

October 2000

**INITIAL ASSESSMENT OF
MODIFICATION PROPOSAL P40 -
Calculation of Negative Estimates of
Annual Consumption (EAC)**

Prepared by ELEXON Limited

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Version	Date	Reviewer	Signature	Responsibility
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b Distribution

Name	Organisation
Each BSC Party	Various
Each BSC Agent	Various
The Gas and Electricity Markets Authority	Ofgem
Each BSC Panel Member	Various
energywatch	Energywatch
Core Industry Document Owners	Various

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II CONTENTS TABLE

I	Document Control.....	3
a	Authorities.....	3
b	Distribution.....	3
c	Intellectual Property Rights and Copyright.....	3
II	Contents Table	4
1	Summary.....	5
2	Introduction	6
3	Purpose and Scope of the Report	7
4	Description of the Modification Proposal.....	8
5	Impact on BSC Systems and Processes.....	9
6	Impact on Other Systems and Processes Used by Parties.....	10
7	Impact on Documentation.....	11
7.1	Impact on Balancing and Settlement Code.....	11
7.2	Impact on Code Subsidiary Documents.....	13
7.3	Impact on Core Industry Documents.....	14
8	Impact on Other Configurable Items.....	15
9	Impact on ELEXON.....	16
10	Impact on Financial Arrangements and Budget	17
11	Impact on BSC Agent Contractual Arrangements.....	18
12	Process and Timetable for Progressing the Proposal.....	19
12.1	Outline Timetable.....	19
12.2	Impact Assessment Costs	19
13	Issues.....	20
Annex 1 – Modification Proposal.....		21
MP Form (F76/01)		21

1 SUMMARY

Modification Proposal P40 'Calculation of Negative Estimated Annualised Consumptions (EACs)' was submitted on 25th September 2001 by SEEBOARD. The Modification Proposal seeks to preclude the ability for an EAC (Estimated Annual Consumption) to be calculated as a negative value. These negative EACs result from negative Annualised Advances (AAs), which may occur from either an erroneously large previous AA or as a result of an undetected meter rollover.

Negative EACs cause imbalances in settlement and potentially cause inaccurate forecasts of future demand. The Modification Proposal asserts that changing the EAC calculation rules to prevent such negative values from arising will facilitate achievement of the Applicable BSC Objective in Condition 7A(3)(d) of the Transmission Licence (i.e. promoting "efficiency in the implementation and administration of the balancing and settlement arrangements").

An initial assessment of Modification Proposal P40 has identified the following potential areas of impact and issues to be considered:

Issues:

- The Modification Proposal identifies three different options (a) to (c) for amending the EAC calculation rules to avoid negative values. The Modification Proposal could therefore be regarded as not being clearly defined in this area. However, the Proposer has indicated that to ELEXON that his preference is for option (b). In other respects the Modification Proposal does appear to be clearly defined.
- The Modification Proposal does not provide any detailed explanation of how the Proposal will promote "efficiency in the implementation and administration of the balancing and settlement arrangements".

Areas of impact:

- The Modification will have an impact on software that calculates EAC values. In particular, it will require changes to the EAC/AA system, which was developed by ELEXON, and is used by Non Half Hourly Data Collectors (NHHDC).
- The Modification may also impact on PSL 120 "Party Service Line PSL120 for Non Half Hourly Data Collection".

Because the Modification Proposal is clearly defined (except in that it identifies three possible options for amending the EAC calculation rules), it is recommended that:

- Modification Proposal P40 be submitted to the Assessment Procedure (as defined in the BSC, section F.2.6);
- For the purposes of the Assessment Procedure, option (b) should be regarded as the Modification Proposal (with options (a) and (c) available to the Modification Group as potential Alternative Modification Proposals); and
- The Assessment Report be submitted to the Panel Meeting on 13th December 2001.

2 INTRODUCTION

This Report has been prepared by ELEXON Ltd. on behalf of the Balancing and Settlement Code Panel ('the Panel'), in accordance with the terms of the Balancing and Settlement Code ('BSC'). The BSC is the legal document containing the rules of the balancing mechanism and imbalance settlement process and related governance provisions. ELEXON is the company that performs the role and functions of the BSCCo, as defined in the BSC.

An electronic copy of this document can be found on the BSC website, at www.elexon.co.uk

3 PURPOSE AND SCOPE OF THE REPORT

Section F of the BSC sets out the procedures for progressing proposals to amend the BSC (known as 'Modification Proposals'). These include procedures for proposing, consulting on, developing, evaluating and reporting to the Authority on potential modifications.

