



**ASSESSMENT REPORT for Modification Proposal P216
Audit of LLF Production**

Prepared by P216 Modification Group

For Review	Date of Issue	8 February 2008	Version Number	1.0
Overview or Purpose of Document:				
<p>Proposed Modification P216 seeks to provide additional assurance to the industry and the BSC Panel that the Line Loss Factors (LLFs) being approved, are accurate and consistent with the methodologies published. P216 proposes that this assurance is achieved by creating a set of high level principles, which LLF methodologies must be consistent with, and auditing the methodologies to check that they are compliant with the principles. In addition P216 requires that LLF calculations are audited to confirm that they follow the approved methodology and that spot checks are undertaken to confirm that the correct Line Loss Factor Class (LLFC) is applied at a Metering System level. P216 further seeks to ensure that Line Loss Factors are not changed part way through a year.</p> <p>Alternative Modification P216 seeks to allow mid year changes to site specific LLFs when there has been a material change to the site and the Panel is in agreement with the proposed change.</p>				
Modification Group's Recommendations				
The P216 Modification Group invites the Panel to:				
<ul style="list-style-type: none">• NOTE a SPLIT view from the Modification Group on whether the Proposed Modification P216 should or should not be made;• AGREE a provisional Panel recommendation that Proposed Modification P216 should or should not be made;• NOTE a SPLIT view from the Modification Group on whether the Alternative Modification P216 should or should not be made;• AGREE a provisional Panel recommendation that Alternative Modification P216 should or should not be made;• AGREE a provisional Implementation Date for Proposed or Alternative Modification P216 of 20 April 2009 if an Authority decision is received on or before 30 September 2008, or 19 April 2010 if the Authority decision is received after 1 October 2008 but on or before 30 September 2009;• AGREE the draft legal text for Proposed and Alternative P216 Modifications;• AGREE that Modification Proposal P216 be submitted to the Report Phase; and• AGREE that the P216 draft Modification Report be issued for consultation and submitted to the Panel for consideration at its meeting of 13 March 2008.				
Contact	Ysanne Hills	 ysanne.hills@elexon.co.uk		0207 380 4162

Contents

Modification Group's Recommendations.....	1
Summary of Impacted Parties and Documents.....	4
1 Executive Summary	5
1.1 Summary of the P216 Modification	5
1.2 Summary of the Group's Conclusions	5
1.3 Summary of the Potential Benefits and Aims of P216.....	6
2 Context	7
2.1 Line Loss Factors.....	7
2.2 Line Loss Factors in the Balancing and Settlement Code (BSC)	7
3 Description of Modification.....	9
3.1 High Level Principles.....	10
3.2 Setting Parameters	11
3.3 Audit of LLF Methodologies	11
3.4 Audit of LLF Calculations	12
3.5 Summary of The Timetable For LLF Approval	16
4 Alternative Modification	16
5 Areas Raised by the Terms Of Reference.....	17
5.1 Analysis	17
5.2 Principles	20
5.3 Audit Processes.....	33
5.4 Distribution Licence Requirements.....	38
5.5 Implementation Approach and Costs	39
5.6 Legal Text	41
6 Assessment of Modification the Against Applicable BSC Objectives	41
6.1 Proposed Modification	41
6.2 Alternative Modification	43
6.3 Final Recommendation to the Panel.....	44
7 Terms Used In This Document.....	44
8 Document Control	45
8.1 Authorities	45
8.2 References	45
Appendix 1: Process Followed.....	47
Appendix 2: Summary of Assessment Procedure DSO Questionnaire Responses	50
Appendix 3: Summary of Assessment Procedure Consultation Responses	52
Appendix 4: Results of Impact Assessment	57
Appendix 5 – BSC Party Impact Assessment Responses	59

Appendix 6: LLFC Groupings Analysis Table.....	61
Attachment 1: Draft Legal Text – Proposed Modification	62
Attachment 2: Draft Legal Text – Alternative Modification	62
Attachment 3: Complete Responses to the DSO Questionnaire.....	62
Attachment 4: Complete Responses to the Assessment Consultation – Main Questions	62
Attachment 5: Complete Responses to the Assessment Consultation – High Level Principles	62
Attachment 6: LLF Sensitivity Analysis	62

Help us be “Easy to do Business With”

Improving our documents is one of our key objectives for 2008. Your feedback will help us to improve, so please tell us what you think of this document:

1. Do you have any comments on the tone and content of the report?
2. Was the report easy to read and understand, could it be written better? If so, how?
3. Do you have any comments on the structure of the document?

[Click here](#) to send us your feedback on this or any of our documents or email **communications@elexon.co.uk**. Thank you.

Intellectual Property Rights, Copyright and Disclaimer

The copyright and other intellectual property rights in this document are vested in ELEXON or appear with the consent of the copyright owner. These materials are made available for you for the purposes of your participation in the electricity industry. If you have an interest in the electricity industry, you may view, download, copy, distribute, modify, transmit, publish, sell or create derivative works (in whatever format) from this document or in other cases use for personal academic or other non-commercial purposes. All copyright and other proprietary notices contained in the document must be retained on any copy 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 in this document is accurate or complete. While care is taken in the collection and provision of this information, ELEXON Limited shall not be liable for any errors, omissions, misstatements or mistakes in any information or damages resulting from the use of this information or action taken in reliance on it.

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 P216.

Please note that this table represents a summary of the full impact assessment results in Appendix 4.

Parties		BSC Sections		Code Subsidiary Documents	
Distribution System Operators	<input checked="" 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 type="checkbox"/>	C	<input type="checkbox"/>	BSC Service Descriptions	<input 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 type="checkbox"/>	Data Catalogues	<input type="checkbox"/>
Suppliers	<input checked="" type="checkbox"/>	F	<input type="checkbox"/>	Communication Requirements Document	<input type="checkbox"/>
Transmission Company	<input type="checkbox"/>	G	<input type="checkbox"/>	Reporting Catalogue	<input type="checkbox"/>
Party Agents		H	<input type="checkbox"/>	Core Industry Documents	
Data Aggregators	<input type="checkbox"/>	I	<input type="checkbox"/>	Ancillary Services Agreement	<input type="checkbox"/>
Data Collectors	<input type="checkbox"/>	J	<input type="checkbox"/>	Data Transfer Services Agreement	<input type="checkbox"/>
Meter Administrators	<input type="checkbox"/>	K	<input checked="" type="checkbox"/>	Distribution Code	<input checked="" type="checkbox"/>
Meter Operator Agents	<input type="checkbox"/>	L	<input type="checkbox"/>	Distribution Connection and Use of System Agreement ¹	<input checked="" type="checkbox"/>
ECVNA	<input type="checkbox"/>	M	<input type="checkbox"/>	Grid Code	<input type="checkbox"/>
MVRNA	<input type="checkbox"/>	N	<input type="checkbox"/>	Master Registration Agreement	<input type="checkbox"/>
BSC Agents		O	<input type="checkbox"/>	Supplemental Agreements	<input type="checkbox"/>
SAA	<input type="checkbox"/>	P	<input type="checkbox"/>	Use of Interconnector Agreement	<input type="checkbox"/>
FAA	<input type="checkbox"/>	Q	<input type="checkbox"/>	ELEXON	
BMRA	<input type="checkbox"/>	R	<input type="checkbox"/>	Internal Working Procedures	<input checked="" type="checkbox"/>
ECVAA	<input type="checkbox"/>	S	<input type="checkbox"/>	BSC Panel/Panel Committees	
CDCA	<input type="checkbox"/>	T	<input type="checkbox"/>	Working Practices	<input checked="" type="checkbox"/>
TAA	<input type="checkbox"/>	U	<input type="checkbox"/>	Other	
CRA	<input type="checkbox"/>	V	<input type="checkbox"/>	Market Index Data Provider	<input type="checkbox"/>
SVAA	<input type="checkbox"/>	W	<input type="checkbox"/>	Market Index Definition Statement	<input type="checkbox"/>
Teleswitch Agent	<input type="checkbox"/>	X	<input checked="" type="checkbox"/>	Connection and Use of System Code	<input type="checkbox"/>
BSC Auditor	<input type="checkbox"/>	Z	<input type="checkbox"/>	System Operator-Transmission Owner Code	<input type="checkbox"/>
Profile Administrator	<input type="checkbox"/>			Transmission Licence	<input type="checkbox"/>
Certification Agent	<input type="checkbox"/>				
Other Agents					
Supplier Meter Registration Agent	<input type="checkbox"/>				
Unmetered Supplies Operator	<input type="checkbox"/>				
Data Transfer Service Provider	<input type="checkbox"/>				

¹ There may be an interaction between P216 and the Distribution Code and/or the Distribution Connection and Use of System Agreement (DCUSA). However, no actual changes to these Codes are anticipated.

1 Executive Summary

1.1 *Summary of the P216 Modification*

P216 seeks to provide additional assurance regarding the accuracy and correct application of LLFs used in Settlement by:

- creating a set of high level principles, which all LLF methodologies must adhere to (these principles will sit in a BSCP);
- requiring an audit of the methodologies used to calculate LLFs to ensure that they are consistent with the principles;
- requiring an audit of the calculation of LLFs to ensure that they are consistent with the audited and approved methodology; and
- allowing only approved and audited LLFs to be used in Settlement.

A detailed description of the P216 solution is provided in Section 3.

1.2 *Summary of the Group's Conclusions*

The key conclusions of the P216 Modification Group ('the Group') are outlined below. The Group:

- **AGREED** that an Alternative Modification should be developed in order to allow mid year changes to site specific LLFs;
- **AGREED** that a single common methodology should not form part of the P216 solution;
- **CONDUCTED** analysis to understand the potential impact of inaccurate LLFs on Grid Supply Point Group Correction Factor (GSPGCF) and Supplier Volumes;
- **CONDUCTED** analysis to better understand how LLFC groupings differ across GSPGs;
- **ISSUED** a questionnaire to Distribution System Operators (DSOs) to aid the Group's understanding of the current LLF methodologies and the differences between methodologies;
- **AGREED** high level principles to be included within BSC Governance, which LLF methodologies must adhere to and will be audited against;
- **DEVELOPED** audit processes which would be carried out by ELEXON to confirm that the methodologies, calculations and LLFCs applied are correct;
- **WERE SPLIT** on whether the Proposed Modification P216 should or should not be made;
- **WERE SPLIT** on whether the Alternative Modification P216 should or should not be made;
- **AGREED** an Implementation Date for the Proposed or Alternative P216 Modification of 20 April 2009 if an Authority decision is received on or before 30 September 2008, or 19 April 2010 if the Authority decision is received after 1 October 2008 but on or before 30 September 2009;
- **AGREED** that the draft legal texts deliver the intended solutions for the Proposed and Alternative Modifications.

1.3 *Summary of the Potential Benefits and Aims of P216*

The Group noted that the key aims of P216 are to:

- increase the transparency in the way that LLFs are calculated and assigned; and
- introduce the consistency in LLFs across GSPGs, both in terms of the calculation and the type of LLF assigned to a given type of Metering System.

It was noted that these benefits are not easily quantified in terms of cost savings.

Site specific LLFs are calculated using analysis for a specific site. The type of load flow analysis will vary between GSPGs, with no one type of analysis considered to be particularly more accurate than others.

Generic LLFs are calculated by ascertaining the overall losses for an entire GSPG (after taking into account the site specific LLFs applied) and then assigning these losses to Metering Systems based on their Voltage level and usage type. The assumptions made will vary between GSPGs, due to differences in the physical network, the types of customer connected and the overall losses.

The way that LLFs are calculated means that it is impossible to work out the 'correct' LLF value for each site for a half hour across a GSPG. This means it is not possible to quantify the current error in LLFs. As a result, the Group noted that the analysis undertaken does not demonstrate that there are currently material inaccuracies in the way that LLFs are calculated. In addition, this analysis does not demonstrate that there are no material inaccuracies either.

The Group looked instead to calculate the size of the potential impact of changes to LLFs on GSPGCF and Supplier volumes. The results of this analysis are described in section 5.1, along with the views of those who responded to the Assessment Consultation. It is noted that the view of participants were split as to whether this analysis indicates that realistic differences exist between the way the LLFs are assigned and whether this is materially significant (both between GSPGs and between years).

The Group noted a view that the Annual Demand Ratio (ADR) trends do not suggest an issue with the current LLFs. It was further noted that the ADR trend would not identify any individual LLF inaccuracies, where the overall level of losses was unchanged.

P216 seeks to reduce the volatility of LLFs by:

- increasing the similarity of the LLF methodologies used by DSOs (by requiring that the LLF methodology Principles are used, and auditing to confirm that they have been);
- requiring that any changes to LLF methodology Principles is completed through the BSC Change Proposal process;
- removing the ability to change LLFs mid year (generic LLFs only for the Alternative solution);
- using more realistic default LLF values, where the calculated value is not available;
- checking a sample of Metering Systems to ensure that the correct LLFC has been applied.

LLF methodologies are already required to be published. P216 would increase the transparency of LLF calculations by requiring the calculations be audited to confirm that they are consistent with the published methodology.

The Group noted that the burden of recalculating LLFs as a result of P216 will fall mainly on DSOs, without there being clear benefits of the P216 solution for DSOs. DSOs could choose to pass these costs on, through the price control process.

The Group noted that the Ofgem Codes Review is currently ongoing, and confirmed that P216 has been assessed against the current Codes baseline.

2 Context

2.1 *Line Loss Factors*

Site specific Line Loss Factors (LLFs) represent an estimate of the electrical losses on the distribution network for a particular Metering System between the metering point and the connection to the boundary of the Transmission System. Site specific LLFs are often used for larger customers whose sites are connected at higher voltages (most extra high voltage (EHV) sites). Site specific LLFs are normally calculated using load flow engineering analysis and represent technical losses only.

Generic LLFCs (Line Loss Factor Classes) represent an estimate of the average of the total losses on the distribution network (technical and non-technical) for a particular class of customer/connection voltage between the metering point and the connection to the boundary of the Transmission System for the following year. Losses tend to vary by the Settlement Period and time of year, and generic LLFCs often reflect this by having different LLF values for different times of the day.

In the Supplier Volume Allocation (SVA) market LLFCs are used to describe a complete set (1 year) of LLFs. LLFCs are not used within the Central Volume Allocation (CVA) market.

LLFs are required, by Distribution Licences, to represent an accurate reflection of the actual losses on the system. The methodologies used in calculating line losses are published by Licensed Distribution System Operators (LDSOs) in their Use of System Charging Statements (sometimes referred to as "Condition 4 Statements"). Links to the Use of System Charging Statements for the seven existing DSOs (Distribution System Operators) are available in the references section of this document (9.2). IDSOs (Independent DSOs) are also required to publish their LLF methodologies.

IDSOs operate Distribution Systems that are connected to the Transmission System via another Distribution System. Throughout this document, the system operator for the Distribution System that IDSOs connect via is called the host-DSO, and the term DSO is used to describe host-DSOs and IDSOs.

2.2 *Line Loss Factors in the Balancing and Settlement Code (BSC)*

Settlement is based on the use of electricity volumes at Transmission System Boundary Points and Grid Supply Points (GSPs); LLFs are used within Settlement to scale a Metered Volume (measured within a Distribution Network) to provide an equivalent volume at the relevant GSP or Transmission System Boundary Point, the scaled volume is then used in Settlement.

Currently the Imbalance Settlement Group (ISG) and Supplier Volume Allocation Group (SVG) approve LLFs (having delegated authority from the Panel) for use in Settlement for CVA and SVA respectively. Prior to the approval of LLFs, some basic checks are undertaken by ELEXON to ensure completeness and for comparison with previously submitted LLFs.

2.2.1 Central Volume Allocation (CVA) Line Loss Factors

There are a relatively small number of CVA LLFs (due to the small number of CVA Metering Systems connected to the Distribution System), with LLFs for approximately 100 Metering Systems being approved as part of the annual review last year. CVA LLFs are checked to ensure that:

- the factors are complete (that a full year of data has been submitted);
- the factors are submitted by an Authorised Signatory;
- each LLF is to 5 decimal places;
- each LLF value lies between 0.00000 and 1.99999;
- the submission is received more than 40WDs before the go-live date; and
- where the change from a previous factor for a similar time period is more than double, or less than half the previous value; then ELEXON will confirm the value submitted with the LDSO before approval is requested.

ELEXON will also report, when the LLF is taken for approval, if the Registrant has highlighted an objection to a particular LLF; however, the agreement of LLFs (between the LDSO and the Registrant) is not carried out under the BSC, and the BSC does not currently require the LLF to have been agreed with the Registrant.

The processing and validation of CVA LLFs is described within BSCP28 ('Approval and Notification of CVA LLFs').²

2.2.2 Supplier Volume Allocation (SVA) Line Loss Factors

There are greater numbers of SVA LLFs (due to the larger number of SVA Metering Systems); as such these are sent to ELEXON via the D0265 data flow ('Line Loss Factor Data File'). As part of the annual reload process, files are received by ELEXON (from LDSOs) and validated. Further files are received throughout the year, as and when LLFs need to be updated.

