

January 2002

MODIFICATION REPORT
MODIFICATION PROPOSAL P40 –
CALCULATION OF NEGATIVE
ESTIMATES OF ANNUAL
CONSUMPTION (EAC)

**Prepared by ELEXON on behalf of the Balancing
and Settlement Code Panel**

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1 SUMMARY AND RECOMMENDATIONS

1.1 Recommendation

On the basis of the analysis, consultation and assessment undertaken in respect of this Modification Proposal during the Assessment Phase, and the resultant findings of this report, the BSC Panel recommends to the Authority that:

- **Modification Proposal P40 should be rejected.**

1.2 Background

Modification Proposal P40 'Calculation of Negative Estimates of Annual Consumption (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.

On 18th October 2001 the BSC Panel reviewed the Initial Written Assessment of Modification Proposal P40 prepared by ELEXON, and agreed that the Proposal should be submitted to the Volume Allocation Modification Group under the Assessment Procedure (as described in section F2.6 of the Balancing and Settlement Code). In the course of the Assessment Procedure, the Modification Group issued for consultation both the Modification Proposal itself, and a paper describing the issues it raises.

The majority of the consultation responses received were in favour of Modification Proposal P40. However, after considering the responses and analysing the issues raised, the Modification Group concluded that Modification Proposal P40 would not better facilitate achievement of the Applicable BSC Objectives.

On 13th December 2001 the BSC Panel considered the Assessment Report prepared by the Modification Group, and agreed with its recommendation that Modification Proposal P40 should be rejected. This Modification Report should be read in conjunction with the Assessment Report, which can be found on the BSC website at www.elexon.co.uk.

1.3 Rationale for Recommendations

The rationale for the Panel's recommendation is stated in section 5 of this report. In summary, the Panel agreed with the findings of the Volume Allocation Modification Group that:

- Where a negative EAC value occurs, either the previous or the subsequent EAC will typically be too large, and these two values can compensate for each other. Removing only one of them runs the risk of introducing a systematic distortion into the (uncorrected) Non Half Hourly energy values entering settlement. This may hinder effective competition in the supply of electricity.
- The actual effect on the accuracy of settlement and Distribution Use of System (DUoS) billing is very limited, with any inaccuracies being resolved through the mechanism of Reconciliation. The costs of changing Non Half Hourly Data Collector software to implement the Modification Proposal would therefore outweigh the benefits.

A number of Panel Members also believed that Modification Proposal P40 was seeking to address the symptoms of poor data quality, and that it was more appropriate to address the underlying causes through appropriate performance assurance techniques.

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.

This Modification Report is addressed and furnished to the Gas and Electricity Markets Authority ('the Authority') and none of the facts, opinions or statements contained herein may be relied upon by any other person.

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

3 HISTORY OF PROPOSED MODIFICATION

Modification Proposal P40 'Calculation of Negative Estimates of Annual Consumption (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.

At its meeting on 18th October 2001, the Panel reviewed the Initial Written Assessment of Modification Proposal P40 prepared by ELEXON, and agreed that the Proposal should be submitted to the Volume Allocation Modification Group under the Assessment Procedure, as described in section F2.6 of the Balancing and Settlement Code. (A copy of the Modification Proposal and of the Initial Written Assessment can be found on the BSC website at www.elexon.co.uk).

The Modification Group met on 25th October 2001, and agreed to issue a paper on the issues raised by Modification Proposal P40 for consultation and impact assessment by Parties and Party Agents. The deadline for consultation and impact assessment responses was 19th November 2001, and the Modification Group met on 22nd November 2001 to discuss the responses.

The majority of the consultation responses received were in favour of Modification Proposal P40. However, after considering the responses and analysing the issues raised, the Modification Group concluded that Modification Proposal P40 would not better facilitate achievement of the Applicable BSC Objectives. The Assessment Report presented to the Panel therefore recommended that Modification Proposal P40 should be rejected.

The Modification Group also considered a number of other possible solutions to the issues raised by Modification Proposal P40, but concluded that none of them would better facilitate achievement of the Applicable BSC Objectives. Therefore they did not identify an Alternative Modification.

At its meeting on 13th December 2001, the Panel considered the Assessment Report prepared by the Modification Group, and agreed with its recommendation that Modification Proposal P40 should be rejected. Section 5 of this report describes the rationale for this recommendation.