The BSC Panel is charged with supervising and implementing the modification procedures. ELEXON provides the secretariat and other advice, support and resource required by the Panel for this purpose. In addition, if a modification to the Code is approved or directed by the Authority, ELEXON is responsible for overseeing the implementation of that amendment (including any consequential changes to systems, procedures and documentation).

When a new proposal to modify the BSC is made, it is the responsibility of the Panel to determine how it should be progressed. Options include submitting the proposal to a Definition Procedure¹, submitting it to an Assessment Procedure², amalgamating the proposal with another proposal³, or proceeding directly to the Report Phase⁴. With a view to assisting the Panel in taking this decision, ELEXON prepares this initial written assessment of the implications of the Modification Proposal as soon as reasonably practicable after the proposal is made⁵. ELEXON endeavours to complete this initial assessment such that it can be reviewed by the Panel at the Panel meeting at which the relevant Modification Proposal is first to be considered.

This initial assessment provides a preliminary view on the following:

- the potential impact of the proposed modification on BSC systems and processes;
- the potential impact of the proposed modification on other systems and processes used by Parties;
- the potential impact of the proposed modification on the BSC, Code Subsidiary Documents and Core Industry Documents;
- the potential impact of the proposed modification on ELEXON;
- the potential impact of the proposed modification on BSC financial arrangements and budget;
- the potential impact of the proposed modification on BSC Agent contractual arrangements;
- The process and timetable that should be adopted for the progression of the Modification Proposal, in light of its complexity, importance and urgency; and
- Issues that will need to be considered and addressed in progressing the Modification Proposal (including the potential need for impact assessments, consultation and analyses).

It should be noted that, as this document only represents a preliminary assessment of the Modification Proposal, the information contained herein will, in most cases, be superseded by the subsequent analysis and reports produced by the Modification Group to which the Panel assigns the proposal for consideration.

¹ see BSC F2.5

² see BSC F2.6

³ see BSC F2.3

⁴ see BSC F2.7

⁵ see BSC F2.1.8

4 DESCRIPTION OF THE MODIFICATION PROPOSAL

Modification P40 seeks to amend the rules for calculating Estimated Annual Consumption (EAC) values in BSC Annex S-2 paragraph 4.3.7. These rules specify that an EAC should be calculated as a weighted average of the Previous EAC and the Annualised Advance (AA). As there are circumstances which lead to the calculation of a negative AA, it is also possible (depending on the weighting given to the AA in the calculation) for the EAC to become negative.

Modification Proposal P40 argues that such negative EAC values are intrinsically erroneous, and seeks to replace them with more appropriate values, in order to minimise the effect of the inaccuracy on settlement, and on the cashflow of the Public Distribution System Operator.

A copy of the Modification Proposal, as submitted by its proposer, can be found at Annex 1 to this report.

5 IMPACT ON BSC SYSTEMS AND PROCESSES

BSC System / Process	Potential Impact of Proposed Modification
Registration	No impact identified at this time.
Contract Notification	No impact identified at this time.
Credit Checking	No impact identified at this time.
Balancing Mechanism Activities	No impact identified at this time.
Collection and Aggregation of Metered Data	No impact identified at this time.
Supplier Volume Allocation	This Modification will change the process by which NHHDCs generate EACs
Settlement	No impact identified at this time.
Clearing, Invoicing and Payment	No impact identified at this time.
Reporting	No impact identified at this time.
Contingencies	No impact identified at this time.
Dispute Resolution	No impact identified at this time.

6 IMPACT ON OTHER SYSTEMS AND PROCESSES USED BY PARTIES

System / Process	Potential Impact of Proposed Modification

7 IMPACT ON DOCUMENTATION

7.1 Impact on Balancing and Settlement Code

BSC Section	Potential Impact of Proposed Modification
A: Parties and Participation	No impact identified at this time.
B: The Panel	No impact identified at this time.
C: BSCCo and its Subsidiaries	No impact identified at this time.
D: BSC Cost Recovery and Participation Charges	No impact identified at this time.
E: BSC Agents	No impact identified at this time.
F: Modification Procedures	No impact identified at this time.
G: Contingencies	No impact identified at this time.
H: General	No impact identified at this time.
I: Not Used	No impact identified at this time.
J: Party Agents	No impact identified at this time.
K: Classification and Registration of Metering Systems and BM Units	No impact identified at this time.
L: Metering	No impact identified at this time.
M: Credit Cover and Credit Default	No impact identified at this time.
N: Clearing, Invoicing and Payment	No impact identified at this time.
O: Communications	No impact identified at this time.

