

<b>NETA Change Form</b>	<b>MP/CP/TP No:</b> MP75
	<b>Logica reference:</b> ICR388
<b>Title:</b> Introduction Of Zonal Transmission Losses.	
<b>Identified by:</b> Powergen UK	<b>Date received:</b> 02-Oct-2002

<b>Statement of requirement</b>
<b>Baseline affected:</b> NETA Service Definition Baseline (V1.0)
<b>Assumed changes over baseline:</b> None
<b>Description of Change:</b> See attached original MP75.
<b>Proposed solution:</b> See attached original MP75.
<b>Justification for Change:</b> See attached original MP75.
<b>Proposed changes to Service Levels:</b> None
<b>Proposed changes to the Agreement:</b> None
<b>Attachments/references:</b> MP75 Design Analysis, MP75

<b>To be completed by Logica</b>			
	High Level Impact Assessment	Detailed Level Impact Assessment	Quotation
Tick which stage is being completed:		✓ (revised)	
Signed by Logica Contract Manager:			
Date:		04-Nov-2002	
HLIA category: Small/Medium/Large/Other		Price for DLIA:	
If this is a Quotation, are consequential modifications needed to the DLIA? Yes/No.			

<b>Logica's proposal</b>
<b>Logica's understanding of the requirement:</b> See Design Analysis.
<b>Logica's proposed design solution:</b> See Design Analysis.
<b>Testing</b> See Design Analysis.



<b>Method of deployment:</b>		
Patch	Is a planned outage required? Yes	
<b>Price for Design and Build:</b>		
<b>Item description:</b>	<b>Price (ex VAT)</b>	<b>Type of price:</b>
CRA, SAA and BMRA changes.	£782 700  <b>This price is for a stand alone patch, and includes the associated patch testing costs.</b>  (Replacing TLF in BM Unit Detail by a single zone instead of two zones would be approximately the same price.)	Fixed
<b>Price for Operate and Maintain:</b>		
<b>Item description:</b>	<b>Price per month (ex VAT)</b>	<b>Type of price:</b>
Operate	£0	Fixed
Maintain	£9 132	Fixed
If this is a DLIA or Quotation, is a price breakdown in the agreed format attached? Yes		
<b>Terms attaching to the offer</b>		
<b>Validity period of offer:</b> 30 days	<b>Type of offer:</b> Firm	
<b>Assumed start date:</b>		
<b>Payment milestones:</b> Logica will invoice 30% on receipt of Purchase Order or authorised start of work, 50% on completion of acceptance tests, 20% on deployment or one month after completion of acceptance tests, whichever is sooner.		
<b>Document turnaround time:</b> 5 days		
<b>Impact on Service Levels:</b> None		
<b>Impact on performance of the System:</b>		
<b>Other terms:</b>		
If this is a Quotation, is a draft contract amendment attached? Yes/No		

**Responsibilities of ELEXON:**

- For all DCRs which is subject to review, Logica shall provide one draft issue and a maximum of 5 working days has been allowed for ELEXON to review and comment on the updates. Comments will be addressed and the final issue will be provided. A maximum of 2 working days has been allowed for review confirmation and signoff by ELEXON.
- Within reasonable levels, ELEXON will make available appropriate staff to assist Logica during the development of this change.

**Assumptions made by Logica:**

- Price is for a separate patch.
- Price and duration assume that this change is developed in isolation and the effects of other changes are excluded.
- Price excludes provision for indexation of daily rates from 1<sup>st</sup> April 2003.
- Price is for creating DCRs, not a formal documentation issue.
- Deployment of any software on the Participant Test Environment is outside the scope of this impact assessment.
- See also assumptions in Design Analysis.

**Options and alternatives:**

## MP75 Design Analysis

### Overview

The aim of Modification Proposal MP75 is to spread the cost of transmission charges more fairly. It is therefore proposed that transmission charges are applied on a zonal basis rather than a uniform system wide basis.

MP75 proposes to calculate Transmission Loss Factors on a daily basis, whilst the similar change MP82 proposes to calculate Transmission Loss Factors on an annual basis.

