shown in Figures A4-1 and A4-2. (Figure A4-1 shows the actual indebtedness values in the range -£8m to

+£8m, while Figure A4-2 focuses in on the range -£2m to +£2m.) Both figures show an 'ideal position' line, on which actual and calculated indebtedness are equal.

Trading Parties that appear in the bottom right quadrant represent a potential risk as they actually owe money to the BSC Clearer, but are not required to lodge credit under the current arrangements. Whereas Trading Parties that appear in the top left quadrant are required to lodge credit even though they are not in debt to the BSC Clearer.

Overall, the results of the comparison between actual and calculated indebtedness show that the total calculated indebtedness[5] (for all 120 Parties) was -£98.95 million, while the total actual indebtedness was £-4.90 million. Overall, therefore, the credit checking software had underestimated the indebtedness level by some £94.05 million.

There are three main reasons why the current methodology is underestimating indebtedness:

- The current methodology does not explicitly take into account Balancing Mechanism Cashflows. Therefore if a Trading Party carried out a 100% Metered Volume Reallocation they will have a zero calculated indebtedness and zero Energy Imbalance Cashflow. However they are still capable of submitting Bids and Offers which could potentially result in a positive Actual Indebtedness.
- Actual Energy Imbalance is calculated separately for each party account (consumption and production), whereas calculated Energy indebtedness in MWh is calculated on a Trading Party basis.
- Positive Energy Imbalance is settled at System Sell Price and negative Energy Imbalance is settled at System Buy Price. System Sell Price is generally lower than System Buy Price, therefore a party will get paid less for a positive Energy Imbalance than they pay for a negative Energy Imbalance. The current methodology is based on a single cashout price (CAP).

Therefore if a Trading Party's production account has a positive Energy Imbalance and the consumption account has a negative Energy Imbalance, they will get paid System Sell Price for the positive Energy Imbalance and pay System Buy Price for the negative Energy Imbalance (or vice versa). This means the Energy Imbalance Cashflow will be the net of the cashflows on each account. However, under the current credit methodology the energy indebtedness in MWh will reflect the imbalance of the Trading Party as a whole, regardless of the different accounts. This value is then multiplied by a single value of CAP which will not take into account the difference between System Sell and Buy Prices.

Explanation of Figure A4-6

Given that the calculated indebtedness levels were lower than actual indebtedness levels, one might expect a move to actual data to increase the level of credit cover required by Trading Parties. However, this is not necessarily the case, because only positive values of indebtedness require credit cover. Further analysis of the data has been carried out to take this factor into account.

Figure A4-6 shows the difference between the amount of credit cover a Trading Party would be required to lodge using actual compared to calculated indebtedness. This analysis has been carried out twice, firstly assuming the Trading Party wishes to run at 50% indebtedness and secondly using 75% indebtedness.

[5] As explained above, the actual indebtedness values includes Energy Imbalance Cashflow, Information Imbalance Cashflow, BM Unit Cashflow, Non Delivery Charges and Residual Reallocation Cashflow. However, when summing over the industry as a whole, the Energy Imbalance and Residual Reallocation Cashflows cancel out, leaving only the total Balancing Mechanism payments paid to Trading Parties by the System Operator. It is therefore not entirely surprising that the total indebtedness for the industry as a whole is negative.

The results at 50% suggest that using actual data would decrease the level of credit cover required by £148.72 million. Assuming a cost of credit of 1% per annum, this suggests that using actual indebtedness values would reduce the cost of credit cover to the industry as a whole by some £1.49 million per annum.

This cost saving was not spread equally across Parties. 17 of the 120 Parties would save on credit cover costs from the use of actual data (under the assumptions of scenario a), with a total cost saving of £1,718,000 per annum. Conversely, 26 Parties would incur a total of £231,000 per annum additional costs.

The results at 75% followed the same pattern although the difference was of a smaller magnitude. Under this scenario the level of credit cover required would decrease by £99.15 million. Assuming a cost of credit of 1% per annum, this suggests that using actual indebtedness values would reduce the cost of credit cover to the industry as a whole by some £991,000 per annum.

As in the 50% scenario, the cost saving was not spread equally across Parties. 17 of the 120 Parties would save a total of £1,145,000 per annum, while 26 Parties would incur a total of £154,000 per annum additional costs.

A4.1.2 - Analysis of Scenario (b)

Under scenario (b), the level of credit posted by Trading Parties is not directly influenced by their calculated indebtedness, except where necessary to avoid credit default. The cost savings arising from use of actual data would clearly be less under this scenario, but are not easily quantified using data available to ELEXON.

A4.2 - Analysis of Additional Risk

In addition to the direct costs associated with unnecessary credit cover, any error in the methodology for calculating credit indebtedness also exposes Trading Parties to an increased risk of bad debt, should a Trading Party go into default with settlement liabilities exceeding their credit cover.

It should be noted that the credit cover arrangements under NETA are only designed to provide security for the 29 days settlement liabilities that remain unpaid at any given time, thus ensuring that Parties are not exposed to unsecured settlement liabilities when a Party goes into default. Credit cover is not intended to cover other debts, such as:

- Settlement liabilities incurred after the point at which a Party goes into default.
- Unpaid liabilities under bilateral contracts.

The risk analysis for Modification Proposal P2 therefore focused on quantifying the extent to which inaccuracy in the methodology for calculating indebtedness might lead to unsecured settlement liabilities at the moment of default. Clearly this risk depends upon the behaviour of the defaulting Party in the period leading up until default. Possible scenarios include the following:

- Scenario (a) is for the Party's trading behaviour to remain relatively unaffected in the period leading up to the default.
- Scenario (b) is for a Generator to cease generating (perhaps because of inability to pay fuel or maintenance costs), with bilateral contracts still in place. Under this scenario the Generator would be buying all his energy from the imbalance market at System Buy Price (SBP), and hence incurring large settlement liabilities, which would not be reflected in the current credit checking process.

- Scenario (c) is for a Supplier to find that they can't buy their energy through bilateral contracts (perhaps because Generators are aware that they are in financial difficulty, and are unwilling to take the risk of trading with them). As in scenario (b), the Supplier would end up buying their energy from the imbalance market.
- Scenario (d) is "distressed selling" i.e. a Party in financial difficulty raises short-term cash by selling energy to Parties that they are unable physically to deliver, hoping to receive payment on the bilateral contracts prior to Initial Settlement.

A4.2.1 - Analysis of Scenario (a)

Under scenario (a) the indebtedness of the defaulting Party is unaffected by their financial difficulties, and the potential losses to other Parties can therefore be estimated on the basis of current market behaviour.

Figures A4-3 and A4-4 show graphically the actual indebtedness of Parties (between 21 May and 18 June 2001) compared with the amount of credit cover lodged as of 10 July. (The two figures differ only in the subset of data they show, with A4-3 showing actual indebtedness values from -£8 million to +£8 million; A4-4 showing values from -£1.5m to £1.5m). The latest credit cover value has been used as a number of parties are currently adjusting their credit cover. This figure is expected to change even further over the coming weeks.

The total credit zone shows those parties whose actual indebtedness exceeded the total amount of credit lodged. There are currently 8 Trading Parties in the total Credit Zone with a total shortfall in credit cover of £7.55 million. This is an average of £0.9 million per party.

Parties in this zone represent a potential risk as they have not lodged enough credit to cover their 29 days cashflow. Please note that none of these parties are actually in credit default at this point. Parties who should actually be in credit default are not being flagged as such and there is no incentive for them to lodge enough credit to cover their actual indebtedness.

A4.2.2 - Analysis of Scenario (b)

Out of the four, scenario (b) potentially leads to the largest unsecured liabilities. When the Generator stops generating, they begin buying all their contracted output through the imbalance market. However, the current credit checking process doesn't take actual metered volumes into account, and therefore this increase in indebtedness will not be reflected in credit checking.

For example, consider a Generator with a typical output of 3,500 MW (i.e. a 10% share), who has small levels of indebtedness and credit cover prior to going into default. If the generator continues trading without physically generating for 29 days, they would buy 3,500 * 24 * 29 = 2,436,000 MWh. At a System Buy Price of £25/MWh, this would amount to £60m[6].

A4.2.3 - Analysis of Scenario (c)

Under scenario (c), like scenario (b), the defaulting Party ends up buying their energy through the imbalance market. However, because the current methodology does take actual volumes of bilateral contracts into account, the effect of the Supplier failing to obtain contract cover is fully allowed for, and the errors in the indebtedness calculation are only those caused by estimated metered volumes and prices.

[6] Although in fact a much higher level of System Buy Price might apply, as the System Operator would under this scenario be having to accept large volumes of Offers, which would tend to increase SBP.

In summary, therefore, the error in the calculated indebtedness due to weaknesses in the current methodology is no greater under scenario (c) than scenario (a).

A4.2.4 - Analysis of Scenario (d)

From the viewpoint of unsecured settlement liabilities, scenario (d) is similar to scenario (c). The Party's indebtedness increases dramatically prior to default, but this increase is due to a change in the bilateral contract position. As the current methodology takes the bilateral contract position fully into account, the error in the calculated indebtedness is no greater than under scenario (a).

A4.3 - Analysis of Direct Cost Savings Comparing P2 with Calculated Indebtedness

In reality actual metered volumes and price data are not available at the time the credit check is carried out. Therefore Modification P2 is a two stage process using estimated data until actual metered data and prices become available. In order to assess the direct cost saving of Modification P2, the costs of credit cover under P2 were compared with the costs under the current methodology.

The definition of calculated indebtedness is the same as that given under Section A4-1 and the following statement is used to define P2.

P2 Indebtedness – refers to the indebtedness value that would be calculated if the most recent seven days indebtedness were based on the current methodology (using CALF, GC/DC and CAP) and the previous 22 days indebtedness were based on actual indebtedness as defined above.

A4.3.1 – Explanation of Figure A4-6 and A4-7

A graphical representation of the relationship between P2 indebtedness and calculated indebtedness is shown in Figures A4-6 and A4-7. (Figure A4-6 shows the P2 indebtedness values in the range -£10m to +£10m, while Figure A4-7 focuses in on the range -£2m to +£2m.) Both figures show an 'ideal position' line, on which P2 and calculated indebtedness are equal.