BSC Section	Potential Impact of Proposed Modification
P: Energy Contract Volumes and Metered Volume Reallocations	No impact identified at this time.
Q: Balancing Mechanism Activities	No impact identified at this time.
R: Collection and Aggregation of Metered Data from CVA Metering Systems	No impact identified at this time.
S: Supplier Volume Allocation	No impact identified at this time.
S: ANNEX S-1 Performance Levels and Supplier Charges	No impact identified at this time.
S: ANNEX S-2 Supplier Volume Allocation Rules	This modification will adjust the equation given by the BSC to calculate EAC values.
T: Settlement and Trading Charges	No impact identified at this time.
U: Provisions Relating to Settlement	No impact identified at this time.
V: Reporting	No impact identified at this time.
W: Trading Queries and Trading Disputes	No impact identified at this time.
X: Definitions and Interpretation	No impact identified at this time.
X: ANNEX X-1 General Glossary	No impact identified at this time.
X: ANNEX X-2 Technical Glossary	No impact identified at this time.

7.2 Impact on Code Subsidiary Documents

Code Subsidiary Document	Potential Impact of Proposed Modification
BSC Procedures	No impact identified at this time.
Codes of Practice	No impact identified at this time.
BSC Service Descriptions	No impact identified at this time.
Party Service Lines	The Modification will have an impact on PSL 120 "Party Service Line PSL120 for Non Half Hourly Data Collection"
Data Catalogues	An amendment may be required to the SVA Data Catalogue to clarify that negative EAC values are not permitted.
Communication Requirements Documents	No impact identified at this time.
Reporting Catalogue	No impact identified at this time.

7.3 Impact on Core Industry Documents

Core Industry Document	Potential Impact of Proposed Modification
Grid Code	No impact identified at this time.
MCUSA	No impact identified at this time.
Supplemental Agreements	No impact identified at this time.
Ancillary Services Agreements	No impact identified at this time.
Master Registration Agreement	No impact identified at this time.
Data Transfer Services Agreement	No impact identified at this time.
British Grid Systems Agreement	No impact identified at this time.
Use of Interconnector Agreement	No impact identified at this time.
Pooling and Settlement Agreement	No impact identified at this time.
Settlement Agreement for Scotland	No impact identified at this time.
Distribution Codes	No impact identified at this time.
Distribution Use of System Agreements	No impact identified at this time.
Distribution Connection Agreements	No impact identified at this time.

8 IMPACT ON OTHER CONFIGURABLE ITEMS

Item	Potential Impact of Proposed Modification

9 IMPACT ON ELEXON

Area of Business	Potential Impact of Proposed Modification
ELEXON Systems	This Modification will impact the EAC/AA Calculator, which is a software system developed by ELEXON and provided to Non Half Hourly Data Collectors for the purpose of calculating EAC and AA values.
ELEXON Procedures	No impact identified at this time.
ELEXON Contracts (Excluding BSC Agent Contracts)	No impact identified at this time.
Other (e.g. costs, staffing, etc.)	No impact identified at this time.

10 IMPACT ON FINANCIAL ARRANGEMENTS AND BUDGET

Not known at this time, but any modification of the EAC/AA Calculator will incur a cost to ELEXON. This cost will include the specification of the required changes, the software changes themselves, and user acceptance testing. Also should be included the internal cost of changes to the BSC and other impact areas.

11 IMPACT ON BSC AGENT CONTRACTUAL ARRANGEMENTS

BSC Agent Contract	Potential Impact of Proposed Modification
Logica (BMRA, CRA, CDCA, SAA, ECVAA, TAA(CVA))	No impact identified at this time.
EPFAL (FAA)	No impact identified at this time.
ESIS (TAA(SVA))	No impact identified at this time.
Cap Gemini (SVAA)	No impact identified at this time.
PwC (BSC Auditor, Certification Agent)	No impact identified at this time.
EASL (Teleswitch Agent, Profile Administrator)	No impact identified at this time.

12 PROCESS AND TIMETABLE FOR PROGRESSING THE PROPOSAL

ELEXON recommends that Modification Proposal P40, Calculation of Negative Estimates of Annual Consumption (EAC), be submitted to the Assessment Procedure, in accordance with section F2.6 of the BSC.

As there is not currently any Modification Group whose terms of reference include changes to the requirements for Supplier Volume Allocation (SVA), it is recommended that a new Modification Group be created, the Volume Allocation Modification Group (VAMG), and that this Modification Group should carry out the Assessment Procedure for P40, and other SVA Modification Proposals (such as P41 and P43). The Modification Group should be actioned to provide its report to the Panel by 13th December 2001.