BSCP528 ('SVA LLFs for HH and NHH SVA Metering Systems registered in SMRS') describes the processes for validating and approving SVA LLFs. As set out in BSCP528, ELEXON performs a number of validation checks on the LLFCs and associated LLFs to check:

- for completeness (using an MDD comparison) to ensure there are LLFs for all LLFCs;
- whether the percentage change from the previous year's submission is less than $\pm 20\%$ (for updated LLFs only);
- that they were submitted by an Authorised Signatory;
- that they are to 3 decimal places;
- that the submission has been received more than 40WDs before the go-live date;
- that the format of the D0265 is correct; and
- the range of values (which currently must be between 1.000 and 1.250).

² It is worth noting that CDCA systems cannot process different Import and Export values for a specific site within the Aggregation rules.

The Summary and Validation Reports resulting from this validation are provided to the SVG with the LLFs for approval.

It is noted that ELEXON is currently looking at ways to automate the validation of the D0265 files by using a LuSTRe based solution, to speed up the validation process and to allow a greater sample to be analysed when checking the change in LLF values from one year to the next.

2.2.3 Current LLF Assurance

If a new SVA LLF is not approved prior to the old LLF expiring, then a default value (of 1.000) is used. There is a PARMS Serial (DA02 'Timely Application of LLFs') which records when the Half Hourly (HH) SVA LLFs being applied in Settlement are default LLFs.

If a new CVA LLF is not approved prior to the old LLF expiring, then a default is used. The previous year's values are used where possible, but if there are no values available for the previous year, the LLFs are defaulted to 1.00000.

The BSC Audit scope for 2006 to 2007 covers the application of LLFCs by the Supplier Volume Allocation Agent (SVAA) and the notification of LLFs to ELEXON by LDSOs. It is noted that the Audit Scope may change under P207 'Introduction of a new governance regime to allow a risk based Performance Assurance Framework (PAF) to be utilised and reinforce the effectiveness of the current PAF'.

New LLFs (and replacement LLFs) can be submitted and approved during the course of the year; these are taken to the SVG and ISG as appropriate.

2.2.4 Previous Consideration of LLF Approval

Concerns have previously been raised at the SVG and by the ISG, to the Panel, on the approval of LLFs for use in Settlement. Concerns were expressed regarding the perceived 'rubber stamping' of submitted LLFs and whether the ISG/SVG had the relevant experience to approve the exact figures for LLFs.

A meeting was held in May 2004 with an ISG member, LDSOs and ELEXON to discuss the authorisation processes for CVA LLFs. This resulted in a review of the LLF approval process in 2004.

A paper was presented to the April 2005 Panel (91/012) which explained the current BSC obligations for submitting LLFs for approval. The Panel noted that an Ofgem review of the existing processes would be taking place, and that the Panel paper would be submitted to Ofgem for consideration as part of the review.

One outcome of this review was the agreement that LDSOs would publish their current LLF methodologies as part of their Use of System Charging methodology statements from April 2006, with a note that their LLF calculation methodology is not subject to Authority approval. A review by ELEXON of these statements for April 2007 shows that this is the case.

3 Description of Modification

This section outlines the solution for the Proposed Modification, as developed by the Modification Group.

P216 was raised on 30 July 2007 by Smartest Energy ('the Proposer'). P216 seeks to provide additional assurance and controls over the calculation and application of LLFs in both the SVA and CVA market.

For a full description of the original Modification Proposal as submitted by Smartest Energy ('the Proposer'), please refer to the [P216 Initial Written Assessment \(IWA\)](#).

Throughout section 3, where the Panel is required to set a parameter or approve a value, the Group anticipate that the Panel will choose to delegate these tasks to ISG or SVG.

3.1 High Level Principles

All LLF methodologies would be required to comply with the Principles described below. These Principles will form the basis of the methodology audit and will be included in a new Code Subsidiary Document.

- 1 All LLFs shall be calculated using a generic (non site specific) method except for:
 - a sites that are connected at EHV³; or
 - b where the customer has requested a site specific LLF, and the DSO is in agreement.
- 2 All LLFs shall be calculated to 3 decimal places.
- 3 All site specific LLFs shall account for technical losses only.
- 4 All generic LLFs shall account for all losses (technical and non technical⁴).
- 5 Site specific LLF values and the total GSPG losses shall be considered in the calculation of generic LLFs.
- 6 Generic LLFCs for Import and Export at the same site where the voltage level is the same shall have the same values.
- 7 There shall be no more than 2 LV and 2 HV generic LLFC Groups⁵ in each GSPG, and at least 1 generic EHV LLFC Group.
- 8 As a minimum, generic LLFs shall be calculated separately for day and night.
- 9 DSOs shall utilise Settlement data from a Settlement Run at R2 or greater and from a complete 12-month period, for calculating LLFs. The 12-month period to be used shall be determined by the Panel after the first year⁶.
- 10 Adjustments to LLFs, to take into account historic market wide issues noted in the BSC Auditor's latest Report, can only be made if agreed to be appropriate by the Panel.
- 11 Robust error detection and correction processes shall be in place throughout the calculation of LLFs.
- 12 All generic LLFs shall be re-calculated at least every 2 years⁷.

⁴ Where technical losses and non-technical losses will be defined during the implementation of P216.

⁵ An 'LLFC Group' means a set of LLFCs that have the same LLFs (and will be defined as part of P216 implementation).

⁶ For the first year's LLF submissions, after P216 is implemented the data year 1 May to 30 April will be used.

⁷ For the avoidance of doubt generic LLFs must be recalculated for the first LLF submission, following the implementation of P216.

- 13 All site specific LLFs shall be re-calculated when there has been a relevant change⁸ to the site or network, and at least every 5 years⁹.
- 14 No changes shall be made to approved LLFs for site specific or generic LLFCs mid year. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined from time to time by the Panel.
- 15 No retrospective changes shall be made to approved site specific or generic LLFs other than to correct material manifest errors.

3.2 *Setting Parameters*

In line with Principle 9, after the first year, the Panel will approve the date range for which data should be used. The Group agreed a default date range of 1 April to 31 March (a BSC Year). The Panel will determine these dates prior to 1 June for the next BSC Year's LLFs.

For the first year, the date range would be set automatically as 1 May to 30 April for the year 1 May (year = Y-1) to 1 April (year = Y) where P216 is approved before October in year=Y. More detail on P216 implementation timescales is included in section 5.5.

For Principle 10, the Panel shall approve the extent to which any historic market wide issues noted in the BSC Auditor's Report may be taken into account at the same time as determining the date range. The Group noted that the type of issues that may be picked up here are issues affecting the Settlement data that will be used in the LLF calculations, but that no longer affect the market.

3.3 *Audit of LLF Methodologies*

An audit of LLF methodologies will be conducted by ELEXON¹⁰ and will seek to confirm that the written methodologies are consistent with the Principles set out in section 3.1.

There will be a larger volume of methodologies to be audited in the first year and an increased chance of audit failures. To take this into account, methodologies will be submitted to ELEXON by DSOs by 1 May and the audit process will be completed for all methodologies by 1 August in the first year.

In subsequent audit years, only methodologies that have been revised since the previous approval will be submitted to ELEXON. DSOs would submit their methodologies before 1 August. If a methodology has not been updated, written confirmation should be sent instead of the revised methodology. Any methodology which has been changed but which has not been sent to ELEXON by 1 August (or 1 May in the first year) will be considered inconsistent with the BSC.

Once the audit process is complete, ELEXON will issue a final audit report to the DSO by 1 September (or 1 August in the first year) to either confirm that the methodology is compliant, or highlight the areas of non-compliance. The Performance Assurance Board (PAB) will be informed of

⁸ Where a relevant change (defined as part of P216) is a change that will, or is likely to, change the losses attributable to the site. Examples of these types of change include, but are not limited to: changes in the Voltage level or in site use.

⁹ For the avoidance of doubt:

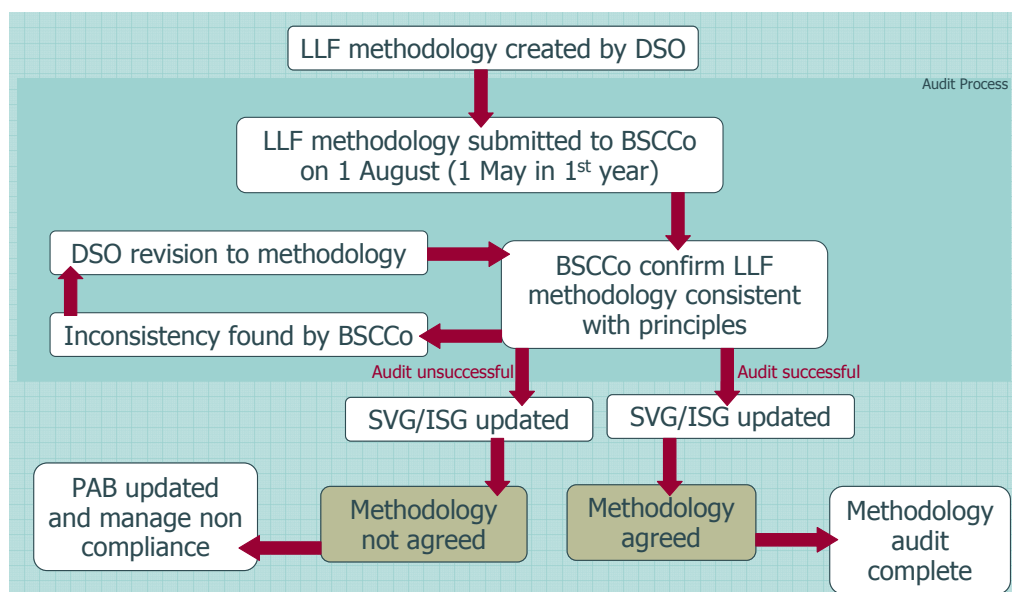
- site specific LLFs which have been recalculated in the last 5 years, would only need to be recalculated when this 5 years is up, even in if the last recalculation was completed before the implementation of P216;
- site specific LLFs which have not been recalculated in the last 5 years, would need to be recalculated for the second LLF submission following the implementation of P216; and
- new site specific LLFs (for new sites, or sites that have moved to site specific LLFs as a result of Principle 1) must be calculated for the first LLF submission following the implementation of P216.

¹⁰ It is noted that ELEXON may choose to sub-contract the audit process to a third party.

the audit results and continued non-compliance would be managed through the normal PAB processes.

It is noted that the audit process itself may involve the correction and re-auditing of non-compliances, before the final audit report is issued.

The diagram below shows the high level LLF methodology audit process:



3.4 Audit of LLF Calculations

Where it has been confirmed that an LLF methodology is consistent with the Principles (or that no methodology audit is needed), the DSO would complete the calculations for the next year's LLFs.

The LLFs would be submitted to ELEXON by 30 September (except for IDSOs who are mirroring¹¹ the host-DSOs LLFs, who would submit their LLFs on 30 October). Host-DSOs will be required to provide IDSOs the information they need to mirror LLF values, if requested.

The LLF calculations audit is carried out by ELEXON on site at DSOs. This audit seeks to ensure that LLF calculations are compliant with the BSC and consistent with the audited LLF methodology for that DSO. This audit is only required when generic LLFs have been recalculated (which will be a maximum of every 2 years for generic LLFs and 5 years for site specific LLFs).

In addition, the LLF calculations audit will include spot checks on LLFCs already applied to Metering Systems during the year to confirm that an LLFC assigned can reasonably be considered to be the correct LLFC (given the usage of that Metering System).

For clarity:

- The audit of LLF calculations will combine the current validation checks undertaken by ELEXON and the new audit requirements in P216;
- The audit of LLF calculations is undertaken for CVA and SVA LLFs;
- The audit of LLF calculations must take place after 1 October and before 30 November;

¹¹ It is noted that IDSO 'mirroring' will be defined within the BSCP.

- ELEXON will agree site visit dates with DSOs by 10 September, where a date cannot be agreed ELEXON will set a site visit date and advise the DSO of this date;
- Following the audit of LLF calculations, LLFs may be resubmitted only as a result of issues noted during the audit. Resubmissions and confirmations must be received by 31 December;
- Non compliances in LLF calculation will be reported to PAB to manage the non compliance;
- All LLFs are taken to the Panel in January for approval; and
- Following approval, CVA LLFs would be sent by ELEXON to the Central Data Collection Agent (CDCA) and SVA LLFs (in D0265 format) sent to the Supplier Volume Allocation Agent (SVAA) LLFs would then be published on the BSC Website.

3.4.1 Audit Scope

The audit of LLF calculations will be carried out for each DSO and will include the following checks (it is noted that some of these checks may be performed before the site visit, if appropriate):

- 1 Confirm all LLFs submitted have effective from dates of 1 April;
- 2 Confirm that SVA LLFs were submitted by a Category X Signatory
- 3 Confirm that CVA LLFs were submitted by a Category P Signatory;
- 4 Confirm all LLFs submitted are calculated to 3 decimal places;
- 5 For SVA LLFs, confirm that the D0265 file is in accordance with the format defined in the Data Transfer Catalogue (DTC);
- 6 Confirm that the number of Settlement Periods for each Settlement Date matches the number of LLFs submitted for that date;
- 7 Confirm that all SVA LLFC IDs submitted are entered in MDD or an application has been made to do so and that LLFs have been submitted for all LLFCs contained in MDD;
- 8 Conduct a validation check, which will pick out:
 - a all SVA LLFs which are <0.000 or >1.250 ;
 - b all CVA LLFs which are <0.000 or >1.999
 - c all revised SVA LLFs which are $>\pm 20\%$ of last years value¹²;
 - d all revised CVA LLFs which are not within -50% to $+100\%$ of the last years value; and
 - e all new sites with new LLFs (that were not included in last year's submission).

The auditor (ELEXON) may request that LLFs that fail validation be highlighted to the DSO for comment.

- 9 Check a representative sample (which is determined by Panel, based on risk assessments and will include LV, HV, EHV and site specific LLFs) of LLFs to confirm that they have been calculated in accordance with the audited methodology. This check will be performed at the DSOs offices, and will include discussions with the DSO and consideration of the audit trail.

¹²It is noted that there may be an increased number of LLFs picked up in the first year due to potential changes in LLF methodologies resulting from P216.

- 10 Check a representative sample of Metering Systems (which is determined by Panel, based on risk assessments and will include LV, HV, EHV and site specific LLFs) to confirm that the correct LLFC has been applied. This check will be performed at the DSOs offices. For clarity, this check will look at the application of an LLFC to Metering Systems during the last year.

3.4.2 Following the Site Visit

Within 5WDs of the site visit, ELEXON will provide the DSO a site visit report detailing any non-compliance identified during the audit, or confirming that no issues were identified.

It is noted that the audit process itself may involve the correction and re-auditing of non-compliances, before the final audit report is issued.

By 31 December the DSO will either confirm that the original LLFs should be used or send the revised LLFs, confirming that the non-compliances identified in the audit have been corrected and that no other changes have been made.

Following receipt of the revised submissions/confirmations ELEXON will draft papers for the Panel recommending that:

- all LLFs that have passed the methodology and calculation audits are approved;
- all LLFs that have failed one aspect of the audit are not approved (no detail is provided as to which aspect was failed);
- for all non approved LLFs a default value is used. This default is the last LLF which has been approved. Where no LLF has been approved, the default should be the generic LLFs for that voltage level (from the relevant GSPG)¹³. A default value of 1.000 may be used if there are no previous values and no generic LLFs available.

Following receipt of the revised submissions/confirmations, ELEXON will draft a paper for the PAB. This paper will identify the details of all non-compliances noted during the audit. PAB will manage the non-compliances under the P207 risk based error correction processes.

ELEXON will submit the approved LLFs to CDCA and SVAA as appropriate, and then will publish the LLFs on the ELEXON website and issue a Circular.

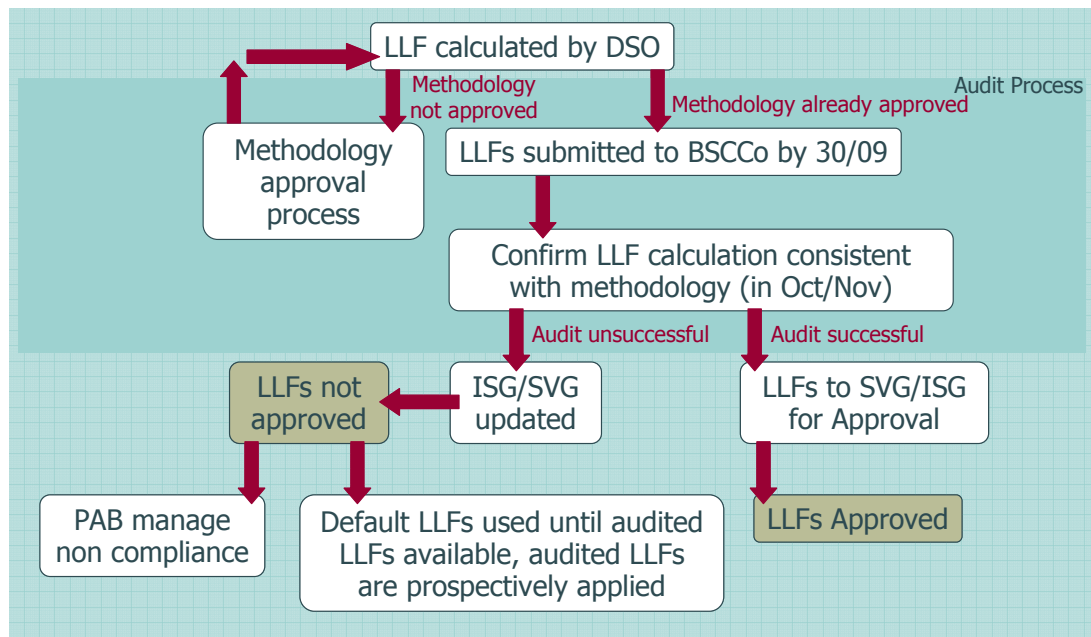
3.4.3 Resolved Non-Compliances

All non-compliances should be corrected by 1 April (or before the effective from date). Where an audit failure is confirmed as corrected by the PAB after 1 April, the Panel may choose to approve the revised data and confirm that it may be used prospectively for the rest of the year.