Overall the results of the comparison between P2 and calculated indebtedness show that the total calculated indebtedness (for all 120 Parties) was -£98.95 million, while the total P2 indebtedness was £-43.85 million. Therefore it appears that credit checking under P2 will increase the total level of indebtedness by £55.10 million.

A4.3.2 – Explanation of Figure A4-8

Figure A4-8 shows the difference between the amount of credit cover a Trading Party would be required to lodge using P2 compared to calculated indebtedness. This analysis has been carried out twice, firstly assuming the Trading Party wishes to run at 50% indebtedness and secondly using 75% indebtedness.

The results at 50% suggest that using P2 data would decrease the level of credit cover required by £126.31 million. Assuming a cost of credit of 1% per annum, this suggests that using actual indebtedness values would reduce the cost of credit cover to the industry as a whole by some £1.26 million per annum.

This cost saving was not spread equally across Parties. 15 of the 120 Parties would save on credit cover costs from the use of P2 data (under the assumptions of scenario a), with a total cost saving of £1,456,000 per annum. Conversely, 16 Parties would incur a total of £192,000 per annum additional costs.

The results at 75% followed the same pattern although the difference was of a smaller magnitude. Under this scenario the level of credit cover required would decrease by £84.21 million. Assuming a cost of credit of 1% per annum, this suggests that using actual indebtedness values would reduce the cost of credit cover to the industry as a whole by some £842,000 per annum.

As in the 50% scenario, the cost saving was not spread equally across Parties. 15 of the 120 Parties would save a total of £970,000 per annum, while 16 Parties would incur a total of £128,000 per annum additional costs.

A4.4 - Comparison of Additional Direct Costs of the P2 Methodology Compared to Actual Indebtedness

Although the above analysis shows that P2 will significantly reduce the cost of credit cover compared to the current methodology, P2 indebtedness will still differ from Actual Indebtedness. The following analysis looks at the potential inaccuracy in P2 indebtedness. The definitions of P2 indebtedness and actual indebtedness are the same as those stated above.

A4.4.1 – Explanation of Figure A4-9 and A4-10

A graphical representation of the relationship between P2 indebtedness and actual indebtedness is shown in Figures A4-9 and A4-10. (Figure A4-9 shows the actual indebtedness values in the range -£7m to +£7m, while Figure A4-10 focuses in on the range -£2m to +£2m.) Both figures show an 'ideal position' line, on which P2 and actual indebtedness are equal.

Overall the results of the comparison between P2 and actual indebtedness show that the total actual indebtedness[7] (for all 120 Parties) was -£4.90 million, while the total P2 indebtedness was £-43.85 million. Therefore it appears that credit checking under P2 will underestimate the total level of indebtedness by £38.95 million.

A4.4.2 – Explanation of Figure A4-11

Figure A4-11 shows the difference between the amount of credit cover a Trading Party would be required to lodge using actual compared to P2 indebtedness. This analysis has been carried out twice, firstly assuming the Trading Party wishes to run at 50% indebtedness and secondly using 75% indebtedness.

The results at 50% suggest that using P2 methodology would result in an excess of £22.41 million credit being lodged. Assuming a cost of credit of 1% per annum, this suggests that P2 would cost the industry as a whole £224,000 per annum (this is compared to £1.49 million under the current arrangements).

These costs were not spread equally across Parties. 25 of the 120 Parties would be save on credit cover costs from the use of P2 data compared to actual data (under the assumptions of scenario a), with a total cost saving of £63,000 per annum. Conversely, 14 Parties would incur a total of £287,000 per annum additional costs.

The results at 75% followed the same pattern although the difference was of a smaller magnitude. Under this scenario the level of credit cover required would decrease by £14.94 million. Assuming a

[7] As explained above, the actual indebtedness values includes Energy Imbalance Cashflow, Information Imbalance Cashflow, BM Unit Cashflow, Non Delivery Charges and Residual Reallocation Cashflow. However, when summing over the industry as a whole, the Energy Imbalance and Residual Reallocation Cashflows cancel out, leaving only the total Balancing Mechanism payments paid to Trading Parties by the System Operator. It is therefore not entirely surprising that the total indebtedness for the industry as a whole is negative.

cost of credit of 1% per annum, this suggests that using actual indebtedness values would reduce the cost of credit cover to the industry as a whole by some £149,000 per annum.

As in the 50% scenario, the cost saving was not spread equally across Parties. 15 of the 120 Parties would save a total of £42,000 per annum, while 14 Parties would incur a total of £192,000 per annum additional costs.

A4.5 – Supporting Graphs

Figures A4-1 to A4-11 overleaf illustrate various aspects of the analysis in this Annex:

- Figures A4-1 and A4-2 compare actual and calculated indebtedness, as explained in section A4.1.1 of this Annex.
- Figures A4-3 and A4-4 compare actual indebtedness and actual credit cover, as explained in section A4.2.1 of this Annex.
- Figure A4-5 shows how credit cover values based on actual data compared with credit cover values based on estimated data, as explained in section A4.1.1 of this Annex.
- Figures A4-6 and A4-7 compare P2 and calculated indebtedness as explained in section A4.3.1 of this Annex.
- Figure A4-8 shows how credit cover values based on P2 data compared with credit cover values based on the current methodology, as explained in section A4.3.2 of this Annex.
- Figures A4-9 and A4-10 compare P2 and actual indebtedness as explained in section A4-1 of this Annex.
- Figure A4-11 shows how credit cover values based on P2 data compared with credit cover values based on actual metered volumes and prices, as explained in section A4.4.2 of this Annex.