### Document Changes

	BMRA	CDCA	CRA	ECVAA	SAA	TAA
URS	✓	✓	✓		✓	
SS	✓	✓	✓		✓	N/A
DS	✓	✓	✓		✓	N/A
MSS		✓	✓		✓	N/A
OSM		✓	✓		✓	

<b>IDD</b>	Part 1 document	✓ (CDCA-I029, CDCA-I030, CDCA-I042)
	Part 1 spreadsheet	
	Part 2 document	✓ (CRA-I015)
	Part2 spreadsheet	

### Software Changes

1. CRA modifications to provide full refresh and daily updates of CRA-I015 to TLFA.
2. CDCA to redirect SO's CDCA-I042, CDCA-I029 and CDCA-I030 to TLFA for all run types as they are produced, through High Grade or Low Grade link (whichever is appropriate for the TLFA).
3. New flow to SAA/BMRA containing the daily TLF per Zone.
4. There will be a maximum of 100 TLF Zones.
5. BMRA modified to store TLF for use the following year.
6. New report from SAA to BMRA of TLF values.
7. Replace TLF in BM Unit details by one or two TLF Zones.
8. Add TLF Zone ID(s) to SAA settlement reports and report the TLF used (as now). The TLF value will be a positive or negative number with n decimal places.

### Other Changes

1. None.

### Assumptions

1. Initial association of BMUnits to Zone ID (s) will be received electronically (e.g. spreadsheet/CSV) by CRA.
2. An initial year's data for BMRA's use will be provided using the new electronic flow and so will load automatically.
3. Ongoing changes to the TLF data will be performed automatically by the loading and processing of the new electronic flow.
4. The existing TLF column in the 'Maintain BM Unit' screen will be removed.
5. A new operator screen for TLF Zones will be created in NETA SAA. In normal operation it will not require any manual process to update or change the information contained within it, but it will be possible to do so.
6. CRA will not be required to run any additional reports or perform any additional checks for this process.

7. The TLF Zone details should be reported out in the CRA-I015 and CRA-I020 automatically in place of the existing TLF value.
8. No operational changes will be made to the way CRA report the CRA-I015, CRA-I020, CRA-I029 and CRA-F032.
9. No changes will be made to the way SAA report the SAA-I001, SAA-F007 and SAA-I014.
10. No changes will be made to the way BMRA report the BMRA-I001 and BMRA-F003.

### Testing

1. Regression testing will involve tests RT-01, RT-02, RT-04, RT-06 and RT-11 (subset).
2. No ECVAA testing (either Regression or Change-specific) is required.
3. No estimates for running any Functional Area Tests (FAT) have been included.
4. To allow for an increase in the scope of regression testing (currently under discussion) extra effort added in under "Increase".
5. Specific clock change testing is not required since TLF values are set per settlement day not per settlement period.
6. No interim run is needed.