3.4.4 Process Diagram

The diagram below shows the high level LLF calculation audit process:

¹³ It is noted that this represents a change to the default rules for both SVA and CVA.



3.4.5 New LLFs for New Sites

3.4.5.1 SVA

When a new Metering System is created during the year, this site will need to have LLFs assigned to it, these LLFs must be calculated using the latest approved and audited methodology.

For new Metering Systems that are assigned to an existing LLFC no submission or audit is required. However, where a new Metering System is assigned entirely new LLFs (e.g. a new site specific set of LLFs), the LLFs must then be audited before they are approved by the Panel.

The new LLFs audit process is the same as the process described in section 3.4, except for checks 9 and 10, which are excluded. In normal circumstances a site visit would not be required.

The timings for this audit will be shifted, depending on when the LLFs are needed in Settlement. Each new set of LLFs that does need to be audited would have to be submitted at least 50WDs before the effective from date of the LLFs.

Changes would not be made to LLFs for existing Metering Systems during the year.

3.4.5.2 CVA

For CVA, all new LLFs will need to be submitted and audited (whether the site is being assigned LLFs equivalent to the generic LLFC for that Voltage or site specific LLFs) before they are approved by the Panel.

The new LLFs audit process is the same as the process described in section 3.4, except for checks 9 and 10, which are excluded. In normal circumstances a site visit would not be required.

The timings for this audit will be shifted, depending on when the LLFs are needed in Settlement. Each new set of LLFs that does need to be audited would have to be submitted at least 50WDs before the effective from date of the LLFs.

Changes would not be made to LLFs for existing Metering Systems during the year.

3.5 *Summary of The Timetable For LLF Approval*

The timetable below pulls together the timescales for each of the audit processes described above, in sections 3.2 to 3.4.5.

Date	Action
Methodologies Audit	
Year 1: by 1 May	Methodologies submitted to ELEXON
Year 1: by 1 August	Methodologies audit complete
Year >1: by 1 August	Any amended methodologies submitted to ELEXON
Year >1: by 1 September	Amended methodologies audit complete
Calculations Audit	
By 30 September	LLFs submitted to ELEXON for calculations audit
By 30 October	All IDSO 'mirroring' LLFs submitted
Between 1 October and 30 November	Calculations audits conducted by ELEXON on site at DSOs
Within 5WDs of the end of the site visit	Final audit calculation report sent to DSO by ELEXON
By 31 December	Revised LLFs submitted, or confirmation that original LLFs should be used sent by DSO
In January	Paper taken to the Panel to approve LLFs or the use of defaults
New Sites	
At any time during the year and ≥ 50 WDs before effective from date	LLFs for a new Metering System submitted (where the LLFC doesn't exist)
≥ 50 WDs before effective from date	Calculations audits conducted by ELEXON
≥ 45 WDs before effective from date	Final audit calculation report sent to DSO by ELEXON
≥ 40 WDs before effective from date	Revised LLFs submitted, or confirmation that original LLFs should be used sent by DSO
>40WDs before effective from date	Paper taken to the Panel to approve LLFs or the use of defaults

4 **Alternative Modification**

The P216 Alternative is identical to the Proposed solution except for rewording Principle 14, and the addition of Principle 16. Principle 14 would read:

- 14 No changes shall be made to approved generic LLFCs mid year. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined from time to time by the Panel.

The new Principle 16 would read:

- 16 Changes shall only be made to approved site specific LLFs mid year if:

- a there has been a material change affecting the site; and
- b the revised LLFs have been approved by the Panel.

Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined from time to time by the Panel.

In effect this would mean that site specific LLFs can be changed mid year. Any mid year changes to site specific LLFs would not be subject to a full audit prior to their use, but would be approved by the Panel; and would be subject to the annual audit processes.

5 Areas Raised by the Terms Of Reference

This section outlines the conclusions of the Modification Group regarding the areas set out in the P216 Terms of Reference.

5.1 Analysis

5.1.1 Modification Group's Initial Discussions

5.1.1.1 SVA LLFC Groupings

Analysis of the LLFC Grouping was undertaken by a Group member, and is attached in Appendix 6. This analysis shows, for each GSPG, the number of LLFCs with different LLF values (the number of 'LLFC Groups'). The number of LLFC Groups is then split down into:

- Flat LLFC Groups – indicating that all the LLFs for that LLFC group are the same;
- Profiled LLFC Groups – indicating that some level of profiling is used in that LLFC, e.g. day/night; and
- LV/HV/EHV and site specific LLFC Groups – showing how the LLFC Groupings are split across the voltages¹⁴.

The Group noted that there are differences in the number of LLFC Groups, which vary from 7 to 52 and that the proportion of flat to profiled LLFC Groups also varies (e.g. SPOW has no profiled LLFC Groups, whereas Laing and SWEB are all profiled).

The Group noted a smaller variation in the number of LLFC Groups assigned to each of the voltages, with all DSOs having a maximum of 2 LV, 2 HV and 1 EHV LLFC Groups. As expected, the number of site specific LLFC Groups varied considerably, due to the differing number of site specific sites in each GSPG. It is noted that there is not a complete data set for the LV, HV, EHV and site specific.

The Group noted that the differences between GSPGs could be due to:

- network set up (i.e. what types of site are connected at which voltage);
- area (i.e. an industrialised area will have more site specific sites and therefore more LLFC Groups); and
- historical differences in how LLFCs are assigned (e.g. for an industrial site, whether they have a generic EHV LLFC assigned or a site specific LLFC assigned).

The Group agreed that it would be possible to minimise differences in the number of LV and HV LLFC Groupings going forward by including Principles to limit this number.

Details of the LLFC Grouping analysis is included in Appendix 6.

¹⁴ The Group member highlighted that this analysis was only possible with the data included in the DSO questionnaire, and so only DSOs who had provided data non-confidentially in response to question 5 of the questionnaire were included here.

5.1.1.2 *SVA LLF Sensitivity Analysis*

The Group undertook analysis to understand the potential impact of altering LLF values on Supplier energy volumes and the application of GSPGCF. The analysis was undertaken for 10 Settlement Dates in a single GSP Group. The LLF values were changed to:

- increase and decrease the overall losses;
- increase and decrease site specific losses only;
- increase and decrease Export losses only;
- switch Summer and Winter Line Loss Factors; and
- change the LV/HV weighting, while maintaining the level of overall losses.

The LLFs were increased and decreased by $\pm 20\%$ to match the SVA LLF variations that would be acceptable under the current validation rules.

The Group noted that although $\pm 20\%$ LLF change is viable, in reality such a change would be extreme, and that it is unlikely that all losses (or even individual losses) would vary to this extent. However, the Group noted that $\pm 20\%$ is used in the current SVA validation processes and so represents the extent of a change to LLF values that would pass through validation.

The Group agreed that the graphs illustrate how the impact varies from Supplier to Supplier and that the results could be linearly extrapolated to show how other changes to LLFs might impact Suppliers.

The Group noted the conclusion that the results showed negligible seasonal variation as the 10 dates considered showed very similar patterns when the same change to losses was made.

The Group agreed that the analysis showed that the impact on Suppliers varies depending on their portfolio of customers. This is because Non Half Hourly (NHH) volumes are affected by both changes in the LLFs and the consequential alterations in the application of GSPGCF, whilst the Half Hourly (HH) volumes are only affected by the LLF variation.

Suppliers with a high number of NHH domestic customers benefit when all LLFs are increased (due to the application of GSPGCF), while Suppliers with a high number of HH customers benefit when all LLFs are reduced.

A Group member observed that, given how GSPGCF can be impacted by minor changes in application of losses the application of GSPGCF to NHH only was brought into question; as errors in HH losses will impact NHH customers. The Group noted that changing GSPGCF is outside the scope of P216.

The Group agreed that the most useful graphs are those showing the impact of reapportioning losses from LV to HV and vice versa while maintaining the overall volume of losses (included as Figures 17-20 in Attachment 6); as they represent the most likely scenarios.

The costs noted on the graphs are aggregated for a full Settlement day for a single GSPG, and could be multiplied by 365 to gain an indication of the materiality over the course of the year.

The table below gives the approximate range of the materiality shown in each of the graphs included in the LLF Sensitivity Report. These values show the changes in the allocation of GSPGCF due purely to the change in LLFs.

Type of LLF Variation	Approximate range of the materiality of the impacts on individual Suppliers per GSPG per day
Overall losses increased	+£3,000 to -£4,000
Overall losses decreased	+£2,500 to -£2,000
Site specific LLFs increased	+£40 to -£20
Site specific LLFs decreased	+£30 to -£50
Export LLFCs increased	+£100 to -£150
Export LLFCs decreased	+£400 to -£150
Switch Summer LLFs to Winter LLFs	+£6,000 to -£7,000
Switch LLFs Winter to Summer LLFs	+£8,000 to -£7,000
HV LLFs increased	+£1,500 to -£1,500
HV LLFs decreased	+£1,250 to -£1,000

One member noted that they believed that the materiality shown in the graphs could be considered significant to Suppliers, while other members disagreed. The Group agreed to consult on the significance of the materiality shown.

The full analysis report, including details of the calculation undertaken, results and more detailed conclusions is attached as a separate document - Attachment 6.

5.1.2 Views of Respondents to Assessment Procedure Consultation

The responses to the consultation were split as to whether or not the LLF sensitivity analysis was materially significant. Those who felt that the values were materially significant noted that the significance will vary depending on the size and type of a Supplier's portfolio of customers. The respondents who felt that the potential materiality is not significant did so because they felt that the figures are small in context. Some respondents felt that the figures were inconclusive or irrelevant to P216.

Several different suggestions were provided in terms of what value would be materially significant including the following:

- a four figure sum over the course of a year;
- a value significant in comparison to overall Supplier purchase costs; and
- a similar threshold to that used by the TDC (i.e. £500).

One response suggested that additional analysis should be conducted each year to look at the volume impact of changing LLFs from one year to the next in a GSPG, by applying the new LLF values to the last year's volumes.

5.1.3 Modification Group's Conclusions

The Group queried whether the significance of the materiality would change purely based on the size of a portfolio as the change in individual Suppliers figures would be dependent on the number of Metering Systems (and LLFs).

The Group reconfirmed that these figures represent an extreme (although technically possible) variation in LLFs. One member noted that there was a split between DSOs and Suppliers in the responses to this question, with Suppliers being more likely to consider the materiality significant.

One member noted that there is no evidence that LLFs have changed to this extent and noted that significant changes to LLFs would be visible through GSPGCF and the Annual Demand Ratio (ADR).

Another member noted that significant changes to LLFs would only be visible through GSPGCF and ADR if a significant percentage of the LLFs in the GSPG changed, and noted that significant changes to a small number of LLFs would not be picked up.

The Group discussed the responses that suggested the analysis is irrelevant to P216 and reconfirmed that this analysis only shows the potential impact on Suppliers if LLFs were changed and gives no indication of whether or not inaccurate LLFs are a material issue within Settlement.

The Group noted the figures provided for a materially significant issue and noted that there was little agreement between participants, and that the values would depend on the nature of each business.

The Group noted the suggestion for annual volume impact analysis and agreed not to include this as part of the P216 solution.

5.2 Principles

At an early stage in the Group discussions the Group agreed that to audit LLF methodologies and calculations under BSC Governance, some requirements detailing what is expected in an LLF methodology/calculation would be needed. These requirements might take the form of high level principles that current methodologies could be adapted to incorporate or they could be at such a detailed level that, in effect, a single, common methodology is used by all DSOs.

The Group noted that, even if a common methodology were to be part of the final solution, high level principles would still be needed to form the basis of the methodology.

5.2.1 High Level Principles¹⁵

The Group discussed the high level principles included in section 3.1, the aim of these Principles was either to form the framework for a common methodology or to increase/maintain the level of sameness across existing methodologies. The Group's discussion around each of these Principles is described below.

Principle 1 - All LLFs shall be calculated using a generic (non site specific) method except for:

- a sites that are connected at EHV¹⁶; or**
- b where the customer has requested a site specific LLF, and the DSO is in agreement.**

5.2.1.1 Modification Group's Initial Discussions

The Group agreed that the split between site specific and generic LLFs is different in different GSPGs and agreed that this area would be key to getting greater consistency between DSO calculations.

The Group discussed possible 'cut off' points for assigning site specific LLFs and noted that too many site specific LLFs could be very expensive for DSOs to calculate and manage. The Group also noted that site specific LLFs weren't necessarily better, as they exclude non-technical losses, so these are attributed to an ever decreasing number of sites, as the number of sites with site specific

¹⁵ The Group formed these Principles following discussion of the DSO Questionnaire responses, a summary of the responses received is included in Appendix 3 and the actual responses are provided in Attachment 1.

¹⁶ Where EHV is as defined in the Distribution Licence.

LLFs increases. The Group agreed that site specific LLFs are most useful for large and relatively unusual sites (in terms of demand/generation patterns).

The Group agreed that all large CVA sites would have site specific LLFs. The Group felt that a capacity rather than the voltage level was most likely to be representative of the size of the CVA site.

There was disagreement on whether all SVA EHV sites should have site specific LLFs and whether a reasonable degree of flexibility is added by including point c. Some group members felt that there should be a capacity threshold for these sites (as for CVA), while others felt there should be more flexibility for DSO. The Group agreed to consult on this Principle.

The Group discussed an additional Principle which would require large HV sites to have site specific LLFs, but agreed that this should not be included because large HV sites could be included as a result of point c.

The Group were keen to understand how many sites would need to change from generic to site specific and vice versa, as a result of this Principle. Therefore a specific question relating to this has been included on the Impact Assessment proforma.

5.2.1.2 *Views of Respondents to Assessment Procedure Consultation*

There was majority support for Principle 1. Those who queried the benefits of Principle 1, did so because they felt that it would lead to an increase in the number of site specific LLFs which would increase costs.

There was majority support for a split between site specific LLFs and generic LLFs being based on Voltage level or a combination of Voltage level and size or complexity. In addition, there was strong support not to include all HV sites automatically as site specific due to the significant costs.

One respondent queried why SVA and CVA sites are being treated differently under this Principle.

As part of the Impact Assessment, the Group specifically asked DSOs how Principle 1 would affect the number of site specific/generic LLFs in their area. The 3 responses received indicated that there would be an increase in the number of site specific LLFs by 48-162 sites per DSO.

5.2.1.3 *Modification Group's Conclusions*

The Modification Group noted the responses received and agreed that requiring all HV sites to have site specific LLFs would be time consuming and costly.

One Group member noted that if all HV sites were required to have site specific LLFs, then the volume of site specific LLFs would be so high that the current systems may not cope.

The Group agreed that extending Principle 1 to include all HV sites would delay the implementation of P216 as calculating so many new site specific LLFs would be a slow process, and system changes may be needed.

The Group noted the query about why SVA and CVA sites are being treated differently and agreed that, given sites could move between SVA and CVA, there seems no reason that the LLFs should be calculated differently purely because a site has moved from SVA to CVA or vice-versa.

The Group noted that Principle 1 would mean that small CVA sites would need to be accounted for in the calculation for determining the generic values; and will need to be assigned LLFs equivalent to the SVA generic LLFC.

The Group noted that Principle 1 would lead to an increase in site specific LLFs.

The Group agreed Principle 1 should be amended to remove the requirement for CVA sites greater than 10MWs to have site specific LLFs and to make all sites at EHV (rather than just SVA) automatically have site specific LLFs).

Principle 2 - All LLFs shall be calculated to 3 decimal places.

5.2.1.4 *Modification Group's Initial Discussions*

The Group noted that CVA LLFs are currently calculated to 5 decimal places and SVA LLFs are calculated to 3 decimal places. One Group member felt strongly that as far as possible there should be consistency between CVA and SVA requirements. The Group discussed possible reasons for the difference and felt that 5 decimal places was falsely accurate as the error bands would be relatively large for a LLF calculation to 5 decimal places. The Group agreed that all LLFs should be calculated to 3 decimal places although Parties are asked to confirm via the consultation response whether this would require changes to software¹⁷.

5.2.1.5 *Views of Respondents to Assessment Procedure Consultation*

The majority of responses received supported Principle 2. Those who agreed supported the Group's views set out above.

The respondent who disagreed noted that there is no advantage in reducing the accuracy of CVA LLFs and that this change may prove material for some CVA customers.

None of the responses received indicated that CVA systems may be impacted.

5.2.1.6 *Modification Group's Conclusions*

The Group noted the responses received and agreed that Principle 2 should not be changed.