Figure A4-1

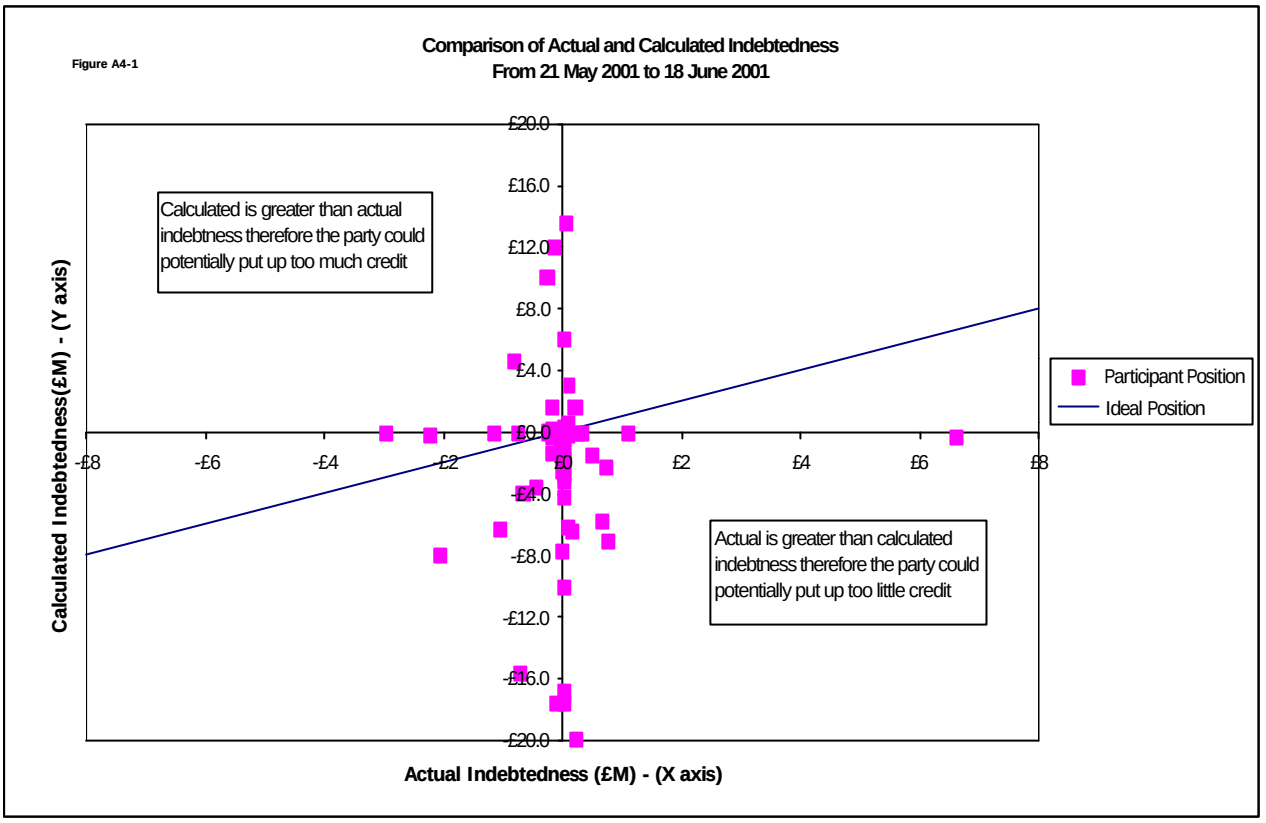


Figure 4-2

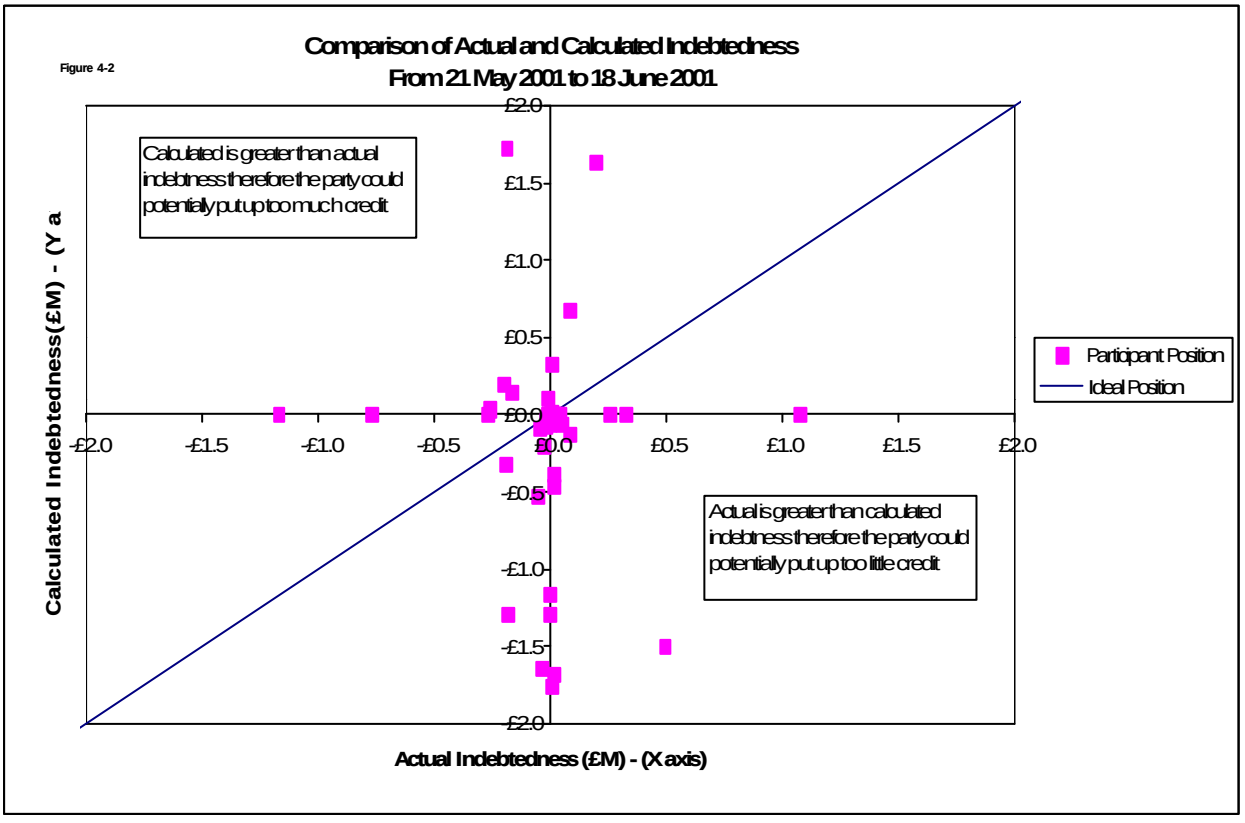


Figure A4-3

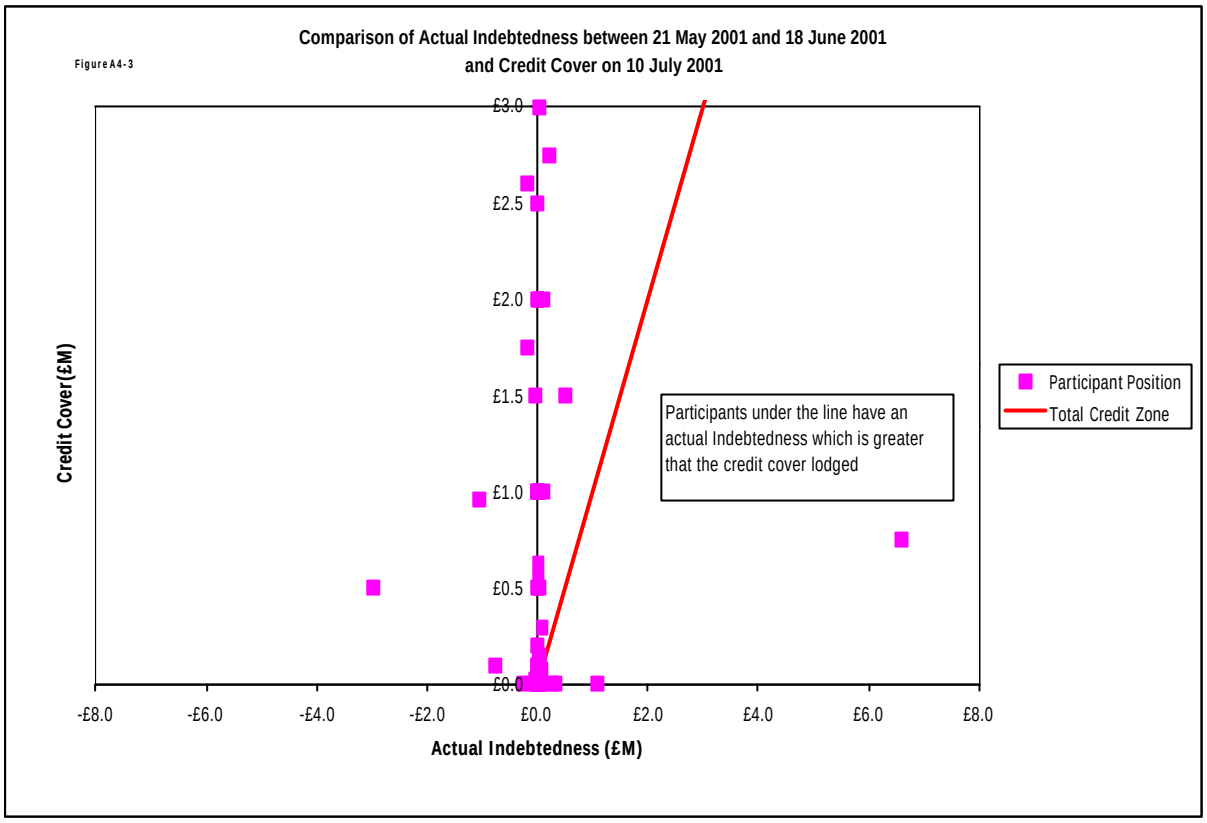
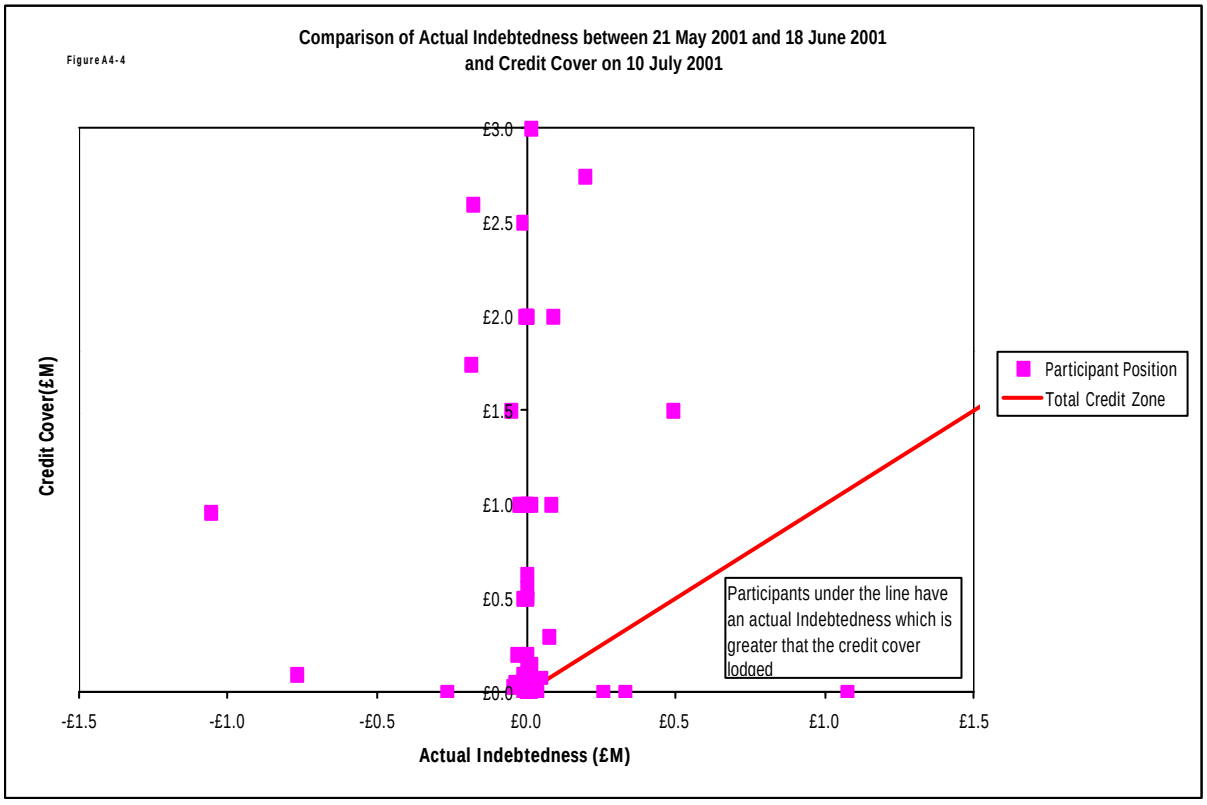


Figure A4-4



Difference between Calculated Indebtedness and Actual Indebtedness at 50 or 75% based in data from 21 May to 18 June 2001

