

ASSESSMENT REPORT for Modification Proposal P203

'Introduction of a Seasonal Zonal Transmission Losses Scheme'

Prepared by: P203 Modification Group

Date of Issue:	4 August 2006	Document Reference:	P203AR
Reason for Issue:	For Panel decision	Version Number:	1.0

This document has been distributed in accordance with Section F2.1.10 of the Balancing and Settlement Code.¹

Proposed Modification P203 seeks to allocate the 'variable' (heating) element of transmission losses to BSC Parties on a 'zonal' basis, according to the extent to which each Party is estimated to give rise to them. The solution for P203 involves the calculation of four Adjusted Seasonal Zonal Transmission Loss Factor (TLF) values per TLF Zone for each BSC Year – one for each BSC Season. TLF Zones would be based on Grid Supply Point Groups, and the seasonal TLFs would be calculated on an annual ex-ante (forecast) basis for each forthcoming BSC Year (1 April – 31 March). All BM Units within a Zone would receive the Adjusted Seasonal Zonal TLF value for that Zone in every Settlement Period of the relevant BSC Season.

Proposed Modification P203 is similar to Alternative Modification P198, with the key difference that under P203 (unlike P198 Alternative) there would be no phased implementation of seasonal TLF values.

No Alternative Modification has been developed for P203.

MODIFICATION GROUP'S RECOMMENDATIONS

The P203 Modification Group invites the BSC Panel to:

- **AGREE that Proposed Modification P203 should not be made;**
- **AGREE a provisional Implementation Date for Proposed Modification P203 of 1 April 2008 if an Authority decision is received on or before 22 March 2007, or 1 October 2008 if the Authority decision is received after 22 March 2007 but on or before 20 September 2007;**
- **AGREE the draft legal text for Proposed Modification P203;**
- **AGREE that Modification Proposal P203 be submitted to the Report Phase; and**
- **AGREE that the P203 draft Modification Report be issued for consultation and submitted to the Panel for consideration at its meeting on 14 September 2006.**

¹ The current version of the Code can be found at <http://www.elexon.co.uk/bscrelateddocs/BSC/default.aspx>.

CONTENTS TABLE

Summary of Impacted Parties and Documents	3
1 Executive Summary	4
2 Background.....	5
2.1 Types of Transmission Losses	5
2.2 Existing Allocation Mechanism for Transmission Losses	5
2.3 Related Modification Proposals	5
2.4 Modification Proposal P203	10
3 Description of Modification.....	11
4 Group's Consideration of Areas Raised by the Terms of Reference	11
4.1 Solution and Legal Text Interaction with Alternative Modification P198	11
4.2 Load-Flow Modelling	12
4.3 Cost-Benefit Analysis.....	13
4.4 Impact Assessment, Costs and Implementation Approach	21
4.5 Potential Options for an Alternative Modification.....	23
5 Group's Consideration of Assessment Consultation Responses.....	23
5.1 Respondents' Views of Proposed Modification Compared with Existing Code Baseline	24
5.2 Respondents' Views of Proportionality of Impact on Parties	28
5.3 Respondents' Views of Impact on Risk/Cost of Capital	30
5.4 Respondents' Views on Implementation Approach.....	31
5.5 Alternative Solutions Identified by Respondents	32
5.6 Further Issues Raised by Respondents	33
5.7 Further Comments of Respondents.....	34
6 Group's Assessment of Modification Against the Applicable BSC Objectives....	35
6.1 Merits of P203 Compared with Existing Code Baseline.....	35
6.2 Final Recommendation to the Panel.....	38
6.3 Interaction with P198.....	38
7 Terms Used in this Document.....	39
8 Document Control.....	39
8.1 Authorities.....	39
8.2 References	39
8.3 Intellectual Property Rights, Copyright and Disclaimer	39
Appendix 1: Draft Legal Text	40
Appendix 2: Process Followed	40
Appendix 3: Results of Impact Assessment.....	43
Appendix 4: Results of TLF Modelling Exercise.....	48
Appendix 5: Results of Cost-Benefit Analysis	48
Appendix 6: Results of Assessment Procedure Consultation	48
Appendix 7: Results of Data Correction Consultation.....	48
Appendix 8: P198 Assessment Report	48

SUMMARY OF IMPACTED PARTIES AND DOCUMENTS

As far as the Modification Group has been able to assess, the following parties/documents would be impacted by P203.

Please note that this table represents a summary of the full impact assessment results in Appendix 3.

Parties	Sections of the BSC	Code Subsidiary Documents
Distribution System Operators	<input type="checkbox"/>	A <input type="checkbox"/> BSC Procedures <input checked="" type="checkbox"/>
Generators	<input checked="" type="checkbox"/>	B <input type="checkbox"/> Codes of Practice <input type="checkbox"/>
Interconnectors	<input checked="" type="checkbox"/>	C <input type="checkbox"/> BSC Service Descriptions <input checked="" type="checkbox"/>
Licence Exemptable Generators	<input checked="" type="checkbox"/>	D <input type="checkbox"/> Party Service Lines <input type="checkbox"/>
Non-Physical Traders	<input type="checkbox"/>	E <input checked="" type="checkbox"/> Data Catalogues <input type="checkbox"/>
Suppliers	<input checked="" type="checkbox"/>	F <input type="checkbox"/> Communication Requirements Documents <input checked="" type="checkbox"/>
Transmission Company	<input checked="" type="checkbox"/>	G <input type="checkbox"/> Reporting Catalogue <input checked="" type="checkbox"/>
Party Agents	H	Load Flow Model Specification* <input checked="" type="checkbox"/>
Data Aggregators	<input type="checkbox"/>	I <input type="checkbox"/>
Data Collectors	<input type="checkbox"/>	J <input type="checkbox"/>
Meter Administrators	<input type="checkbox"/>	K <input type="checkbox"/>
Meter Operator Agents	<input type="checkbox"/>	L <input type="checkbox"/>
ECVNA	<input type="checkbox"/>	M <input type="checkbox"/>
MVRNA	<input type="checkbox"/>	N <input type="checkbox"/>
BSC Agents	O	Core Industry Documents
SAA	<input checked="" type="checkbox"/>	P <input type="checkbox"/>
FAA	<input type="checkbox"/>	Q <input type="checkbox"/>
BMRA	<input checked="" type="checkbox"/>	R <input type="checkbox"/>
ECVAA	<input type="checkbox"/>	S <input type="checkbox"/>
CDCA	<input checked="" type="checkbox"/>	T <input checked="" type="checkbox"/>
TA	<input type="checkbox"/>	U <input type="checkbox"/>
CRA	<input checked="" type="checkbox"/>	V <input checked="" type="checkbox"/>
SVAA	<input type="checkbox"/>	W <input type="checkbox"/>
Teleswitch Agent	<input type="checkbox"/>	X <input checked="" type="checkbox"/>
BSC Auditor	<input checked="" type="checkbox"/>	BSCCo
Profile Administrator	<input type="checkbox"/>	Internal Working Procedures <input checked="" type="checkbox"/>
Certification Agent	<input type="checkbox"/>	BSC Panel/Panel Committees
Transmission Loss Factor Agent*	<input checked="" type="checkbox"/>	Working Practices <input checked="" type="checkbox"/>
Other Agents		Other
Supplier Meter Registration Agent	<input type="checkbox"/>	Market Index Data Provider <input type="checkbox"/>
Data Transfer Service Provider	<input type="checkbox"/>	Market Index Definition Statement <input type="checkbox"/>
		System Operator-Transmission Owner Code <input type="checkbox"/>
		Transmission Licence <input type="checkbox"/>
		Network Mapping Statement* <input checked="" type="checkbox"/>
		Load Flow Model Reviewer* <input checked="" type="checkbox"/>

*New document/role introduced by P203

1 EXECUTIVE SUMMARY

The key conclusions of the P203 Modification Group ('the Group') are outlined below.

The Group:

- **AGREED** that the solution requirements for Proposed Modification P203 should be based on those for Alternative Modification P198, with the exception that the P203 solution would not contain the phasing element of P198 Alternative;
- **NOTED** the results of the load-flow modelling, cost-benefit analysis and impact assessment which had already been carried out for P198, and **AGREED** that no further work in these areas was required to support the assessment of Proposed Modification P203;
- **AGREED** by majority that Proposed Modification P203 would not better facilitate the achievement of the Applicable BSC Objectives when compared to the current Code baseline;
- **DID NOT** identify any Alternative Modification to P203 which it believed would better facilitate the achievement of the Applicable BSC Objectives compared with the Proposed Modification;
- **NOTED** that the central implementation costs for Proposed Modification P203 were estimated to be approximately £477,000 (with an associated tolerance of +/- 35%), with annual operational costs in the region of £157,000 (with an associated tolerance of +/- 45%);
- **NOTED** that Proposed Modification P203 would require a twelve-month implementation lead time, driven by the timescales required to procure the TLFA and develop TLFA systems; and
- **AGREED** that the Implementation Date for Proposed Modification P203 should be tied to Parties' contract rounds – giving the following proposed dates:
 - 1 April 2008, if an Authority decision is received on or before 22 March 2007; or
 - 1 October 2008, if an Authority decision is received after 22 March 2007 but on or before 20 September 2007.

Section 2 provides further details regarding the background to P203, including a comparison with other current Modification Proposals in the area of transmission losses. A description of the Proposed Modification solution is provided in Section 3. Further information regarding the Group's discussions of the areas set out in the P203 Terms of Reference is contained in Section 4, whilst a copy of the Group's full Terms of Reference is provided in Appendix 2 along with details of the Group's membership and the process followed.

A summary of the Group's views regarding the merits of the Proposed Modification can be found in Section 6, whilst the draft legal text for P203 is provided in Appendix 1. Further details of the impacts of P203 on BSC systems, documentation, process and participants can be found in Appendix 3. A summary of the responses received to the Assessment Procedure consultation can be found in Section 5, along with the Group's discussion of those responses. Full copies of the individual consultation responses received are contained in Appendix 6. The full results of the TLF load-flow modelling exercise and cost-benefit analysis are provided in Appendices 4 and 5 respectively, whilst a copy of the P198 Assessment Report is attached as Appendix 8.

2 BACKGROUND

2.1 Types of Transmission Losses

Transmission losses can be considered to comprise two main elements:

- 'Fixed' losses are those which do not vary significantly with the power flow. In transformers, the losses arise from magnetising the iron core. In overhead lines, they include losses dependent on the voltage levels, length of line and climatic conditions.
- 'Variable' losses arise through the heat caused by current flowing through the transformers and lines. Variable losses increase with the current (and associated power flow) and the length of line in which it flows.

References to 'total' transmission losses throughout this document are used to represent the sum of fixed and variable losses (i.e. the total energy lost from the Transmission System at any given point in time).

2.2 Existing Allocation Mechanism for Transmission Losses

Transmission losses are allocated to BSC Parties ('Parties') as part of their Trading Charges, by adjusting individual BM Unit Metered Volumes in Settlement through a Transmission Loss Multiplier (TLM). The rules and calculations for allocating transmission losses to Parties are set out in Section T2 of the Balancing and Settlement Code ('the Code').

Under the existing Code provisions, both fixed and variable transmission losses in each Settlement Period are allocated to Parties on a 'uniform' (non-locational) basis in proportion to each Party's metered energy. The current allocation of transmission losses therefore does not take account of the extent to which individual Parties give rise to such losses. Although a parameter for a 'differential' allocation of some or all transmission losses is included in the Code (the Transmission Loss Factor or TLF), this is currently set to zero so has no practical effect. The value of TLF can only be amended through a modification to the Code.

Further detail regarding the existing arrangements can be found in Section 2 of the P198 Assessment Report in Appendix 8.

2.3 Related Modification Proposals

There are currently three other Pending Modification Proposals being progressed in the area of zonal transmission losses, as follows:

- Modification Proposal P198 'Introduction of a Zonal Transmission Losses Scheme' (raised by RWE Npower on 16 December 2005);
- Modification Proposal P200 'Introduction of a Zonal Transmission Losses Scheme with Transitional Scheme' (raised by Teesside Power Limited on 21 April 2006); and
- Modification Proposal P204 'Scaled Zonal Transmission Losses' (raised by British Energy Power & Energy Trading Ltd on 3 July 2006).

In addition, the P198 and P200 Modification Groups have developed Alternative Modifications for both P198 and P200. All of the proposals seek to introduce a locational allocation of variable losses through the calculation of 'zonal' TLF values, although their precise calculations and application of these values differ. A summary of these different solutions can be found in Table 1 on the following page, whilst further detail regarding the proposals and their Alternatives can be found in Sections 2.3.1-2.3.4 below.

Please note that all three of these Modification Proposals and their Alternatives are mutually exclusive, such that only one could be approved by the Authority for implementation.

Table 1 – Summary of Pending Transmission Losses Modification Proposals

Aspect of Solution	P198 Proposed	P198 Alternative	P200 Proposed	P200 Alternative	P203 Proposed	P204 Proposed
Scope of Zonal TLF Calculation	Scaled Marginal (Variable Losses Only)					
Scaling Factor	0.5	0.5	0.5	0.5	0.5	TBC - to ensure no energy credits
Applicable Period for TLFs	BSC Year	BSC Season	BSC Year	BSC Season	BSC Season	TBC
Nature of TLF Calculation	Ex-Ante	Ex-Ante	Ex-Ante	Ex-Ante	Ex-Ante	Ex-Ante
Frequency of TLF Calculation	Annual	Annual	Annual	Annual	Annual	Annual
Applicable Zones for Production BM Units	GSP Group					
Applicable Zones for Consumption BM Units	GSP Group					
Mitigation of Impacts?	No	Yes	Yes	Yes	No	No
Type of Mitigation	-	Linear Phasing	Hedging	Hedging	-	-
Period of Mitigation	-	4 Years	15 Years	15 Years	-	-

2.3.1 Modification Proposal P198

The P198 Assessment Report will be presented to the BSC Panel ('the Panel') at its meeting on 10 August 2006, and is attached as Appendix 8. An overview of the solution for the P198 Proposed and Alternative Modifications is provided below. The majority recommendation of the P198 Modification Group is that neither Proposed Modification P198 nor Alternative Modification P198 should be made.

a) Proposed Modification P198

The solution for Proposed Modification P198 involves the following 'scaled marginal' methodology for calculating zonal TLFs:

- 1) An electrical model of the Transmission System (a 'Load Flow Model') would be built, containing 'Nodes' to represent points where energy flows on or off the Transmission System or where two or more circuits on the network meet. Each Node on the Transmission System would be identified by the Transmission Company, and would be allocated to a specific Zone on the transmission network on the basis of a 'Network Mapping Statement' maintained by BSCCo. The TLF Zones would be set by the Panel, based on the geographic areas covered by GSP Groups. Since there are currently 14 GSP Groups, there would therefore be 14 TLF Zones.
- 2) TLFs would be calculated on an ex-ante basis (i.e. forecasted) for each BSC Year, using Metered Volumes and Network Data for Sample Settlement Periods from a preceding 12-month period (the 'Reference Year'). The required Metered Volumes and Network Data would be provided by the Central Data Collection Agent (CDCA) and the Transmission Company respectively.
- 3) Prior to the start of each BSC Year (1 April – 31 March), the Load Flow Model would be run by a Transmission Loss Factor Agent ('the TLFA') to calculate how an incremental (or 'marginal') increase (or 'injection') in power at each individual Node would affect the total variable losses from the Transmission System. The output of the Load Flow Model would be a TLF value for each Node in each of the Sample Settlement Periods. Positive TLF values would be produced for Nodes where an incremental increase in generation (or reduction in demand) had the effect of decreasing variable losses. Negative TLF values would be produced for Nodes where an incremental increase in generation (or reduction in demand) had the effect of increasing variable losses. For example, if an injection of an extra unit of energy at a Node increased variable losses by 0.02%, the TLF for that Node in that Settlement Period would be -0.02.
- 4) The TLFA would average these raw Nodal TLFs across all the Nodes in each TLF Zone by 'volume-weighted' averaging, to give 14 Zonal TLF values for each Sample Settlement Period (one per TLF Zone). The TLFA would then convert these to Annual Zonal TLFs by 'time-weighted' averaging.
- 5) The TLFA would adjust the Annual Zonal TLFs by a 0.5 scaling factor such that the volume of energy allocated via the TLFs was comparable to the volume of variable losses calculated by the Load Flow Model. These 14 Adjusted Annual Zonal TLFs (one per TLF Zone) would be made publicly available by BSCCo no less than three months prior to their use in the TLM Settlement calculation for the applicable BSC Year.