Principle 3 - All site specific LLFs shall account for technical losses only.

5.2.1.7 *Modification Group's Initial Discussions*

Some of the Group present (who worked for DSOs), confirmed that site specific LLFs in their distribution systems are intended to account for technical losses (electrical losses) only. The Group agreed that this should be the same across all GSPGs. The Group noted that this would mean that all non-technical losses (including theft) within the GSPG are applied to sites with generic LLFs.

5.2.1.8 *Views of Respondents to Assessment Procedure Consultation*

The majority of responses received supported Principle 3.

The three respondents who disagreed did so because they felt the technical/non-technical split was in the wrong place. Two believed that LLFs for HV sites should only include technical losses and the other felt that all LLFs should include an element of non-technical losses.

¹⁷ The Group noted that any value with 5 decimal places and ending 00 (e.g. 1.01100) would be considered to be calculated to 3 decimal places of accuracy.

5.2.1.9 Modification Group's Conclusions

The Group noted the responses received. One member noted that theft at HV is unlikely, although it was noted that theft is not the only cause of non-technical losses.

The Group felt that this Principle reflects the way that GSPGCF is applied and agreed that the Principle should not be changed without looking at GSPGCF as well. Noting that changes to the GSPGCF are out of scope, the Group agreed Principle 3 with no changes.

Principle 4 - All generic LLFs shall account for all losses (technical and non technical).

5.2.1.10 Modification Group's Initial Discussions

The Group agreed that Principle 4 is needed to balance Principle 3 and clarify that all non technical losses would be applied to sites with generic LLFs.

5.2.1.11 Views of Respondents to Assessment Procedure Consultation

The responses received in relation to Principle 4 mirrored those received in response to Principle 3.

5.2.1.12 Modification Group's Conclusions

The Group noted the majority support for Principle 4 and agreed that no changes should be made.

Principle 5 - Site specific LLF values and the total GSPG losses shall be considered in the calculation of generic LLFs.

5.2.1.13 Modification Group's Initial Discussions

The Group agreed that the total losses in the GSPG should be calculated, as should the total losses being applied to site specific sites and used in the calculation of generic LLFs. This will help to ensure that the total losses in the GSPG are accounted for.

5.2.1.14 Views of Respondents to Assessment Procedure Consultation

The majority of responses supported Principle 5.

Those respondents who disagreed, did so because they felt that calculating losses in this way would lack transparency or would mean significant changes to the way that LLFs are currently calculated for their business.

5.2.1.15 Modification Group's Conclusions

The Group noted the responses received and agreed that calculating LLFs in line with Principle 5 may mean more significant changes for some DSOs than others due to the varying numbers of site specific LLF sites between GSPGs.

The Group agreed Principle 5 with no changes.

Principle 6 - Generic LLFCs for Import and Export at the same site, where the voltage level is the same, shall have the same values.

5.2.1.16 Modification Group's Initial Discussions

The Group agreed by majority that in general Import and Export LLFs would be the same.

Some members of the Group expressed strong disagreement with Principle 6 and expressed concern that Import and Export have different actual losses as they represent different flows of energy. These Group members highlighted that this Principle may actually decrease the accuracy of LLFs and impact generators negatively. One member of the Group noted that existing software is likely to need to be modified (including disabling of functionality that allows DSOs to calculate more accurate generation losses per voltage level) to be compliant with this Principle.

One member felt strongly that Principle 6 is in line with the embedded generation Principles.

The Group considered adding a phrase to say 'unless it has been demonstrated that the losses on Import and Export are materially different' but felt that this could be misused and that, while easily provable (and verifiable) for site specific LLFs it would not be for generic LLFs.

The Ofgem representative confirmed that Principle 6 is not in direct conflict with the Distribution Licence.

5.2.1.17 Views of Respondents to Assessment Procedure Consultation

The majority of responses agreed with Principle 6. There was a split in opinion as to whether or not generic LLFs for Import and Export could be different for the same site. Where there was agreement that the LLFs could be different, there was disagreement on whether or not it is worth the cost of calculating separate LLFs for Import and Export.

One respondent noted that Principle 6 is consistent with Ofgem's recent consultation document entitled "Distributed Energy – Initial Proposals for More Flexible Market and Licensing Arrangements" a link to this paper is provided in the References section of this document, 8.2. Ref 295/07.

5.2.1.18 Modification Group's Conclusions

The Group noted the majority view of the consultation responses. One member noted that Principle 6 will result in some changes to Export LLFs.

The Group agreed Principle 6, by majority, with no changes.

Principle 7 - There shall be no more than 2 LV and 2 HV LLFC Groups⁵ in each GSPG, and at least 1 generic EHV LLFC Group.

5.2.1.19 Modification Group's Initial Discussions

In analysing the LLFC Groupings (details of this analysis are included in section 5.1.1 and Appendix 6) the Group agreed that it would be helpful to limit the number of generic LLFC Groups for LV and HV. In looking at the data available the Group agreed that this should be set at 2 for HV and 2 for LV, as this was currently the maximum number of LLFC Groups per DSO.

The Group agreed that by requiring DSOs to have a generic EHV LLFC, this could be used as a default when an audited and approved value is not available for an EHV site.

5.2.1.20 Views of Respondents to Assessment Procedure Consultation

The majority of responses supported Principle 7. All of the respondents agreed that 2 LV, 2 HV and 1 EHV generic LLFC would be enough.

5.2.1.21 Modification Group's Conclusions

The Group noted the responses and agreed Principle 7 with no changes.

Principle 8 - As a minimum, generic LLFs shall be calculated separately for day and night.

5.2.1.22 Modification Group's Initial Discussions

The Group noted that some DSOs don't use any profiling for LLFs, (with all LLFs in a specific LLFC having the same value) while some DSOs calculate LLFs separately for several different time periods. For example:

- Night 00:30 – 07:30;
- Monday – Friday 16:00 – 19:00 November to February;
- Monday–Friday 07:30–16:00 & 19:00–20:00 November to February; and
- All other times.

The Group agreed that, while they would not want to prevent greater accuracy, it would be useful to have greater similarity in the granularity of the profiling of LLFs. The Group agreed that, as a minimum, separate calculations should be undertaken for day and night, and noted that this does not necessarily mean that the day and night values will be different. One member noted that they would be surprised if the values were the same.

5.2.1.23 Views of Respondents to Assessment Procedure Consultation

There was unanimous support for Principle 8.

5.2.1.24 Modification Group's Conclusions

The Group noted the support for Principle 8 and agreed it with no changes.

Principle 9 - DSOs shall utilise Settlement data from a Settlement Run at R2 or greater and from a complete previous 12-month period, for calculating LLFs. The 12-month period to be used shall be determined by the Panel after the first year.

5.2.1.25 Modification Group's Initial Discussions

Looking at the DSO questionnaire responses, the Group noted that all DSOs use Settlement data to calculate overall losses. In terms of the run type, all respondents indicated that they use the 'best available' or 'R2 or greater'. In discussing this Principle, the Group noted that the Group members present, who were DSOs, used data from different time periods and agreed that it would be beneficial to create greater conformity between the LLF calculation inputs.

The Group considered requiring the year of data to be a full BSC Year, or another date range, specified in the BSCP, but agreed that it would be more sensible to provide a flexible date that can be changed from year to year provided all DSOs use the same year.

It was also agreed that all DSOs should use data from R2 or greater as this would be more accurate than using data from earlier Settlement Runs. It would be up to the individual DSO to decide whether to use data from the latest run type or whether to use all of the data from one Settlement Run e.g. all R2 data.

5.2.1.26 Views of Respondents to Assessment Procedure Consultation

The majority of responses supported Principle 9. Those who disagreed did so because they felt that the same data should be used by all DSOs.

The Group specifically asked whether R2 data was accurate enough and whether it was suitable for the PAB to determine the date range to be used each year.

There were a mixture of responses received regarding whether R2 or R3 should be used with some responses suggesting that the latest available data should be used (which would be an R2/R3 mix) and some suggesting that a complete set of R2 data is accurate enough. There was also a split in responses between whether the same dates should be used each year (for consistency) or whether there should be flexibility in the date range chosen (to allow for any potential issues with data to be taken account of).

5.2.1.27 Modification Group's Conclusions

The Group agreed that the Panel should be responsible for choosing the dates to be used, with the expectation that this would be delegated to the SVG/ISG; as ISG/SVG will be approving the LLFs to be used in Settlement.

The Group considered the responses received and agreed that default dates should be included in the BSCP, while the Panel would still have the ability to vary these if needed, they would provide increased consistency between years.

The Group agreed a default date range of 1 April to 31 March (a BSC Year) except for the first year, when the date range would be set automatically as 1 May to 30 April. The Group noted that setting the date range to be used in the first year as part of the P216 solution would allow DSOs more time to complete their site specific calculations in time for the first LLF submission.

The Group agreed a reworded version of Principle 9.

Principle 10 - Adjustments to LLFs, to take into account historic market wide issues noted in the BSC Auditor's latest Report can only be made if agreed to be appropriate by the Panel.

5.2.1.28 Modification Group's Initial Discussions

The Group noted that one DSO had previously taken account of a market wide issue (and the likely level of correction) when calculating LLFs. The Group agreed that this could be of benefit, but that it should be done in a centralised way, so that this issue is considered equally in all GSPGs. It was agreed that the PAB should decide whether there are any market wide issues that could be accounted for in the LLF calculation at the same time as it determines which full year of data to use. The auditor would then confirm whether this information is included in each of the LLF methodologies.

5.2.1.29 Views of Respondents to Assessment Procedure Consultation

All of the responses received supported Principle 10.

5.2.1.30 Modification Group's Conclusions

The Group agreed that Principle 10 should refer to issues raised in the BSC Auditors Report; and that the extent to which issues are taken into account should be agreed by the Panel as they have the authority to approve LLFs. The Group anticipates that the Panel will choose to delegate this authority to the ISG/SVG.

Principle 10 was agreed by the Group with revised wording.

Principle 11 - Robust error detection and correction processes shall be in place throughout the calculation of LLFs.

5.2.1.31 Modification Group's Initial Discussions

All respondents to the DSO questionnaire confirmed that they do have error detection/correction processes in place, and the Group agreed that this is important in picking up potentially erroneous LLFs. The Group agreed that this is even more important where approved LLFs are more difficult to change (under the P216 solution).

The Group agreed that, in some instances where a significant material error has been created, there should be enough flexibility to correct these. This forms Principle 11.

5.2.1.32 Views of Respondents to Assessment Procedure Consultation

There was unanimous support for Principle 11.

5.2.1.33 Modification Group's Conclusions

The Group agreed Principle 11 with no changes.

Principle 12 - All generic LLFs shall be re-calculated at least every 2 years¹⁸.

5.2.1.34 Modification Group's Initial Discussions

The Group noted that currently, there are no requirements over how often an LLF should be recalculated, and agreed that there should be a maximum length of time between calculations. The Group agreed that the timescales should be different for site specific and generic LLFs.

For generic LLFs the Group noted that one DSO calculates these every year, while another DSO calculates every two years (this is to allow for the effect of the calculation to show in the Annual Demand Ratio (ADR), such that the DSO can understand the impact of their LLFs). The DSO who recalculates every two years believed that by recalculating every year, although the LLFs would change slightly, the calculation would not be any more accurate and the slight change would simply result from a random fluctuation.

The Group discussed the possibility for creating a requirement where the LLF must be recalculated if the ADR is outside a certain band, but were unable to decide on a band that would be suitable.

¹⁸ For the avoidance of doubt generic LLFs must be recalculated in the first year, following the implementation of P216.

Several Group members favoured an annual calculation to ensure that more recent Settlement data is used, while others felt that 2 years is adequate.

For site specific LLFs, the Group agreed that the most important time to recalculate would be when there is a material change to the site or network, including changes in operating regime. One member felt strongly that as time goes on a series of smaller changes may combine to create a material change over time. Therefore, the Group agreed that 5 years would be a good backstop, given the burden of recalculating site specific LLFs is significantly greater than for generic LLFs. This forms Principle 13 (below).

5.2.1.35 Views of Respondents to Assessment Procedure Consultation

The majority of responses supported Principle 12. There was a split in responses as to whether generic LLFs should be recalculated every year or every 2 years.

One respondent noted that the Licence states (under SLC4A Paragraph 7 (b)) that DSOs:

“shall at least once in every year make such changes (if any) as are necessary to the charging statement to ensure that the information set out in it continues to be accurate in all material aspect”.

and noted that the Loss Adjustment Factor table and notes are an integral part of the statement and under SLC4A Paragraph 2 (b) all DSO's must include a schedule of adjustment factors relating to their distribution losses.

The Group specifically asked DSOs how much work was involved in recalculating generic LLFs. The figures provided ranged from 1 week to 3-4 months for 2 Distribution areas. The costs, where provided, ranged from £10k to £20k.

5.2.1.36 Modification Group's Conclusions

One DSO Group member noted that, in their view the Licence requires that DSOs consider recalculating the LLFs, but not actually to recalculate, if they consider that there have been no material changes.

The Group noted the responses received and agreed that it would be possible to compromise by rewording the Principle to say 'at least every 2 years.' which would mean that the calculation can be carried out more frequently if desired.

The Group agreed that all generic LLFs should be recalculated in the first year, following the implementation of P216.

The Group agreed the reworded Principle 12 by majority.

Principle 13 - All site specific LLFs shall be re-calculated when there has been a material change to the site or network, and at least every 5 years¹⁹.

¹⁹ For the avoidance of doubt:

- site specific LLFs which have been recalculated in the last 5 years, would only need to be recalculated when this 5 years is up, even in if the last recalculation was completed before the implementation of P216;
- site specific LLFs which have not been recalculated in the last 5 years, would need to be recalculated for the second LLF submission following the implementation of P216; and
- new site specific LLFs (for new sites, or sites that have moved to site specific LLFs as a result of Principle 1) must be calculated for the first LLF submission following the implementation of P216.

5.2.1.37 Modification Group's Initial Discussions

See text in sections 5.2.1.34 above for the Group's discussion of this Principle.

5.2.1.38 Views of Respondents to Assessment Procedure Consultation

The majority of responses supported Principle 13. One respondent felt that site specific LLFs should be recalculated every year.

The Group specifically asked DSOs how much work was involved in recalculating site specific LLFs. The figures provided ranged from 1-2+ days per site to up to 100 days for 2 areas. The costs, where provided, ranged from £2k per site to £20-40k per Distribution area.

5.2.1.39 Modification Group's Conclusions

The Group noted the costs received and noted that the number of site specific sites would increase under P216 and so these costs would increase.

The Group agreed that if a DSO wanted to recalculate site specific LLFs every year, they could still choose to do so if Principle 13 remains.

The Group noted that complying with this Principle in the first year following implementation, would be difficult for DSOs. DSOs would need to recalculate their site specific LLFs at the same time as calculating new site specific LLFs (under Principle 1) for sites which were previously given generic LLFs.

The Group agreed that, in order to make the implementation of P216 easier for DSOs:

- site specific LLFs which have been recalculated in the last 5 years, would only need to be recalculated when this 5 years is up, even in if the last recalculation was completed before the implementation of P216;
- site specific LLFs which have not been recalculated in the last 5 years, would need to be recalculated for the second LLF submission following the implementation of P216; and
- new site specific LLFs (for new sites, or sites that have moved to site specific LLFs as a result of Principle 1) must be calculated for the first LLF submission following the implementation of P216.

The Group agreed Principle 13 with the addition of a clarificatory footnote.

Principle 14 - No changes shall be made to approved LLFs mid year. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined from time to time by the Panel.

5.2.1.40 Modification Group's Initial Discussions

The Group noted that this Principle is included in the P216 Modification Proposal and so is required to form part of the P216 solution.

One member disagreed with this Principle as they believed that it would unduly impact customers. For example, a newly connected wind farm will often agree revised LLFs with the DSO when a year of actual data is available. This is to correct the rough estimates made when the wind farm came on line. Under the P216 solution, this revision could not be made until the next 1 April.

One member noted that while one participant may gain when retrospective changes are made to LLFs, another will lose. The member therefore believed that retrospective changes should not be made.

The Group also agreed that this doesn't prevent LLFs which have previously failed an audit being prospectively applied when the audit is passed, as the original LLFs applied were defaults rather than approved and audited LLFs.

In addition, this doesn't prevent LLFs for new sites being agreed and applied in Settlements.

5.2.1.41 Views of Respondents to Assessment Procedure Consultation

There was majority support for Principle 14. Those who did support Principle 14 did so because they felt that it encourages accuracy in LLF calculations and provides security for Suppliers who are making commercial decisions based on the initial LLF values.

Those who disagreed with Principle 14 did so because they felt that LLFs would be less accurate as a result and that LLFs should be updated if better data becomes available.

Several respondents suggested that site specific LLFs should be allowed to change as a significant change to a large site could have a material impact on that sites LLF.

5.2.1.42 Modification Group's Conclusions

The Group noted the responses received and that allowing changes to site specific LLFs mid year would be an Alternative to P216.

The Group agreed that a P216 Alternative should be created to allow changes to site specific sites mid year.

The Group agreed Principle 14 with no changes for P216 Proposed and agreed revised wording for P216 Alternative.

Principle 15 - No retrospective changes shall be made to approved LLFs for site specific or generic LLFCs, other than to correct material manifest errors.

