December 2001

ASSESSMENT REPORT

MODIFICATION PROPOSAL P34 – Transfer of Imbalances caused by Balancing Services to the Transmission Company Energy Account

MODIFICATION PROPOSAL P36 – The generation of Bid – Offer Acceptances relating to energy delivered as a result of providing Applicable Balancing Services

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

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I DOCUMENT CONTROL

a Authorities

Version	Date	Author	Signature	Change Reference
0.1	06/12/01	Mandi Francis		
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Version	Date	Reviewer	Signature	Responsibility
0.1	07/12/01	Justin Andrews		Trading Strategy
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0.1	07/12/01	Kris Clapham		ELEXON Legal
1.0	11/12/01	Justin Andrews		Trading Strategy
1.0	11/12/01	Richard Clarke		Trading Strategy

b Distribution

Name	Organisation

c Related Documents

Reference	Document
Reference 1	Modification Proposal P34 'Transfer of Imbalances caused by Balancing Services to the Transmission Company Energy Account'
Reference 2	Initial Written Assessment of P34 'Transfer of Imbalances caused by Balancing Services to the Transmission Company Energy Account' (IWA034) V1.0 21 August 2001
Reference 3	Modification P34: 'Transfer of Imbalances caused by Balancing Services to the Transmission Company Energy Account' Requirements Specification (027AAR) V1.0 13 November 2001
Reference 4	Panel Paper 031/011 Interim Report: P34 Transfer of Imbalances caused by Balancing Services to NGC and P36 The Generation of Bid - Offer Acceptances relating to Energy Delivered as a result of Providing Applicable Balancing Services' 18 October 2001
Reference 5	Modification Proposal P36 'The generation of Bid - Offer Acceptances relating to energy delivered as a result of providing Applicable Balancing Services'
Reference 6	Initial Written Assessment of P36 'The generation of Bid - Offer Acceptances relating to energy delivered as a result of providing Applicable Balancing Services' (IWA036) V1.0 20 September 2001
Reference 7	Modification P36: 'The generation of Bid - Offer Acceptances relating to energy delivered as a result of providing Applicable Balancing Services' Requirements Specification (029AAR) V1.0 13 November 2001

d Intellectual Property Rights and Copyright

II CONTENTS TABLE

1 SUMMARY AND RECOMMENDATIONS

This Assessment Report contains the detail of the Assessment procedure for Modification proposal P34 and P36, and their Alternatives, in recognition of the interactions between the two Modifications. However, it should be noted that these are separate Modifications and have been assessed and developed as such.

See Attachment 1 to this Assessment Report.

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

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.

This Assessment Report therefore addresses all of the requirements of the BSC, Section F, with regards to the Assessment of the Modification, to the extent relevant to the Modification Proposal in question.

4 MODIFICATION GROUP DETAILS AND TERMS OF REFERENCE

4.1 Modification Group Details

This Assessment Report has been prepared by the Pricing Issues Modification Group incorporating members of the Connection Use of System Code (CUSC) Working Group. The Membership of the Modification Group was as follows:

Member	Organisation
Justin Andrews	ELEXON (Chair)
Richard Clarke	ELEXON (Analyst)
Mandi Francis	ELEXON (Analyst)
Nick Sillito	NGC (P34 Proposer)
David Tolley	Innogy (P36 Proposer)
Andrew Murray	Axia Energy
Richard Ford	St. Clements Services
Martin Mate	British Energy Group
Maurice Smith	Campbell Carr
Chris Price	PowerGen
Danielle Lane	British Gas Trading
Anthony Doherty	Ofgem
Nick Elms	Enron
Chuan Zhang (CUSC)	London Electricity
Paul Mott	London Electricity
Simon Lord	Edison Mission Energy
Ben Willis	Yorkshire Electricity

4.2 Terms of Reference

The Panel provided specific Terms of Reference for the Pricing Issues Modification Group with regards to Modification P34 'Transfer of Imbalances caused by Balancing Services to NGC', as follows.

“The Modification Group will:”

1. Confirm that there will be no change to the BSC Systems this winter;

The PIMG determined that, given the size of the amendments required to support Modification P34, and the current implementation schedule associated with the ELEXON BSC Systems Release 2 Project, it would be very unlikely that a change of the nature of that required to support Modification Proposal P34 would be able to be implemented in the BSC Systems this winter. However, the PIMG noted that any implementation date is dependent upon, and would have to be determined in conjunction with, the Detailed Level Impact Assessment provided by the BSC Central Service Provider.

2. Examine achieving the result outside the Code;

   The PIMG, at their meetings of 5 September 2001, and 28 September 2001, discussed this point, but recognised that this fell outside of the remit of the Modification Group as a consequence of this falling outside of the provisions of the BSC. Therefore the PIMG agreed that this point and the point raised at (4) be addressed by the Transmission Company in a representation to the Panel.

3. Include in the Group expertise from the pre-CUSC Group involved in this area since it was already looking at the issues involved;

   The membership of the Modification Group was extended to include members of the CUSC Working Group.

   It should also be noted that an ELEXON Analyst attended, by invitation, a CUSC Working Group meeting on the subject of issues relating to the provision of balancing services.

4. Provide an explanation of why NGC cannot achieve this contractually;

   The PIMG, at their meetings of 5 September 2001, and 28 September 2001, discussed this point, but recognised that this fell outside of the remit of the Modification Group as a consequence of this falling outside of the provisions of the BSC. Therefore the PIMG agreed that this point and the point raised at (2) be addressed by the Transmission Company in a representation to the Panel.

5. Provide an explanation of the governance arrangements relating to these services (since this was originally intended to be handled under the CUSC arrangements).

   This is addressed by the Transmission Company's analysis and responses to the consultations on this Modification and its Alternative, and is summarised in Section 16 of this Assessment Report, with the full response provided in ANNEX 5.

"A report on the above issues would be presented to the Panel at its meeting of September 20. The Panel also suggested that the Lead Analyst on P34 should attend the CUSC Working Group."

The PIMG reviewed these Terms of Reference at their meeting of 5 September 2001 with a view to addressing them as part of the Assessment procedure for Modification Proposal P34. The Transmission Company raised concerns about the Terms of Reference set by the Panel in regards to Modification Proposal P34. The Transmission Company stated that it believed that a number of the Terms of Reference were beyond the remit of the Modification Group to consider, as they represented issues that were beyond the governance of the BSC.

Therefore the advice of Ofgem was sought by the Modification Group. Ofgem stated that the Modification Group could, as part of the assessment of the Modification Proposal, touch on and note issues outside of the BSC for the purposes of the assessment, but that where any party has an issue with any aspect that does not fall under the provisions of the BSC, that

such issue should be raised directly with Ofgem. With specific regard to the Terms of Reference for the Modification Group in respect to Modification Proposal P34, Ofgem stated that it would 'have difficulty' with the Modification Group extending its remit to matters outside of the BSC and reiterated that issues pertaining to such aspects should be raised with Ofgem by the concerned party.

Therefore the PIMG agreed to recognise this approach during discussions, and agreed that points raised concerning matters outside of the BSC should be noted, but that any recommendations made by the Group regarding the Modification Proposal should be limited to matters falling under the provisions of the BSC.

5 DESCRIPTION AND ASSESSMENT AGAINST THE APPLICABLE BSC OBJECTIVES

5.1 Assessment of Modifications P34 and P36 and their Alternatives against the Applicable BSC Objectives

As part of the assessment of the Modification, the PIMG reviewed the objectives of the Modification against the Objectives of the BSC, as defined in the Transmission Licence Condition C3, paragraph (3), as follows:

(a) The efficient discharge by the Transmission Company of the obligations imposed under the Transmission Licence;

(b) The efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System;

(c) Promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity;

(d) Promoting efficiency in the implementation and administration of the balancing and settlement arrangements.

The Proposer of Modification Proposal P34 believes that it will better achieve Objective (3) (a) and (b) as a consequence of the removal of the exposure to imbalance for energy deemed to be delivered in the provision of a balancing service incentivising parties to provide such services. Under current arrangements the proposer believes that balancing services are expensively priced (to account for the imbalance exposure risk), not being offered, or are being withdrawn, as a direct result of the risk of exposure to imbalance charges caused by the provision of such services. The proposer believes that this may pose a threat to the security of the system in the longer term if balancing services become scarcer or materially more expensive.

Therefore the ability to remove the imbalance exposure risk at source could mean that balancing services become more competitively priced, especially in the case of commercial services, where the service provision price includes a premium intended to cover imbalance exposure, and more freely available, as the risk of imbalance has been removed. In addition, the removal of the requirement for the Transmission Company to make an imbalance compensation payment for the provision of certain balancing services, means that all these factors should combine to reduce the balancing services payments made by the Transmission Company, which again should be reflected in an associated reduction in Balancing Use of System Charges (BSUoS).

The PIMG agreed with this assertion, but with the proviso that the benefits of the Modification Proposal could not be assessed against the Applicable BSC Objectives without the definition of the balancing services the Modification is to apply to and the associated methodology for calculating the energy volumes deemed to have been delivered by the provision of these balancing services falling under the provisions of the BSC.

The majority of the PIMG believed that it was not appropriate to amend settlement calculations, affecting the cashflows of all parties, to enable volumes to be notified, where those volumes are defined and calculated outside of the BSC, and therefore under different

governance. The PIMG believed that this introduced the potential for amendments to the definition of the balancing services and associated methodology to be made which did not better facilitate the Applicable BSC Objectives, under a non BSC governed change management process, but which directly affects the BSC and BSC Parties via the settlement cashflows.

The proposer stated, in response to these concerns, that the definition of the balancing services and the associated methodology would fall under the CUSC amendment process, with final approval for such definition and methodology coming from the Authority. However, the majority of the PIMG still felt that there could be potential for amendments to be made to the definition and methodology which did not better facilitate the Applicable BSC Objectives, as it was believed that the statutory duties of the Authority may differ according to whether the amendment was being made to the BSC, or to the CUSC. Therefore the PIMG expressed the requirement for the governance of the definition and methodology to come under the provisions of the BSC, and the associated change management process.

Therefore the PIMG believed that the Alternative to Modification Proposal P34 better facilitated the Applicable BSC Objectives than the original as a consequence of the governance falling under the provisions of the BSC.

The same arguments for Modification Proposal P34 also apply to Modification Proposal P36, in that the removal of the exposure to imbalance for the energy deemed to have been delivered in the provision of balancing services would have a similar effect in increasing competition in the provision of balancing services, reducing Transmission Company costs in obtaining such services, thus reducing the associated BSUoS charges.

The Modification Proposal also meets the requirements of the PIMG in that:

- The associated definition of the balancing services that the Modification is to apply to;
- The associated methodology for calculation of the energy volumes; and
- The payment for the provision of balancing services (via the Bid – Offer Acceptance and associated price).

Would all fall under the provisions of the BSC, therefore ensuring that any amendment, by definition, would better facilitate the Applicable BSC Objectives.

However, the PIMG noted that Modification Proposal P36, as drafted, may not fully achieve the Applicable BSC Objective 3(c), i.e. the promotion of competition in the generation and supply of electricity, as a consequence of the Modification requiring that any provider of Applicable Balancing Services is:

1. The Lead Party of the relevant BM Unit; and / or
2. An active participant in the Balancing Mechanism.

Therefore the PIMG determined that, to ensure that all parties offering balancing services could benefit from the mechanism proposed by Modification P36, an Alternative Modification should be developed which extended the mechanism defined by Modification proposal P36 to include that defined for Modification Proposal P34, such that all balancing service providers could have an appropriate mechanism for removing the exposure to imbalance caused by the provision of balancing services.

The PIMG therefore developed the Alternative Modification P36 which they believed better facilitated the Applicable BSC Objectives than the original, by expansion ofthe Modification to include all balancing service providers, rather than just a subset.

6 DESCRIPTION OF MODIFICATION P34 AND THE ALTERNATIVE MODIFICATION P34

The following represents extracts from the Requirements Specification for Modification Proposal P34, 027AAR (Reference 3).

This section, in referencing the Requirements Specification provides the definition of the changes required to support the implementation of the solution to Modification Proposal P34, as defined within that Modification Proposal. There is significant overlap between the amendments required to support this Modification and those required to support the Alternative Modification Proposal and therefore the Alternative Modification is presented as the additional functionality over and above that defined for the original Modification.

The draft legal text to support these amendments is defined in ANNEX 1 of this Assessment Report and is referenced throughout the definition of the requirements for clarity.

Where interfaces are referenced, the references have been taken from the BSC Central Service Agent User Requirements Specification and Interface Design Definition. This is in order to provide a definition of the amendments to the interfaces that is consistent with the approach taken by the BSC Central Service Agent for the purposes of this Requirements Specification.

For the avoidance of doubt, it is intended that if the original Modification is implemented, then the implementation should be on a settlement Day basis, retrospective from 23 August 2001. Where the Alternative Modification is implemented, then, due to the nature of the amendments, the implementation should be on a Settlement Day basis. Therefore any impact assessment should take this approach into consideration.

6.1 The Proposed Original Modification P34

6.1.1 Overview

At a high level, Modification Proposal P34 requires that (after the event, but within two working days, i.e. in time for the Initial Interim Information Run) the Transmission Company determine the energy volume associated with the provision of balancing services for a BM Unit and Settlement Period. On such determination, the Transmission Company will notify the Settlement Administration Agent (SAA) of the volumes. These energy volumes will be removed from the Energy Account of the balancing service provider, thus removing them from exposure to the consequences of imbalance, and transferred to the Energy Account of the Transmission Company.

The energy volumes associated with the provision of balancing services will be reported into the Settlement Administration Agent for use in the settlement calculations. However, consideration should be given as to whether it is desirable / reasonable to publish these volumes on the BMRA against the associated BM Units when they are received from the Transmission Company. Therefore the functionality and documentation amendments required to support this are detailed separately so that development costs and timescales can be provided separately by the BSC Central Service Agent.

Modification Proposal P34 requires that the methodology for determining the energy volumes associated with the provision of balancing services, and the list of balancing services that this Modification is to apply to, be held outside of the provisions of the BSC, potentially under the Connection Use of System Code (CUSC), consequently falling under the provisions of the Transmission Licence. Therefore neither the balancing services nor the methodology for calculating the associated energy volumes are provided in this Requirements Specification for this original Modification. As a consequence of this approach, no payments are made for the provision of balancing services via the Balancing Mechanism. All payments for the provision of the balancing services are dealt with outside of the BSC, via the CUSC and / or Ancillary Services Contracts with the Transmission Company.

It should also be noted that balancing services providers can 'opt out' of this process. Where the providers do not wish to have energy volumes attributable to the provision of balancing services notified into the Balancing Mechanism under the process defined in this Requirements Specification, the balancing service provider can notify the Transmission Company that this is the case. The Transmission Company will not notify energy volumes attributable to the provision of balancing services into the Balancing Mechanism, for those Parties who have opted out of this process.

6.1.2 Definitions Required to Support Modification Proposal P34

The Modification Proposal requires new and amended definitions to support the implementation of the provision of a new energy volume to the Settlement Administration Agent (SAA), and the associated amendment to the settlement calculations.

Therefore Section X ANNEX X-2 Table X-2 'Technical Glossary' requires amendment to include the requisite new and amended definitions, as defined in ANNEX 1 (a) of this Assessment Report.

Section X ANNEX X-2 Table X-3 'Glossary of Acronyms Applying Except in Relation to Section S' requires amendment to include the requisite new and amended definitions, as defined in ANNEX 1 (a) of this Assessment Report.

6.1.3 Provision of the 'BM Unit Ancillary and Other Service Energy Volume'

The Transmission Company is required to determine the energy volume associated with the provision of balancing services, at Settlement Period and BM Unit level and provide such volumes to the Settlement Administration Agent by the end of the second working day from the Settlement Day to which the energy volumes pertain.

The notified volumes relate to the specified BM Unit in a Settlement Period on a Settlement Date only and it is not intended that they be defaulted.

The Transmission Company will provide a cumulative / total volume for each BM Unit and Settlement Period, i.e. there will not be multiple within Settlement Period volumes notified for a BM Unit at any one time.

The Transmission Company will be able to resubmit an amended 'BM Unit Ancillary and Other Service Energy Volume' to the Settlement Administration Agent at any time after initial notification up to the Final Reconciliation Run (in a similar manner to that utilised for amending Balancing Services Adjustment Data (BSAD)). Where the Transmission Company wishes to amend the data, they will resubmit the interface with the requisite data at any time.

It is expected that the interface providing such volumes to the SAA be fully automated and the format be agreed between the Transmission Company and the SAA. However, for the purposes of this Requirements Specification, an example format of the interface is provided:

To: SAA **From:** Transmission Company (System Operator)

Settlement Date (dd/mm/yyyy)

Settlement Period (1-50)

BM Unit Id

BM Unit Ancillary and Other Service Energy Volume (MWh)

Amendment to the BSC, Section Q 'Balancing Mechanism Activities' is required to support the provision of the 'BM Unit Ancillary and Other Service Energy Volume' to the Settlement Administration Agent from the Transmission Company, as defined in ANNEX 1 (a) of this Assessment Report.

6.1.4 Inclusion of the 'BM Unit Ancillary and Other Service Energy Volumes' in Settlement Calculations

The intent of the Modification is that the energy volumes directly associated with the provision of balancing services are excluded from the consequence of imbalance charges (Energy Imbalance, Information Imbalance and Non Delivery charges), by removing this energy from the Energy Account of the Service Provider (via adjustment of the energy

associated with the BM Unit providing the balancing service) and transferring it to the Energy Account (non IEA) of the Transmission Company. The Transmission Company (non IEA) Energy Accounts are exempt from imbalance charging.

Therefore, in order to support the intent of the Modification, settlement calculations, as defined in Section T of the BSC, will have to be amended for all Settlement Runs as defined in ANNEX 1 (a) of this Assessment Report.

The determination of the Period BM Unit Balancing Services Volume (the name has been amended from the 'Period BM Unit Bid – Offer Volume', under this Modification) in Section T 4.3.2 is required to be amended as defined in ANNEX 1 (a) of this Assessment Report.

Placing the QAS_{ij} variable in the equation at Section T 4.3.2 means that the:

– Calculation of expected metered volumes (Section T, 4.3.3) is adjusted for 'BM Unit Ancillary and Other Service Energy Volume'; and

– This excludes the 'BM Unit Ancillary and Other Service Energy Volume' from the calculation of Information Imbalance volume calculation (Section T 4.3.4), the calculation of Energy Imbalance Prices (Section T 4.4) and the calculation of Account Credited Energy Volumes (Section T 4.6.2) and consequently the calculation of Energy Imbalance Volume (Section T 4.6.3).

This amendment effectively adjusts the Energy Account of the Service Provider to account for the 'BM Unit Ancillary and Other Service Energy Volume'.

The calculation at Section T, 4.6.2 requires amendment to the name of the variable being calculated as a consequence of the amendment to the definition required for this Modification. It should be noted that no amendment to the variables or the calculation is required, as defined in ANNEX 1 (a) of this Assessment Report.

For consistency with the calculation and reporting of other variables under the BSC, one further calculation is required in order to determine the Total Period Ancillary and Other Service Energy Volume transferred to the Transmission Company. This will require addition of a calculation into Section T 4.6, as defined in ANNEX 1 (a) of this Assessment Report.

6.1.5 Settlement Report (SAA-I014) Amendments

The Settlement Report (SAA-I014), all sub flows, require amendment to reflect the application of the new functionality in the report, so that BSC Parties, the Transmission Company and ELEXON can replicate the settlement calculations, if required.

It should be noted that there is potential to utilise parallel reporting functionality, i.e. recipients determine the version of the Settlement Report they wish to receive. Therefore any Impact Assessment should provide a view on the appropriateness and cost / timescale implications of utilising this approach.

Therefore the following amendments are required:

SAA-I014 Subflow 1 - to BSC Parties:

Group **SSD** 'System Period Data'

Include new data item 'Total Period Ancillary and Other Service Volume' ($TQAS_j$) (MWh).

Group **BPD** 'BM Unit Period Data'

Include new data item 'BM Unit Ancillary and Other Service Volume' (QAS_{ij}) (MWh) and rename existing data item 'Period BM Unit ~~Bid-Offer~~ Balancing Services Volume' (N0164).

SAA-I014 Subflow 2 - to Transmission Company:

Group **SPI** 'Settlement Period Information'

Include new data item 'Total Period Ancillary and Other Service Volume' ($TQAS_j$) (MWh).

Group **BPI** 'BM Unit Period Data'

Include new data item 'BM Unit Ancillary and Other Service Volume' (QAS_{ij}) (MWh).

Group **SSD** 'System Period Data'

Include new data item 'Total Period Ancillary and Other Service Volume' ($TQAS_j$) (MWh).

Group **BP7** 'BM Unit Period Data'

Include new data item 'BM Unit Ancillary and Other Service Volume' (QAS_{ij}) (MWh) and rename existing data item 'Period BM Unit ~~Bid-Offer~~ Balancing Services Volume' (N0164).

SAA-I014 Subflow 3 - to ELEXON:

Group **SSD** 'System Period Data'

Include new data item 'Total Period Ancillary and Other Service Volume' ($TQAS_j$) (MWh).

Group **BUI** 'BM Unit Period Data'

Include new data item 'BM Unit Ancillary and Other Service Volume' (QAS_{ij}) (MWh) and rename existing data item 'Period BM Unit ~~Bid-Offer~~ Balancing Services Volume' (N0164).

6.1.6 Other Changes Required

This section defines amendments to industry systems, processes and documentation not already identified in the previous sections.

6.1.6.1 Potential Changes to External Systems

All Parties, the Transmission Company and ELEXON are impacted by the amendments to the Settlement Report. However, it may be possible to utilise the parallel implementation approach defined under Modification P8 to delay the impact.

Modification P8 proposes that flow version numbering be implemented within the BSC Central Service Agent. Namely, when a report such as the Settlement Report (SAA-I014) changes and the changes are implemented, Parties can determine whether they wish to continue receiving the old version of the report (i.e. without the amendments and therefore reducing the ability to accurately verify their trading charges), or the new, with the amendments. This enables them to determine the timeframes for implementation of an amended interface independently of its development within the Central Services (unlike a 'big bang' approach). However, the impact from the implementation of amendments to the Settlement Report is still likely to be significant.

6.1.7 Potential Changes to Industry Documentation

The following lists the documentation (other than the documentation specific to the BSC Central Service Agent and therefore 'owned' by the Central Services, such as the URSs) that requires amendment as a result of the implementation of the Modification with a brief summary of the potential change. The documentation listed is believed to represent the full set of impacted documents at this time.

6.1.7.1 BSC Subsidiary Documents - The Reporting Catalogue

The Reporting Catalogue (v2.0) requires amendment to reflect the amendments to the Settlement Report. The amendments required are described as follows:

3.1.1 Report sent to the Transmission Company (TC)

(b) Settlement Period Information …

- …
- **Total Period Ancillary and Other Service Energy Volume ($TQAS_j$) (MWh)**

(d) BM Unit Period Information

- …
- **BM Unit Ancillary and Other Service Energy Volume (QAS_{ij}) (MWh)**

(h) Settlement Period Information:

- System Period Data
  - …
  - **Total Period Ancillary and Other Service Energy Volume ($TQAS_j$) (MWh)**

(k) BM Unit Period Information

- BM Unit Period Data:
  - …
  - **BM Unit Ancillary and Other Service Energy Volume (QAS_{ij}) (MWh)**

3.1.2 Report sent to BSCCo

(c) Settlement Period Information …

- … System Period Data
  - …
  - **Total Period Ancillary and Other Service Energy Volume ($TQAS_j$) (MWh)**

(d) BM Unit Period Information

- …
- **BM Unit Ancillary and Other Service Energy Volume (QAS_{ij}) (MWh)**

3.1.3 Reports sent to Parties

(b) Settlement Period Information …

- …
- **Total Period Ancillary and Other Service Energy Volume ($TQAS_j$) (MWh)**

(e) BM Unit Period Information

- …
- **BM Unit Ancillary and Other Service Energy Volume (QAS_{ij}) (MWh)**

No other amendments to the BSC Subsidiary Documents, other than those previously defined, are identified at this time.

6.1.7.2 Settlement Administration Agent Service Description

The following amendments are required to support the implementation of Modification P34.

Section 1.4 …

ii) For each Settlement Run:

a. Receive BM Data from the SO including:

- …
- **BM Unit Ancillary and Other Service Energy Volumes**

Section 2.1 System Operator …

2.1.1 …

- …
- **BM Unit Ancillary and Other Service Energy Volumes**

3.18 Calculation of Period BM Unit ~~Bid – Offer~~ Balancing Services Volume

3.18.1 The SAA shall ensure that the Period BM Unit ~~Bid – Offer~~ Balancing Services Volume (QBO_{ij}) represents the net quantity of Balancing Services energy, consisting of accepted Bids and Offers, and energy associated with Ancillary and Other services from BM Unit i in Settlement Period j. It is determined as follows:

$$QBO_{ij} = S^{n}(QAO^{n}_{ij} + QAB^{n}_{ij}) + QAS_{ij}$$

The following amendments to the SAA Service Description are required to support the remainder of the functionality for Modification P34:

3.33 Calculation of Account Period ~~Bid – Offer~~ Balancing Services Volume

3.33.1 The SAA shall ensure that the Account Period ~~Bid – Offer~~ Balancing Services Volume ($QABO_{aj}$) represents the net volume of Balancing Services energy, consisting of accepted Bids and Offers, and energy associated with Ancillary and Other services attributable to each Energy Account a, in Settlement Period j.

3.33A Calculation of Total Period Ancillary and Other Service Energy Volume

3.33A.1 In respect of each Settlement Period, the Total Period Ancillary and Other Service Energy Volume will be determined as follows:

$$TQAS_{j} = S_{i}QAS_{ij}$$

Where S_i represents the sum over all BM Units.

The SAA Service Description, Appendix A 'Inputs and Outputs' requires amendment, as follows, to reflect the receipt of information from the Transmission Company relating to the provision of the BM Unit Ancillary and Other Service Energy Volumes:

1. SAA Inputs

Input Flow Description	Flow Received From
BM Unit Ancillary and Other Service Energy Volume	**SO**

No other amendments to the Service Descriptions, other than those previously defined, are identified at this time.

6.1.7.3 NETA Data File Catalogue

The NETA Data File Catalogue requires amendment to include the new and amended reports, as defined in Sections 6.1.3 (Transmission Company to SAA) and 6.1.5 (amendments to the Settlement Report) of this Assessment Report.

No other amendments to the NETA Data File Catalogue are identified at this time.

6.1.8 Balancing Mechanism Reporting Agent Functionality

If it is determined to be appropriate for the Balancing Mechanism Reporting Agent (BMRA) to publish the 'BM Unit Ancillary and Other Service Energy Volumes' against the associated BM Unit, then the BMRA and supporting documentation will require amendment, as defined in the following sections.

6.1.8.1 Amendments to BMRA

Section 6.1.3 of this Assessment Report defines the (example) interface from the Transmission Company for the provision of the 'BM Unit Ancillary and Other Service Energy Volumes'. It is expected that the interface be provided only once to the BSC Central Service Agent from the Transmission Company (in accordance with the BSC Section Q, 1.3.1 which states "*Where … the Transmission Company is required to send particular data to both the BMRA and SAA, for so long as the same person acts as BMRA and SAA, the Transmission Company shall be treated as having sent such data to both of them if it has sent the data to one of them.*").

It should be noted that the calculations undertaken by BMRA at the end of each Settlement Period are not affected by the requirement to receive this additional information from the Transmission Company and the derived data calculation and publishing functionality requires no amendment as a consequence of implementing this Modification.

6.1.8.2 BMRA Publishing Requirements

The 'BM Unit Ancillary and Other Service Energy Volumes' (QAS_{ij}) should be published on the BMRA against the associated BM Unit and Settlement Period for a specific Settlement Date, within [x] minutes of receipt[1].

There is no requirement to calculate and publish the Total Period Ancillary and Other Service Energy Volumes.

6.1.8.3 BSC Amendments

The new clause, as provided in ANNEX 1 (a) of this Assessment Report, for inclusion in the BSC, Section Q 'Balancing Mechanism Activities', arbitrarily named Q 6.3A, requires additional mention of the provision of these volumes to the BMRA, as well as the SAA.

A new entry in Section V 'Reporting', ANNEX V-1: 'Tables of Reports', is required, as defined in ANNEX 1 (a) of this Assessment Report.

6.1.8.4 Amendments to the BMRA Service Description

The following amendments to the BMRA Service Description are required to support the publishing of this data on BMRA.

8 RECEIVE BM DATA

… **f. BM Unit Ancillary and Other Service Energy Volumes**

…

[1] There is no precedent for the timescales for publishing this information on BMRA, therefore this can be determined in discussion with the BSC Central Service Agent, for incorporation into the Service Description and associated Service Levels.

8.2A **Publish the BM Unit Ancillary and Other Service Energy Volumes on line within [x] minutes of receipt.**

If the [x] minutes is determined to be the same as other BM data, which is required to be published within 5 minutes of receipt, then there is no requirement to add this additional paragraph, as the requirement / obligation will be covered by the existing paragraph 8.2.

A new entry in Appendix A 'Input Output Flows', is required:

Balancing Mechanism Reporting Inputs

Input Flow Description	Flow Received From
BM Unit Ancillary and Other Service Energy Volumes	**SO**

6.1.8.5 BSC Subsidiary Documents - The Reporting Catalogue

The Reporting Catalogue (v2.0) requires amendment to reflect the obligation to publish the BM Unit Ancillary and Other Service Energy Volumes, as follows:

2.1 Data Posted on the BMRS …

… (w) BM Unit Ancillary and Other Service Energy Volumes (QAS_{ij}), daily.

6.2 Alternative Modification P34

6.2.1 Alternative Modification Overview

The Alternative Modification for P34 is based on the original Modification almost in entirety, utilising the same mechanism and processes for the notification and application of the transfer of energy volumes associated with the provision of balancing services to the Transmission Company's Energy Account. However, the main difference is that:

- The Alternative Modification Proposal P34 requires that the methodology for determining the energy volumes associated with the provision of balancing services, and the list of balancing services that this Modification is to apply to, be held under of the provisions of the BSC, rather than under the Connection Use of System Code (CUSC) as proposed by the original Modification.

It should be noted that payments for these services will still fall under the CUSC, rather than under the BSC, and service providers will still be able to 'opt out' of this process by notifying the Transmission Company.

The following sections describe the ADDITIONAL requirements, over and above those defined in Section 6.1 of this Assessment Report, and should therefore be considered in conjunction with Section 6.1 for the purposes of any assessment of the Alternative Modification.

6.2.2 Additional Requirements to Support Alternative Modification P34

The amendments to the BSC required to support the implementation of Alternative Modification P34 are defined in ANNEX 1 (a) and (b) of this Assessment Report.

Section X ANNEX X-2 Table X-2 'Technical Glossary' requires amendment to include the requisite new and amended definitions, as defined in ANNEX 1 (a) and (b) of this Assessment Report.

Section X ANNEX X-2 Table X-3 'Glossary of Acronyms Applying Except in Relation to Section S' requires amendment to include the requisite new and amended definitions, as defined in ANNEX 1 (a) and (b) of this Assessment Report.

6.2.3 Determination of the BM Unit Ancillary and Other Service Energy Volume

The Transmission Company is required to determine the energy volume associated with the provision of Applicable Balancing Services at BM Unit level, in the form of an energy volume against a BM Unit and Settlement Period. Therefore a methodology for such determination is required to be included in the BSC. To this end, a new ANNEX to Section T is required, as defined in ANNEX 1 (a) and (b) of this Assessment Report.

No further amendments to the BSC, BSC Subsidiary Documentation, industry documentation or BSC System functionality, additional to that required for the original Modification, is believed to be required to support Alternative Modification P34.

7 DESCRIPTION OF MODIFICATION P36 AND THE ALTERNATIVE MODIFICATION P36

7.1 The Proposed Original Modification P36

7.1.1 Overview

At a high level, Modification Proposal P36 requires that (after the event, but within two working days, i.e. in time for the Interim Initial Information Run) the Transmission Company determine the energy volume associated with the provision of balancing services for a BM Unit and Settlement Period, according to a methodology defined within the BSC. These energy volumes will be treated as Bid – Offer Acceptances, but will be explicitly excluded from Energy Imbalance Price calculations as a consequence of such Bid – Offer Acceptances resulting from system balancing. Therefore the Service Provider gets the energy associated with the provision of the balancing service cashed out at the Bid – Offer price and is protected from the exposure to the consequences of imbalance, as a result of the Bid – Offer Acceptance.

The energy volumes associated with the provision of balancing services will be reported into the Settlement Administration Agent for use in the settlement calculations. However, consideration should be given as to whether it is desirable / reasonable to publish these volumes on the BMRA against the affected BM Units when they are received from the Transmission Company. Therefore the functionality and documentation amendments required to support this are detailed separately so that development costs and timescales can be provided separately by the BSC Central Service Agent.

Modification Proposal P36 requires that the methodology for determining the energy volumes associated with the provision of balancing services, and the list of balancing services that this Modification is to apply to, be held under the provisions of the BSC. As a consequence of this approach, all payments are made for the provision of balancing services via the Balancing Mechanism, this will require an associated amendment to the Connection and Use of System Code (CUSC) to reflect this change in governance.

It should also be noted that balancing services providers can 'opt out' of this process. Where the providers do not wish to have energy volumes attributable to the provision of balancing services notified into the Balancing Mechanism under the process defined in this Requirements Specification, the service provider can notify the Transmission Company that this is the case. The Transmission Company will not notify energy volumes (as 'additional' Bid - Offer Acceptances) attributable to the provision of balancing services into the Balancing Mechanism, for those Parties who have opted out of this process.

7.1.2 Transmission Company Methodology

The methodology proposed by the Transmission Company for the calculation and provision of the Bid - Offer Acceptances associated with the provision of Applicable Balancing Services results in a Bid - Offer Acceptance volume for a Bid - Offer pair, BM Unit and Settlement Period. The provision of the Bid - Offer Acceptance in this way effectively means that the Transmission Company undertake the determination of the Bid - Offer Acceptance volume against the relevant Bid - Offer pair (n), 'bypassing' the Settlement Administration Agent (SAA) determination of such volumes.

It has been assumed, for the purposes of these requirements that the Transmission Company will provide the relevant volume against each Bid - Offer pair, i.e. undertaking a similar integration to that which SAA performs, in order to provide an acceptance volume against each (relevant) Bid - Offer pair to ensure that the correct Bid - Offer Price is applied to the relevant volumes.

7.1.3 Definitions Required to Support Modification Proposal P36

The Modification Proposal requires new definitions to support the implementation of the provision of a new type of Bid – Offer Acceptance to the Settlement Administration Agent (SAA), and the associated amendment to the settlement calculations.

Therefore Section X ANNEX X-2 Table X-2 'Technical Glossary' requires amendment to include the requisite new and amended definitions, as defined in ANNEX 1 (c) of this Assessment Report.