- 6) Each BM Unit would be allocated to a specific TLF Zone by BSCCo on the basis of the Network Mapping Statement, with any question or dispute over their zonal allocation to be resolved by the Panel. Using the Network Mapping Statement, the TLFA would determine the TLF value to be applied to each BM Unit in the TLM Settlement calculation for the applicable BSC Year. This BM Unit-Specific TLF would be the Adjusted Annual Zonal TLF value for the Zone in which the BM Unit was located. All BM Units within a Zone would therefore receive the same single TLF value (the Adjusted Annual Zonal TLF for that Zone), for every Settlement Period within the applicable BSC Year. A positive TLF value would increase the value of TLM used to scale a BM Unit's Metered Volume (a benefit to generators and disadvantage to Suppliers), whilst a negative TLF value would decrease the value of TLM (a benefit to Suppliers and disadvantage to generators).
- 7) The BM Unit-Specific TLFs calculated by the TLFA would be registered in BSC Systems by the Central Registration Agent (CRA), and would be used by the Balancing Mechanism Reporting Agent (BMRA) and the Settlement Administration Agent within the Balancing Mechanism Reporting Service (BMRS) and Settlement calculations respectively.
- 8) The remaining 'fixed' element of transmission losses would continue to be allocated to Parties on a non-locational basis through the TLMO, and the overall 45:55 allocation of total transmission losses to generation and demand would be retained.
- 9) There would be no phased implementation or 'hedging' of exposure to the new zonal TLFs, which would therefore take full effect from the first Settlement Period on the Implementation Date.

Further detail regarding the solution for Proposed Modification P198 can be found in Section 4 of the P198 Assessment Report.

b) Alternative Modification P198

Under Alternative Modification P198, the TLFA would calculate Nodal TLFs and Zonal TLFs in the same way as for Proposed Modification P198, but would time-weight by BSC Season rather than by BSC Year to calculate a set of four Seasonal Zonal TLFs for each TLF Zone – one for each BSC Season.

The BSC Seasons are already defined in Section K of the Code, and are:

- BSC Spring: 1 March – 31 May inclusive;
- BSC Summer: 1 June – 31 August inclusive;
- BSC Autumn: 1 September – 30 November inclusive; and
- BSC Winter: 1 December – 28 February inclusive (or 29 February in a leap year).

These Seasonal Zonal TLFs would be multiplied under the same 0.5 scaling factor as under Proposed Modification P198 to ensure that the level of variable losses allocated through these TLFs was comparable to that calculated by the Load Flow Model. However, under Alternative Modification P198, the Seasonal Zonal TLFs would also be multiplied by an additional 'beta' (β) scaling factor to create the final set of four Adjusted Seasonal Zonal TLFs.

The value of the β scaling factor would be as follows:

Applicable BSC Year 1:	0.2
Applicable BSC Year 2:	0.4
Applicable BSC Year 3:	0.6
Applicable BSC Year 4:	0.8
Applicable BSC Year 5 onwards:	1.0.

Adjusted Seasonal Zonal TLF values would therefore be phased in linearly over the first four BSC Years of the scheme, such that they were applied at 20% of their full value in BSC Year 1, 40% in BSC Year 2, 60% in BSC Year 3, 80% in BSC Year 4, and 100% in BSC Year 5 and all subsequent years. This scaling would be undertaken by the TLFA as part of its annual ex-ante calculation of TLFs, and would apply equally to all BM Units.

All BM Units within a Zone would receive the Adjusted Seasonal Zonal TLF value for that Zone in the applicable season. TLFs would be recalculated for each BSC Year, based on data from a previous Reference Year.

Since the BSC Spring season (1 March – 31 May) spans the beginning of a new BSC Year on 1 April, the new set of TLFs for each year would therefore come into effect part-way through this season. This would result in a changeover from the BSC Spring seasonal TLF value applied to a BM Unit on the last Settlement Period on 31 March to a new value for that season which was effective from the first Settlement Period on 1 April.

Not all members of the P198 Modification Group who supported the inclusion of seasonal TLF values in an Alternative Modification supported linear phasing, and vice versa. The P198 Group noted that, under the BSC Modification Procedures, only one final Alternative Modification could be put forward to the Authority for decision – and that it was therefore not possible to develop seasonal TLFs and linear phasing as separate Alternatives. The Group noted that including both options within one Alternative would involve the risk that such an Alternative might be rejected by the Authority, were the Authority to disagree with one of these elements. The Group noted that this risk might be increased by the fact that some members in support of one of the elements did not necessarily support the other. However, since there was a majority of members in favour of each element (although not necessarily in favour of both), the Group provisionally agreed by majority on 15 June 2006 that both seasonal TLFs and linear phasing should form the Alternative Modification to P198. P203 was subsequently raised as a separate Modification Proposal on 26 June 2006. The P198 Group confirmed its majority decision to include both seasonal TLFs and phasing within the final P198 Alternative on 18 July 2006.

Further detail regarding the solution for Alternative Modification P198 can be found in Section 4 of the P198 Assessment Report.

2.3.2 Modification Proposal P200

The P200 Assessment Report (Reference 1) will be presented to the Panel at its meeting on 10 August 2006. An overview of the solution for the P200 Proposed and Alternative Modifications is provided below. The majority recommendation of the P200 Modification Group is that neither Proposed Modification P200 nor Alternative Modification P200 should be made.

a) Proposed Modification P200

Proposed Modification P200 seeks to introduce zonal TLFs under the same methodology as Proposed Modification P198 (i.e. an annual ex-ante calculation of one Adjusted Annual Zonal TLF value per TLF Zone), but with the addition of an F-factor 'hedging' scheme to mitigate the impact of TLFs on existing generators over 15 years.

P200 had been considered as a potential option for an Alternative Modification to P198. However, the P198 Modification Group agreed by majority not to assess a hedging scheme in favour of a linear phasing approach. P200 was subsequently raised as a separate Modification Proposal.

Further detail regarding Proposed Modification P200 can be found in the P200 Assessment Report (Reference 1).

b) Alternative Modification P200

Alternative Modification P200 seeks to introduce zonal TLFs under the same methodology as Alternative Modification P198 (i.e. an annual ex-ante calculation of four Adjusted Seasonal Zonal TLF values per TLF Zone), but with the addition of a 15-year F-factor 'hedging' scheme for existing generators.

Further detail regarding Alternative Modification P200 can be found in the P200 Assessment Report (Reference 1).

2.3.3 Modification Proposal P204

P204 is currently part-way through the Assessment Procedure, with an Assessment Report to be presented to the Panel at its meeting on 12 October 2006. The P204 Modification Group has not yet developed a view regarding the merits of P204.

Like P198, Proposed Modification P204 seeks to introduce a zonal scheme for the allocation of variable losses, whereby annual TLF values would be calculated for each BSC Year on an ex-ante basis for each TLF Zone. However, the principle behind P204 is different to P198, since it seeks to ensure that no BM Units are credited with energy (i.e. receive payments) through the TLM.

P204 had been considered as a potential option for an Alternative Modification to P198. However, the Group agreed by majority not to further assess such an option under P198 – believing either that it was outside the scope of P198, or that it required a substantive assessment in its own right and would be better assessed via a separate Modification Proposal.

Further detail can be found in the P204 Initial Written Assessment (IWA, Reference 2).

2.4 Modification Proposal P203

P203 was raised on 26 June 2006 by RWE Npower ('the Proposer'), who is also the Proposer of P198. P203 seeks to introduce an annual calculation of seasonal TLF values which is based on the solution developed by the P198 Modification Group for Alternative Modification P198, except that (unlike P198 Alternative) there would be no phased implementation of these values under P203.

The Proposer argues that the existing locational split between northern generation and southern demand is neither economic, efficient nor good for the environment, since it results in the transportation of electricity over large distances – increasing the amount of energy lost through variable (heating) losses. The Proposer argues that the Code's current uniform allocation of variable losses does not provide the appropriate economic signals to site new generation closer to existing demand (and vice versa), since it fails to target the costs of such losses on those Parties who cause electricity to be transported the furthest distance. The Proposer considers that this results in a cross-subsidy, whereby southern generators and northern Suppliers have to pay part of the costs of transporting electricity to the south.

P203 proposes to allocate variable losses to Parties on a 'zonal' basis through the TLF, according to the extent to which each Party gives rise to them. In the short-term, the Proposer believes that the locational economic signals generated by P203 would remove existing cross-subsidies and lead to more efficient despatch (i.e. more efficient use of existing generation closer to demand). In the longer-term, the Proposer believes that these signals would encourage more efficient siting of new plant and load in areas where generation or demand is respectively limited. The Proposer believes that these changes in market behaviour would lead to a reduction in the level of total transmission losses.

On the basis of the external TLF modelling and cost-benefit analysis exercises carried out during the P198 Assessment Procedure, the Proposer believes that the use of seasonal TLF values would provide a more accurate allocation of losses than the use of annual values – leading to more efficient despatch and a greater reduction in the level of losses. The Proposer also believes that a phased or mitigated implementation of TLF values would not be appropriate, since these would delay the realisation of these benefits.

For a full description of the original Modification Proposal as submitted by the Proposer, please refer to the P203 IWA.

3 DESCRIPTION OF MODIFICATION

The solution agreed by the P203 Modification Group for Proposed Modification P203 is based on that developed by the P198 Modification Group for Alternative Modification P198, with the exception that it would not contain the phasing element of P198 Alternative. The solution for P203 involves using a Load Flow Model to calculate four Adjusted Seasonal Zonal TLF values per TLF Zone for each BSC Year – one for each BSC Season. TLF Zones would be based on GSP Groups, and the seasonal TLFs would be calculated on an annual ex-ante (forecast) basis by the TLFA for each forthcoming BSC Year. All BM Units within a Zone would receive the Adjusted Seasonal Zonal TLF value for that Zone in every Settlement Period of the relevant BSC Season. A 0.5 scaling factor would be used in the calculation of Adjusted Seasonal Zonal TLF values, in order to ensure that the level of variable losses allocated through TLFs was comparable to the level of variable losses calculated by the Load Flow Model. The Adjusted Seasonal Zonal TLF values for each Zone would be made available to Parties no later than three months prior to the start of the applicable BSC Year.

Since the BSC Spring season (1 March – 31 May) spans the beginning of a new BSC Year on 1 April, the new set of TLFs for each year would therefore come into effect part-way through this season. This would result in a changeover from the BSC Spring seasonal TLF value applied to a BM Unit on the last Settlement Period on 31 March to a new value for that season which was effective from the first Settlement Period on 1 April.

No Alternative Modification was developed by the Group for P203 (see Section 4.5).

4 GROUP'S CONSIDERATION OF AREAS RAISED BY THE TERMS OF REFERENCE

This section outlines the initial conclusions of the Modification Group regarding the areas set out in the P203 Terms of Reference. For a summary of the process followed by the Group in progressing P203 (including a copy of the full Terms of Reference), please refer to Appendix 2.

4.1 Solution and Legal Text Interaction with Alternative Modification P198

The Group noted that, with the exception of its removal of the phasing element, the Modification Proposal implied (though was not explicit) that all other elements of the solution for Proposed Modification P203 would be based on the solution already agreed by the P198 Group for Alternative Modification P198. The Group noted that the Panel, in setting the Terms of Reference for P203, had stipulated that the following areas of the solution for Proposed Modification P203 should therefore mirror the requirements for Alternative Modification P198:

- Calculation of Nodal, Zonal, Seasonal Zonal, and Adjusted Seasonal Zonal TLF values (including the application of a 0.5 scaling factor which is fixed in the Code);
- Role of TLFA and Load Flow Model Reviewer;
- Access arrangements, input data, and output data for Load Flow Model;

- Basis for TLF Zones (GSP Groups);
- Duration (and start and end dates) of Reference Year;
- Requirements regarding the contents and maintenance of the Network Mapping Statement;
- Publication lead time for TLF values (no later than three months prior to the start of the applicable BSC Year);
- Criteria for the retrospective recalculation of TLFs; and
- Application of seasonal TLF values in Settlement.

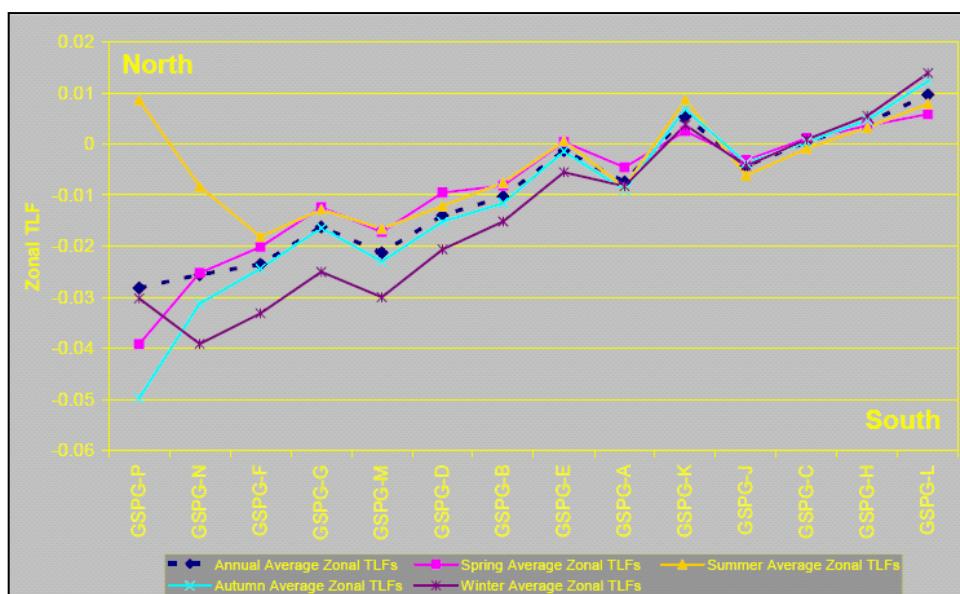
The Group (including the Proposer) agreed with this approach, noting that it would promote efficiency and the expeditious progression of P203 by avoiding the need to repeat discussions already undertaken by the P198 Group. The Group noted that the legal text for Proposed Modification P203 would therefore be based on that for Alternative Modification P198, with the exception that the text relating to the phasing element of P198 Alternative would be removed for P203. A copy of the P203 legal text can be found in Appendix 1. The Group has reviewed this text and has agreed that it delivers its intended solution.