The Panel meeting on 13 December 2001 considered the Assessment Report and agreed that the Modification Proposal should proceed to the Report Phase. The Panel agreed that a draft Modification Report be prepared and issued for consultation with a recommendation to the Authority that Modification Proposal P40 should be rejected. A draft Modification Report was sent for consultation on

19 December 2001. The draft Modification Report has been updated in the light of the consultation responses and submitted to the Panel meeting on 17 January 2002.

4 DESCRIPTION OF PROPOSED MODIFICATION

4.1 Current Process for Calculating EAC/AA Values

Annex S-2 of the BSC specifies that each Non Half Hourly meter advance processed for settlement purposes should be converted into two separate estimates of annualised consumption:

- The Annualised Advance (AA) is used for settling those Settlement Days that fall within the period of the meter advance. It is derived by 'scaling up' the meter advance value to reflect consumption over a typical year.
- The Estimated Annual Consumption (EAC) is used to settle Settlement Days after the end of the Meter Advance Period (until such time as the next meter advance enters the settlement process).

The EAC value is intended to take into account the Annualised Advance value, but with an additional element of 'smoothing' to limit the extent to which a single AA value (which may not be representative of the customer's typical demand level) can affect the forward-looking EAC value.

4.2 Negative EAC Values

It is not possible for an EAC value to become negative unless one or more meter advance values for that register are themselves negative, and the underlying causes of negative EAC values are therefore the same as those of negative meter advances. The Modification Group agreed that these underlying causes could usefully be divided into three categories:

1. Cases where the settlement processes are followed correctly, but a negative meter advance nonetheless results. The most common example of this is likely to be when a Deemed Meter Advance (calculated for example on Change of Supplier) is higher than a subsequent actual meter read, leading to a negative meter advance.
2. Cases where a process failure leads directly to a negative meter advance. An example of this would be if a Non Half Hourly Data Collector misinterpreted a meter rollover as a large negative advance.
3. Cases where a process failure leads to a large positive meter advance, which is not withdrawn prior to Final Reconciliation, and the Non Half Hourly Data Collector therefore has to correct the overall volume of energy settled by 'compensating' for the large positive advance with a negative meter advance. (This practice is consistent with ELEXON guidelines on Gross Volume Correction).

4.3 Modification Proposal P40

Modification Proposal P40 proposes that:

- The rules for calculating AA values should remain unchanged, so a negative meter advance should still lead to a negative AA. This is necessary because, in many cases, the negative AA is compensating for a previous AA that was too high (and cannot now be withdrawn).
- The rules for calculating EAC values should be amended to replace any negative values with an appropriate default value. The rationale for this is that a negative meter advance is caused by a specific event (e.g. an error in interpreting a meter reading, or a Deemed Meter Advance being too

high) and does not indicate that subsequent meter advances will also be negative. It is therefore inappropriate for the EAC (which is used in lieu of future meter advances) to take a negative value.

To be specific, Modification Proposal P40 proposes that a negative EAC value should be replaced by a default value calculated from the GSP Group Profile Class Average EAC ($GGPCAEC_{HPC}$) for GSP Group H, Profile Class P and Standard Settlement Configuration C. Section 6 of this report includes the precise legal text.

5 RATIONALE FOR PANEL RECOMMENDATIONS

The majority of Panel Members agreed with the Modification Group's arguments (described in section 7.1 of this report) that Modification Proposal P40 would not better facilitate achievement of the Applicable BSC Objectives, for the following reasons:

- Where a negative EAC value occurs, either the previous or the subsequent EAC will typically be too large, and these two values can compensate for each other. Removing only one of them runs the risk of introducing a systematic distortion into the (uncorrected) Non Half Hourly energy values entering settlement. This may hinder effective competition in the supply of electricity.
- The actual effect on the accuracy of DUoS billing and settlement is very limited, with any inaccuracies being resolved through the mechanism of Reconciliation. The costs of changing Non Half Hourly Data Collector software to implement the Modification Proposal would therefore outweigh the benefits.

A number of Panel Members also believed that Modification Proposal P40 was seeking to address the symptoms of poor data quality, and that it was more appropriate to address the underlying causes through appropriate performance assurance techniques.

