Modification proposal:	**Balancing and Settlement Code (BSC) P216: Audit of LLF Production (P216)**		
Decision:	The Authority[1] has decided to reject the Proposed Modification and direct that the Alternative Modification Proposal be made[2]		
Target audience:	National Grid Electricity Transmission Plc (NGET), Parties to the BSC and other interested parties		
Date of publication:	24 April 2008	Implementation Date:	20 April 2009

Background to the modification proposal

Line Loss Factors (LLFs) are used to apportion the losses within the distribution system between customers according to their energy usage. This scaled volume is then used in settlement so that the customer's energy charges from their supplier reflect their energy usage including losses.

Licensed Distribution System Operators (LDSOs) are required under the Distribution Licence[3], to provide "a schedule of adjustment factors to be made to allow for distribution losses, in the form of additional supplies required to cover those losses". The methodologies used in calculating LLFs are published by LDSOs as an appendix to their Use of System Charging methodology statements, though they are not subject to Authority approval.

Currently the Imbalance Settlement Group (ISG) and Supplier Volume Allocation Group (SVG) are responsible for approving LLFs (having delegated authority from the BSC Panel[4]). However, those groups currently have no mechanism to check that LLFs are correct and accurate before approval other than following some basic checks to ensure completeness and consistency by comparison with previously submitted LLFs. Any error in the loss factors that are submitted could therefore endure year to year. In addition, any correction to the LLF which is outside ISG/SVGs expectations could perversely result in the submission being rejected, with the default being that the previous year's erroneous submission is carried over.

Site specific and generic Line Loss Factors

Site specific 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. 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.

[1] The terms 'the Authority', 'Ofgem' and 'we' are used interchangeably in this document. Ofgem is the Office of the Gas and Electricity Markets Authority.
[2] This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.
[3] Electricity Distribution Licence Standard Condition 4A 2 (b)
[4] Under Section K of the Balancing and Settlement Code Para 1.7.1 Each Licensed Distribution System Operator, or such other person as the Panel may agree, shall establish and submit to the Panel in accordance with BSCP28 (for CVA Metering Systems) and BSCP528 (for SVA Metering Systems) Line Loss Factors applying in respect of each Metering System on its Distribution System(s) and Associated Distribution System(s) (if any).

The modification proposal

BSC Modification P216 was raised by Smartest Energy (the Proposer) on 30 July 2007 with the aim of providing additional assurance and controls over the calculation and application of Line Loss Factors (LLFs). The objectives of the modification are to:

- Increase the transparency in the way LLFs are calculated and assigned; and
- Introduce consistency in LLFs across Grid Supply Point Groups (GSPGs), both in terms of the calculation and the type of LLF assigned to a given type of Metering System.

The subsequent Modification Group developed two proposals – the original Proposed Modification and an Alternative Modification. These are summarised below and are described in more detail in the modification group's Final Modification Report (FMR) to the BSC Panel.

Proposed Modification

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 LLFs are not changed part way through a year.

Alternative Modification

Alternative Modification P216 is identical to the Proposed Modification except that it introduces a new principle which allows mid-year changes to site specific LLFs when there has been a material change affecting the site and the revised LLFs have been approved by the Panel.

For convenience the high level principles have been appended to this letter.

BSC Panel[5] recommendation

The Draft Modification Report, and respondent's views to it, was considered by the BSC Panel at its meeting on 14 February 2008. The unanimous view of the panel was that both the Proposal and the Alternative Proposal would better facilitate the achievement of Relevant BSC Objectives (c) and (d) when compared with the existing baseline. The Panel provided a further majority view, that the Alternative Modification would better facilitate the achievement of Relevant BSC Objectives (c) and (d) than the Proposed Modification. The Panel therefore recommended by a majority that the Proposed Modification should not be made and that the Alternative Modification should be made.

[5] The BSC Panel is established and constituted pursuant to and in accordance with Section B of the BSC.

The Authority's decision

Having considered the issues raised by the modification proposal, the Final Modification Report (FMR) dated 18 March 2008 and the responses to Elexon's[6] consultation on the modification proposal which are attached to the FMR[7], the Authority has concluded that:

1. Implementation of either the Proposal or the Alternative Proposal would better facilitate the achievement of the relevant objectives of the BSC[8];

2. Implementation of the Alternative Proposal will best facilitate the achievement of the relevant objectives of the BSC as compared with the current baseline; and

3. Directing that the Alternative Modification be made is consistent with the Authority's principal objective and statutory duties[9].