Figure A4-5

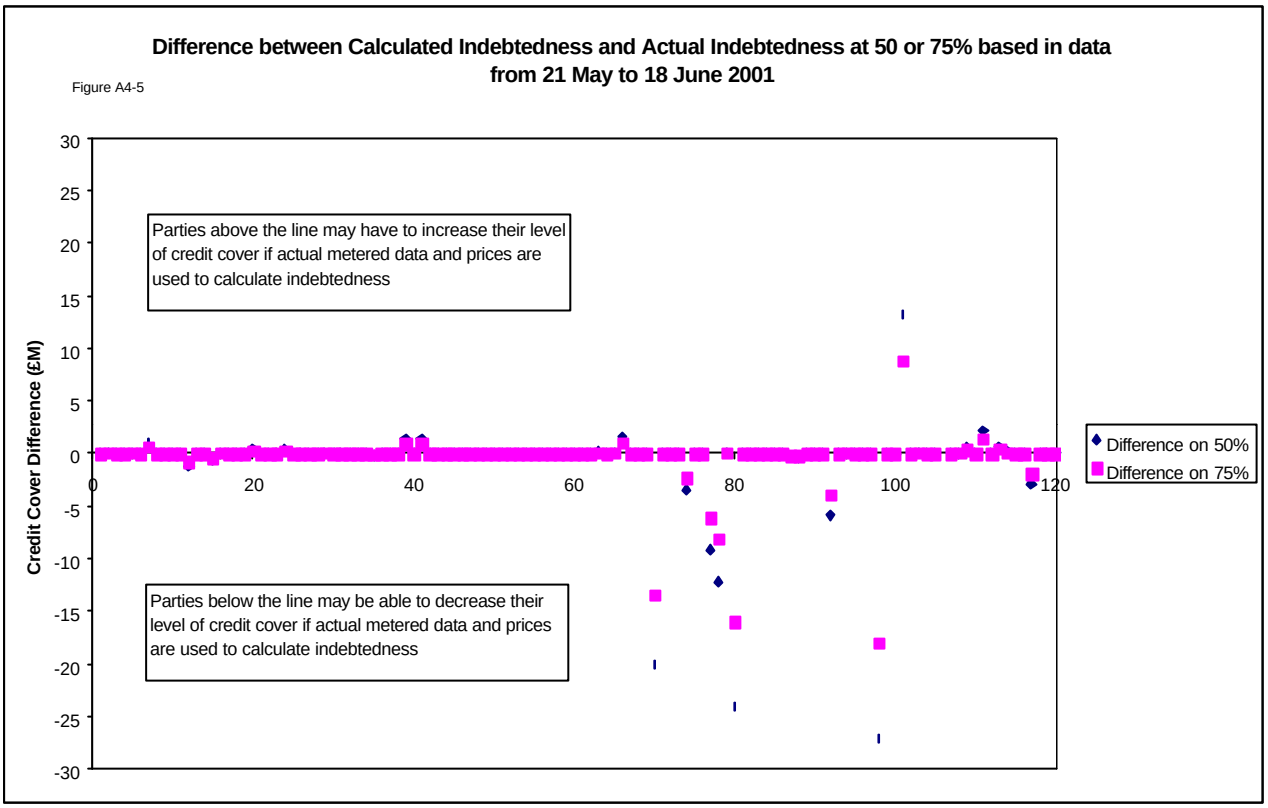


Figure A4-6

Comparison of P2 and Calculated Indebtedness From 21 May 2001 to 18 June 2001

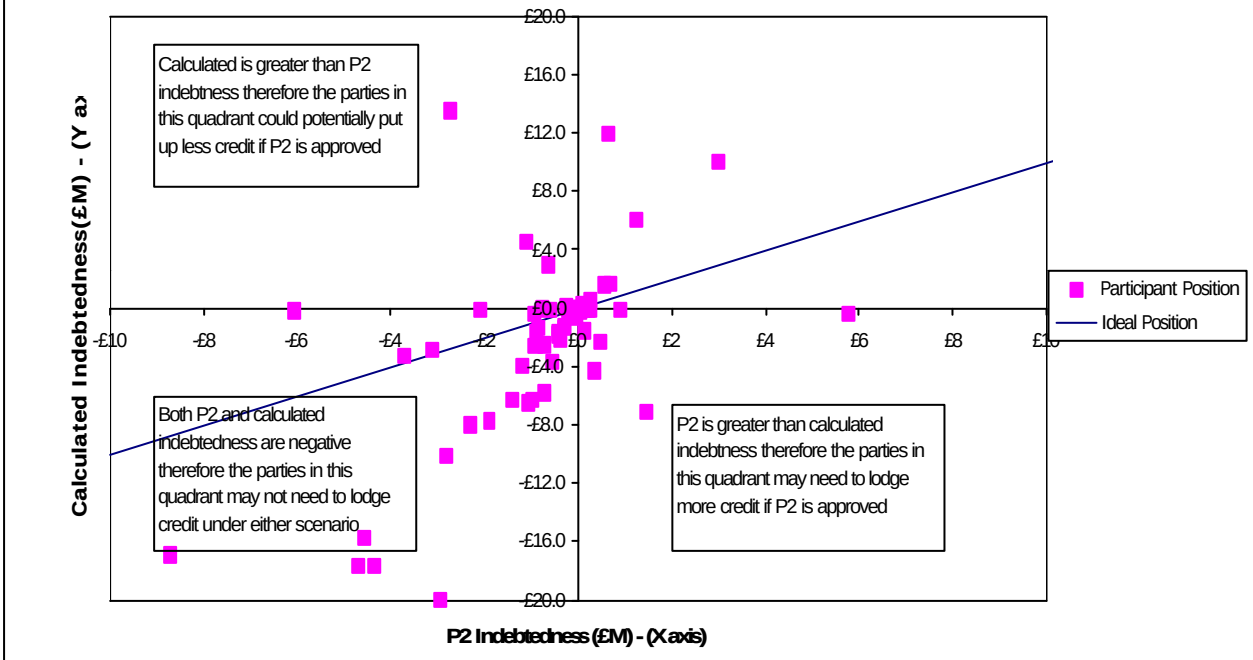
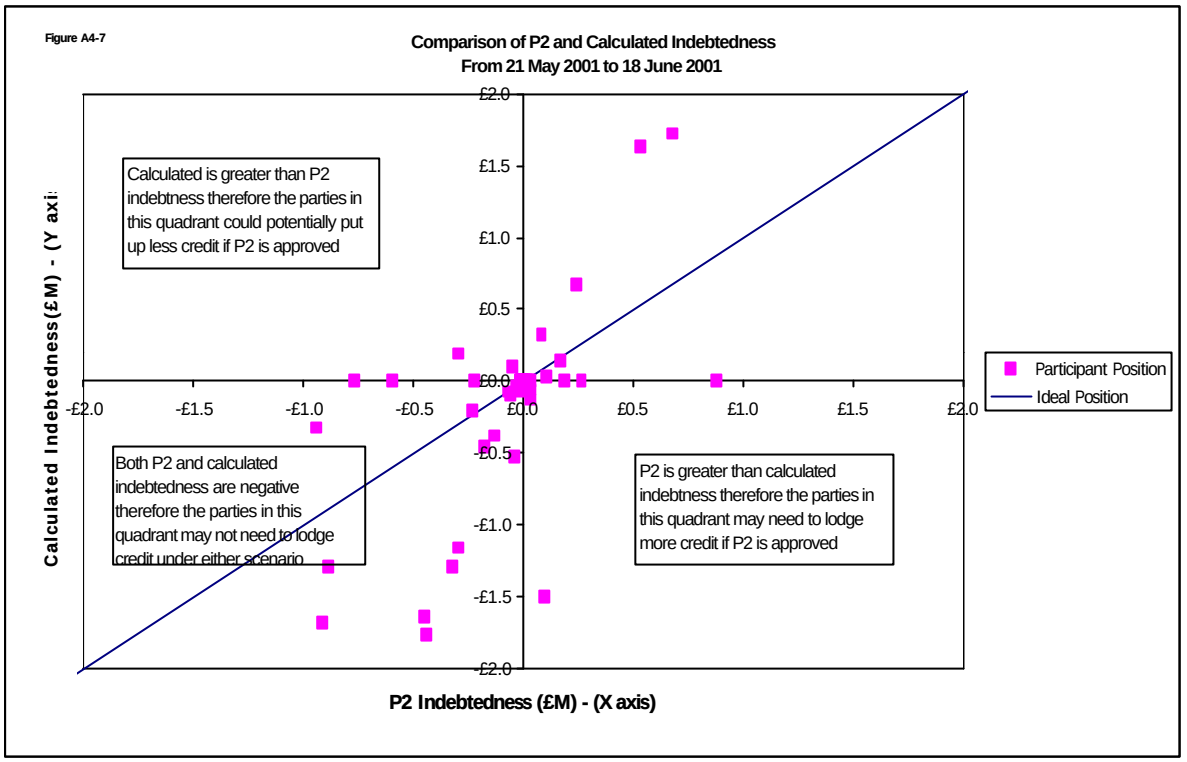
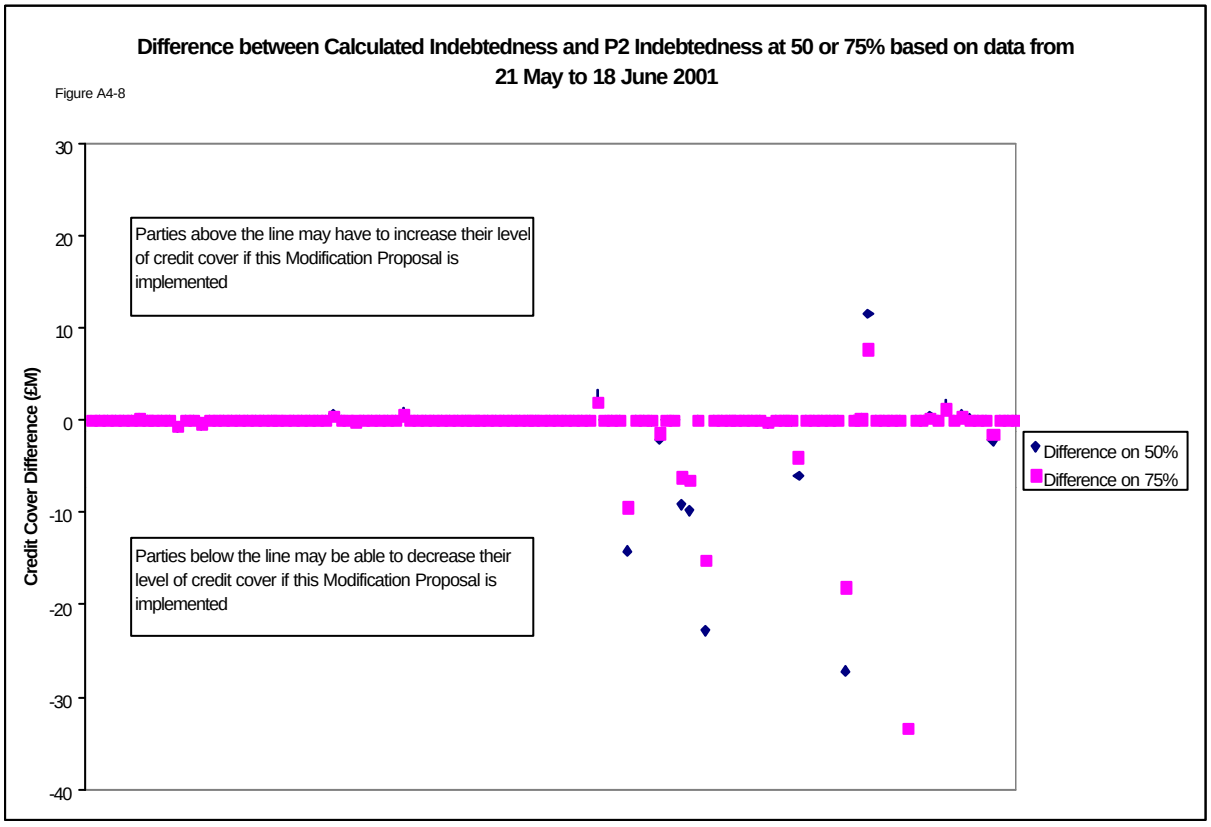
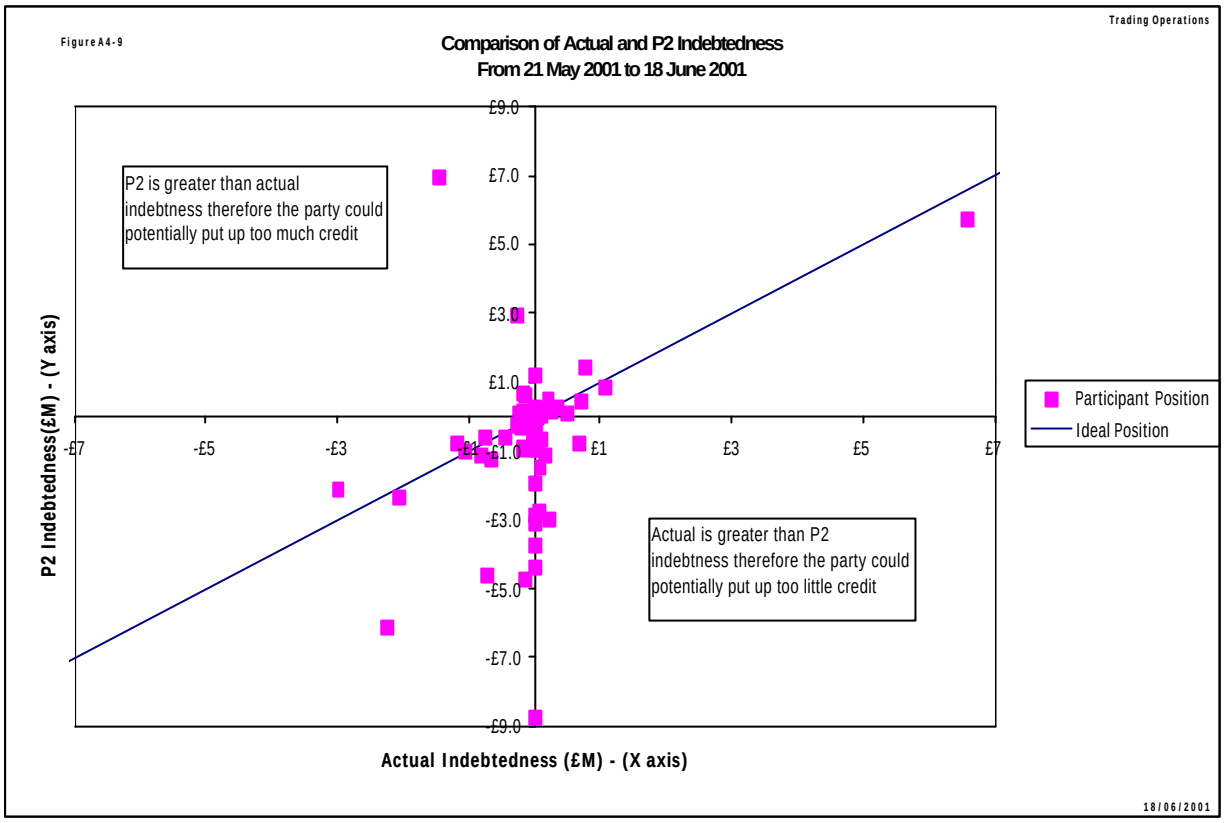