6 LEGAL TEXT TO GIVE EFFECT TO THE PROPOSED MODIFICATION

6.1 Conformed Version

ANNEX S-2: SUPPLIER VOLUME ALLOCATION RULES

4.3 Non Half Hourly Data Collection

No changes until...

4.3.7 For the purposes of this paragraph 4.3.7 the Previous Estimated Annual Consumption ($PEAC_{KR}$) shall be defined as the effective value of EAC_{KR} for each Settlement Day in the Meter Advance Period which applies before a new value is determined in accordance with this paragraph. An Annualised Advance Adjustment Factor ($AAAF_{KR}$) and a new Estimated Annual Consumption shall be determined as follows using the value of Annualised Advance determined pursuant to paragraph 4.3.4:

(a) $AAAF_{KR} = \max(0, \min((FYC_{KR} * SPAR), 1.0))$; and

(b) **if ($AAAF_{KR} * AA_{KR} + (1 - AAAF_{KR}) * PEAC_{KR}$) ≥ 0 , then**

$$EAC_{KR} = AAAF_{KR} * AA_{KR} + (1 - AAAF_{KR}) * PEAC_{KR}$$

else

$$EAC_{KR} = GGPCAEAC_{HPC} * AFYC_{HPR}$$

where:

(a) SPAR is the value of the Smoothing Parameter set from time to time by the Panel applicable on the last Settlement Day of the Meter Advance Period;

(b) **GGPCAEAC_{HPC} is the value of the GSP Group Profile Class Average Estimated Annual Consumption for the GSP Group "H", Profile Class "P" and Standard Settlement Configuration "C" applying to the Metering System on the Settlement Day following the last Settlement Day of the Meter Advance Period; and**

(c) **AFYC_{HPR} is the value of the Average Fraction of Yearly Consumption for the GSP Group "H", Profile Class "P" and Standard Settlement Configuration and Time Pattern Regime combination "R" applying to the relevant Settlement Register within the Metering System on the Settlement Day following the last Settlement Day of the Meter Advance Period.**

The Effective From Settlement Date for each such value of Estimated Annual Consumption shall be the date of the Settlement Day following the last Settlement Day of the Meter Advance Period and shall replace any previous Estimated Annual Consumption effective on such Settlement Days.

6.2 Clean Version

ANNEX S-2: SUPPLIER VOLUME ALLOCATION RULES

4.3 Non Half Hourly Data Collection

No changes until...

4.3.7 For the purposes of this paragraph 4.3.7 the Previous Estimated Annual Consumption ($PEAC_{KR}$) shall be defined as the effective value of EAC_{KR} for each Settlement Day in the Meter Advance Period which applies before a new value is determined in accordance with this paragraph. An Annualised Advance Adjustment Factor ($AAAF_{KR}$) and a new Estimated Annual Consumption shall be determined as follows using the value of Annualised Advance determined pursuant to paragraph 4.3.4:

- (a) $AAAF_{KR} = \max(0, \min((FYC_{KR} * SPAR), 1.0))$; and
- (b) if $(AAAF_{KR} * AA_{KR} + (1 - AAAF_{KR}) * PEAC_{KR}) \geq 0$, then

$$EAC_{KR} = AAAF_{KR} * AA_{KR} + (1 - AAAF_{KR}) * PEAC_{KR}$$

else

$$EAC_{KR} = GGPCAEAC_{HPC} * AFYC_{HPR}$$

where:

- (a) SPAR is the value of the Smoothing Parameter set from time to time by the Panel applicable on the last Settlement Day of the Meter Advance Period;
- (b) $GGPCAEAC_{HPC}$ is the value of the GSP Group Profile Class Average Estimated Annual Consumption for the GSP Group "H", Profile Class "P" and Standard Settlement Configuration "C" applying to the Metering System on the Settlement Day following the last Settlement Day of the Meter Advance Period; and
- (c) $AFYC_{HPR}$ is the value of the Average Fraction of Yearly Consumption for the GSP Group "H", Profile Class "P" and Standard Settlement Configuration and Time Pattern Regime combination "R" applying to the relevant Settlement Register within the Metering System on the Settlement Day following the last Settlement Day of the Meter Advance Period.

