Panel 112/05

Meeting name	BSC Panel
Date of meeting	9 March 2006
Paper Title	INTERIM REPORT FOR MODIFICATION PROPOSAL P198 'INTRODUCTION OF A ZONAL TRANSMISSION LOSSES SCHEME'
Purpose of Paper	For Decision
Synopsis	This Interim Report summarises the progress of the P198 Modification Group to date against the Terms of Reference set by the BSC Panel. It invites the Panel to agree the proposed way forward as recommended by the Group, including an extension to the Assessment Procedure of two months to allow modelling work to be completed and a cost-benefit analysis to be undertaken. The Panel is also invited to consider whether it wishes to request provisional thinking from the Authority.

1. OVERVIEW OF PROCESS FOLLOWED

1.1. Modification Proposal P198 'Introduction of a Zonal Transmission Losses Scheme' (P198) seeks to allocate the variable element of transmission losses to BSC Parties ('Parties') on a 'zonal' locational basis, according to the extent to which each Party gives rise to them. The remaining 'fixed' element of transmission losses would continue to be allocated to Parties on a non-locational basis.

1.2. The P198 Modification Group ('the Group') has met three times on 18 January, 26 January and 2 March 2006. This Interim Report summaries the progress of the Group to date against the Terms of Reference set by the BSC Panel ('the Panel'). It also invites the Panel to agree the proposed way forward as recommended by the Group, including an extension to the Assessment Procedure of two months to allow modelling work to be completed and a cost-benefit analysis to be undertaken. The Panel is also invited to consider whether it wishes to request provisional thinking from the Authority. Details of the Group's membership and a copy of the Terms of Reference can be found in Appendices 1 and 2.

2. PROPOSED MODIFICATION SOLUTION

2.1. P198 proposes a transmission losses scheme similar to that which was previously fully developed (though not implemented) for Proposed Modification P82 'Introduction of a Zonal Transmission Losses Scheme on an Average Basis' – i.e. it proposes an annual ex-ante calculation of zonal Transmission Loss Factors (TLFs) for each BSC Year, with TLF Zones to be based on GSP Groups. The Group has therefore agreed that the P198 Proposed Modification will be based on the P82 solution except where a specific reason has been identified for diverging from that solution. The divergences from P82 agreed by the Group are set out below, along with the Group's rationale:

- **Escrow arrangements for Load Flow Model** – the Group notes that the P82 legal text required the Panel to set the Terms of Reference for the Load Flow Model escrow arrangements. However the Group has agreed that, since the Transmission Loss Factor Agent (TLFA) would be established as a new BSC Agent, it would be more appropriate to apply ELEXON's standard BSC Agent escrow agreement rather than introducing specific Terms of Reference for the TLFA's escrow agent.

- **Access to Load Flow Model** – the Group has agreed (by majority) that the TLFA would be required to make the Load Flow Model available to ELEXON on request (in addition to the Load Flow Model Reviewer and BSC Auditor) as an additional assurance measure.

- **TLF data publication on BSC Website** – the Group has agreed that an additional requirement should be introduced for ELEXON to publish Annual Adjusted TLFs, and the Load Periods and Sample Settlement Periods used in the Load Flow Model, on the BSC Website (note that ELEXON is already required to publish BM Unit-specific TLFs under Section V of the Code). The Group agrees that this would aid Parties in validating the TLF values applied to their BM Units, and notes that it would incur minimal cost since the data would already be held by ELEXON.

- **TLF data publication on request** – the Group has agreed that, in addition to the raw Nodal TLF data which was to be made available to Parties on request under P82, ELEXON should also be required to provide the following data on request:

  - The Network Data and/or nodal power flow data used in the Load Flow Model for a particular BSC Year; and/or

  - The circuit and transformer power flows and losses produced by the Load Flow Model in individual snapshots.

  The Group agrees that this would aid Parties in validating the TLF values applied to their BM Units, and allow them to analyse potential future scenarios from the raw data. The Group notes that the additional of this requirement would incur minimal cost to ELEXON, since the data would be readily available from the TLFA.

3. PROPOSED MODIFICATION IMPLEMENTATION LEAD TIME

3.1. An impact assessment of the Proposed Modification has been undertaken by BSC Agents, the Transmission Company, Parties and ELEXON. ELEXON is still compiling details of the estimated implementation costs for the Proposed Modification. However the required implementation lead time has been determined, based on the lead times given in the impact assessment responses. An implementation timeline is provided in Appendix 3, and is based on the critical path for implementation as set out below. Please note that there would be other implementation activities undertaken in parallel (such as changes to BSC Agent documentation and Code Subsidiary Documents) which have not been shown in the timeline, since they do not determine the required timescales.

- **Procurement of the TLFA by ELEXON** – the estimated lead time for this activity is 2.5 months. This is driven both by ELEXON's commercial procurement policy (under which a competitive tender exercise is required for a contract the size and cost of the TLFA role) and by the BSC Agent procurement process set out in Section E of the Code (which includes the agreement of a Tender Framework Statement and the BSC Agent contract by the Panel).