4.2 Load-Flow Modelling

The Group noted that an external load-flow modelling exercise had been carried out by PTI Siemens on behalf of the P198 Modification Group, which included the calculation of unphased seasonal TLF values using 2005/06 data for 623 Sample Settlement Periods (weighted to be representative of a whole year). The purpose of the modelling exercise was to establish the magnitude and variability of the TLF values which would have been calculated for the 2006/07 BSC Year.

The results of the load-flow modelling exercise highlighted that there could be a significant temporal variation from an annual average TLF value in the northern TLF Zones, which was most pronounced in Scotland. This variation is shown in Figure 1 below.

Figure 1 – PTI Adjusted Seasonal Zonal TLFs for 2006/07



The results also showed that monthly and daily TLF values would be closer to seasonal TLFs than to the annual average. A copy of the full PTI load-flow modelling report can be found in Appendix 4.

The P203 Modification Group agreed that since (with the exception of the removal of the phasing element) the calculation of Adjusted Seasonal Zonal TLFs under Proposed Modification P203 would be the same as for Alternative Modification P198, no additional load-flow modelling was required for Proposed Modification P203. The Group noted that, during the load-flow modelling exercise, an issue had been identified relating to an amount of missing demand in the metered data sample used in the Load Flow Model. The Group noted that further investigations by BSCCo had identified that this appeared to arise from the approach taken to aggregate metered data for a number of 'shared' GSPs in the model input data. The Group noted that further work undertaken by PTI had demonstrated that the influence of this missing data on TLF values was not likely to be material, since the TLF calculation is based on nodal power flows (which are initially normalised to remove losses) rather than directly on the raw metered data included in the sample. However, the Group agreed with the view of the P198 Group that BSCCo should seek to resolve the issue in time for the live implementation of any transmission losses proposal which utilised the P198 methodology.

The Group noted BSCCo's advice that it is considering a potential solution to the issue whereby Licensed Distribution System Operators would be required to resubmit aggregation rules for shared GSPs as a one-off activity during implementation. The Group noted that no additional changes were required to the legal text in order to reflect this solution. One member of the Group considered that the issue should be resolved regardless of whether a zonal transmission losses scheme was approved by the Authority – since, although the current GSP aggregation rules do not represent a material issue in Settlement, this member believed there to be a broader issue regarding the transparency of minority flows within these rules. BSCCo advised that, should a zonal transmission losses scheme not be approved, it would seek the views of the Imbalance Settlement Group (ISG) as to whether it wished to progress this broader issue. The Group agreed that this approach was appropriate.

A more detailed explanation in this area can be found in Section 4.4.3 b) of the P198 Assessment Report in Appendix 8.

4.3 Cost-Benefit Analysis

The Group noted that an external cost-benefit analysis of a zonal transmission losses scheme had been carried out by OXERA Consulting on behalf of the P198 Modification Group. This analysis included a comparison between the net benefits which would arise from the use of both unphased annual and unphased seasonal TLF values. The objective of the analysis was to assess the future costs and benefits of the scheme to the market over ten years. In order to make the amount of modelling manageable, OXERA used TLF values calculated for a small number of 'representative' snapshots (three per BSC Year/BSC Season) rather than the full 623 Sample Settlement Periods which were used by PTI for the detailed analysis of one year.²

This section summarises the key findings of the cost-benefit analysis. A copy of the full OXERA cost-benefit analysis report is provided in Appendix 5. The Group's views regarding the analysis can be found in Section 6.

4.3.1 Net Benefit to Market

The cost-benefit analysis identified a total net benefit from the introduction of seasonal TLF values of £66 million over the ten years of the study period – approximately three times the net benefit of introducing annual TLF values under the same 'central scenario' market conditions.

This figure was net of the implementation costs of the scheme (a one-off cost to the market, estimated to be in the region of £2 million), operational costs (estimated at £300,000 per year), and of the assumed offsetting resource costs to Parties (for example, the use of higher-priced fuel during redespactch).

² A comparison of the TLF values calculated by OXERA and PTI for 2006/07 can be found in Section 2.2 of the P198 Cost-Benefit Analysis Report.

Table 2 below shows OXERA's comparative breakdown of the net benefits of introducing annual and seasonal TLF values under the same 'central scenario' market conditions.

Table 2 – OXERA Scenarios of Future Benefits to 2015/2016 (£m)

OXERA Assumed Future Benefits	Annual TLFs	Seasonal TLFs
Generation Redespatch (per annum)	2.9	8.9
Demand Response (per annum)	0.6	0.8
Assumed Operating Costs (per annum)	0.3	0.3
Assumed Implementation Costs	2.0	2.0
Net Present Value of Future Benefits to 2015/2016, Net of Offsetting Cost Increases	21.1	65.7

OXERA concluded that seasonal values would provide sharper signals for economic despatch, resulting in a greater reduction in the level of variable losses – and thereby a higher net benefit to the market.

Please note that the above demand response and total benefit figures have been amended slightly from those provided in the P203 Assessment Procedure Consultation Document, following OXERA's subsequent identification of a data error in the demand response figures. Corresponding amendments have also been made to Sections 6 and 8 of the cost-benefit analysis report in Appendix 5. Although the correction of this error altered the estimated annual changes in consumption per TLF Zone, the resulting differences in the net benefit figures were minor and in the order of £0.1-£0.2m.

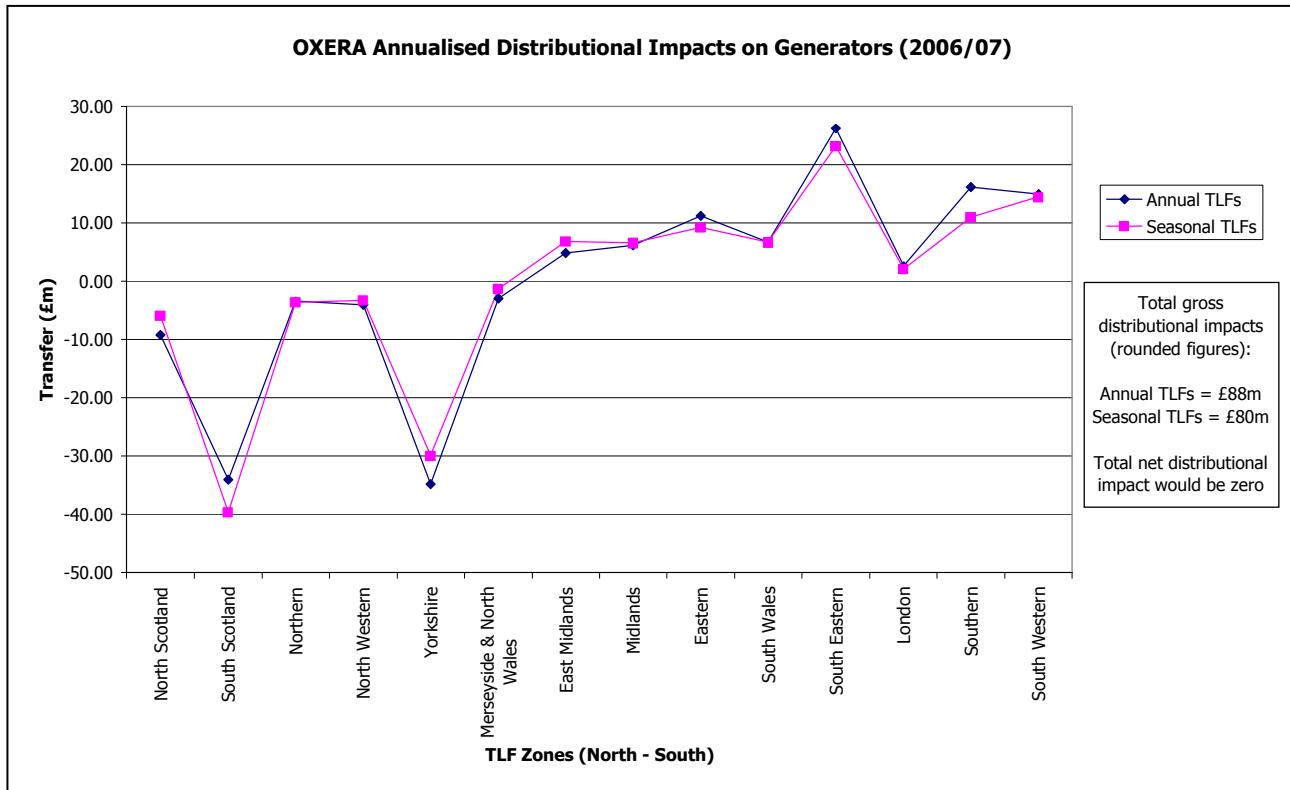
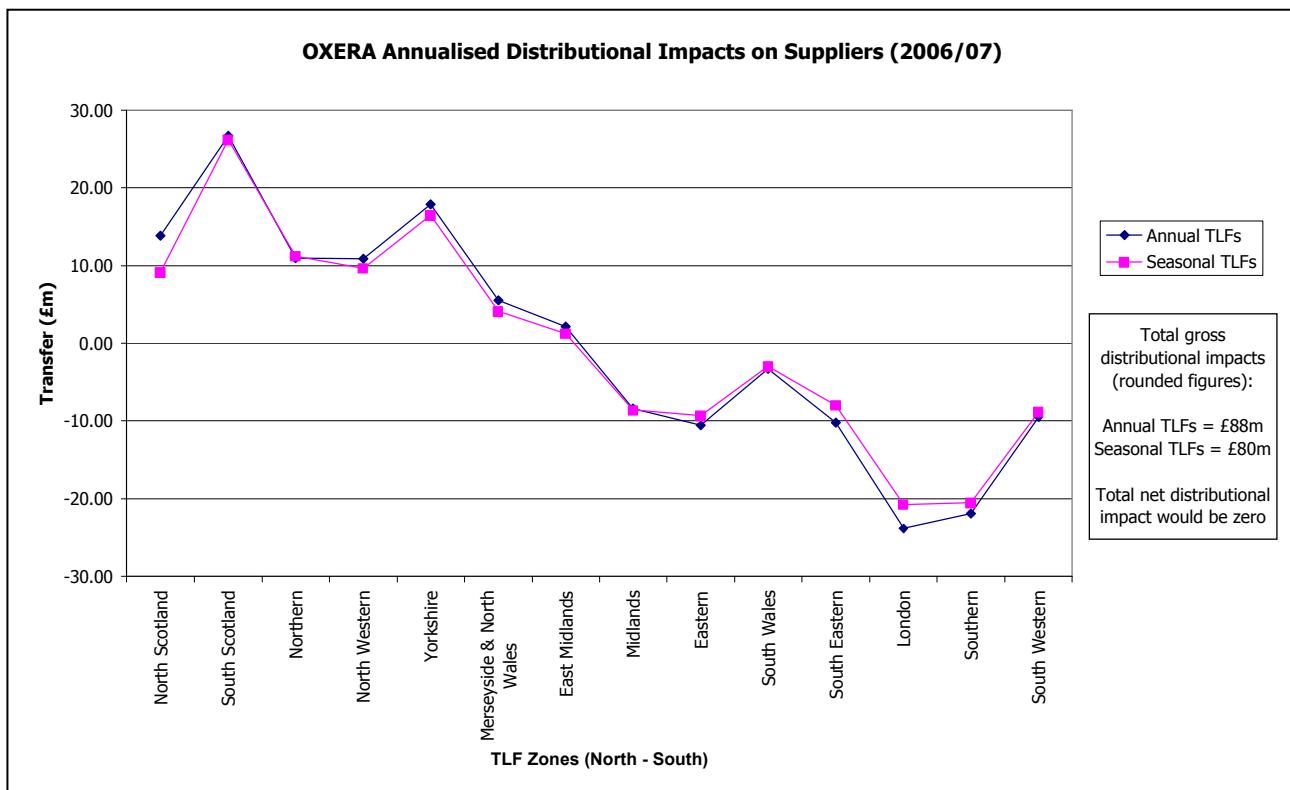
4.3.2 Distributional Impacts

OXERA also estimated the distributional effects for Parties which would occur during the first year of the scheme, as a result of the changeover from the current uniform allocation of losses to the new locationally-based allocation. These effects are set out below. OXERA concluded that whether these distributional impacts affected the net benefits identified in Table 2 was a judgement to be made by the industry.

a) Impacts by TLF Zone

Figures 2 and 3 on the following page show the total annualised distributional impacts for generators and Suppliers in each individual TLF Zone for 2006/07, as estimated by OXERA using annual and seasonal TLF values under the same 'central' scenario market conditions. These graphs were produced by BSCCo using the figures provided in Section 9 of the OXERA cost-benefit analysis report. The transfer figures in the graphs show the difference in Parties' Trading Charges which OXERA estimated would occur under the use of annual and seasonal TLFs in the TLM calculation, compared with the existing uniform TLM calculation under the current Code baseline. Negative transfers within the graphs represent an increase in payments compared with the current baseline, whilst positive transfers represent a decrease in payments. Note that the figures represent the total transfers across all generators or Suppliers within a Zone, and not the individual impact on any specific Parties. Please note also that the figures do not take account of any portfolio effects which might offset these impacts for individual Parties.

The figures underlying these graphs can be found in Section 9 of the OXERA cost-benefit analysis report in Appendix 5. Although the transfer figures by Zone contained in Figures 2-3 and in Section 9 of the OXERA report will not exactly sum to zero (since these are rounded figures), the precise transfer figures underlying these rounded totals would sum to zero. The £/MWh values of the electricity price used by OXERA to calculate these transfers can also be found in Section 9 of the cost-benefit analysis report.

Figure 2 – OXERA Annualised Distributional Impacts on Generators (2006/07)**Figure 3 – OXERA Annualised Distributional Impacts on Suppliers (2006/07)**

In Figures 2 and 3, the distributional impacts of seasonal TLFs have been annualised (i.e. the figures represent the summation of the distributional effects in each season) in order that they can be compared with the use of annual TLFs.

Figures 4 and 5 below show the estimated distributional effects of seasonal TLFs on generators and Suppliers for each BSC Season in 2006/07. These graphs were produced by BSCCo using the figures provided in Section 9 of the OXERA cost-benefit analysis report. The £/MWh values of the electricity price used by OXERA to calculate these transfers for each season can also be found in Section 9 of the cost-benefit analysis report.