5.2.1.43 Modification Group's Initial Discussions

The Group agreed that, once approved, LLFs should not be changed, although it was noted that material errors should be corrected to protect Settlement accuracy.

5.2.1.44 Views of Respondents to Assessment Procedure Consultation

The majority of those who responded to the consultation supported Principle 15. The respondent who didn't support the Principle did so because they felt that LLFs should be updated retrospectively when better information becomes available.

5.2.1.45 Modification Group's Conclusions

The Group noted the consultation responses and agreed Principle 15 by majority.

5.2.2 Review of High Level Principles

The Group noted a suggestion from the consultation responses that the High Level Principles should be regularly reviewed.

The Group agreed that because the High Level Principles could be updated through the use of the change processes described in BSCP40, (as they would be included in a new BSCP) the Principles do not need a separate review process.

5.2.3 Common Methodology

5.2.3.1 Modification Group's Initial Discussions

The Group discussed the concept of a common methodology and agreed that this would require a much more detailed set of rules than that described by the high level principles proposed by the Group. The detail of the rules would be such that the processes for calculating and allocating LLFs would be entirely consistent across GSPGs, save for the differences arising from the physical network.

The Group agreed that there are several varieties of a potential common methodology. These are common methodologies where:

- a it is applied by each individual DSO to their area;
- b it is centrally administered by a single body for all areas;
- c it is centrally administered for generic LLFs (which are assigned a proportion of the total GSPG losses), but applied by the individual DSO for site specific LLFs (which are calculated using load flow analysis of the network).

The Group agreed the following pros and cons for each of these options when compared to the high level principle based solution:

Common Methodology for calculating LLFs in all GSP Groups	
Pros	Cons
Option A (applied by each DSO)	
<p>Increased transparency in how LLFs are calculated</p> <p>Somewhat greater consistency in how LLFs are calculated across GSPGs</p> <p>Improved accuracy (in applying the rules agreed)</p>	<p>Difficult to ensure that DSOs are undertaking exactly the same analysis (in relation to the judgements and estimates needed in calculating LLFs) this will reduce the transparency/consistency</p> <p>Accuracy is only in terms of the rules agreed, not the actual losses</p> <p>A complex set of rules would need to be agreed, so a significant initial effort would be needed. This would be costly</p> <p>DSOs may be required to make significant and costly changes to their systems and processes</p> <p>Potential divergence in DSO methodologies over time</p> <p>The same data would be needed from each DSO area (network data), this may not be easily available and it is inefficient in terms of duplicating data</p> <p>No significant decrease in audit costs, and potentially an increase as more checks would have to be put in place to ensure that the methodologies don't diverge from the original set of detailed rules</p>
Option B (administered centrally)	
<p>Increased transparency in how LLFs are calculated</p> <p>Significantly greater consistency in how LLFs are calculated</p>	<p>Accuracy is only in terms of the rules agreed, not the actual losses</p> <p>A complex set of rules would need to be agreed, so a significant initial effort would be needed. This would be costly</p>

Common Methodology for calculating LLFs in all GSP Groups	
Pros	Cons
<p>across GSPGs</p> <p>More efficient in the long term (reduced cost of calculating the losses)</p> <p>Reduced need for auditing the calculation/reduced audit costs</p> <p>Significantly improved accuracy (in applying the rules agreed)</p> <p>Potentially more stability for Suppliers in forecasting how the GSPGCF will be affected by LLFs</p>	<p>Procurement costs (for the new central administrator of the process)</p> <p>Apportionment of the costs of the procurement and ongoing service needs to be carefully considered to reflect costs on those who benefit</p> <p>Ongoing costs would be incurred by the central administrator to maintain 'shadow' network models for each DSO and keep these updated (these would be needed to calculate site specific LLFs)</p> <p>The same data would be needed from each DSO area (network data), this may not be easily available and it is inefficient in terms of duplicating data</p>
Option C (generic is applied centrally and site specific is applied by the DSO)	
<p>Increased transparency in how LLFs are calculated</p> <p>Greater consistency in how LLFs are calculated across GSPGs</p> <p>Reduced costs for the central agent (as they will not need to undertake complex load flow modelling for site specific LLFs)</p> <p>Benefits of DSOs knowledge of their networks will not be lost for load flow modelling</p> <p>Slightly more efficient in the long term (reduced cost of calculating the losses and auditing the calculation)</p> <p>Significantly improved accuracy (in applying the rules agreed)</p> <p>Potentially more stability for Suppliers in forecasting how the GSPGCF will be affected by LLFs</p>	<p>Difficult to ensure that DSOs are undertaking exactly the same calculation (in relation to the judgements and estimates needed) this will reduce the transparency/consistency (<i>applicable to site specific LLFs only</i>)</p> <p>Accuracy is only in terms of the rules agreed, not the actual losses</p> <p>A complex set of rules would need to be agreed, so a significant initial effort would be needed. This would be costly</p> <p>Potential divergence in DSO methodologies over time (<i>applicable to site specific LLFs only</i>)</p> <p>Procurement costs (for the new central administrator of the process)</p> <p>Apportionment of the costs of the procurement and ongoing service needs to be carefully considered to reflect costs on those who benefit</p> <p>The same data would be needed from each DSO area (network data), this may not be easily available and it is inefficient in terms of duplicating data</p>

Several Group members noted that by aiming for a common methodology the P216 proposed solution (high level principles and audit processes) would be put at risk, as there is potential for the common methodology to prove so complex that the Proposed Modification fails. It was also noted that the work involved in formulating a common methodology would require several more months work, and so any potential benefits that may be gained under the current Proposed solution would be delayed.

In light of the pros and cons discussed, the Group agreed that a common methodology should not form the basis of the solution under P216; and noted that it could be considered at some point in the future under another Modification or Issue. It was noted that there are other avenues under which this can be pursued, including the Distribution Charging Methodologies Forum (DCMF).

The Group noted that charging methodologies themselves had been raised as an area for discussion under the Ofgem Codes review.

5.2.3.2 *Views of Respondents to Assessment Procedure Consultation*

The Group did not ask any specific questions relating to common methodologies in the Assessment consultation and no comments were received.

5.2.4 Placement within the BSC

5.2.4.1 *Modification Group's Initial Discussions*

The Group agreed that the following information should sit within a new BSCP (such that BSCP28 and BSCP528 would be removed):

- High level principles; and
- New audit processes/timetables (detailed versions).

This BSCP would be drafted during the implementation of P216, and will need to be approved by the Panel (as a new Code Subsidiary Document (CSD)).

The BSC itself would contain requirements:

- for there to be an audit of LLF methodologies and calculations (and for these to be easily auditable);
- for there to be a set of high level principles (and for the LLF methodologies to comply with the principles and the LLF calculations to follow the approved methodologies); and
- for a new BSCP to be created (including the new BSCP number, which will be BSCP128).

These lists are indicative and not intended to be exhaustive.

5.2.4.2 *Modification Group's Conclusions*

The Group agreed legal text for the BSC and agreed that all other details should be included in a new BSCP, BSCP128, which will be created by ELEXON during the implementation of P216. The legal text is available in Attachments 1 and 2, and an explanation of the legal text is available in section 5.6.

5.3 *Audit Processes*

5.3.1 Auditor

The Group agreed that ELEXON should conduct audits of the LLF calculations and methodologies and noted that ELEXON may choose to sub contract the audit processes under this solution.

5.3.2 Audit Processes

The Group discussed the 3 types of audit required by P216 – an audit of LLF methodologies, an audit of LLF calculations and a spot check on the application of LLFCs.

5.3.2.1 *Audit of LLF Methodologies*

The Group discussed the process and agreed that this would be an audit of the written methodology statements, and that this should be carried out prior to the calculation of the next year's LLFs (to reduce the potential of re-calculation to be needed).

The Group agreed that this audit would be conducted by ELEXON and would check that the written methodology statements are compliant with the Principles described in section 3.1.

The Group members, who were DSOs, indicated that they undertake LLF calculations between September and December, and the Group noted that the audit of LLF methodologies would need to take place before this. The Group agreed that the LLF methodologies to be used in the next set of calculations should be submitted to ELEXON on the 1 August each year for auditing.

The Group agreed that in the first year there are more likely to be non-compliances and so the audit process would be completed by 1 August (rather than starting on the 1 August) for the first year of the audit only.

The Group agreed that there should be discussion between the DSO and ELEXON to correct non-compliances in the methodologies before a final report is drafted. If non-compliances cannot be resolved then the Group confirmed that PAB should be informed and the normal error correction processes should be utilised.

5.3.2.2 *Audit of LLF Calculations*

The Group agreed that ELEXON would carry out the audit of LLF calculations. The Group noted that LLFs are currently submitted 40WDs before the effective from date, but that more time would be needed for a more extensive validation/audit process.

The Group agreed that:

- the audit should take place at DSOs offices as further explanation/discussion may be needed when unexpected results are found;
- the audit would encompass most of the current validation checks, and extend these to check whether the calculations are compliant with the Principles (as described in 3.1);
- for the audit of LLF calculations, there should be a dialogue between ELEXON and the DSO to allow for the correction of non-compliances in the calculations before a final report is drafted; and
- PAB should be updated on the outcome of each audit and should be provided with the detail necessary to manage any non-compliance.

The SVG or ISG should be updated only on the successful or unsuccessful completion of both audits (methodology and calculation), and would not be provided with any details of the failure. The Group noted that this would mean that it would be publicly known that a DSO's LLFs have not been approved, but the reason why would not be.

5.3.2.3 *Spot Check on LLFC Application*

The Group agreed that the spot check on LLFC application would form part of the audit of LLF calculations, to prevent additional site visits being required if this check were to be done separately.

5.3.3 Audit Timetable

5.3.3.1 *Modification Group's Initial Discussions*

The LDSO Group members present indicated that they usually completed their calculations by the end of December, so the Group initially agreed that LLFs would be submitted on 31 December. This would mean that the audit of LLF calculations would take place in the first few weeks of January, to allow for the finalised LLFs to be submitted by 40WDs before 1 April (allowing 10WDs for report drafting and for the revised LLFs to be submitted).

After further consideration, the Group agreed that this timetable discussed was very tight, and would allow only a few weeks to complete all of the LLF calculation audits and finalise the results. To allow more time, it was suggested that all the timescales should be brought forward. The audit processes could then take place in October/November and the final LLF submissions would be made by 31 December.

The Group agreed that it would be beneficial to undertake the audit earlier to provide more time for corrections, if needed. The Group agreed to consult on this approach.

5.3.3.2 *Views of Respondents to Assessment Procedure Consultation*

The majority of respondents supported the audit timetable. One respondent queried when the relevant R2 data would be available.

One respondent suggested that smaller audits should be conducted after the first year, and queried whether the LLF calculations audit was really needed.

5.3.3.3 *Modification Group's Conclusions*

The Group agreed the audit timetable with one change to allow IDSOs to obtain the host-DSOs LLF values. This change is discussed in more detail in section 5.3.4 below.

The Group agreed default dates would be set for the data to be used by LDSOs, for which R2 data would be available.

The Group noted the comment suggesting that smaller audits be conducted after the first year and agreed that the SVG/ISG would be able to vary the size of the sample to be checked, which could reduce the size of the calculations audit. The Group noted that as the audit processes will be included in a BSCP the scope of the audits may also be reduced through the Change Proposal processes described in BSCP40.

5.3.4 Independent Distribution System Operators (IDSOs)

5.3.4.1 *Modification Group's Initial Discussions*

The Group noted that IDSOs are also required to publish their methodologies²⁰.

Both of the IDSOs who responded to the DSO Questionnaire indicated that they will match the host-DSOs LLFs for each GSPG; therefore they do not undertake their own calculation.

The Group agreed that IDSOs should be included in the audit processes, and agreed that given the risk-based approach to the sampling (determined by the Panel) IDSOs are likely to have a relatively small audit when compared to the host-DSOs. The Group noted that if IDSOs did increase in size over time, the sampling is likely to grow with them.

²⁰ Ofgem are currently liaising with IDSOs to agree and publish these methodologies.

The Group noted that IDSOs don't have access to all of the data needed to be compliant with Principle 5. The Group agreed that mirroring the host LLF values would be considered compliant, providing that the correct value is chosen and the host DSO methodology has been approved. The Group agreed to consult on the approach to auditing IDSOs suggested in the currently proposed P216 solution.

5.3.4.2 *Views of Respondents to Assessment Procedure Consultation*

The Group asked specific questions about the timetable for IDSOs.

The majority of respondents supported the approach to auditing IDSOs and agreed that there is little alternative for IDSOs, other than mirroring host-DSOs LLFs at the present time.

5.3.4.3 *Modification Group's Conclusions*

Under the current processes, IDSOs are able to use the host-DSOs LLF values, as they are published on 31 December.

If the LLFs are required before the 31 December publication date, then DSOs will need to make their LLFs available to IDSOs before IDSOs can submit 'mirrored' values.

The Group agreed that IDSOs who are 'mirroring' the host-DSOs values would be able to submit their LLFs one month late. This will mean that IDSO LLF calculation audits will take place in November.

The Group agreed that an additional requirement should be placed on host-DSOs within the BSCP to provide the information to IDSOs on request.

The Group noted the responses received and agreed that there would be enough flexibility in the auditing (due to the risk based sampling) to ensure that IDSOs receive a relatively 'light-touch' audit where they are mirroring values. If IDSOs do start to calculate their own LLFs in the future the level of sampling could increase.

5.3.5 *Audit Failure and the Application of Default LLFs*

5.3.5.1 *Modification Group's Initial Discussions*

The Group noted that P216 requires that LLFs that have failed audits are not used in Settlement.

The Group agreed that where an LLF audit (either methodology or calculation) is failed, PAB would manage the non-compliance and that all non-compliances should be resolved by 1 April (or the effective from date for new sites). Where non-compliances have not been resolved by 1 April, the Group agreed that a default would be used.

The default used would be the last LLFs approved for that site, or where no LLFs have been approved under this process, the generic LLFs for that voltage would be used. The Group agreed that generic LLF values would be more accurate than just using a value of 1.000, which is the current default.

The Group agreed that following an audit failure, where the calculation or methodology have been corrected and the audited values become available, the PAB should have the authority to approve LLFs.

The Group discussed whether the use of the approved and audited LLFs should be retrospective or prospective. Some members believed that they should be retrospective, so as to correct the full

year of data. Other members believed that, in line with Principle 15, changes should not be made retrospectively, and any changes resulting from corrected audit failures should be applied prospectively only. The Group agreed that a question should be asked to obtain further views on whether changes should be prospective or retrospective.

The Group agreed that this does not conflict with Principle 14 (no mid year changes to audited and approved LLFs) as default LLFs will have been applied for the first part of the year do not constitute audited and approved LLFs.

5.3.5.2 *Views of Respondents to Assessment Procedure Consultation*

The majority of respondents supported the application of approved and audited LLFs part way through the year prospectively only. Those who disagreed believed that the newly available LLF should be applied retrospectively back to 1 April or for all non-crystallised data.

One respondent queried how default LLFs would be applied and how HHDAs would be made aware of the default or new available LLFs.

One respondent suggested that DSOs should pay the cost of an audit where they fail one or more aspects of it.

5.3.5.3 *Modification Group's Conclusions*

The Group agreed that the Panel should approve newly available LLF values, rather than the PAB, so that they retain overall responsibility for all LLF approval. The Group anticipated that the Panel may choose to delegate this task to the ISG/SVG.

The Group noted the responses received and agreed, by majority, that the application of approved and audited LLFs part way through the year should be prospective only.

The Group agreed that SVA default LLFs would be determined by ELEXON and incorporated in a revised version of the D0265, which would be sent to SVAA and published on the ELEXON website for HHDAs to download. ELEXON would issue a Circular each time the D0265 is re-issued.

CVA defaults relating to the previous year's data would be applied in the CDCA system as per the current process. Should the generic LLFs be required, then these would be determined by ELEXON and submitted to the CDCA.

The Group agreed that if no data has been submitted by ELEXON a default of 1.000 should be used by the CDCA and SVAA and that ELEXON should be notified that no data has been submitted.

The Group noted the suggestion that DSOs pay for failed audits and agreed that there is no precedence for doing this under the current BSC Audit or Technical Assurance checks and decided not to progress this idea as part of the P216 solution.

5.3.6 *New LLFs during the year*

The Group confirmed that the Proposed Modification requires that LLFs for existing sites do not change during the audit year; and that those new sites (that come on-line during the year) which have new LLFCs or site specific LLFs must be audited before their LLFs can be approved and used in Settlement.

The Group agreed that there is likely to be a relatively low number of new sites coming on-line during the year. These new sites may require a new LLFC (e.g. a new factory requiring site specific LLFs), or may be assigned to an existing LLFC (e.g. a new domestic property). The Group felt that

any new sites present a low enough risk to Settlement to have a relatively limited audit before they are approved, provided the methodology used has already been approved. In addition, sites that are assigned to current LLFCs will not require auditing as the LLFs would have been approved as part of the previous year's process.

The Group considered an Alternative Modification where no audit is required for sites with new LLFCs, but agreed not to develop this, agreeing that a small audit (similar to the current validation checks) would be more suitable.

The Group suggested that DSOs would be unlikely to want to change their methodology when calculating new LLFs mid year.