Figure A4-7







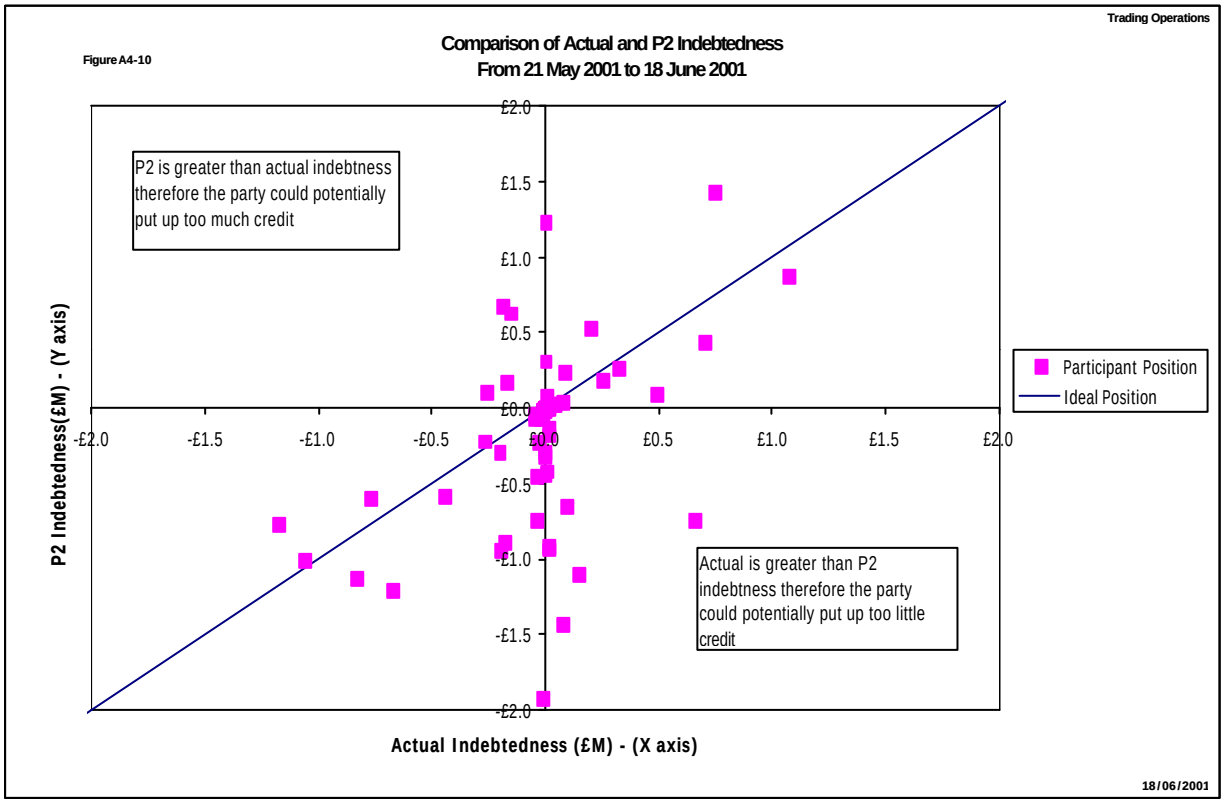
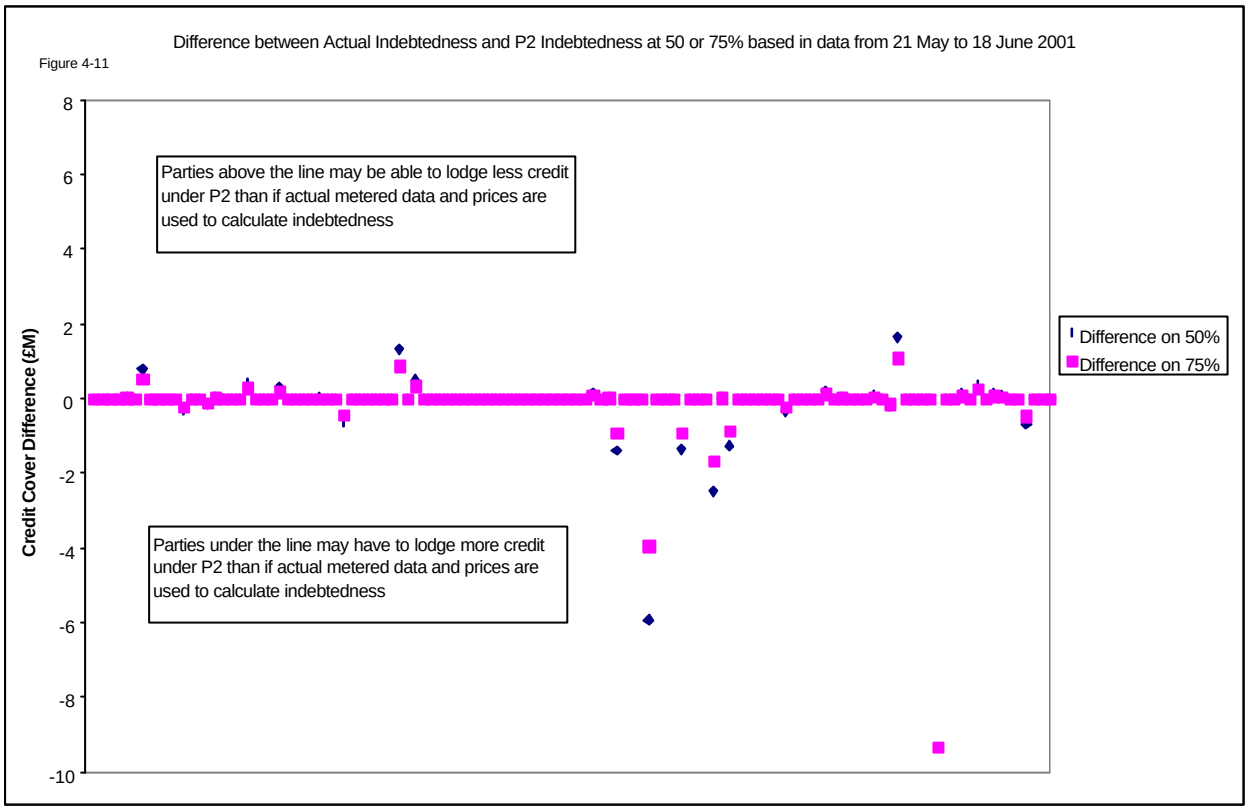


Figure 4-11



ANNEX 5 – COMPARISON OF P2 WITH ALTERNATIVE MODIFICATION PROPOSAL

A5.1 – Overview

Modification Proposal P2 and the Alternative Modification Proposal are based on the same methodology for estimating Energy Indebtedness after the Interim Information (II) run. However the II run is not carried out until 5 Business Days after the Settlement Day to which it relates. Therefore a two stage process is required using a different method of estimation prior to the II run compared to that used after the II run.