Figure 4 – OXERA Seasonal Distributional Impact on Generators (2006/07)

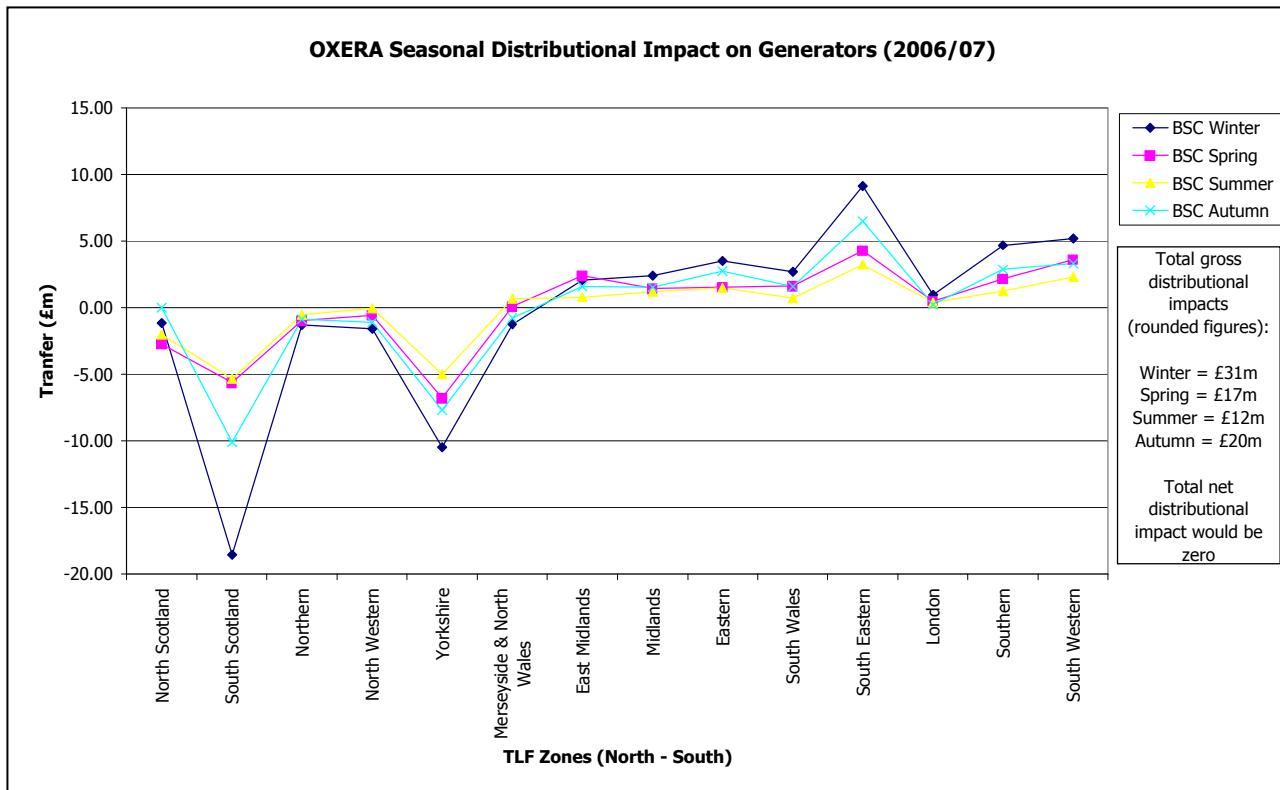
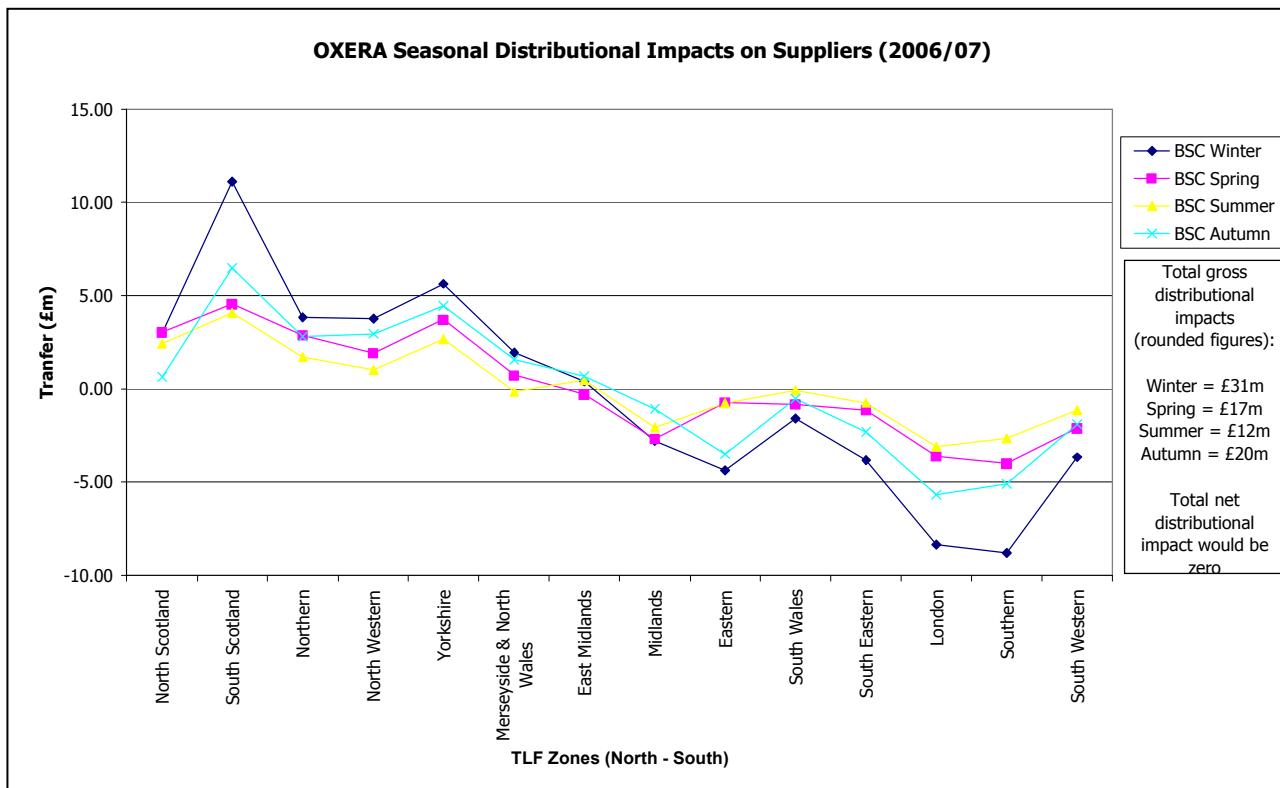


Figure 5 – OXERA Seasonal Distributional Impacts on Suppliers (2006/07)



b) Impact by Geographic Region (North/South)

Tables 3-5 below show OXERA's total estimated distributional impacts of annual and seasonal TLF values by geographic region (Scotland, northern England, and the south). These geographic areas represent OXERA's aggregations of the following TLF Zones:

- Scotland: North Scotland and Southern Scotland (GSP Groups P and N);
- Northern England: Northern, North Western and Yorkshire (GSP Groups F, G and M); and
- South: Merseyside & North Wales, East Midlands, Midlands, Eastern, South Wales, South Eastern, London, Southern and South Western (GSP Groups A, B, C, D, E, H, J, K, and L).

Please note that the distributional impacts for these regions shown in Tables 3-5 represent the net total distributional effect on generators or Suppliers in each region, and that not all Zones within the southern region experienced transfers in the same direction (i.e. generators/Suppliers in some southern Zones were estimated to experience an increase in charges, whilst others were estimated to experience a decrease). The totals in these tables are therefore different to the summations of all positive or all negative transfers in each scenario which are shown in Figures 2-5. For a breakdown by individual Zone, please refer to Figures 2-5 above or to the detailed zonal tables in Section 9 of the OXERA cost-benefit analysis report in Appendix 5. Please note also that, due to the geographical aggregations and the fact that they are based on rounded totals for each TLF Zone, the totals shown in the tables will not sum to zero.

The Group noted that, although some parts of Section 9 of the OXERA report referred to distributional impacts on consumers, these were actually the impacts on Suppliers – since consideration of whether such costs would be passed on to consumers had been specifically excluded from the scope of the cost-benefit analysis.

Table 3 – OXERA Annualised Distributional Impacts (2006/07)

	Annual TLFs		Season TLFs	
	North	South	North	South
Generators (Net Total)	Increase payments by: £43m in Scotland £42m in Northern England	Decrease payments by: £85m	Increase payments by: £45m in Scotland £36m in Northern England	Decrease payments by: £80m
Suppliers (Net Total)	Decrease payments by: £41m in Scotland £40m in Northern England	Increase payments by: £80m	Decrease payments by: £35m in Scotland £37m in Northern England	Increase payments by: £72m

The figures shown for the seasonal scenario in Table 3 above represent a summation of the distributional effects for the four individual BSC Seasons (i.e. annualised figures). Tables 4 and 5 on the following page show the impacts per season.

Table 4 – OXERA Northern Distributional Impacts by BSC Season (2006/2007)

	BSC Winter	BSC Spring	BSC Summer	BSC Autumn
Generators (Net Total)	Increase payments by: £20m in Scotland £13m in Northern England	Increase payments by: £8m in Scotland £8m in Northern England	Increase payments by: £7m in Scotland £6m in Northern England	Increase payments by: £10m in Scotland £10m in Northern England
Suppliers (Net Total)	Decrease payments by: £14m in Scotland £13m in Northern England	Decrease payments by: £8m in Scotland £9m in Northern England	Decrease payments by: £7m in Scotland £5m in Northern England	Decrease payments by: £7m in Scotland £10m in Northern England

Table 5 – OXERA Southern Distributional Impacts by BSC Season (2006/2007)

	BSC Winter	BSC Spring	BSC Summer	BSC Autumn
Generators (Net Total)	Decrease payments by: £29m	Decrease payments by: £18m	Decrease payments by: £12m	Decrease payments by: £20m
Suppliers (Net Total)	Increase payments by: £31m	Increase payments by: £15m	Increase payments by: £10m	Increase payments by: £18m

Please note that only the distributional impacts of the use of annual TLFs were provided to the industry in the P203 Assessment Procedure Consultation Document. Following the consultation, a data error was subsequently identified in these figures for Suppliers which has been corrected within Table 3 in this Assessment Report and in Section 9 of the updated version of the cost-benefit analysis report provided in Appendix 5. Specifically, the OXERA analysis now estimates the net decrease in charges for Scottish Suppliers under the use of annual TLFs at £41m (increased from £32m), the net decrease in charges for Suppliers in northern England at £40m (reduced from £41m), and the net increase in charges for southern Suppliers at £80m (increased from £73m). Although the correction of this error did not alter the overall geographic pattern or magnitude of the distributional effects, it did alter the figures provided for Suppliers in specific Zones – with the distributional effects for Suppliers in some Zones being higher under the revised figures, and those for other Zones being lower. Although the average magnitude of this change was around £4m per Zone, the difference in impact for some individual Zones was in the region of over £10m. In addition, the distributional effects identified for Suppliers in the East Midlands Zone under the use of annual TLFs in the ‘central’ scenario switched from a net loss of £1.4m to a net gain of £2.1m as a result of correcting the error. The correction of the error did not affect the distributional impacts for generators.

Following the P203 Assessment Procedure consultation, OXERA also subsequently provided the P198 Group with details of the distributional effects of the use of seasonal TLF values at the request of BSACo (as detailed in Tables 3-5). Whilst the overall annualised results under the seasonal scenario were similar to those under the annual TLFs scenario (although with a lower total distributional effect under seasonal TLFs), there was a significant variation in distributional impacts between season. The Group agreed that this was in line with its intuitive expectations, since the PTI analysis had demonstrated the seasonal variability of TLF values.

4.3.3 Impact on Transmission Losses

OXERA concluded that the more efficient despatch generated by both annual TLF values (modelled by OXERA using three 'central', 'demand' and 'gas' scenarios) and seasonal TLF values would lead to a reduction in the volume of transmission losses. However, it estimated that the highest level of reduction would occur under the use of seasonal values.

Whilst savings in transmission losses were evident in the early years of the study period, OXERA noted an overall reduction in these savings towards the end of the modelling horizon. This is shown in Figure 6 below.

Figure 6 – OXERA Assumed Annual Loss Savings (GWh)



Figure 6 shows the energy (in GWh) which would be saved under annual and seasonal zonal TLFs compared with the current baseline (i.e. the reduction in losses which would be directly attributable to the scheme). OXERA concluded that, whilst zonal TLFs would give an evident reduction in losses in the early years of the scheme (highest under the use of seasonal TLFs), from around 2012 the amount of savings directly attributable to the scheme would reduce. This would be due to the introduction of planned new build in the south from this time, which resulted in a more geographically-balanced system and would reduce losses without the introduction of a zonal losses scheme. Since the plans to introduce new southern capacity are already in existence under the current Code baseline, OXERA concluded that the potential for any incremental savings from a zonal transmission losses scheme would therefore be reduced in these years.

In 2014/15, the incremental savings in losses under the scheme reduced to zero or became negative in some scenarios. This implied that in these years there could be an equal or increased level of losses under the use of zonal TLFs compared with the existing baseline. This perceived increase in losses can be partly explained by the fact that, as the system became more in balance after 2012, the level of losses became more sensitive to marginal changes in despatch. Other factors in this result could be the chosen modelling approach (based on the use of three snapshot periods per year/season) or the ex-ante nature of the TLF calculation (which is based on the previous year's despatch patterns).

4.3.4 Locational Signals

OXERA concluded that the geographical pattern of annual and seasonal TLFs would reinforce the existing locational signals already provided by the Transmission Company's Transmission Network Use of System (TNUoS) charging. However, OXERA concluded that the strength of the TLF signals would be approximately one-third of those provided by TNUoS, and that the effect of TLFs in this area was therefore ambiguous.

Moreover, OXERA noted that over 90% of potential new Combined Coal and Gas Turbine (CCGT) projects identified in the Transmission Company's 2006 Seven Year Statement were in southern Zones – suggesting that TNUoS is already providing signals for new generation to locate in the south. OXERA considered that any long-term impacts of TLFs were therefore unlikely to be realised until beyond 2015.

Finally, OXERA considered that the impact of the TLF signals on new-build decisions was uncertain in relation to other non-cost-related issues, such as planning permission and land availability.

4.3.5 Impact on Different Classes of Generator

OXERA concluded that P198 would have an ambiguous signal on the siting of future large-scale conventional plant, and would be unlikely to have a significant impact before 2015 due to existing plans for southern build.

OXERA concluded that P198 would have a minimal impact on future renewable, nuclear and embedded generation. OXERA considered that any negative effects of TLFs on renewables would be offset by the protection offered by the government's Renewables Obligation scheme, whilst availability of land and planning consent were likely to be the most significant factors in the location of new nuclear plant.

OXERA concluded that, whilst the presence of 132kV transmission lines in Scotland would influence the TLF values for the Scottish Zones, it would not lead to any difference in signals for generators in these Zones according to whether they were connected to 132kV, 275kV or 400kV transmission lines – since all generators within a Zone would receive the same TLF, and therefore the same signals.

4.3.6 Impact on Demand

OXERA concluded that there would be limited demand-side response to P198, primarily due to the perceived inelasticity of demand.

4.3.7 Impact on Risk/Cost of Capital

OXERA did not believe that the introduction of annual or seasonal TLFs would increase perceptions of risk or the cost of capital for new investments. In support of this conclusion, OXERA argued that:

- i) Since the possibility of a zonal transmission losses scheme had been mooted since privatisation, any regulatory uncertainty for Parties in this area would have affected all investment decisions made from privatisation onwards. OXERA therefore concluded that it was unlikely that the introduction of TLFs would increase the forward-looking risks faced by investors.
- ii) An investor holding a balanced portfolio of generator shares would be unaffected by TLFs, since costs would be transferred between different generation companies. OXERA concluded that any risk which is diversifiable would not affect the cost of capital.
- iii) A zonal losses scheme was unlikely to give rise to any greater risk than other recent market changes such as BETTA. OXERA noted that a degree of risk was inherent in any change to the market arrangements, but concluded that zonal TLFs would not increase perceptions of this risk.

OXERA did not imply that there is no risk faced by electricity companies; rather that the introduction of a zonal TLFs scheme would not alter views of either regulatory or sector-specific risk factors.

On the basis of these views, OXERA did not address this area further.

4.3.8 Modification Group's Discussion of Applicability of Cost-Benefit Analysis to P203

The P203 Group noted the full results of the cost-benefit analysis undertaken by OXERA for the P198 Group, as set out in Appendix 5 and summarised above. The Group agreed that since (with the exception of the removal of the phasing element) the calculation of Adjusted Seasonal Zonal TLFs under Proposed Modification P203 would be the same as for Alternative Modification P198, no additional cost-benefit analysis was required for Proposed Modification P203.