The Effective From Settlement Date for each such value of Estimated Annual Consumption shall be the date of the Settlement Day following the last Settlement Day of the Meter Advance Period and shall replace any previous Estimated Annual Consumption effective on such Settlement Days.

7 ASSESSMENT

This section of the report summarises the assessment carried out by the Volume Allocation Modification Group during the Assessment Procedure. Full details are contained in the P40 Assessment Report, which may be found on the BSC website at www.elexon.co.uk.

7.1 Assessment Against Applicable BSC Objectives

Modification Proposal P40 argues that it is intrinsically inappropriate for an EAC to take a negative value, given that an EAC is a forward-looking estimate of consumption, and it would never be reasonable to expect the consumption recorded on a Non Half Hourly meter to be negative on an ongoing basis. In order to assess the materiality of this issue, the Modification Group analysed data (from the largest Non Half Hourly Data Aggregator in one particular GSP Group), and concluded that Modification Proposal P40 would increase by some 0.75% the total volume of (uncorrected) Non Half Hourly energy at Initial Settlement.

The Modification Group therefore concluded that the existence of negative EAC values does have a small but noticeable effect on the volume of (uncorrected) Non Half Hourly energy entering settlement at Initial Settlement. However, the view of the Modification Group is that removing negative EAC values in this way would not better facilitate the achievement of the Applicable BSC Objectives, for the following reasons:

- Although the Modification Group had some sympathy for the Proposer's view that it is inherently anomalous for a forward-looking estimate of consumption to take a negative value, they also noted that where a negative EAC value occurs, either the previous or the subsequent EAC will typically be too large. The two errors do to some extent compensate for each other, and removing only one of them runs the risk of introducing a systematic distortion into the (uncorrected) Non Half Hourly energy values entering settlement, which could hinder effective competition in the supply of electricity.
- Even if one were to accept that negative EAC values are undesirable in principle, their actual effect on the accuracy of DUoS billing and settlement is extremely limited, with any inaccuracies being resolved through the mechanism of Reconciliation. The Modification Group therefore believe that the costs of making the change would outweigh the benefits (and that the cost of implementation would therefore hinder rather than promote effective competition in the supply of electricity).

7.2 BSC Agent Impact Assessment

Modification Proposal P40 would require changes to the EAC/AA system, which is provided to Non Half Hourly Data Collectors by ELEXON for the purpose of calculating EAC values. The impact assessment obtained from the EAC/AA software developer during the Assessment Procedure indicates that the cost of these software changes would be £79,800. ELEXON estimates that an additional £40,000 would be required for acceptance testing, market participant testing and project management.

8 SUMMARY OF REPRESENTATIONS

Six responses representing eighteen Parties were received to the consultation on the draft Modification Report. No new substantive issues were raised (over and above those already discussed in the Assessment Report and/or draft Modification Report). The full text of all the responses is included as Annex 1 to this report.

Five of the responses representing seventeen Parties supported the recommendation to reject the Modification Proposal. One response representing one Party (who was the Proposer of P40) did not support the recommendation.

8.1 Previous Consultations

On 5th November 2001, in the course of the Assessment Procedure, Modification Proposal P40 and a paper describing the issues it raises were issued for consultation. A summary and copies of the representations received and considered by the Modification Group can be found in the P40 Assessment Report.

ANNEX 1 – REPRESENTATIONS

Responses from P40 Draft Modification Report Consultation

Consultation issued 20 December 2001

Representations were received from the following parties:

No	Company	File Number	No. Parties Represented
1.	Powergen UK plc	P40_MR_001	4
2.	Innogy Group	P40_MR_002	1
3.	Scottish & Southern Energy plc	P40_MR_003	4
4.	SEEBOARD Energy Limited	P40_MR_004	1
5.	SEEBOARD Power Networks	P40_MR_005	1
6.	ScottishPower	P40_MR_006	7

P40_MR_001 – Powergen UK plc

I am writing in response to the consultation on the above draft modification report. This response is made on behalf of Powergen UK plc, Powergen Retail Limited, Diamond Power Generation Limited and Cottam Development Centre Limited.

We support the recommendation of the Panel that P40 should be rejected. It is not clear that the effect of negative EACs is sufficient to warrant the changes which would be required to implement P40. We also agree with the view that a distortion could occur as a result of a failure to remove a compensating large EAC or AA along with the negative EAC.