Section X ANNEX X-2 Table X-3 ‘Glossary of Acronyms Applying Except in Relation to Section S’ requires amendment to include the requisite new and amended definitions, as defined in ANNEX 1 (c) of this Assessment Report.

7.1.4 Amendment of the Definition of a Bid – Offer Acceptance

The BSC, Section Q ‘Balancing Mechanism Activities’, paragraph 5.1 Bid – Offer Acceptances requires an additional clause to specifically define the Bid – Offer Acceptances made under this Modification, as the current definition does not include Acceptances made after the event for the purposes of accounting for energy volumes associated with the provision of Applicable Balancing Services. The amended definition is provided in ANNEX 1 (c) of this Assessment Report.

7.1.5 Determination of the Accepted Ancillary and Other Service Bid - Offer Volumes

The Transmission Company is required to determine the energy volume associated with the provision of Applicable Balancing Services at BM Unit level, in the form of additional Bid – Offer Acceptances against a BM Unit. Therefore a methodology for such determination is required to be included in the BSC. To this end, a new ANNEX to Section T is required, as defined in ANNEX 1 (c) of this Assessment Report.

7.1.6 Provision of the BM Unit Ancillary and Other Service Bid - Offer Acceptances

The Transmission Company is required to determine the energy volume associated with the provision of Applicable Balancing Services at Bid - Offer pair (n) and BM Unit level and provide such volumes, in the form of 'additional' Bid – Offer Acceptances to the Settlement Administration Agent by the end of the second working day from the Settlement Day to which the energy volumes pertain.

The existing interface for provision of Bid - Offer Acceptances into the Settlement Administration Agent and Balancing Mechanism Reporting Agent is not suitable for use to provide this information, as the Transmission Company is providing volumes against the BM Unit and not Acceptance spot points. Therefore a new interface is required between the Transmission Company and the BSC Central Service Agent.

The format of such interface should be agreed between the BSC Central Service Agent and the Transmission Company, however, it is expected that the interface be automated. The following provides an example of the format of this interface for the purposes of these requirements only:

From: *Transmission Company* ***To:*** *SAA*

Settlement Date

Settlement Period

BM Unit

n *

BM Unit Ancillary and Other Service Bid Acceptance ($QABO^{n}_{ij}$)

BM Unit Ancillary and Other Service Offer Acceptance ($QASO^{n}_{ij}$)

* It is expected that a BM Unit Ancillary and Other Service Bid - Offer Acceptance volume be provided for each relevant value of 'n'.

No Bid - Offer Acceptance number (k) is utilised. This is a consequence of:

– The irrelevance of including a Bid - Offer Acceptance Number at this level, as there is no 'real' acceptance made, only a notified Acceptance volume after the event; and

– The requirements of the Settlement Administration Agent (SAA) (and BMRA) with regards to Bid - Offer Acceptance numbering; the Acceptance numbers are treated very similarly to File Sequence Numbers to enable 'missing' Bid - Offer Acceptances to be identified by the Central Services. Therefore, for these 'additional' acceptances, the Acceptance number would not be contiguous with those in the same / preceding / subsequent Settlement Period, potentially causing a significant problem in processing for the Central Service Agent.

Amendment to the BSC, Section Q 'Balancing Mechanism Activities' is required to support the provision of the 'BM Unit Ancillary and Other Service Energy Volume' to the Settlement Administration Agent from the Transmission Company, as defined in ANNEX 1 (c) of this Assessment Report.

7.1.7 Inclusion of the BM Unit Ancillary and Other Service Bid - Offer Acceptances in Settlement Calculations

The intent of the Modification is that the energy volumes directly associated with the provision of Applicable Balancing Services are excluded from the consequence of imbalance charges (Energy Imbalance, Information Imbalance and Non Delivery charges), by accounting for this energy via Bid – Offer Acceptances.

Therefore, in order to support the intent of the Modification, settlement calculations, as defined in Section T of the BSC, will have to be amended as defined in ANNEX 1 (c) of this Assessment Report, for all Settlement Runs.

The determination of the Period BM Unit Total Accepted Offer Volume (QAO^n_{ij}) and Period BM Unit Total Accepted Bid – Volume (QAB^n_{ij}) (Section T 3.9) are required to be amended as defined in ANNEX 1 (c) of this Assessment Report.

Placing the Accepted Ancillary and Other Service Bid – Offer Volumes in this equation at Section T 3.9 means that the energy volumes associated with the provision of balancing services is treated like any other Bid – Offer Acceptance, with the exception that these Bid – Offer Acceptances are excluded from the Energy Imbalance Price calculation.

7.1.8 Settlement Report (SAA-I014) Amendments

The Settlement Report (SAA-I014), all sub flows, requires amendment to reflect the application of the new functionality in the report, so that BSC Parties, the Transmission Company and ELEXON can replicate the settlement calculations, if required.

It should be noted that there is potential to utilise parallel reporting functionality, i.e. recipients determine the version of the Settlement Report they wish to receive. Therefore any Impact Assessment should provide a view on the appropriateness and cost / timescale implications of utilising this approach.

Therefore the following amendments are required:

SAA-I014 Subflow 1 - to BSC Parties:

Group **BOD** 'BMU Period Bid – Offer Data'

Include new data items 'BM Unit Ancillary and Other Service Bid Volume' ($QASB^n_{ij}$) (MWh) and 'BM Unit Ancillary and Other Service Offer Volume' ($QASO^n_{ij}$) (MWh).

SAA-I014 Subflow 2 - to Transmission Company:

Group **BO4** 'BMU Period Bid – Offer Data'

Include new data items 'BM Unit Ancillary and Other Service Bid Volume' ($QASB^n_{ij}$) (MWh) and 'BM Unit Ancillary and Other Service Offer Volume' ($QASO^n_{ij}$) (MWh).

SAA-I014 Subflow 3 - to ELEXON:

No amendment required (as Bid – Offer Acceptance data is not reported out).

7.1.9 Other Changes Required

This section defines amendments to industry systems, processes and documentation not already identified in the previous sections.

7.1.9.1 Potential Changes to External Systems

All Parties, the Transmission Company and ELEXON (as they also receive the Transmission Company variant of the Settlement Report) are impacted by the amendments to the Settlement Report. However, it may be possible to utilise the parallel implementation approach defined under Modification P8 to delay the impact.

Modification P8 proposes that flow version numbering be implemented within the BSC Central Service Agent. Namely, when a report such as the Settlement Report (SAA-I014) changes and the changes are implemented, Parties can determine whether they wish to continue receiving the old version of the report (i.e. without the amendments and therefore reducing the ability to accurately verify their trading charges), or the new, with the amendments. This enables them to determine the timeframes for implementation of an amended interface independently of its development within the Central Services (unlike a 'big bang' approach). However, the impact from the implementation of amendments to the Settlement Report is still likely to be significant.

7.1.10 Potential Changes to Industry Documentation

The following lists the documentation (other than the documentation specific to the BSC Central Service Agent and therefore 'owned' by the Central Services, such as the URSs) that requires amendment as a result of the implementation of the Modification with a brief summary of the potential change. The documentation listed is believed to represent the full set of impacted documents at this time.

7.1.10.1 BSC Subsidiary Documents - The Reporting Catalogue

The Reporting Catalogue (v2.0) requires amendment to reflect the amendments to the Settlement Report. The amendments required are described as follows:

3.1.1 Report sent to the Transmission Company (TC)

(m) BM Unit Period Bid - Offer Information …

- Bid - Offer Data:
  - Period BM Unit Total Accepted Offer Volume (QAO^{n}_{ij})
  - **BM Unit Ancillary and Other Service Bid Acceptance ($QABO^{n}_{ij}$) (MWh)**
  - **BM Unit Ancillary and Other Service Offer Acceptance ($QASO^{n}_{ij}$) (MWh)**

3.1.3 Reports sent to Parties

(g) BM Unit Period Bid - Offer Information …

- Bid - Offer Data:
  - Period BM Unit Total Accepted Offer Volume (QAO^{n}_{ij})
  - **BM Unit Ancillary and Other Service Bid Acceptance ($QABO^{n}_{ij}$) (MWh)**

– **BM Unit Ancillary and Other Service Offer Acceptance ($QASO^{n}_{ij}$) (MWh)**

No other amendments to the BSC Subsidiary Documents, other than those previously defined, are identified at this time.

7.1.10.2 Service Description for the Settlement Administration Agent

The following amendments are required to support the implementation of Modification P34.

3.12 Calculation of Period BM Unit Total Accepted Offer Volume and Period BM Unit Total Accepted Bid Volume

3.12.1 The Period BM Unit Total Accepted Offer Volume (QAO^{n}_{ij}) is the total MW volume of Offer n accepted from all Bid - Offer Acceptances. It shall be determined by the SAA as follows:

$$QAO^{n}_{ij} = \Sigma^{k}(QAO^{kn}_{ij}) \mathbf{+ QASO^{n}_{ij}}$$

3.12.2 The Period BM Unit Total Accepted Bid Volume (QAB^{n}_{ij}) is the total MW volume of Bid n accepted from all Bid - Offer Acceptances. It shall be determined by the SAA as follows:

$$QAB^{n}_{ij} = \Sigma^{k}(QAB^{kn}_{ij}) \mathbf{+ QASB^{n}_{ij}}$$

The SAA Service Description, Appendix A 'Inputs and Outputs' requires amendment, as follows, to reflect the receipt of information from the Transmission Company relating to the provision of the BM Unit Ancillary and Other Service Energy Volumes:

1. SAA Inputs

Input Flow Description	**Flow Received From**
BM Unit Ancillary and Other Service Bid - Offer Acceptances	**SO**

No other amendments to the Service Descriptions, other than those previously defined, are identified at this time.

7.1.10.3 NETA Data File Catalogue

The NETA Data File Catalogue requires amendment to include the new and amended reports, as defined in Sections 7.1.6 (Transmission Company to SAA) and 7.1.8 (amendments to the Settlement Report) of this Assessment Report.

No other amendments to the NETA Data File Catalogue are identified at this time.

7.1.11 Balancing Mechanism Reporting Agent Functionality

If it is determined to be appropriate for the Balancing Mechanism Reporting Agent (BMRA) to publish the BM Unit Ancillary and Other Service Bid - Offer Acceptances against the associated BM Unit, then the BMRA and supporting documentation will require amendment, as defined in the following sections.

7.1.11.1 Amendments to BMRA

Section 7.1.6 of this Assessment Report defines the (example) interface from the Transmission Company for the provision of the 'BM Unit Ancillary and Other Service Energy Volumes'. It is expected that the interface be provided only once to the BSC Central Service Agent from the Transmission Company (in accordance with the BSC Section Q, 1.3.1 which states "*Where … the Transmission Company is required to send particular data to both the BMRA and SAA, for so long as the same person acts as BMRA and SAA, the Transmission Company shall be treated as having sent such data to both of them if it has sent the data to one of them.*").

The BSC, Section V 2.6 covers the calculation by BMRA of indicative data, which is required to be calculated and published on a half hourly basis.

For two of these calculations, the implementation of this Modification would mean that there would be insufficient information at the time the calculation was undertaken for the results to be entirely accurate, as the results would be calculated without consideration of the BM Unit Ancillary and Other Service Bid - Offer Acceptances.

The two affected calculations are:

- **BSC Section V 2.6.4** - the calculation of Indicative Period BM Unit Total Accepted Bid Volume ($IQAB^{n}_{ij}$) and Indicative Period BM Unit Total Accepted Offer Volume ($IQAO^{n}_{ij}$); and
- **BSC Section V 2.6.6** - the calculation of Indicative Period BM Unit Bid Cashflow (ICB^{n}_{ij}) and Indicative Period BM Unit Offer Cashflow (ICO^{n}_{ij}).

It should be noted that the implementation of the Modification will not affect the Indicative Energy Imbalance Price calculations and publishing.

7.1.11.2 BMRA Publishing Requirements

The BM Unit Ancillary and Other Service Bid - Offer Acceptances ($QASB^{n}_{ij}$ and $QASO^{n}_{ij}$) should be published on the BMRA against the associated BM Unit and Settlement Period for a specific Settlement Date, within [x] minutes of receipt[2].

7.1.11.3 BSC Amendments

The new clause, as provided in ANNEX 1 (c) of this Assessment Report, for inclusion in the BSC, Section Q 'Balancing Mechanism Activities', arbitrarily named Q 6.3A, requires additional mention of the provision of these volumes to the BMRA, as well as the SAA.

[2] There is no precedent for the timescales for publishing this information on BMRA, therefore this can be determined in discussion with the BSC Central Service Agent, for incorporation into the Service Description and associated Service Levels.

A new entry in Section V 'Reporting', ANNEX V-1: 'Tables of Reports', is required, as defined in ANNEX 1 (c) of this Assessment Report.

7.1.11.4 Amendments to the BMRA Service Description

The following amendments to the BMRA Service Description are required to support the publishing of this data on BMRA.

8 RECEIVE BM DATA

…

8.2A Publish the BM Unit Ancillary and Other Service Bid - Offer Acceptances on line within [x] minutes of receipt.

If the [x] minutes is determined to be the same as other BM data, which is required to be published within 5 minutes of receipt, then there is no requirement to add this additional paragraph, as the requirement / obligation will be covered by the existing paragraph 8.2.

A new entry in Appendix A 'Input Output Flows', is required:

Balancing Mechanism Reporting Inputs

Input Flow Description	Flow Received From
BM Unit Ancillary and Other Service Bid Acceptances	**SO**
BM Unit Ancillary and Other Service Offer Acceptances	**SO**

7.2 Alternative Modification P36

7.2.1 Alternative Modification Overview

At a high level, Alternative Modification Proposal P36 requires that (after the event, but within two working days, i.e. in time for the Interim Initial Information Run) the Transmission Company determine the energy volume associated with the provision of balancing services for a BM Unit and Settlement Period, according to a methodology defined within the BSC. These balancing services energy volumes will be notified as:

- BM Unit Ancillary and Other Service Bid - Offer Acceptances. These will be explicitly excluded from Energy Imbalance Price calculations as a consequence of such Bid – Offer Acceptances being attributable to system balancing. Therefore the Service Provider gets the energy associated with the provision of the balancing service cashed out at the Bid – Offer price and is protected from the exposure to the consequences of imbalance; and / or
- BM Unit Ancillary and Other Service Energy Volumes. These will be removed from the Energy Account of the balancing service provider, thus removing them from exposure to the consequences of imbalance, and transferred to the Energy Account of the Transmission Company.

It should be noted that both types of balancing service energy volumes can be determined and notified for one BM Unit, where the energy volumes so notified are attributable to the provision of separate balancing services, for example, BM Unit Ancillary and Other Service Bid - Offer Acceptances for mandatory frequency response, and BM Unit Ancillary and Other Service Energy Volumes for standing reserve provision.

The energy volumes associated with the provision of balancing services will be reported into the Settlement Administration Agent for use in the settlement calculations. However, consideration should be given as to whether it is desirable / reasonable to publish these volumes on the BMRA against the affected BM Units when they are received from the Transmission Company. Therefore the functionality and documentation amendments required to support this are detailed separately so that development costs and timescales can be provided separately by the BSC Central Service Agent.

Alternative Modification Proposal P36 requires that the methodology for determining the energy volumes associated with the provision of balancing services, and the list of balancing services that this Modification is to apply to, be held under the provisions of the BSC. As a consequence of this approach:

- BM Unit Ancillary and Other Service Bid - Offer Acceptances - payments are made for the energy associated with the provision of balancing services via the Balancing Mechanism and this will require a consequential amendment to the Connection and Use of System Code (CUSC) to reflect this change in governance; and
- BM Unit Ancillary and Other Service Energy Volumes – payments are made for the provision of balancing services outside of the Balancing Mechanism, under the Connection and Use of System Code (CUSC). However, it should be noted that this will require a consequential amendment to the Connection and Use of System Code (CUSC) to reflect the removal of the imbalance compensation payment.

It should also be noted that balancing services providers can 'opt out' of this process. Where the providers do not wish to have energy volumes attributable to the provision of balancing services notified into the Balancing Mechanism under the process defined in this Requirements Specification, the service provider can notify the Transmission Company that this is the case. The Transmission Company will not notify energy attributable to the provision of balancing services into the Balancing Mechanism, for those Parties who have opted out of this process.

7.2.2 Definitions Required to Support Alternative Modification P36

The Alternative Modification requires new and amended definitions to support the implementation of the provision of a new energy volume and a new type of Bid – offer Acceptance volume to the Settlement Administration Agent (SAA), and the associated amendment to the settlement calculations.

Therefore Section X ANNEX X-2 Table X-2 'Technical Glossary' requires amendment to include the requisite new and amended definitions, as defined in ANNEX 1 (d) of this Assessment Report.

Section X ANNEX X-2 Table X-3 'Glossary of Acronyms Applying Except in Relation to Section S' requires amendment to include the requisite new and amended definitions, as defined in ANNEX 1 (d) of this Assessment Report.

The BSC, Section Q ‘Balancing Mechanism Activities’, paragraph 5.1 Bid – Offer Acceptances requires an additional clause to specifically define the Bid – Offer Acceptances made under this Modification, as the current definition does not include Acceptances made after the event for the purposes of accounting for energy volumes associated with the provision of Applicable Balancing Services.

Therefore the amendments to Section Q required to support the implementation of the Alternative Modification are defined in ANNEX 1 (d) of this Assessment Report.

7.2.3 Determination of the Accepted Ancillary and Other Service Bid - Offer Volumes

The Transmission Company is required to determine the energy volume associated with the provision of Applicable Balancing Services at BM Unit level, in the form of an energy volume against a BM Unit and Settlement Period and also in the form of additional Bid – Offer Acceptances against a BM Unit. Therefore a methodology for such determination is required to be included in the BSC. To this end, a new ANNEX to Section T is required, as defined in ANNEX 1 (d) of this Assessment Report.

7.2.4 Provision of the BM Unit Ancillary and Other Service Bid - Offer Acceptances

The Transmission Company is required to determine the energy volume associated with the provision of Applicable Balancing Services at Bid - Offer pair (n) and BM Unit level and provide such volumes, in the form of 'additional' Bid – Offer Acceptances to the Settlement Administration Agent by the end of the second working day from the Settlement Day to which the energy volumes pertain.

The existing interface for provision of Bid - Offer Acceptances into the Settlement Administration Agent and Balancing Mechanism Reporting Agent is not suitable for use to

provide this information, as the Transmission Company is providing volumes against the BM Unit and not Acceptance spot points. Therefore a new interface is required between the Transmission Company and the BSC Central Service Agent.

The format of such interface should be agreed between the BSC Central Service Agent and the Transmission Company, however, it is expected that the interface be automated. The following provides an example of the format of this interface for the purposes of this Requirements Specification only:

From: Transmission Company To: SAA

Settlement Date

Settlement Period

BM Unit

n *

BM Unit Ancillary and Other Service Bid Acceptance ($QABO^{n}_{ij}$)

BM Unit Ancillary and Other Service Offer Acceptance ($QASO^{n}_{ij}$)

* It is expected that a BM Unit Ancillary and Other Service Bid - Offer Acceptance volume be provided for each relevant value of 'n'.

No Bid - Offer Acceptance number (k) is utilised. This is a consequence of:

- The irrelevance of including a Bid - Offer Acceptance Number at this level, as there is no 'real' acceptance made, only a notified Acceptance volume after the event; and
- The requirements of the Settlement Administration Agent (SAA) (and BMRA) with regards to Bid - Offer Acceptance numbering; the Acceptance numbers are treated very similarly to File Sequence Numbers to enable 'missing' Bid - Offer Acceptances to be identified by the Central Services. Therefore, for these 'additional' acceptances, the Acceptance number would not be contiguous with those in the same / preceding / subsequent Settlement Period, potentially causing a significant problem in processing for the Central Service Agent.

7.2.5 Provision of the 'BM Unit Ancillary and Other Service Energy Volume'

The Transmission Company is required to determine the energy volume associated with the provision of Applicable Balancing Services, at Settlement Period and BM Unit level and provide such volumes to the Settlement Administration Agent by the end of the second working day from the Settlement Day to which the energy volumes pertain.

The notified volumes relate to the specified BM Unit in a Settlement Period on a Settlement Date only and it is not intended that they be defaulted.

The Transmission Company will provide a cumulative / total volume for each BM Unit and Settlement Period, i.e. there will not be multiple within Settlement Period volumes notified for a BM Unit at any one time.

The Transmission Company will be able to resubmit an amended 'BM Unit Ancillary and Other Service Energy Volume' to the Settlement Administration Agent at any time after initial notification up to the Final Reconciliation Run (in a similar manner to that utilised for amending Balancing Services Adjustment Data (BSAD)). Where the Transmission Company

wishes to amend the data, they will resubmit the interface with the requisite data at any time.

It is expected that the interface providing such volumes to the SAA be fully automated and the format be agreed between the Transmission Company and the SAA. However, for the purposes of this Requirements Specification, an example format of the interface is provided:

To: SAA **From:** Transmission Company (System Operator)

Settlement Date (dd/mm/yyyy)

Settlement Period (1-50)

BM Unit Id

BM Unit Ancillary and Other Service Energy Volume (MWh)

Amendment to the BSC, Section Q 'Balancing Mechanism Activities' is required to support the provision of the 'BM Unit Ancillary and Other Service Energy Volume' to the Settlement Administration Agent from the Transmission Company, as defined in ANNEX 1 (d) of this Assessment Report.

Amendment to the BSC, Section Q 'Balancing Mechanism Activities' is also required to support the provision of the 'BM Unit Ancillary and Other Service Bid – Offer Acceptances' to the Settlement Administration Agent from the Transmission Company, as defined in ANNEX 1 (d) of this Assessment Report.

7.2.6 Inclusion of the BM Unit Ancillary and Other Service Bid - Offer Acceptances in Settlement Calculations

The intent of the Alternative Modification is that the energy volumes directly associated with the provision of Applicable Balancing Services are excluded from the consequence of imbalance charges (Energy Imbalance, Information Imbalance and Non Delivery charges), by accounting for this energy via Bid – Offer Acceptances.

Therefore, in order to support the intent of the Alternative Modification, settlement calculations, as defined in Section T of the BSC, will have to be amended as follows, for all Settlement Runs:

The determination of the Period BM Unit Total Accepted Offer Volume (QAO^{n}_{ij}) and Period BM Unit Total Accepted Bid – Volume (QAB^{n}_{ij}) (Section T 3.9) is required to be amended as defined in ANNEX 1 (d) of this Assessment Report.

Placing the Accepted Ancillary and Other Service Bid – Offer Volumes in the equation at Section T 3.9 means that the energy volumes associated with the provision of balancing services is treated like any other Bid – Offer Acceptance, with the exception that these Bid – Offer Acceptances are excluded from the Energy Imbalance Price calculation.

7.2.7 Inclusion of the 'BM Unit Ancillary and Other Service Energy Volumes' in Settlement Calculations

The intent of the Alternative Modification is that the energy volumes directly associated with the provision of Applicable Balancing Services are excluded from the consequence of imbalance charges (Energy Imbalance, Information Imbalance and Non Delivery charges), by

removing this energy from the Energy Account of the Service Provider (via adjustment of the energy associated with the BM Unit providing the balancing service) and transferring it to the Energy Account (non IEA) of the Transmission Company. The Transmission Company (non IEA) Energy Accounts are exempt from imbalance charging.

Therefore, in order to support the intent of the Alternative Modification, settlement calculations, as defined in Section T of the BSC, will have to be amended as defined ANNEX 1 (d) of this Assessment Report, for all Settlement Runs.

The determination of the Period BM Unit Balancing Services Volume (the name has been amended from the 'Period BM Unit Bid – Offer Volume', see section 2.2.1) (Section T 4.3.2) is required to be amended as defined in ANNEX 1 (d) of this Assessment Report.

Placing the QAS_{ij} variable in this equation at 4.3.2 means that the:

– Calculation of expected metered volumes (Section 4.3.3) is adjusted for 'BM Unit Ancillary and Other Service Energy Volume'; and

– This excludes the 'BM Unit Ancillary and Other Service Energy Volume' from the calculation of Information Imbalance volume calculation (Section T 4.3.4), the calculation of Energy Imbalance Prices (Section T 4.4) and the calculation of Account Credited Energy Volumes (Section T 4.6.2) and consequently the calculation of Energy Imbalance Volume (Section T 4.6.3).

This amendment effectively adjusts the Energy Account of the Service Provider to account for the 'BM Unit Ancillary and Other Service Energy Volume'.

The calculation at Section T, 4.6.2 requires amendment to the name of the variable being calculated as a consequence of the amendment to the definition. It should be noted that no amendment to the variables or the calculation is required, as defined in ANNEX 1 (d) of this Assessment Report.

For consistency with the calculation and reporting of other variables under the BSC, one further calculation is required in order to determine the Total Period Ancillary and Other Service Energy Volume transferred to the Transmission Company.

This will be added into the end of Section T 4.6, as defined in ANNEX 1 (d) of this Assessment Report.

7.2.8 Settlement Report (SAA-I014) Amendments

The Settlement Report (SAA-I014), all sub flows, requires amendment to reflect the application of the new functionality in the report, so that BSC Parties, the Transmission Company and ELEXON can replicate the settlement calculations, if required.

It should be noted that there is potential to utilise parallel reporting functionality, i.e. recipients determine the version of the Settlement Report they wish to receive. Therefore any Impact Assessment should provide a view on the appropriateness and cost / timescale implications of utilising this approach.

Therefore the following amendments are required:

SAA-I014 Subflow 1 - to BSC Parties:

Group **SSD** 'System Period Data'

Include new data item 'Total Period Ancillary and Other Service Volume' ($TQAS_j$) (MWh).

Group **BPD** 'BM Unit Period Data'

Include new data item 'BM Unit Ancillary and Other Service Volume' (QAS_{ij}) (MWh) and rename existing data item 'Period BM Unit ~~Bid-Offer~~ Balancing Services Volume' (N0164).

Group **BOD** 'BMU Period Bid – Offer Data'

Include new data items 'BM Unit Ancillary and Other Service Bid Volume' ($QASB^n_{ij}$) (MWh) and 'BM Unit Ancillary and Other Service Offer Volume' ($QASO^n_{ij}$) (MWh).

SAA-I014 Subflow 2 - to Transmission Company:

Group **SPI** 'Settlement Period Information'

Include new data item 'Total Period Ancillary and Other Service Volume' ($TQAS_j$) (MWh).

Group **BPI** 'BM Unit Period Data'

Include new data item 'BM Unit Ancillary and Other Service Volume' (QAS_{ij}) (MWh).

Group **SSD** 'System Period Data'

Include new data item 'Total Period Ancillary and Other Service Volume' ($TQAS_j$) (MWh)oup.

Group **BP7** 'BM Unit Period Data'

Include new data item 'BM Unit Ancillary and Other Service Volume' (QAS_{ij}) (MWh) and rename existing data item 'Period BM Unit ~~Bid-Offer~~ Balancing Services Volume' (N0164).

Group **BO4** 'BMU Period Bid – Offer Data'

Include new data items 'BM Unit Ancillary and Other Service Bid Volume' ($QASB^n_{ij}$) (MWh) and 'BM Unit Ancillary and Other Service Offer Volume' ($QASO^n_{ij}$) (MWh).

SAA-I014 Subflow 3 - to ELEXON:

Group **SSD** 'System Period Data'

Include new data item 'Total Period Ancillary and Other Service Volume' ($TQAS_j$) (MWh).

Group **BUI** 'BM Unit Period Data'

Include new data item 'BM Unit Ancillary and Other Service Volume' (QAS_{ij}) (MWh) and rename existing data item 'Period BM Unit ~~Bid-Offer~~ Balancing Services Volume' (N0164).

7.2.9 Other Changes Required

This section defines amendments to industry systems, processes and documentation not already identified in previous sections.

7.2.9.1 Potential Changes to External Systems

All Parties, the Transmission Company and ELEXON (as they also receive the Transmission Company variant of the Settlement Report) are impacted by the amendments to the Settlement Report. However, it may be possible to utilise the parallel implementation approach defined under Modification P8 to delay the impact.

Modification P8 proposes that flow version numbering be implemented within the BSC Central Service Agent. Namely, when a report such as the Settlement Report (SAA-I014) changes and the changes are implemented, Parties can determine whether they wish to continue receiving the old version of the report (i.e. without the amendments and therefore reducing the ability to accurately verify their trading charges), or the new, with the amendments. This enables them to determine the timeframes for implementation of an amended interface independently of its development within the Central Services (unlike a 'big bang' approach). However, the impact from the implementation of amendments to the Settlement Report is still likely to be significant.

7.2.10 Potential Changes to Industry Documentation

The following lists the documentation (other than the documentation specific to the BSC Central Service Agent and therefore 'owned' by the Central Services, such as the URSs) that requires amendment as a result of the implementation of the Alternative Modification with a brief summary of the potential change. The documentation listed is believed to represent the full set of impacted documents at this time.

7.2.10.1 BSC Subsidiary Documents - The Reporting Catalogue

The Reporting Catalogue (v2.0) requires amendment to reflect the amendments to the Settlement Report. The amendments required are described as follows:

3.1.1 Report sent to the Transmission Company (TC)

(b) Settlement Period Information …

- …
- **Total Period Ancillary and Other Service Energy Volume ($TQAS_j$) (MWh)**

(d) BM Unit Period Information

- …
- **BM Unit Ancillary and Other Service Energy Volume (QAS_{ij}) (MWh)**

(h) Settlement Period Information:

- System Period Data
  - …
  - **Total Period Ancillary and Other Service Energy Volume ($TQAS_j$) (MWh)**

(k) BM Unit Period Information

- BM Unit Period Data:
  - …
  - **BM Unit Ancillary and Other Service Energy Volume (QAS_{ij}) (MWh)**

(m) BM Unit Period Bid - Offer Information …

- Bid - Offer Data:
  - …
  - **BM Unit Ancillary and Other Service Bid Acceptance ($QABO^n_{ij}$) (MWh)**
  - **BM Unit Ancillary and Other Service Offer Acceptance ($QASO^n_{ij}$) (MWh)**

3.1.2 Report sent to BSCCo

(c) Settlement Period Information …

- … System Period Data
  - …
  - **Total Period Ancillary and Other Service Energy Volume ($TQAS_j$) (MWh)**

(d) BM Unit Period Information

- …
- **BM Unit Ancillary and Other Service Energy Volume (QAS_{ij}) (MWh)**

3.1.3 Reports sent to Parties

(b) Settlement Period Information …

- …
- **Total Period Ancillary and Other Service Energy Volume ($TQAS_j$) (MWh)**

(e) BM Unit Period Information

- …
- **BM Unit Ancillary and Other Service Energy Volume (QAS_{ij}) (MWh)**

(g) BM Unit Period Bid - Offer Information …

- Bid - Offer Data:
  - …
  - **BM Unit Ancillary and Other Service Bid Acceptance ($QABO^{n}_{ij}$) (MWh)**
  - **BM Unit Ancillary and Other Service Offer Acceptance ($QASO^{n}_{ij}$) (MWh)**

No other amendments to the BSC Subsidiary Documents, other than those previously defined, are identified at this time.

7.2.10.2 Settlement Administration Agent Service Description

The following amendments are required to support the implementation of Alternative Modification P36.

Section 1.4 …

ii) For each Settlement Run:

a. Receive BM Data from the SO including:

- …
- **BM Unit Ancillary and Other Service Energy Volumes**

Section 2.1 System Operator …

2.1.1 …

- …
- **BM Unit Ancillary and Other Service Energy Volumes**

3.12 Calculation of Period BM Unit Total Accepted Offer Volume and Period BM Unit Total Accepted Bid Volume

3.12.1 The Period BM Unit Total Accepted Offer Volume (QAO^{n}_{ij}) is the total MW volume of Offer n accepted from all Bid - Offer Acceptances. It shall be determined by the SAA as follows:

$$QAO^{n}_{ij} = \Sigma^{k}(QAO^{kn}_{ij}) \mathbf{+ QASO^{n}_{ij}}$$

3.12.2 The Period BM Unit Total Accepted Bid Volume (QAB^{n}_{ij}) is the total MW volume of Bid n accepted from all Bid - Offer Acceptances. It shall be determined by the SAA as follows:

$$QAB^{n}_{ij} = \Sigma^{k}(QAB^{kn}_{ij}) \mathbf{+ QASB^{n}_{ij}}$$

3.18 Calculation of Period BM Unit ~~Bid – Offer~~ Balancing Services Volume

3.18.2 The SAA shall ensure that the Period BM Unit ~~Bid – Offer~~ Balancing Services Volume (QBO_{ij}) represents the net quantity of Balancing Services energy, consisting of accepted Bids and Offers, and energy associated with Ancillary and Other services from BM Unit i in Settlement Period j. It is determined as follows:

$$QBO_{ij} = S^{n}(QAO^{n}_{ij} + QAB^{n}_{ij}) \mathbf{+ QAS_{ij}}$$

3.33 Calculation of Account Period ~~Bid – Offer~~ Balancing Services Volume

3.33.1 The SAA shall ensure that the Account Period ~~Bid – Offer~~ Balancing Services Volume ($QABO_{aj}$) represents the net volume of Balancing Services energy, consisting of accepted Bids and Offers, and energy associated with Ancillary and Other services attributable to each Energy Account a, in Settlement Period j.

3.33A Calculation of Total Period Ancillary and Other Service Energy Volume

3.33A.1 In respect of each Settlement Period, the Total Period Ancillary and Other Service Energy Volume will be determined as follows:

$$\mathbf{TOAS_j = S_i OAS_{ij}}$$

Where S_i represents the sum over all BM Units.

The SAA Service Description, Appendix A 'Inputs and Outputs' requires amendment, as follows, to reflect the receipt of information from the Transmission Company relating to the provision of the BM Unit Ancillary and Other Service Energy Volumes:

1. SAA Inputs

Input Flow Description	**Flow Received From**
BM Unit Ancillary and Other Service Bid - Offer Acceptances	**SO**
BM Unit Ancillary and Other Service Energy Volume	**SO**

No other amendments to the Service Descriptions, other than those previously defined, are identified at this time.

7.2.10.3 NETA Data File Catalogue

The NETA Data File Catalogue requires amendment to include the new and amended reports, as defined in Sections 7.3.4 and 7.3.5 (Transmission Company to SAA) and 7.3.8 (amendments to the Settlement Report) of this Assessment Report.

No other amendments to the NETA Data File Catalogue are identified at this time.

7.2.11 Balancing Mechanism Reporting Agent Functionality

If it is determined to be appropriate for the Balancing Mechanism Reporting Agent (BMRA) to publish the BM Unit Ancillary and Other Service Bid - Offer Acceptances against the

associated BM Unit, then the BMRA and supporting documentation will require amendment, as defined in the following sections.