5.3.7 CVA and SVA

5.3.7.1 *Modification Group's Initial Discussions*

The Group felt that the differences in validating CVA and SVA LLFs should be minimised, and that the processes followed for auditing CVA and SVA LLFs should be the same. However, the level of sampling during the audit of LLF calculations might be higher for CVA LLFs to take account of the increased risk associated with CVA Metering Systems.

5.4 *Distribution Licence Requirements*

5.4.1 *Modification Group's Initial Discussions*

The Ofgem representative confirmed that there is no conflict with the Distribution Licence due to Principle 6.

The Group noted Distribution Licence condition 4A.2B and agreed that it does not conflict with the current P216 solution. Licence condition 4A.2B states that:

“Standard Condition 4A. Charges for Use of System

1. The licensee shall prepare a statement, in a form approved by the Authority, which sets out the basis on which charges will be made for the use of the system (“the charging statement”), which:

a) is in such a form and contains such detail as would enable any person to make reasonable estimate of the charges to which he would become liable in respect of use of system; and

b) from 1 April 2005, is prepared in accordance with the use of system charging methodology.

2. The statement referred to in paragraph 1 shall include:

a) a schedule of charges for the distribution of electricity under use of system;

b) a schedule of adjustment factors to be made for distribution losses, in the form of additional supplies required to cover those losses;”

c) Continues...

5.4.1.1 *Views of Respondents to Assessment Procedure Consultation*

The Group noted the comment received in response to Principle 12 (as set out in section 5.2.1.35).

5.4.1.2 *Modification Group's Conclusions*

The Group agreed that there is no conflict with the License due to Principle 12 as, if anything, the Licence is more stringent than the BSC.

5.5 *Implementation Approach and Costs*

5.5.1 **Modification Group's Initial Discussions**

The Group discussed possible implementation dates, and agreed that these will be dependent on the results of the Impact Assessment.

One member of the Group expressed a preference to have the revised process in place for the April 2009 LLF submissions. The Group noted that this would be particularly tight given the need for the methodologies audit to start in the previous May (2008).

One member suggested that the audit could be postponed to the second year, to allow enough time to implement P216 before the April 2009 submissions. This would mean that the methodologies in use must be compliant with the high level principles for April 2009, but that the LLFs would not be audited before they are approved in the first year to allow additional time for the audit processes to be implemented.

5.5.2 **Results of Proposed Modification Impact Assessment**

PROPOSED MODIFICATION IMPLEMENTATION COSTS	
ELEXON Implementation Cost	176 man days £38,720
It is noted that ELEXON has looked at automating LLF validation processes as part of an operational systems upgrade. ELEXON believe that the cost of building a system to create the D0265 file (which would be in addition to the above costs) is not substantive.	
PROPOSED MODIFICATION ONGOING SUPPORT AND MAINTENANCE COSTS	
Total ELEXON Annual Operational Cost	£ 25,960 per annum
It is noted that this cost will vary from year to year, based on how many DSOs submit new methodologies to be audited and how large the audit sample sizes are (which will be determined by the Panel each year).	

a **BSC Agent Impact**

No impact identified.

b **BSC Party and Party Agent Impact**

Distributors: Where costs were provided, these ranged from £100,000 to £120,000 per DSO, to implement P216 and an ongoing annual cost of £50,000 to £60,000 per DSO to support the audit processes introduced by P216.

DSOs requested between 1 and 2+ years to implement P216 (unless there is a dispensation from Principle 1 for the first year).

Suppliers: No costs were provided in the Impact Assessment. Suppliers requested between 6 and 12 months to implement P216.

c Transmission Company Impact

No impact identified.

d ELEXON Impact

Implementation: New BSCP drafting, walk through, process testing/definition.

Ongoing: undertaking the new audits (including: site visits, validation processes, drafting papers, resolving discrepancies).

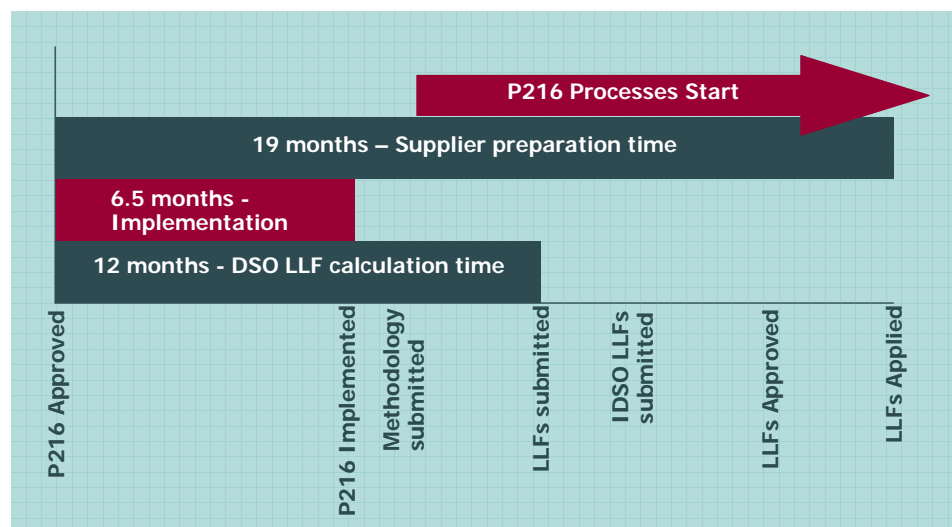
5.5.3 Modification Group's Conclusions

The Group noted that DSOs will need some time to calculate site specific LLFs for all those sites required to have them by Principle 1. The Group noted that some of these calculations could be undertaken before P216 has been implemented, but after it has been approved.

The Group noted the range of 1-2 year's implementation time was requested by DSOs. The Group agreed that DSOs should have at least 12 months' notice, before they are required to submit LLFs which are compliant with the Principles.

The Group agreed that as long as P216 was approved by September (in Year = Y) then there would be enough time for the LLFs to be submitted in September Y+1 and the LLFs used in April Y+2. As the high level principles and the data date range for the first year are set out in the Proposed Modification, DSOs will be able to start amending their methodologies and re-calculating LLFs when P216 is approved. The BSCP drafting and other implementation activities could take place in parallel with some of these DSO implementation activities.

Under the P216 processes:		
Action	Month	Year
P216 Approved	September	Y
P216 Implemented (and BSCP128 becomes effective)	Late April	Y+1
LLF methodologies submitted	May (1 st year)	Y+1
LLFs submitted	end of September	Y+1
LLFs approved	January	Y+2
LLFs used in Settlement	April	Y+2



The Group agreed that if P216 were approved, ELEXON would, at the start of the implementation period issue a letter to all DSOs, highlighting the implementation timescales, and hold an education seminar for DSOs to explain how the P216 implementation process will work.

The Group noted that the implementation of P216 is highly unusual, as DSOs are recommended to start calculating LLFs for the new processes before they have been implemented. The Group agreed that this approach is justified, as it significantly reduces the implementation timescales (as the P216 processes start in May each year).

The Group noted that implementing P216 in late April also makes the implementation simpler, as it means that the previous submission will have already been made.

The Modification Group therefore agreed the following recommended implementation approach for P216:

- An Implementation Date for the Proposed and Alternative Modification of 20 April 2009 if an Authority decision is received on or before 30 September 2008; or
- An Implementation Date for the Proposed and Alternative Modification of 19 April 2010 if an Authority decision is received on or before 30 September 2009.

5.6 *Legal Text*

The P216 Group has reviewed and agreed the draft legal text, which can be found in Attachments 1 and 2.

The Group noted that Principles 10 and 14 have been included in the legal text, and included in the BSC. Initially the Group intended that none of the Principles would be included in the BSC. However, Principles 10 and 14 have been included for the following reasons.

Principle 10 has been included because it represents a new requirement on the BSC Panel, in authorising DSOs to make adjustments to their LLF methodologies, due to market wide issues.

Principle 14 has been included because it formed part of the original Modification Proposal. The legal text for the Alternative Modification is slightly different within this section, to allow site specific LLFs to change mid year.

6 *Assessment of Modification the Against Applicable BSC Objectives*

This section outlines the views of consultation respondents and the Modification Group regarding the merits of P216 against the Applicable BSC Objectives.

6.1 *Proposed Modification*

6.1.1 *Modification Group's Initial Discussions*

The initial **MAJORITY** view of the Modification Group was that the Proposed Modification **WOULD NOT** better facilitate the achievement of Applicable BSC Objectives (c) and (d) when compared to the current Code baseline, for the following reasons:

Applicable BSC Objective (c)

- effective competition would not be improved, as there is already a level playing field in the way that methodologies are published and LLFs approved;
- the potential materiality of any error associated with inaccurate LLFs has not been proven and stable ADR values imply that any issues are not of significance; and
- generation sites could be unfairly and negatively impacted as a result of Principle 6 (where generic LLFCs for Import and Export at the same site are required to have the same LLF values), and Principle 15 (where no retrospective changes to LLFs would be allowed).

Applicable BSC Objective (d)

- the administration of the balancing and settlement arrangements would be less efficient due to the increased costs of the audit processes.

The **MINORITY** view, that Applicable Objectives (c) and (d) **WOULD** be better facilitated by the Proposed Modification, was supported for the following reasons:

Applicable BSC Objective (c)

- analysis shows that Suppliers will be impacted in different ways by changing LLF values. While the extent of the impact is open to debate, the variance between different types of Supplier is significant and will negatively affect competition;
- audits will provide Suppliers with assurance that the originally applied LLF values are correct; and disallowing retrospective changes will give Suppliers increased confidence in their expected imbalance position.

Applicable BSC Objective (d)

- high level principles will provide increased transparency in the way that LLFs are derived for use in Settlement.

The Group unanimously agreed that the Proposed Modification would have a neutral impact on Applicable BSC Objectives (a) and (b). Some Group members also felt that there would be a neutral impact on Applicable BSC Objective (d).

The Group noted that the Proposer was unable to be present at the meeting when views on the Applicable BSC Objectives were discussed; and that he continued to support the P216 Proposed Modification.

6.1.2 Views of Respondents to Assessment Procedure Consultation

The **SLIGHT MAJORITY** view of respondents to the Assessment Procedure consultation was that the Proposed Modification **WOULD NOT** better facilitate the achievement of **Applicable BSC Objectives (c) and (d)** when compared with the existing Code baseline.

The **SLIGHT MINORITY** view of respondents to the Assessment Procedure consultation was that the Proposed Modification **WOULD** better facilitate the achievement of **Applicable BSC Objectives (c) and (d)** when compared with the existing Code baseline.

The arguments expressed in the consultation responses (both for P216 and against) were the same as those expressed by the Group in their initial discussions described in section 6.1.1.

6.1.3 Modification Group's Conclusions

The Modification Group was **SPLIT** over whether the Proposed Modification would better facilitate the achievement of **Applicable BSC Objectives (c) and (d)** when compared with the existing Code baseline.

Those Group members who did not support the Proposed Modification reiterated the arguments previously expressed against P216.

Those Group members who supported the Proposed Modification reiterated the arguments previously expressed in support of P216, and added the following argument:

Applicable BSC Objective (c)

- the relatively low implementation costs of P216 mean that the benefits of increased transparency and consistency are justified.

The Group unanimously agreed that the Proposed Modification would have a neutral impact on Applicable BSC Objectives (a) and (b).

6.2 *Alternative Modification*

6.2.1 Alternative Modification compared with Proposed Modification

6.2.1.1 *Views of the Modification Group*

The Modification Group was **SPLIT** over whether the Alternative Modification would better facilitate the achievement of **Applicable BSC Objectives (c) and (d)** when compared with the Proposed Modification.

Those Group members who did support the Alternative Modification over the Proposed Modification did so for the following reasons:

Applicable BSC Objective (c)

- errors in site specific LLFs can be corrected more quickly than for the Proposed Modification. This increases the accuracy of Settlement.

Those Group members who did not support the Alternative Modification over the Proposed Modification did so for the following reasons:

Applicable BSC Objective (c)

- there is increased uncertainty for Suppliers in LLF values. If an LLF changes unexpectedly mid-year the Supplier will be unable to update their contracts in time to reflect the change. This means that individual Suppliers will be advantaged or disadvantaged during the year, and there will not be a level playing field.

The Group unanimously agreed that the Alternative Modification would have a neutral impact on Applicable BSC Objectives (a) and (b).

6.2.2 Alternative Modification compared with Existing Code Baseline

6.2.2.1 Modification Group's Views

The Modification Group was **SPLIT** over whether the Alternative Modification would better facilitate the achievement of **Applicable BSC Objectives (c) and (d)** when compared with the existing Code baseline.

Those Group members who did support the Alternative Modification over the existing Code baseline did so for the same reasons as they supported the Proposed Modification.

Those Group members who did not support the Alternative Modification existing Code baseline did so for the same reasons as they did not support the Proposed Modification.

The Group unanimously agreed that the Alternative Modification would have a neutral impact on Applicable BSC Objectives (a) and (b).

6.3 Final Recommendation to the Panel

On the basis of the above assessment, the Modification Group were:

- **SPLIT** on whether the Proposed Modification should or should not be made;
- **SPLIT** on whether the Alternative Modification better facilitates the Applicable BSC Objectives when compared to the Proposed Modification; and
- **SPLIT** on whether the Alternative Modification should or should not be made;

Anonymised details of how the Group voted are included below.

	Proposed	Alternative vs. Proposed	Alternative vs. Baseline
Group Member 1	✓	✗	✓
Group Member 2	✓	✗	✓
Group Member 3	✓	✗	✓
Group Member 4	✗	✓	✗
Group Member 5	✗	✓	✗
Group Member 6	✗	✓	✗
Overall View	SPLIT	SPLIT	SPLIT
Attendee 1 ²¹	✓	✗	✓

Details of the Group's recommended Implementation Date and legal text can be found in Sections 5.5 and 5.6.

7 Terms Used In This Document

Other acronyms and defined terms take the meanings defined in the Code.

Acronym/Term	Definition
ADR	Annual Demand Ratio: ADR is a measure of the variation between the total annual profiled Non Half Hourly (NHH) consumption and the total annual metered NHH consumption (as deduced from GSP Group

²¹ The attendee expressed the same arguments as the Group in terms of the Applicable BSC Objectives.

Acronym/Term	Definition
	Takes and HH consumption).
CVA	Central Volume Allocation
DSO	Distribution System Operator (Independent or Licensed)
DTC	Data Transfer Catalogue
EATL	EA Technology Limited
EHV	Extra High Voltage - over 22kV or at a substation with a primary voltage of 66kV or above.
Embedded Generation	Term used for any electricity generating plant that is connected to a distribution network. These networks are owned and operated by the DSOs.
GSP	Grid Supply Point
GSPGCF	Grid Supply Point Group Correction Factor
HV	High Voltage - a voltage typically exceeding 1000 Volts and less than 22kV.
IDSO	Independent Distribution System Operator
ISG	Imbalance Settlement Group
LDSO	Licensed Distribution System Operator
LLF	Line Loss Factor
LLFC	Line Loss Factor Class
LuSTRe	<p>LuSTRe is an application which provides a control framework that other applications can be run under. It supports file loading, reports, and scripts to control the processing. It can also automatically locate and load files from directories on the LuSTRe or other servers.</p> <p>LuSTRe is a client server application. The Server side part of LuSTRe runs as a service, and will be active all the time that the server is running. The Client (user interface) side of LuSTRe runs on a standard Windows XP system and revolves around configuring the processing and checking its status.</p>
PAB	Performance Assurance Board
SVA	Supplier Volume Allocation
SVG	Supplier Volume Allocation Group
TAA	Technical Assurance Agent

8 Document Control

8.1 Authorities

Version	Date	Author	Reviewer	Reason for review
0.1	21/01/08	Ysanne Hills	Sarah Jones	For technical review
0.2	24/01/08	Ysanne Hills	P216 MG	For MG review
0.3	01/02/08	Ysanne Hills	David Jones	For quality review
1.0	08/02/08	Change Delivery	N/A	For Panel decision

8.2 References

Ref.	Document Title	Owner	Issue Date	Version
1	Trading Operations Report (presented to the August 2007 Panel)	ELEXON	August 2007	August 2007
2	SVG Paper SVG/38/480	ELEXON	22/03/04	22/03/04
3	SVG Paper SVG/40/011	ELEXON	21/05/04	21/05/04

Ref.	Document Title	Owner	Issue Date	Version
4	NEDL Use of System Charges Statements	CE Electric	July 2007	July 2007
5	YEDL Use of System Charges Statements	CE Electric	July 2007	July 2007
6	Central Networks East Charging Statement	Central Networks	April 2007	April 2007
7	Central Networks West Charging Statement	Central Networks	April 2007	April 2007
8	London Network Charging Statement	EDF Energy	October 2007	October 2007
9	East of England Network Charging Statement	EDF Energy	October 2007	October 2007
10	South East England Network Charging Statement	EDF Energy	October 2007	October 2007
11	Scottish Hydro Electric Power Distribution Charging Statement	Scottish & Southern Energy	July 2007	July 2007
12	Southern Electric Power Distribution Charging Statement	Scottish & Southern Energy	October 2007	October 2007
13	SP Distribution Charging Statement	Scottish Power	August 2007	August 2007
14	SP Manweb Charging Statement	Scottish Power	April 2007	April 2007
15	United Utilities' Use of System Charges Statements	United Utilities	April 2006	April 2006
16	WPD South West Charging Statement	Western Power Distribution	April 2007	April 2007
17	WPD South Wales Charging Statement	Western Power Distribution	April 2007	April 2007
18	Distributed Energy – Initial Proposals for More Flexible Market and Licensing Arrangements Ofgem Reference: 295/07	Ofgem	December 2007	December 2007

Appendix 1: Process Followed

Copies of all documents referred to in the table below can be found on the [P216 page of the BSC Website](#).