It is recommended that the membership of the VAMG be formed from the Panel's committee Supplier Volume Allocation Group (SVG). This will provide the necessary expertise in the areas of settlement and specifically Non Half Hourly processes.

12.1 Outline Timetable

The recommendation to provide the Assessment Report to the 13th December meeting of the BSC Panel is based on the following outline timetable. (This timetable has been prepared for planning purposes only. Meeting dates and other details are subject to confirmation by the Modification Group members).

25 th October	Modification Group meets to discuss content of consultation and assessment.
31 st October	ELEXON send consultation paper and requirements specification to Modification Group members for comment.
5 th November	ELEXON issue consultation paper and requirements specification for consultation and assessment.
19 th November	Deadline for consultation and assessment responses.
21 st November	Modification Group meets to discuss responses, and content of Assessment Report.
28 th November	ELEXON send Assessment Report to Modification Group members for comment.
4 th December	Final draft of Assessment Report finalised.
7 th December	Assessment Report issued to Panel.

12.2 Impact Assessment Costs

Proposing this modification will require at least two meetings of the modification group and the commissioning of an impact assessment from Logica. This modification will also require software changes. This Modification Proposal is believed to be of medium complexity and a budget of £40k should be established to enable progression of the Modification Proposal through the Assessment Procedure.

13 ISSUES

The Modification Proposal raises the following issues:

- The Proposal identifies three different options (a) to (c) for amending the EAC calculation rules to avoid negative values. This could be seen as suggesting that the Proposal is not clearly defined, and needs to be submitted to the Definition Procedure. However, as the Proposer has indicated to ELEXON that his preference is for option (b), and the Proposal is clearly defined in all other respects, it is recommended that the Proposal be submitted directly to the Assessment Procedure.
- The Modification Proposal does not provide any detailed explanation of how the Proposal will promote “efficiency in the implementation and administration of the balancing and settlement arrangements”. This issue will need to be considered further in the course of the Assessment Procedure.
- There are two technical options for implementing the preferred option (b), relating to how much of the required functionality is implemented within the ELEXON-developed EAC/AA calculator:
 - (a) The first option is to enhance the EAC/AA calculator to store details of GSP Group Profile Class Average EAC values, so that it can substitute the appropriate value in place of a negative EAC.
 - (b) The second option is for the EAC/AA calculator to simply output a null value in place of a negative EAC, signalling to the Non Half Hourly Data Collector (NHHDC) operating the calculator that they should substitute a GSP Group Profile Class Average EAC. This is referred to as option (d) in the Modification Proposal. This approach is currently adopted when a metering system changes Profile Class, and has the advantage of reducing the changes required to the ELEXON-developed EAC/AA calculator.

ANNEX 1 – MODIFICATION PROPOSAL

MP Form (F76/01)

Modification Proposal – F76/01	MP No: <i>(mandatory by BSCCo)</i>
Title of Modification Proposal <i>(mandatory by originator):</i>	
Calculation of Negative Estimates of Annual Consumption (EAC)	
Submission Date <i>(mandatory by originator):</i>	
25 th September 2001	
Date Logged <i>(mandatory by BSCCo):</i>	
Description of Proposed Modification <i>(mandatory by originator)</i>	
<p>Amendments to calculation of EAC_{KR} in BSC Annex S-2 paragraph 4.3.7. This will introduce an extension to this calculation to remove the ability for EAC_{KR} to be calculated as a negative value. Negative EACs are logically inconsistent and should be replaced by a more appropriate value. This would minimise inaccuracies in settlements and ensure a Public Distribution System Operator (PDSO) does not have any material unbilled Use of System or cashflow impact.</p>	
Description of Issue or Defect that Modification Proposal Seeks to Address <i>(mandatory by originator)</i>	
<p>ELEXON developed EAC/AA calculator allows a negative Estimate of Annual Consumption (EAC) to be calculated.</p> <p>A negative Annualised Advance (AA) may arise as a result of an erroneously large previous AA value or as a result of failure to detect a meter-rollover. In the former case, the erroneously large AA and negative AA will cancel out, in as much as overall metered volume over the two meter advance periods will be correct, albeit that profiled demand values will be inaccurate. In the latter case, no such compensation will take place.</p> <p>In either of these cases, a negative AA may (depending on its magnitude, the meter advance period and the value of Previous Estimated Annual Consumption (PEAC)) result in a negative EAC.</p> <p>Current value of Smoothing Parameter (SPAR) is set at 2. Any negative AA where the sum of Daily Profile Coefficients for the associated meter advance period is 0.5 or more will lead to a negative EAC.</p> <p style="padding-left: 40px;">A negative EAC is counter-intuitive. It can only arise from an erroneously calculated AA value and estimating future demand as negative merely compounds the original error.</p> <p style="padding-left: 40px;">Where, within the Settlement window, a negative EAC is not replaced by an AA, a Supplier would receive a credit from a PDSO for using its distribution network rather than a charge.</p>	