7.2.11.1 Amendments to BMRA

Section 7.3.4 and 7.3.5 of this Assessment Report defines the (example) interface from the Transmission Company for the provision of the 'BM Unit Ancillary and Other Service Energy Volumes'. It is expected that the interface be provided only once to the BSC Central Service Agent from the Transmission Company (in accordance with the BSC Section Q, 1.3.1 which states "*Where … the Transmission Company is required to send particular data to both the BMRA and SAA, for so long as the same person acts as BMRA and SAA, the Transmission Company shall be treated as having sent such data to both of them if it has sent the data to one of them.*").

The BSC, Section V 2.6 covers the calculation by BMRA of indicative data, which is required to be calculated and published on a half hourly basis.

For two of these calculations, the implementation of this Modification would mean that there would be insufficient information at the time the calculation was undertaken for the results to be entirely accurate, as the results would be calculated without consideration of the BM Unit Ancillary and Other Service Bid - Offer Acceptances.

The two affected calculations are:

- **BSC Section V 2.6.4** - the calculation of Indicative Period BM Unit Total Accepted Bid Volume ($IQAB^{n}_{ij}$) and Indicative Period BM Unit Total Accepted Offer Volume ($IQAO^{n}_{ij}$); and
- **BSC Section V 2.6.6** - the calculation of Indicative Period BM Unit Bid Cashflow (ICB^{n}_{ij}) and Indicative Period BM Unit Offer Cashflow (ICO^{n}_{ij}).

It should be noted that the implementation of the Modification will not affect the Indicative Energy Imbalance Price calculations and publishing.

7.2.11.2 BMRA Publishing Requirements

The BM Unit Ancillary and Other Service Bid - Offer Acceptances ($QASB^{n}_{ij}$ and $QASO^{n}_{ij}$) should be published on the BMRA against the associated BM Unit and Settlement Period for a specific Settlement Date, within [x] minutes of receipt[3].

The 'BM Unit Ancillary and Other Service Energy Volumes' (QAS_{ij}) should be published on the BMRA against the associated BM Unit and Settlement Period for a specific Settlement Date, within [x] minutes of receipt.

There is no requirement to calculate and publish the Total Period Ancillary and Other Service Energy Volumes.

[3] There is no precedent for the timescales for publishing this information on BMRA, therefore this can be determined in discussion with the BSC Central Service Agent, for incorporation into the Service Description and associated Service Levels.

7.2.11.3 BSC Amendments

The new clause, as provided in ANNEX 1(d) of this Assessment Report, for inclusion in the BSC, Section Q 'Balancing Mechanism Activities', arbitrarily named Q 6.3A and Q 6.3B, require additional mention of the provision of these volumes to the BMRA, as well as the SAA.

A new entry in Section V 'Reporting', ANNEX V-1: 'Tables of Reports', is required as defined in ANNEX 1 (d) of this Assessment Report.

7.2.11.4 Amendments to the BMRA Service Description

The following amendments to the BMRA Service Description are required to support the publishing of this data on BMRA.

8 RECEIVE BM DATA

…

… **f.** **BM Unit Ancillary and Other Service Energy Volumes**

…

8.2A **Publish the BM Unit Ancillary and Other Service Energy Volumes on line within [x] minutes of receipt.**

8.2B **Publish the BM Unit Ancillary and Other Service Bid - Offer Acceptances on line within [x] minutes of receipt.**

If the [x] minutes is determined to be the same as other BM data, which is required to be published within 5 minutes of receipt, then there is no requirement to add this additional paragraph, as the requirement / obligation will be covered by the existing paragraph 8.2.

A new entry in Appendix A 'Input Output Flows', is required:

Balancing Mechanism Reporting Inputs

Input Flow Description	Flow Received From
BM Unit Ancillary and Other Service Bid Acceptances	**SO**
BM Unit Ancillary and Other Service Offer Acceptances	**SO**
BM Unit Ancillary and Other Service Energy Volumes	**SO**

7.2.11.5 BSC Subsidiary Documents - The Reporting Catalogue

The Reporting Catalogue (v2.0) requires amendment to reflect the obligation to publish the BM Unit Ancillary and Other Service Energy Volumes, as follows:

2.1 Data Posted on the BMRS …

… (w) BM Unit Ancillary and Other Service Energy Volumes (QAS_{ij}), daily.

8 AMENDMENTS TO THE METHODOLOGY GOVERNANCE APPROACH DESCRIBED IN SECTIONS 6 AND 7

8.1 Governance Considerations

At their meeting of 6 December 2001, the PIMG agreed an amended way forward regarding the definition of the balancing services and the associated energy volume calculation methodology. The PIMG, on consideration of the ELEXON legal advice (provided in full in ANNEX 7 of this Assessment Report and summarised in Section 14), agreed that it was not appropriate to include the definition of the balancing services and the methodology within the BSC (originally proposed for inclusion as an ANNEX to Section T, (ANNEX T-2), for P34 Alternative and both the original Modification and the Alternative for P36). The Requirements Specifications for Modifications P34 and P36 (Reference 3 and Reference 7, respectively) included the proposed (draft) legal drafting for the ANNEX to Section T of the BSC, and therefore it should be noted that this is the basis for the impact assessment and consultations carried out to date.

The PIMG agreed that the definition of balancing services and the associated volume calculation methodology should be documented in a framework document to the BSC. The PIMG, in consultation with the ELEXON Legal Advisors, agreed that the BSC should be amended to include reference to the framework document and to the requirement for the contents of the framework document to be approved by the Authority. The PIMG noted that this framework document would be a new type of document from the existing documentation and this document would be operated by the Transmission Company and approved by the Authority following a mandatory consultation.

8.2 Requirements of the Framework Document

The PIMG determined the requirements of the framework document, namely:

- The reference to the framework document in the BSC should include reference to the requirement for the Authority to approve the framework, and therefore approve the methodology and the balancing services it applies to;
- The framework document would remain the responsibility of the Transmission Company to operate and maintain and that this would be reflected in the framework document (and possibly the BSC);
- The reference to the framework document in the BSC should also include reference to the requirement for changes to the document to accord with the Applicable BSC Objectives (as defined in the Transmission Licence, Condition C3 (3) statement);
- The framework document should contain reference to the change management process for the document, and therefore the definition of the balancing services and the associated methodology. The PIMG determined that the change management process should be transparent and that Parties should have the ability to invoke the amendment process as required. The change management process agreed by the PIMG requires that:
  - Any party requiring an amendment to the document should raise that requirement with the Transmission Company, the Panel or the Authority;

  - There should (always) be a subsequent consultation process for the requisite amendment (this requirement could be reflected in the BSC, but in any event, should be reflected within the document itself); and
  - The Authority makes the final recommendation / instruction to the Transmission Company as to the amendments required.

- The framework document should contain reference to the disputes and appeals process to be invoked for disputes regarding the detail of the framework document. The PIMG determined that:
  - Disputes as to the application of the methodology, i.e. errors in the application of the methodology, should be raised under the provisions of the BSC, Section W, and progressed through the Trading Disputes process (i.e. escalation to the Trading Disputes Committee and final appeal to the Authority (only seen as necessary in extreme cases[4]); and
  - Disputes as to the content of the methodology statement, i.e. errors in the formulae, or disagreement with the methodology, or points of principle regarding the framework document, should be raised via the change management process.

  The PIMG recognised that there would be disputes raised which straddled both areas, therefore the PIMG agreed that the Trading Disputes Committee would be able to determine whether this was the case and to take the appropriate action (i.e. referring the disputing party into the change management process) where this occurred.

8.3 Alternative Approach to the Framework Document

It should be noted that the PIMG considered including the definition of balancing services and the associated methodology for calculating the energy volumes in a BSC Procedure created under the Modification / Alternative Modification. However, the PIMG believed that the change control process for a BSC Procedure (BSCP) was not appropriate for a methodology of this sort. Amendments to BSCPs are controlled by the process defined in BSCP40, whereby the ISG deliberate and agree the changes, with subsequent ratification from the Panel. The PIMG agreed that the definition of balancing services and the associated methodology would require approval at Authority level. Therefore the proposal to create a BSCP was discounted.

8.4 Issues Arising from the Framework Document

The PIMG also noted that there was an issue regarding governance. The Connection Use of System Code (CUSC) contains reference to balancing services and the associated methodology for calculating the energy volumes associated with their provision, along with the associated payment mechanisms. The PIMG noted that this caused an issue over duplication of the calculations / definitions. The PIMG agreed that there were three potential solutions to this issue, but determined that it was beyond the remit of the PIMG to recommend one of the solutions, as it relates to areas of governance outside of the provisions of the BSC. Therefore the PIMG believed it to be sufficient to identify the issue and the potential solutions:

[4] The PIMG believed that escalation to Arbitration would not be appropriate for disputes in this area, and therefore the Authority (or other delegated committee, such as a variant of the Trading Disputes Committee) should have the final ruling on the dispute if it cannot be resolved satisfactorily earlier in the process.

1. The framework document could contain the definition of the balancing services and the associated methodology with the CUSC referencing the framework document; or
2. The CUSC could retain the definition of the balancing services and the associated methodology with the framework document referencing the CUSC; or
3. Consideration could be given to including the definition of the balancing services and the associated methodology in both documents, recognising that the definition of the balancing services and the associated methodology in the CUSC may be utilised differently and with a different objective that in the framework document. Therefore it may be legitimate, and even encouraged, for there to be inconsistencies between the two documents given the differing application and intent.

9 IMPACT ON THE BSC AND BSCCO DOCUMENTATION

9.1 The BSC

Modification P34 and the Alternative Modification to P34 impact the BSC, Sections Q 'Balancing Mechanism Activities', T 'Settlement and Trading Charges', V 'Reporting' and X, ANNEX X-2 'Technical Glossary. ANNEX 1 of this document contains the draft legal text for the Modification and for the Alternative Modification.

9.2 BSC Subsidiary Documents

The amendments to BSC Subsidiary documents required to support the Modification and the Alternative Modification are believed to be limited to amendments to the NETA Data File Catalogue, the Reporting Catalogue, Balancing Mechanism Reporting Agent Service Description and to the Settlement Administration Agent Service Description, as follows:

9.2.1 The NETA Data File Catalogue

The NETA Data File Catalogue requires amendment to reflect the changes to reporting described and detailed in previous sections in this Assessment Report, namely:

9.2.2 Modification Proposal P34 and Alternative Modification Proposal P34

Modification P34

Section 6.1.5, to support the amendments to all subflows of the Settlement Report (SAA-I014).

Section 6.1.3, to support the provision of information from the Transmission Company to SAA.

Section 6.1.8.1, to support the reporting requirements of the Modification on the BMRA.

Alternative P34

Section 6.1.5, to support the amendments to all subflows of the Settlement Report (SAA-I014).

Section 6.1.3, to support the provision of information from the Transmission Company to SAA.

Section 6.1.8, to support the reporting requirements of the Modification on the BMRA.

9.2.3 Modification Proposal P36 and Alternative Modification Proposal P36

Modification P36

Section 7.1.8, to support the amendments to all subflows of the Settlement Report (SAA-I014).

Section 7.1.6, to support the provision of information from the Transmission Company to SAA.

Section 7.1.11, to support the reporting requirements of the Modification on the BMRA.

Alternative P36

Section 7.2.8, to support the amendments to all subflows of the Settlement Report (SAA-I014).

Sections 7.2.4 and 7.2.5, to support the provision of information from the Transmission Company to SAA.

Section 7.2.11, to support the reporting requirements of the Modification on the BMRA.

9.2.4 The Reporting Catalogue

The Reporting Catalogue requires amendment to reflect the changes to reporting described and detailed in previous sections in this Assessment Report, namely the amendments to the Settlement Report, and to the data published on the BMRA, as follows:

9.2.5 Modification Proposal P34 and Alternative Modification Proposal P34

Modification P34 — **Section 6.1.7.1**, to support the amendments to all subflows of the Settlement Report (SAA-I014).

Alternative P34 — **Section 6.1.7.1**, to support the amendments to all subflows of the Settlement Report (SAA-I014).

9.2.6 Modification Proposal P36 and Alternative Modification Proposal P36

Modification P36 — **Section 7.1.10.1**, to support the amendments to all subflows of the Settlement Report (SAA-I014).

Alternative P36 — **Section 7.2.10.1**, to support the amendments to all subflows of the Settlement Report (SAA-I014).

9.2.7 Service Description for the Balancing Mechanism Reporting Agent

The BMRA Service Description requires amendment to reflect the changes to reporting described and detailed in previous sections in this Assessment Report, namely the amendments to the data published on the BMRA, as follows:

9.2.8 Modification Proposal P34 and Alternative Modification Proposal P34

Modification P34 — **Section 6.1.8.4**, to support the reporting requirements of the Modification on the BMRA.

Alternative P34 — **Section 6.1.83.4**, to support the reporting requirements of the Alternative Modification on the BMRA.

9.2.9 Modification Proposal P36 and Alternative Modification Proposal P36

Modification P36 — **Section 6.1.8.4**, to support the reporting requirements of the Modification on the BMRA.

Alternative P36 — **Section 6.1.83.4**, to support the reporting requirements of the Alternative Modification on the BMRA.

9.2.10 Service Description for the Settlement Administration Agent

The SAA Service Description requires amendment to reflect the changes to reporting described and detailed in previous sections in this Assessment Report, namely the amendments to the Settlement Report, and the amendments to the settlement calculations, as follows:

9.2.11 Modification Proposal P34 and Alternative Modification Proposal P34

Modification P34 — **Section 6.1.7.2**, to support the implementation of a new interface to provide the Balancing Services energy volumes from the Transmission Company to the SAA / BMRA, the amendments to all subflows of the Settlement Report (SAA-I014) and the amendments to the settlement calculations.

Alternative P34 — **Section 6.1.7.2**, to support the implementation of a new interface to provide the Balancing Services energy volumes from the Transmission Company to the SAA / BMRA, the amendments to all subflows of the Settlement Report (SAA-I014) and the amendments to the settlement calculations.

9.2.12 Modification Proposal P36 and Alternative Modification Proposal P36

Modification P36 — **Section 7.1.10.2**, to support the implementation of a new interface to provide the Balancing Services energy volumes from the Transmission Company to the SAA / BMRA, the amendments to all subflows of the Settlement Report (SAA-I014) and the amendments to the settlement calculations.

Alternative P36 — **Section 7.2.10.2**, to support the implementation of a new interface to provide the Balancing Services energy volumes from the Transmission Company to the SAA / BMRA, the amendments to all subflows of the Settlement Report (SAA-I014) and the amendments to the settlement calculations.

9.3 BSCCo Memorandum and Articles of Association

Not Applicable.

10 IMPACT ON BSC SYSTEMS

10.1 Detailed Level Impact Assessment

The Central Service Agent provided Detailed Level Impact Assessment (provided in full in ANNEX 4) for the development and implementation of the changes required to support Modification Proposal P34 and Modification Proposal P36, and their Alternatives, respectively.

With reference to the detail and scope of the Detailed Level Impact Assessments:

- The Impact Assessments were undertaken against the Requirements Specifications for Modification Proposal P34 (Reference 3) and Modification Proposal P36 (Reference 7)
- The Detailed Level Impact Assessments provide indicative costs and timescales, and therefore may be subject to change;
- All quoted costs are exclusive of VAT;
- The quoted costs do not provide for the indexation of daily fee rates for the BSC Central Service Agent from 1 April 2002;
- The development and implementation costs include internal systems development and testing, but are exclusive of external testing / testing with external systems; and
- The implementation is specified as being a patch release.

10.2 Modification Proposal P34 and Alternative Modification P34

It should be noted that the BSC Central Service Agent development and implementation costs and timescales are the same for both the Modification and the Alternative.

Development and implementation of all changes to support the Modification or the Alternative Modification, except for BMRA Reporting:

- Development and Implementation costs: **£140,900**
- Ongoing Operate and Maintain costs: **£1,644 per month**
- Development Timescales: **8 weeks**

Development and implementation of all changes to support the Modification or the Alternative Modification, including BMRA Reporting:

- Development and Implementation costs: **£192,800**
- Ongoing Operate and Maintain costs: **£2,249 per month**
- Development Timescales: **9 weeks**

10.3 Modification Proposal P36 and Alternative Modification P36

10.3.1 Modification Proposal P36

Development and implementation of all changes to support the Modification, except for BMRA Reporting:

- Development and Implementation costs: **£137,900**
- Ongoing Operate and Maintain costs: **£1,608 per month**
- Development Timescales: **8 weeks**

Development and implementation of all changes to support the Modification, including BMRA Reporting:

- Development and Implementation costs: **£189,900**
- Ongoing Operate and Maintain costs: **£2, 215 per month**
- Development Timescales: **9 weeks**

10.3.2 Alternative Modification P36

Development and implementation of all changes to support the Alternative Modification, except for BMRA Reporting:

- Development and Implementation costs: **£170,400**
- Ongoing Operate and Maintain costs: **£1,988 per month**
- Development Timescales: **10 weeks**

Development and implementation of all changes to support the Alternative Modification including BMRA Reporting:

- Development and Implementation costs: **£230,900**
- Ongoing Operate and Maintain costs: **£2,693 per month**
- Development Timescales: **10 weeks**

11 IMPACT ON CORE INDUSTRY DOCUMENTS AND SUPPORTING ARRANGEMENTS

11.1 Grid Code

It is believed that there is no impact on the Grid Code from the implementation of either the Modification or the Alternative Modification.

11.2 Connection and Use of System Code (CUSC)

The implementation of P34 Alternative, P36 as drafted and P36 Alternative all have an impact on the CUSC section relevant to the calculation of the volumes and payments associated with the provision of balancing services. This interaction is explored in more detail by the Transmission Company in their analysis of this Modification (summarised in Section 16 and provided in full in ANNEX 5 of this Assessment Report) and was discussed by the PIMG in their deliberations on the approach for documenting the balancing services and associated methodology (as detailed in Section 8.4 of this Assessment Report).

11.3 Supplemental Agreements

No Impact from either the Modification or the Alternative Modification.

11.4 Ancillary Services Agreements (ASAs)

The amendments to CUSC potentially required to support the implementation of Alternative Modification P34, Modification P36 and Alternative Modification P36 may have implications on the Ancillary Services Agreements, therefore this interaction should be recognised and is explored in more detail by the Transmission Company in their analysis of this Modification (summarised in Section 16 and provided in full in ANNEX 5 of this Assessment Report).

11.5 Master Registration Agreement (MRA)

No Impact from either the Modification or the Alternative Modification.

11.6 Data Transfer Services Agreement (DTSA)

No Impact from either the Modification or the Alternative Modification.

11.7 British Grid Systems Agreement (BGSA)

No Impact from either the Modification or the Alternative Modification.

11.8 Use of Interconnector Agreement

No Impact from either the Modification or the Alternative Modification.

11.9 Pooling and Settlement Agreement (PSA)

No Impact from either the Modification or the Alternative Modification.

11.10 Settlement Agreement for Scotland (SAS)

No Impact from either the Modification or the Alternative Modification.

11.11 Distribution Codes

No Impact from either the Modification or the Alternative Modification.

11.12 Distribution Use of System Agreements (DUoSAs)

No Impact from either the Modification or the Alternative Modification.

11.13 Distribution Connection Agreements

No Impact from either the Modification or the Alternative Modification.

12 IMPACT ON ELEXON

12.1 ELEXON Design Authority

This CPC has the following impacts on DA maintained products:

P34 impacts the following Design Authority maintained products

- **Reporting Catalogue** - estimated 1 man day including review cycle
- **Neta Data File Catalogue** - estimated 2 man days including review cycle
- **Business Process Model** - estimated 2 man days including review cycle

P36: impacts the following Design Authority maintained products

- **Reporting Catalogue** - estimated 1 man day including review cycle
- **Neta Data File Catalogue** - estimated 2 man days including review cycle
- **Business Process Model** - estimated 2 man days including review cycle

12.2 ELEXON BSC Systems Release 2 Project

See ANNEX 6 of this Assessment Report for the full Impact Assessments. In summary:

To include P34 in the ELEXON BSC Systems Release 2 Project with an associated implementation date of 30 September 2002 would require an additional **133** man days of effort, and would and would incur project costs of an additional **£80,000**.

To include P36 in the ELEXON BSC Systems Release 2 Project with an associated implementation date of 30 September 2002 would require an additional **133** man days of effort, and would incur project costs of an additional **£80,000**.

These figures and timescales assume the following:

- An Authority determination given in time for development to be completed by the end of March 2002;
- The Modification is the only additional Modification included in the Release 2 Project;
- P34 and P36 are mutually exclusive, i.e. only one will be Authorised; and
- Participant testing is required, and such testing will utilise the participant test environment.

12.3 ELEXON Trading Operations

High Level Impact Assessment

P34 and P36 will impact operations in the following way:

TOMAS will have to be updated to accommodate the changes to the I014 sub flows 2 and 3. This will have a development and implementation cost associated with it.

Development and Implementation

It is believed that the development and implementation can be run as a mini project within Trading Operations, as such it is likely to entail of the order of up to 30 to 40 man days work[5] depending upon the option implemented (i.e. P34 would require potentially less work than P36 Alternative).

In summary, based on an average day rate of £500, the estimate is as follows:

P34 / P34 Alternative / P36:	**£15,000**
P36 Alternative:	**£20,000**

It is not believed at this time that there is any other impact on Trading Operations.

[5] This is indicative only for the purposes of a High Level Impact Assessment.

13 IMPACT ON PARTIES AND PARTY AGENTS

The following represents an assessment of the impact on BSC Parties and Party Agents based upon the Consultation and Impact Assessment responses received. It should be noted that the Impact on Parties is relatively similar for both the Modification and the Alternative Modification, in that both require the implementation of amendments to the Settlement Report (SAA-I014, subflow 1) and to amend any functionality for verification of Settlement Reports to account for the implementation of the Modification or Alternative Modification.

The Participant Impact Assessments are summarised in Section 15.2 and provided in full in ANNEX 3 (b) of this Assessment Report.

13.1 Parties

All Parties are impacted by the amendments to the Settlement Report (SAA-I014, subflow 1). However, it may be possible to utilise the parallel implementation approach defined under Modification P8 to delay the impact.

Modification P8 proposes that flow version numbering be implemented within the NETA Central Service Agent. Namely, when a report such as the Settlement Report (SAA-I014) changes and the changes are implemented, Parties can determine whether they wish to continue receiving the old version of the report (i.e. without the amendments and therefore reducing the ability to accurately verify their trading charges), or the new, with the amendments. This enables them to determine the timeframes for implementation of an amended interface independently of its development within the Central Services (unlike a 'big bang' approach). However, the impact from the implementation of amendments to the Settlement Report is still likely to be significant.

The Impact Assessments indicate a relatively material impact on Parties, with estimates of implementation timescales ranging from 1 month to 830 days.

13.2 Party Agents

No impact identified.

14 LEGAL ISSUES

ELEXON's Legal Advisors provided a document entitled 'Modifications P.34 and P.36 'Note to ELEXON'' in order to detail the legal issues associated with Modification Proposals P34 and P36. The document is provided in full in ANNEX 7 of this Assessment Report.

In summary:

The principle legal issue associated with both Modification Proposals (P34 and P36) is one of governance of the proposed arrangements. With regards to the governance arrangements, both Modification Proposals require that the balancing services to which the proposed arrangements would apply, and the basis upon which the Transmission Company would determine the data to be fed into Settlements de decided.

This has the following implications:

- In which document could these matters be defined: The legal scope of a document determines what should be included within. The documentation which could contain the proposed arrangements to support Modification Proposal P34 and / or Modification Proposal P36 is the BSC, the CUSC (Connection Use of System Code) and / or a statement developed under the Transmission Licence (similar to the Balancing Services Adjustment Data (BSAD) Methodology Statement).
- In which document should these matters be defined: This is an issue of appropriateness from a public law perspective. The history of similar arrangements indicates a policy decision to provide for the BSAD Methodology Statement, the Procurement Guidelines and the Balancing Principles documentation under the Transmission Licence, not under the BSC. The possibility of incorporating arrangements for Modification Proposals P34 and P36 in specific industry documentation is explored further below:
  - **Within the BSC:**

    From a legal perspective, this is undesirable for a number of reasons. The definition of balancing services and the associated methodology would have to be relatively general and potentially vague to ensure an adequate level of flexibility and breadth and this may cause disputes over interpretation.

    The inclusion of these matters in the BSC means that a Modification is required each time an amendment needs to be made to the definition of balancing services /methodology. This is relatively inflexible, and a more flexible change mechanism may be more appropriate.

    Disputes concerning the balancing services and methodology, specifically the application of them in settlements, would have to be arbitrated under the provisions of the BSC. It may not be appropriate for such disputes to fall under the BSC, as they relate primarily to information determined and controlled by the Transmission Company.
  - The inclusion of the arrangements for Modification Proposals P34 and P36 in the BSC is inconsistent with the approach taken for other similar matters (Balancing Reserve Level, system-to-system flows, BSAD) and therefore may be inappropriate.
  - Potential interactions between the definition of balancing services and the associated methodology with other regulatory / regulated documents (in this case, the

Transmission Company incentive scheme, CUSC, the Grid Code, the BSAD Methodology, the Procurement Guidelines and the Balancing Principles) means that it may be more appropriate for the Authority to have a role in supervising and co-ordinating such matters and subsequent revisions.

- **Within the Connection Use of System Code (CUSC):**

  This raises similar difficulties as those defined above for the incorporation of the definition of balancing services and the associated methodology in the BSC, however, in addition:

  Including these matters in the Connection Use of System Code increases the number of dependencies between the CUSC and the BSC and therefore the contractual matrix (and the associated requirement for co-ordination of disputes and modifications, etc.). This may lead to more protracted and therefore expensive disputes.

  The constituency of CUSC differs from that for the BSC (for example, Non Physical Traders are Party to the BSC, but not the CUSC).

- **Within the Transmission Licence:**

  The existing provisions in the Transmission Company Licence relating to the BSAD Methodology Statement are not sufficiently broad to include the definition of the balancing services and the associated methodology required to support Modification Proposals P34 and P36. Therefore a licence modification would be required.

  The inclusion of the definition of the balancing services and the associated methodology required to support Modification Proposals P34 and P36 in the Transmission Licence would be consistent with the approach to BSAD, and ensures appropriate regulatory control.

  The change mechanisms are more flexible, with amendments made subject to consultation and Authority approval / veto.

  The disadvantage is the timing and the difficulties of getting a licence modification.

- **Within a framework under the BSC:**

  This is similar to the approach adopted for system-to-system flows (Section R 7.5.3 of the BSC).

  The Transmission Company would be required to prepare, maintain and revise from time to time a statement setting out the relevant balancing services and associated methodology, with such statement subject to the approval of the Authority. The Transmission Company would be required to consult on the statement / revisions to the statement, and provide such consultation views to the Authority when requesting approval.

  The view of the ELEXON Legal Advisors is that this is the simplest and most appropriate solution, avoiding a requirement for a Transmission Licence Modification.

15 SUMMARY OF REPRESENTATIONS

15.1 Initial Consultation Responses

The Modification Report consultation request resulted in the receipt of **thirteen** responses. These responses are provided in ANNEX 3 of this Assessment Report.

To summarise:

- **All** responses supported the principle that the Balancing Services Provider should not be exposed to the consequences of imbalance charges for the provision of that Balancing Service;
- **Ten** responses (the majority) supported that the removal of this exposure should fall under the BSC;
- **Responses were split** on whether "applicable" Balancing Services include only mandatory (**5 for**) or both mandatory and commercial balancing services (**3 for**);
- **Nine** responses (the majority) supported that the definition of the "applicable" Balancing Services and the calculation of the associated volume should fall under the BSC**;**
- **Eight** responses (the majority) supported that the proposal be made prospectively (**3 for retrospective change**);

Please see table below for the summary of the responses. Please note that 2 responses did not provide detailed views on the consultation as they felt that they had either insufficient time or did not want to prejudge their response on Modification Proposal P36.

Question	Summary
Q1. Do you Agree with the principle that "The Provider of Balancing Services should not be exposed to the consequence of imbalance for the portion of energy attributable to the provision of that Balancing Service, subject to the volume calculation and the delivery of the service."	**All 13 agreed**
Q2. In consideration of Modification P34, the Modification Group identified the following issues. Do you agree with each of the issues below?	**-**
Q2. Issue 1: Should the definition of "applicable" Balancing Services include only mandatory or all Balancing Services (mandatory and commercial balancing services)	**Mandatory – 5 for** **Mandatory & Commercial – 3 for** **No – 1 against** **No Comment – 2 (further assessment required)**
Q2. Issue 2: Should the removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code?	**Support - 10 (1 only Mandatory)** **No Comment - 2**
Q2. Issue 3: If removal of exposure to the consequence of	**Support – 9 (2 only**

Question	Summary
imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code, should the definition of the "applicable balancing services" and calculation of the associated volume fall under the Balancing and Settlement Code.	**Mandatory)** **No – 1** **No Comment – 2**
Q2. Issue 4: Should the proposal be made retrospective (as per the proposal 23rd August 2001) or only prospective?	**Retrospective – 3 for** **Prospective – 8** **No Comment – 1**
Q3. With respect to Modification Proposal P34 and each of the Options, please indicate your support (or otherwise) for each option. Please also state your view on whether the Modification and / or Options better facilitates the BSC Objectives, as defined in the Transmission Licence Condition 7A (objectives provided)	**-**
Modification Proposal P34	**FOR – 2 (1 if too costly then Option 6)** **AGAINST – 1** **No Comment – 10**
Option 1 – P34, No retrospection	**FOR – 0** **AGAINST – 8** **No Comment – 3**
Option 2 – Mandatory Balancing Services Volumes as Bid – Offer Acceptances	**FOR – 2** **AGAINST – 4** **No Comment – 4 (Requires further debate)**
Option 3 – Mandatory and Commercial Balancing Services Volumes as Bid – Offer Acceptances	**FOR – 1** **AGAINST – 6** **No Comment – 4**
Option 4 – P34, No retrospection, methodology under the Code	**FOR – 1** **AGAINST – 7** **No Comment – 3**
Option 5 – Mandatory Balancing Services Volumes as BOAs, methodology under the Code	**FOR – 6** **AGAINST – 3** **No Comment – 3 (requires further debate)**
Option 6 – Mandatory and Commercial Balancing Services Volumes as BOAs, methodology under the BSC	**FOR – 5** **AGAINST – 2** **No Comment – 4**
Q4. With respect to the Modification Proposal and each of the Options, please provide an indication of a preferred "Effective from" date.	**23rd August 2001 – 1** **ASAP – 1** **Date of Approval – 2** **When systems ready - 1** **No Comment – 4 (need impact assessment)**

15.2 Impact Assessment Responses

Ten responses were received in response to the Impact Assessment of Modification Proposal P34 and its Alternative Modification and Modification Proposal P36 and its Alternative Modification (combined CPC0077). The full responses are provided in ANNEX 3 (b) of this Assessment Report.

In summary:

- Five responses indicate a 'No comment / No Impact' response;
- One response agreed with the implementation of the original Modification Proposal P34, and required 1 months notice to implement it;
- One response indicates that the original Modification P36 is the preferred solution, but that this preference is cost dependent, indicating that if P36 was to prove much more expensive than P34 to implement, then support would be given to the Alternative Modification P34, as the retrospective aspect of the original P34 Modification Proposal was not supported;
- One response indicates a preference for the Alternative Modification P36, stating that the preference is a result of this option providing most of the governance under the BSC, and that imbalances caused by Ancillary Services delivery are neutralised separately;
- One response indicates a preference for the original Modification Proposal P36, with an implementation requirement of 800 days. The response indicated disagreement to Modification P34 and its Alternative, and to the Alternative Modification for P36. Implementation timescales are given as 830 days for the Alternative Modification P36; and
- One response indicated that the preference for options was provided direct to the Modification Group, and therefore did not express a preference, however, implementation timescales were given as four months.

15.3 Assessment Consultation Responses

Sixteen responses, on behalf of fifty Parties, were received in response to the questionnaire issued on behalf of the PIMG. The full responses are provided in ANNEX 3 (c) of this Assessment Report. The consultation questionnaire requested responses to the following questions, and requested rationale in all areas:

Q1 Please indicate whether you support the P34 Alternative.

Q2 Please indicate whether you support P36 as drafted.

Q3 Please indicate whether you support the P36 Alternative.

Q4 Please indicate whether you support the definition of Class A and Class B Balancing Services and if not, what alternative you would propose.

Q5 Please indicate whether (and why) you support the position in P36 Alternative that payment for balancing services energy as Bid - Offer Acceptance is obligatory for Class B. If you do not support "obligatory", please state your reasons and identify other approaches you would prefer.

To summarise:

Q1 Please indicate whether you support the P34 Alternative.

Fourteen of the responses received expressed a preference[6], as follows:

- Eight responses, on behalf of twenty-one parties, indicated that they supported the P34 Alternative; and
- Six responses, on behalf of twenty-seven parties, indicated that they did not support the P34 Alternative.

Reasons given in support of the P34 Alternative were as follows:

- It would increase the number of parties offering balancing services, therefore reducing the cost of service provision;
- It would better fulfil the BSC Objective relating to the efficient, economic and co-ordinated operation of the Transmission System (Condition C3, (3)(b));
- It improves the management of the energy element of Ancillary Services;
- It removes the retrospective element of the original Modification Proposal P34 and therefore the requirement to retrospectively change commercial arrangements;
- It removes the exposure to imbalance, which is crucial if Non BSC Parties are to be able to participate in balancing services provision, as Lead Parties reluctance to accept the associated imbalance costs hampers that provision; and
- It provides the simplest method for avoiding exposure to imbalance for the provision of balancing services, whilst providing transparency in how balancing services volumes are calculated and governed.

Reasons given for not supporting the P34 Alternative were as follows:

- It is not the most appropriate solution to the issue and would only be supported if P36 development and implementation costs were considerably higher;
- P34 Alternative only addresses the energy volumes for the provision of balancing services, not the associated price / remuneration, whereas P36 addresses both;
- Making payments outside of the BSC would seem to not better facilitate the Applicable BSC Objectives and risks discriminatory treatment between energy delivered under the provision of a balancing service and that provided through the Balancing Mechanism; and
- In the case of Mandatory Frequency responses, the CUSC allows for an imbalance compensation payment, and if such imbalance were removed from the BSC, then this compensation would no longer apply.

[6] The remaining two responses provided information about balancing services provision without completing the consultation questionnaire. These responses are summarised separately.

Q2 Please indicate whether you support P36 as drafted.

Fourteen of the responses received expressed a preference, as follows:

- Seven responses, on behalf of thirty-four parties, indicated that they supported P36 as drafted; and
- Seven responses, on behalf of fourteen parties, indicated that they did not support P36 as drafted.

Reasons given in support of P36 as drafted were as follows:

- It increases the incentives to accurately fulfil balancing service obligations, thus reducing system balancing costs;
- It is the only option that resolves the pricing issue applicable to all balancing services, but as drafted it obliges all Parties to be active in the Balancing Mechanism;
- It improves the management of the energy element of Ancillary Services; and
- Energy should be valued in the same way as Bids and Offers, and should be excluded from imbalance in the same way.