- **TLFA development** – the estimated lead time for this activity is 5.5 months from the point that the TLFA contract is signed, which was the timescale required by the P82 TLFA. Due to the need for a competitive tender exercise as outlined above, this lead time is therefore based on the development timescale which would be required were a new organisation to be awarded the TLFA contract.

- **Party development lead time** – the estimated lead time for this activity is 8 months, based on the maximum lead time provided by the Party impact assessment (other timescales provided by Parties were 3 months and 6 months, whilst some Parties required only minimal lead time). The maximum lead time has been used since Parties' system development would take place in parallel with the ELEXON procurement and TLFA development, which also has a combined lead time of 8 months. A reduced Party lead time would therefore not reduce the overall implementation lead time for the Proposed Modification.

- **Approval of Load Flow Model by the Panel and publication of TLFs** – the estimated lead time for this activity is 1 month following the completion of the TLFA development. This is based on the timescales which were required during the P82 implementation for the Load Flow Model Reviewer to report to the Panel on whether the model developed by the TLFA was fit for purpose.

- **Party publication lead time** – the Group has agreed that TLF values would be published 3 months before they were used in Settlement for the applicable BSC Year. The majority of respondents to the impact assessment indicated that 3 months would be acceptable as a minimum notice period – although some stated that they would prefer 6 months, whilst one respondent believed that a minimum of 6 months was required. The Group notes that 3 months' notice of TLF values was given under P82, and therefore agrees that this should be retained under P198 as an acceptable notice period for Parties.

3.2. The Group notes that the total implementation lead time for P198 would therefore be 12 months from the date of an Authority decision – and that, on this basis, an Implementation Date of 1 April 2007 (as suggested by the Proposer) would not be achievable. The Group notes that the rationale for an April implementation under P82 was to enable Parties to incorporate TLFs into their annual contract rounds, but that a 1 October implementation was put forward for P82 as an acceptable fall-back date to tie in with autumn contract rounds. The Group has therefore initially agreed that an Implementation Date for P198 of 1 October 2007 would be acceptable, with a fall-back date of 1 April 2008.

4. POTENTIAL OPTIONS FOR AN ALTERNATIVE MODIFICATION

4.1. The Group initially identified 7 potential variations on the Proposed Modification solution, which members believed could arise from consideration of the key principles raised by P198 and could form potential options for an Alternative Modification:

- **Potential Alternative Option 1**: An ex-post (i.e. retrospective) calculation of TLFs, based on actual data (similar to Proposed Modification P75 'Introduction of Zonal Transmission Losses').

- **Potential Alternative Option 2**: A more frequent ex-ante calculation of TLFs (similar to P75 Alternative Modification).

- **Potential Alternative Option 3**: A different constitution of TLF Zones, with a potential minimum of two Zones or maximum of one Zone per Node. This could involve a different constitution of Zones for generation and demand as under P75.

- **Potential Alternative Option 4**: A phased implementation of a zonal TLF scheme, either through linear phasing (as under P75 and P82 Alternative Modifications) or through a 'grandfathering' scheme (similar to previous Modification Proposal P109 'A Hedging Scheme for Changes to TLF in Section T of the Code').

- **Potential Alternative Option 5**: The exclusion of some or all of the following types of BM Units from the application of a zonal TLF scheme:

  - 5A: BM Units connected to the 132kV transmission network;[1]
  - 5B: Consumption BM Units;
  - 5C: BM Units relating to wind generating plant; and/or
  - 5D: BM Units relating to renewable generating plant.

  Zonal TLFs would be generated for the 'excluded' BM Units through the Load Flow Model, but would be set to zero in Settlement so that they were not applied. The share of variable transmission losses not allocated to 'excluded' BM Units on a zonal basis would be smeared across all BM Units (including the 'excluded' BM Units) on a non-locational basis – retaining the existing overall 45:55 allocation of total transmission losses to generation and demand.

- **Potential Alternative Option 6**: The exclusion of 132kV transmission losses from the locational TLF calculation, such that they were allocated across all BM Units on a non-locational basis (note that this option is different from Option 5A, which would retain 132kV transmission losses in the TLF calculation but would exclude 132kV-connected BM Units from the application of the resulting TLF values).

- **Potential Alternative Option 7**: A change to the existing 45:55 overall allocation of total transmission losses, such that a different proportion would be allocated to generation and demand.

[1] The transmission network in England and Wales is defined as that operating at voltages of 275kV and 400kV, while in Scotland it also contains the 132kV level. Losses in 132kV lines tend to be proportionally higher than in the higher-voltage lines.