<b>Modification Proposal</b>	<b>MP No: 75</b> <i>(mandatory by BSCCo)</i>
<b>Title of Modification Proposal</b> <i>(mandatory by proposer):</i> Introduction Of Zonal Transmission Losses	
<b>Submission Date</b> <i>(mandatory by proposer):</i> 5 April 2002	
<p><b>Description of Proposed Modification</b> <i>(mandatory by proposer):</i></p> <p>The modification proposes that transmission losses are allocated on a zonal rather than on a uniform system wide basis. Currently under Section T2 of the BSC, Transmission Loss Factors (TLF<sub>ij</sub>) for all BMUs in all settlement periods are set to zero.</p> <p>It is proposed that a Transmission Loss Factor Agent (TLFA) be appointed to calculate zonal marginal TLFs for each BMU in a given settlement period. Initially NGC would fulfil this role, however BSCCo could, in principle, choose to carry out this activity in-house or procure such a service from a third party other than NGC. TLFs would be calculated in accordance with the Transmission Loss Factor Methodology (TLFM), which would be set out in detail under the BSC. The methodology for deriving TLFs would be a marginal loss approach the exact form of which would be defined by the Modification Group. A suggested approach is summarised as follows:</p> <ul style="list-style-type: none"> <li>• Demand and generation would be determined for all nodes on the system for each settlement period on an ex post basis.</li> <li>• A load flow model would be run to determine how a small increment of demand is met by a suitable increase in generation spread across all nodes.</li> <li>• Nodal marginal loss factors would then be derived by repeating this process for each node.</li> <li>• These would then be grouped into the current TNUoS zones for generators and GSP Groups for demand. <i>(The Modification Group may wish to consider whether other zonal groupings are more appropriate).</i></li> <li>• The resulting zonal marginal TLF data would be submitted to BSCCo by the TLFA as soon as practicable and preferably in time for the Initial Settlement Run. There would be no scaling of these factors.</li> <li>• Transmission Loss Multipliers (TLMs) would then be calculated in accordance with Section T2.3.1 of the BSC.</li> </ul> <p>Although this proposal preserves the full marginal loss signals from the network modelling, adjustments (TLMO<sup>+</sup><sub>j</sub> and TLMO<sup>-</sup><sub>j</sub>) under T2.3.1 ensure Transmission Loss Multipliers (TLM<sub>j</sub>) recover the correct volume of total system losses in each settlement period. In addition, to ensure suppliers can manage the customer billing implications of this proposal implementation before 1 April 2003 is <u>not</u> advised.</p> <p><u>Governance of future changes to Transmission Loss Factor Methodology (TLFM)</u></p> <p>Given the commercial importance of transmission losses, changes to TLFM would only be permitted by means of a modification proposal. As such changes could only be proposed according to the 'normal' modification rules by energywatch, market participants or NGC. This together with incorporation of the TLFM within the BSC will ensure a rigorous appraisal of any future proposed changes to the losses regime.</p>	
<b>Description of Issue or Defect that Modification Proposal Seeks to Address</b> <i>(mandatory by proposer):</i> Currently the cost of transmission losses is not accurately targeted at BSC Parties that are to a greater or lesser	

## Modification Proposal

**MP No: 75**  
(mandatory by BSCCo)

extent contributing to those losses. The proposal addresses this defect.

By introducing a zonal differentiation in the allocation of losses the proposal will provide appropriate locational signals to parties which will help reduce overall transmission losses in the short-term and encourage more optimal siting of generation and demand in the longer-term. Adoption of a marginal approach ensures that robust economic signals are provided to relevant users.

The current uniform approach to allocation of transmission losses fails to provide appropriate cost signals. It effectively provides hidden cross-subsidies for northern generation and southern demand, whilst unfairly placing additional costs on southern generation and northern demand. The industry has been aware of this long-standing distortion at the heart of electricity trading arrangements, from the inception of the England and Wales Electricity Pool. Indeed OFFER in its 1989 Annual Report stated that there should be locational pricing for the use of NGC's transmission system and made it clear that it envisaged transmission losses should include locational signals.

In 1997 the Pool Executive Committee approved a scheme for the zonal allocation of the cost of transmission losses. Although the project was shelved in the run up to NETA, Ofgem made clear that the issue would be revisited after NETA implementation. The subject has also been discussed at length in various Ofgem Transmission Access and Losses consultation documents dated December 1999, May 2001 and February 2002.

### **Impact on Code** (optional by proposer):

Changes to Section T2 of the BSC.

### **Impact on Core Industry Documents** (optional by proposer):

Not known.

### **Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties** (optional by proposer):

Likely to impact on supplier's customer billing systems.

### **Impact on other Configurable Items** (optional by proposer):

### **Justification for Proposed Modification with Reference to Applicable BSC Objectives** (mandatory by proposer):

The proposal more accurately targets the cost of transmission losses. In so doing it removes the cross-subsidies inherent in the current method for allocation of transmission losses between BSC participants, and hence helps ensure effective competition in the generation and supply of electricity.

The short-term effects are likely to be a reduction in the overall cost of system losses, although the longer-term efficiency gains in terms of influencing the locational patterns of generation and supply are likely to be more significant. Overall, this should assist the Transmission Company in the efficient, economic and co-ordinated operation of the Transmission System.



## Modification Proposal

**MP No: 75**  
*(mandatory by BSCCo)*

### Details of Proposer:

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**Attachments:** No