Reasons given for not supporting P36 as drafted were as follows:

- P34 deals sufficiently with the concerns of balancing service providers through the elimination of imbalance risk;
- It does not differentiate between different types of balancing service contracts;
- Payment for balancing services through Bid - Offer Acceptances is detrimental to parties and non party participants that do not participate in the Balancing Mechanism. It could require all parties obliged to offer mandatory balancing services to become an active participant and this runs contrary to the 'voluntary market' principles of the trading arrangements;
- Balancing Mechanism participants should not be treated differently to non Balancing Mechanism participants in the provision of Ancillary services, this would be discriminatory;
- In principle, energy has the same value at any given point in time, however, in practice this raises concerns that the combination of a simple banded Bid - Offer price structure and non transparent balancing services contract trades, combined with the limited number of current service providers, may not achieve effective transparency and competition; and
- P36 Alternative is better, as it is appropriate that remuneration is dependent upon the class of balancing service, as is the case for the P36 Alternative.

Q3 Please indicate whether you support the P36 Alternative.

Fourteen of the responses received expressed a preference, as follows:

- Ten responses, on behalf of thirty-one parties, indicated that they supported the P36 Alternative; and
- Four responses, on behalf of seventeen parties, indicated that they did not support the P36 Alternative.

Reasons given in support of the P36 Alternative were as follows:

- Mandatory response is beyond the reasonable control of the party, therefore they should not be penalised for providing it;
- It values the energy supplied through balancing services contract equally with Bid - Offer Acceptances, and it is believed that this better facilitates the Applicable BSC Objectives;
- It allows a competitive market in Ancillary Services, thus leading to a more efficient and economic market, whilst enabling balancing services provided by non Balancing Mechanism participants to be dealt with;
- It better facilitates the Applicable BSC Objectives by more precisely defining the boundary for those services where the application of the [original] P36 approach would be obligatory; and
- The principles underlying P36 Alternative facilitate better operation of the market, as mandatory frequency response providers can better reflect the risks of provision via Bid - Offer data.

Reasons given for not supporting the P36 Alternative were as follows:

- It does not provide a more appropriate way forward than the original Modification;
- It fails to address the price in respect of mandatory services;
- Balancing Mechanism participants should not be treated differently to non Balancing Mechanism participants in the provision of Ancillary services, this would be discriminatory;
- The flexibility inherent in the P36 Alternative allows decisions on which prices are to be used to be deferred or altered at a later date as the market develops; and
- BSC governance provides the advantages of independence and transparency, although alternative governance is possible if such independence and transparency are assured.

Q4 Please indicate whether you support the definition of Class A and Class B Balancing Services and if not, what alternative you would propose.

Ten of the responses received expressed a preference[7], as follows:

- Eight responses, on behalf of twenty-three parties, indicated that they supported the definition of Class A and Class B balancing services; and
- Two responses, on behalf of eight parties, indicated that they did not support the definition of Class A and Class B balancing services.

Reasons given in support of the definition of Class A and Class B balancing services were as follows:

- It facilitates the distinction between the provision of commercial and mandatory balancing services. Currently mandatory service providers have little opportunity to reflect the specific costs associated with service provision, whereas it is expected that commercial service providers have assessed the risks and have contracted on that basis.

Reasons given for not supporting the definition of Class A and Class B balancing services were as follows:

- The distinction between Class A and Class B balancing services should be dependent upon the ability to calculate the volume of delivered energy precisely and the existence of relevant Bid - Offer prices. If both criteria are satisfied, then it should be a Class B service, unless the service provider and NGC agree to re-categorise the service to a Class A. Under this approach, Class B are treated consistently with any other balancing action; and
- All balancing services should be Class A, with the potential for re-classification as experience of the trading arrangements increases.

Q5 Please indicate whether (and why) you support the position in P36 Alternative that payment for balancing services energy as Bid - Offer Acceptance is obligatory for Class B. If you do not support "obligatory", please state your reasons and identify other approaches you would prefer.

Eleven of the responses received expressed a preference, as follows:

- Seven responses, on behalf of twenty-six parties, indicated that they supported the obligatory Class B balancing services; and
- Four responses, on behalf of five parties, indicated that they did not support the obligatory Class B balancing services.

Reasons given in support of the obligatory Class B balancing services were as follows:

- Ancillary services priced as Bid - Offer Acceptances allows a market in these services to develop, improving transparency and ensuring that service providers are dealt with on an equal basis. Allowing some mandatory response providers to

[7] Two of the remaining responses did not respond to the consultation questionnaire, and the remaining responses either did not comment, or applied a 'Not Applicable / No comment' response, mainly as a consequence of not supporting Modification P36 or its Alternative.

opt out of Class B undermines the market and decreases transparency, failing to facilitate Applicable BSC Objective C3 (3)(c) in promoting effective competition in supply and generation;

- The energy element of Class B balancing services should be treated in the same way as any other payment for balancing actions. Commercial service providers are not BM Units so cannot be reimbursed in this manner; and
- Unless consistency in the treatment and pricing is achieved, a proper economic choice between the various alternatives available to the System Operator will not be possible and competition in the provision of balancing energy will be stifled.

Two general responses were received. These can be summarised as follows:

1. A demand side provider of balancing services should neither expose itself or its supplier to imbalance charges as a result of offering balancing services. This should be achieved in the most simple and cost efficient manner possible; and
2. A provider of demand reduction services via Standing Reserve Contracts with NGC believes that offering such contracts should not penalise the provider. The response notes experience to date from the provision of this service, namely that under their contract, energy has been pre-bought which is then spilt when called. Spill price to date (System Sell Price) has invariably been considerably less than the contract price and can also be negative. When contracts were offered to the Transmission Company the poor spill price could not be factored in.

   The Transmission Company taking on the imbalance only partly solves the problem - it will remove the risk of negative prices, but the provider will still lose around £20/MWh on each MWh action taken. Furthermore, they will have to recover their original position once the reserve call is ended - costing more.

   The response indicates broad support of the principles of P34 and P36 in the removal of risk, however, a Balancing Mechanism that properly values imbalance would be preferable.

16 SUMMARY OF TRANSMISSION COMPANY ANALYSIS

ANNEX 5 (a) and (b) contains the full Initial Consultation response and Impact Analysis received from the Transmission Company.

16.1 Initial Consultation Response

The Transmission Company's full response is provided in ANNEX 5 (a).

To summarise:

The Transmission Company supports the principle that it is inappropriate for balancing service providers to be exposed to imbalance prices when they are delivering services that are assisting in overall system balancing. The Transmission Company supports the mechanism described in Modification P34 for removing this exposure at source.

Governance of Balancing Services

The consultation on Modification P34 raises questions and issues that currently fall outside of the governance of the BSC.

The governance of balancing services is covered by the Transmission Licence, Grid Code, Connection Use of System Code (CUSC) and the Procurement Guidelines, as follows:

Balancing Services are defined by the Transmission Licence (Condition 1A[8]), as follows:

- Ancillary Services are described within CC8 of the Grid Code;
- Balancing Mechanism Bids and Offers procurement arrangements are contained within the BSC; and
- Other Services available to the Transmission Company to assist in operating the Transmission System.

These definitions are expanded in the Procurement Guidelines which are produced by the Transmission Company in accordance with Licence Condition 7B.3.

The Grid Code (CC8) defines the different types of System Ancillary Service as Part 1, Part 2 and Commercial Ancillary Services[9].

The contractual mechanisms for Part 1 Ancillary Services, and the associated prices and calculation of volumes (in Mandatory Service Agreements) are defined in the CUSC.

Arrangements for Part 2 Ancillary Services and Commercial Ancillary Services are contained within Commercial Services Agreements, bilaterally negotiated between the balancing service provider and the Transmission Company, and are therefore not part of the CUSC.

These governance arrangements have been developed through a number of industry consultations around development of the trading arrangements, the initial System Operator incentive arrangements and the development of the CUSC.

[8] The Licence Conditions detailed are as provided by the Transmission Company in their response. It should be noted that these Conditions may have changed as a consequence of the issue of a new version of the Transmission Licence, dated 01 October 2001.
[9] These are all defined in the Transmission Company responses, therefore these definitions are not repeated here.

Interaction between Balancing Services and the BSC

There are circumstances where the procurement and provision of balancing services interacts with the BSC via the Energy Imbalance Price calculations. Two examples are:

1. Balancing Services Adjustment Methodology Statement - produced under the provisions of Licence Condition 7B.6 by the Transmission Company and approved by the Authority; and
2. System-to-System flows - result from commercial balancing services contracts entered into by the Transmission Company with other externally interconnected System Operators. The methodology for determining the associated volume delivered under such contract is approved by the Authority, and sits as a framework document to the BSC (Section R 7.5.3).

There can also be an impact on balancing service providers as a result of the BSC.

In general, provision of a balancing service results in a deviation from the output anticipated at Gate Closure. The deviation caused by the delivery in balancing services is dealt with in different ways, for different categories of provider:

- Normal Balancing Mechanism actions - Bid - Offer Acceptances for energy balancing purposes;
- Balancing Services Balancing Mechanism actions - Bid - Offer Acceptances for instructed services, such as standing reserve (contracted for, and Bid - Offer prices agreed in advance);
- System-to-system flows - energy associated with the provision of a balancing service by an externally interconnected System Operator is transferred to the Energy Account of the Transmission Company; and
- Automatic Generator response, Non BM Participants and other circumstances - delivery of the balancing service results in imbalance exposure for the provider (or the Lead Party of the BM Unit associated with the service provider where the balancing service provider is not a BSC Party).

Modification P34 is aimed at the balancing service providers covered by the last bullet point.

Modification P34

P34 seeks to remove exposure to imbalance charges arising under the BSC when certain balancing services are being provided. The Transmission Company believes that it is not appropriate for these service providers to face this exposure, nor to transfer this exposure to the Transmission Company via contractual mechanisms outside of the BSC.

It is envisaged that the volume of balancing services would be calculated via an agree methodology (similar to BSAD or system-to-system flows) which would be agreed between the Transmission Company and the Authority.

General Comments on the Consultation

The questions and options raised in this consultation range far wider than P34 and cover issues associated with where the volumes of balancing services and the associated prices are defined. These volumes and prices are dealt with via other mechanisms and are therefore not alternatives to P34, but different proposals in entirety.

A number of options have been raised via Modification Proposal P36 and via the CUSC Working Group, and the Transmission Company believes that significant further work, analysis and consultation is required before any of the established industry governance principles are changed in respect of the costs and volumes associated with balancing services.

Interaction with other current Modification Proposals

P26 'Market - Driven Trading Neutrality Band' - the amendments proposed by this Modification are inconsistent with the approach defined for Modification P34; and

P36 Bid - Offer Acceptances relating to Applicable Balancing Services - the Transmission Company believe that P36 is Option 5 in the consultation document, therefore there is an interaction between this modification and P34, however, the Transmission Company believe Modification P36 to be dealing with different issues.

Summary of the Transmission Company Consultation Response:

Q1. Do you Agree with the principle that "The Provider of Balancing Services should not be exposed to the consequence of imbalance for the portion of energy attributable to the provision of that Balancing Service, subject to the volume calculation and the delivery of the service."
The Transmission Company fully supports this principle. They believe that there are two alternative mechanisms for removing this exposure: **1.** Removing the imbalance exposure entirely (as defined in P34) ensures that no perverse incentives are placed on balancing service providers. **2.** Removal of the exposure to the consequence of imbalance can be achieved outside of the BSC, via contractual arrangements between the Transmission Company and the balancing service provider, however, this only transfers the imbalance exposure, via the contractual arrangement, to the Transmission Company. This imbalance risk is then reflected in the Balancing Services Use of System Charges (BSUoS), along with the original imbalance payments contributing to the overall Residual Cashflow as calculated under the BSC - this is an inefficient flow of cash. The Transmission Company believe that 1. Is the best approach for better achieving facilitation of the Applicable BSC Objectives.
Q2. In consideration of Modification P34, the Modification Group identified the following issues. Do you agree with each of the issues below?
Q2. Issue 1: Should the definition of "applicable" Balancing Services include only mandatory or all Balancing Services (mandatory and commercial balancing services)

NO.

This question is not believed to be relevant to Modification P34. The Transmission Company envisage that achievement of P34 will be via a separate methodology, which will provide the detail of the balancing services where imbalance exposure results from the provision of such services, with the methodology visible to all parties and agreed by the Authority.

It is inappropriate to draw any distinction between mandatory and commercial services for the purposes of P34, as the Transmission Company believe that it is inappropriate for any provider of balancing services to be exposed to imbalance, as the provision of the service is helping to balance the system.

Q2. Issue 2: Should the removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code?

YES.

The exposure to imbalance should be addressed at source via the mechanism proposed by P34.

Q2. Issue 3: If removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code, should the definition of the "applicable balancing services" and calculation of the associated volume fall under the Balancing and Settlement Code.

NO.

The governance model for balancing services is described above. The Transmission Company believe that it is inappropriate to change this governance model.

If 'Applicable Balancing Services' are defined under the BSC, then it is possible that this list may become inconsistent with the definitions in the Transmission Licence, potentially leading to, in extreme cases, licence breach by the Transmission Company.

Q2. Issue 4: Should the proposal be made retrospective (as per the proposal 23rd August 2001) or only prospective?

YES.

The Transmission Company support a retrospective implementation of Modification P34, this is a consequence of the view of certain balancing service providers, hence the request for the Modification to be treated as urgent:

There is serious concern that balancing services may be withdrawn leading to a deterioration of system security standards.

Q3. With respect to Modification Proposal P34 and each of the Options, please indicate your support (or otherwise) for each option. Please also state your view on whether the Modification and / or Options better facilitates the BSC Objectives, as defined in the Transmission Licence Condition 7A (objectives provided)

Modification Proposal P34	**FOR**
Option 1 – P34, No retrospection	**AGAINST** (see Q2, Issue 4).
Option 2 – Mandatory Balancing Services Volumes as Bid – Offer Acceptances	**AGAINST**

It is not appropriate to draw any distinction between mandatory and commercial balancing services. Bid - Offer prices may not be appropriate for the provision of balancing services: Certain balancing services which are governed by CUSC have cost reflective charging principles. It is not clear how these would be maintained if Bid - Offer prices are used. The use of Bid - Offer prices may result in these prices applying to the provision of different services, eg normal Bid - Offer Acceptances (for energy balancing), and Bid - Offer Acceptances for frequency response (system balancing). Under certain circumstances, it may be totally inappropriate to use the Bid - Offer price in the Balancing Mechanism for the provision of balancing services, for example, a demand side standing reserve provider, under a Supplier BM Unit for which they are not the Lead Party (note that in this circumstance, it is the Supplier, not the balancing service provider, that receives the payment via the BM Unit cashflow). The Transmission Company believe that this is more of a question about what the right price is for a balancing service, rather than the principle of the exposure to imbalance, and therefore do not believe that it is appropriate to ask this question in relation to Modification P34. The cost of balancing services is dealt with via established governance processes.	
Option 3 – Mandatory and Commercial Balancing Services Volumes as Bid – Offer Acceptances	**AGAINST** See Option 2 response.
Option 4 – P34, No retrospection, methodology under the BSC	**See response to Q2, Issue 4, and Options 2 and 3**
Option 5 – Mandatory Balancing Services Volumes as BOAs, methodology under the BSC	**See response to Q2, Issue 4, and Options 2 and 3**
Option 6 – Mandatory and Commercial Balancing Services Volumes as BOAs, methodology under the BSC	**See response to Q2, Issue 4, and Options 2 and 3**
Q4. With respect to the Modification Proposal and each of the Options, please provide an indication of a preferred “Effective from” date.	**23 August 2001**

16.2 Assessment Consultation Response

The Transmission Company's full response is provided in ANNEX 5 (b).

To summarise:

The Transmission Company supports Modification Proposal P34, as the proposer and believes that this Modification is the most appropriate mechanism to support the key principle of the Modification, which is that ***'the provider of balancing services should not be exposed to the consequence of imbalance for the portion of energy attributable to the provision of that balancing service, subject to the volume calculation and the delivery of the service'***.

There are two fundamental reasons why P34 Alternative, P36 and P36 Alternative are not appropriate:

1. **Governance:** Implementation of P34 Alternative, P36 and P36 Alternative would result in a change to the existing governance model, shifting issues currently under the governance of the CUSC or Transmission Licence into the governance of the BSC. This is inappropriate because:

   – It results in duplication between the BSC the CUSC (and associated systems);

   – It would lead to confusion in respect of overall governance;

   – It reduces transparency; and

   – Ofgem have made clear statements on their views of governance (Conclusions document on CUSC, May 2001).

   P34 does not require any change to the existing governance.

   It is also appropriate to reject P36 under the BSC, and for the issues it raises to be considered under the CUSC via CUSC Amendment Proposal CAP010 (which achieves the same result as P36, but under CUSC governance).

2. **Payment Mechanisms for Balancing Services:** Implementation of P36 and P36 Alternative result in a change to the way in which certain types of balancing service are paid for. The Transmission Company believe that it is inappropriate to value delivered balancing services energy at the Bid - Offer price, specifically in relation to obligatory, cost based services such as mandatory frequency response, as it will lead, if introduced in isolation, to an increase in the cost of mandatory frequency response, which will be reflected in BSUoS charges.

   Paying for mandatory frequency response at the Bid / Offer price will lead to significant difficulties in optimising overall response holding, potentially giving rise to higher overall costs and less transparent decision making associated with balancing the system.

   Neither P34, nor P34 Alternative result in a change to the existing payment mechanisms.

P34 Alternative, P36 and P36 Alternative all raise issues that complicate the debate about reaching the primary objective of P34, which is to remove at source the energy volume associated with the provision of the balancing service, in an effective and simplistic way

without altering the current governance arrangements, or changing any of the current payment mechanisms.

The Transmission Company rationale when responding to the consultation questions is:

1. Whether the proposal / alternative achieves the primary objective (i.e. the removal of exposure to imbalance prices when providing relevant balancing services);
2. Whether the mechanism required by the proposal / alternative is consistent with the existing industry governance model; and
3. Whether the mechanism required by the proposal / alternative changes any of the current arrangements for treatment of those balancing services (for example, payment mechanisms).

Support of Modification P34 is reiterated, as it:

1. Achieves the primary objective of these related proposals;
2. Is consistent with the existing industry governance model; and
3. Does not change any of the current arrangements for treatment of relevant balancing services.

Q1 Please indicate whether you support the P34 Alternative.

P34 Alternative is not supported. With regards to the Transmission Company rationale, it:

1. Achieves the primary objective of these related proposals;
2. Results in a shift of governance by moving the definition of Applicable Balancing Services and the associated volume calculation to come under the provisions of the BSC ; and
3. Does not change any of the (other) current arrangements for treatment of relevant balancing

Q2 Please indicate whether you support P36 as drafted.

P36 as drafted is not supported. The Transmission Company believe that it is appropriate to debate the issues raised by Modification P36 via the amendment procedures defined in the Connection Use of System Code (CUSC) during the consideration of CAP010. Such debate is currently being undertaken by the Balancing Services Standing Group.

With regards to the Transmission Company rationale, Modification P36, as drafted:

1. Achieves the primary objective of these related proposals;
2. Results in a shift of governance by moving the definition of Applicable Balancing Services and the associated volume calculation to come under the provisions of the BSC ; and
3. Results to a change in payment arrangements for relevant balancing services by valuing the balancing services energy at the prevailing bid – offer Price and making that payment under the BSC. It is believed that this is inappropriate for the following reasons:

- Certain balancing services (including Mandatory Frequency Response) are governed by cost reflective charging principles and therefore P36 presents a move away from these principles;
- It could lead to difficulties in securing the economic optimisation of balancing services (as illustrated in Appendix A of the Transmission Company response), leading to higher costs associated with the procurement of these services, reflected in increased Balancing Services Use of System (BSUoS) charges;
- It could lead to the effective withdrawal of mandatory services on a price basis, resulting in prohibitively high costs being incurred in balancing the system (as illustrated in Appendix A of the Transmission Company response);
- Any change to payment arrangements for balancing services need to be considered in light of an eventual move to enduring market based arrangements and it is not clear how implementing P36 will assist in this move; and
- P36 does not apply to balancing service providers who chose not to participate in the balancing mechanism (for example, small scale demand side players).

Q3 Please indicate whether you support the P36 Alternative.

P36 Alternative is not supported. With regards to the Transmission Company rationale, Modification P36 Alternative:

1. Achieves the primary objective of these related proposals;
2. Results in a shift of governance by moving the definition of Applicable Balancing Services and the associated volume calculation to come under the provisions of the BSC ; and
3. Results to a change in payment arrangements for relevant balancing services by valuing the balancing services energy at the prevailing bid – offer Price and making that payment under the BSC. It is believed that this is inappropriate for the same reasons as those provided for Question 2.

Q4 Please indicate whether you support the definition of Class A and Class B Balancing Services and if not, what alternative you would propose.

The definition of Class A and Class B balancing services is not supported by the Transmission Company. The Transmission Company do not believe that any further definition of balancing services is required. If it were, then such definitions should be consistent with, or refer to, other definitions for balancing services contained within the Grid Code and / or the Transmission Company.

Q5 Please indicate whether (and why) you support the position in P36 Alternative that payment for balancing services energy as Bid - Offer Acceptance is obligatory for Class B. If you do not support "obligatory", please state your reasons and identify other approaches you would prefer.

This is not supported by the Transmission Company for the reasons given above.

Current Treatment of Imbalance and the existing Governance model

This part of the Transmission Company's analysis contains a description of the existing governance model and the current treatment of imbalances associated with the relevant balancing services.

Current Treatment of Imbalance

Currently any energy imbalance charges arising from the delivery of mandatory frequency response are refunded to the provider via the CUSC mechanism of imbalance compensation payments.

There are a small number of bilateral agreements for commercial frequency response services that replicate the arrangements in the CUSC for imbalance compensation, and it assumed, for the purposes of this analysis, that these are also covered by the CUSC arrangements for mandatory frequency response.

There are no other specific arrangements for compensation when providing other balancing services (such as reserve). Therefore imbalance charges are incurred when these services are provided. It could be assumed that these balancing services providers build in an 'imbalance premium' into their overall price for service provision. A number of these balancing services providers have indicated to the Transmission Company that they are unwilling to continue taking on the risk of imbalance exposure.

Summary of the Governance arrangements for Balancing Services

The governance of balancing services, as established via industry consultation pre Go Live, is covered by the Transmission Licence, the Grid Code, CUSC and Procurement Guidelines.

- Balancing Services are defined within the Transmission Licence (with the definitions further expanded in the Procurement Guidelines);
- The Grid Code defines the different types of Ancillary Services – Part 1, Part 2 and Commercial Ancillary Services;
  - Part 1 Ancillary Services contractual mechanisms, calculations and cost reflective charging principles are described within the CUSC, supported by the prices and plant specific characteristics in the Mandatory Service Agreements;
  - Arrangements for Part 2 and Commercial Ancillary Services are contained within Commercial Services Agreements (CSAs), which are bilaterally negotiated between the balancing services provider and the Transmission Company.

Description of the Proposed Modifications

The main difference in the mechanisms for the Modification Proposals and their Alternatives is that P34 adjusts the accepted Bid – Offer volume after payments have been made for the Bid – Offer Acceptance, whilst P36 makes the adjustment prior to payment. Therefore implementation of P34 means that all payments for the provision of the relevant balancing services would continue to be paid in accordance with the existing principles defined in the CUSC or bilateral contracts. However, P36 moves away from this approach with the payments being made via the balancing Mechanism at the Bid – Offer Price.

Governance under the proposed Modifications

The existing governance arrangements and the impact from the implementation of Modification Proposals P34 and P36 and their respective Alternatives, are detailed in the Transmission Company's original response, and provided in full in ANNEX 5, therefore they are not repeated here.

The Transmission Company disagrees with the view of the PIMG that **'Including, within the BSC, the definition of Applicable Balancing Services and associated Balancing Services Volume Calculation provides the opportunity to ensure that any subsequent changes would better facilitate the achievement of the applicable BSC Objectives and specifically provides transparency of these changes to market participants'** (BSC Consultation Paper on P34/P36, November 2001, Appendix B). It is believed that the governance structure currently in place allows the Authority to consider the full impact of proposed modifications across all affected areas (including the BSC, CUSC and other codes).

It is useful to consider the distinction that has been developed between the BSC and the CUSC. Ofgem/DTI concluded that terms relating to the Mandatory Balancing Services should be contained within the CUSC, thus:

'The BSC will not be used for the recovery of system balancing costs. These costs will be recovered through BSUoS charged, and hence contractually through CUSC. Ofgem/DTI therefore consider it appropriate for terms relating to mandatory services to sit within the CUSC' (*NGC's connection and use of system code: scope, content and associated licence conditions, An Ofgem/DTI conclusions document May 2001,section 3.60*).

The Transmission Company believe that it is inappropriate to change the existing governance model by explicitly including the definition of balancing services and the associated volume calculation methodology in the BSC. It is also believed that it is inappropriate to amend the existing governance model for the following reasons:

1. It would result in duplication between the BSC and the CUSC (and their associated systems);
2. It would lead t confusion about overall governance; and
3. It would reduce transparency.

Modification Proposal P36 and P36 Alternative

Modification P34 and its Alternative can be utilised by all, included balancing service providers who are not BSC Parties, or active participants in the Balancing Mechanism.

However, the proposed mechanism for P36 is restricted to Balancing Mechanism participants only and payment is made to the Lead Party for the associated BM Unit (not the balancing services provider). If the balancing services provider is not the Lead Party of the BM Unit, then they have no direct control over the Bid – Offer data (and therefore the price) submitted.

Restrictions of Paying for imbalance volume at Bid and Offer Prices:

Mandatory Services are provided in accordance with the CUSC on a cost reflective basis. It is believed that under the mechanism in P36 and P36 Alternative cost reflectivity for Mandatory

Services would be lost as the energy volume associated with the services would be paid at Bid and Offer Prices, thus representing a clear shift from cost to value. A mandatory balancing service provider could effectively make the system prohibitively expensive to operate by submitting extreme Bid and Offer prices, thus causing difficulties in securing system balance at optimum cost.

A provider of an applicable Balancing Service would only be paid for the energy attributable to the provision of that Balancing Service at their submitted Bid and Offer Price. This price may not be the same for different types of deviations in the Balancing Mechanism; the cost associated with a manually initiated decrease or increase from a provider's physical output will not necessarily be the same as the cost of an automatically initiated increase or decrease resulting from the provision of balancing services.

Where more than one service provider forms part of a BM Unit, only a single Bid/Offer Price ladder may be submitted. This does not allow the individual providers to correctly reflect their costs in their price ladder.

Impact on BSUoS

It is believed that P36/P36 Alternative as proposed could lead to an increase in balancing costs which would be reflected in an increase in the BSUoS charge. This is fully discussed in a paper by National Grid which was circulated round the Modifications Group, 'Impact on BSUoS charges and RCRC from the delivery of Mandatory Response under current arrangements and under P34 and P36', 31 October 2001 (provided in ANNEX 2 of this Assessment Report).

Frequency Response Market

The Transmission Company is committed to the development of an implementation plan for a Frequency Response Market and the Balancing Services Standing Group (BSSG - established under CUSC) is working on this issue.

Therefore issues raised by these modifications should be considered in the context of the whole market debate. It is believed that P34 paves the way for market arrangements by removing the perversity of imbalance exposure when delivering the services, whereas the other proposed modifications achieve the removal of imbalance exposure, they also introduce further complexity which do not necessarily represent steps in the right direction towards frequency response market arrangements.

We believe that it is appropriate for these issues to be considered at the BSSG.

Impact on System Operator Systems

The Transmission Company have performed informal Impact Assessments on System Operator systems in respect of P34 and P36 (a fuller, more detailed impact assessment will be required once it is clear which modification is approved). It will also be necessary to consider the impact in respect of other BSC driven developments such as P12, P22 and P33.

Impact on Control Room Systems

- P34 will not impact on these systems.
- P36 will impact on the algorithm used to optimise frequency response holding as it changes the way that delivered response energy is paid for. Amendments, with varying degrees of complexity, could be made to this algorithm to include some type of bid/offer indicator in the optimisation process.

The estimate for the investigation and development required to the dispatch algorithm for this crude enhancement is £150k, with a delivery time of approximately 9 months.

Significant further analysis would be required in order to develop the dispatch algorithm to fully optimise response holding under a P36 scenario. A full optimisation would require the development of probabilistic techniques to attempt to forecast the expected response behaviour of each generator relative to the system frequency, and the interaction of this behaviour with its bid/offer ladder. We have not yet attempted to quantify this effort but it is likely that significant research would be required.

Impact on Balancing Services Systems

P34/P36 impact on the systems used to settle Balancing Services Contracts, and in particular the system used to calculate the volume of these services. Currently these volumes are calculated using data from the Initial Interim (II) Settlement Run, however the requirement specification states that the volume has to be provided to the SAA prior to the II run. Additional development (to establish new interfaces) would be required to calculate these volumes prior to the II run, and the estimates provided assume that this is the case. If, however, the data can be provided after the II run, then the costs and timescales would reduce.

P34 development estimate £50k, delivery time 3 – 4 months, starting March 2002.

P36 development estimate £80 - 130k, delivery time 5 – 8 months, starting March 2002.

BSC Objectives

It is believed that P34 Alternative, P36 and P36 Alternative do not better facilitate the BSC Objectives as set out in the Transmission Licence, Condition C3, paragraph 3.

It is believed that the mechanisms proposed for P36 and P36 alternative would not facilitate **'the efficient, economic co-ordinated operation by the licensee of the licensee's transmission system'**. It is likely not to be economic to pay for imbalance volume at Bid and Offer prices as stated in 6.2 as this could make the system prohibitively expensive to operate also with the effect that BSC Parties could also face an increase in BSUoS charges.

It is also believed that the proposals P34 Alternative, P36 and P36 Alternative would not be **'promoting efficiency in the implementation and administration of the balancing and settlement arrangements'.** By duplicating the applicable balancing services and associated volume calculations in the BSC, any BSC modification would have to be done in parallel with modifications to the CUSC (or relevant industry document). The duplication of information between documents, which effectively govern the operation of our activities, is not in line with efficient implementation and administration of the balancing and settlement arrangements.

ANNEX 1 – PROPOSED DRAFT TEXT TO MODIFY THE BSC

The following text is that proposed by the PIMG prior to their meeting of 6 December 2001, and is the text that was impact assessed and consulted on. At the meeting of 6 December 2001, the PIMG agreed that it was inappropriate for the definition of the balancing services and the associated volume calculation methodology to be explicitly included in the BSC (the considerations are detailed in Section 8 of this Assessment Report). Therefore the amendments in ANNEX 1, (a), (b), (c) and (d) which would not be required under the approach set out in Section 8 of this Assessment Report are flagged[10], and any additional amendments are provided in ANNEX 1 (e) of this Assessment Report.

a Modification P34

Amendments to the BSC, Section X , ANNEX X-2 'Technical Glossary'

Section X ANNEX X-2 Table X-2 'Technical Glossary' requires amendment to include the requisite new and amended definitions, as follows:

Defined Term	Acronym	Units	Definition / Explanatory Text
Account Period ~~Bid – Offer~~ Balancing Services Volume	$QABO_{aj}$	MWh	The quantity determined in accordance with section T 4.6.2 *The Account Period ~~Bid – Offer~~ Balancing Services Volume is the sum of the quantity of Balancing Services energy, consisting of accepted Bids and Offers, and energy associated with Ancillary and Other services from all BM Units for which Energy Account a is the Lead Energy Account in Settlement Period j.*
BM Unit Ancillary and Other Service Energy Volume	**QAS_{ij}**	**MWh**	**The amount determined in accordance with Section Q 6.3A.1.** ***The volume of energy expected to be delivered by BM Unit i in Settlement Period j to meet Ancillary or Other Contracts with the Transmission Company.***
Period BM Unit ~~Bid – Offer~~ Balancing Services Volume	QBO_{ij}	MWh	The quantity determined in accordance with section T 4.3.2 *The Period BM Unit ~~Bid – Offer~~ Balancing Services Volume is the net quantity of Balancing Services energy, consisting of accepted Bids and Offers, and energy associated with Ancillary and Other services from BM Unit i in Settlement Period j.*
Total Period Ancillary and Other Service Energy Volume	**$TQAS_j$**	**MWh**	**The amount determined in accordance with Section T 4.6.5.**

[10] It has been assumed for the purposes of this drafting that the variables contained within the framework document will be defined in the Code. If this is not to be the case, then the final legal drafting will reflect this.

			The Total Period Ancillary and Other Service Energy Volume is the net quantity of energy determined to be delivered by all BM Units in Settlement Period j to meet Ancillary or Other Contracts with the Transmission Company.

Section X ANNEX X-2 Table X-3 'Glossary of Acronyms Applying Except in Relation to Section S' requires amendment to include the requisite new and amended definitions, as follows:

Acronym	Units	Corresponding Defined Term or Expression
$QABO_{aj}$	MWh	Account Period ~~Bid – Offer~~ Balancing Services Volume
QAS_{ij}	**MWh**	**BM Unit Ancillary and Other Service Energy Volume**
QBO_{ij}	MWh	Period BM Unit ~~Bid – Offer~~ Balancing Services Volume
$TQAS_j$	**MWh**	**Total Period Ancillary and Other Service Energy Volume**

Amendments to the BSC, Section Q 'Balancing Mechanism Activities'

Amendment to the BSC, Section Q 'Balancing Mechanism Activities' is required to support the provision of the 'BM Unit Ancillary and Other Service Energy Volume' to the Settlement Administration Agent from the Transmission Company, as follows.

A new clause in Section Q 6, arbitrarily named Q 6.3A here, is required:

6.3A Ancillary and Other Service Energy Volumes

6.3A.1 In relation to each Settlement Period and each BM Unit, not later than the end of the second business day following the Settlement Day, the Transmission Company shall determine (on a basis approved in writing by the Authority for the purposes of this paragraph 6.3A.1), and notify the BMRA[11] and SAA the volume of Ancillary Services and Other Service Energy expected in relationship to Transmission Company Contracts. The variable 'BM Unit Ancillary and Other Service Energy Volume' (QAS_{ij}) will take the notified value. For the avoidance of doubt, in the event that no approval exists from the Authority, this term shall be 0 MWh.

6.3A.2 The Transmission Company may resubmit to the SAA the 'BM Unit Ancillary and Other Service Energy Volume' in respect of any BM Unit and Settlement Period within a Settlement Day at any time prior to the Final Reconciliation Settlement Run for such Settlement Day and the SAA shall correct such data in the Settlement Run following such resubmission.

[11] The receipt of this information by the BMRA may be excluded from the Modification, depending upon the costs and timescales for such amendment.