4.2. The Group noted that paragraph F2.6.2 of the Code states that:

"The purpose of the Assessment Procedure is to evaluate whether the Proposed Modification identified in a Modification Proposal better facilitates achievement of the Applicable BSC Objective(s) and whether any alternative modification would, as compared with the Proposed Modification, better facilitate the achievement of the Applicable BSC Objective(s) in relation to the issue or defect identified in the Modification Proposal".

The Group noted that there was not necessarily majority agreement amongst members as to whether these options might better facilitate the achievement of the Applicable BSC Objectives compared with the Proposed Modification – and that there could be cost and timescale implications in assessing a large number of potential Alternative options. Some members were also unsure as to whether Options 5, 6 and 7 sought to address the same defect as the original Modification Proposal. However, the Group was uncomfortable with the idea of discarding any of the options without first seeking views from industry.

4.3. In order to help it decide which options to assess further, the Group therefore agreed to undertake an industry consultation on whether any potential option(s) for an Alternative Modification might better facilitate the achievement of the Applicable BSC Objectives compared with the Proposed Modification. Respondents expressing support for one or more options were invited to indicate how the option(s) might address the defect identified by P198. Respondents were not requested to state whether they believe the Proposed Modification or any potential Alternative option would be better than the current Code baseline – since this will form the subject of a subsequent, more detailed consultation (to include the results of the modelling and cost-benefit analysis).

4.4. The Group also requested that ELEXON provide legal advice as to whether an Alternative Modification which included one or more of Options 5, 6 and 7 would represent a valid Alternative to P198. ELEXON's legal advice is that an Alternative Modification which included any of Options 5, 6 or 7 would not address the specific issue or defect identified by the Modification Proposal. The following represents a summary of the rationale for this advice:

- **Potential Alternative Option 5** – part of the defect identified by P198 is that variable transmission losses are currently allocated on a uniform basis and, as such, the allocation bears no relation to the extent to which each Party has given rise to these losses. If certain types of BM Units were to be excluded from the application of zonal TLFs under P198, it would therefore be necessary to establish that they do not cause any variable transmission losses in order to address the defect identified by the Modification Proposal.

- **Potential Alternative Option 6** – one element of the defect identified by P198 is that variable transmission losses are not allocated on a locational (zonal) basis. Since the 132kV network in Scotland (and a limited number of 132kV assets in England and Wales) are classed as part of the Transmission System, losses from these lines represent 'transmission' losses. Excluding transmission losses from the 132kV Transmission System in a zonal TLF calculation could therefore not address the defect identified by P198 unless the definition of the Transmission System was amended to exclude all 132kV circuits. This would be seeking to address a broader defect, which falls outside the Code.

- **Potential Alternative Option 7** – the defect identified by P198 relates only to the variable element of transmission losses. As Option 7 proposes a change to the overall allocation of *total* transmission losses, this option therefore seeks to address a broader defect than that identified by the Modification Proposal.

A summary of the ELEXON legal advice was provided in the consultation document issued to industry.

4.5. 14 responses (representing 64 BSC Parties and 4 non-Parties) were received to the consultation. A summary table of the responses can be found in Appendix 4, and copies of the actual responses are provided as Attachment A to this report. Of the responses received:

- A majority of respondents believed that a phasing or grandfathering scheme (Potential Alternative Option 4) had the potential to better facilitate the achievement of the BSC Objectives compared with the Proposed Modification, and should therefore be assessed further by the Group;

- A substantial minority of respondents believed that further analysis of a more frequent ex-ante calculation (Potential Alternative Option 2) should be undertaken by the Group to establish whether this might better facilitate the achievement of the Applicable BSC Objectives compared with the Proposed Modification;

- Only a minority of respondents believed that there was merit in further assessing the remaining Potential Alternative Options 1, 3, 5, 6 and/or 7;

- One respondent suggested a further variation of Potential Alternative Option 7, whereby all transmission losses would be allocated to the Transmission Company;

- Two respondents suggested an additional Potential Alternative Option, whereby the TLF values generated by the Load Flow Model would be scaled with the aim of allocating no negative TLFs (i.e. a zero or positive fraction of real variable losses would be attributed to every node, with no negative fraction of variable losses attributable to any given node).

4.6. Having considered the ELEXON legal advice and the arguments expressed by consultation respondents, the Group has agreed that:

- The decision whether to further assess Potential Alternative Options 1 and 2 should be **deferred** until after the completion of the modelling exercise, which is examining the materiality of the difference between ex-post and different ex-ante calculations;

- Any variant of Potential Alternative Option 3 **should not** be assessed further, since a majority of members agree with the view expressed by the majority of respondents that a different constitution of TLF Zones would not better facilitate the achievement of the Applicable BSC Objectives compared with the Proposed Modification;

- Potential Alternative Option 4 **should** be assessed further, since a majority of members agree with the view expressed by the majority of respondents that phasing or grandfathering has the potential to better facilitate the achievement of the Applicable BSC Objectives compared with the Proposed Modification;