Modification P2 proposes to use the current methodology for the period prior to the II run. This involves calculating a Credit Assessment Credited Energy Volume for each Trading Party (Section M1.2 of the BSC Version 1.1). This MWh value can then be multiplied by the Credit Assessment Price to produce an estimated Energy Indebtedness in £s (Section 1.4 of the BSC Version 1.1).

The Alternative Modification Proposal is based on scaling up the metered data that is available so that it covers the full 29 days.

ELEXON have assessed the accuracy of these two methods by comparing the estimated data under P2 and the Alternative methodology, with each other, and with the actual metered data for the same period. Actual metered data for a 29 day period between 21 May 2001 and 18 June 2001 has been used.

A5.1 – Analysis of Modification Proposal P2

P2 proposes to use the current methodology to estimated Energy Indebtedness for the days prior to the II run. To analyse the accuracy of this estimate, the BM Unit Credit Assessment Import/Export Capability (BMCAIC/BMCAEC) was calculated for each BM Unit based on the following equations:

BMCAIC (MW) = CALF * DC
BMCAEC (MW) = CALF * GC

This was multiplied by 24 to give a daily estimate of metered data. It should be noted that the date range crosses into two BSC Seasons. Therefore Spring values of CALF, GC and DC were used for 21 May to 31 May and Summer values were used for 1 June to 18 June.

A5.1.1 – Explanation of Figure A5-1

Figure A5-1 shows the actual metered volumes plotted against estimated metered volumes determined using P2 methodology. The graph shows an 'ideal position' line, on which actual and estimated metered volumes are equal.

Overall the BM Units are situated on or close to the ideal position line indicating that the actual discrepancy between the two values is quite small. However it should be noted that the credit check uses this data on a Settlement Period basis. The estimated metered volumes will not differ for each Settlement Period, therefore it is assumed that this data will be more accurate for certain Settlement Periods.

A5.1.2 – Explanation of Figure A5-2

Figure A5-2 shows the absolute % deviation from actual metered volumes of the data estimated using the P2 methodology. BM Units with zero metered volumes were not included.

Please note 14 SVA and 40 CVA BM Units had an estimated metered volume but no actual metered data. These were not included in this analysis as the % deviation could not be determined.

Overall the % deviation ranged from 619,416% to 0.03%, with 25% of the BM Units analysed, deviating by more than 100%. 44 SVA and 17 CVA BM Units had a % deviation of more than 1000 and are therefore not actually visible on the graph. However by looking at the actual deviation in GWh, also shown on the graph, it can be seen that a high % deviation does not necessarily mean a high actual deviation.

A5.2 – Analysis of the Alternative Modification Proposal

The Alternative Modification Proposal intends to take the actual metered data that is used in the II run (actual CVA metered volumes and estimated SVA metered volumes based on a proportion of GSP Group Take) and scale this up to cover 29 days. The II run is carried out five Business Days after the Settlement Day to which it relates. Therefore there will generally be 22 days worth of data available, at the time of the credit check, which can be multiplied by 29/22 to give an estimated metered volume to cover the full 29 days used in the credit checking process.

A5.2.1 – Explanation of Figure A5-3

Figure A5-3 shows the 29 days actual metered volumes plotted against the metered data for 22 days scaled up to cover 29 days. The graph shows an 'ideal position' line, on which 29 days and 22 days scaled up are equal.

The vast majority of BM Units are situated on the ideal position line, or so close to it that they cannot be distinguished. Therefore this seems to be a very accurate way of estimating metered volumes for the period prior to the II run when CVA metered volumes are not available. However it should be noted that only a small amount of data was analysed. If a BM Unit does not have a stable metered volume, for example when a generator is starting up after an outage, this will not be reflected accurately and could lead to large discrepancies between the two volumes.

A5.2.2 – Explanation of Figure A5-4

Figure A5-4 shows the absolute % deviation from 29 days actual metered volumes of the 22 days scaled up value. Please note that BM Units with zero metered volumes were not included in this analysis.

The % deviation ranged from 160% to 0%, with less than 1% of BM Units deviating by more than 100%. There were six BM Units that deviated by 100% as they had no metered data for the original 22 days. Also 30 BM Units deviated by 33% as they had no metered data for the final seven days.

A5.3 – Comparison of P2 and the Alternative Modification Proposal

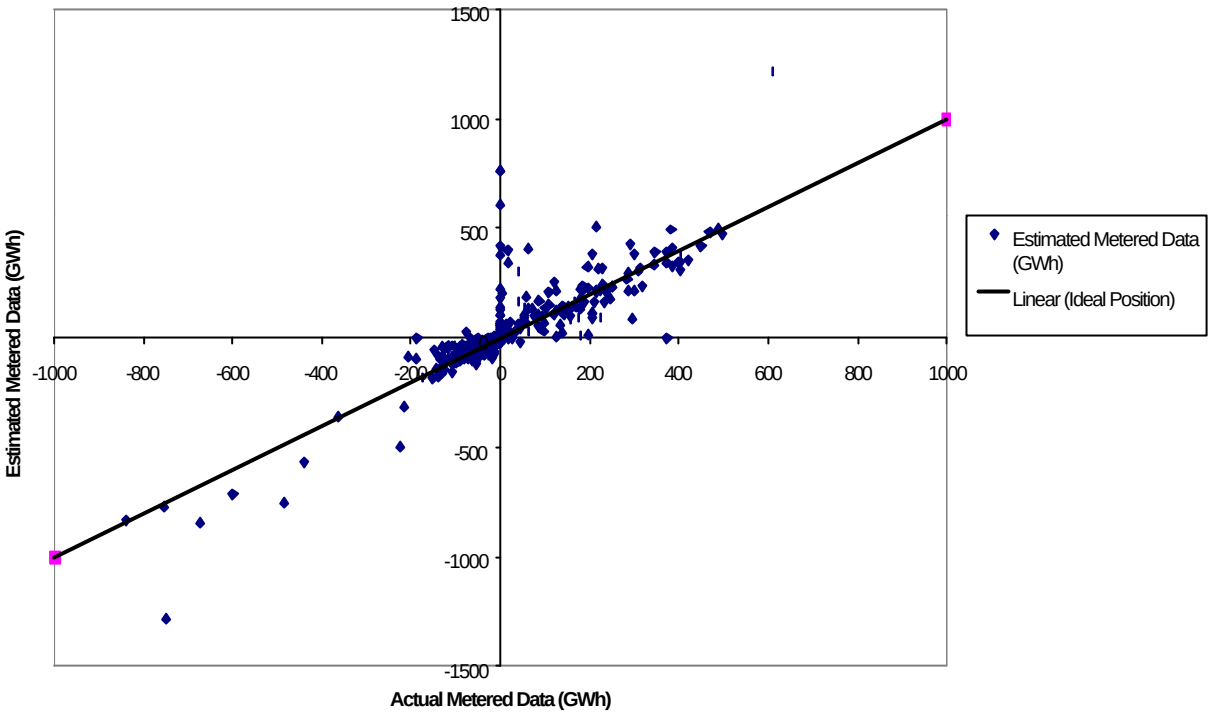
A5.3.1 – Explanation of Figure A5-5

By comparing Figures A5-1 to A5-4 it appears that the methodology detailed in the Alternative Modification Proposal for estimating metered volumes prior to the II run would be more accurate than that proposed by P2. Figure A5-5 has therefore been produced to show whether or not this is true.

Figure A5-5 therefore shows the % deviation, from actual metered data for each BM Unit, with a non zero metered volume, under both P2 and the Alternative Modification Proposal. It can be clearly seen that the Alternative Modification Proposal more accurate estimates the metered volumes, for the period analysed, for the majority of BM Units. However P2 is more accurate where the original 22 days are not typical of the full 29 days data.

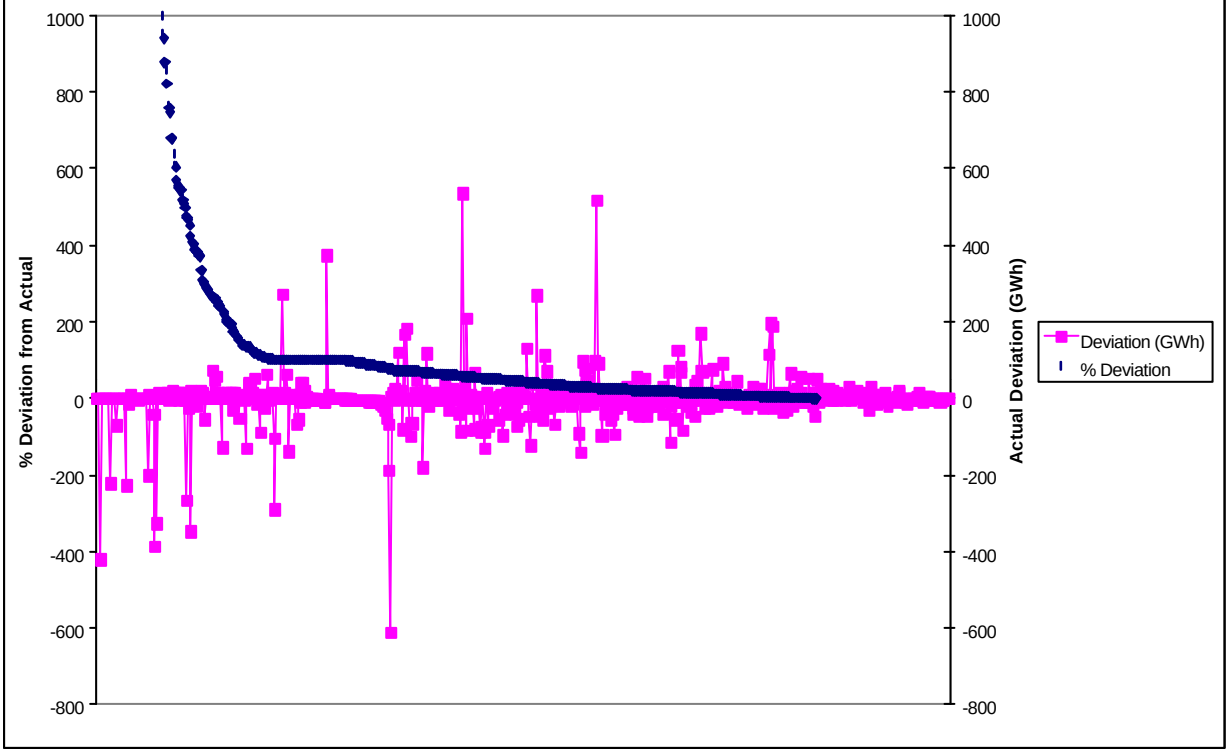
Comparison of Actual BM Unit Metered Data Compared with Metered Data Estimated using the CALF/GC/DC Methodology for 21 May to 18 June 2001