Although the Group agreed that the correction of data errors in the cost-benefit analysis should be brought to the attention of the Panel and the industry, it agreed that the amended figures did not alter its overall views regarding P203. One member stated that the amended figures reinforced their view that the short-term distributional effects outweighed any net benefit from P203. An additional consultation was subsequently issued to industry, which identified the correction of the errors and sought confirmation from respondents that the amended data did not alter their views regarding P203. The responses received to this consultation can be found in Appendix 7 (note that, at the date of production of this report, these responses were not yet available but will be provided to the Panel at its meeting on 10 August 2006).

The full views of the Group regarding those elements of the cost-benefit analysis which they believed to be applicable to P203 can be found in Section 6.

4.4 Impact Assessment, Costs and Implementation Approach

The Group noted that, during the P198 Assessment Procedure, separate impact assessments had been sought from BSC Agents, Parties, BSCCo and the Transmission Company of the two elements of Alternative Modification P198 (seasonal TLFs and linear phasing). Respondents to this impact assessment indicated that the costs and lead times involved in implementing only the seasonal element of the Alternative would be the same as implementing both the seasonal and phasing elements. Further detail regarding the responses received can be found in Appendix 3.

The Group agreed that since (with the exception of the removal of the phasing element) the calculation of Adjusted Seasonal Zonal TLFs under Proposed Modification P203 would be the same as for Alternative Modification P198, no additional impact assessment would be required for Proposed Modification P203.

The costs of Proposed Modification P203 are therefore identical to those for Alternative Modification P198. The implementation costs of P203/P198 Alternative are approximately £10,000 higher than for Proposed Modification P198 with marginally lower operational costs, due to the P198 Group's choice of a scripted approach to loading multiple TLF values into BSC Systems. A summary of these costs is provided on the following page. The same 12-month lead time would also be required for Proposed Modification P203 as for Alternative Modification P198. A more detailed explanation of these costs and timescales can be found in Sections 4.5 and 4.9 of the P198 Assessment Report in Appendix 8. Please note that the implementation costs shown in the following table do not include those which would be required to resolve the metered data sample issue identified in Section 4.2 as a one-off activity prior to implementation.

P203 IMPLEMENTATION COSTS³

		Cost	Tolerance
Logica CSA Cost	Change Specific Cost	£25,864	Nil
	Release Cost	£17,114	Nil
	Total Logica CSA Cost	£42,978	Nil
TLFA/Load Flow Model Reviewer Cost	Development, Testing and Deployment	£250,000	+/- 50%
BSC Audit Cost	Planning and Development	£15,000	+/- 50%
Implementation Cost	External Programme Audit	£0	Nil
	Design Clarifications	£14,294	+/- 100%
	Additional Resource Costs	£0	Nil
	Additional Testing/Audit Support Costs	£20,000	+/- 50%
Total Demand Led Implementation Cost		£342,272	+/- 50%
ELEXON Implementation Resource Cost		613 man days £134,860	+/- 5%
Total Implementation Cost		£477,132	+/- 35%

P203 ONGOING SUPPORT AND MAINTENANCE COSTS

		Cost	Tolerance
Logica CSA Operation Cost Per BSC Year		£1,550	Nil
Logica CSA Maintenance Cost Per BSC Year		£0	Nil
TLFA/Load Flow Model Reviewer Operational Cost Per BSC Year		£100,000	+/- 50%
BSC Auditor Cost Per BSC Year		£40,000	+/- 50%
ELEXON Operational Cost Per BSC Year		70 man days £15,400	+/- 5%
Total Operational Cost Per BSC Year		£156,950	+/- 45%

³ An explanation of the cost terms used in this section can be found on the BSC Website at the following link:
http://www.elexon.co.uk/documents/Change_and_Implementation/Modifications_Process_-_Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf

The Group noted that, under P198, the Implementation Date and annual TLF calculation would be tied to Parties' contract rounds – to allow Parties to take account of TLF values in their contracts. The Group agreed that this approach was also appropriate for P203. The Group therefore agreed that the following provisional Implementation Dates for P198 should also apply to P203:

- 1 April 2008, if an Authority decision is received on or before 22 March 2007; or
- 1 October 2008, if an Authority decision is received after 22 March 2007, but on or before 20 September 2007.

The new zonal TLF values would therefore take effect from the first Settlement Period on the Implementation Date. For a 1 April implementation, this would also be the first Settlement Period on the first day of the BSC Year (part-way through the BSC Spring season). For a 1 October implementation (part-way through BSC Autumn), TLF values would only apply for six months during the first BSC Year of the scheme – from part-way through the BSC Autumn season to part-way through BSC Spring, when the next year's Spring TLF value would take effect. TLFs for all subsequent years would be applied on a seasonal basis for each full BSC Year.

The Group noted that, under P203, TLF values for each forthcoming BSC Year would be made available no later than three months prior to the start of that year – consistent with P198.

4.5 Potential Options for an Alternative Modification

The Group noted that a standard part of the Assessment Procedure was to consider whether there was any Alternative Modification which might better facilitate the achievement of the Applicable BSC Objectives when compared with the Proposed Modification.

The Group noted that, of the variety of potential Alternative options considered under P198, only seasonal TLFs and linear phasing had received majority support amongst the P198 Group and that both of these options formed the Alternative Modification to P198. The Group noted that the defects identified in, solutions proposed by, and issues associated with P198 and P203 were very similar – and therefore agreed that the arguments against progressing other potential Alternative options under P198 (whether due to lack of majority support or because they were believed to be outside the scope of the proposal) also applied to P203. As a result, the Group did not identify any Alternative Modification to P203 which it believed would better facilitate the achievement of the Applicable BSC Objectives compared to the Proposed Modification.

Further detail regarding the options considered for an Alternative Modification under P198 can be found in Section 4.6 of the P198 Assessment Report in Appendix 8.

5 GROUP'S CONSIDERATION OF ASSESSMENT CONSULTATION RESPONSES

13 responses (representing 69 BSC Parties and no non-Parties) were received to the P203 Assessment Procedure consultation.

Table 6 on the following page provides a summary of the numbers of these respondents in support of each view, whilst Sections 5.1-5.7 detail the arguments expressed and the Group's resulting discussions of these arguments.

Full copies of the individual responses received can be found in Appendix 6.

Table 6 – Responses to Assessment Procedure Consultation

Numbers in bold represent the majority view. Bracketed numbers show the number of BSC Parties represented by the respondent(s).

	Question	Yes	No	Neutral	No Comment
Q1	Do you believe that Proposed Modification P203 would better facilitate the achievement of the Applicable BSC Objectives when compared with the current Code baseline?	3 (28)	9 (40)	1 (1)	0
Q2	Do you believe that Proposed Modification P203 would have a disproportionate impact on any class or classes of Parties?	10 (44)	3 (25)	0	0
Q3	Do you believe that Proposed Modification P203 would have an impact on perceptions of regulatory risk and/or the cost of capital?	6 (21)	5 (46)	1 (1)	1 (1)
Q4	Do you support the implementation approach described in the consultation document?	8 (55)	3 (4)	1 (9)	1 (1)
Q5	Do you believe there are any alternative solutions that the Modification Group has not identified and that should be considered?	2 (2)	10 (66)	0	1 (1)
Q6	Does P203 raise any issues that you believe have not been identified so far and that should be progressed as part of the Assessment Procedure?	3 (13)	9 (55)	0	1 (1)

The Group noted that many of the responses referred to areas which fell outside the scope of its assessment of P203 under the Applicable BSC Objectives, but that these areas could be considered by the Authority as part of its wider statutory duties. The Group noted that the Authority had recently published a letter stating that its current assumption was that a Regulatory Impact Assessment (RIA) would be undertaken for P198,⁴ although it noted that the Authority had not stated whether an RIA would be undertaken for P203.

5.1 Respondents' Views of Proposed Modification Compared with Existing Code Baseline

5.1.1 Views of Respondents

a) Majority View

A majority of respondents believed that overall the Proposed Modification **would not** better facilitate the achievement of the Applicable BSC Objectives compared with the existing Code baseline.

The majority of those respondents who opposed the Proposed Modification did not identify any impact on the achievement of Applicable BSC Objective (a). However, one respondent believed that the Proposed Modification would have a negative effect on Applicable BSC Objective (a), as this respondent believed that it would discriminate against some Parties whilst favouring others through the transfer of capital value and windfalls.

⁴ http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/15174_P198_Code_Mod_Impact_Assessment_260506.pdf

The different arguments expressed by these respondents against the other BSC Objectives were as follows:⁵

Applicable BSC Objective (b)

- The despatch benefits identified by the cost-benefit analysis were unlikely to be realised in practice, since they were based on an assumption of economic despatch which would not reflect other commercial drivers in Parties' output;
- The Proposed Modification would not provide a long-term signal to Parties, since the cost-benefit analysis demonstrated that other existing signals are already incentivising new southern generation; and/or
- The Proposed Modification would give an inconsistent, contradictory and uncertain short-term despatch signal (some respondents believed this to be a result of the approximations inherent in the ex-ante and average nature of the P203 TLF calculation).

Applicable BSC Objective (c)

- The TLF calculation under the Proposed Modification would result in allocations of losses to BM Units which were larger than the actual loss attributable to any individual BM Unit in isolation – creating windfall winners and losers;
- The distributional effects of the Proposed Modification identified by the cost-benefit analysis would represent windfall gains and losses for existing investments, which would not be able to respond to locational signals (some respondents did not agree that the existing arrangements represented a cross-subsidy, and therefore did not agree that a defect existed in the Code);
- These distributional effects – when combined with the implementation costs to Parties – would be inequitable and anti-competitive, and would outweigh any benefits associated with redespatch;
- The Proposed Modification would represent a barrier to entry into the market;
- The Proposed Modification would not outweigh other locational factors in the siting of generation and demand;
- The nature of the TLF calculation would mean that the signals provided to any one Party were also dependent on the actions of other Parties, which would be outside its control and would change from year to year – creating uncertainty for participants; and/or
- The Proposed Modification would send incorrect or inconsistent signals to participants as a result of intra-season and between-year variation, and due to the approximations contained in the TLF calculation.

Applicable BSC Objective (d)

- The Proposed Modification would add cost and complexity to the BSC arrangements, thereby reducing efficiency (note that not all respondents who opposed the Proposed Modification identified an impact on Applicable BSC Objective (d)).

Some respondents argued that the Proposed Modification would have a disproportionate impact on certain classes of Party, whilst some argued that it would negatively impact perceptions of risk and/or the cost of capital. These arguments have been detailed in Sections 5.2 and 5.3 below.

⁵ Note that not all respondents referred to specific Applicable BSC Objectives or referred to the same Objective, so arguments in these sections have been grouped according to the Objective cited by the majority of respondents in relation to each view.

b) Minority View

A minority of respondents believed that the Proposed Modification **would** better facilitate the achievement of the Applicable BSC Objectives compared with the existing Code baseline.

The different arguments expressed by respondents in favour of the Proposed Modification were as follows:

Applicable BSC Objective (a)

- The Proposed Modification would remove the market distortions and discrimination which are inherent in the cross-subsidy created by the existing uniform allocation of losses.

Applicable BSC Objective (b)

- The cost-benefit analysis demonstrated that the Proposed Modification would lead to more efficient and economic short-term plant despatch, and thereby a reduction in the level of losses; and/or
- The Proposed Modification would lead to more efficient and economic long-term plant investment decisions, by reinforcing other existing signals.

Applicable BSC Objective (c)

- The current uniform allocation is contrary to market principles and hinders the ability of competitive generation and retail businesses to reflect the cost of losses in their tariffs; and/or
- The Proposed Modification would provide a more cost-reflective allocation of variable losses – thereby promoting competition by removing an existing cross-subsidy and allocating the cost of losses to Parties according to the extent to which Parties contributed to such losses.

None of these respondents believed that P203 would affect the achievement of Applicable BSC Objective (d).

One respondent was **neutral** regarding the merits of the Proposed Modification. This respondent believed that any benefits under Applicable BSC Objective (b) through redespatch could be limited and would be balanced against the distributional effects under Objective (c) and increased costs under Objective (d).

5.1.2 Modification Group's Discussion of Responses

The Group agreed that the majority of the arguments expressed by respondents in this area had already previously been considered by the Group during the Assessment Procedure. However, some new arguments or points of clarification were identified and discussed by the Group as follows:

- a) One respondent believed that the incentive for Suppliers to balance their supply to demand would reduce the ability of generators to change their despatch. The Group noted this view.
- b) Some respondents believed that the Proposed Modification would create signals which overlapped with, or contradicted, the signals already provided by the Transmission Company's TNUoS charging methodology. The Group noted the view of the Transmission Company that the introduction of seasonal zonal TLFs would not have a direct impact on TNUoS charging, and the conclusion of the cost-benefit analysis that the signals created by these TLFs would reinforce the existing TNUoS signals. However, the Group agreed that direct consideration of any interaction with TNUoS fell outside the scope of its assessment of P203 under the Applicable BSC Objectives, and would need to be considered by the Authority under its wider remit.

- c) One respondent noted the conclusion of the cost-benefit analysis that the long-term locational impacts of zonal TLFs were uncertain, and considered that this represented a 'major gap' in the assessment of P203. The Group did not believe that any further assessment was required in this area. It noted that the cost-benefit analysis conclusion was based on the fact that no generating plant relocated during the study period – and agreed that, whilst it demonstrated that the locational effects of seasonal TLFs might be ambiguous and unlikely to be realised until beyond 2015, substantial analysis had been undertaken to support this conclusion. The Group noted that it would be difficult to quantitatively model the effect of P203 beyond 2015, due to the uncertainty of market conditions beyond this point.
- d) One respondent referred to an impact on end consumers in support of their views against the Proposed Modification. The Group noted that consideration of any impact on consumers fell outside the scope of its assessment under the Applicable BSC Objectives, and would need to be considered by the Authority under its wider remit.
- e) Some respondents referred to a negative impact on the government's environmental objectives. Further detail can be found in Section 5.2 below.
- f) Some respondents believed the cost-benefit analysis to be 'flawed', since the seasonal TLFs which it generated for 2006/07 using historic 2005/06 data for snapshot periods were not identical to those calculated by PTI using 623 Sample Settlement Periods for the same year. One of these respondents believed that implementation of P203 should be delayed until these differences had been explained. Another respondent stated that they believed that any appointed TLF agent would, depending on their method, produce different TLFs – and that these TLFs would be gross approximations of the marginal affect on losses of individual Trading Units. The Group noted that the differences between the OXERA and PTI TLF values were a consequence of the different sample periods used in the respective calculations, and that a detailed comparison and explanation of these values had been provided within Section 2.2 of the cost-benefit analysis report. The Group also noted that OXERA had undertaken a detailed validation of the results generated by its load-flow model using the full 623 Sample Settlement Periods prior to utilising its snapshot approach. The Group agreed that no further explanation of these results was required, and that the area was therefore a matter of judgement for participants as to whether the conclusions of the cost-benefit analysis were likely to be realised in practice. The Group noted that, under the P203 implementation and enduring solution, the TLFA would use the same methodology used by PTI for the Assessment Procedure modelling – and that a snapshot approach had only been used for indicative forward-modelling over ten years.
- g) One respondent noted that the PTI modelling and the initial starting point for the OXERA modelling had been actual 2005/06 data. The respondent considered that, since this represented a period of high gas prices, use of this data could result in a distorted outcome. The respondent believed that no detailed consideration of this appeared to have been taken into account. The Group noted that the nature of the P203 TLF calculation was that TLF values would be based on the previous year's market behaviour, which would include the influence of factors such as fuel price. However, the Group noted that the cost-benefit analysis had examined the sensitivity of TLFs to such factors by including a scenario which reversed the current relativities of coal and gas prices over the next ten years. The Group therefore agreed that no further analysis was required in this area.