Date	Event
30/07/07	Modification Proposal raised by Smartest Energy
09/08/07	IWA presented to the Panel
03/09/07	First Definition Procedure Modification Group meeting held
06/09/07	Second Definition Procedure Modification Group meeting held
12/09/07	Definition Procedure Consultation issued
18/09/07	Definition Procedure consultation responses returned
21/09/10	Third Definition Procedure Modification Group meeting held
11/10/07	Definition Report presented to the Panel
22/10/07	First Assessment Procedure Modification Group meeting held
13/11/07	Second Assessment Procedure Modification Group meeting held
20/11/07	Third Assessment Procedure Modification Group meeting held
05/12/07	Fourth Assessment Procedure Modification Group meeting held
12/12/07	Fifth Assessment Procedure Modification Group meeting held
13/12/07	Interim Report presented to the Panel
19/12/07	Sixth Assessment Procedure Modification Group meeting held
20/12/07	Consultation issued for industry consideration
20/12/07	Requirements Specification issued BSC Agent impact assessment
20/12/07	Request for Party/Party Agent impact assessments request issued
20/12/07	Request for Transmission Company analysis issued
20/12/07	Request for ELEXON impact assessment issued
15/01/08	Consultation responses returned
15/01/08	BSC Agent impact assessment returned
15/01/08	Party/Party Agent impact assessments returned
15/01/08	Transmission Company analysis returned
15/01/08	ELEXON impact assessment returned
18/01/08	Seventh Assessment Procedure Modification Group Meeting
24/01/08	Eighth Assessment Procedure Modification Group Meeting
14/02/08	Assessment Report Presented to the Panel

ESTIMATED COSTS OF PROGRESSING MODIFICATION PROPOSAL ²²	
Please note: these costs are for the Assessment Procedure only. The estimated costs for the Definition Procedure were provided in the Initial Written Assessment and were approximately £16,000 in total.	
Meeting Cost	£ 3,500
Legal/Expert Cost	£ 8,000
Impact Assessment Cost	£ 12,000
ELEXON Resource	130 man days £ 40,000

The above costs are as highlighted in the Definition Report. It is noted that the actual costs of the P216 Assessment may be higher than these values due to an additional questionnaire which was used to better understand the current LLF methodologies and the analysis undertaken being more time consuming than expected.

²² Clarification of the meanings of the cost terms in this appendix can be found on the BSC Website at the following link: http://www.elxon.co.uk/documents/Change_and_Implementation/Modifications_Process_-_Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf

Modification Group Membership

Member	Organisation	2007						2008	
		22/10	13/11	20/11	05/12	12/12	19/12	18/01	24/01
David Jones	ELEXON (Chairman)	✓	✓	✓	✓	✓	✓	✓	✓
Ysanne Hills	ELEXON (Lead Analyst)	✓	✓	✓	✓	✓	✓	✓	✓
Colin Prestwich	SmartestEnergy (Proposer)	✓	✓	✓	✓	✓☎	✗	✓	✓
Glenn Sheern	E.ON UK	✓	✓	✗	✗	✗	✗	✗	✗
María Isabel Liendo	Scottish Power Energy Networks	✓	✗	✗	✓	✓☎	✓☎	✓☎	✗
James Evans	British Energy	✓	✓	✗	✓	✓	✓☎	✓	✓
Rosie McGlynn	EDF	✓	✓	✗	✓	✓	✗	✓	✓
Andrew Manning	npower	✗	✗	✗	✓	✓☎	✓☎	✓	✗
Andrew Neves	Central Networks	✗	✓	✓	✓	✓☎	✓☎	✓	✓
Eric Graham	Independent	✗	✗	✗	✓	✓☎	✗	✓	✓
Nigel Lloyd	Western Power Distribution	✓	✓	✓	✓	✓☎	✓☎	✗	✓
Attendee	Organisation								
Shantok Karavadra	ELEXON (Lawyer)	✗	✓	✓	✓	✗	✗	✓	✓
Justin Andrews	ELEXON (DA)	✓	✓	✗	✗	✓	✗	✗	✗
Sarah Jones	ELEXON (DA)	✗	✓	✓	✓	✓	✗	✓	✗
Keith Banwaitt	ELEXON (Operational)	✓	✓	✓	✓	✓	✓	✓	✗
Simon Polley	Ofgem	✓	✓	✓	✓	✓	✓☎	✓	✗
Mark Field	npower	✗	✓	✗	✗	✗	✗	✗	✗
Robert Arbon	Campbell Carr	✓	✓	✓	✓	✓☎	✓☎	✓	✓
Richard Cullen	ELEXON (Operational)	✗	✗	✗	✗	✓	✓	✗	✗
Sarah Mann	ELEXON (Observer)	✗	✗	✗	✗	✗	✗	✓	✗
Gill Nolan	SEMO (Observer)	✗	✗	✗	✗	✗	✗	✓	✗
Mary D'arcy	SEMO (Observer)	✗	✗	✗	✗	✗	✗	✓	✗
Nihm Delany	SEMO (Observer)	✗	✗	✗	✗	✗	✗	✓	✗
Roger Harris	ELEXON (Operational)	✗	✗	✗	✗	✗	✗	✗	✓

Modification Group Terms Of Reference

Modification Proposal P216 will be considered by the **P216 Modification Group**, comprised of members of the **Volume Allocation Modification Standing Group (VASMG)**, **Governance Standing Modification Group (GSMG)**, **Settlement Standing Modification Group (SSMG)** and **Distribution Company Representatives** in accordance with the following Terms of Reference.

P216 – Audit of LLF Production

Definition Procedure

The Modification Group will carry out a Definition Procedure in respect of Modification Proposal P216 pursuant to section F2.5 of the Balancing and Settlement Code.

The Modification Group will produce a Definition Report for consideration at the BSC Panel Meeting on 11 October 2007.

The Modification Group shall consider and/or include in the Definition Report as appropriate:

- the scope and aims of each of the audits suggested;
- how inaccurate LLFs might impact on GSP Group Correction Factor, how significant any impact is for settlement and the appropriateness of assessing this issue under P216;
- whether the rules for LLF methodologies should be Code defined (and constructed by the Modification Group as part of the Modification) or approved and amended from time to time by, for example, a Panel Committee; and
- confirm that the audits proposed are within the scope of the BSC, as opposed to any other governance arrangements.

Assessment Procedure

The Modification Group will carry out a Definition Procedure in respect of Modification Proposal P216 pursuant to section F2.6 of the Balancing and Settlement Code.

The Modification Group will produce an Interim Report for consideration at the BSC Panel Meeting on 13 December 2007. This report will confirm whether the Group are pursuing a solution based on a common LLF methodology for all GSP Groups, and whether additional time is needed to complete this.

The Modification Group will produce an Assessment Report for consideration at the BSC Panel Meeting on 14 February 2008.

The Modification Group shall consider and/or include in the Assessment Report as appropriate:

- who should conduct each of the audits and checks described in P216 (e.g. an existing or new BSC Agent/service provider or ELEXON) and to whom reports should be provided to;
- the detailed scope, approach and timing for each of the checks described in P216 and how these could be changed in the future;
- the procedure to be followed if an LLF fails one or more audits, including any default rules;
- the rules/principles to be included in the BSC which LLF methodologies must comply with, and the level of detail that these rules should go into (what LLFs represent (i.e. the actual or technical losses on a line) should be defined, potentially as part of these rules);
- any changes needed to the process for new LLFs being approved during the course of the year;
- the differences between SVA and CVA LLFs and whether the differences identified lead to variances in audit approach;
- analyse the number and types of Metering Systems in the existing LLFC groupings;

- any interaction with approved Modifications, such as P197 ('SVA Qualification Processes Review') and P207 ('Introduction of a new governance regime to allow a risk based Performance Assurance Framework (PAF) to be utilised and reinforce the effectiveness of the current PAF');
- costs-benefits analysis - whether the perceived risk to Settlement justifies the impact/cost of providing each of the suggested audits, and the level of detail of the LLF Principles) (including undertaking analysis to see how changes in the LLF values impact Settlement (volumes and GSPGCF) and Parties);
- conclude whether a common LLF methodology should be determined;
- consider the impact of P216 on Independent Distributor Networks ; and
- Confirmation that there is not a conflict between the P216 solution and the Licence requirement 4A.2B on Distributors.

Appendix 2: Summary of Assessment Procedure DSO Questionnaire Responses

The Group issued a questionnaire to all DSOs (IDSOs and LDSOs) to aid in their understanding of how LLFs are currently calculated and the differences between DSOs calculations. 8 responses were received, from: CE Electric; Central Networks; Scottish and Southern; Scottish Power; United Utilities; Western Power Distribution; Laing O'Rourke Energy (IDSO); and The Electricity Network Company (IDSO).

A summary of the answers received is available below and the full non-confidential responses (excluding question 5) are attached in a separated document, Attachment 1.

	Question	Summary of Answers
1	What criteria do you use to determine whether a site should have a site specific LLFs (i.e. a LLF calculated or estimated exclusively for the site) or non site specific (generic) LLFs? For example: Is the criteria based on voltage, capacity (kVA), DUoS tariffs, trading arrangements (SVA or CVA sites) or some other criteria? Please state the criteria and any supporting rationale.	Always generic for smaller SVA sites. Usually site specific for all CVA sites. The split between site specific and generic is usually around SVA EHV sites. IDSOs mirror the host network.
For the calculation of site specific LLFs:		
2a	Do you use a Load flow and substitution model?	5 – yes 1 – no (see the answer to Q2aii for what is used)
2ai	If yes, please give details of the type of model used, and how much of the network is analysed for each site?	Load flow model used, usually calculating the difference with and without the customer.
2aii	If no, how do you calculate your site specific LLFs?	Use the EATL model for specific sites.
2b	What input parameters do you use? In particular, how do you treat time-dependent loads (i.e. do you take an average, RMS value, etc)? Also, how do you treat the other loads (or generation) connected in the local network and at which loads do you run the analysis.	Usually profiled/ metered demand/ generation and network model data.
2c	How do you estimate these inputs, and how are they sourced?	Sourced from asset certificates, load flow models and Settlement data.
2d	Do you ever change site specific LLFs during the	4 – yes

	year?	1 - no
2di	If yes, what reasons are there for changing LLFs mid year?	This is unusual. Due to a material change - examples given included a new site or a significant change to site usage.
For generic LLFs:		
3a	Do you use the EA Technology methodology for calculating non-site specific LLFs?	4 – no 3 - yes
3ai	If not, which methodology do you use?	3 – own methodology IDSOs – mirror host network
3aii	If not, why have you opted for this methodology over the EA Technology one (other than for commercial reasons)?	1 – our methodology is similar to EA anyway. 2 – historical reasons/we weren't part of the development of the EATL Methodology.
3aiii	If yes, why did you choose the EA Technology methodology (except for commercial reasons)?	Reasons included: It is an improvement on previous methods. Due to the move to HH profiles. We participated in the development.
3aiv	If yes, how do you use the EA Technology model?	A limited number of responses received. Those that did respond to this question indicated that they use the model to establish fixed and variable losses or to estimate LAFs for STOD tariff periods at different voltage levels.
3b	Are you planning to move to a new methodology?	5 – no 2 – yes/possibly
3bi	If yes, why?	To improve accuracy.
3bii	If yes, which methodology are you planning to move to?	1 – newLAF 1 – a methodology similar to EATL
3biii	If no, why not?	4 – current methods are fit for purpose/simplest for us.
3c	How do you estimate the overall losses in the network?	4 – units distributed vs. units entering. 2 – as described in the Licence.
3d	Which voltage level are you attributing the majority of losses to? How do you ensure that the allocation method (e.g. EA technology, newLAF or other) takes into account this assumption?	4 – LV 2 – depends on the results of the modelling IDSOs – mirror host network
3e	If using EA technology or newLAF (or other method if applicable), where do you source the network data from? In particular, how do you reflect "technical" losses (fixed and variable). How often are these variables updated?	5 – network data/assets register IDSOs – mirror host network <u>Updates:</u> 1 – when there are changes 3 – annually 1 – last change in 1999, next in 2008
3f	Do you use settlement data to calculate your LLF allocation?	6 – yes
3fi	If yes, at what stage of reconciliation do you take the data (e.g. R1, R2)	3 – R2+ 2 – R3 1 – best available
3fii	If yes, at what level of granularity is the data used? (e.g. half-hourly, monthly, annual)	5 – HH 1 - annual

3fiii	If no, what other method do you use to allocate overall losses (as per question 3.c above) to the different voltage levels and customer groups?	A limited number of responses received. The respondent that did comment indicated that they used an iterative process to match engineering losses to estimated total losses.
3g	Do you ever change the allocation of a non-site specific LLFC (or the associated LLFs) to a site during the year?	4 – yes 2 – no
3gi	If yes, what reasons are there for changing LLFC or LLFs mid year?	Unusual. 2 – changes to the site 2 – better data becomes available
4	Do you have any error detection process in the calculation of LLFs?	6 - yes
4a	If yes, what happens when errors are detected?	Detect errors by: 3 – comparing the results to last years 1 – auditing the model used 2 – checking inputs 1 – using an internal approval processes
5	Please can you provide ELEXON a full list of the LLFCs that are active in each of your GSPG(s) with the MPAN count associated with each LLFC, and stating which LLFCs are site specific, LV, HV, EHV or generic.	Non-confidential, collated answers received are provided in the table below.

	Generic MPAN Count	Generic LLFCs	Site specific MPAN Count	site specific LLFCs
NEEB	1,576,178	61	99	110
YELG	2,220,410	77	73	76
LENG	1,071	9	0	0
SWAE	1,067,568	114	89	58
SWEB	1,497,872	67	43	34
MIDE	2,463,391	63	21	8
EMEB	2,633,499	62	58	49
NORW	2,545,505	76	95	68

Appendix 3: Summary of Assessment Procedure Consultation Responses

A summary of the consultation responses is provided in the tables below.

It is noted that 2 confidential responses were received. These responses have not been included in these consultation summaries; however, with the respondents' agreement, the confidential responses were shared with the Group.

Q	Consultation Question	Summary of Responses		
		Yes	No	Neutral ²³
1	Do you believe Proposed Modification P216 would better facilitate the achievement of the Applicable BSC	4 respondents	5 respondents	1 respondent
		Those who supported P216 usually did so due to the increase in transparency and consistency in		

²³ Views have been collated into this column when there was no comment, the view was neutral or the respondent was unsure.

Q	Consultation Question	Summary of Responses		
		Yes	No	Neutral ²³
	Objectives?	calculating LLFs. Those who did not support P216 did so because they believed that there is little evidence of a material error in LLFs.		
2	Do you believe there are any alternative solutions that the Modification Group has not identified and that should be considered?	One respondent suggested that the audit size should be reduced after the first year and questioned whether the audit of LLF calculations was really needed.		
3	Please use Attachment 1: P216 High Level Principles Proforma, to provide comments on the High Level Principles.	Responses to these questions are summarised in the table below.		
4	Do you agree with the timetable for the audits? If not, when do you consider would be the best time to conduct the audits?	9 respondents	1 respondents	0 respondents
		The respondent that disagreed did so because they felt that the current processes work. Some of those who supported the timetable noted that it allowed time for corrective action.		
5	When an audit is failed, and the revised LLF values become available mid year, should the LLFs be applied prospectively (for the rest of the year, going forward only) rather than retrospectively (back to 1 April)?	7 respondents ²⁴	3 respondents	1 respondent
		Most respondents agreed that unless the error was significant then the change should be prospective only, as retrospective changes cause uncertainty. Some respondents felt the audited LLF values should be applied back to the start of the BSC Year, or to all non-crystallised data. One respondent felt that the defaults should be used for the full year.		
6a	Do you agree with the approach to auditing IDSOs?	8 respondents	2 respondents	0 respondents
		The majority of respondents agreed with the flexible approach to auditing IDSOs. One of the respondents that disagreed did so because they felt that the current processes work.		
6b	Under P216, are there any alternatives for IDSOs estimating their LLFs, other than mirroring the host DSOs LLF values?	1 respondent	9 respondents	1 respondent
		Most respondents agreed that at the present time there are no alternatives for IDSOs, although several suggested that this may change in the future. One respondent suggested that IDSOs could choose to use their own method if they wanted too.		
7	Does P216 raise any issues that you believe have not been identified so far and that should be progressed as part of the Assessment Procedure?	Those respondents who provided a response to this question suggested that: <ul style="list-style-type: none"> the scope and costs of the audits should be reviewed regularly; DSOs should pay for failed audits; and analysis should be conducted on a regular basis to look at the volume impact of changing LLFs from one year to the next in a GSPG, by applying the new LLF values to the last years volumes. 		
8a	Analysis undertaken to establish the	5 respondents	4 respondents	1 respondent

²⁴ Prospective only preferred.