Figure A5-1



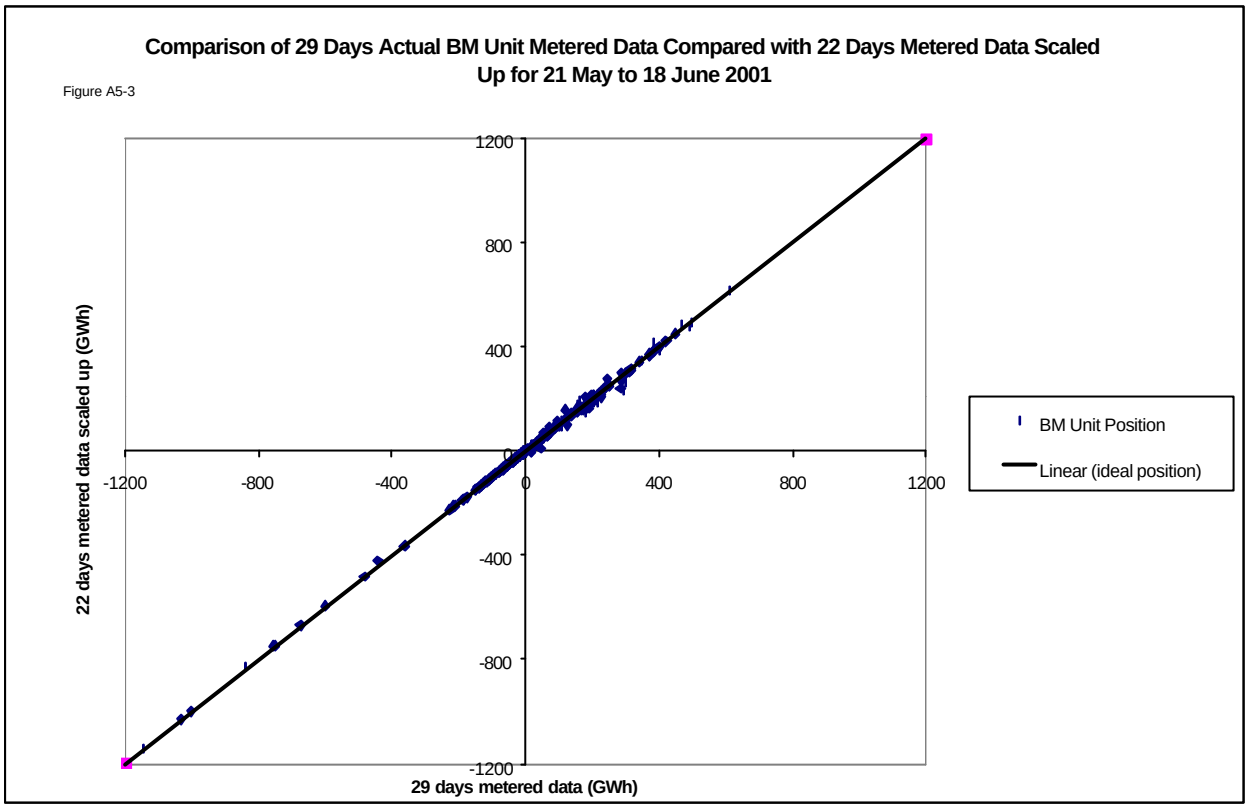
% Difference Between BM Unit Actual Metered Data and Estimated Metered Data for 21 May to 18 June 2001

Figure A5-2



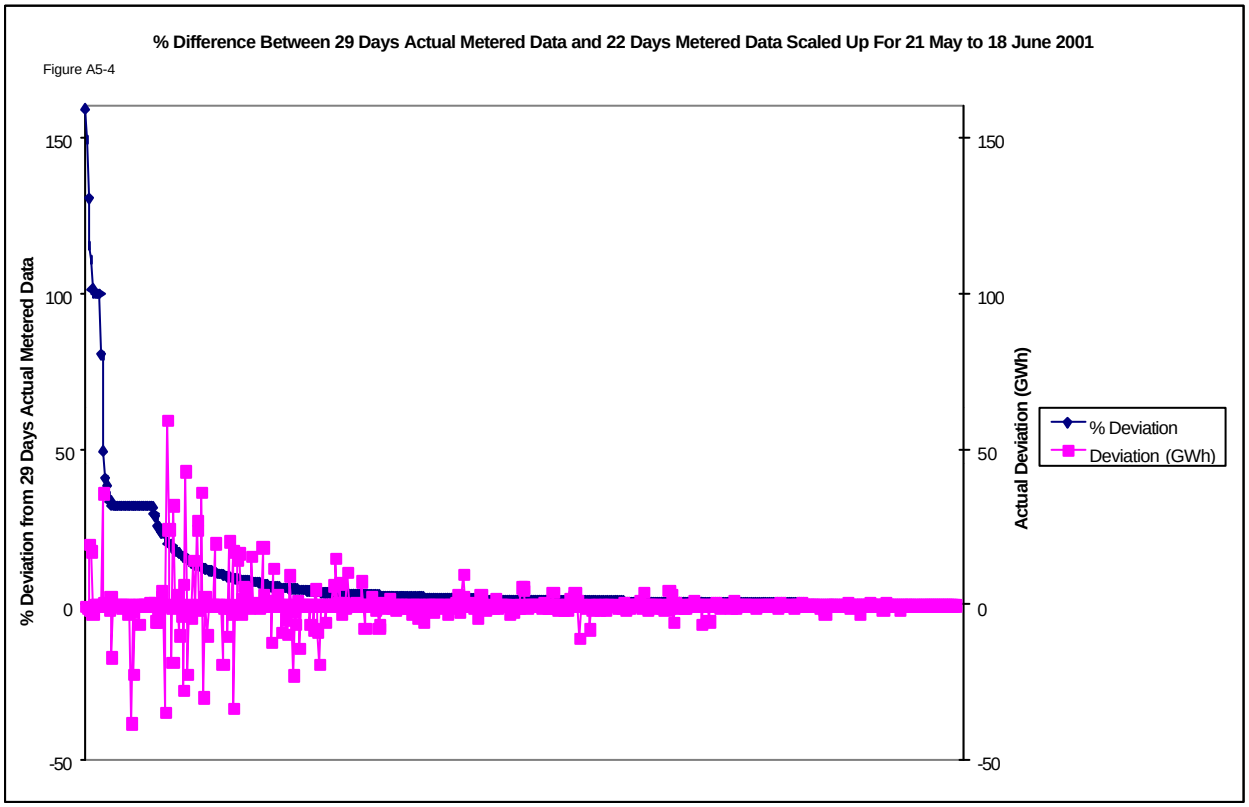
Comparison of 29 Days Actual BM Unit Metered Data Compared with 22 Days Metered Data Scaled Up for 21 May to 18 June 2001

Figure A5-3



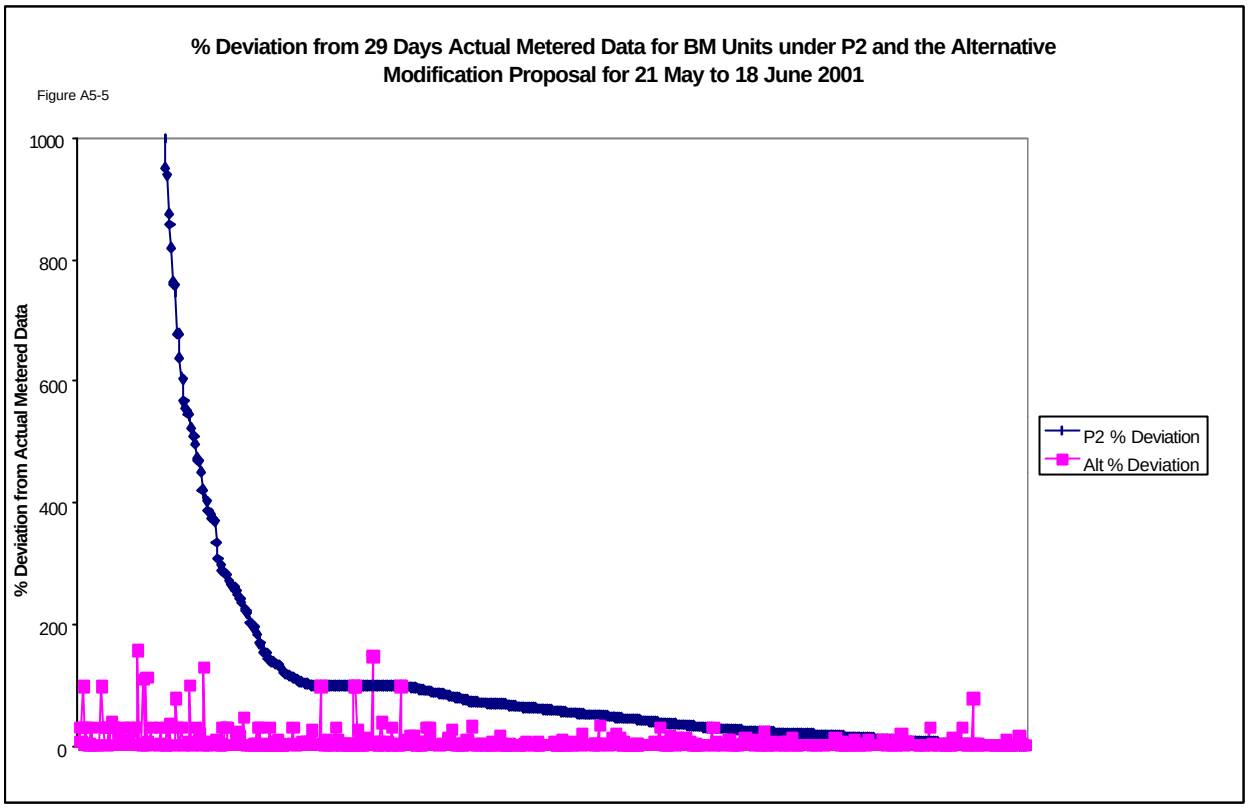
% Difference Between 29 Days Actual Metered Data and 22 Days Metered Data Scaled Up For 21 May to 18 June 2001

Figure A5-4



% Deviation from 29 Days Actual Metered Data for BM Units under P2 and the Alternative Modification Proposal for 21 May to 18 June 2001

Figure A5-5



ANNEX 6 – ACCURACY OF PROPOSED TECHNIQUE FOR ESTIMATION OF SVA METERED VOLUMES

A6.1 - Overview

Both Modification Proposal P2 and the Alternative Modification Proposal rely on estimation of SVA metered volumes to obtain reasonable estimates of Trading Charges from the Interim Information run. In order to verify the feasibility of this approach, ELEXON have performed some analysis of the proposed estimation method.