- h) One respondent considered that the introduction of P203 would be inconsistent with the intent of the legislation to introduce the British Electricity Trading and Transmission Arrangements (BETTA). The Group noted that the Department of Trade and Industry (DTI) had not placed any moratorium on the raising of a new zonal transmission losses Modification Proposal following the DTI's statement in June 2003 that it was 'not minded to' include P82 in the GB Code at BETTA Go-Live. The Group noted that the Code allows Parties to raise Modification Proposals in areas where they believe there to be an issue or defect, and that P203 therefore needed to be considered on its own merits against the current Code baseline.

5.2 Respondents' Views of Proportionality of Impact on Parties

5.2.1 Views of Respondents

The views of respondents in this area generally influenced their views as to whether P203 would better facilitate the achievement of the Applicable BSC Objectives – since most respondents who believed that P203 would have a disproportionate impact on certain Parties argued that this would have a negative impact on the achievement of Applicable BSC Objective (c).

a) Majority View

A majority of respondents believed that P203 **would** have a disproportionate impact on certain classes of Party. The following different types of Party were identified by respondents as being disproportionately impacted (note that not all of these respondents cited impacts on all of these Parties):

- **Existing Parties:** Some respondents believed that P203 would create windfall gains and losses which penalised existing investments made on the basis of other factors prior to zonal loss charging, since existing Parties would not be able to respond to any locational signals created by the scheme.
- **New entrants:** Some respondents argued that P203 would present a barrier to entry for new participants in the market (some respondents considered that this would be especially true for smaller players). This argument was generally linked to respondents' views regarding perceptions of risk and the cost of capital (see Section 5.3).
- **Small Parties:** Some respondents believed that P203 would have a negative impact on smaller Parties, for whom implementation costs would be proportionally greater – and who were perceived to be less likely to be able to respond to signals to vary their despatch.
- **Non-portfolio players:** Some respondents considered that P203 would have an especially negative effect on non-portfolio players at the geographic extremities of the country, who (unlike vertically-integrated Parties) would not have a portfolio with which to mitigate any impact on one side of their business (this argument was generally related to views regarding regulatory risk and the cost of capital – see Section 5.3 below).
- **Vertically-integrated companies:** One respondent believed that P203 would have a negative impact on those vertically-integrated companies with northern generation and southern demand.
- **Renewables:** Some respondents argued that P203 would have a disproportionate impact on renewable generation, which they believed would be predominantly located in the 'worst' TLF Zones. These respondents considered that renewables would be unable to respond to any locational and/or despatch signals created by the scheme due to their need to site close to energy sources and the intermittent nature of their generation. Some of these respondents also disagreed with the conclusion of the cost-benefit analysis that any impact on renewables would be offset by the higher financial incentives provided by the government's Renewables Obligation scheme, since they believed this scheme had not been designed as a means of hedging against future industry changes. One respondent also believed that P203 would penalise Suppliers who purchased directly from renewable generators. Finally, one respondent believed that P203 would have a negative impact on

microgeneration which was subject to Non Half Hourly (NHH) metering (further detail regarding this argument can be found in Section 5.2.2 below).

- **Suppliers:** Some respondents believed that P203 would have a disproportionate impact on Suppliers, since the cost-benefit analysis demonstrated that demand would be largely unable to respond to the signals created by the scheme.
- **Power Stations:** One respondent believed that power stations would be particularly negatively affected. This respondent believed that the uncertainty created by future variability of locational losses would create risk, with an associated cost. The respondent considered that this cost would be higher for long-term investments such as power stations. This argument was linked to the respondent's view regarding perceptions of risk and the cost of capital (see Section 5.3 below).
- **CHP plant:** Some respondents argued that P203 would have a negative impact on CHP plant, since they believed that such plant would be unable to respond to the signals of the scheme since their electricity generation is a secondary process tied to heat production;
- **Nuclear generation:** Some respondents argued that implementation of P203 would lead to increased costs for Parties such as nuclear generators, since they believed that such generators run at baseload and would therefore be unable to change their operational regime readily.
- **132kv transmission-connected BM Units:** One respondent believed that P203 would have a negative impact on BM Units connected to the 132kV elements of the transmission system, since losses from these lines would be higher.

b) Minority View

A minority of respondents believed that P203 **would not** have a disproportionate impact on any class or classes of Party. The different arguments expressed by respondents in support of this view were as follows:

- Although there would be redistributive impacts, all classes of Party would be treated equally; and/or
- P203 would remove an existing disproportionality or cross-subsidy in the allocation of losses, and so would have a more proportionate impact on every class of Party than the existing Code baseline.

5.2.2 Modification Group's Discussion of Responses

The Group agreed that the majority of arguments expressed by respondents in this area had already previously been considered by the Group during the Assessment Procedure. However, some new arguments or points of clarification were identified and discussed by the Group as follows:

- a) One respondent believed that P203 would have a disproportionate impact on microgeneration, arguing that since such generation is subject to NHH metering it would be unable to respond to any despatch signals. However, no members of the Group believed that P203 would have a specific disproportionate impact on microgeneration. Some members believed that any domestic microgeneration would reduce bills to consumers, regardless of the signals created by P203. The Group also noted that direct consideration of this area lay outside the scope of its assessment under the Applicable BSC Objectives (see below). Some members did believe that NHH-metered generation in general would be limited in its ability to respond to despatch signals, compared with HH-metered generation – but were unsure that this represented a disproportionate result of P203 specifically.
- b) Some respondents believed that P203 would have a negative impact on the government's environmental policy. The Group noted that this consideration fell outside the scope of the Applicable BSC Objectives, and that any impact on the environment would need to be considered by the Authority under its wider remit.

- c) Some respondents referred to costs being passed through from Suppliers to consumers. The Group agreed that any consideration of consumers fell outside the scope of its assessment, but could be considered by the Authority.
- d) Some respondents believed that P203 would have a disproportionate impact on small Parties, and might present a barrier to entry into the market for such Parties. The Group noted this argument, which had not been explicitly considered within the consultation document. Some members of the Group indicated that they agreed with this view. One member stated that they believed that P203 might create a barrier to entry for new Suppliers – who they believed would have a different risk profile (since they only picked up active customers), and would be more likely to use longer-term contracts.
- e) One respondent noted that the version of the cost-benefit analysis attached to the consultation document only contained details of the distributional effects under the use of annual TLF values, and not for seasonal TLFs. The Group noted that the seasonal distributional effects had subsequently been provided to the Group (as detailed in Section 4.3), and would be highlighted to the industry during the Report Phase consultation.
- f) Some respondents believed that P203 would have a negative effect on Parties with contracts which were longer than one year, since they would be unable to factor yearly changes in TLF values into these contracts. Some members of the Group stated that they agreed with this view.

5.3 Respondents' Views of Impact on Risk/Cost of Capital

5.3.1 Views of Respondents

a) Majority View

A majority of respondents disagreed with the conclusions of the cost-benefit analysis in this area, and believed that P203 **would** have a negative impact on perceptions of regulatory risk and thereby on the cost of capital. These respondents believed that this would have a negative impact on the achievement of Applicable BSC Objective (c), and some believed that it represented a barrier to entry.

The different arguments expressed by these respondents were that:

- The variability and volatility associated with annual changes to seasonal TLF values would introduce further regulatory risk, which would be translated into financial risk (and increased cost) by the providers of capital;
- P203 would significantly increase the regulatory risk associated with new generation build – imposing a premium on the cost of capital for both new and existing generation;
- Any change which significantly alters the cost-base of participants introduces volatility and thereby affects the cost of capital; and/or
- Any form of regulatory risk would affect future investment decisions.

b) Minority View

A minority of respondents believed that P203 **would not** have a negative impact on perceptions of regulatory risk or the cost of capital. The different arguments expressed by respondents in support of this view were as follows:

- The possibility of a zonal transmission losses scheme has been discussed since privatisation, and therefore should already have been factored into market expectations; and/or
- Parties accept a degree of regulatory risk in becoming signatories to a Code which contains a process for its own modification.

One of these respondents stated that they agreed with the conclusion of the cost-benefit analysis that any risk associated with P203 would be forward-looking and diversifiable, and would therefore not impact the cost of capital.

One respondent was **neutral** in this area.

5.3.2 Modification Group's Discussions of Results

The Group agreed that the majority of the arguments expressed by respondents in this area had already been previously considered by the Group during the Assessment Procedure. However, some new arguments or points of clarification were identified and discussed by the Modification Group as follows:

- a) One respondent argued that considerations regarding regulatory risk and the cost of capital fell outside the scope of the Applicable BSC Objectives. A majority of members did not agree with this argument, and believed that any area which had the potential to affect the costs of entry to, or participation in, the market was a direct consideration under Applicable BSC Objective (c).
- b) One respondent referred to a paper from NERA Economic Consulting – which had been submitted by a respondent to the P198 and P200 consultations but not in response to P203 – in support of their views. A copy of the NERA paper can be found in the P198 Assessment Report in Appendix 8.

5.4 Respondents' Views on Implementation Approach

5.4.1 Views of Respondents

a) Majority View

A majority of respondents **agreed** with the implementation approach proposed by the Group. The different arguments expressed by respondents in support of the proposed approach were as follows:

- The proposed implementation approach had been carefully considered by the Modification Group, and represented an area of consensus within the Group;
- The proposed approach is pragmatic and based on P82; and/or
- April 2008 represents the earliest achievable Implementation Date, due to the need to allow sufficient time for all system and process changes and the desirability of aligning implementation with contract rounds;

b) Minority View

A minority of respondents **disagreed** with the implementation approach proposed by the Group.

One of these respondents stated that, since they did not support P203, they could not support the proposed implementation approach. Another believed that, if a change to seasonal TLF values was to be contemplated, phasing the implementation of these values was essential – and therefore did not agree with the implementation of P203. One respondent believed that an implementation lead time of less than three years was insufficient notice for Suppliers to renegotiate fixed long-term contracts to take account of the step change in the rules. None of these respondents suggested a specific different Implementation Date to that proposed by the Group.

One respondent indicated that they were **neutral** in this area. This respondent stated that, as they did not support P203, they believed its implementation would add unnecessary costs to the industry. However, the respondent stated that, were P203 to be approved, they recognised that the proposed approach was reasonable.

5.4.2 Modification Group's Discussion of Responses

The Group agreed that the majority of the arguments expressed by respondents in this area had already previously been considered by the Group during the Assessment Procedure. However, some new arguments were identified and discussed by the Group as follows:

- a) One respondent, although supportive of the proposed implementation approach, believed that it might be prudent to factor the possibility of a legal challenge into the implementation timetable. The Group agreed that it would not be appropriate to add additional lead time to implementation to cover this possibility, since BSACo and the Panel had an obligation under Section F1.2 to ensure that the Code facilitated the achievement of the Applicable BSC Objectives, and to implement Approved Modifications in a timely manner. BSACo also advised that, since the P82 judicial review, a Conditional Implementation Date process had been introduced into the Code by Modification Proposal P180, to allow further 'fall-back' Implementation Dates to be put forward to the Authority in the event of a legal challenge.⁶
- b) One respondent stated that it would be useful to the market if the TLFA were to re-calculate TLFs using 2005/06 data during implementation, in order to validate these against the TLFs calculated by the PTI modelling during the Assessment Procedure. However, a majority of members believed that it would not be appropriate to add such a requirement to the P203 legal text. These members noted that the 'live' TLFs for a 2008 implementation would be recalculated based on data from the 2006/07 Reference Year, and that a requirement to also calculate TLFs using 2005/06 data prior to implementation might increase the required TLFA effort and lead time. These members believed that such a requirement would not add value to the legal text, since this already requires an independent Load Flow Model Reviewer to ensure that the Load Flow Model is compliant with its specification prior to implementation. However, the Group noted that there was nothing to prevent BSACo from contractually pursuing such a requirement with the TLFA as part of the pre-implementation testing of its systems.

5.5 Alternative Solutions Identified by Respondents

A majority of respondents **did not** believe there to be any alternative solutions which the Modification Group had not identified and which should be considered further.

A minority of respondents **did** identify alternative solutions which they believed required further consideration. The solutions suggested by these respondents, and the Group's discussion of these suggestions, are summarised below.

- a) One respondent believed that the Group should give consideration to a 'more sensitive' solution that allowed the market to adjust to the impact of the modification in a more appropriate way. The respondent suggested that a solution which allowed for a rolling average of TLFs over multiple years would reduce the possibility of further destabilising step-changes. Some members were sympathetic to the argument that such an approach could reduce uncertainty, but noted that its impact would need to be fully assessed. The Group noted that it would not be possible to model what the resulting TLFs would be under this approach, since only one year of post-BETTA BSC metered data was currently available (the 2005/06 data used in the PTI analysis). Some members considered that such an approach might introduce further approximations, and decrease the accuracy of any signals. Other members did not believe that this approach would be better than the Proposed Modification. The Group therefore agreed not to progress this option under P203.

⁶ Modification Proposal P180 'Revision to BSC Modification Implementation Dates, where an Authority decision is referred to appeal or judicial review'.

- b) One respondent noted that the Panel had the ability under Section F2.1.4 of the Code to refuse to accept a new Modification Proposal, where "in the opinion of the Panel" it had "substantially the same effect" as another Pending Modification Proposal. This respondent believed that the Panel should have refused to accept P203 as being substantially similar to P198. The Group noted that, whilst the Code allowed the Panel to refuse new proposals on such grounds, the Panel was not required to do so. The Group also noted that the matter of whether a new proposal had substantially the same effect as another existing proposal was a matter for the Panel's judgement. It noted that the Panel had discussed the possibility of refusing P203 at its meeting on 13 July 2006, but had agreed that it had a substantially different effect to both Proposed Modification P198 (due to the use of seasonal, rather than annual, values) and Alternative Modification P198 (due to the removal of the phasing element). The Group noted that it was therefore required under its Terms of Reference to assess P203 on its own merits. One member of the Group remained concerned that this might set a precedent for 'frustrated potential alternatives' to be raised as separate Modification Proposals. The Group noted that this precedent already existed – particularly in the case of previous transmission losses Modification Proposal P105, which had been based on the Alternative Modification for P75 with the exception of the removal of P75 Alternative's phasing element.⁷
- c) One respondent, whilst not proposing an alternative solution to P203, believed that the BSC was not the appropriate Code in which to deal with transmission losses. This respondent believed that transmission losses would be best managed through transmission charging and the Connection and Use of System Code. The Group noted that this view represented part of the respondent's rationale for not supporting P203, but agreed that consideration of alternative mechanisms outside the BSC fell outside the scope of its assessment.
- d) One respondent stated that no reference had been made in the consultation document as to the impact that the actions of the System Operator could have on the level of transmission losses, and believed that this might require further assessment. The Group agreed that wider considerations of the effect that factors such as the System Operator Incentive Scheme or system-balancing actions might have on losses lay outside the scope of its assessment under the Applicable BSC Objectives.

5.6 Further Issues Raised by Respondents

A majority of respondents **did not** believe there to be any further issues regarding P203 which had not been considered by the Modification Group.

A minority of respondents **did** identify issues which they believed required further consideration. The issues raised by these respondents, and the Group's discussions of these issues, are summarised below.