Reasons for the Authority's decision

We note that these proposals stem from concerns that have been raised by some Suppliers regarding the inconsistent way LLFs are applied by different DSOs and experience of LLFs changing mid-year, which results in an impact on Settlement volumes (and costs) which often cannot be recovered through Supply contracts. There have also been concerns from the Panel and its committees that they are tasked with approving LLF values with little certainty that such values were appropriate or accurate, in contrast to other Settlement inputs which normally have such validation processes. The crux of these proposals is therefore that they would provide the Panel greater assurance that the values were being calculated in a consistent manner and that they had been through an audit process. This would in turn give market participants greater confidence in the accuracy of LLF submissions.

Given the above, we concur with the Panel that as these proposals relate to the Distribution rather than Transmission network, Relevant Objectives a) and b) of the BSC do not apply and that the proposals should be assessed against both Relevant Objectives c) and d).

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

We note that some respondents considered that there is insufficient evidence of the need for either the Proposal or the Alternative. We recognise that the way that LLFs are calculated creates difficulties in quantifying the current error in LLFs.

Site specific LLFs are calculated using analysis for a specific site. We recognise that the type of load flow analysis will vary between GSP Groups, 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 GSP Groups (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. It is our view that the

[6] The role and powers, functions and responsibilities of Elexon are set out in Section C of the BSC.
[7] BSC modification proposals, modification reports and representations can be viewed on the Elexon website at www.elexon.com
[8] As set out in Standard Condition C3(3) of NGET's Transmission Licence, see: http://epr.ofgem.gov.uk/document_fetch.php?documentid=4151
[9] The Authority's statutory duties are wider than matters which the Panel must take into consideration and are detailed mainly in the Electricity Act 1989.

assumptions made will vary between GSPGs, due to differences in the physical network, the types of customer connected and the overall losses.

Given these difficulties, the analysis undertaken by the Modification Group has not been able to demonstrate that there are currently material inaccuracies in the way that LLFs are calculated. Equally, the group's analysis was unable to verify that the LLFs are accurate. The Modification Group had looked instead to calculate the size of the potential impact of changes to LLFs on GSP Group Correction Factor (GCF) and Supplier volumes. We note that the views of participants were split as to whether this analysis indicated that realistic differences exist between the way the LLFs are assigned and whether this is materially significant (both between GSP Groups and between years).

We recognise that the benefits of improving the accuracy of LLFs are not easily quantified in terms of cost savings, particularly as no material error has been proven in the current calculation of LLFs. However, there have been longstanding and persistent concerns that inaccurate LLFs have the potential to create significant inaccuracy in settlement and could be adversely affecting GSP GCF. These risks to the accuracy of settlements, regardless of whether they are real or only perceived, will have an adverse impact upon competition insofar as reducing participant's confidence in the system. Whilst this may not be sufficiently material to deter participation, the increased assessment of risk may lead to wider risk premiums and increased costs of capital. More tangibly, any errors associated with inaccurate or volatile LLFs may have an uneven distribution and fall more heavily upon particular types of supplier, i.e. those smaller suppliers which service a particular niche of the market rather than having a more balanced portfolio.

We also consider that the prohibition on retrospective changes will give Suppliers increased confidence in their expected imbalance position. This will be particularly beneficial to parties who are less able to accommodate cash flows shocks, typically smaller parties and new entrants. The current potential for volatility in LLFs, as allowed by the wide LDSO discretion to vary them, also has a particular impact upon smaller parties who, like other suppliers, may be contractually prevented from passing these costs onto customers in the short term, but are less able to absorb them in the meantime.

Given the above, we consider that the reduced volatility in LLFs and the increased assurance provided to suppliers under both proposals would have a positive, though potentially marginal, impact on facilitating effective competition between suppliers.

We note that the Modification Group had a split decision without conclusion regarding principle six that "Generic LLFCs for Import and Export at the same site where the voltage level is the same shall have the same values" but we are of the view that on balance this is a pragmatic position for generic LLFCS.