- Any variant of Potential Alternative Option 5 **should not** be assessed further – since a majority of members either agree with the ELEXON legal advice that these would not address the specific defect identified by P198, or agree with the view of the majority of respondents that the exclusion of any type of BM Unit would not better facilitate the achievement of the Applicable BSC Objectives compared with the Proposed Modification;

- Any variant of Potential Alternative Options 6 or 7 **should not** be assessed further – since a majority of members either agree with the ELEXON legal advice that these would be seeking to address a broader defect than that identified by P198, or agree with the view of the majority of respondents that the exclusion of 132kV transmission losses or a change to the overall 45:55 allocation would not better facilitate the achievement of the Applicable BSC Objectives compared with the Proposed Modification; and

- The decision whether to further assess a 'no negative TLFs' potential Alternative option should be **deferred** until after the completion of the modelling exercise.

5. PROGRESS OF TLF MODELLING

5.1. Using data from the 2004/2005 BSC Year, the P198 modelling exercise seeks to establish the likely magnitude and volatility of the TLF values which would have been generated for the 2005/2006 BSC Year had the proposed P198 scheme been in place.

5.2. Siemens PTI have been selected to provide the modelling service. PTI provided the modelling work for P75 and P82, and performed the role of the TLFA under the P82 development. Given that these systems are still available it was considered that utilising Siemens PTI for the P198 work provides the most efficient solution. In addition, utilising the P82 system provides additional assurance, since the calculation approach and system functionality was verified and tested during the P82 development process.

5.3. The modelling contract was agreed on 20 February 2006. Work has commenced later than originally planned, due to contractual negotiation timescales. In addition, initial problems were experienced with the input data. The project timescales are also two weeks longer than originally estimated, due to the amount of extra modelling which is required for Scotland under P198. The Group has agreed that a one-month extension to the Assessment Procedure is therefore required in order for the modelling work to be completed. The costs of the modelling exercise remain within the expenditure agreed by the Panel.

6. PROGRESS OF ECONOMIC MODELLING (COST-BENEFIT ANALYSIS)

6.1. The purpose of the cost-benefit analysis is to assess the net benefit of P198 over a ten-year period, taking into account both short-term impacts (e.g. immediate impact on charges paid by generators and Suppliers, implementation costs, effect on despatch) and long term effects (e.g. impact on the future development and location of generation and demand). The Group has developed and agreed a high-level set of requirements for the cost-benefit analysis, including the areas requested by the Panel as part of the Group's Terms of Reference. A copy of these requirements is provided as Appendix 5 to this Interim Report.

6.2. A streamlined commercial tender process has been used in order to identify potential service providers and evaluate possible approaches. A limited number of initial proposals for the service have been received, and ELEXON is currently in the process of clarifying these proposals with the consultants concerned. Following these clarifications and the production of a finalised specification by the Group, a further process will be required to allow the submission and evaluation of final proposals. This will be undertaken in parallel with the modelling work.

6.3. The initial proposals received suggest that the required timescales for the cost-benefit analysis work will be longer than ELEXON's original estimate of 2 weeks. The majority of Group members have agreed that a cost-benefit analysis is essential for the Group to be able to undertake a full assessment of whether P198 would better facilitate the achievement of the Applicable BSC Objectives. The Group has therefore agreed that a two-month extension to the Assessment Procedure is required in order that such analysis can be completed in addition to the TLF modelling work.

7. OTHER AREAS OF TERMS OF REFERENCE

7.1. Developments in the European Union Regarding Transmission Losses

ELEXON has not identified any specific EU policy regarding the treatment of transmission losses. Members of the Group have been invited to provide any documentation which they believe the Group should consider as background information; however, the Group's assessment of the merits of P198 will be limited to the Applicable BSC Objectives.

7.2. Potential Interaction With Transmission Network Use of System (TNUoS) Charging

The Transmission Company has not identified any direct interaction between TNUoS charging and the zonal transmission losses scheme proposed by P198. The Group notes that the two schemes are comparable to the extent that they both seek to provide locational signals – however, it agrees that any relationship between these signals falls outside the Applicable BSC Objectives, and would be a matter for consideration by the Authority under its wider statutory duties.

7.3. Scottish Transmission Owner Representation

At the Panel's request, an invitation for Scottish Transmission Owners to participate in the P198 Modification Group was extended at the System Operator-Transmission Owner Code (STC) Committee meeting on 17 January 2006. Following the February 2006 Panel meeting, ELEXON has also written individually to the four Scottish Transmission Owner members of the STC Committee to encourage their participation. Responses declining the Panel's invitation were received from two of these members, and no Scottish Transmission Owner representative has therefore attended the P198 meetings to date. However, at its last meeting on 2 March 2006, the Group agreed that no specific information is required from the Scottish Transmission Owners to support its assessment of P198.

8. WAY FORWARD

8.1. In accordance with paragraph F2.2.9 of the Code, the Panel may agree an extension to the Assessment Procedure where it believes such an extension to be justified by the particular circumstances of the Modification Proposal (taking due account of its complexity, importance and urgency) and providing that the Authority does not issue a contrary direction.