- a) One respondent believed that there were environmental issues which should be identified and progressed, as well as a potential impact on consumers. The Group agreed that any impacts in this area fell outside the scope of the Applicable BSC Objectives, and would need to be considered by the Authority as part of its wider statutory duties.
- b) One respondent believed that P203 could lead to an increase in bid price as northern generators recouped costs. The Group noted this view.

⁷ Modification Proposals P75 'Introduction of a Zonal Transmission Losses Scheme' and P105 'Introduction of Zonal Transmission Losses on a Marginal Basis Without Phased Implementation'.

- c) One respondent believed that there had been no assessment of the materiality of P203 on different types of Supplier (for example, according to whether they also owned generation assets and the size and type of customer portfolio). This respondent believed that Suppliers without generation assets would be unable to offset the impact of P203 on their operations. The Group noted that the cost-benefit analysis had examined the distributional effects on three hypothetical Suppliers of the same size, but whose customer base was respectively concentrated in the north, south or balanced across the whole country (see Section 9.1 of the cost-benefit analysis report). The Group noted that, for the purpose of this exercise, these hypothetical Suppliers had been assumed not to own any generation assets. The Group noted that OXERA would not have had knowledge of individual Suppliers' actual portfolios, and also agreed that it would not have been appropriate for the cost-benefit analysis or the Group to consider individual Parties' commercial positions.
- d) One respondent noted that the government's Energy Review and the Transmission Company's Winter Outlook Update had recently been published, and believed that there might be additional issues arising from these documents that needed to be taken into account when considering the merits of P203. The Group noted this view, but agreed that any consideration of these documents fell outside the scope of its assessment under the BSC.

5.7 Further Comments of Respondents

Many of the further comments made by respondents reiterated arguments already expressed elsewhere within their responses (in particular, their support or opposition to the Modification Proposal). In addition to these reiterated views, the following further points were made:

- a) One respondent expressed concern at what they perceived as the very short length of the P203 consultation period. The respondent believed that this may have resulted in the industry not being able to comment fairly on the changes. The Group noted that a two-week consultation period had been provided, which was the maximum period possible under the one-month Assessment Procedure timetable for P203.
- b) One respondent believed that any benefits of P203 were unlikely to be realised until beyond 2015, and that excluding phasing from the solution therefore offered no benefit. The Group noted that this view appeared to be based on the conclusion of the cost-benefit analysis report that any long-term effect of zonal TLFs was ambiguous, but appeared to disagree with OXERA's findings that there would be short-term despatch benefits prior to 2015.
- c) The same respondent believed that each time a new measure was introduced into the market, consumer confidence was undermined – and that consumers might therefore cease to respond to both the new signals and already-existing signals in the market. Although the Group noted that any impact on consumers fell outside the scope of its assessment under the Applicable BSC Objectives, one member believed that the arguments made by the respondent could also apply to generators' response to signals and was related to perceptions of regulatory risk. This view was noted by the Group.
- d) One respondent believed that consideration needed to be given to the current rules that only permitted one Alternative Modification to be put forward per Modification Proposal. This respondent believed that, if the Modification Process was to be effected in an orderly manner, all reasonable alternatives to the main proposal should be identified and progressed as part of the main proposal. The respondent suggested that, once a matter had been ruled on by Ofgem (e.g. P82), there should be a moratorium on similar proposals being raised for a minimum of two years – and five years where a new proposal had essentially the same effect as a previous one. The Group noted that any party could raise a Modification Proposal or Standing Issue to change the Modification Process in this area, if they believed this was required. However, the Group noted that it was required to assess P203 under the current rules of the BSC.

- e) The same respondent believed that a better approach to the management of zonal transmission losses would be to place clear incentives on the Transmission Company to limit the cost of these. The Group noted that the System Operator Incentive Scheme already places incentives on the Transmission Company to reduce losses (although the actual cost of losses is linked to the market price of electricity), but that direct consideration of this scheme fell outside its assessment under the Applicable BSC Objectives.
- f) One respondent believed that the Authority should consider the impact of P203 on the environment, consumers, and the existing TNUoS charging methodology. The Group noted that the Authority's decision would be based on consideration of whether P203 would be consistent with its wider statutory duties, in addition to whether it would better facilitate the achievement of the Applicable BSC Objectives.
- g) One respondent believed that it was inappropriate to be introducing further regulatory risk in a climate when major investment in new generation capacity is needed for national security of supply. Some members of the Group agreed with this view.

6 GROUP'S ASSESSMENT OF MODIFICATION AGAINST THE APPLICABLE BSC OBJECTIVES

6.1 Merits of P203 Compared with Existing Code Baseline

This section outlines the views of the Modification Group regarding the merits of Proposed Modification P203 against the Applicable BSC Objectives.

Table 7 – Modification Group's View of Proposed Modification

Proposed Modification better facilitates?	Applicable BSC Objectives				
	(a)	(b)	(c)	(d)	Overall
Yes	Minority	Majority	Minority	None	Minority
No	None	Minority	Majority	Minority	Majority
Neutral	Majority	Minority	None	Majority	Minority

Applicable BSC Objective (a) – The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence

The **MAJORITY** view of the Group was that Proposed Modification P203 would have a **NEUTRAL** effect on the achievement of Applicable BSC Objective (a). This was consistent with the view provided within the Transmission Company Analysis for Alternative Modification P198, where the Transmission Company concluded that the introduction of seasonal zonal TLFs would have no impact on its ability to discharge its licence obligations (see Appendix 3) – and with the Transmission Company's consultation response in respect of P203, which did not identify any impact on the achievement of Applicable BSC Objective (a) (see Appendix 6). One of these members did not believe that the current arrangements could be construed as being discriminatory.

The view of a **MINORITY** of members was that Proposed Modification P203 **WOULD** better facilitate the achievement of Applicable BSC Objective (a), by removing the market distortions and discrimination generated by the existing uniform allocation of variable losses. This reflected the view provided by the Authority in the P75 and original P82 decision letters that "*addressing the cross-subsidy in the present transmission losses charging arrangements through more cost-reflective charging will also help to remove the discrimination that exists in the present arrangements*". One member also believed that Proposed Modification P203 could assist the Transmission Company in making efficient despatch decisions for balancing services.

Applicable BSC Objective (b) – The efficient, economic and co-ordinated operation of the GB transmission system

The **MAJORITY** view of the Group was that Proposed Modification P203 **WOULD** better facilitate the achievement of Applicable BSC Objective (b). These members believed that the cost-benefit analysis had highlighted a significant reduction in the level of variable losses under the use of seasonal zonal TLF values, as a result of more efficient short-term plant despatch. Although some of these members believed that the cost-benefit analysis demonstrated that the long-term signals provided by such a scheme might be ambiguous, they believed that the identified savings from redespatch would still deliver a net efficiency benefit.

One member of the Group also argued that, in addition to introducing more efficient short-term despatch, P203 would introduce long-term signals influencing business decisions regarding investment in both generation and demand. This member believed that the results of the cost-benefit analysis demonstrated that Parties are already taking account of the possible introduction of a zonal transmission losses scheme in their planning decisions, since the introduction of such a scheme has been discussed for several years.

The view of a **MINORITY** of members was that Proposed Modification P203 would have a **NEUTRAL** impact on the achievement of Applicable BSC Objective (b). This view was generally based on the findings of the cost-benefit analysis that the introduction of a seasonal zonal transmission losses scheme would not result in the relocation of any existing generating plant. These members argued that this demonstrated that the Proposed Modification would not provide a long-term signal to the market relative to other existing signals, and that any efficiency benefit would therefore be negligible. Some members believed that the introduction of a seasonal zonal transmission losses scheme would not have a significant impact on plant despatch. Noting that this was not necessarily supported by the cost-benefit analysis, these members considered that the analysis had been based on an economic despatch model which might not be representative of realistic market conditions.

The view of another **MINORITY** of members was that Proposed Modification P203 **WOULD NOT** better facilitate the achievement of Applicable BSC Objective (b). These members did not believe that the Proposed Modification would lead to more efficient despatch. One of these members noted that the seasonal TLF values calculated by OXERA for 2006/07 were not identical to those calculated by PTI for that year. Although noting that this was a consequence of the cost-benefit analysis modelling approach (which calculated TLFs for three representative snapshot periods per season rather than the total 623 Sample Settlement Periods used by PTI across the four seasons), the member therefore questioned the despatch benefits identified by the cost-benefit analysis. Another member considered that, at a time when the market is concerned over the security of supply, it was inappropriate to be considering changes which would impact the cost base of participants.

Applicable BSC Objective (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

The **MAJORITY** view of the Group was that Proposed Modification P203 **WOULD NOT** better facilitate the achievement of Applicable BSC Objective (c). These members noted the distributional effects of a zonal transmission losses scheme highlighted in the cost-benefit analysis, and believed that these represented windfall gains and losses which would penalise existing investment decisions with a negative impact on competition. Some members disagreed with the findings of the cost-benefit analysis that there would be no disproportionate impact on any class or classes of Parties, and believed that disproportionate impacts would arise. Some of these members considered that it would be impractical for demand to respond to either short-term or long-term signals. Some believed that certain types of generation (such as renewables or CHP) would be limited in their ability to respond to despatch signals, whilst some argued that all existing generators would be unable to respond to any long-term locational signals. These members therefore believed that P203 would have a disproportionate impact on such Parties. Some members did not agree that the existing arrangements represented a cross-subsidy. Additionally, some members believed that the Proposed Modification would increase volatility and would raise the cost of capital for new entrants to the market. One of these members also believed that P203 would create uncertainty by having TLF values which varied from year to year, which would have an impact on Parties' contracts.

A **MINORITY** of members believed that Proposed Modification P203 **WOULD** better facilitate the achievement of Applicable BSC Objective (c). One of these members did not believe that the distributional impacts of a zonal transmission losses scheme were a valid consideration against its approval, since they believed that these represented the removal of the cross-subsidy between Suppliers (north to south) and generators (south to north) which was inherent in the existing uniform allocation of variable losses. This member also believed that the zonal nature of the scheme would ensure that individual BM Units were not unduly penalised, whilst basing the scheme on an ex-ante calculation would allow Parties to estimate the impact of TLFs on their charges and reflect these in their advance contracts. The same member argued that Parties already took account of regulatory risk in becoming a Code signatory, and therefore did not believe that the Proposed Modification would have any impact in this area.

One member of the Group argued that Proposed Modification P203 would also introduce long-term signals influencing business decisions regarding investment in both generation and demand. This member believed that the results of the P198 cost-benefit analysis demonstrated that Parties are already taking account of the possible introduction of a zonal transmission losses scheme in their planning decisions, since the introduction of such a scheme has been discussed for several years.

Applicable BSC Objective (d) – Promoting efficiency in the implementation and administration of the balancing and settlement arrangements

The **MAJORITY** view of the Group was that Proposed Modification P203 would have a **NEUTRAL** effect on the achievement of Applicable BSC Objective (d). These members believed that the implementation costs of the proposal were not significant. One member considered that increased cost and complexity in the balancing and settlement arrangements was not in itself a negative effect, if the process which was being introduced promoted efficiencies.

A **MINORITY** of members believed that Proposed Modification P203 **WOULD NOT** better facilitate the achievement of Applicable BSC Objective (d). These members argued that the Proposed Modification would add cost and complexity to the BSC arrangements, reducing overall efficiency.

Summary

On balance, a **MAJORITY** of members believed that any benefits under Applicable BSC Objective (b) would be limited and would be outweighed by a negative impact on Applicable BSC Objective (c). These members therefore believed that Proposed Modification P203 **WOULD NOT** better facilitate the achievement of the Applicable BSC Objectives overall, and should not be made.

Another member stated that, although they believed that the balance between the potential benefits and disbenefits of the Proposed Modification would lead to a neutral effect overall, they believed that the Proposed Modification should not be made since the case for change was unproven.

A **MINORITY** of members believed that Proposed Modification P203 **WOULD** better facilitate the achievement of both Applicable BSC Objectives (b) and (c), and should therefore be made. Some of these members also believed that the Proposed Modification would better facilitate the achievement of Applicable BSC Objective (a).

Another **MINORITY** of members believed that any potential benefit under Applicable BSC Objective (b) and any negative impact under Objective (c) would be finely balanced. These members therefore stated that they remained **NEUTRAL** as to whether the Proposed Modification would better facilitate the achievement of the Applicable BSC Objectives overall.

6.2 Final Recommendation to the Panel

On the basis of the above assessment, the Modification Group therefore agreed a **MAJORITY** recommendation to the Panel that P203 **SHOULD NOT** be made.

Details of the Group's recommended Implementation Date and legal text can be found in Section 4.

6.3 Interaction with P198

In accordance with the BSC Modification Procedures, P198 and P203 were assessed separately by their respective Modification Groups as to whether they would better facilitate the achievement of the Applicable BSC Objectives compared with the existing Code baseline – and not compared with each other. The Group noted that the majority recommendation of the P198 Group was that neither the P198 Proposed nor Alternative Modifications should be made. However, a majority of members considered that it would be useful to indicate a preference between P198 and P203, so that this could be taken into account by the Panel and the Authority.

A majority of members expressed a preference for Proposed Modification P203 over Proposed Modification P198, due to the use of seasonal rather than annual TLF values. No members expressed a preference for Proposed Modification P198 over Proposed Modification P203. A minority of members abstained – either because they did not have a strong preference either way, or since they did not believe that it was appropriate to express a preference between stand-alone Modification Proposals.

A narrow majority of members expressed a preference for Alternative Modification P198 over Proposed Modification P203, due to its inclusion of phasing. A large minority of members did not support phasing, and therefore expressed a preference for Proposed Modification P203 over P198 Alternative. One member abstained.

7 TERMS USED IN THIS DOCUMENT

An explanation of all the terms used in this document can be found in the P198 Assessment Report in Appendix 8.

8 DOCUMENT CONTROL

8.1 Authorities

Version	Date	Author	Reviewer	Reason for Review
0.1	02/08/06	Kathryn Coffin	Sarah Jones, Justin Andrews, John Lucas, Tom Bowcutt, Chris Rowell, P203 Modification Group	For technical review
0.2	04/08/06	Kathryn Coffin	Sarah Jones	For review
1.0	04/08/06	P203 Modification Group	BSC Panel	For Panel decision

8.2 References

Ref.	Document Title	Owner	Issue Date	Version
1	Assessment Report for Modification Proposal P200 'Introduction of a Zonal Transmission Losses Scheme with Transitional Scheme' ELEXON - Modification Proposal 200	BSCCo	04/08/06	1.0
2	Initial Written Assessment for Modification Proposal P204 'Scaled Zonal Transmission Losses' ELEXON - Modification Proposal 204	BSCCo	07/07/06	1.0
3	Requirements Specification for Alternative Modification P198 ELEXON - Modification Proposal 198	BSCCo	30/05/06	1.0

8.3 Intellectual Property Rights, Copyright and Disclaimer

This document contains materials the copyright and other intellectual property rights in which are vested in ELEXON Limited or which appear with the consent of the copyright owner. These materials are made available for you to review and to copy for the purposes of your establishment or operation of or participation in electricity trading arrangements under the Balancing and Settlement Code ("BSC"). All other commercial use is prohibited. Unless you are a person having an interest in electricity trading under the BSC you are not permitted to view, download, modify, copy, distribute, transmit, store, reproduce or otherwise use, publish, licence, transfer, sell or create derivative works (in whatever format) from this document or any information obtained from this document otherwise than for personal academic or other non-commercial purposes. All copyright and other proprietary notices contained in the original material must be retained on any copy that you make. All other rights of the copyright owner not expressly dealt with above are reserved.