Modification Proposal – F76/01	MP No: <i>(mandatory by BSCCo)</i>
Impact on Code <i>(optional by Originator)</i>	
Amendments to calculation of EAC _{KR} in Annex S-2 paragraph 4.3.7.	
Impact on Core Industry Documents <i>(optional by Originator)</i>	
There may be impacts on a number of documents, including but not exclusively, BSCP 504 and PSL 120.	
Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties <i>(optional by originator)</i>	
EAC/AA calculator changes	
Impact on other Configurable Items <i>(optional by originator)</i>	
Justification for Proposed Modification with Reference to Applicable BSC Objectives <i>(mandatory by originator)</i>	
<p>This modification should better facilitate achievement of Applicable BSC Objectives set out in Transmission Licence Condition 7A(3)(d) in promoting efficiency in implementation and administration of balancing and settlement arrangements.</p> <p>As a result of the volume of erroneously large AA and EAC values (currently subject to data cleansing), large numbers of negative EAC values have been calculated. Not all negative EAC (and associated negative AA) values have been cleansed by Final Reconciliation (or Disputes Final) Run. This has led to inaccuracies in Settlements.</p> <p>For PDSOs any negative EACs will initially create a material cash flow impact. Experience of the market has confirmed that on many occasions negative EAC values can still be present and "crystallised" in the Final Reconciliation Run.</p> <p>This flawed process implies a payment from a PDSO to a Supplier for use of distribution network, rather than a charge, hence leading to a loss of DUoS income. PDSOs do not have a direct contractual relationship with a Supplier's appointed Data Collector to monitor ongoing performance and seek appropriate remedies to such issues.</p>	

Modification Proposal – F76/01	MP No: <i>(mandatory by BSCCo)</i>
Details of Proposer: Name..... Dave Morton..... Organisation..... SEEBOARD..... Telephone Number.... 0190 328 3465..... Email Address..... iss_architecture@seeboard.com.....	
Details of Proposer's Representative: Name Peter Merrick Organisation SEEBOARD Telephone Number 01444 477 733 Email address pmerrick@seeboard.com	
Details of Representative's Alternate: Name Bob Brennan Organisation SEEBOARD Telephone Number 01444 477 731 Email address bbrennan@seeboard.com	
Attachments: Yes <i>(delete as appropriate) (mandatory by originator)</i> 1 Page, appended to this proposal entitled "Options to replace calculated negative EACs."	

Attachment

Options to replace calculated negative EACs.

A number of potential alternatives to replace a calculated negative EAC have been considered. These are:

- to use previous EAC value;
- to use a GSP Group Profile Class Average EAC value, as defined in Market Domain Data;
- to set EAC to zero;
- not to calculate an EAC (i.e. set to null).

These options are described in more detail below.

a) Use previous EAC value

A negative EAC can only arise from a negative AA. A negative AA, in turn, may arise as a result of an erroneously large previous AA value or as a result of failure to detect a meter-rollover. In the case of meter-rollover, there is no reason why previous EAC value should not be used. However, where previous AA was erroneously large, the associated EAC is also likely to be erroneously large as well. As there is no way of distinguishing between these two cases, it is not felt that using previous EAC value would provide a complete solution.

b) Use GSP Group Profile Class Average EAC value

GSP Group Profile Class Average EAC, as defined in Market Domain Data (MDD) represents an equitable substitute for a negative EAC. However, these are not currently stored by the EAC/AA system. The advantage of this option being use of a well understood substituted EAC.

c) Set EAC to zero

This would still result in an under-accounting of energy in settlements, but to a lesser extent than using a negative EACs. It avoids risks of 'reversing the error' that is inherent in option (a) and may be cheaper to implement than option (b). However, PDSOs would not be able to receive payment for network services provided.

d) Calculate an Annualised Advance only

Calculation of a null EAC is already performed by the EAC/AA system in the event of a change of Profile Class during the meter advance period. In the case of a change of Profile Class, a Supplier provides an initial class average EAC for the new Profile Class in lieu of a calculated "forward" EAC. In the case of a negative EAC, a Supplier-provided EAC would be inappropriate. This would effectively mean that previous EAC would continue to be used in settlement, as per option (a) above.