Amendments to the BSC, Section T 'Settlement and Trading Charges'

In order to support the intent of the original Modification, settlement calculations, as defined in Section T of the BSC, will have to be amended as follows, for all Settlement Runs:

4.3.2 In respect of each Settlement Period, for each BM Unit, the Period BM Unit ~~Bid – Offer~~ Balancing Services Volume, will be determined as follows:

$QBO_{ij} = \Sigma^n(QAO^n_{ij} + QAB^n_{ij})$ **$+ QAS_{ij}$**

Where Σ^n represents the sum over all Bid – Offer Pair numbers for the BM Unit.

4.6.2 In respect of each Settlement Period, for each Energy Account, the Account Period ~~Bid – Offer~~ Balancing Services Volume will be determined as follows:

No change to the calculation.

4.6.5 In respect of each Settlement Period, the Total Period Ancillary and Other Service Energy Volume will be determined as follows:

$TOAS_i = \Sigma_i QAS_{ij}$

Where S_i represents the sum over all BM Units.

Amendments to the BSC, Section V 'Reporting'

A new entry in Section V 'Reporting', ANNEX V-1: 'Tables of Reports', is required:

Table 1 - BMRS

DATA AND RELEVANT SETTLEMENT PERIODS	FREQUENCY	FORMAT	DEFAULT
…			
BM Unit Ancillary and Other Service Energy Volumes (QAS_{ij})	**Daily (published for all days on operational days only)**	**Tabular**	**None**

b Alternative Modification P34

The following section describes the ADDITIONAL requirements, over and above those defined in ANNEX 1 (a), and should therefore be considered in conjunction with the draft legal text provided in ANNEX 1 (a) for the purposes of any assessment of the Alternative Modification.

Amendments to the BSC, Section X, ANNEX X-2 'Technical Glossary'

Section X ANNEX X-2 Table X-2 'Technical Glossary' requires amendment to include the requisite new and amended definitions, as follows:

Defined Term	Acronym	Units	Definition / Explanatory Text
Applicable Balancing Services			**Those balancing services listed in Section T ANNEX T-2.**
Applicable Balancing Services Provider			**The provider of the Applicable Balancing Service.**
Expected Response Power	FR^{m}_{ms}	**MW**	**The amount determined in accordance with Section T ANNEX T-2.** ***Is the Expected Response Power for site s in response mode m.***
Expected Service Energy	ESE_{sj}	**MWh**	**The amount determined in accordance with Section T ANNEX T-2** ***Is the Expected Service Energy from service s in Settlement Period j.***
Instructed Reserve Delivery	$I_{sj}(t)$	**MW**	***Is the Instructed (excluding Bid – Offer Acceptances) Reserve delivery, from site s, time t from the start of the Settlement Period j, taking account of contracted run-up and run down profiles.***
Service Flag	SF_{sj}		**Is the Service Flag for site s in Settlement Periodj.** ***The Service Flag takes the value of 1 if the Lead Party for the BM Unit which incorporates service s has indicated that they wish the energy volume for the BM Unit to be adjusted for that site Ancillary and Other Service Volume, other wise it has the value of 0.***

Section X ANNEX X-2 Table X-3 'Glossary of Acronyms Applying Except in Relation to Section S' requires amendment to include the requisite new and amended definitions, as follows:

Acronym	Units	Corresponding Defined Term or Expression
FR^{m}_{ms}	MW	Expected Response Power
ESE_{sj}	MWh	Expected Service Energy
$I_{sj}(t)$	MW	Instructed Reserve Delivery
SF_{sj}		Service Flag

Amendments to the BSC, Section T 'Settlement and Trading Charges'

This amendment would not be required if the approach of placing the definition of the balancing services and the associated methodology in a framework document to the BSC is followed.

A new ANNEX to Section T is required, as follows:

ANNEX T-2: Methodology to be utilised by the Transmission Company to determine BM Unit Ancillary and Other Service Volumes

1. Applicable Balancing Services

1.1 The methodology defined in this ANNEX T-2, 1.2, pertains to the following Applicable Balancing Services:

(a) Mandatory Frequency Response;

(b) Commercial Response;

(c) Fast Reserve; and

(d) Standing Reserve.

Where the Lead Party has notified the Transmission Company to set the Service Flag to 1 for the BM Unit incorporating the site that provides the Applicable Balancing Service.

The following methodology is a proposed view of the potential calculation for the purposes of this Requirements Specification only. This methodology is based upon the current methodology proposed for inclusion in the Connection Use of System Code, and may be amended. Therefore this section of the BSC may reference to the CUSC, or some other arrangement may be required in order to maintain the consistency and correctness of this methodology.

1.2 The Expected Response Power for site s when in response mode m is determined as follows:

(i) For response modes delivered by free governor action, this will be derived from the relevant table set out in the relevant services agreement (as such table in interpreted in accordance with Paragraph 4.1.3.11 of the Connection and Use of System Code) by reference to the level of De-Load of the site concerned at the end of minute m and the mean Frequency Deviation over that minute. For this purpose:

(a) for a positive Frequency Deviation in minute m, the expected change in active power output of site s shall be derived from the high frequency response capability table set out in the relevant services agreement; and

(b) for a negative Frequency Deviation in minute m, the expected change in active power output of site s shall be (where the Applicable Balancing Services Provider is instructed to provide Primary Response together with Secondary Response) the mean average value of the Primary Response capability and Secondary Response capability, or (where the Applicable Balancing Services Provider is instructed to provide Primary Response without Secondary Response) Primary Response capability, in each case derived from the low frequency response table set out in the relevant services agreement.

(ii) For response delivered by low or high frequency relay initiation shall be calculated with reference to the actual system frequency and the contracted initiation:

(a) For the period immediately following an initiation in accordance with the contract (or where the service would have been obliged to initiate in accordance with the contract) and prior to a cease or deemed cease instruction, the expected change in active power as derived from the contracted secondary or high frequency response (as the case may be);

(b) For the period immediately following a cease, or deemed cease, instruction the agreed restoration profile; and

(c) For all other periods, 0 MW.

1.3 Where the Applicable Balancing Service is Response, then the Expected Service Energy for a BM Unit and Settlement Period is determined as follows:

$$ESE_{sj} = \sum_{m} \sum_{m \in j} \left(\frac{FR_{ms}^{m}}{60} \right)$$

where $S_{m \in j}$ is the sum over all minutes in the Settlement Period and S_m is the sum over all response modes, m.

1.4 Where the Applicable Balancing Service is Reserve, then the Expected Service Energy for a BM Unit and Settlement Period is determined as follows:

$$ESE_{sj} = \int_0^{SPD} I_{sj}(t)dt$$

1.5 Where the Applicable Balancing Service is not listed in this Section T ANNEX T-2, 1.1, then the Expected Service Energy for a BM Unit and Settlement Period is 0 MWh.

1.6 The BM Unit Ancillary and Other Service Volume for a BM Unit and Settlement Period (QAS_{ij}) is determined as follows:

$QAS_{ij} = S_{s \in i} (SF_{sj} \times ESE_{sj})$

where $S_{s \in i}$ is the sum across all sites, s, forming all, or part of, BM Unit i.

c Modification P36

Amendments to the BSC, Section X, ANNEX X-2 'Technical Glossary'

Therefore Section X ANNEX X-2 Table X-2 'Technical Glossary' requires amendment to include the requisite new and amended definitions, as follows:

Defined Term	Acronym	Units	Definition / Explanatory Text
Applicable Balancing Services			**Those balancing services listed in Section T ANNEX T-2.**
BM Unit Ancillary and Other Service Offer Acceptance	**$QASO^{n}_{ij}$**	**MWh**	**The amount determined in accordance with Section T ANNEX T-2** ***The BM Unit Ancillary and Other Service Offer Acceptance is the additional quantity of Offer n, accepted by the Transmission Company in respect of BM Unit i, in Settlement Period j, and is the volume determined to have been delivered as a consequence of the provision of Applicable Balancing Services.***
BM Unit Ancillary and Other Service Bid Acceptance	**$QASB^{n}_{ij}$**	**MWh**	**The amount determined in accordance with Section T ANNEX T-2** ***The BM Unit Ancillary and Other Service Bid Acceptance is the additional quantity of Bid n, accepted by the Transmission Company in respect of BM Unit i, in Settlement Period j, and is the volume determined to have been delivered as a consequence of the provision of Applicable Balancing Services.***
Expected Service Energy	**ESE_{sj}**	**MWh**	**The amount determined in accordance with Section T ANNEX T-2** ***Is the Expected Service Energy from service s in Settlement Period j.***
Service Flag	**SF_{sj}**		**Is the Service Flag for site s in Settlement Periodj.** ***The Service Flag takes the value of 1 if the Lead Party for the BM Unit which incorporates service s has indicated that they wish the energy volume for the BM Unit to be adjusted for that site Ancillary and Other Service Volume, other wise it has the value of 0.***
Service - Site Pair	**s**		***The Service Site Pair providing Ancillary and Other Service for the Transmission Company***

Section X ANNEX X-2 Table X-3 'Glossary of Acronyms Applying Except in Relation to Section S' requires amendment to include the requisite new and amended definitions, as follows:

Acronym	Units	Corresponding Defined Term or Expression
ESE_{sj}	**MWh**	**Expected Service Energy**
$QASO^{n}_{ij}$	**MWh**	**BM Unit Ancillary and Other Service Offer Acceptance**
$QASB^{n}_{ij}$	**MWh**	**BM Unit Ancillary and Other Service Bid Acceptance**
SF_{sj}		**Service Flag**
s		**Service - Site Pair**

Amendments to the BSC, Section Q 'Balancing Mechanism Activities'

The BSC, Section Q 'Balancing Mechanism Activities', paragraph 5.1 Bid – Offer Acceptances requires an additional clause to specifically define the Bid – Offer Acceptances made under this Modification, as the current definition does not include Acceptances made after the event for the purposes of accounting for energy volumes associated with the provision of Applicable Balancing Services.

Therefore the following amendments to Section Q are required to support the implementation of Modification P36:

5.1 Bid - Offer Acceptances

5.1.2 The Transmission Company may accept Bid(s) and / or Offer(s) by issuing a communication under the Grid Code of a type which, for the purposes of the Code, is classed as an Acceptance pursuant to paragraph 5.1.3 **(a) and (b), and by issuing a BM Unit Ancillary and Other Service Bid - Offer Acceptance pursuant to paragraph 5.1.3 (c)**.

5.1.3 …

(c) An Acceptance Volume (BM Unit Ancillary and Other Service Bid Acceptance / BM Unit Ancillary and Other Service Offer Acceptance) issued in respect of a BM Unit in accordance with an Ancillary or Other Service Contract with the Transmission Company and which is calculated in accordance with Section T ANNEX T-2,

Where 5.1.3 is subsequently referred to in Section Q, this should be amended to read **'5.1.3 (a) and (b)'**, namely in sections 5.1.6, 5.1.7, 5.1.11 and 5.1.13.

The following amendments are also required to Section Q:

5.3 Acceptance Data

5.3.1 Acceptance Data for a BM Unit**, for Acceptances made pursuant to Section Q 5.1.3 (a) and (b),** shall comprise the following data items: …

5.3.1A Acceptance Data for a BM Unit, for Acceptances made pursuant to Section Q 5.1.3 (c) shall comprise a Bid - Offer Acceptance volume for each (relevant) value of 'n'.

Amendment to the BSC, Section Q 'Balancing Mechanism Activities' is required to support the provision of the 'BM Unit Ancillary and Other Service Energy Volume' to the Settlement Administration Agent from the Transmission Company, as follows.

A new clause in Section Q 6, arbitrarily named Q 6.3A here, is required:

6.3A BM Unit Ancillary and Other Service Bid - Offer Acceptances

6.3A.1 In relation to each Settlement Period and each BM Unit, not later than the end of the second business day following the Settlement Day, the Transmission Company shall determine (in accordance with the Code, Section T ANNEX T-2), and notify the BMRA and SAA of the additional Bid - Offer Acceptances made by the Transmission Company (pursuant to Section Q 5.1.3 (c)) with regards to the volume of energy related to the provision of Ancillary Services and Other Services expected in relationship to Transmission Company Contracts, by provision of the volumes associated with 'BM Unit Ancillary and Other Service Bid Acceptances' ($QASB^{n}_{ij}$) and 'BM Unit Ancillary and Other Service Offer Acceptances' ($QASO^{n}_{ij}$).

6.3A.2 The Transmission Company may resubmit to the SAA the volumes associated with the 'BM Unit Ancillary and Other Service Bid Acceptance' and the 'BM Unit Ancillary and Other Service Offer Acceptance' in respect of any BM Unit and Settlement Period within a Settlement Day at any time prior to the Final Reconciliation Settlement Run for such Settlement Day and the SAA shall correct such data in the Settlement Run following such resubmission.

Amendment to the BSC, Section T 'Settlement and Trading Charges'

Therefore, in order to support the intent of the Modification, settlement calculations, as defined in Section T of the BSC, will have to be amended as follows, for all Settlement Runs:

The determination of the Period BM Unit Total Accepted Offer Volume (QAO^{n}_{ij}) and Period BM Unit Total Accepted Bid – Volume (QAB^{n}_{ij}) (Section T 3.9) are required to be amended as follows:

3.9.1 In respect of each Settlement Period, for each BM Unit, the total MWh volume of the Offer accepted from all Acceptances shall be the Period BM Unit Total Accepted Offer Volume and shall be established as follows:

$$QAO^{n}_{ij} = \Sigma^{k} QAO^{kn}_{ij} \; \underline{+ QASO^{n}_{ij}}$$

Where Σ^{k} represents the sum over all Acceptances within the Settlement Period.

3.9.2 In respect of each Settlement Period, for each BM Unit, the total MWh volume of the Bid accepted from all Acceptances shall be the Period BM Unit Total Accepted Bid Volume and shall be established as follows:

$QAB^{n}_{ij} = \Sigma^{k} QAB^{kn}_{ij}$ **+ $QASB^{n}_{ij}$**

Where Σ^{k} represents the sum over all Acceptances within the Settlement Period.

The Transmission Company is required to determine the energy volume associated with the provision of Applicable Balancing Services at BM Unit level, in the form of additional Bid – Offer Acceptances against a BM Unit. Therefore a methodology for such determination is required to be included in the BSC. To this end, a new ANNEX to Section T is required, as follows:

This amendment would not be required if the approach of placing the definition of the balancing services and the associated methodology in a framework document to the BSC is followed.

ANNEX T-2: Methodology to be utilised by the Transmission Company to determine Accepted Ancillary and Other Service Bid – Offer Volumes

1. The transmission company will determine the expected variation of power output, $ESE_{sj}(t)$ from the delivery of ancillary service-site pair, s, as follows time t from the start of settlement period j:

1.1 In the event that service-site pair s is a response service (either mandatory or commercial) delivered by free governor action:

$ESE_{st}(t)$ will be the expected change in power output as a result of variation in system frequency. This will be derived from the relevant table set out in the relevant services agreement (as such table is interpreted in accordance with Paragraph 4.1.3.11of CUSC) by reference to the level of De-Load of the site concerned at the end of minute and the mean Frequency Deviation over the minute, m, where minute m contains spot time t, and starts an integer multiple of 60 seconds from the start of the settlement period j.

for this purpose:

1.1.1 For a positive Frequency Deviation at time t, the expected change in active power output of site s shall be derived from the high frequency response capability table set out in the relevant services agreement; and

1.1.2 For a negative Frequency Deviation at time t, the expected change in active power output of site s shall be derived from

(i) the primary frequency response capability set out in the relevant services agreement when the unit is instructed to provide primary response without secondary response;

(ii) the mean of the primary and secondary response capability set out in the relevant services agreement when the unit is instructed to provide primary response with secondary response.

1.2 In the event that service-site pair s is a response service delivered on initiation by a low or high frequency relay:

$ESE_{sj}(t)$ shall be calculated in with reference to the actual system frequency and the contracted initiation.

1.2.1 For the period immediately following an initiation in accordance with the contract (or where the service would have been obliged to initiate in accordance with the contract) and prior to a cease or deemed cease instruction, the expected change in active power as derived from the contracted secondary or high frequency response (as the case may be).

1.2.2 For the period immediately following a cease (or deemed cease) instruction the agreed restoration profile.

1.2.3 For all other periods, 0 MW.

1.3 In the event that service-site pair s is a reserve service:

$ESE_{sj}(t)$ shall be the instructed (excluding Bid Offer Acceptances) Reserve delivery, from service-site pair *s*, time *t* from the start of settlement period *j*, taking account of contracted run-up and run down profiles.

1.4 In the event that service-site pair s is any other service:

$$ESE_{sj}(t) = 0$$

2. The Transmission Company will determine the expected change in the production or consumption power of BM Unit i resulting from the delivery of Ancillary or Other Services using the following formula

$$qAS_{ij}(t) = \sum_{s \in i} \left(SF_{sj} \times ESE_{sj}(t) \right)$$

where:

SF_{sj} **Is the Service Flag for service-site pair *s* in settlement period *j*.**

Takes the value 1, if the Lead Party for the BM Unit that incorporates service *s* has indicated (in accordance with the notification procedure) that they wish the BM volume to be adjusted for that site Ancillary and Other Service volume.

Otherwise 0.

$\sum_{s \in i}$ **Is the summation across all service-site pairs, s, that form part of BMU i.**

3. The Transmission Company will determine the instantaneous Offer Acceptance thus:

$$qASO_{ij}(t) = \max\left(qAS_{ij}(t), 0\right)$$

and the instantaneous Bid Acceptance thus:

$$qASB_{ij}(t) = \min\left(qAS_{ij}(t), 0\right)$$

4. The Transmission Company will determine the expected variation of output of BM Unit i at time t from the start of settlement period j as a result of bid offer acceptances thus:

$$qD_{ij}(t) = \sum_k \sum_n \left(qAB_{ij}^{kn}(t) + qAO_{ij}^{kn}(t)\right)$$

where $\sum_k$ means the summation across all bid offer acceptances and $\sum_n$ means the summation across all bid offer pairs.

5. The Transmission Company will determine the change in production or consumption resulting from ancillary or other service delivery as an offer acceptance in range n, of BM Unit i, time t from the start of settlement period j thus:

For n ? 1

$$qASO_{ij}^{n}(t) = \max\left(\min\left(qD_{ij}(t) + qASO_{ij}(t), \sum_{n'=0}^{n} qBO_{ij}^{n'}(t)\right), \sum_{n'=0}^{n-1} qBO_{ij}^{n'}(t)\right) - \max\left(\min\left(qD_{ij}(t), \sum_{n'=0}^{n} qBO_{ij}^{n'}(t)\right), \sum_{n'=0}^{n-1} qBO_{ij}^{n'}(t)\right)$$

for n ? -1

$$qASO_{ij}^{n}(t) = \min\left(\max\left(qD_{ij}(t) + qASO_{ij}(t), \sum_{n'=n}^{0} qBO_{ij}^{n'}(t)\right), \sum_{n'=n+1}^{0} qBO_{ij}^{n'}(t)\right) - \min\left(\max\left(qD_{ij}(t), \sum_{n'=n}^{0} qBO_{ij}^{n'}(t)\right), \sum_{n'=n+1}^{0} qBO_{ij}^{n'}(t)\right)$$

and as a bid acceptance, thus:

For n ? 1

$$qASB_{ij}^{n}(t) = \max\left(\min\left(qD_{ij}(t) + qASB_{ij}(t), \sum_{n'=0}^{n} qBO_{ij}^{n'}(t) \right), \sum_{n'=0}^{n-1} qBO_{ij}^{n'}(t) \right) - \max\left(\min\left(qD_{ij}(t), \sum_{n'=0}^{n} qBO_{ij}^{n'}(t) \right), \sum_{n'=0}^{n-1} qBO_{ij}^{n'}(t) \right)$$

for n ? -1

$$qASB_{ij}^{n}(t) = \min\left(\max\left(qD_{ij}(t) + qASB_{ij}(t), \sum_{n'=n}^{0} qBO_{ij}^{n'}(t) \right), \sum_{n'=n+1}^{0} qBO_{ij}^{n'}(t) \right) - \min\left(\max\left(qD_{ij}(t), \sum_{n'=n}^{0} qBO_{ij}^{n'}(t) \right), \sum_{n'=n+1}^{0} qBO_{ij}^{n'}(t) \right)$$

where it is assumed that

i. $qBO_{ij}^{0}(t) = 0$;
ii. $qBO_{ij}^{5}(t)$ is arbitrarily large and positive; and
iii. $qBO_{ij}^{-5}(t)$ is assumed to be arbitrarily large and negative such that the bid offer range is extended to accommodate any value of $qAS_{ij}(t)$.

6. The Transmission Company will determine the offer acceptance volume resulting from ancillary or other service delivery falling within bid offer range n, of BM Unit i, time t from the start of settlement period j thus:

$$QASO_{ij}^{n} = \int_{0}^{SPD} qASO_{ij}^{n}(t)dt$$

and the bid acceptance volume resulting from ancillary or other service delivery falling within bid offer range n, of BM Unit i, time t from the start of settlement period j thus:

$$QASB_{ij}^{n} = \int_{0}^{SPD} qASB_{ij}^{n}(t)dt$$

Amendment to the BSC, Section V 'Reporting'

A new entry in Section V 'Reporting', ANNEX V-1: 'Tables of Reports', is required:

Table 1 - BMRS

DATA AND RELEVANT SETTLEMENT PERIODS	FREQUENCY	FORMAT	DEFAULT
…			
BM Unit Ancillary and	**Daily (published for all**	**Tabular**	**None**

Other Service Bid Acceptances ($QASB^{n}_{ij}$)	**days on operational days only)**		
BM Unit Ancillary and Other Service Offer Acceptances ($QASO^{n}_{ij}$)	**Daily (published for all days on operational days only)**	**Tabular**	**None**

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Amendments to the BSC, Section X ANNEX X-2 'Technical Glossary'

Therefore Section X ANNEX X-2 Table X-2 'Technical Glossary' requires amendment to include the requisite new and amended definitions, as follows:

Defined Term	Acronym	Units	Definition / Explanatory Text
Account Period ~~Bid – Offer~~ Balancing Services Volume	$QABO_{aj}$	MWh	The quantity determined in accordance with section T 4.6.2 *The Account Period ~~Bid – Offer~~ Balancing Services Volume is the sum of the quantity of Balancing Services energy, consisting of accepted Bids and Offers, and energy associated with Ancillary and Other services from all BM Units for which Energy Account a is the Lead Energy Account in Settlement Period j.*
Applicable Balancing Services			**Those balancing services listed in Section T ANNEX T-2.**
Applicable Balancing Services Provider			**The provider of the Applicable Balancing Service.**
BM Unit Ancillary and Other Service Bid Acceptance	**$QASB^{n}_{ij}$**	**MWh**	**The amount determined in accordance with Section T ANNEX t-2, 3.** ***The BM Unit Ancillary and Other Service Bid Acceptance is the additional quantity of Bid n, accepted by the Transmission Company in respect of BM Unit i, in Settlement Period j, and is the volume determined to have been delivered as a consequence of the provision of Applicable Balancing Services.***
BM Unit Ancillary and Other Service Offer Acceptance	**$QASO^{n}_{ij}$**	**MWh**	**The amount determined in accordance with Section T ANNEX t-2, 3.** ***The BM Unit Ancillary and Other Service Offer Acceptance is the additional quantity of Offer n, accepted by the Transmission Company in respect of BM Unit i, in Settlement Period j, and is the volume determined to have been delivered as a consequence of the provision of Applicable Balancing Services.***

Defined Term	Acronym	Units	Definition / Explanatory Text
BM Unit Ancillary and Other Service Energy Volume	**QAS_{ij}**	**MWh**	**The amount determined in accordance with Section Q 6.3A.1.** ***The volume of energy expected to be delivered by BM Unit i in Settlement Period j to meet Ancillary or Other Contracts with the Transmission Company.***
Expected Response Power	**FR^{m}_{ms}**	**MW**	**The amount determined in accordance with Section T ANNEX T-2.** ***Is the Expected Response Power for site s in response mode m.***
Expected Service Energy	**ESE_{sj}**	**MWh**	**The amount determined in accordance with Section T ANNEX T-2** ***Is the Expected Service Energy from service s in Settlement Period j.***
Instructed Reserve Delivery	**$I_{sj}(t)$**	**MW**	***Is the Instructed (excluding Bid – Offer Acceptances) Reserve delivery, from site s, time t from the start of the Settlement Period j, taking account of contracted run-up and run down profiles.***
Period BM Unit ~~Bid – Offer~~ Balancing Services Volume	QBO_{ij}	MWh	The quantity determined in accordance with section T 4.3.2 *The Period BM Unit ~~Bid – Offer~~ Balancing Services Volume is the net quantity of Balancing Services energy, consisting of accepted Bids and Offers, and energy associated with Ancillary and Other services from BM Unit i in Settlement Period j.*
Service Flag	**SF_{sj}**		**Is the Service Flag for site s in Settlement Periodj.** ***The Service Flag takes the value of 1 if the Lead Party for the BM Unit which incorporates service s has indicated that they wish the energy volume for the BM Unit to be adjusted for that site Ancillary and Other Service Volume, other wise it has the value of 0.***
Service Site Pair	**s**		**The Service Site Pair s, providing Ancillary and Other Services for the Transmission Company.**
Total Period Ancillary and Other Service Energy Volume	**$TQAS_{j}$**	**MWh**	**The amount determined in accordance with Section T 4.6.5.** ***The Total Period Ancillary and Other Service Energy Volume is the net quantity of energy determined to be delivered by all BM Units in Settlement Period j to meet Ancillary or Other***

Defined Term	Acronym	Units	Definition / Explanatory Text
			Contracts with the Transmission Company.

Section X ANNEX X-2 Table X-3 'Glossary of Acronyms Applying Except in Relation to Section S' requires amendment to include the requisite new and amended definitions, as follows:

Acronym	Units	Corresponding Defined Term or Expression
FR^{m}_{ms}	**MW**	**Expected Response Power**
ESE_{sj}	**MWh**	**Expected Service Energy**
$I_{sj}(t)$	**MW**	**Instructed Reserve Delivery**
$QABO_{aj}$	MWh	Account Period ~~Bid – Offer~~ Balancing Services Volume
QAS_{ij}	**MWh**	**BM Unit Ancillary and Other Service Energy Volume**
$QASO^{n}_{ij}$	**MWh**	**BM Unit Ancillary and Other Service Offer Acceptance**
$QASB^{n}_{ij}$	**MWh**	**BM Unit Ancillary and Other Service Bid Acceptance**
QBO_{ij}	MWh	Period BM Unit ~~Bid – Offer~~ Balancing Services Volume
SF_{sj}		**Service Flag**
$TQAS_{j}$	**MWh**	**Total Period Ancillary and Other Service Energy Volume**

Amendments to the BSC, Section Q 'Balancing Mechanism Activities'

The BSC, Section Q 'Balancing Mechanism Activities', paragraph 5.1 Bid – Offer Acceptances requires an additional clause to specifically define the Bid – Offer Acceptances made under this Modification, as the current definition does not include Acceptances made after the event for the purposes of accounting for energy volumes associated with the provision of Applicable Balancing Services.

Therefore the following amendments to Section Q are required to support the implementation of the Alternative Modification:

5.1 Bid - Offer Acceptances

5.1.2 The Transmission Company may accept Bid(s) and / or Offer(s) by issuing a communication under the Grid Code of a type which, for the purposes of the Code, is classed as an Acceptance pursuant to paragraph 5.1.3 **(a) and (b), and by issuing a BM Unit Ancillary and Other Service Bid - Offer Acceptance pursuant to paragraph 5.1.3 (c)**.

5.1.3 …

(c) An Acceptance Volume (BM Unit Ancillary and Other Service Bid Acceptance / BM Unit Ancillary and Other Service Offer Acceptance) issued in respect of a BM Unit in accordance with an Ancillary or Other Service Contract with the Transmission Company and which is calculated in accordance with Section T ANNEX T-2,

Where 5.1.3 is subsequently referred to in Section Q, this should be amended to read **'5.1.3 (a) and (b)'**, namely in sections 5.1.6, 5.1.7, 5.1.11 and 5.1.13.

The following amendments are also required to Section Q:

5.3 Acceptance Data

5.3.1 Acceptance Data for a BM Unit**, for Acceptances made pursuant to Section Q 5.1.3 (a) and (b),** shall comprise the following data items: …

5.3.1A Acceptance Data for a BM Unit, for Acceptances made pursuant to Section Q 5.1.3 (c) shall comprise a Bid - Offer Acceptance volume for each (relevant) value of 'n'.

Amendment to the BSC, Section Q 'Balancing Mechanism Activities' is required to support the provision of the 'BM Unit Ancillary and Other Service Energy Volume' to the Settlement Administration Agent from the Transmission Company, as follows.

A new clause in Section Q 6, arbitrarily named Q 6.3A here, is required:

6.3A Ancillary and Other Service Energy Volumes

6.3A.1 In relation to each Settlement Period and each BM Unit, not later than the end of the second business day following the Settlement Day, the Transmission Company shall determine (on a basis approved in writing by the Authority for the purposes of this paragraph 6.3A.1), and notify the BMRA and SAA the volume of Ancillary Services and Other Service Energy expected in relationship to Transmission Company Contracts. The variable 'BM Unit Ancillary and Other Service Energy Volume' (QAS_{ij}) will take the notified value. For the avoidance of doubt, in the event that no approval exists from the Authority, this term shall be 0 MWh.

6.3A.2 The Transmission Company may resubmit to the SAA the 'BM Unit Ancillary and Other Service Energy Volume' in respect of any BM Unit and Settlement Period within a Settlement Day at any time prior to the Final Reconciliation Settlement Run for such Settlement Day and the SAA shall correct such data in the Settlement Run following such resubmission.

Amendment to the BSC, Section Q 'Balancing Mechanism Activities' is also required to support the provision of the 'BM Unit Ancillary and Other Service Bid – Offer Acceptances' to the Settlement Administration Agent from the Transmission Company, as follows.

A new clause in Section Q 6, arbitrarily named Q 6.3B here, is required:

6.3B BM Unit Ancillary and Other Service Bid - Offer Acceptances

6.3B.1 In relation to each Settlement Period and each BM Unit, not later than the end of the second business day following the Settlement Day, the Transmission Company shall determine (in accordance with the Code, Section T ANNEX T-2), and notify the BMRA and SAA the additional Bid - Offer Acceptances made by the Transmission Company (pursuant to Section Q 5.1.3 (c)) with regards to the volume of energy related to the provision of Ancillary Services and Other Services expected in relationship to Transmission Company Contracts, by provision of the volumes

associated with 'BM Unit Ancillary and Other Service Bid Acceptances' ($QASB^n_{ij}$) and 'BM Unit Ancillary and Other Service Offer Acceptances' ($QASO^n_{ij}$).

6.3B.2 The Transmission Company may resubmit to the SAA the volumes associated with the 'BM Unit Ancillary and Other Service Bid Acceptance' and the 'BM Unit Ancillary and Other Service Offer Acceptance' in respect of any BM Unit and Settlement Period within a Settlement Day at any time prior to the Final Reconciliation Settlement Run for such Settlement Day and the SAA shall correct such data in the Settlement Run following such resubmission.

Amendments to the BSC, Section T 'Settlement and Trading Charges'

In order to support the intent of the Alternative Modification, settlement calculations, as defined in Section T of the BSC, will have to be amended as follows, for all Settlement Runs:

The determination of the Period BM Unit Total Accepted Offer Volume (QAO^n_{ij}) and Period BM Unit Total Accepted Bid – Volume (QAB^n_{ij}) (Section T 3.9) is required to be amended as follows:

3.9.1 In respect of each Settlement Period, for each BM Unit, the total MWh volume of the Offer accepted from all Acceptances shall be the Period BM Unit Total Accepted Offer Volume and shall be established as follows:

$$QAO^n_{ij} = \Sigma^k QAO^{kn}_{ij} \; \mathbf{+ QASO^n_{ij}}$$

Where Σ^k represents the sum over all Acceptances within the Settlement Period.

3.9.2 In respect of each Settlement Period, for each BM Unit, the total MWh volume of the Bid accepted from all Acceptances shall be the Period BM Unit Total Accepted Bid Volume and shall be established as follows:

$$QAB^n_{ij} = \Sigma^k QAB^{kn}_{ij} \; \mathbf{+ QASB^n_{ij}}$$

Where Σ^k represents the sum over all Acceptances within the Settlement Period.

The determination of the Period BM Unit Balancing Services Volume (the name has been amended from the 'Period BM Unit Bid – Offer Volume', see section 2.2.1) (Section T 4.3.2) is required to be amended as follows:

4.3.2 In respect of each Settlement Period, for each BM Unit, the Period BM Unit ~~Bid – Offer~~ Balancing Services Volume, will be determined as follows:

$$QBO_{ij} = \Sigma^n (QAO^n_{ij} + QAB^n_{ij}) \; \mathbf{+ QAS_{ij}}$$

Where Σ^n represents the sum over all Bid – Offer Pair numbers for the BM Unit.

The calculation at Section T, 4.6.2 requires amendment to the name of the variable being calculated as a consequence of the amendment to the definition. It should be noted that no amendment to the variables or the calculation is required, as follows:

4.6.2 In respect of each Settlement Period, for each Energy Account, the Account Period ~~Bid – Offer~~ Balancing Services Volume will be determined as follows:

No change to the calculation.

For consistency with the calculation and reporting of other variables under the BSC, one further calculation is required in order to determine the Total Period Ancillary and Other Service Energy Volume transferred to the Transmission Company.

This will be added into the end of Section T 4.6, as follows:

4.6.5 In respect of each Settlement Period, the Total Period Ancillary and Other Service Energy Volume will be determined as follows:

$$TOAS_i = \sum_i QAS_{ij}$$

Where S_i represents the sum over all BM Units.

The Transmission Company is required to determine the energy volume associated with the provision of Applicable Balancing Services at BM Unit level, in the form of an energy volume against a BM Unit and Settlement Period and also in the form of additional Bid – Offer Acceptances against a BM Unit. Therefore a methodology for such determination is required to be included in the BSC. To this end, a new ANNEX to Section T is required, as follows:

This amendment would not be required if the approach of placing the definition of the balancing services and the associated methodology in a framework document to the BSC is followed.

ANNEX T-2: Methodology to be utilised by the Transmission Company to determine BM Unit Ancillary and Other Service Volumes and BM Unit Ancillary and Other Service Bid – Offer Acceptances

1. Applicable Balancing Services

1.1 The methodology defined in this ANNEX T-2, pertains to the following Applicable Balancing Services:

(a) Mandatory Frequency Response;

(b) Commercial Response;

(c) Fast Reserve; and

(d) Standing Reserve.

Where the Lead Party has notified the Transmission Company to set the Service Flag to 1 for the BM Unit incorporating the site that provides the Applicable Balancing Service.