The estimation technique proposed is that, for each GSP Group and Settlement Period, the SAA system will apportion the total GSP Group Take between all the BM Units in the GSP Group, in proportion to their actual metered volumes in the same Settlement Period on the Settlement Day twenty-one days previously (i.e. the most recent comparable day for which data is available).

To investigate the accuracy of this approach, ELEXON obtained SVA metered volume data for a randomly chosen GSP Group for the period 19th May to 18th June, and calculated the percentage of the GSP Group assigned to each SVA BM Unit. In order to reduce the volumes of data to manageable levels, the analysis was restricted to Settlement Periods 6 (2:30-3:00), 32 (15:30-16:00) and 42 (20:30-21:00) on each day.

The remainder of this Annex includes some results from this analysis, as follows:

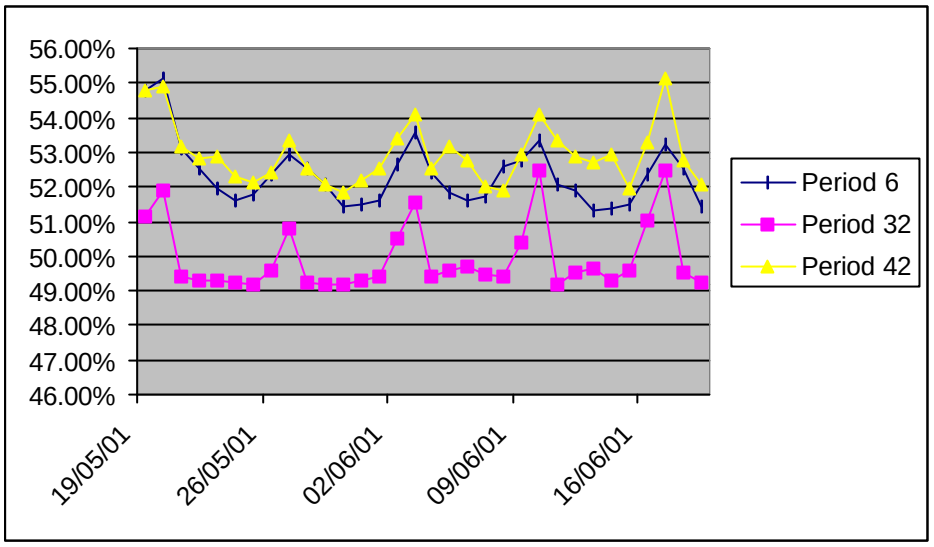
- A6.2 shows some examples of how market share data varies across time for different BM Units.
- A6.3 shows the accuracy of the proposed estimation technique for each BM Unit in the sample GSP Group (for a sample Settlement Period).

Clearly one has to be cautious about drawing conclusions from this extremely small quantity of data. However, based on the data analysed, it would appear that:

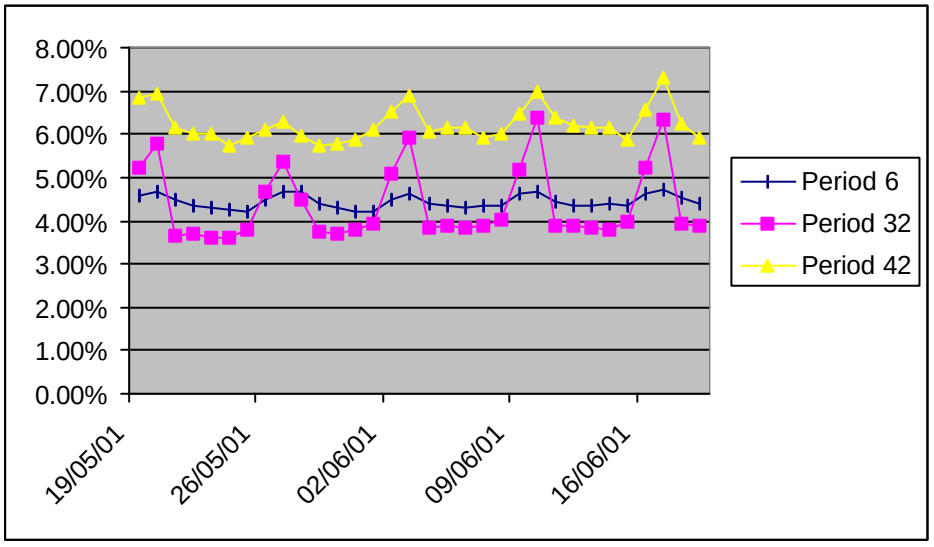
- For the dominant Base BM Unit in the GSP Group, the error was less than 1%
- For those BM Units with 2% or more of the GSP Group Take, the errors ranged from 0.6% to 12.2%, with the average being 4.75%
- For the remaining Base BM Units (excluding those not trading in the GSP Group), the errors ranged from 0.8% to 59.27, with the average being 22.1%
- For the two Additional BM Units in the GSP Group, the errors were in excess of 100% in each case.

A6.2 – Data for Sample BM Units

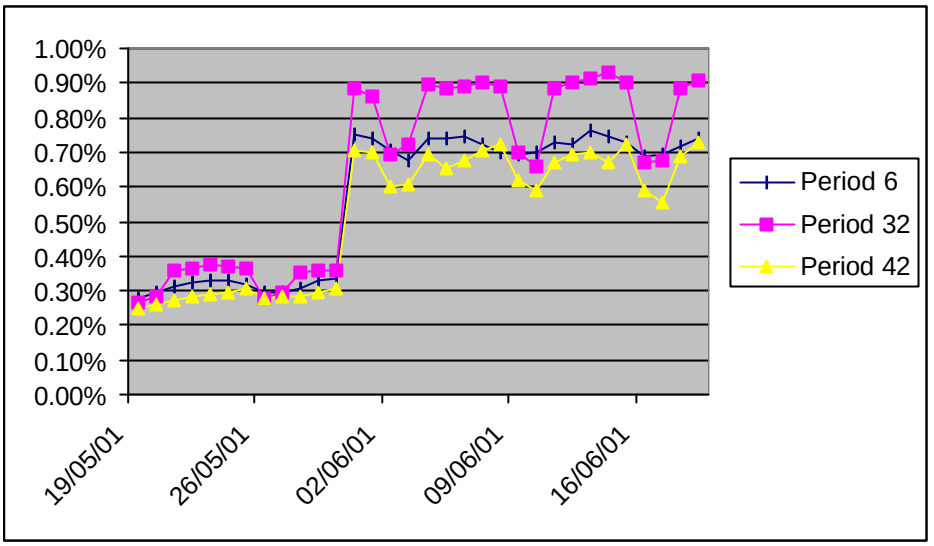
The following graph shows how the percentage of GSP Group Take varied over the month for the Base BM Unit of the dominant Supplier in the GSP Group. It can be seen that the market share is relatively stable, with a clear seven-day cycle (justifying the use of data from the same day of the week in estimating):



The following graph shows the same data for a (randomly selected) smaller Supplier in the GSP Group:



Finally, this graph shows the same data for an Additional BM Unit, which might be expected to have a more variable pattern of demand:



A6.3 – Data for Sample BM Units

In order to allow a slightly more systematic assessment of the accuracy of the proposed estimation method, the following table shows the percentage error in estimated meter volumes that would arise for each BM Unit in the sample GSP Group, in one of the sample Settlement Periods:

BM Unit Type	Market Share on 18th June, period 32	Market Share on 28th May, period 32	Percentage Change in Market Share
Base	49.5199%	49.2372%	-0.57%
Base	6.4918%	6.3112%	-2.86%
Base	6.3447%	6.7333%	5.77%
Base	5.4191%	5.6117%	3.43%
Base	4.6077%	4.9951%	7.75%
Base	3.9378%	4.4823%	12.15%
Base	3.6990%	3.5628%	-3.82%
Base	3.5264%	3.5041%	-0.64%
Base	2.6533%	2.5323%	-4.78%
Base	2.1771%	2.1445%	-1.52%
Base	1.7764%	2.0141%	11.81%
Base	1.3134%	0.9519%	-37.97%
Base	1.1241%	0.9737%	-15.45%
Base	1.0466%	0.7721%	-35.56%
Base	0.9441%	0.8787%	-7.44%
Base	0.9112%	0.7277%	-25.22%
Additional	0.8866%	0.3539%	-150.51%
Base	0.8525%	0.9165%	6.98%
Base	0.8486%	0.8002%	-6.05%
Base	0.6686%	1.0670%	37.33%
Base	0.2825%	0.3209%	11.97%
Base	0.2722%	0.4747%	42.64%
Base	0.2035%	0.1932%	-5.34%
Base	0.1816%	0.1802%	-0.76%
Base	0.0838%	0.1006%	16.64%
Base	0.0701%	0.0475%	-47.62%

BM Unit Type	Market Share on 18th June, period 32	Market Share on 28th May, period 32	Percentage Change in Market Share
Additional	0.0610%	0.0272%	-124.07%
Base	0.0433%	0.0271%	-59.74%
Base	0.0146%	0.0180%	19.18%
Base	0.0123%	0.0107%	-15.38%
Base	0.0118%	0.0132%	10.11%
Base	0.0111%	0.0141%	21.60%
Base	0.0030%	0.0022%	-38.17%
Base	0.0001%	0.0001%	19.18%
Base	0.0001%	0.0001%	19.18%
Base	0.0001%	0.0001%	19.18%