8.2. The Group recommends that the P198 Assessment Procedure should be extended by two months, in order that the modelling and cost-benefit analysis work can be adequately completed and considered. It should be noted that if a two-month extension is not granted, it would not be possible for the Group to commission any independent cost-benefit analysis – and this requirement would therefore need to be removed from the Group's Terms of Reference. However, even if no cost-benefit analysis is undertaken, a one-month extension would still be required to complete the modelling. Revised Assessment Procedure timetables, showing the activities which would be undertaken under a one-month and two-month extension, are provided in Appendices 6 and 7 respectively.

8.3. Paragraph F2.6.10 of the Code states that, where an interim report is prepared for the Panel, "the Panel may seek the views of the Authority as to whether the findings of such report are consistent with the Authority's provisional thinking in respect thereof". The Panel is therefore invited to consider whether it wishes to request provisional thinking from the Authority on any of the matters contained in this P198 Interim Report.

9. RECOMMENDATIONS

9.1. Having considered, and taken into due account, the contents of the P198 Interim Report, the Panel is invited to:

a) NOTE the P198 Interim Report and the recommendations of the P198 Modification Group;

b) AGREE an extension to the Assessment Procedure timetable of 2 months, such that an Assessment Report will be presented to the Panel at its meeting of 13 July 2006;

c) CONSIDER whether any refinement is required to the P198 Modification Group Terms of Reference; and

d) CONSIDER whether the Panel wishes to seek the views of the Authority as to whether the findings of the Interim Report are consistent with the Authority's provisional thinking.

Chris Rowell
Modification Secretary

List of appendices:

Appendix 1 – P198 Modification Group membership
Appendix 2 – P198 Terms of Reference
Appendix 3 – P198 Proposed Modification implementation timeline
Appendix 4 – Summary of P198 First Assessment Procedure Consultation Responses
Appendix 5 – P198 Modification Group's requirements for cost-benefit analysis
Appendix 6 – Revised P198 Assessment Procedure timetable (based on 1-month extension)
Appendix 7 – Revised P198 Assessment Procedure timetable (based on 2-month extension)

List of attachments:

Attachment A – P198 First Assessment Procedure Consultation Responses

APPENDIX 1: P198 MODIFICATION GROUP MEMBERSHIP

Member	Organisation	18/01	26/01	02/03
Sarah Jones	ELEXON (Chairman)	Y	Y	Y
Kathryn Coffin	ELEXON (Lead Analyst)	N	Y	Y
Tom Bowcutt	ELEXON (Lead Analyst)	Y	N	Y
Bill Reed	(Proposer's Representative) RWE Npower	Y	Y	Y
Guy Phillips	National Grid	Y	Y	Y
Steve Drummond	EDF Trading	Part	Y	Y
David Lewis	EDF Energy	N	N	Y
Man Kwong Liu	SAIC	Y	Y	Y
Martin Mate	British Energy	Y	Y	Y
Garth Graham	Scottish and Southern	Y	Y	N
Mark Manley	Centrica	N	Y	Y
Keith Miller	KM Energy	Y	Y	Y
Richard Ford	BWEA	Y	Y	Y
Libby Glazebrook	International Power	Y	Y	Y
Bob Brown	Cornwall Energy Associates	Y	Y	Y
Peter Bolitho	E.ON	N	Y	Y
Kirsten Elliott-Smith	Conoco Phillips	Y	Y	N

Attendee	Organisation	18/01	26/01	02/03
Richard O'Malley	ELEXON (Lawyer)	Y	Y	Y
John Lucas	ELEXON (Technical Support)	Y	Y	N
Richard Hall	Ofgem	Y	Y	N
Amrik Bal	Ofgem	Y	N	N
Grant MacEachran	Ofgem	N	Y	N
David Edward	Ofgem	N	N	Y
Lesley Nugent	Ofgem	N	N	Y
Barbara Vest	BSC Panel	Part	Y	N
Graham Thomas	BSC Panel	Part	N	N
Steve Moore	EDF Energy	Y	Y	N
Richard Jones	Npower	N	Y	N

Attendee	Organisation	18/01	26/01	02/03
Helen Snowdin	Garrad Hassan	N	N	Y
Rhys Stanwix	Scottish and Southern	N	N	Y

APPENDIX 2: P198 TERMS OF REFERENCE

Modification Proposal P198 will be considered by a new Modification Group, the 'P198 Modification Group' (formed from members of the original P82 Transmission Loss Factor Modification Group, supplemented by the expertise of current Standing Modification Group members, a representative of the System Operator-Transmission Owner Code Committee, and representatives of customer organisations), in accordance with the following Terms of Reference.

The Modification Group will carry out an Assessment Procedure in respect of Modification Proposal P198 pursuant to 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 11 May 2006, with an Interim Report to be presented at the Panel Meeting on 9 March 2006.