The following methodology in paragraph 2 is a proposed view of the potential calculation for the purposes of this Requirements Specification only. This methodology is based upon the current methodology proposed for inclusion in the Connection Use of System Code, and may be amended. Therefore this section of the BSC may reference to the CUSC, or some other arrangement may be required in order to maintain the consistency and correctness of this methodology.

2. Determination of BM Unit Ancillary and Other Service Energy Volumes

2.1 The Expected Response Power for site s when in response mode m is determined as follows:

(i) For response modes delivered by free governor action, this will be derived from the relevant table set out in the relevant services agreement (as such table in interpreted in accordance with Paragraph 4.1.3.11 of the Connection and Use of System Code) by reference to the level of De-Load of the site concerned at the end of minute m and the mean Frequency Deviation over that minute. For this purpose:

(a) for a positive Frequency Deviation in minute m, the expected change in active power output of site s shall be derived from the high frequency response capability table set out in the relevant services agreement; and

(b) for a negative Frequency Deviation in minute m, the expected change in active power output of site s shall be (where the Applicable Balancing Services Provider is instructed to provide Primary Response together with Secondary Response) the mean average value of the Primary Response capability and Secondary Response capability, or (where the Applicable Balancing Services Provider is instructed to provide Primary Response without Secondary Response) Primary Response capability, in each case derived from the low frequency response table set out in the relevant services agreement.

(ii) For response delivered by low or high frequency relay initiation shall be calculated with reference to the actual system frequency and the contracted initiation:

(a) For the period immediately following an initiation in accordance with the contract (or where the service would have been obliged to initiate in accordance with the contract) and prior to a cease

or deemed cease instruction, the expected change in active power as derived from the contracted secondary or high frequency response (as the case may be);

(b) For the period immediately following a cease, or deemed cease, instruction the agreed restoration profile; and

(c) For all other periods, 0 MW.

2.2 Where the Applicable Balancing Service is Response, then the Expected Service Energy for a BM Unit and Settlement Period is determined as follows:

$$ESE_{sj} = \sum_{m} \sum_{m \in j} \left(\frac{FR_{ms}^{m}}{60} \right)$$

where $\sum_{m \in j}$ is the sum over all minutes in the Settlement Period and $\sum_{m}$ is the sum over all response modes, m.

2.3 Where the Applicable Balancing Service is Reserve, then the Expected Service Energy for a BM Unit and Settlement Period is determined as follows:

$$ESE_{sj} = \int_{0}^{SPD} I_{sj}(t)dt$$

2.4 Where the Applicable Balancing Service is not listed in this Section T ANNEX T-2, 1.1, then the Expected Service Energy for a BM Unit and Settlement Period is 0 MWh.

2.5 The BM Unit Ancillary and Other Service Volume for a BM Unit and Settlement Period (QAS_{ij}) is determined as follows:

$QAS_{ij} = \sum_{s \in i} (SF_{sj} \times ESE_{sj})$

where $\sum_{s \in i}$ is the sum across all sites, s, forming all, or part of, BM Unit i.

3. Determination of BM Unit Ancillary and Other Service Bid – Offer Acceptances

3.1 The transmission company will determine the expected variation of power output, $ESE_{sj}(t)$ from the delivery of ancillary service-site pair, s, as follows time t from the start of settlement period j:

3.1.1 In the event that service-site pair s is a response service (either mandatory or commercial) delivered by free governor action:

ESE_{st}(t) will be the expected change in power output as a result of variation in system frequency. This will be derived from the relevant table set out in the relevant services agreement (as such table is interpreted in accordance with Paragraph 4.1.3.11of CUSC) by reference to the level of De-Load of the site concerned at the end of minute and the mean Frequency Deviation over the minute, m, where minute m contains spot time t, and starts an integer multiple of 60 seconds from the start of the settlement period j.

for this purpose:

(a) For a positive Frequency Deviation at time t, the expected change in active power output of site s shall be derived from the high frequency response capability table set out in the relevant services agreement; and

(b) For a negative Frequency Deviation at time t, the expected change in active power output of site s shall be derived from

(i) the primary frequency response capability set out in the relevant services agreement when the unit is instructed to provide primary response without secondary response;
(ii) the mean of the primary and secondary response capability set out in the relevant services agreement when the unit is instructed to provide primary response with secondary response.

3.1.2 In the event that service-site pair s is a response service delivered on initiation by a low or high frequency relay:

ESE_{si}(t) shall be calculated in with reference to the actual system frequency and the contracted initiation.

(a) For the period immediately following an initiation in accordance with the contract (or where the service would have been obliged to initiate in accordance with the contract) and prior to a cease or deemed cease instruction, the expected change in active power as derived from the contracted secondary or high frequency response (as the case may be).

(b) For the period immediately following a cease (or deemed cease) instruction the agreed restoration profile.

(c) For all other periods, 0 MW.

3.1.3 In the event that service-site pair s is a reserve service:

ESE_{si}(t) shall be the instructed (excluding Bid Offer Acceptances) Reserve delivery, from service-site pair *s*, time *t*

from the start of settlement period *j*, taking account of contracted run-up and run down profiles.

3.1.4 In the event that service-site pair s is any other service:

$$ESE_{sj}(t) = 0$$

3.2 The Transmission Company will determine the expected change in the production or consumption power of BM Unit i resulting from the delivery of Ancillary or Other Services using the following formula

$$qAS_{ij}(t) = \sum_{s \in i} \left(SF_{sj} \times ESE_{sj}(t) \right)$$

where:

SF_{sj} **Is the Service Flag for service-site pair *s* in settlement period *j*.**

Takes the value 1, if the Lead Party for the BM Unit that incorporates service *s* has indicated (in accordance with the notification procedure) that they wish the BM volume to be adjusted for that site Ancillary and Other Service volume.

Otherwise 0.

$\sum_{s \in i}$ **Is the summation across all service-site pairs, s, that form part of BMU i.**

3.3 The Transmission Company will determine the instantaneous Offer Acceptance thus:

$$qASO_{ij}(t) = \max\left(qAS_{ij}(t), 0 \right)$$

and the instantaneous Bid Acceptance thus:

$$qASB_{ij}(t) = \min\left(qAS_{ij}(t), 0 \right)$$

3.4 The Transmission Company will determine the expected variation of output of BM Unit i at time t from the start of settlement period j as a result of bid offer acceptances thus:

$$qD_{ij}(t) = \sum_k \sum_n \left(qAB_{ij}^{kn}(t) + qAO_{ij}^{kn}(t) \right)$$

where $\sum_k$ means the summation across all bid offer acceptances and $\sum_n$ means the summation across all bid offer pairs.

3.5 The Transmission Company will determine the change in production or consumption resulting from ancillary or other service delivery as an offer

acceptance in range n, of BM Unit i, time t from the start of settlement period j thus:

For n ? 1

$$qASO_{ij}^{n}(t) = \max\left(\min\left(qD_{ij}(t) + qASO_{ij}(t), \sum_{n'=0}^{n} qBO_{ij}^{n'}(t) \right), \sum_{n'=0}^{n-1} qBO_{ij}^{n'}(t) \right) - \max\left(\min\left(qD_{ij}(t), \sum_{n'=0}^{n} qBO_{ij}^{n'}(t) \right), \sum_{n'=0}^{n-1} qBO_{ij}^{n'}(t) \right)$$

for n ? -1

$$qASO_{ij}^{n}(t) = \min\left(\max\left(qD_{ij}(t) + qASO_{ij}(t), \sum_{n'=n}^{0} qBO_{ij}^{n'}(t) \right), \sum_{n'=n+1}^{0} qBO_{ij}^{n'}(t) \right) - \min\left(\max\left(qD_{ij}(t), \sum_{n'=n}^{0} qBO_{ij}^{n'}(t) \right), \sum_{n'=n+1}^{0} qBO_{ij}^{n'}(t) \right)$$

and as a bid acceptance, thus:

For n ? 1

$$qASB_{ij}^{n}(t) = \max\left(\min\left(qD_{ij}(t) + qASB_{ij}(t), \sum_{n'=0}^{n} qBO_{ij}^{n'}(t) \right), \sum_{n'=0}^{n-1} qBO_{ij}^{n'}(t) \right) - \max\left(\min\left(qD_{ij}(t), \sum_{n'=0}^{n} qBO_{ij}^{n'}(t) \right), \sum_{n'=0}^{n-1} qBO_{ij}^{n'}(t) \right)$$

for n ? -1

$$qASB_{ij}^{n}(t) = \min\left(\max\left(qD_{ij}(t) + qASB_{ij}(t), \sum_{n'=n}^{0} qBO_{ij}^{n'}(t) \right), \sum_{n'=n+1}^{0} qBO_{ij}^{n'}(t) \right) - \min\left(\max\left(qD_{ij}(t), \sum_{n'=n}^{0} qBO_{ij}^{n'}(t) \right), \sum_{n'=n+1}^{0} qBO_{ij}^{n'}(t) \right)$$

where it is assumed that

iv. $qBO^{0}_{ij}(t) = 0$;
v. $qBO^{5}_{ij}(t)$ is arbitrarily large and positive; and
vi. $qBO^{-5}_{ij}(t)$ is assumed to be arbitrarily large and negative such that the bid offer range is extended to accommodate any value of $qAS_{ij}(t)$.

3.6 The Transmission Company will determine the offer acceptance volume resulting from ancillary or other service delivery falling within bid offer range n, of BM Unit i, time t from the start of settlement period j thus:

$$QASO_{ij}^{n} = \int_{0}^{SPD} qASO_{ij}^{n}(t)dt$$

and the bid acceptance volume resulting from ancillary or other service delivery falling within bid offer range n, of BM Unit i, time t from the start of settlement period j thus:

$$QASB_{ij}^{n} = \int_{0}^{SPD} qASB_{ij}^{n}(t)dt$$

Amendment to the BSC, Section V 'Reporting'

A new entry in Section V 'Reporting', ANNEX V-1: 'Tables of Reports', is required:

Table 1 - BMRS

DATA AND RELEVANT SETTLEMENT PERIODS	FREQUENCY	FORMAT	DEFAULT
…			
BM Unit Ancillary and Other Service Bid Acceptances ($QASB^{n}_{ij}$)	**Daily (published for all days on operational days only)**	**Tabular**	**None**
BM Unit Ancillary and Other Service Offer Acceptances ($QASO^{n}_{ij}$)	**Daily (published for all days on operational days only)**	**Tabular**	**None**
BM Unit Ancillary and Other Service Energy Volumes (QAS_{ij})	**Daily (published for all days on operational days only)**	**Tabular**	**None**

ANNEX 2 – TRANSMISSION COMPANY PAPERS

This ANNEX contains the papers pertinent to Modification proposals P34 and P36, and their Alternatives, provided by the Transmission Company to assist the deliberations of the PIMG.

a Current Treatment of Imbalances associated with Ancillary and Other Services

Paper by National Grid

Revised 29 October 2001

Introduction

The purpose of this paper is to explain how the impact of deviation from contracted energy position and Physical Notification resulting from the variation of production or consumption in accordance with Ancillary and Other Service contracts is handled under the following contract mechanisms:

i. CUSC (relating to mandatory provision of frequency response);

ii. CUSC if Amendment Proposal CAP001 (also relating to mandatory provision of frequency response) were adopted; and

iii. Bilateral Contracts between the Transmission Company and Service Providers for other services (including commercial response).

The effects of the deviation are as follows:

i. The parties exposure to Energy Imbalance Charges (System Buy and Sell Prices) is varied;

ii. An information imbalance charge is incurred (currently set to £0 / MWh); and

iii. The party may be subject to a non-delivery (of bids or offers) charge.

This paper:

i. describes how each of the charges may be incurred;

ii. possible mechanisms for refunding the charge; and

iii. summarises the mechanisms used in each contract form.

The paper does not consider the effects of ancillary and other service delivery on BSUoS charges and the Residual Cashflow Reallocation Cashflow, nor does it consider payment for the associated energy.

Energy Imbalance

An Energy Imbalance charge is made against each energy account (not BMU) for the difference between the credited energy volume (not FPN) and the contracted energy volume. If the account is short (more energy was contracted that generated or more energy was consumed that contracted) the shortfall is bought from the system at System Buy Price (SBP). If the account is long (more energy was generated than contracted or more energy was

contracted than consumed) the surplus is sold to the system at System Sell Price (SSP) (which may be negative)[12].

Contracts (including CUSC) can seek to address this on a BMU specific basis by refunding SBP if the volume of ancillary and other services energy is negative, and charging the provider SSP if the volume of energy is positive. The contract will then make a payment for the energy actually delivered at an agreed rate.

The following table illustrates the impact of 25 MWh of reduced production in accordance with an ancillary services agreement (and assumes that the actual and expected energy volume are the same), delivered by a service provider against three scenarios:

i. A balanced contract position;

ii. a short contract position; and

iii. a long contract position.

In each case it is assumed that imbalance prices are as follows:

SBP: £40 /MWh

SSP: £10 /MWh

	Balanced		Short		Long	
	No AS	With AS	No AS	With AS	No AS	With AS
Contract Position /MWh	200	200	200	200	200	200
Planned Production /MWh	200	200	180	180	220	220
AS requirement /MWh	0	-25	0	-25	0	-25
Actual Production /MWh	200	175	180	155	220	195
Imbalance /MWh	0	-25	-20	-45	20	-5
Imbalance payment /£	0	-1000	-800	-1800	200	-200
Ancillary service imbalance refund /£	-	1000	-	1000	0	1000
Total /£	0	0	-800	-800	200	800
Impact of Ancillary Service refund	-	No impact		No impact		£ 600 surplus

[12] Refer to BSC T4.7.1

From this table it can be inferred that the current mechanism correctly refunds imbalance payments in the following scenarios:

Against a balanced contracted position; and

where the ancillary or other service energy delivery makes the imbalance greater.

However, where the ancillary or other service energy delivery reduces imbalance there is the possibility of overpaying the service provider (this is paid for through increased BSUoS charges and in not offset by the residual cashflow reallocation cashflow).

This limitation can only be overcome if the adjustment is made on an energy account specific basis.

Information Imbalance Charge

If the metered output of a BMU differs from its expected output (FPN plus bid offer acceptances) then the (modulus) error is charged at the Information Imbalance Price (IIP_j)[13]. IIP is currently set to £0/MWh, and hence no charges are made.

No contracts currently refund the Information Imbalance Charge, although certain commercial contracts have reopeners if IIP is varied.

Non Delivery Charge

If a BM unit has a bid or offer accepted but fails to vary its output in accordance with the bid offer acceptance, it is potentially subject to an energy imbalance charge. However, if the imbalance charge is less expensive than the accepted bid or offer price, then the provider can potentially make a profit from non-delivery. The non delivery rule[14] requires a party that does not deliver a bid offer acceptance to refund the difference between the acceptance price the relevant imbalance price.

Where a provider has had a bid or offer accepted, but delivery is offset by energy delivery under an ancillary or other service contract they are potentially required to refund payment for the bid offer acceptance, despite having met all their contractual obligations.

Currently no ancillary or other service contracts compensate for the effects of the non-delivery charge. However, if adopted the CUSC Amendment Proposal CAP001 would introduce a refund of the non-delivery charge for mandatory frequency response.

Summary of Current Contract Position

[13] BSC T 4.3 refers
[14] BSC T 4.8 refers

<table>
<tr><th></th><th>Energy Imbalance</th><th>Information Imbalance</th><th>Non delivery</th></tr>
<tr><td>CUSC[15]</td><td rowspan="2">Refund of energy imbalance volume at SBP or SSP</td><td rowspan="3">No provision[16]</td><td>No provision</td></tr>
<tr><td>CUSC following adoption of CAP001[17]</td><td>Full refund by the Transmission Company</td></tr>
<tr><td>Commercial Service Contracts[18]</td><td>No provision[19]</td><td>No provision</td></tr>
</table>

Where there is no provision to refund an imbalance charge, the service provider is expected to include the imbalance cost risk in the service price.

Payment for Energy

Energy delivered under these contracts (where a bid offer acceptance is not given) is paid at a rate specified in the contract. Prices for energy may be specified using a number of methods including the following:

A fixed price agreed in the contract;

A price based on a fuel price index;

A function of Imbalance prices;

A function of bid and/or offer prices;

Reference to an external electricity market.

Summary

Currently energy imbalance resulting from the delivery of ancillary and other is refunded by the Transmission Company for mandatory response (via CUSC) and for a limited number of commercial contracts. The method employed can result, in certain circumstances, in the Transmission Company making over payments which are funded through increased BSUoS charges and not offset by an increase in residual cashflow reallocation cashflow.

No contracts currently refund information imbalance or non-delivery charges. However CUSC Amendment Proposal CAP001 would introduce a refund of the non-delivery charge for mandatory response and certain commercial contracts have reopeners should the information imbalance price become non-zero.

[15] CUSC relates to mandatory response delivery only.
[16] Certain commercial contracts have reopeners should the information imbalance price (IIP) be varied.
[17] CAP001 also revises the calculation of volume expected from the delivery of mandatory response.
[18] Relates to all services other than mandatory response.
[19] Certain commercial contracts have some form of imbalance provision.

b Differences between the effects of P34 and P36

Paper by National Grid

The proposed algebra for P34 and P36 is very similar. Both P34 and P36 modify the bid offer acceptance volume in accordance with the expected volume of energy delivered under an ancillary or other service contract. The difference between the two is P34 adjusts the accepted bid offer volume after payments have been made for bids and offers, whilst P36 makes the adjustment prior to payment. Hence the BSC modified by either P34 or P36 would both take account of ancillary and other service energy volumes when calculating:

- Energy Imbalance Charges
- Information Imbalance Charges
- Non delivery charges

The difference between P34 and P36 is that, via the BSC, P34 makes no payment for the energy delivered, whilst P36 makes payments at bid offer prices.

Neither P34 nor P36 have any effect on the setting of SSP and SBP.

The implication of the adoption of P34 would be that all (subject to the scope of the methodology statement) ancillary and other service energy would be paid at a price specified in the contract (or CUSC), which may be the relevant BM Unit's bid or offer price or some other agreed level. P36 would result in all (subject to the scope of the methodology statement) ancillary and other service energy to be paid at bid or offer price.

P36 has the following limitations over P34:

A provider who wishes to provide an ancillary or other service can only be paid for the energy at the submitted bid-offer price. This price may not be the same as the price they wish to charge for deviations in the Balancing Mechanism.

A mandatory service provider (subject to cost reflective principles) can effectively withdraw services by submitting extreme bid offer prices. Under current arrangements this issue falls under CUSC governance.

Not all service providers wish to participate in the BM (and hence do not submit bids and offers); this would prevent the provider getting paid for the service.

Not all service providers are the lead party of the BMU they form a part of. The energy payment is made to the lead party (not the service provider) and the service provider has no direct control over the bid offer price (if any) submitted on the BMU.

Where more than one service provider forms part of a BM Unit, only a single offer price ladder may be submitted. This does not allow the individual providers to correctly charge their price ladder.

Service Volumes

The following table indicates the volumes of service held by providers who are the BM unit lead party compared to those that are not.

	Provider is BM Unit lead party	Provider in not BM unit lead party
Response	70%	30%
Standing Reserve	70%	30%

Calculation of the Volume of Ancillary and Other Service Energy

Both P34 and P36 require the expected volume of energy delivered to meet the obligations of the ancillary or other service contract, aggregated up to the BM Unit level. P34 only requires this information across the half-hour, however P36 requires this information on a continuous basis (to derive which bid offer pair to allocate the energy to).

There have been three different methods discussed for determining this volume:

1. P34 proposed that the volume of ancillary and other services was determined by the Transmission Company in accordance with a methodology statement approved by the Authority[20];
2. P36 (and P34 variants) proposed that the volume was determined by the Transmission Company in accordance with a methodology statement incorporated in the BSC (or a sub document to the BSC); and
3. That the volume was determined by the Transmission Company in accordance with a methodology statement subject to the Transmission Licence[21].

As defined under the Transmission Licence, there are three types of Balancing Services:

1. offers and bids made in the balancing mechanism
2. ancillary services; and
3. other services.

The BSC deals with the settlement of balancing mechanism actions (bid offer acceptances), and includes the calculation (by the SAA) of the acceptance volume from point acceptances as issued by the Transmission Company.

The BSC does not deal with either ancillary or other services (and not all providers are BSC parties).

Proposals (i) and (iii) (The Transmission Company determines the volume using a methodology external to the BSC) are consistent with the current industry structure. If the methodology were to be brought into the scope of the BSC, it would be appropriate to consult more widely before making such a change, these are dealt with under CUSC and bilateral contracts with National Grid and the Provider.

[20] Analogous to the treatment of interconnectors under the BSC (R7.5.3 refers)
[21] Analogous to Balance Service Adjustment Data under clause 6 of condition 7B of National Grid's Transmission Licence.

c Ancillary and Other Services Volume Methodology Statement

See attached file ANNEX 2(c). This is the initial version of the methodology statement, as utilised for the supporting text for Modifications P34 and P36, and is in accordance with that currently defined in the CUSC.

d Impact on BSUoS charges and RCRC from the delivery of Mandatory Response under current arrangements and under P34 and P36

See attached file ANNEX 2(d).

e Ancillary and Other Services Volume Methodology Statement

See attached file ANNEX 2(e). This is v0.2 of the statement, incorporating the amendments required to support CAP009.

ANNEX 3 – REPRESENTATIONS FROM PARTIES

The full responses are provided in Attachment 3 to this Assessment Report.

a Initial Written Assessment Consultation Document

The following is a copy of the questionnaire that was sent for consultation on the Initial Written Assessment of Modification Proposal P34:

P34 Consultation Questions

Background

Modification Proposal P34 'Transfer of Imbalances caused by Balancing Services to the Transmission Company Energy Account' was raised on the 14th August by NGC. The Initial Written Assessment of the Modification proposal was presented to the Panel at its meeting of the 23rd August 2001 (see Attachment 1). The Panel agreed that this Modification Proposal should be submitted to the Assessment Procedure with a completed assessment report to be presented to the Panel meeting on the 18th October 2001 (interim paper to Panel on 20th September 2001). The Panel also set the terms of reference for the Modification Group which are attached to this consultation.

Modification Proposal P34

Modification Proposal P34 seeks to modify the calculation of Credited Energy Volume (QCE_{iaj}) such that any imbalance caused by the delivery of certain Balancing (Ancillary) Services is transferred from the provider's Energy Account to the Transmission Company's Energy Account, thus removing it from exposure to Imbalance Charges – Energy Imbalance, Information Imbalance and Non Delivery charges. The Modification proposes that the definition of the Balancing Services and the associated methodology for calculating the volumes attributable to the provision of Balancing Services, be defined by the Transmission Company, approved by the Authority with governance outside of the Balancing and Settlement Code. The Modification also proposes a retrospective implementation date of 23rd August 2001.

Modification Group meeting 5th September 2001

As directed by the Panel, the Modification Group met to progress the Modification through the Assessment Procedure (see attached notes of meeting and membership). The Group discussed the Modification Proposal and noted that under P34, the definition of what services would be 'eligible' for Balancing Services Volume Adjustment would be the subject of the methodology established outside the BSC by the Transmission Company and agreed by the Authority. The Group also noted the retrospective element to the Proposal and suggested an alternative option to P34 which achieved the same effect as P34 but was not retrospective.

The Group noted that NGC believed that a some specific areas identified in the Terms of Reference were beyond the remit of the Modification Group, as they represented issues that were beyond the governance of the Balancing and Settlement Code. Nevertheless, Ofgem clarified that the Group could, as part of the assessment of the Modification, touch on and

note issues outside of the Balancing and Settlement Code for the purposes of assessing the Modification (or any Alternative Modification), but that where any Party has an issue with any aspect that does not fall under the provisions of the Balancing and Settlement Code, then that Party should raise an issue direct with Ofgem. Therefore the group noted that the Panel had specified that NGC be invited to comment on whether there were any means, outside the BSC, of addressing the problem it had identified. NGC agreed to produce a separate brief to the Panel on this issue.

The Group discussed the underlying principle to P34 of whether it was appropriate to remove Balancing Services Providers from the exposure of Imbalance charges for volumes associated with the provision of the Balancing Services. The Group agreed this principle but then discussed whether this exposure should be removed "at source" (under the BSC) or outside the BSC.

The Group then discussed whether P34 could better facilitate the achievement of the Applicable BSC Objectives. The Group felt that until the "applicable balancing services" and the calculation of the associated volume was defined, it could not assess whether P34 better meets the applicable BSC objectives.

The Group noted that one way to address this concern would be include the definition of the "applicable balancing services" (including consideration of mandatory/all balancing services) and the calculation of the associated volume under the BSC. The Group then identified a number of alternative options, which would be issued for consultation with the original proposal. However, the group did note that the methodology was to be part of NGC's licence condition as determined by Ofgem and as such would be for consideration outside the Code.

Consultation

Parties are invited to comment on the Modification Proposal P34 as proposed. (please see attached Initial Written Assessment for Modification P34) Furthermore, Parties are requested to provide comments on the underlying principle to P34 and the issues raised by the proposal and additional alternative options.

Principle:

The Provider of Balancing Services should not be exposed to the consequence of imbalance for the portion of energy attributable to the provision of that Balancing Service, subject to the volume calculation and the delivery of the service.

Issues

In consideration of Modification P34, the Modification Group identified the following issues:

Issue 1: Should the removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code.

Issue 2: If removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code, should the definition of the "applicable balancing

services" and the calculation of the associated volume fall under the Balancing and Settlement Code?

Issue 3: Should the definition of "applicable" balancing services include only mandatory or all Balancing Services (mandatory and commercial balancing services)?

Issue 4: Should the proposal be made retrospective or only prospective? In judging whether this be applied retrospectively, Parties are invited to note the comments made by Ofgem in its determination on Modification Proposal P19 (hyper link to document:

http://www.elexon.co.uk/ta/modifications/modsprops/hP019/P19_Ofgem_Dec.pdf)

Options

The Modification Group meeting identified six options. These options follow on from the issues raised and could be used to help develop an alternative modification (if deemed appropriate). It should be noted that more assessment of each of these options is required in order to determine the appropriateness of each:

Option 1 – P34, No Retrospection: This is Modification Proposal P34 with a prospective implementation date, thus removing the retrospective element of the original Proposal.

Option 2 – Mandatory Balancing Services Volumes as Bid – Offer Acceptances (BOAs): This Option proposes that the energy volumes associated with the provision of mandatory Balancing Services be calculated according to an agreed methodology, with the governance for that methodology sitting outside of the Code (i.e. as part of the NGC BSUOS arrangements). These volumes would then be notified to the NETA Central Service Agent as Bid – Offer Acceptances, valued at the associated Bid – Offer price.

Option 3 – Mandatory and Commercial Balancing Services Volumes as Bid – Offer Acceptances (BOAs): This Option proposes that the energy volumes associated with the provision of defined mandatory and commercial Balancing Services be calculated, with the governance for the definition of the Balancing services and associated methodology for such calculations sitting outside of the Code. These volumes would then be notified to the NETA Central Service Agent as Bid – Offer Acceptances, valued at the associated Bid – Offer price.

Option 4 - P34, No Retrospection, methodology under the Code: This is Modification Proposal P34 with an implementation date in the future, thus removing the retrospection, and with the methodology for the definition of the Applicable Balancing Services and associated methodology for calculation of volumes under the governance of the Balancing and Settlement Code.

Option 5 - Mandatory Balancing Services Volumes as BOAs, methodology under the Code: This Option proposes that the energy volumes associated with the provision of mandatory Balancing Services be calculated, with the methodology for the definition of the Applicable mandatory Balancing Services and associated methodology for calculation of volumes under the governance of the Balancing and Settlement Code. These volumes would then be notified to the NETA Central Service Agent as Bid – Offer Acceptances, valued at the associated Bid – Offer price.

Option 6 – Mandatory and Commercial Balancing Services Volumes as BOAs, methodology under the Code: This Option proposes that the energy volumes associated

with the provision of defined mandatory and commercial Balancing Services be calculated, with the methodology for the definition of the Applicable Balancing Services and associated methodology for calculation of volumes under the governance of the Balancing and Settlement Code. These volumes would then be notified to the NETA Central Service Agent as Bid – Offer Acceptances, valued at the associated Bid – Offer price.

Respondents should note that options 3-6 have regulatory implications.

Attachments:

1. Initial Written Assessment (including P34).
2. Notes of the P34 Modification Group meeting held on 5th September 2001.
3. Modification Group's Terms of Reference, set by Panel at meeting on 23rd August 2001.
4. Modification Group P34 membership.

Consultation Questions:

With respect to the **Modification Proposal P34 and each of the Options**, please respond to the following questions by completing the table:

Question		**YES**	**NO**
Q1	Do you Agree with the Principle that "***The Provider of Balancing Services should not be exposed to the consequence of imbalance for the portion of energy attributable to the provision of that Balancing Service, subject to the volume calculation and the delivery of the service."***		
Additional Comment:			
Q2	In consideration of Modification P34, the Modification Group identified the following issues. Do you agree with each of issues below?	**YES**	**NO**
Issue 1	Should the definition of "applicable" balancing services include only mandatory or all Balancing Services (mandatory and commercial balancing services)		
Additional Comment:			
Issue 2	Should the removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code?		
Additional Comment:			

Issue 3	If removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code, should the definition of the "applicable balancing services" and calculation of the associated volume fall under the Balancing and Settlement Code.		
Additional Comment:			
Issue 4	Should the proposal be made retrospective (as per the proposal 23rd August 2001) or only prospective?		
Additional Comment:			

Consultation Questions (continued):

Q3. With respect to the **Modification Proposal P34 and each of the Options**, please indicate your support (or otherwise) for each Option.

Please also state your view on whether the Modification and / or Options better facilitates the BSC Objectives, as defined in the Transmission Licence Condition 7A 3 (a), (b), (c), (d), as follows?

(a) The efficient discharge by the Transmission Company of the obligations imposed under the Transmission Licence;

(b) The efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System;

(c) Promoting effective competition in the generation and supply of electricity, and (so far as is consistent therewith) promoting such competition in the sale and purchase of electricity;

(d) Promoting efficiency in the implementation and administration of the balancing and settlement arrangements.

Modification / Option	***View For/Against***
Modification Proposal P34	
Option 1 – P34, No Retrospection	
Rational/ BSC Objective :	
Option 2 – Mandatory Balancing Services Volumes as Bid – Offer Acceptances (BOAs)	

Rational / BSC Objective:	
Option 3 – Mandatory and Commercial Balancing Services Volumes as Bid – Offer Acceptances (BOAs)	
Rationale / BSC Objective:	
Option 4 - P34, No Retrospection, methodology under the Code	
Rationale / BSC Objective:	
Option 5 – Mandatory Balancing Services Volumes as BOAs, methodology under the Code[22]	
Rationale / BSC Objective:	
Option 6 – Mandatory and Commercial Balancing Services Volumes as BOAs, methodology under the Code	
Rational / BSC Objective:	
Additional Comments on Options:	

Q4. With respect to the **Modification Proposal and each of the Options**, please provide an indication of a preferred "effective from" date:

Modification Proposal P34 (note that P34 proposes a retrospective effective from date):
Other Options Proposed "Effective from" Date:
Additional comment:

Any Additional Comments on the attached Initial Written Assessment:

[22] It should be noted that subsequent to the Modifications Group meeting a separate Modification Proposal has been submitted by Innogy (P36) based on Option 5. This will be presented separately to the Panel meeting on 20th September 2001.

Additional comment:

b P34 & P36 Assessment Consultation Document

The following is a copy of the questionnaire that was sent for consultation on the Assessment of Modification Proposal P34 and Modification Proposal P36:

Explanatory table for Modification options

	Modification option			
Functionality	**P34**	**P34 Alternative**	**P36**	**P36 Alternative**
Prospective only	✗	✔	✔	✔
Definition under Code (Services & Volm. Calc.)	✗	✔	✔	✔
Remove exposure	✔	✔	✔ - all defined	✔ - all
Payment for Energy (obligatory)	✗	✗	✔ - all defined	✗ - Class A ✔ - Class B

Class A

1) Fast Reserve for Lead parties that are either BSC or non BSC Parties

2) Standing Reserve for Lead parties that are not BSC Parties

3) Commercial Frequency Response

   i) Governor Action

   ii) Relay Initiated

Class B (note only available for Lead parties that are BSC Parties)

1) Mandatory Frequency Response

N.B Acceptance of Bid/Offer for Standing Reserve from BSC Parties is currently available under the existing version of the BSC.

P34/P36 Consultation Questions –

		Yes /No
Q1	**Please indicate whether you support the P34 Alternative**	
Rationale:		
Q2	**Please Indicate whether you support P36 as drafted**	
Rationale:		
Q3	**Please indicate whether you support the P36 Alternative**	
Rationale:		
Q4	**Please indicate whether you support the definition of Class A and Class B Balancing Services and if not what alternative would you propose**	
Rationale/Alternative Proposal:		
Q5	**Please indicate whether (and why) you support the position in P36 Alternative that payment for Balancing Services Energy as Bid Offer/Acceptance is obligatory for Class B. If you do not support "Obligatory", please state your reasons and identify any other approaches you would prefer.**	
Rational/View:		

ANNEX 4 - BSC AGENT IMPACT ASSESSMENTS

Detailed Level Impact Assessments (DLIAs)

The following representations provide the Detailed Level Impact Assessments received from the Central Service Agent.

NETA Change Form

To be completed by the Originator						
Change Request ID (to be provided by the Customer) P34 Logica reference: ICR 157			Service affected SAA			
Change Request Name:			Transfer of Imbalances caused by Balancing to NGC			
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		29/11/2001				
Configuration of Service(s) (baseline affected)						
Assumed Changes (over baseline)	NETA Service Definition Baseline (V1.0)					
Priority	High/Medium/Low					
Identified by: Sandy Blows			Date Submitted: 13/11/2001			
Description of Change See attached original P34 and Draft DCR for IDD and URS.						
Reason for Change (benefits) See attached original P34						
Implications of not making the change See attached original P34						
Attachments/references	P34, Draft DCR for IDD and URS.					
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		30/11/2001	

Validity period of costs/prices	Change Quotation	
	Change	30 days
Does the change involve any changes to the System or Services		Yes
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: Option 1 or Option 3 (Both these Options have the same impact on Logica and are based on Sections 2, 3 and 5 of P34 Requirements Specification)	£140,900 (ex VAT) to develop and implement the change £1,644 (ex VAT) per month to Operate & Maintain	Indicative Indicative
Option 2 or Option 4 (Both these Options have the same impact on Logica and are based on Sections 2, 3, 4 and 5 of P34 Requirements specification)	£192,800 (ex VAT) to develop and implement the change £2,249 (ex VAT) per month to Operate & Maintain	Indicative Indicative

Assumptions for the above Price:

- None of the changes in the calculation described in Section 5 of P34 Requirements Specification have any impact on the NETA Central Services and there is no impact on the format or frequency of messages sent to NETA Central Services. Given this, Option 1 and Option 3 are equivalent as are Option 2 and Option 4.
- Logica will invoice 30% on receipt of CN or authorised start of work, 50% on completion of acceptance tests, 20% on deployment or one month after completion of acceptance tests, whichever is sooner.