We consider that the comparison between the original Proposal and the Alternative is finely balanced, being hinged entirely upon the additional scope for a mid-year adjustment to site specific LLFs afforded by the Alternative. We generally consider that it is important for suppliers to have certainty and that frequent within year adjustments should be avoided. However, we also consider that costs should be allocated as accurately as possible. In the context of site specific adjustments, there may be less of an impact to the relevant suppliers and ultimately customers if adjustments are gradually made as necessary, rather than stored up and resulting in a step change in charges the following year. We therefore consider that the additional flexibility of the Alternative means it would better facilitate Relevant Objective c) than either the current baseline of the original Proposal.

Relevant Objective d) *Promoting efficiency in the implementation and administration of the balancing and settlement arrangements*

It was recognised that P216 was intending to introduce consistency and assurance through the use of audits and principles. As the Panel sub-committees, the ISG and SVG, will retain a role in approving LLF submissions, we consider that adherence to these principles and the provision of an audit report will enable those groups to discharge their responsibilities more effectively than at present. In effect they will be able to apply appropriate rigour, rather than conduct what is currently perceived by some to be a rubber stamping exercise. More generally we consider that the proposals represent better governance insofar as they each would increase the transparency of the procedures, and make the LDSOs more accountable for the production of accurate LLFs.

We acknowledge that either proposal would involve costs for all LDSOs; though some of these would have been incurred at some point in any case when LDSOs revise their LLF methodologies. The additional audit elements of either proposal would require greater central resource, as well as LDSO involvement in audit activities. However, we agree with the views expressed by respondents that these costs are not excessive and the additional obligation would seem to be entirely in keeping with the licence obligation to maintain a charging statement that is accurate in all material respects[10].

Whilst the costs of these proposals have been quantified, it is less easy to quantify these benefits of this improved governance. This is particularly the case as the proposals may not in practice lead to any material improvement to the accuracy of LLFs, but merely increased assurance of that accuracy.

Whilst we note the concern from LDSOs regarding some of the proposed principles, we do not consider that any issues with the principles themselves outweigh the benefits of either proposal. We note that the principles will not form part of the BSC itself, but be contained in a new subsidiary document, BSC Procedure 128. As such, the principles may be amended without need of a further modification, by unanimous agreement of the relevant Panel committee[11].

We consider that either the Proposal or the Alternative would better facilitate Relevant Objective d) than the current baseline. However, we note the additional flexibility offered by the Alternative to make a mid-year site specific adjustment if there has been a material change affecting that site. The required approval of the Panel should ensure that it only occurs where appropriate. We consider this additional flexibility means The Alternative better facilitates Relevant Objective d) than the original Proposal.

Decision Notice

In accordance with Standard Condition C3 of NGET's Transmission Licence, the Authority hereby directs that Alternative Proposal P216: '*Audit of LLF Production*', be made.

Rachel Fletcher
Director Distribution
Signed on behalf of the Authority and authorised for that purpose.

[10] Electricity Distribution Licence Standard Condition 4A 2 (b) and 7 (b)
[11] The change procedures for BSC subsidiary documents are set out in BSC40: http://www.elexon.co.uk/Documents/BSC_and_Related_Documents/BSC_-_BSCPs/BSCP40_v9.0.pdf

Appendix 1 High Level Principles: Proposed and Alternative Proposed Modification

The P216 Alternative is identical to the Proposal except for re-wording Principle 14, and the addition of Principle 16, as set out below. These Principles will form the basis of the methodology audit and will be included in a new Code Subsidiary Document (BSCP128).

1. All LLFs shall be calculated using a generic (non site specific) method except for:
   a. sites that are connected at Extra High Voltage (EHV); 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 technical).
5. Site specific LLF values and the total Grid Supply Point Group (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 Low Voltage (LV) and 2 High Voltage (HV) generic LLFC Groups 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 year.
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 years.
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.
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 see note [12] below.
15. No retrospective changes shall be made to approved site specific or generic LLFs other than to correct material manifest errors.
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 adte of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to approved LLFs on a prospective basis as determined from time to time by the Panel.

[12] Principle 14 will require amendment to reflect the Alternative Modification, as directed, which allows mid year changes to site specific LLFs when there has been a material change affecting the site and the revised LLFs have been approved by the Panel.