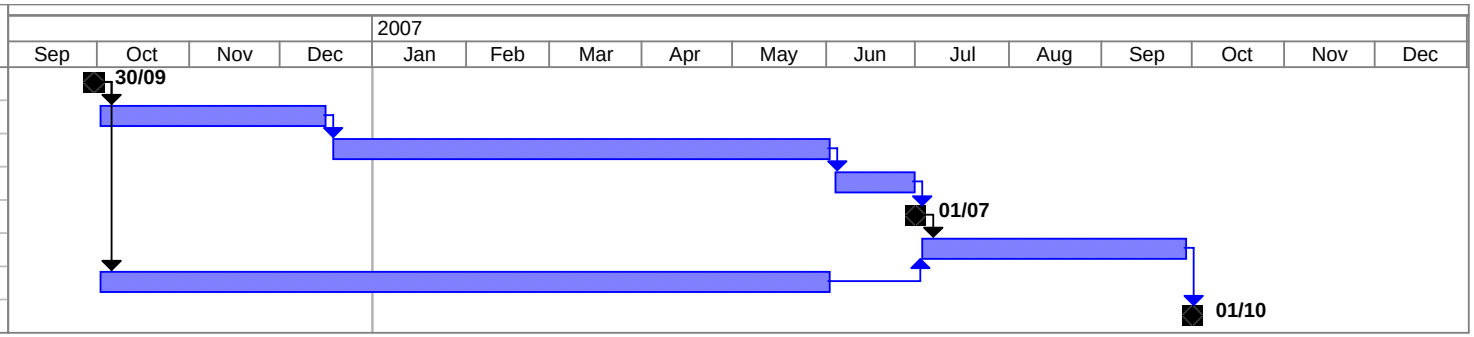
The Modification Group shall consider:

- The following background information:
  - The TLFMG's previous assessment of P75, P82 and P105;
  - The Authority's decisions on P75, P82 and P105;
  - The DTI's previous assessment of the merits of zonal transmission losses in a GB market, including confirmation that no moratorium was placed on the raising of a new GB losses Modification Proposal; and
  - Current developments in the Europe Union regarding transmission losses charging.
- The appropriateness of the following key aspects of the solution proposed by P198, in order to aid the Group's assessment against the Applicable BSC Objectives and to identify any potential Alternative Modifications:
  - TLFs to be calculated on an ex-ante basis;
  - TLFs to be calculated annually for each BSC Year using data from a previous 'reference year';
  - Zonal TLFs to be applied to both generation and demand;
  - TLF zones for both generation and demand to be based on GSP Groups;
  - TLFs to be scaled to only recover variable losses;
  - TLFs to be published at least one month prior to use;
  - TLFs to be calculated by a TLF agent/service provider; and
  - No phased implementation or 'grandfathering' scheme.

- Confirmation of whether a change to the overall 45:55 allocation of transmission losses would fall within the scope of an Alternative Modification or would require a separate Modification Proposal;
- The value of the scaling factor to be used to recover only variable losses;
- The governance arrangements for the scaling factor (e.g. 'hard-wired' in Code or Panel parameter);
- The period to be covered by the reference year;
- The exact process and timetable for approving and publishing TLFs;
- The nature of the TLF agent/service provider role;
- The variability and magnitude of TLFs under P198 – to be established through a modelling exercise provided by an external consultant, in accordance with a set of requirements produced by the Group (this should include identification of whether the P82 modelling requirements are still appropriate, and any additional requirements or input data needed to reflect the inclusion of Scotland under BETTA);
- A cost-benefit analysis of P198 – to be undertaken by an external consultant, in accordance with a set of requirements produced by the Group which should include as a minimum:
  - An assessment of the impact of P198 on different classes of Party;
  - An assessment of the impact of P198 on renewables and CHP plant;
  - An assessment of the impact of P198 on future generation (both large-scale and small-scale);
  - An assessment of the potential impact of P198 on the costs of carbon emissions to Parties (linked to Applicable BSC Objective (c)); and
  - Any risks which might be associated with a zonal losses scheme.
- Any interaction between P198 and National Grid's Transmission Network Use of System charging;
- Any new issues arising from extending the P82 solution to Scotland (e.g. the differences between the England and Wales Transmission System and the 132kv Transmission System in Scotland); and
- Any interaction between transmission losses and constraints on the Transmission System.

APPENDIX 3: P198 PROPOSED MODIFICATION IMPLEMENTATION TIMELINE

ID	Task Name
1	Authority Decision Required By
2	TLFA Procurement
3	TLFA Development
4	LFM Approval
5	TLFs Published
6	Publication Lead Time
7	Party System Development
8	Go Live



APPENDIX 4: SUMMARY OF P198 FIRST ASSESSMENT PROCEDURE CONSULTATION RESPONSES

14 responses received, representing 64 BSC Parties and 4 non-Parties.