No representation, warranty or guarantee is made that the information provided is accurate, current or complete. Whilst care is taken in the collection and provision of this information, ELEXON Limited will not be liable for any errors, omissions, misstatements or mistakes in any information or damages resulting from the use of this information or any decision made or action taken in reliance on this information.

APPENDIX 1: DRAFT LEGAL TEXT

Draft legal text for the Proposed Modification is attached as a separate document, Attachment 1A.

APPENDIX 2: PROCESS FOLLOWED

Copies of all documents referred to in the table below can be found on the BSC Website at: [ELEXON - Modification Proposal 203](#).

Date	Event
26/06/06	Modification Proposal raised by RWE Npower
13/07/06	IWA presented to the Panel
14/07/06	First Assessment Procedure Modification Group meeting held
17/07/06	Assessment Procedure Consultation issued
28/07/06	Assessment Procedure Consultation responses returned
01/08/06	Second Assessment Procedure Modification Group meeting held
01/08/06	Cost-Benefit Analysis Data Correction Consultation issued
08/08/06	Cost-Benefit Analysis Data Correction Consultation responses returned
10/08/06	Assessment Report presented to the Panel

ESTIMATED COSTS OF PROGRESSING MODIFICATION PROPOSAL⁸

Meeting Costs	£1,000
Legal/Expert Cost	£0
Impact Assessment Cost	£0
ELEXON Resource	15 man days £3,860

These costs are unchanged from those provided in the P203 IWA.

⁸ Clarification of the meanings of the cost terms in this appendix can be found on the BSC Website at the following link:
http://www.elexon.co.uk/documents/Change_and_Implementation/Modifications_Process_-Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf.

MODIFICATION GROUP MEMBERSHIP

Member	Organisation	14/7	1/8
Sarah Jones	ELEXON (Chair)	Y	Y
Kathryn Coffin	ELEXON (Lead Analyst)	Y	Y
Bill Reed	RWE Npower (Proposer's Representative)	Y	N
Terry Ballard	RWE Npower (Proposer's Alternate)	N	Y
Andrew Truswell	National Grid	Y	Y
Steve Drummond	EDF Trading	Y	N
David Scott	EDF Energy	Y	Y
Man Kwong Liu	SAIC	N	Y
Martin Mate	British Energy	Y	Y
Garth Graham	Scottish and Southern	Y	Y
Dave Wilkerson	Centrica	N	Y
Keith Miller	KM Energy	N	Y
Bob Brown	Cornwall Energy Associates	Y	Y
Ben Sheehy	E.ON	Y	Y

Attendee	Organisation	14/7	1/8
Justin Andrews	ELEXON (Technical Support)	Y	Y
Cheryl Mundie	Ofgem	N	Y
Mark Gribble	Logica CMG	Y	N
Graham Shuttleworth	NERA	Y	N

COPY OF ORIGINAL MODIFICATION GROUP TERMS OF REFERENCE

Modification Proposal P203 will be considered by a new Modification Group, the 'P203 Modification Group' (formed from members of the P198 and P200 Modification Groups), in accordance with the following Terms of Reference.

P203 – Introduction of a Seasonal Zonal Transmission Losses Scheme

The Modification Group will carry out an Assessment Procedure in respect of Modification Proposal P203 in accordance with Section F2.6 of the Balancing and Settlement Code.

The Modification Group will produce an Assessment Report for consideration at the BSC Panel Meeting on 10 August 2006.

The Modification Group shall:

- Base the solution for Proposed Modification P203 on that developed by the P198 Modification Group for Alternative Modification P198, with the exception of the removal of the linear phasing element of that solution;
- Consider the results of the P198 load-flow modelling, cost-benefit analysis and impact assessment that are applicable to P203, but shall not carry out any further work in these areas for Proposed Modification P203;
- Be mindful of the arguments expressed regarding potential Alternative options under P198, and the applicability of these arguments to any potential Alternative options under P203;
- Carry out an industry consultation on the merits of P203 against the Applicable BSC Objectives; and
- Develop legal drafting for the implementation of P203.

APPENDIX 3: RESULTS OF IMPACT ASSESSMENT

An impact assessment was undertaken by the Group in respect of all BSC systems, documentation and processes. The following were identified as being impacted by P203.

Please note that the impacts listed below are based on the responses received to the impact assessment for Alternative Modification P198 (which sought separate assessments of the impacts of the seasonal TLFs and phasing elements of P198 Alternative). Copies of the individual responses received to this impact assessment are included in the P198 Assessment Report in Appendix 6. A detailed explanation of the solution requirements for the calculation and application of seasonal TLF values can be found in the Requirements Specification for Alternative Modification P198 (Reference 3).

a) Impact on BSC Systems and Processes

System / Process	Impact of Proposed Modification
BM Unit Registration	The CRA would be required to amend its BM Unit registration process so that Adjusted Seasonal Zonal TLF values for each BM Unit are obtained from the TLFA (via BSCLCo) for each BSC Year, and are registered in BSC Systems. These values would be reported to the BMRA, SAA and BSCLCo using existing data flows.
Central Data Collection	The CDCA would be required to provide the TLFA (via BSCLCo) with Metered Volume data for the Sample Settlement Periods used in the Load Flow Model.
BMRS	The BMRA would be required to receive Adjusted Seasonal Zonal TLF values for each BM Unit from the CRA, and to use these values in BMRA reporting during the applicable BSC Year.
Settlement Administration	The SAA would be required to receive Adjusted Seasonal Zonal TLF values for each BM Unit from the CRA, and to apply these values in Settlement calculations during the applicable BSC Year.
Derivation of Zonal TLFs	A new BSC process, with supporting systems, would be introduced for the TLFA to derive TLFs through the application of a Load Flow Model in accordance with a Network Mapping Statement, Load Flow Model Specification, and new calculations in Section T of the Code. The output of this new process would be a set of four Adjusted Seasonal Zonal TLF values (one per BSC Season in the year) for each of the 14 TLF Zones. All BM Units within a Zone would receive the Adjusted Seasonal Zonal TLF value for that Zone in the relevant BSC Season.

All of the above processes would contain the flexibility to handle the following activities:

- Ad-hoc prospective registration of TLFs for new BM Units; and
- Ad-hoc retrospective recalculation of TLF values following an upheld Trading Dispute.

BSC Agent documentation (e.g. Interface Definition and Design, Design Specifications, System Specifications, Manual System Specifications and Operating System Manuals) would need to be amended/developed to reflect the changes outlined above.

b) Impact on BSC Agent Contractual Arrangements

BSC Agent Contract	Impact of Proposed Modification
Transmission Loss Factor Agent	A full BSC Agent procurement exercise would need to be undertaken, and appropriate contractual arrangements created, for the TLFA in accordance with Section E of the Code.
BSC Auditor	The scope of the BSC Audit would need to be extended to include the new BSC Agent, the TLFA.

c) Impact on BSC Parties and Party Agents

Parties may wish to verify the allocation of their BM Units to Zones. Parties that have developed their own systems to monitor the Settlement calculations would also need to amend these to take account of the existence of non-zero TLF values which vary by BSC Season.

P203 has no impact on any Party Agents.

d) Impact on Transmission Company

P203 would have the following impact on the Transmission Company:

- The Transmission Company would be required to support BSCCo and the Panel in establishing and maintaining the Network Mapping Statement – including the maintenance of an up-to-date list of all Nodes on the Transmission System, and assistance in resolving any question or dispute over the allocation of individual BM Units to Zones; and
- The Transmission Company would be required to support the TLFA and the Panel in maintaining the Load Flow Model, including the provision of relevant Network Data and any necessary information to aid the Panel in its determination of Load Periods.

e) Impact on BSC Panel

P203 would have the following impact on the Panel:

- The Panel would be responsible for approving the Load Flow Model, the Load Flow Model Specification, the TLFA Service Description, the Load Flow Model Reviewer Terms of Reference and the Network Mapping Statement;
- The Panel would be responsible for establishing the definitive list of TLF Zones for use in the Network Mapping Statement and Load Flow Model, including the resolution of any question or dispute over the mapping of individual BM Units to Zones;
- The Panel would be responsible for establishing, for use in the Load Flow Model, a number of different Load Periods to represent varying levels of load on the Transmission System;
- The Panel would be responsible for establishing, for use in the Load Flow Model, the number of Sample Settlement Periods to be used in each Load Period;
- The Panel would be responsible for establishing a revised BSC Audit Scope incorporating the TLFA; and
- The Panel (aided by an independent Load Flow Model Reviewer) would be responsible for ensuring that the Load Flow Model complies with the Load Flow Model Specification – including retrospectively, where the calculation or use of TLFs is the subject of a Trading Dispute.

f) Impact on BSCCo

Area of Business	Impact of Proposed Modification
BSC Website	<p>BSCCo would be required to publish the following TLF data and documents on the BSC Website:</p> <ul style="list-style-type: none"> • The four Adjusted Seasonal Zonal TLF values for each TLF Zone in the applicable BSC Year; • The version of the Network Mapping Statement used in the annual TLF calculation, and any subsequent amendments to that statement to take account of changes in BM Unit registrations; and • The Load Periods and Sample Settlement Periods used in the TLF calculation for the applicable BSC Year. <p>Any existing website references to TLF=0 would also need to be amended.</p>
Communications	<p>BSCCo would produce an information sheet for Parties explaining the new P198 process, for publication on the BSC Website.</p>
Working Procedures	<p>BSCCo would need to put in place appropriate working practices to support its Code obligations regarding the derivation and use of TLFs. These would include processes for requesting Node information and Network Data from the Transmission Company, requesting Metered Volume data from the CDCA, and allocating new BM Units to Zones.</p>
BSC Panel/Panel Committee Support	<p>BSCCo would be required to assist the Panel in its determination of TLF Zones, Load Periods and Sample Settlement Periods.</p> <p>BSCCo would be required to support the Panel in its determination of any question or dispute over the mapping of individual BM Units to TLF Zones (potentially including the development of appeal guidelines).</p> <p>BSCCo would be required to develop a revised methodology for Estimated Transmission Losses Adjustment (ETLMO) values to reflect zonal TLFs, and to support the ISG in its approval of that methodology.</p> <p>Any potential incorrect calculation or use of TLF values in Settlement would form the subject of a Trading Dispute, under the normal process administered by BSCCo on behalf of the Trading Disputes Committee (TDC). BSCCo and TDC working practices regarding such Disputes would require additional steps for the TDC to decide whether to obtain a report from the Load Flow Model Reviewer on the compliance of the Load Flow Model with its specification, and for the Panel to determine whether TLFs should be recalculated.</p>
Change and Configuration Management	<p>BSCCo would be required to maintain the Network Mapping Statement on behalf of the Panel, under a specific change process to be detailed in the Code.</p>
Procurement and Contract Management	<p>BSCCo would be required to procure the TLFA and Load Flow Model Reviewer, and to manage the resulting contracts. BSCCo would also be required to manage the escrow arrangements for the Load Flow Model.</p>

Area of Business	Impact of Proposed Modification
Performance Assurance	BSCCo would be required to provide any necessary additional support to the BSC Auditor and the Panel in extending the scope of the BSC Audit to incorporate the TLFA.

g) Impact on Code

Code Section	Impact of Proposed Modification
Section E 'BSC Agents'	The TLFA would need to be added to the list of existing BSC Agents in Section E.
Section H 'General'	The Load Flow Model Specification would need to be added to the list of Code Subsidiary Documents in Section H.
Section T 'Settlement and Trading Charges'	Section T would require amendments to detail the rights and obligations of all relevant parties regarding the derivation of Adjusted Seasonal Zonal TLFs and their use in Settlement.
Section V 'Reporting'	Section V would require amendment to detail the provision by BSCCo of the following TLF data to Parties on request: <ul style="list-style-type: none"> • The Network Data and Metered Volumes used in the TLF calculation for the applicable BSC Year; • The circuit and transformer power flows generated by the Load Flow Model; • The raw nodal power flows calculated by the Load Flow Model and used in the TLF calculation for the applicable BSC Year; and • The raw Nodal TLFs calculated by the Load Flow Model and used in the TLF calculation for the applicable BSC Year.
Section X 'Definitions and Reporting'	Section X would require amendment to detail any new Code-defined terms or acronyms required for P203.

h) Impact on Code Subsidiary Documents

Document	Impact of Proposed Modification
BSCP01 'Overview of the Trading Arrangements'	Amendments would be required to reflect the derivation of non-zero TLFs and their use in Settlement calculations.
BSCP15 'BM Unit Registration'	Amendments would be required to include the process for allocating four Adjusted Seasonal Zonal TLF values to each BM Unit in the applicable BSC Year.
BSCP38 'Authorisations'	Amendments would be required to include an authorisation process for Parties to request input and output data files relating to the Load Flow Model (Network Data, Metered Volumes, power flows and Nodal TLFs).
BSCP41 'Report Requests and Authorisations'	As above.
Reporting Catalogue	Amendments would be required to reflect the new/amended reporting requirements introduced by P203.

Document	Impact of Proposed Modification
Communications Requirement Document	Amendments would be required to reflect the rules for communicating with the TLFA via BSCCo.
BSC Agent Service Descriptions	The BMRS, BSC Auditor, CDCA, CRA and SAA Service Descriptions would need to be amended to reflect the new obligations on these Agents in respect of zonal TLFs. A new Service Description would need to be developed for the TLFA.
Load Flow Model Specification	The specification for the TLFA Load Flow Model would be established as a new Code Subsidiary Document.

i) Impact on Core Industry Documents/System Operator-Transmission Owner Code

No impact.

j) Impact on Other Configurable Items

Document	Impact of Proposed Modification
User Requirements Specifications	The BMRS, BSC Website, CDCA, and CRA URSs would need to be amended to reflect the new obligations on these Agents in respect of zonal TLFs. A new URS would need to be developed for the TLFA.

k) Impact on BSCCo Memorandum and Articles of Association

No impact.

l) Impact on Governance and Regulatory Framework

The P198 Modification Group agreed that the following potential impacts of P198 fell outside the vires of the Code, and could therefore not form part of its assessment against the Applicable BSC Objectives:

- Impact on the environment (through changes in carbon emissions, plant-mix, or the location of generation and demand);
- Impact on consumers (through the passing on of costs or cost-savings by Parties, or changes in the location of demand);
- Impact on the existing locational signals provided by the Transmission Company's TNUoS charging.

The P198 Group noted that these areas could be taken into account by the Authority as part of its wider statutory duties when making its decision whether to approve P198. The P203 Modification Group agreed that the same arguments applied to P203.

APPENDIX 4: RESULTS OF TLF MODELLING EXERCISE

A copy of the full PTI load-flow modelling report can be found on the BSC Website at [ELEXON - Modification Proposal 198](#).

APPENDIX 5: RESULTS OF COST-BENEFIT ANALYSIS

A copy of the full OXERA cost-benefit analysis report can be found on the BSC Website at [ELEXON - Modification Proposal 198](#).

APPENDIX 6: RESULTS OF ASSESSMENT PROCEDURE CONSULTATION

Copies of the full responses received to the Assessment Procedure consultation are attached as a separate document, Appendix 6A.

APPENDIX 7: RESULTS OF DATA CORRECTION CONSULTATION

Copies of the full responses received to the cost-benefit analysis data correction consultation are attached as a separate document, Appendix 7A (note that, at the time of production of this report, these responses were not yet available but will be provided to the Panel at its meeting on 10 August 2006).

APPENDIX 8: P198 ASSESSMENT REPORT

A copy of the P198 Assessment Report can be found on the BSC Website at [ELEXON - Modification Proposal 198](#).