Yours sincerely,
Paul Jones
Strategy and Regulation

P40_MR_002 – Innogy Group

The Innogy Group of Companies support the recommendation to reject Mod P40.

Terry Ballard
01905-340507
07989-493038

P40_MR_003 – Scottish & Southern Energy plc

This response is sent on behalf of Scottish and Southern Energy, Southern Electric, Keadby Generation Ltd. and SSE Energy Supply Ltd.

In accordance with our previous comments on this Proposal (P 40), we agree with the Modification Group's recommendation that the Panel recommend to the Authority that this Proposal be rejected.

Regards
Garth Graham
Scottish & Southern Energy plc

P40_MR_004 – SEEBOARD Energy Limited

Detailed below is our response to the above mentioned modification. This covers responses from both SEEBOARD Energy Limited and SEEBOARD Power Networks plc. Separate responses are given as they cover two distinct points of view.

SEEBOARD Energy Limited Response

The major problem with this modification is that it is tackling a symptom rather than the root cause of problems. From our point of view we see no direct benefit from this change and as such would agree with the recommendation. Such modifications would always fail because the only beneficiaries are PDSOs who would pay nothing for this change. P17 was rejected by the Authority for this reason. For such modifications to be successful a proposed alternative funding arrangement would need to be put forward.

P40_MR_005 – SEEBOARD Power Networks

SEEBOARD Power Networks plc

PDSOs are directly reliant on effective BSC processes and the quality and performance of Suppliers and their Agents for delivery of accurate and robust information upon which to base Use of System Charges. In addition we understand that Elexon has responsibility for monitoring the effectiveness of Settlements processes. All parties agree it is a fundamental flaw in BSC rules and EAC/AA software logic in creating negative EAC's, i.e. forward looking customer estimates of likely consumption, driven by actions to correct, or create negative AA's. It is also evident from the modification process, that whilst PDSOs are required to be a party to the BSC, their opportunity to effect changes is extremely limited.

We appreciate in this instance the change would incur charges on Suppliers, to support the cost of correcting this flaw. This would lead to improving the accuracy of Use of System Charges, and this could also increase Supplier costs. As such there is insufficient local incentive on Suppliers to support this change.

As a consequence rejection of this proposal would preclude an opportunity to improve quality and accuracy of the Settlements process in this area and we are surprised that the proposal gained limited support. We are also concerned that this proposal does not appear to support a level playing field approach between Suppliers and PDSOs in working together to improve accuracy of data. Previous changes to the industry design have been made at significant cost to PDSOs with benefit solely to Suppliers. So for Suppliers to reject this change because of this fact is disappointing.

We note with some comfort the intent for Elexon to investigate NHH Data Collectors performance regarding the derivation of significant numbers of negative AA's. Although this may have a

consequence of reducing the scale of problems highlighted within this proposal during the period associated with this review, it will not solve the root cause.

Dave Morton
SEEBOARD
0190 328 3465

P40_MR_006 – ScottishPower

I would like to thank you for this opportunity to comment on the Modification Report for P40 – Calculation of Negative Estimates of Annual Consumption (EAC).

While we would echo the sentiments of the Proposer in raising this Modification Proposal, we note that neither the Modifications Group or ELEXON's own analysts were able to identify any need for such a change to the BSC. Naturally, we would welcome any proposal that would improve the Settlements Process, but tend to agree with the Panel's findings that it has not been adequately established that this proposal would achieve this. We also note the Panel's determination that the proposal failed to satisfy the Applicable BSC Objectives.

Nonetheless, the issue of possible process failures leading to negative EACs being used in RF does, of course, cause concern and we would like to see ELEXON undertake to monitor the future performance of NHHDCs' to ensure there was no cause for concern relating to deemed readings at RF runs. Should such concerns prove to be justified, we would welcome a further opportunity to examine this issue.

I trust you will find these comments helpful.

Yours Sincerely,
James Nixon

Calanais Ltd

For and on behalf of:

Scottish Power UK plc
SP Energy Trading Ltd
SP Generation Ltd
Scottish Power Energy Retail Ltd
Emerald Power Generation Ltd
SP Transmission Ltd
SP Manweb plc