Q	Consultation Question	Summary of Responses		
		Yes	No	Neutral ²³
	sensitivity of GSPGCF to changes in LLFs (Attachment 2), gives an indication of the potential materiality of altering LLF values. Do you consider these values materially significant?	<p>Those who considered that the analysis does not demonstrate a materially significant potential error did so because the numbers are small in context or because they felt that the analysis was irrelevant.</p> <p>Those who considered that the analysis does demonstrate a materially significant potential error felt that the materiality was dependent on the type and size of the business/portfolio.</p>		
8b	What would you consider to be materially significant?	<p>Those respondents who commented on this question suggested:</p> <ul style="list-style-type: none"> • a four figure sum over the course of a year; • a number that is significant when compared to overall energy purchase costs; • When the costs of the audit are outweighed by the benefits; and • applying similar figure to the TDC limit (i.e. £500). 		
9	Are there any further comments on P216 that you wish to make?	<p>Those respondents who commented on this question queried:</p> <ul style="list-style-type: none"> • the business case for P216; and • how defaults will be communicated/published for DAs. 		

Please note that the Principles included in the table below are those sent out for consultation, (the wording of the Principles in this section has not been updated based on the Group's further discussions). The final Principles agreed by the Group following the consultation are available in section3.1.

Principle	Responses		
	Agree	Disagree	Neutral/No comment
1. All LLFs shall be calculated using a generic (non site specific) method except for: a. sites which are CVA and have a demand/generation capacity of greater than 10MW; or b. SVA sites that are connected at EHV ; or c. where the customer has requested a site specific LLF, and the DSO is in agreement.	6 respondents	2 respondents	1 respondent
	<p>The Group specifically asked for comments on whether the split should be by Voltage level or max/average demand.</p> <ul style="list-style-type: none"> • The majority of respondents supported a Voltage level split would be best, some suggested a combined Voltage level and demand. • One respondent suggested that a Voltage Level split seems complex. <p>The Group specifically asked if all HV sites should have site specific LLFs. All those who responded to this question suggested that it would be too costly and time consuming to require all HV sites to have site specific LLFs.</p> <p>One respondent queried why the site specific/generic split in LLFs would be different for CVA and SVA.</p>		
2. All LLFs shall be calculated to 3 decimal places.	8 respondents	1 respondent	0 respondents
	<p>One respondent suggested that CVA should be to 4dcp.</p> <p>Some respondents expressed concern about reducing the accuracy of CVA LLFs, while others</p>		

	Responses		
	noted that CVA LLFs are often 1.00000 anyway. No significant impacts on CVA were identified.		
3. All site specific LLFs shall account for technical losses only.	6 respondents	3 respondents	0 respondents
	2 respondents suggested that HV sites should not be subject to non-technical losses. One respondent suggested that all sites should share non-technical losses.		
4. All generic LLFs shall account for all losses (technical and non technical).	6 respondents	3 respondents	0 respondents
	2 respondents suggested that HV sites should not be subject to non-technical losses. One respondent suggested that all sites should share non-technical losses.		
5. Site specific LLF values and the total GSPG losses shall be considered in the calculation of generic LLFs.	8 respondents	1 respondent	0 respondents
	One respondent suggested that there would be transparency benefits in separating technical and non-technical losses.		
6. Generic LLFCs for Import and Export at the same site where the voltage level is the same shall have the same values.	6 respondents	3 respondents	0 respondents
	There was a split in respondents views as to whether different Import and Export losses can be justified on a generic basis. Several of those respondents who agreed with Principle 6 noted that while Import and Export losses may actually be different, they didn't consider that the effort to calculate them separately was worthwhile.		
7. There shall be no more than 2 LV and 2 HV generic LLFC Groups ²⁵ in each GSPG, and at least 1 generic EHV LLFC Group.	8 respondents	1 respondent	0 respondents
	The Group specifically asked respondents whether 2 LV, 2 HV and 1 EHV LLFCs per GSPG were enough. All of those who responded to this question confirmed that this is the case.		
8. As a minimum, generic LLFs shall be calculated separately for day and night.	9 respondents	0 respondents	0 respondents
9. DSOs shall utilise Settlement data from a Settlement Run at R2 or greater and from a complete previous year, for calculating LLFs. The year of data to be used shall be determined by the PAB.	8 respondents	1 respondents	respondents
	The majority of respondents agreed that all DSOs should use the same date range. The Group specifically asked whether using R2 data was acceptable. The majority of respondents agreed that using either all R2 or a mixture of R2 and R3 would be acceptable. The Group specifically asked whether respondents believed that the date range used should be the same each year, or varied by the PAB on an annual basis. <ul style="list-style-type: none"> • 5 respondents agreed that the PAB should determine the dates (to maintain flexibility); and • 3 respondents agreed that the date should be the same each year (to maintain consistency between years). 		
10. Changes to the LLF calculation, to take into account market wide issues (e.g. erroneously large EAC/AA or incorrect	9 respondents	0 respondents	0 respondents

²⁵ An 'LLFC Group' means a set of LLFCs that have the same LLFs (and will be defined as part of P216).

	Responses		
Energisation Status) can only be made if agreed to be appropriate through the new LLF 'audits'.			
11. Robust error detection and correction processes shall be in place throughout the calculation of LLFs.	9 respondents	0 respondents	0 respondents
12. All generic LLFs shall be re-calculated [every year/every 2 years].	8 respondents	1 respondents	0 respondents
	<p>The Group specifically asked respondents whether they supported recalculation every year or every 2 years.</p> <ul style="list-style-type: none"> • 5 respondents supported recalculation every year. • 3 respondents supported recalculation every 2 years. <p>The Group specifically asked how much recalculating generic LLFs costs DSOs.</p> <ul style="list-style-type: none"> • The costs provided varied from £10,000 to £20,000. • The time frames need varied from 5 working days to 4 weeks. 		
13. All site specific LLFs shall be re-calculated when there has been a relevant change to the site or network, and at least every 5 years.	8 respondents	1 respondent	0 respondents
	<p>The Group specifically asked how much recalculating site specific LLFs costs DSOs.</p> <ul style="list-style-type: none"> • The costs provided varied from £2,000 (per site) to £20,000 (in total). • The time frames need varied from 2 working days (per site) to 8 weeks (in total). 		
14. No changes shall be made to approved LLFs for site specific or generic LLFCs mid year. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined from time to time by the PAB.	5 respondents	3 respondents	1 respondent
	<p>Several respondents noted with concern Principle 14 would delay the reflection of material changes to sites in the LLFs.</p> <p>Several respondents suggested that mid year changes could be justified for site specific LLFs, where a material change to the site had occurred.</p> <p>One respondent noted that not allowing mid year changes should encourage accuracy in the initial LLF calculation.</p> <p>Several respondents noted that disallowing mid year changes make LLFs more predicable for Suppliers.</p>		
15. No retrospective changes shall be made to approved LLFs for site specific or generic LLFCs, other than to correct material manifest errors.	8 respondents	1 respondent	0 respondents
	<p>The majority of respondents agreed that only very significant errors should result in a retrospective change. This creates certainty in LLF values for Suppliers.</p> <p>One respondent suggested that LLFs should be retrospectively updated whenever better data becomes available.</p>		
Do you believe that any additional Principles should be added? Do you have any further comments on the Principles as a whole?	<p>Those who responded to this question suggested that:</p> <ul style="list-style-type: none"> • the principles represent an improvement on the current situation; • there is no business case for P216; and • the principles should be reviewed annually. 		

Details of the arguments made by respondents can be found in Sections 4 and 6, along with the Modification Group's consideration of these arguments. Full copies of the consultation responses are attached as a separate document, Attachments 4 and 5.

Appendix 4: Results of Impact Assessment

During the Assessment Procedure an impact assessment was undertaken in respect of all BSC systems, processes, documentation and parties. The following have been identified as impacted by P216.

For details of the costs associated with these impacts, please refer to Section 4.

a Impact on BSC Systems and Processes

No impact identified, however it is noted that CDCA systems cannot process different Import and Export values for a specific site within the Aggregation rules.

b Impact on BSC Agent Contractual Arrangements

No significant impact anticipated.

c Impact on BSC Parties and Party Agents

Distributors: P216 would impact DSOs (both LDSOs and IDSOs), Generators and Suppliers.

LLF methodologies would initially need to be revised to ensure that they are consistent with the high level principles - this may require changes to the DSO systems. DSOs would be audited regarding their LLF methodology and calculations, and LLFs would need to be submitted earlier to allow for the audit processes. There would be additional restrictions as to when updated LLFs can be approved and used.

Where costs were provided, these ranged from £100,000 to £120,000 per DSO, to implement P216 and an ongoing annual cost of £50,000 to £60,000 per DSO to support the audit processes introduced by P216.

Suppliers, Generators and Supplier Agents: Suppliers, Generators and Supplier Agents may find that, as a result of new principles applied to methodologies for calculating LLFs, LLFs change when P216 is implemented. There is potential for an increase in the application of default LLFs while methodologies are being updated.

No indicative costs were provided by Suppliers, Generators or Supplier Agents.

Full copies of the Party and Party Agent impact assessment responses are attached as a separate document, Appendix 5.

d Impact on Transmission Company

No impact identified.

e Impact on ELEXON

Area of Business	Impact of Proposed/Alternative Modification
CVA and SVA Operations	ELEXON processes for facilitating the approval of LLFs by the Panel (as delegated to SVG and ISG) would need to be updated to take into account the additional audit requirements proposed. Depending on how P216 is implemented, changes will be needed to revise ELEXON operational processes and the potentially

Area of Business	Impact of Proposed/Alternative Modification
	update the current validation system. ELEXON will need to ensure that the relevant expertise is available to manage the more thorough audit processes and may seek external support to provide this expertise.
Performance Assurance	Remedial action resulting from failed audits would need to be managed within the Performance Assurance Framework. This will lead to a minimal impact on Performance Assurance, who provide the PAB/Panel secretariat.
Procurement	If ELEXON chose to out source the proposed audit processes a new service provider would need to be procured and terms agreed. It is noted that the Impact Assessments indicate that ELEXON is unlikely to choose to outsource the audits.
Implementation	ELEXON would need to implement the proposed changes. This process will include Code Subsidiary Document drafting, process walkthroughs and education.

f Impact on Code

Code Section	Impact of Proposed/Alternative Modification
K (Metering Systems)	Changes are required to section K 1.7 which relates to LLFs and LLF approval.

A copy of the draft legal text to give effect to these changes can be found in Appendix 1.

g Impact on Code Subsidiary Documents

Document	Impact of Proposed/Alternative Modification
BSCP28 (Approval and Notification of CVA LLFs)	BSCP28 will no longer be used to document the CVA LLF process as a joint CVA and SVA process will be included in a new BSCP.
BSCP528 (SVA LLFs for HH and NHH SVA Metering Systems registered in SMRS)	BSCP528 will no longer be used to document the SVA LLF process as a joint CVA and SVA process will be included in a new BSCP.
New BSCP (BSCP128)	A new BSCP will document all of the SVA and CVA LLF processes.

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

No impact anticipated.

i Impact on Other Configurable Items

No impact anticipated.

j Impact on ELEXON Memorandum and Articles of Association

No impact anticipated.

k Impact on Governance and Regulatory Framework

No impact anticipated.

Appendix 5 – BSC Party Impact Assessment Responses

PARTY COSTS			
Co.	I	Impacts	Movement of Generic to SS LLFs
Npower	✓	In order to ensure the costs of losses are reflected on the correct parties any changes in LLF values need to factored into our pricing. An early understanding of any potential 'step-changes' in values is necessary-preferable 6-12months before implementation.	N/A
British Energy	✓	A review of internal processes would be required - anticipated to take 6 months (including contract pricing, position forecasting, validation & settlement and customer billing)	N/A
SSE	✓	<p>Implementation of the proposed principles set out in the assessment consultation document would impose additional costs.</p> <p>In Southern Electric Power Distribution plc (SEPD) we have 75 EHV sites and in Scottish Hydro Electric Power Distribution plc (SHEPD) 13 EHV sites. Of these sites, we will need to produce site specific LLFs for 50 sites in SEPD and for all in SHEPD. We will incur one-off costs in the order of £120,000 for the production of site-specific LLFs, facilitate audits and enhance internal processes.</p> <p>Furthermore, there will be an ongoing cost of at least £60,000 per annum to calculate all the site-specific LLFs and facilitate audits. Implementation timescales need to be realistic with as much notice as possible to produce site-specific LLFs possible as it is a time consuming exercise.</p> <p>Further Comments: We are strongly opposed to any changes to the current process for validating LLFs. We are not convinced that there is a strong business case justification for the implementation of P216.</p> <p>We believe that the existing process is adequate and cost effective for the following reasons;</p> <ul style="list-style-type: none"> a) In setting the LLFs, we monitor the trends in the GSPGCF via the ADR. b) Our Methodology Charging Statement describes in some detail the methodology for calculating site-specific and generic LLFs c) Customer/Supplier can approach us to seek clarification on the basis of the LLFs calculation. d) In the event the Customer/Supplier is not satisfied, the issue may be referred to Ofgem for resolution. 	50 sites (import & export) in SEPD and 13 (import & export) in SHEPD will move from generic voltage specific LLFs to site-specific LLFs.

PARTY COSTS			
Co.	I	Impacts	Movement of Generic to SS LLFs
		<p>e) Settlements processes have data validation procedures.</p> <p>Introduction of additional procedures and audits will impose unnecessary costs and complications</p>	
Scottish Power	✓	<p>The impact would be mostly on our business processes, but could result in a significant annual cost increase, depending on the final implementation. These additional costs would primarily arise from re-calculating all SVA EHV LLFs.</p> <p>Further comments: It will not be possible to recalculate all the LLFs for SVA EHV sites by year 1. This must be taken into account for implementation.</p>	<p>No sites would need to move from site specific to generic. Around 65 EHV sites in SPD and 97 EHV sites in SPM would have to move from generic to site-specific LLFs.</p>
Central Networks	✓	<p>Adoption of the principles set out in the document would increase the number of site specific LLFs we would need to calculate and would generate additional costs associated with facilitation of audits. We estimate a one-off cost of around £100k to calculate site specific LLFs in all cases where these are required by principle 1. We estimate ongoing costs of approximately £50k per year to facilitate audits and to re-calculate all site specific LLFs (including existing site specific LLFs) on a rolling 5 year programme. In terms of timescales, it would be impractical to have a 'big bang' solution at short notice, as calculation of the necessary additional site specific LLFs is not a trivial task. Implementation would be possible given sufficient lead-in time (probably 2 years +), or with dispensation from principle 1 for existing EHV sites for, say, the first five years.</p> <p>Further comments: We continue to question the value of this modification.</p>	<p>A total of 48 LLFCs would have to move from generic to site specific LLFs as a result of principle 1.</p> <p>No sites would need to move from site specific to generic LLFs.</p>

Appendix 6: LLFC Groupings Analysis Table

The Group's analysis of the data provided in this table is available in section 5.1.1.

LDSO/ IDSO	LDSO	LDSO	IDSO	IDSO	LDSO	IDSO	IDSO	LDSO	LDSO	LDSO	LDSO	LDSO	LDSO	LDSO	LDSO	LDSO	LDSO	LDSO
GSPG	EELC	EMEB	ENC	Ener getic s	HYDE	IPN	Laing	LOND	MANW	MIDE	NEEB	NORW	SEEB	SOUT	SPOW	SWAL	SWEB	YELG
Co.	EPN	CNE			SHPD			LPN	SP	CNW	NEDL	UU	SPN	SE	SP	WPD	WPD	YEDL
Total	16	24	37	17	8	35	9	49	17	7	33	31	17	52	5	13	10	30
Flat	6	8	6	1	4	2	0	7	5	3	30	27	13	7	5	1	0	1
Profiled	10	16	31	16	4	33	9	42	12	4	3	4	4	45	0	12	10	29
LV Network	Data not collected	1	Data not collected	Data not collected	Data not collected	Data not collected	Data not collected	Data not collected	Data not collected	1	1	1	Data not collected	Data not collected	Data not collected	1	Data not collected	1
LV Sub		0								0	1	1				0		1
HV Network		1								1	1	1				1		1
HV sub		0								0	0	0				0		1
EHV		0								1	0	1				1		0
SSP		22								4	30	27				10		26

List of Attachments:

Attachment 1: Draft Legal Text – Proposed Modification

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

Attachment 2: Draft Legal Text – Alternative Modification

Draft legal text for the Proposed Modification is attached as a separate document (Attachment 2).

Attachment 3: Complete Responses to the DSO Questionnaire

A complete set of the non-confidential DSO questionnaire responses are attached as a separate document (Attachment 3).

Attachment 4: Complete Responses to the Assessment Consultation – Main Questions

A complete set of the non-confidential consultation responses are attached as a separate document (Attachment 4).

Attachment 5: Complete Responses to the Assessment Consultation – High Level Principles

A complete set of the non-confidential consultation responses are attached as a separate document (Attachment 5).

Attachment 6: LLF Sensitivity Analysis

This attachment provides the full LLF Sensitivity Analysis Report which looks at the potential impact of LLFs on Supplier volumes. This is attached as a separate document (Attachment 6).