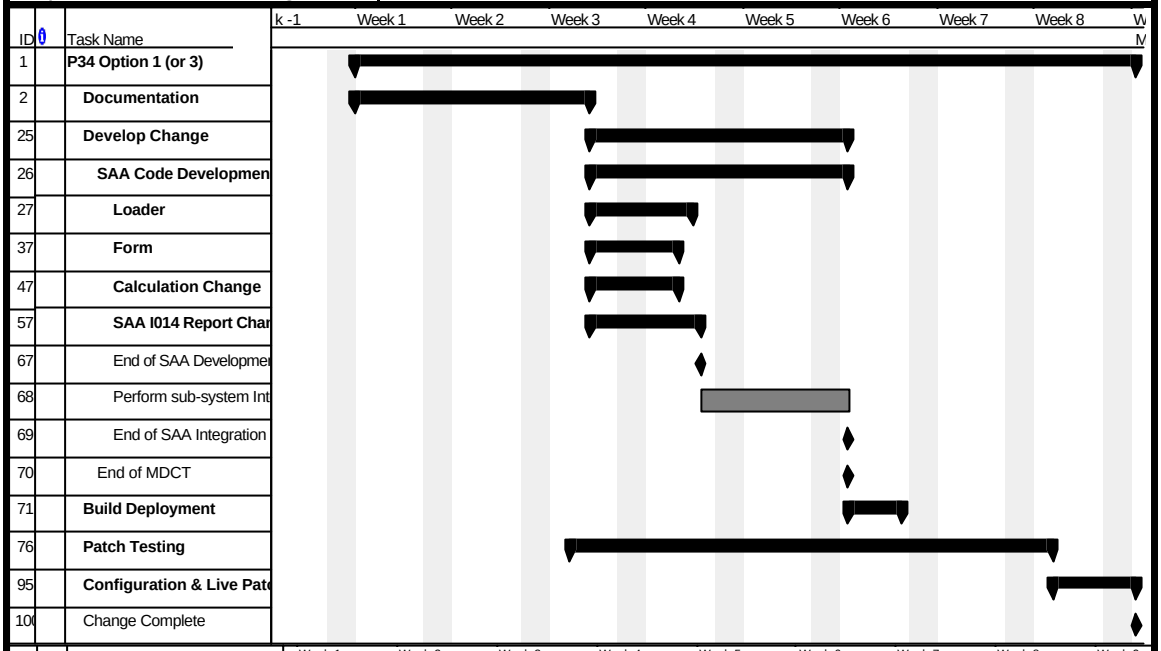
- Price does not include provision for indexation of daily fee rates with effect from 1st April 2002.
- The Service Descriptions will have been updated by ELEXON and agreed with Logica prior to commencement of work.
- For all formal documentation that is subject to review, Logica shall provide one draft issue and a maximum of 5 working days 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
- There will be no new Service Levels.
- The Maintenance charge has been estimated as a proportion of the price.
- No allowance has been made for ELEXON to witness testing.
- 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.

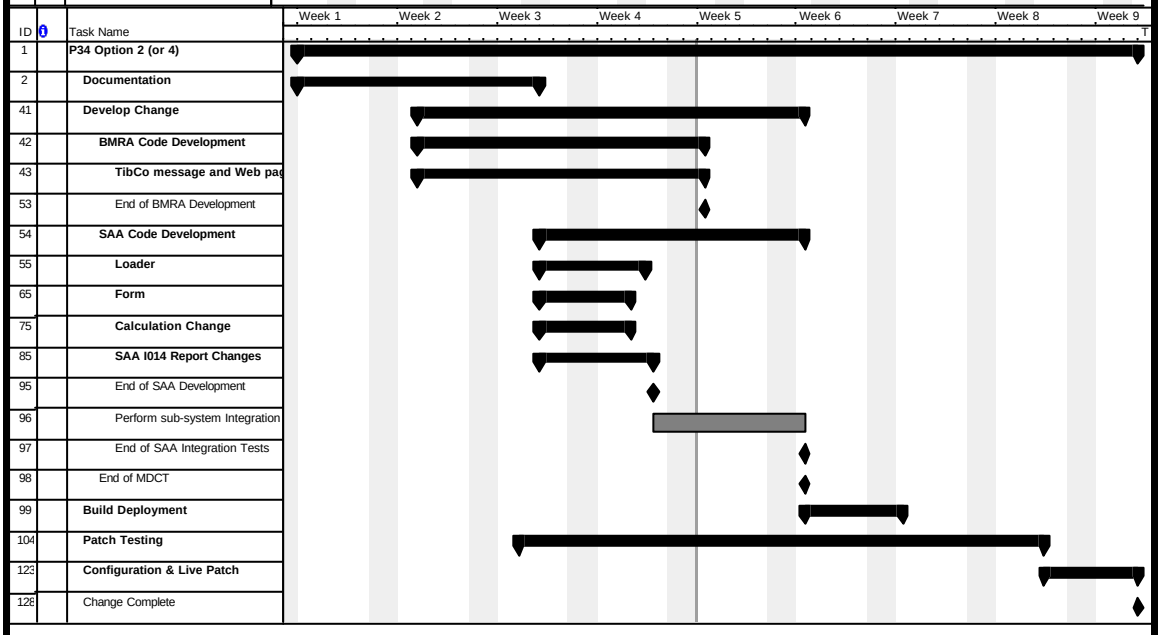
If the change is to be incorporated after Go Live, is this change proposed to be a patch or release			Patch
If patch, expected time of incorporation			
If release - what release number		Release number	
Date		Release Date	
For High Level Assessment only – Is it a Detailed Level Assessment	Yes	If No, estimate 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	The estimated time to complete the development of Option 1 or Option 3 is 8 weeks. The estimated time to complete the development of Option 2 or Option 4 is 9 weeks.

Proposed Plan for Change





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	

NETA Change Form

To be completed by the Originator						
Change Request ID (to be provided by the Customer) P36 Logica reference: ICR158			Service affected BMRA, SAA			
Change Request Name:			Generation of Bid-Offer Acceptances relating to Energy delivered as a result of providing applicable balancing services.			
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		29/11/2001				
Configuration of Service(s) (baseline affected)						
Assumed Changes (over baseline)	NETA Service Definition Baseline (V1.0)					
Priority	High/Medium/Low					
Identified by : Sandy Blows			Date Submitted: 13/11/2001			
Description of Change See attached original P36, P34 and Draft DCR for IDD and URS.						
Reason for Change (benefits) See attached original P36						
Implications of not making the change See attached original P36						
Attachments/references	P36, P34, Draft DCR for IDD and URS.					
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		30/11/2001	

Validity period of costs/prices	Change Quotation	
	Change	30 days
Does the change involve any changes to the System or Services		Yes
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		
Option 1 (This Option is based on Sections 2 and 3 of P36 Requirements Specification.)	£137,900 (ex VAT) to develop and implement the change £1,608 (ex VAT) per month to Operate & Maintain	Indicative Indicative
Option 2 (This Option is based on Sections 2, 3 and 4 of P36 Requirements Specification.)	£189,900 (ex VAT) to develop and implement the change £2,215 (ex VAT) per month to Operate & Maintain	Indicative Indicative
Option 3 (This Option is based on Sections 5 and 6 of P36 Requirements Specification and Sections 2, 3 and 5 of P34 Requirements Specification.)	£170,400 (ex VAT) to develop and implement the change £1,988 (ex VAT) per month to Operate & Maintain	Indicative Indicative
Option 4 (This Option is based on Sections 5, 6 and 7 of P36 Requirements Specification and Sections 2, 3, 4 and 5 of P34 Requirements Specification.)	£230,900 (ex VAT) to develop and implement the change £2,693 (ex VAT) per month to Operate & Maintain	Indicative Indicative

Assumptions for the above Price:

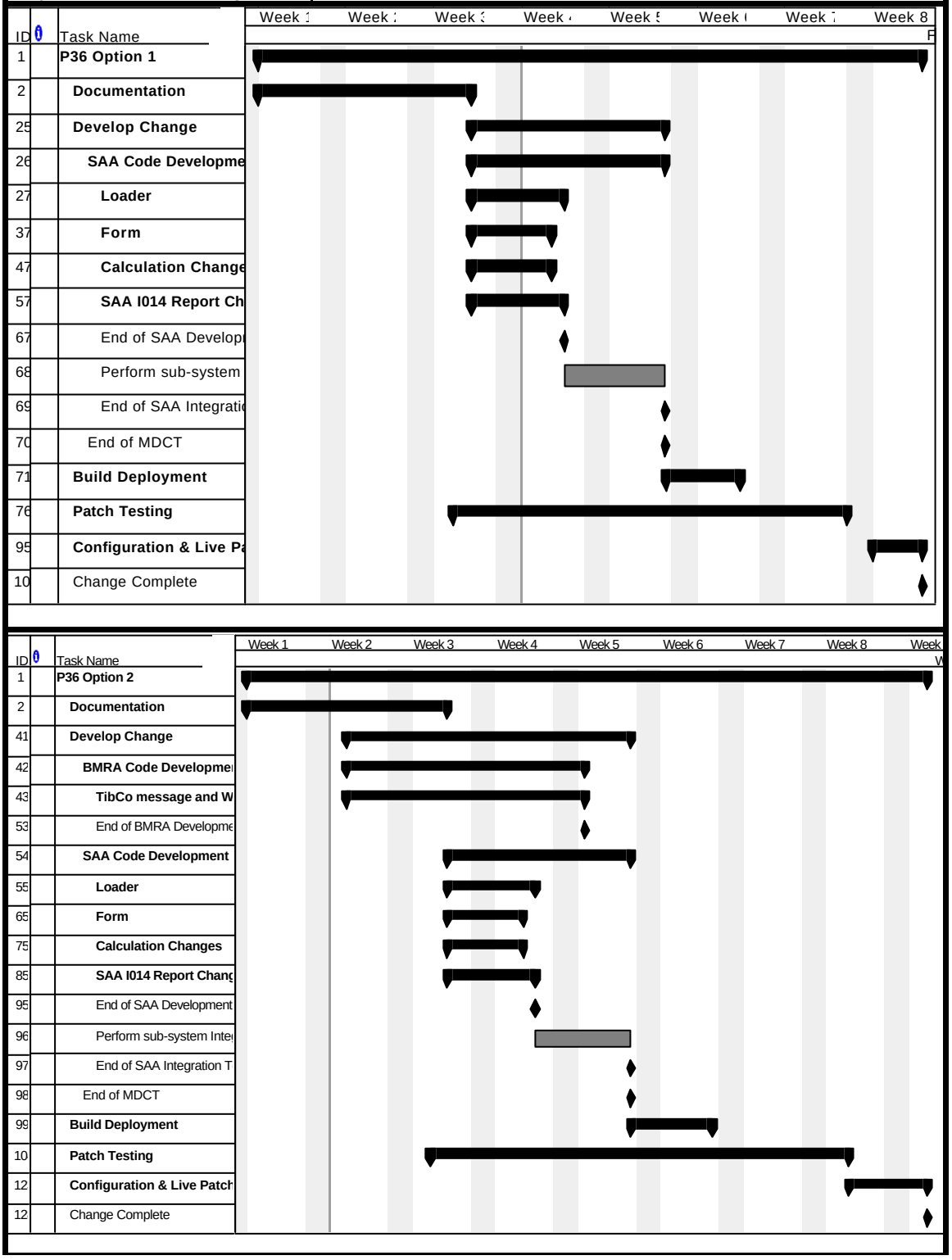
- None of the changes in the calculation described in Section 5 of P34 Requirements Specification have any impact on the NETA Central Services and there is no impact on the format or frequency of messages sent to NETA Central Services.
- Logica will invoice 30% on receipt of CN or authorised start of work, 50% on completion of acceptance tests, 20% on deployment or one month after completion of acceptance tests, whichever is sooner.
- Price does not include provision for indexation of daily fee rates with effect from 1st April 2002.
- The Service Descriptions will have been updated by ELEXON and agreed with Logica prior to commencement of work.
- For all formal documentation which is subject to review, Logica shall provide one draft issue and a maximum of 5 working days 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
- There will be no new Service Levels.
- The Maintenance charge has been estimated as a proportion of the price.
- No allowance has been made for ELEXON to witness testing.
- 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.

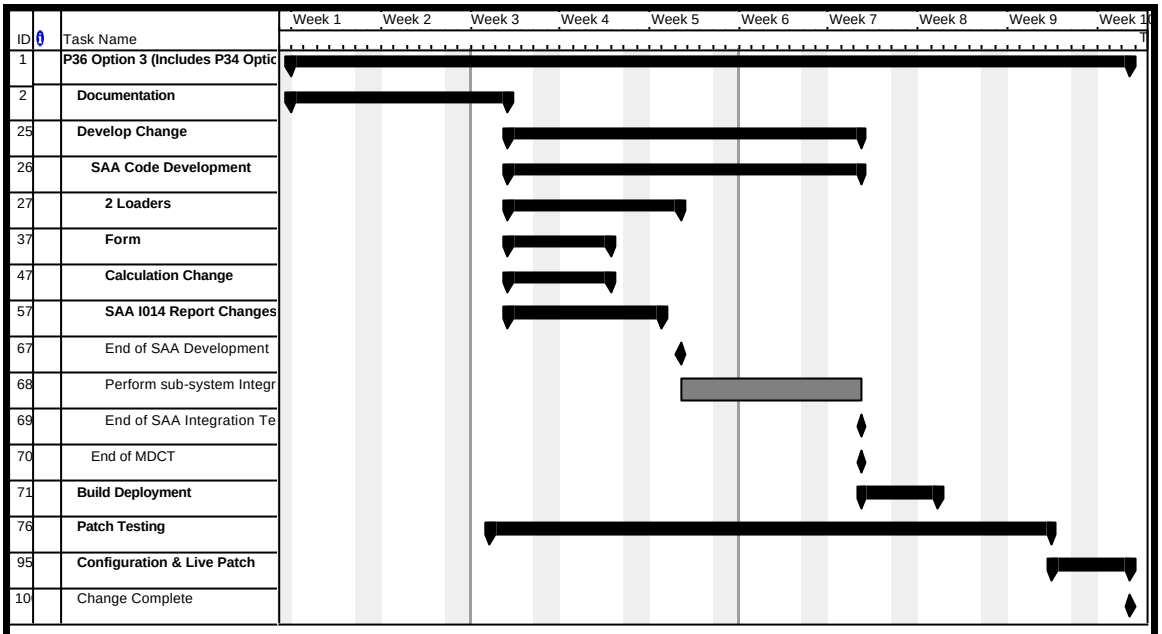
If the change is to be incorporated after Go Live, is this change proposed to be a patch or release		Patch
If patch, expected time of incorporation		
If release - what release number	Release number	
Date	Release Date	
For High Level Assessment only – is it a Detailed Level AssessmentYes	If No, estimate of time and resources required to complete	

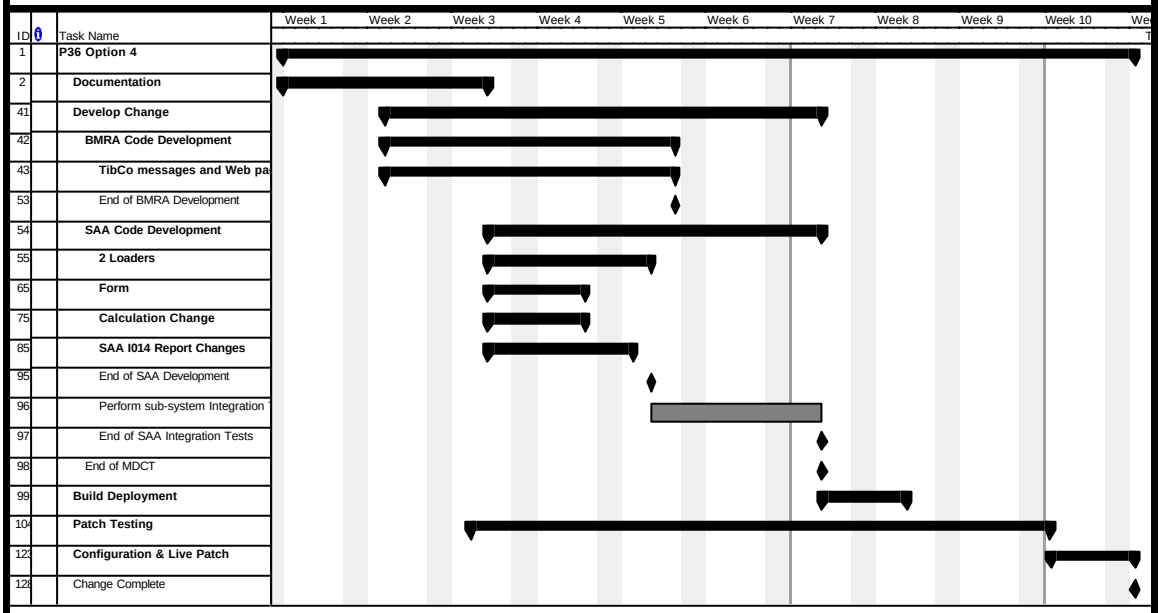
Resources Required to undertake	Detailed Level Assessment	Change Quotation
Labour		
Materials		

Consequential amendments to base line:	
Proposed method of Change/ Work statement	For option 1 the estimated time to complete the development of this change is 8 weeks. For option 2 the estimated time to complete the development of this change is 9 weeks For option 3 the estimated time to complete the development of this change is 10 weeks. For option 4 The estimated time to complete the development of this change is 10 weeks.

Proposed Plan for Change







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

ANNEX 5 – TRANSMISSION COMPANY ANALYSIS

The following represent the analysis received from the Transmission Company in response to the Initial Consultation of Modification P34, and from the Impact Assessment of the Requirements Specification (Reference 3 and 7) respectively.

a Initial Consultation Response

Response to BSC Consultation on P034 (P34_ASS_008 - NGC)

Paper by National Grid

September 2001

1 Summary

1.1 This document contains National Grid's response to the BSC Consultation on BSC Modification Proposal P034. National Grid, as proposer, supports this modification.

1.2 National Grid supports the principle that it is inappropriate for Balancing Services providers to be exposed to imbalance prices when they are delivering services that are assisting in overall system balancing. Furthermore National Grid supports the mechanism described in P034 for removing this exposure at source.

1.3 The document is structured as follows:

- Section 2 - Description of current arrangements for the governance of Balancing Services;
- Section 3 – An overview of the interaction between Balancing Services and the BSC;
- Section 4 - Our view of BSC Modification Proposal P034;
- Section 5 – Our general comments on Questions/Options;
- Section 6 – A description of the interaction with other BSC Modification Proposals; and
- Appendix A - National Grid's Response to the Consultation Questions.

2 Governance of Balancing Services

2.1 The consultation on BSC Modification P034 raises questions and issues that currently fall outside of the governance of the Balancing and Settlement Code. Therefore it is useful to consider the current industry governance arrangements for Balancing Services.

2.2 The governance of Balancing Services is covered via the Transmission Licence, Grid Code, CUSC and the Procurement Guidelines, as described below:

- Balancing Services are defined within the **Transmission Licence** (Condition 1A) as:
  - Ancillary Services – as described within CC8 of the Grid Code and procured from Authorised Electricity Operators;
  - Balancing Mechanism Bids and Offers - Procurement arrangements are contained within the BSC; and
  - Other Services – which are available to National Grid and serve to assist in operating the Transmission System;

- These definitions are further expanded within the **Procurement Guidelines** which are produced in accordance with LC7B.3;

- The **Grid Code** (CC8) defines the different types of Ancillary Services as follows:
  - System Ancillary Services
    - Part 1 – These are services that Generators are obliged to provide, and cover the requirement for Reactive Power and Frequency Control;
    - Part 2 – These are services that Generators will provide only if agreement to provide them is reached with National Grid, and cover the requirement for Fast Start and Black Start Capability; and
    - Commercial Ancillary Services – these services are provided where agreement is reached between the User and National Grid, and covers services such as Standing Reserve, Fast Reserve, demand side services etc. Other Services fall under the definition of Commercial Ancillary Services;

- Contractual mechanisms for Part 1 System Ancillary Services are described with the **CUSC** and the prices and calculation of volumes of the services are contained within Mandatory Services Agreements (MSA) the format of which is defined within the CUSC. These are standard agreements for all Generators who are obliged to provide the mandatory services of frequency control and reactive power;

- Part 1 System Ancillary Services are covered by cost reflective charging principles that are contained within the CUSC; and

- Arrangements for Part 2 System Ancillary Services and Commercial Ancillary Services are contained within Commercial Services Agreements (CSA) which are bilaterally negotiated between National Grid and the service provider. These are not part of the CUSC.

2.3 These governance arrangements have been developed through a number of industry consultations in respect of the development of NETA, the Initial System Operator Incentive Arrangements and the development of the CUSC.

3. Interaction between Balancing Services and the BSC

3.1 There are circumstances where the procurement and provision of Balancing Services interacts with the BSC via the imbalance price calculations. Two examples of this are given below:

- BSAD Methodology Statement – this document is produced via LC7B.6, and deals with the circumstance where the costs and volumes of Balancing Services procured via mandatory or commercial arrangements are included in the calculation of Imbalance Prices as described within the BSC. The BSAD Methodology Statement is established by National Grid and approved by the Authority; and
- System-to-System flows – these result from commercial Balancing Services contracts that National Grid enters into with Externally Interconnected System Operators, where the volume of energy delivered as a result of the contract is transferred to the Energy Account of the Transmission Company (thus incurring no imbalance exposure). The Transmission Company determines the associated volume delivered as per the contract in accordance with a methodology that is approved by the Authority (as per BSC R7.5.3).

3.2 There can also be an impact on Balancing Services providers as a result of the BSC.

3.3 Balancing Services are provided by a number of different classes of participants:

- Generation participating in the Balancing Mechanism;
- Generation that does not participate in the Balancing Mechanism;
- Demand Side providers participating in the Balancing Mechanism; and
- Demand Side providers that do not participate in the Balancing Mechanism.

3.4 In general, provision of a balancing service will result in the deviation of output from the position anticipated at Gate Closure (this will be either directly via the service providers BM Unit or indirectly via the BM Unit that an embedded service provider is associated with). This is not true in all circumstances, as some Balancing Services are delivered prior to, or at, Gate Closure (warming, energy trading etc), and others result in no change in active MW output (e.g. reactive power).

3.5 The deviation caused by the delivery of Balancing Services is dealt with in different ways for different services and different categories of provider:

- 'Normal' BM actions – via Bid/Offer Acceptance in accordance with the BSC (for energy balancing purposes);
- 'Balancing Services' BM actions – via Bid/Offer Acceptance in accordance with the BSC but at a pre-agreed, contracted Bid/Offer price (for instructed services such as standing reserve);
- System–to–System flows – as described above, there are specific arrangements in place to protect Externally Interconnected System Operators from imbalance, by transferring the Balancing Services volume delivered to the Transmission Company Energy Account;
- Automatic generator response – for mandatory frequency response, where the delivery of the response is currently exposed to imbalance prices;

- Non BM participants – instructed in a number of ways (outside of the BM) resulting in imbalance exposure for the associated BM Unit; and
- Other circumstances – there are other circumstances where the delivery of a balancing service will lead to exposure to imbalance prices.

3.6 P034 is intended to remove the imbalance charges arising as a result of the last three of the bullet points above.

4 BSC Modification Proposal P034

4.1 P034 seeks to remove exposure to imbalance charges arising under the BSC when certain balancing services are being provided. It is National Grid's view that it is not appropriate for service providers to face this exposure, or indeed, transfer this exposure to National Grid via contractual mechanisms outside of the BSC.

4.2 P034 proposes a mechanism whereby the volume of balancing services provided by any service provider is transferred from the energy account of that service provider (or the BM participant associated with the actual provider) to the energy account of the Transmission Company, thereby removing any exposure to imbalance prices at source.

4.3 It is envisaged that the volume of balancing services would be calculated via an agreed methodology (similar to the BSAD Methodology Statement, or System–to–System Flows methodology) which would be agreed between National Grid and the Authority.

4.4 It is National Grid's view that P034 proposes a simple and efficient mechanism for removing imbalance exposure of balancing services providers, be they generation or demand, or BM or non-BM participants. Furthermore National Grid believe that P034 can be accommodated within the existing governance framework for Balancing Services and the BSC.

5 General comments on Questions/Options

5.1 Our detailed response to each of the questions and issues raised in the consultation is contained within Appendix A.

5.2 In general National Grid believe that the original intention of P034 should be maintained, as stated in paragraph 1.2 above

5.3 The questions and options raised in this consultation range far wider than P034 and cover issues associated with where the volumes of Balancing Services are defined along with where the prices that National Grid pays for these services are defined. For example, were option 2 to be agreed, this is effectively setting the price for Frequency Response at the Bid/Offer price as submitted via the BSC. This price is currently dealt with via other mechanisms and is not an alternative to P034. It is a different proposal entirely.

5.4 A number of these options have also been raised via another BSC Modification proposal (P036), and via the pre-CUSC Working Group on Frequency Response Imbalance Compensation. National Grid believes that significant further work, analysis and consultation is required before any of the established industry governance principles are changed in respect of the costs and volumes of Balancing Services. However, P034 can be accommodated within the existing governance structure and will ensure that the principle of removing imbalance exposure from service providers is achieved.

6. Interaction with other BSC Modification Proposals

6.1 It is important to note that there is interaction with other current BSC Modification Proposals:

- P26 - Market-Driven Trading Neutrality Band. This BSC Modification proposal is proposing a deadband around energy account volume on which imbalance is not incurred. It should be noted that this is inconsistent with P034, which is attempting to calculate an exact volume of imbalance that should not be subject to imbalance. National Grid does not support P26 as currently drafted, and believes that the principle of P034 should be used and that the incentive to maintain balance should be maintained; and
- P36 - Bid-Offer Acceptances Relating to Applicable Balancing Services. It is our view that P36 is merely Option 5 in the consultation document. Therefore there is an interaction between this consultation and P034, but as stated above we believe that it is dealing with different issues.

APPENDIX A

National Grid's Response to the Consultation Questions:

With respect to the **Modification Proposal P34 and each of the Options**, please respond to the following questions by completing the table:

Question		**YES**	**NO**
Q1	Do you Agree with the Principle that "***The Provider of Balancing Services should not be exposed to the consequence of imbalance for the portion of energy attributable to the provision of that Balancing Service, subject to the volume calculation and the delivery of the service."***	YES	
Additional Comment: National Grid fully supports this principle. Furthermore, National Grid believes that BSC Modification P34 is the appropriate way to achieve this, and that it can be achieved within the existing governance model for balancing services. There are two alternative ways to achieving this principle: 1) As described within P34, where the imbalance exposure is removed within the BSC, thereby removing imbalance exposure entirely. National Grid believes that this is the appropriate route, to ensure that no perverse incentives are placed on providers of Balancing Services. 2) The removal of exposure to the consequence of imbalance can be achieved outside of the code via the contractual arrangements in place between National Grid and the Balancing Services providers. This method however, only serves to transfer the imbalance exposure into the contractual arrangements between National Grid and the service provider. A decision then needs to be made as to where the eventual risk should sit. If National Grid is to take on this risk (via the exposure to imbalance charges) then it will be reflected in the Balancing Services Use of System charge, along with the original imbalance payments contributing to the overall Residual Cashflow as calculated via the BSC. This could be viewed as an inefficient flow of cash around the industry. If National Grid is not able to take on this risk then Balancing Service providers may be discouraged from providing the service. Either way it seems inappropriate for the risk to be managed by another party, with its consequential impact on the cost of providing the service when the risk can be removed entirely. National Grid is of the view that alternative 1 is the best approach to better meet the applicable BSC objectives.			
Q2	In consideration of Modification P34, the Modification Group identified the following issues. Do you agree with each of issues below?	**YES**	**NO**

Issue 1	Should the definition of "applicable" balancing services include only mandatory or all Balancing Services (mandatory and commercial balancing services)		NO
Additional Comment: National Grid does not believe that this question is relevant in relation to P034. It is envisaged that the achievement of P34 will be via a separate methodology which will be referenced in the BSC, visible to all participants, and agreed with the Authority. This methodology will provide the detail of those balancing services where imbalance exposure arises as a result of provision of a balancing service. National Grid does not believe that it would be appropriate to draw any distinction between mandatory and commercial services for the purposes of this modification as National Grid believes that it is inappropriate for any provider of balancing services (mandatory/commercial, generation/demand) to be exposed to imbalance prices as the very provision of the service is helping to balance the overall system.			
Issue 2	Should the removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code?	YES	
Additional Comment: National Grid believe that the removal of exposure to the consequence of imbalance should be addressed at source via the mechanism described in P034. National Grid envisage a separate methodology which will be referenced in the BSC, visible to all participants, and agreed with the Authority. This methodology will provide the detail of those balancing services where imbalance exposure arises as a result of provision of a balancing service.			
Issue 3	If removal of exposure to the consequence of imbalances as a result of the volumes attributable to the provision of that Balancing Service fall under the governance of the Balancing and Settlement Code, should the definition of the "applicable balancing services" and calculation of the associated volume fall under the Balancing and Settlement Code.	NO	
Additional Comment: The governance model for Balancing Services is described elsewhere in this response. This model has developed and been agreed over a number of industry consultations in the run up to NETA Go-live. National Grid believe that it would be inappropriate to change this governance model. National Grid believe that if the BSC defined 'applicable balancing services' then it is possible that this list could contain services that do not fall within the definition within the Transmission Licence, leading to potential inconsistencies, and in the extreme, licence breach by National Grid.			
Issue 4	Should the proposal be made retrospective (as per the proposal 23rd August 2001) or only prospective?	YES	

Additional Comment: National Grid considered that the modification should be raised as an urgent modification because of the view of certain providers of this service. This led to serious concern that the services may be withdrawn leading to a deterioration of system security standards. National Grid recognise that the current arrangements for compensating Balancing Services providers for imbalance exposure have a number of shortcomings and believe that they should be addressed as soon as possible. With this in mind, National Grid supports a retrospective implementation of this proposal (23rd August 2001)	

Consultation Questions (continued):

Modification / Option	***View For/Against***
Modification Proposal P34	For
Option 1 – P34, No Retrospection	Against
Rational/ BSC Objective : Our views on retrospective application are provided in our response to Issue 4 (above). We believe this better facilitates BSC objectives (a), (b) and (c) by ensuring that service providers are appropriately compensated for the provision of these services and continue to make them available.	
Option 2 – Mandatory Balancing Services Volumes as Bid – Offer Acceptances (BOAs)	Against

Rational / BSC Objective: We do not think it is appropriate to draw any distinction between Mandatory and Commercial balancing services in relation to compensation for imbalance exposure. Bid Offer prices may not be appropriate for the provision of Balancing Services. Certain Balancing Services which are governed by the CUSC have cost reflective charging principles within the current governance mechanisms and it is not clear to National Grid as to how these cost reflective principles will be maintained if the Bid Offer price is used. National Grid also believe that use of Bid Offer prices for frequency response will result in these prices applying to provision of different services, for example energy balancing via 'normal' Bid Offer Acceptance, and system balancing via 'frequency response delivery' Bid Offer Acceptance. Using the Bid Offer price for provision of different types of Balancing Services will result in system services returning into the price stack for imbalance prices. Assuming that these are implemented via a half hourly BOA, in the case of continuous services (for example, mandatory frequency response) this will be counter to the intention of the outcome of P18. If the 'balancing services' BOA was issued on a minute by minute basis then this could cause significant implementation issues associated with the calculation and application of the minute by minute BOAs. In certain circumstances the service provider will not be the lead party of the BM unit which is offering into the Balancing Mechanism. For example, a demand side standing reserve provider could be operating 'under' a supplier BM Unit. In this case it may be totally inappropriate to use the Bid Offer price of the Supplier BM Unit to pay for the delivery of the Balancing Service from the embedded provider. Also, any Bid Offer Acceptance payment which would be due via the BOA would be paid to the supplier, not the service provider. Under P34, the payment would be made directly from National Grid to the service provider via the relevant balancing services contract. It is National Grid's view that this question raises a different issue than that raised by P034. P034 is associated with the principle of whether it is appropriate to remove imbalance exposure from providers of balancing services when the services are helping to balance the system. This question actually asks a different question about what the right price to pay for Balancing Services is, and therefore National Grid do not think it is appropriate to ask the question in relation to P034. The issue of prices of Balancing Services is currently dealt with via established governance processes described elsewhere in this document (e.g. CUSC, bilateral agreements, tender processes)	
Option 3 – Mandatory and Commercial Balancing Services Volumes as Bid – Offer Acceptances (BOAs)	Against
Rationale / BSC Objective: It is National Grid's view that this question raises a different issue than that raised by P034. P034 is associated with the principle of whether it is appropriate to remove imbalance exposure from providers of balancing services when the services are helping to balance the system. This question actually raises a separate issue about where the volumes of Balancing Services are defined, and therefore National Grid does not think it is appropriate to ask the question in relation to P034. The issue of volume of Balancing Services is	

currently dealt with via established governance processes described elsewhere in this document (e.g. CUSC, bilateral agreements, tender processes) In general the same comments raised in our response to Option 2 apply.	
Option 4 - P34, No Retrospection, methodology under the Code	
Rationale / BSC Objective: Our views on retrospection are detailed in response to issue 4 (above), along with the response on options 2 and 3.	
Option 5 – Mandatory Balancing Services Volumes as BOAs, methodology under the Code	
Rationale / BSC Objective: Same comments as per Option 2, 3 and 4 apply	
Option 6 – Mandatory and Commercial Balancing Services Volumes as BOAs, methodology under the Code	
Rational / BSC Objective: Same comments as per option 2, 3 and 4 apply	
Additional Comments on Options:	

Q4. With respect to the **Modification Proposal and each of the Options**, please provide an indication of a preferred "effective from" date:

Modification Proposal P34 (note that P34 proposes a retrospective effective from date): **23 August 2001**

b Assessment Consultation Response

Response to BSC Consultation on P34/P36 (P34&P36_ASS_014 - NGC)

Paper by National Grid

November 2001

1. Summary

1.1 This document contains National Grid's response to the BSC Consultation Paper on BSC Modification Proposals P34/P36 dated 14 November 2001. National Grid, as proposer, supports Modification Proposal P34.

1.2 We support the key principle agreed by the Modifications group that **'the Provider of Balancing Services should not be exposed to the consequence of imbalance for the portion of energy attributable to the provision of that Balancing Service, subject to the volume calculation and the delivery of that service' (BSC Consultation Paper on P34/P36, November 2001, Appendix B)**. Furthermore we believe that the mechanism proposed in P34 is the best way to achieving this.