Potential Alternative Option	1	2	3			4	5			6	7		
	Ex-Post	More Frequent Ex-Ante	Different Zones			Phasing / Grandfathering	Exclude Certain BMUs			Exclude 132kV TLs	Change to 45:55 Split		
			Less	More	Not Spec-ified		132kV	Suppliers	Renew-ables		More to Demand	100% NGET	Different Split Per Zone
Respondents Supporting Further Assessment	**3**	**6**	**2**	**2**	**1**	**8**	**2**	**1**	**1**	**4**	**4**	**1**	**1**
No. of Parties Represented	13	24	5	12	2	30	10	1	0	17	22	7	5
No. of Non-Parties Represented	0	3	3	0	0	3	0	0	1	3	0	0	0

APPENDIX 5: P198 MODIFICATION GROUP'S REQUIREMENTS FOR COST-BENEFIT ANALYSIS

The requirements below were agreed by the Group at its meeting on 26 January 2006, and were subsequently issued to potential service providers as a basis for the initial tender exercise.

Purpose of P198 Cost-Benefit Analysis

The purpose of the cost-benefit analysis is to assess the net benefit of P198 to the GB electricity market over a ten-year period, taking into account both short-term impacts (e.g. immediate impact on charges paid by generators and Suppliers, implementation costs, effect on despatch) and long term effects (e.g. impact on the future development and location of generation and demand). The full areas to be considered are set out in the following sections.

Note that the cost-benefit analysis will represent a tool to aid the Group in its assessment, and will not constitute the assessment itself – the Group may agree or disagree with the specific findings of the cost-benefit analysis when making its final assessment against the Applicable BSC Objectives.

The Group's assessment of P198 (including its perceived costs and benefits) is limited to the areas covered by the Applicable BSC Objectives. The following potential impacts of P198 fall outside the Applicable BSC Objectives, and should therefore be excluded from the scope of the cost-benefit analysis:

- Any impact of P198 on the environment (e.g. through a change to the amount of carbon emissions, or through any change to patterns of future generation);
- Any impact of P198 on consumers (e.g. through the passing on of generator/Supplier costs or savings, or through any change to the location of generation and demand); and
- Any interaction between the locational transmission losses charging proposed by P198 and the Transmission Company's existing Transmission Network Use of System (TNUoS) charging scheme.

Cost-Benefit Analysis Requirements

a) Input Data

The service provider should consider the following data as part of its cost-benefit analysis of P198:

- The costs to Parties, BSC Agents (i.e. central BSC Systems), ELEXON, and the Transmission Company of implementing and operating the P198 solution – to be provided by ELEXON;
- The results of a load flow modelling exercise outlining what the likely magnitude and variability of zonal TLFs would have been if they been applied during the past BSC Year – to be provided by ELEXON;
- The latest version of the Transmission Company's Seven Year Statement – available from the National Grid website; and
- The latest report published by the Department of Trade and Industry (DTI) Joint Energy Security of Supply Working Group (JESS) – available from the DTI website.

b) Impacts to Be Quantified

The service provider should quantify the costs and benefits of the following potential impacts of P198 over ten years, with the first five years to be quantified in detail:

- Cost-reflectivity of P198 scheme compared with existing Code baseline (i.e. would P198 more accurately allocate variable transmission losses to Parties according to extent to which Parties give rise to them?);
- Distributional impact of TLFs on Parties (i.e. short-term movement of money between Parties as a result of the introduction of zonal TLFs);
- Impact on total volume and cost of transmission losses to the Transmission Company;
- Impact on the maintenance, development and operation of the GB Transmission System;
- Impact on required GB generation capacity;
- Impact on (and of) Transmission System constraints;
- Impact on operation of existing generation and despatch;
- Impact on growth of future generation (including fuel mix, location, mothballed plant, and different types of large-scale and small-scale generation – e.g. CHP, renewables);
- Impact on existing and future Suppliers (including location of demand);
- Impact on wholesale prices;
- Impact on those 132kV connections which form part of the GB Transmission System;
- Impact on cost of carbon emissions to Parties (in the sense that carbon can be considered to represent a commodity through the carbon trading scheme, and through its impact on unit generation costs – note that any environmental aspects should be excluded from the analysis); and
- Impact on risk and cost of capital to Parties.

c) Areas to Be Considered as Part of Analysis

The service provider should consider the following areas when quantifying the costs and benefits of P198:

- Fuel-price scenarios;
- Generation despatch, profile and growth (including fuel-mix);
- Demand profile and growth;
- Future network changes;
- Future market entry and exit;
- Government energy policy (e.g. how this potentially affects types of future generation);
- Carbon prices;
- Interconnectors;
- Fuel transportation costs;
- The System Operator incentive scheme set by Ofgem; and

- Whether an assumption of economic despatch is realistic for the electricity industry.