1.3 We do not support P34 Alternative, P36 or P36 Alternative. The reasons for this are described in detail in this consultation response. In general however, we believe there are two fundamental reasons why these proposals are not appropriate:

- ***Governance***. Implementation of P34 Alternative, P36 or P36 Alternative would result in a change to the governance model that was developed in the run up to NETA Go-live. Each of these proposals would shift issues, currently under the governance of the CUSC or Transmission Licence, into the governance of the BSC (for example, the calculation of volumes of certain types of Balancing Services).

  We do not believe it is appropriate to alter the existing governance model for the following reasons:

  - it would result in duplication between the BSC and the CUSC (and their associated systems);
  - it would lead to confusion in respect of overall governance;
  - it would reduce transparency; and
  - Ofgem have made clear statements of where they see governance for different issues sitting (Conclusions document on CUSC, May 2001).

  P34 would not result in any change in the extant governance model, and we believe that this is the appropriate modification to progress. We also feel it would be appropriate to reject P36 under BSC and for the issues it raises to be considered under the CUSC via CUSC Amendment Proposal CAP010 (which achieves the same result as P36, but under CUSC governance).

- ***Payment mechanisms for Balancing Services***. Implementation of P36 or P36 Alternative would result in a change to the way that certain types of

Balancing Services are paid for. Specifically they would result in Balancing Services delivered energy being valued at Bid and Offer prices. We believe that this is inappropriate in relation to obligatory, cost-based services such as mandatory frequency response as it will lead, if introduced in isolation, to an increase in the cost of mandatory frequency response. This increase would be borne by BSC Parties through an increase in BSUoS charges.

We are also of the view that paying for mandatory frequency response services at bid/offer prices will lead to significant difficulties in optimising overall response holding, potentially giving rise to higher overall costs, and less transparent decision making associated with balancing the system.

P34 or P34 Alternative would not result in a change to the existing payment mechanisms.

1.4 We believe that consideration of the key principle agreed by the Modifications Group (removal of imbalance exposure) should not be hindered by other issues associated with Balancing Services (for example, their payment mechanisms). P34 Alternative, P36 and P36 Alternative all raise issues that complicate the debate about reaching the primary objective of P34. We therefore feel that the proposal P34 best achieves the key principle by removing at source the energy volume associated with the Balancing Service in an effective and simplistic way, without altering the current governance arrangements, or changing any of the current payment mechanisms.

1.5 The remainder of our response is structured as follows:

- Section 2 - Our response to the consultation questions
- Section 3 - Current treatment of Imbalance and the existing Governance model.
- Section 4 – Description of the proposed modifications
- Section 5 - Governance under the proposed Modifications.
- Section 6 - Our view for BSC Modification Proposals P34, P34 Alternative, P36 and P36 Alternative.
- Section 7 – Assessment against relevant BSC Objectives

2. National Grid's Response to P34/P36 Consultation Questions:

Respondent:	**National Grid**
Our rationale in responding to these questions is structured as follows: 1) whether the proposal/alternative proposal achieves the primary objective of these related proposals (i.e. the removal of exposure to imbalance prices when providing relevant Balancing Services) 2) whether the mechanism proposed by the proposal/alternative proposal is consistent with the existing industry governance industry model. We outline our reasons why we feel that it is inappropriate to change this model elsewhere in this document. 3) whether the mechanism proposed by the proposal/alternative proposal changes any of the current arrangements for the treatment of relevant Balancing Services (for example, their payment mechanisms). *We believe that it is appropriate to debate issues associated with the governance and payment of relevant Balancing Services through other industry forum (for example, the CUSC Amendment Panel).*	**Yes/No**
We would like to re-iterate our support of P34	YES
Rationale: *1) P34 achieves the primary objective of these related proposals* *2) P34 fits in with, and is consistent with, the existing industry governance model* *3) P34 does not change any of the current arrangements for the treatment of relevant Balancing Services*	
Q1 Please indicate whether you support the P34 Alternative	NO
Rationale: *1) P34 Alternative achieves the primary objective of these related proposals* *2) P34 Alternative would result in a shift in governance by moving the definition of Applicable Balancing Services, along with their volume calculation, to the BSC.* *3) P34 Alternative does not change any other current arrangements for the treatment of relevant Balancing Services*	
Q2 Please indicate whether you support P36 as drafted	NO
Rationale:	

1) P36 achieves the primary objective of these related proposals
2) P36 would result in a shift in governance by moving the definition of Applicable Balancing Services, along with their volume calculation, to the BSC.
3) P36 would result in a change to the payment arrangements for relevant Balancing Services by valuing the Balancing Services energy delivered at the prevailing bid/offer price, and making that payment through the BSC. We believe that this is inappropriate for the following reasons:

- *Certain Balancing Services (for example mandatory frequency response) are governed by cost reflective charging principles and we believe that P36 represents a move away from these principles;*
- *P36 could lead to difficulties in securing the economic optimisation of Balancing Services if the use of bids and offers is extended to cover the cost of automatically delivered balancing services as well as manually initiated balancing services (this is illustrated by the example in Appendix A). This could lead to an increase in the overall cost of securing these services which will be reflected in higher BSUoS charges;*
- *P36 as drafted could lead to the effective withdrawal of mandatory services on a price basis, resulting in prohibitively high costs being incurred in balancing the system (again this issue is highlighted by the example attached in Appendix A);*
- *It is our view that any change to payment arrangements for specific Balancing Services (e.g. mandatory frequency response) need to be considered in the light of an eventual move to enduring market based arrangements. It is not clear to us how P36 will help in respect of moving towards this, and delivering any of the expected benefits of more market based arrangements for service procurement;*
- *P36 does not directly apply to Balancing Services providers who chose not to participate in the Balancing Mechanism (for example small scale, demand side players).*

As stated elsewhere, we believe that it is appropriate to debate these issues, as raised by P36, via the Amendment Procedures described in the CUSC, during the consideration of CAP010. This is currently being progressed by the Balancing Services Standing Group.

Q3 Please indicate whether you support P36 Alternative	NO

Rationale:

1) P36 Alternative achieves the primary objective of these related proposals
2) P36 Alternative would result in a shift in governance by moving the definition of Applicable Balancing Services, along with their volume calculation, to the BSC.
3) P36 would result in a change to the payment arrangements for relevant Balancing Services and we believe that it is inappropriate for the same reasons as outlined in Q2 above, with the exception that it allows the application of P34 to non-BM participants.

Q4 Please indicate whether you support the definition of Class A and Class B Balancing Services and if not what alternative would you propose	NO

Rationale:

We do not support the definition of Class A and Class B Balancing Services

We do not believe that any further definition of Balancing Services is required, but if it were then it must be consistent with, or refer to, other definitions for Balancing Services contained within the Grid Code or Transmission Licence.	
Q5 Please indicate whether (and why) you support the position in P36 Alternative that payment for Balancing Services Energy as Bid Offer Acceptance is obligatory for Class B. If you do not support "Obligatory", please state your reasons and identify any other approaches you would prefer	NO
Rationale: *We do not support this for the reasons given in our answer to 3 above.*	

3. Current treatment of Imbalance and the existing Governance model.

This section contains a description of the existing governance model and the current treatment of imbalances associated with relevant Balancing Services.

3.1 Current Treatment of Imbalance

Currently any energy imbalance charges arising when a service provider delivers mandatory frequency response are refunded to that provider via a mechanism described within the CUSC.

There are a small number of bilateral agreements for commercial frequency response services that replicate the arrangements in CUSC for imbalance compensation. In describing the current process in the rest of this document we will assume that these are covered by the arrangements for mandatory frequency response.

There are no other specific arrangements for compensation when providing other balancing services (such as reserve services). Non-BM participants (or their associated lead party) therefore incur imbalance charges when they provide these services. It could be assumed that these providers build an 'imbalance premium' into their overall price for service provision. A number of these providers have indicated to us that they are unwilling to continue taking on this risk of imbalance exposure.

3.2 Summary of the Governance arrangements for Balancing Services

The governance of Balancing Services, as established via industry consultation in the run up to NETA Go-live, is covered via the Transmission Licence, Grid Code, CUSC and Procurement Guidelines.

- Balancing Services are defined within the **Transmission Licence** (these definitions are further expanded within the **Procurement Guidelines,** which are established pursuant to Special Licence Condition AA4);
- The **Grid Code** defines the different types of Ancillary Services (a sub-set of Balancing Services) as Part 1 Ancillary System Services, Part 2 Ancillary Services and Commercial Ancillary Services;
- The contractual mechanisms for Part 1 System Ancillary Services and the calculations specifically required for imbalance volumes relating to them are described within the **CUSC**. Prices and plant specific characteristics of the services are contained within Mandatory Service Agreements (MSA);
- Part 1 System Ancillary Services are covered by cost reflective charging principles that are contained within the **CUSC** (reference CUSC 4.4); and
- Arrangements for Part 2 Ancillary Services and Commercial Ancillary Services are contained within Commercial Services Agreements (CSA) which are bilaterally negotiated between National Grid and the service provider.

4. Description of the proposed modifications.

4.1 **P34** proposes a mechanism whereby any liability for imbalance is removed at source. It seeks to amend the settlement calculations within the BSC such that any imbalance caused by the delivery of certain Balancing Services is transferred from the provider's Energy Account to the Transmission Company's Energy Account, thus removing exposure to Imbalance Charges. This modification is proposed as retrospective applying from 23 August 2001.

4.2 **P36** seeks to create Bid – Offer Acceptances for the energy attributable to the provision of certain Balancing Services, thus removing it from the consequence of exposure to Imbalance charges and thus paying for the energy at the prevailing bid or offer price. This modification would be made prospectively.

4.3 **P34 Alternative** is based along the same lines as P34, however the definition of 'Applicable Balancing Services' and the associated volume calculation would be under the BSC, rather than National Grid's Licence, CUSC and Ancillary Service Contracts. This modification would be made prospectively.

4.4 **P36 Alternative** applies P36 to one class of Balancing Services (class B – mandatory services) and P34 to another class (class A – other services). The required definitions and calculations would sit within the BSC. This modification would be made prospectively.

4.5 The main difference in the mechanisms for the proposals is that P34 adjusts the accepted Bid - Offer volume after payments have been made for Bid/Offer Acceptance, whilst P36 makes the adjustment prior to payment. The implication of the adoption of P34 would be that that all applicable Balancing Services energy would continue to be paid in accordance with the existing principles defined in the CUSC or in accordance with bilateral contracts. However, P36 would result in a move away from this approach with all applicable Balancing Services energy being paid at Bid or Offer price. P36 Alternative is a hybrid of P34 and P36.

5. Governance under the proposed Modifications.

5.1 The current process for imbalance compensation payments is described in 3.1 above. In detail the steps undertaken are

(1) Imbalance charges are incurred when certain types of balancing services are delivered. These imbalance charges are calculated in accordance with the BSC;
(2) The CUSC contains the equations required to calculate the volume of service delivered, for the applicable services;
(3) The CUSC then describes how the imbalance exposure, to this volume, is refunded to or from the service provider; and
(4) The CUSC then describes how the payment for this volume is made (currently this is done at a reference price).

This process only currently relates to the Balancing Service of mandatory frequency response, and each of the modifications seeks to widen the definition so that it applies to different types of balancing services. We will now go on to explain how each of the proposed modifications impacts on this governance model.

5.1.1 **P34** proposes that payment (1) is removed at source. The volume calculation in (2) remains in CUSC (or relevant CSA) and will be replicated within an 'interface' document which sits between the BSC and the CUSC. This document will translate the Balancing Services volume from the CUSC into the BSC, with the BSC making reference to the 'interface' document. Under P34 payment (3) would no longer be required and payment (4) would be made at the appropriate rate.

5.1.2 **P34 Alternative** proposes a similar mechanism, with payment (1) being removed at source, and payment (3) no longer required. However, rather than an interface document between the BSC and CUSC, the BSC would include a definition of the Balancing Services, and the methodology for the volume calculation described in (2). This would result in duplication of definitions and equations in the BSC and Transmission Licence. The methodology for the volume calculation would also still be in the CUSC (or relevant CSA) to pay for the service delivery under (4).

5.1.3 **P36** delivers a Bid-Offer Acceptance applied to cover the volume of Balancing Services delivered. Therefore payment (1) disappears as no imbalance charge is incurred; this is effectively replaced by the Bid/Offer payment. This payment replaces the requirement for the payment in item (4), moving (4) from CUSC (or CSA) to the BSC and changing the reference price to the prevailing Bid/Offer price. The payment in (3)

is no longer required as no imbalance exposure is incurred. P36 proposes that the volume calculation in (2) be duplicated in the BSC.

5.1.4 **P36 Alternative** allows for the distinction between different classes of Balancing Services, some of which are treated as P36 above, and some of which are treated as P34 Alternative, as above.

5.2 National Grid's view on the issue of Governance

National Grid disagrees with the Modifications Group principle **'Including, within the BSC, the definition of Applicable Balancing Services and associated Balancing Services Volume Calculation provides the opportunity to ensure that any subsequent changes would better facilitate the achievement of the applicable BSC Objectives and specifically provides transparency of these changes to market participants' (BSC Consultation Paper on P34/P36, November 2001, Appendix B)**. We believe that the overall industry governance structure that exists allows the Authority to consider the full impact of proposed modifications across all affected areas (including BSC, CUSC and other codes).

It is useful to consider the distinction that has been developed between the BSC and the CUSC. Ofgem/DTI concluded that terms relating to the Mandatory Balancing Services should be contained within the CUSC, thus:

'The BSC will not be used for the recovery of system balancing costs. These costs will be recovered through BSUoS charged, and hence contractually through CUSC. Ofgem/DTI therefore consider it appropriate for terms relating to mandatory services to sit within the CUSC' (*NGC's connection and use of system code: scope, content and associated licence conditions, An Ofgem/DTI conclusions document May 2001,section 3.60*).

National Grid believe it would be inappropriate to change this governance model by explicitly incorporating the detail of applicable Balancing Services and their associated volume calculation into the BSC, as would be the case with P34 Alternative, P36 and P36 Alternative.

We also believe that it would be inappropriate to alter the existing governance model for the following reasons:

- it would result in duplication between the BSC and the CUSC (and their associated systems);
- it lead to confusion about overall governance; and
- it would reduce transparency.

6. BSC Modification Proposals

This section outlines other, more detailed issues associated with each of the proposed Modifications.

6.1 P34/P34 Alternative

The proposed mechanism within P34/P34 Alternative removes imbalance at source, such that any imbalance caused by the delivery of certain Balancing Services is transferred from the provider's Energy Account to the Transmission Company's Energy Account. A non-BM

Balancing Services Provider would have to notify National Grid of its Lead Party so that the relevant energy volume is transferred from the appropriate party. This resolves the issue of exposure to imbalance for non-BM units. A Demand side provider no longer faces the issue of forcing their supplier into imbalance, as the related energy is removed from the supplier's energy account. Thus, P34 covers all Balancing Service providers and removes exposure to the consequence of imbalance for the portion of energy attributable to the provision of that Balancing Service in the same way for all service providers.

6.2 P36/P36 Alternative

The proposed mechanism for P36 is restricted to Balancing Mechanism participants only. Non-BM participants who are service providers would fall outside of the scope of P36. Not all service providers are the lead party of the BMU they form part of. The energy payment is made to the lead party (not the service provider) and the service provider has no direct control over the Bid and Offer Prices submitted for the BMU. For example, the mechanism for P36 would be inappropriate to Demand side providers. The Demand side provider could potentially force their supplier out of balance. The relevant supplier would then be compensated for imbalance at their Bid and Offer prices, which would not be determined by the service providers, and which would not necessarily reflect the value of service provided.

P36 Alternative applies P34 Alternative to one class of providers, and P36 to another class. Although this redresses the issue of scope, National Grid believes this leads to other issues, which will be expanded on below.

Restrictions of Paying for imbalance volume at Bid and Offer Prices:

- Mandatory Services are provided in accordance with the CUSC on a cost reflective basis. We believe that under the mechanism in P36 and P36 Alternative cost reflectivity for Mandatory Services would be lost as the energy volume associated with the services would be paid at Bid and Offer Prices. We are of the view that this represents a clear shift from cost to value. A mandatory service provider could effectively make the system prohibitively expensive to operate by submitting extreme Bid and Offer prices. Since mandatory services are essential to the secure operation of the system this may cause difficulties in securing system balance at optimum cost. For example a situation could arise where there is a large disparity between the price of Bid-Offer Pairs in the ladder.
- To achieve full optimisation it would be necessary to develop probabilistic techniques to attempt to forecast the expected response behaviour of each generator relative to system frequency. The example in Appendix A illustrates how frequency deviations of differing magnitudes could result in a generator moving from a cheap bid/offer range to a very expensive one.
- A provider of an applicable Balancing Service would only be paid for the energy attributable to the provision of that Balancing Service at their submitted Bid and Offer Price. This price may not be the same for different types of deviations in the Balancing Mechanism; the cost associated with a manually initiated decrease or increase from a provider's physical output will not necessarily be the same as the cost of an automatically initiated increase or decrease resulting from the provision of balancing services.
- Where more than one service provider forms part of a BM Unit, only a single Bid/Offer Price ladder may be submitted. This does not allow the individual providers to correctly reflect their costs in their price ladder.

The issues described here are illustrated in the example provided in Appendix A. Issues associated with the optimisation techniques required are described in further detail in Appendix B.

6.3 Impact on BSUoS

It is our view that P36/P36 Alternative as proposed could lead to an increase in balancing costs which would be reflected in an increase in the BSUoS charge. This is fully discussed in a paper by National Grid which was circulated round the Modifications Group, 'Impact on BSUoS charges and RCRC from the delivery of Mandatory Response under current arrangements and under P34 and P36', 31 October 2001.

6.4 Frequency Response Market

We are committed to the development of an implementation plan for a Frequency Response Market and the Balancing Services Standing Group (BSSG - established under CUSC) is working on this issue.

We believe it is important that the issues raised by these modifications should be considered in the context of the whole market debate. We believe that P34 paves the way for market arrangements by removing the perversity of imbalance exposure when delivering the services. Whilst the other proposed modifications achieve the removal of imbalance exposure, they also introduce further complexity which we believe do not necessarily represent steps in the right direction towards frequency response market arrangements.

We believe that it is appropriate for these issues to be considered at the BSSG.

6.5 Impact on System Operator Systems

We have performed Impact Assessments on System Operator systems in respect of P34 and P36. Please note that these Impact Assessments have been carried out in short timescales and do not constitute a formal estimate of the timescales and costs likely to be incurred. A fuller, more detailed impact assessment will be required once it is clear which modification is approved. It will also be necessary to consider the impact in respect of other BSC driven developments such as P12, P22 and P33.

- **Impact on Control Room Systems**

P34 will not impact on these systems.

P36 will impact on the algorithm used to optimise frequency response holding as it changes the way that delivered response energy is paid for. Amendments, with varying degrees of complexity, could be made to this algorithm to include some type of bid/offer indicator in the optimisation process.

There is a potential crude enhancement which adds a penalty onto the response holding cost for each BMU to represent the probabilistic expectation of the response delivered energy and its cost. Our estimate for the investigation and development required to the dispatch algorithm for this crude enhancement is £150k, with a delivery time of approximately 9 months.

Significant further analysis would be required in order to develop the dispatch algorithm to fully optimise response holding under a P36 scenario. A full optimisation would require the development of probabilistic techniques to attempt to forecast the expected response behaviour of each generator relative to the system frequency, and the interaction of this behaviour with its bid/offer ladder. We have not yet attempted to quantify this effort but it is likely that significant research would be required.

- **Impact on Balancing Services Systems**

P34/P36 impact on the systems used to settle Balancing Services Contracts, and in particular the system used to calculate the volume of these services. Currently these volumes are calculated using data from the Initial Interim (II) Settlement Run, however the requirement

specification states that the volume has to be provided to the SAA prior to the II run. Additional development (to establish new interfaces) would be required to calculate these volumes prior to the II run, and the estimates provided assume that this is the case. If, however, the data can be provided after the II run, then the costs and timescales would reduce.

P34 development estimate £50k, delivery time 3 – 4 months, starting March 2002.

P36 development estimate £80 - 130k, delivery time 5 – 8 months, starting March 2002.

7. BSC Objectives

It is our view that P34 Alternative, P36 and P36 Alternative do not better facilitate the BSC Objectives as set out in the Transmission Licence, Condition C3, paragraph 3.

- We believe that the mechanisms proposed for P36 and P36 alternative would not facilitate **'the efficient, economic co-ordinated operation by the licensee of the licensee's transmission system'**. It is likely not to be economic to pay for imbalance volume at Bid and Offer prices as stated in 6.2 as this could make the system prohibitively expensive to operate also with the effect that BSC Parties could also face an increase in BSUoS charges.
- We also feel that the proposals P34 Alternative, P36 and P36 Alternative would not be **'promoting efficiency in the implementation and administration of the balancing and settlement arrangements'.** By duplicating the applicable balancing services and associated volume calculations in the BSC, any BSC modification would have to be done in parallel with modifications to the CUSC (or relevant industry document). The duplication of information between documents, which effectively govern the operation of our activities, is not in line with efficient implementation and administration of the balancing and settlement arrangements.

Consider a generator that offers in a physical notification of 300MW, with other parameters and prices as shown in the diagram. The generator is held in frequency responsive mode. A number of circumstances could arise, all leading to different payments arising.

Example 1

Here the frequency happens to fall by 0.1Hz. The generator delivers 30MW low frequency response in accordance with his frequency response matrix table. This 30MW of delivery would be paid for at £20/MWh for the duration of the delivery.

Example 2

In this example, the frequency falls by 0.5Hz. The generator delivers 80MW low frequency response in accordance with his frequency response matrix table. The first 50MW of delivery is paid at £20/MWh for the duration of the delivery, whilst the remaining 30MW attracts £1000/MWh for delivery.

Example 3

In this example the frequency rises by 0.1Hz and the generator reduces his level by 20MW in accordance with his frequency response matrix table. This 20MW would attract the bid payment of -£99,999/MWh for the duration of delivery. In practice we would not hold this plant in responsive mode due to the high costs associated with delivery, and the plant would have effectively withdrawn his response service on a price basis.

These examples illustrate how a provider may be an attractive choice to provide low frequency response, but prohibitively expensive for high frequency response. Governor characteristics and the contracts that model them do not allow high and low frequency response to be held in isolation.

Therefore in the case described by these examples it could be prohibitively expensive to select this generator for any type of response provision.

Example 4

In this example we buy the first offer of 50MW at the price of £20/MWh. The frequency then falls by 0.1Hz and the generator increases his output by a further 30MW in accordance with his frequency response matrix table. This 30MW would attract the next offer price of £1000/MWh for the delivery duration. This highlights the interaction between energy balancing actions and response delivery.

These examples highlight the problems associated with optimising response holding when the energy delivered is paid at bid/offer price. In order to schedule responsive plant, we would need to perform a probabilistic assessment of frequency deviation to assess whether the frequency is likely to move up or down, and by how much.

ANNEX 6 – ELEXON ANALYSIS

a Impact Assessment of Modification P34

Mod No.	P34	**Title:**	**Transfer of Imbalances caused by Balancing services to the Transmission Company Energy Account**		
Assessor Name	Alex Grieve	**Assessor Team**	BSC Systems Release 2 Project	**Date**	15/11/01
Modification Summary: See 027AAR					
Summary of solution(s): See 027AAR					

Product Affected Reference This should include:	**Target Issue**	**Cost of Embodying CP - Man Days**

• Impact on NETA Services; (review)
  • SAA, BMRA
  • SAA BMRA URS
  • IDD Part 1 and 2
  • SAA BMRA System Specification
  • SAA BMRA Design Specification
  • SAA BMRA OSMs
	Release 2 (Sep 02)	**36 md**

• The legal framework
  • BSC (check for issues & incorporate)
  • BMRA Service Description (develop and review)
  • SAA Service Description (develop and review)
		11 md

• Business definition documents (review)
  • Neta Data File Catalogue
  • Communications Requirement Document
  • Reporting requirements document;
		9 md

• Impact on flows (new/amended/deleted/BSC party impact); (manage party/NGC communications)
  • SAA- I014 (all subflows)
  • NGC-BMRA SAA Interfaces Specification
		10 md

• Impact on BSCCo systems/processes (review/manage)
  • TOMAS – change to calculation plus new flows from NGC
  • ELEXON Web site (possible inclusion of new values)
		10 md

ELEXON Test Strategy ELEXON Business Requirements Solution Logica Test Strategy Logica – Change Specific testing documentation Logica – Regression testing documentation Participant Testing specifications and activities		10 md 15 md 3 md 10 md 10 md 10 md
Additional Audit activities (PwC)		6%
Total additional effort required (133 Md, £80k). This can be achieved with one additional full time resource in the project. It is expected that at least half of this could be funded from the existing project budget but it would be necessary to move funding to the demand led budget (currently funded from operational budget). See assumption 7. PwC costs would have to be assessed – say £20k		£60k

Impact on other Systems –

BSC Party/Agent systems to process SAA-I014 (optional)

NGC systems to produce new flows

NGC systems to process SAA-I014

Assumptions –

1. New NGC flows will be sent electronically to Logica and by email /internet ftp to ELEXON (i.e. does not require new comms to ELEXON).
2. Participant testing will be required and will use the participant test environment
3. Test transmissions will be required
4. Logica will meet the acceptance criteria
5. Ofgem determination given in time for Logica to complete development by the end of March/April at the latest to enable regression testing to begin on time (critical path for September go-live)
6. Logica will issue documentation changes for review as DCRs and will have time to incorporate into full documentation release for Release 2 (March)
7. Cost assessment based on inclusion of P34 only in the full release planned for Sept 2002. If other mods are also included then the project may not be able to absorb ½ the effort/cost for P34. In such a case the cost for P34 would be £80k + £20k.
8. Assumes P34 and P36 will not be authorised (i.e. they are mutually exclusive).

Issues and Risks –

Ofgem determination not received in time for Logica to complete development by end of March/April at the absolute latest to enable regression testing to begin on time

b Impact Assessment of Modification P36

Mod No.	P36	**Title:**	**Generation of Bid Offer acceptances relating to energy delivered as a result of providing applicable balancing services**		
Assessor Name	Alex Grieve	**Assessor Team**	BSC Systems Release 2 Project	**Date**	15/11/01
Modification Summary: See 027AAR					
Summary of solution(s): **See 027AAR**					

Product Affected Reference This should include:	**Target Issue**	**Cost of Embodying CP - Man Days**

• Impact on NETA Services; (review)
  • SAA, BMRA
  • SAA BMRA URS
  • IDD Part 1 and 2
  • SAA BMRA System Specification
  • SAA BMRA Design Specification
  • SAA BMRA OSMs
	Release 2 (Sep 02)	**36 md**

• The legal framework
  • BSC (check for issues & incorporate)
  • BMRA Service Description (develop and review)
  • SAA Service Description (develop and review)
		11 md

• Business definition documents (review)
  • Neta Data File Catalogue
  • Communications Requirement Document
  • Reporting requirements document;
		9 md

• Impact on flows (new/amended/deleted/BSC party impact); (manage party/NGC communications)
  • SAA- I014 (all subflows)
  • NGC-BMRA SAA Interfaces Specification
		10 md

• Impact on BSCCo systems/processes (review/manage)
  • TOMAS – change to calculation plus new flows from NGC
  • ELEXON Web site (possible inclusion of new values)
		10 md

ELEXON Test Strategy ELEXON Business Requirements Solution Logica Test Strategy Logica – Change Specific testing documentation Logica – Regression testing documentation Participant Testing specifications and activities		10 md 15 md 3 md 10 md 10 md 10 md
Additional Audit activities (PwC)		6%
Total additional effort required (133 Md, £80k). This can be achieved with one additional full time resource in the project. It is expected that at least half of this could be funded from the existing project budget but it would be necessary to move funding to the demand led budget (currently funded from operational budget). See assumption 7 PwC costs would have to be assessed – say £20k		£60k

Impact on other Systems –

BSC Party/Agent systems to process SAA-I014 (optional)

NGC systems to produce new flows

NGC systems to process SAA-I014

Assumptions –

1. New NGC flows will be sent electronically to Logica and by email /internet ftp to ELEXON (i.e. does not require new comms to ELEXON).
2. Participant testing will be required and will use the participant test environment
3. Test transmissions will be required
4. Logica will meet the acceptance criteria
5. Ofgem determination given in time for Logica to complete development by the end of March/April at the latest to enable regression testing to begin on time (critical path for September go-live)
6. Logica will issue documentation changes for review as DCRs and will have time to incorporate into full documentation release for Release 2 (March)
7. Cost assessment based on inclusion of P34 only in the full release planned for Sept 2002. If other mods are also included then the project may not be able to absorb ½ the effort/cost for P34. In such a case the cost for P34 would be £80k + £20k.
8. Assumes P34 and P36 will not be authorised (i.e. they are mutually exclusive).

Issues and Risks –

Ofgem determination not received in time for Logica to complete development by end of March/April at the absolute latest to enable regression testing to begin on time

ANNEX 7 – ELEXON LEGAL ISSUES

The following was provided by the ELEXON Legal Advisors with regards to the legal issues identified against Modification Proposal P34 and Modification Proposal P36.

Modifications P.34 and P.36

Note to ELEXON

This note discusses certain legal issues raised by Modifications P.34 and P.36, principally concerning governance of the proposed arrangements. The issues relate to both modification proposals (and/or their alternatives). Therefore, we do not seek to distinguish between the proposals for the purposes of this note.

This note does not consider legal drafting points, which will need to be addressed once these legal issues have been resolved, and the responses to the impact assessments and analysis from NGC have been reviewed.

Governance

1. Both modification proposals would require decisions to be made as to:

   - the Balancing Services to which the proposed arrangements would apply; and
   - assuming NGC is to be responsible for determining the data to be fed into Settlements, the basis upon which NGC would determine the data ('Methodology').

2. The legal issues are:

   (a) In which documents could these matters be defined?

   This is a technical legal question concerning the legal scope of possible documents. Obvious candidates are the BSC, CUSC or a statement developed under NGC's licence similar to the BSAD Methodology Statement.

   It would seem that the definition of relevant Balancing Services and the Methodology could, in theory, be housed in any of those documents. There is no obvious right or wrong answer. These matters relate to data to be fed into Settlements under the BSC, and which affect the outcome of Settlements. On the other hand, the data also concerns NGC's procurement and use of balancing services, activities which fall within the scope of CUSC and NGC's licence.

   In summary, we believe that any of those documents could in theory house these matters.

   (b) The next question is: in which documents should these matters be defined?

   This is a question of public law as to what is appropriate (in a public law sense). By way of background, it is important to note that questions as to the governance of certain matters (in or affecting the BSC) relating to system operation or balancing were the subject of policy decisions prior to Go-live. In particular, those policy decisions led to the decision to house the BSAD Methodology Statement, the Procurement Guidelines and the Balancing Principles under NGC's licence, not under the BSC.

Paragraph 3 discusses some of the pros and cons of certain possible options, which may be relevant in deciding whether or not a particular option is appropriate in this case. The list is by no means exhaustive.

3. Some of the pros and cons of each option are:

(a) *BSC:* define the relevant Balancing Services and the Methodology in the BSC

From a legal perspective, this is undesirable for various reasons:

- the definition of relevant Balancing Services and the Methodology will necessarily have to be couched in fairly general and perhaps vague terms in order to provide sufficient breadth and flexibility. This means that the wording may be difficult to interpret and prone to dispute;

- hard-wiring these matters in the BSC means a BSC modification would be required each time a change was needed (arguably a more flexible change mechanism is more appropriate in this case to respond promptly to market developments);

- disputes concerning NGC's application of the new arrangements would be subject ultimately to arbitration under the BSC. This may not be an appropriate forum in which to decide such matters because (a) they relate to the way in which NGC is balancing the system, which is more properly regulated by the Authority rather than through arbitration with market participants and (b) NGC may arguably be inhibited from contracting efficiently for Balancing Services if it is at risk of arbitration under the BSC in respect of the data submitted by it into Settlements;

- it may be considered inconsistent and therefore inappropriate if other decisions of, arguably, no greater importance (BRL, system-to-system flows, BSAD methodology etc) are made subject to Authority approval under the BSC and/or under NGC's licence while these matters remain subject to a more devolved or lower level governance regime;

- the potential interactions between the definition of Balancing Services and the Methodology and other regulatory or regulated documents may suggest it is more appropriate for the Authority to have a role in supervising and co-ordinating these matters and subsequent revisions (for example, interactions with NGC's incentive scheme in its licence, with CUSC and the Grid Code, with the Procurement Guidelines and the Balancing Principles and with the BSAD Methodology Statement).

(b) *CUSC:* define the relevant Balancing Services and the Methodology in CUSC

This raises a lot of the same difficulties mentioned above in relation to the BSC. In addition:

- defining relevant Balancing Services and the Methodology in CUSC would increase the number of dependencies between CUSC and the BSC, and hence the complexity of the overall contractual matrix, the need for co-ordination of modifications and disputes, and so on. The greater the complexity of the relationship between the two codes, the greater the opportunity for protracted and expensive disputes;

- the constituency of CUSC and the BSC is different (for example, non-physical traders are not party to CUSC and presumably do not have a formal role in its modification process).

(c) *Transmission Licence:* define the relevant Balancing Services and the Methodology in statements prepared by NGC under its licence, subject to the Authority's approval or veto:

- the existing provisions in NGC's licence relating to the BSAD Methodology Statement are not broad enough to allow these matters to be defined in that Statement. A licence modification would be required either to expand the relevant licence provisions or to insert new provisions for an additional statement;

- this has the advantage of being consistent with the approach to BSAD and of ensuring appropriate regulatory control while avoiding some of the pitfalls associated with a contractual framework (see (a) above);

- the change mechanisms could be more flexible so that it was easier to adjust the new statement from time to time (subject to consultation and Authority approval/veto);

- the disadvantage is the timing and other difficulties of obtaining a licence modification, if this route were chosen.

(d) *Framework under BSC:* establish a procedure under the BSC (or CUSC) to define the relevant Balancing Services and the Methodology:

This scenario is similar to (c) above but the requirement for the statements would sit under the BSC rather than NGC's licence. This is the approach adopted, for example, in relation to system-to-system flows under Section R7.5.3 of the BSC.

In other words, NGC would be required to prepare, maintain and revise from time to time a statement setting out the relevant Balancing Services and Methodology. This statement, and any revisions, would be subject to the Authority's approval. NGC could be required to consult on the terms of the statement, and to prepare a report to the Authority summarising the views of interested parties, when requesting approval.

The BSC could provide that questions as to NGC's application of the statement should be determined by the Authority.

In our view, this is the simplest and most appropriate solution, avoiding the need for further licence modifications while preserving the benefits of (c) and overcoming some of the disadvantages of (a) and (b).

Retrospectivity

The Panel is not required to form a definitive legal view on whether or not, as a matter of public law, the vires exist to make this modification retrospective. It is therefore not necessary to rehearse all the legal arguments here.

However, in presenting its findings to the Panel, the Modifications Group is likely to want to explain the pros and cons of retrospective application in this case.