Outputs

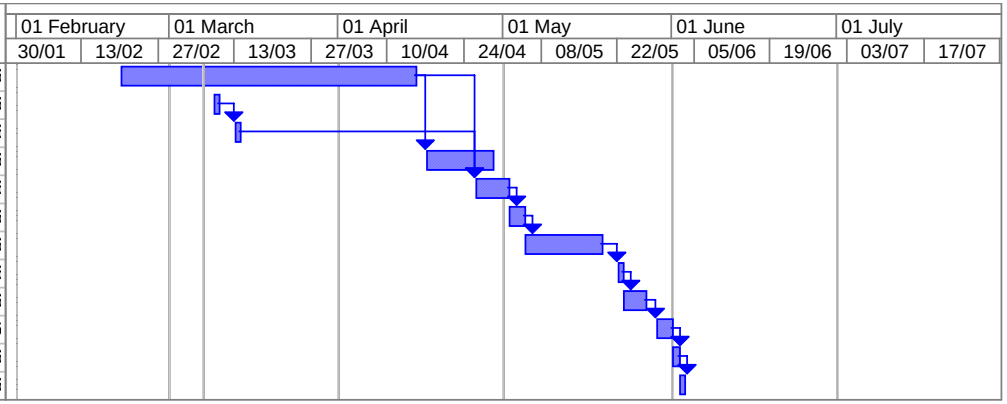
The output of the cost-benefit analysis exercise should be a written report to the Group, setting out the findings and conclusions of the analysis. The report should clearly outline in detail:

- The areas considered during the analysis;
- The data, assumptions and scenarios used in consideration of these area;
- The rationale for the use of such data, assumptions and scenarios; and
- Any sensitivity testing undertaken for the assumptions and scenarios.

The service provider may be invited to attend a meeting of the Group to discuss the analysis.

APPENDIX 6: P198 REVISED ASSESSMENT PROCEDURE TIMETABLE (BASED ON 1-MONTH EXTENSION)

ID	Task Name	Duration	Start	Finish
1	Modelling undertaken	40 days	Mon 20/02/06	Fri 14/04/06
2	**Panel Meeting - Interim Report**	1 day	Thu 09/03/06	Thu 09/03/06
3	**P198 Mods Group**	1 day	Mon 13/03/06	Mon 13/03/06
4	Draft modelling report	10 days	Mon 17/04/06	Fri 28/04/06
5	Draft consultation document	4 days	Wed 26/04/06	Mon 01/05/06
6	MG review by correspondence	3 days	Tue 02/05/06	Thu 04/05/06
7	Industry consultation undertaken	10 days	Fri 05/05/06	Thu 18/05/06
8	**P198 Mods Group**	1 day	Mon 22/05/06	Mon 22/05/06
9	Draft Assessment Report	4 days	Tue 23/05/06	Fri 26/05/06
10	MG review by correspondence	3 days	Mon 29/05/06	Wed 31/05/06
11	Finalise Assessment Report & legal text	1 day	Thu 01/06/06	Thu 01/06/06
12	**June Paper Day**	1 day	Fri 02/06/06	Fri 02/06/06



APPENDIX 7: P198 REVISED ASSESSMENT PROCEDURE TIMETABLE (BASED ON 2-MONTH EXTENSION)

ID	Task Name	Duration	Start	Finish
1	Modelling undertaken	40 days	Mon 20/02/06	Fri 14/04/06
2	Discuss CBA with potential service providers	7 days	Thu 02/03/06	Fri 10/03/06
3	Identify further CBA providers	7 days	Thu 02/03/06	Fri 10/03/06
4	**Panel Meeting - Interim Report**	1 day	Thu 09/03/06	Thu 09/03/06
5	**P198 Mods Group**	1 day	Mon 13/03/06	Mon 13/03/06
6	Update CBA spec	3 days	Tue 14/03/06	Thu 16/03/06
7	MG review CBA spec	3 days	Fri 17/03/06	Tue 21/03/06
8	Identify CBA service provider	15 days	Wed 22/03/06	Tue 11/04/06
9	CBA undertaken	30 days	Mon 17/04/06	Fri 26/05/06
10	**P198 Mods Group**	1 day	Mon 29/05/06	Mon 29/05/06
11	Draft consultation document	5 days	Tue 30/05/06	Mon 05/06/06
12	MG review consultation document	3 days	Tue 06/06/06	Thu 08/06/06
13	Industry consultation undertaken	10 days	Fri 09/06/06	Thu 22/06/06
14	**P198 Mods Group**	1 day	Mon 26/06/06	Mon 26/06/06
15	Draft Assessment Report	4 days	Tue 27/06/06	Fri 30/06/06
16	MG review by correspondence	3 days	Mon 03/07/06	Wed 05/07/06
17	Finalise Assessment Report & legal text	1 day	Thu 06/07/06	Thu 06/07/06
18	**July Paper Day**	1 day	Fri 07/07/06	Fri 07/07/06