

REQUIREMENTS SPECIFICATION for:

**Modification Proposal P171 Retrospective removal of Emergency Instructions taken for System reasons from Imbalance Price; and
Modification Proposal P172 Removal of Emergency Instructions taken for System reasons from Imbalance Price**

Prepared by: Pricing Standing Modification Group (PSMG)

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PURPOSE OF THIS DOCUMENT

The purpose of this document is to identify the requirements for implementation of Modification Proposals P171 and P172. It is intended that this document be used as basis for the Impact Assessment by Parties, BSC Agents, BSCCo, Core Industry Document Owners and the Transmission Company.

For the purposes of this assessment, the reader should assume that the changes will be implemented as a standalone development project managed by BSCCo.

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I CONTENTS TABLE

I	Contents Table	2
	Summary of impacted parties and documents	3
1	Introduction	4
1.1	Proposed Modifications	4
1.2	Background and Scope	4
1.3	Details of the Modification Proposals:	4
1.4	Potential Alternative Modification	6
1.5	Requirements Specification Overview	6
2	Implementation Options	7
2.1	OPTION 1: P171/P172 Automated solution	7
2.1.1	Inform Industry (D)	8
2.1.2	Enter Acceptance Data into Settlement (II)	8
2.1.3	Inform Industry of approach for settling Emergency Instruction	8
2.1.4	Process Acceptance as Normal	8
2.1.5	Flag Acceptance as System Balancing	9
2.1.6	Tag Emergency Instruction within Imbalance Price calculation	9
2.1.7	Report details of Acceptances specifically tagged as System actions	10
2.2	OPTION 2: P171/P172 Manual solution	10
2.2.1	Inform Industry (D)	10
2.2.2	Enter Acceptance Data into Settlement (II)	10
2.2.3	Inform Industry of approach for settling Emergency Instruction	10
2.2.4	Process Acceptance as Normal	10
2.2.5	Flag Acceptance as System Balancing	10
2.2.6	BSCCo Calculate the Energy Imbalance Prices	10
2.2.7	BSC Agent (SAA) Perform Reconciliation with amended BSAD	10
2.2.8	Iteration of Process	10
2.3	OPTION 3: P171/P172 Potential Alternative	10
2.3.1	Inform Industry (D)	10
2.3.2	Enter Acceptance Data into Settlement (II)	10
2.3.3	Inform Industry of approach for settling Emergency Instruction	10
2.3.4	Process Acceptance as Normal	10
2.3.5	Flag Acceptance as System Balancing	10
2.3.6	Determine replacement Acceptance Price	10
2.3.7	BSC Agent amends prevailing price of Acceptance (SF)	10
2.3.8	BSCCo calculates Ad-Hoc Trading Charge to correct cashflow to Lead Party of affected BM Unit	10
3	Document Control.....	10
a	Authorities	10
b	References	10

SUMMARY OF IMPACTED PARTIES AND DOCUMENTS

The following parties/documents have been identified as being potentially impacted by Modification Proposal P171 and P172.

Parties	Sections of the BSC	Code Subsidiary Documents
Suppliers <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"/>
Licence Exemptable Generators <input checked="" type="checkbox"/>	C <input type="checkbox"/>	BSC Service Descriptions <input checked="" type="checkbox"/>
Transmission Company <input checked="" type="checkbox"/>	D <input type="checkbox"/>	Service Lines <input type="checkbox"/>
Interconnector <input checked="" type="checkbox"/>	E <input type="checkbox"/>	Data Catalogues <input checked="" type="checkbox"/>
Distribution System Operators <input type="checkbox"/>	F <input type="checkbox"/>	Communication Requirements Documents <input type="checkbox"/>
Party Agents		
Data Aggregators <input type="checkbox"/>	G <input type="checkbox"/>	Reporting Catalogue <input checked="" type="checkbox"/>
Data Collectors <input type="checkbox"/>	H <input type="checkbox"/>	MIDS <input type="checkbox"/>
Meter Operator Agents <input type="checkbox"/>	J <input type="checkbox"/>	Core Industry Documents
ECVNA <input type="checkbox"/>	K <input type="checkbox"/>	Grid Code <input checked="" type="checkbox"/>
MVRNA <input type="checkbox"/>	L <input type="checkbox"/>	Supplemental Agreements <input checked="" type="checkbox"/>
BSC Agents		
SAA <input checked="" type="checkbox"/>	M <input type="checkbox"/>	Ancillary Services Agreements <input type="checkbox"/>
FAA <input type="checkbox"/>	N <input type="checkbox"/>	Master Registration Agreement <input type="checkbox"/>
BMRA <input checked="" type="checkbox"/>	O <input type="checkbox"/>	Data Transfer Services Agreement <input type="checkbox"/>
ECVAA <input type="checkbox"/>	P <input type="checkbox"/>	British Grid Systems Agreement <input type="checkbox"/>
CDCA <input type="checkbox"/>	Q <input checked="" type="checkbox"/>	Use of Interconnector Agreement <input type="checkbox"/>
TAA <input type="checkbox"/>	R <input type="checkbox"/>	Settlement Agreement for Scotland <input type="checkbox"/>
CRA <input type="checkbox"/>	S <input type="checkbox"/>	Distribution Codes <input type="checkbox"/>
Teleswitch Agent <input type="checkbox"/>	T <input checked="" type="checkbox"/>	Distribution Use of System Agreements <input type="checkbox"/>
SVAA <input type="checkbox"/>	U <input type="checkbox"/>	Distribution Connection Agreements <input type="checkbox"/>
BSC Auditor <input type="checkbox"/>	V <input type="checkbox"/>	BSCCo
Profile Administrator <input type="checkbox"/>	W <input type="checkbox"/>	Internal Working Procedures <input checked="" type="checkbox"/>
Certification Agent <input type="checkbox"/>	X <input checked="" type="checkbox"/>	Other Documents
MIDP <input type="checkbox"/>		Transmission Licence <input type="checkbox"/>
Other Agents		
SMRA <input type="checkbox"/>		
Data Transmission Provider <input type="checkbox"/>		

1 INTRODUCTION

1.1 Proposed Modifications

Modification Proposal P171 'Retrospective removal of Emergency Instructions taken for System reasons from Imbalance Price' (P171) was raised on 25 August 2004 by British Gas Trading (BGT). P171 seeks to remove Emergency Instructions issued for System balancing reasons from Imbalance Prices. It is the intention of the Proposer that P171 would apply on a retrospective basis (i.e. would apply to historic Emergency Instructions).

Modification Proposal P172 'Removal of Emergency Instructions taken for System reasons from Imbalance Price' (P172) was raised on 25 August 2004 by British Gas Trading (BGT). P172 seeks to apply the same changes as P171, however it is the intention of the Proposer that P172 would apply on a prospective basis only (i.e. would not be applied to Emergency Instructions issued prior to the Implementation Date)

Since P171 and P172 are differentiated purely by the Implementation Date the requirements for each proposal are identical as reflected within this document.

1.2 Background and Scope

ELEXON presented an Initial Written Assessment (IWA) for P171 and P172 (References 3 and 4) to the Balancing & Settlement Code Panel ('the Panel') at its meeting on 9 September 2004. The Panel agreed with the recommendation that both P171 and P172 be submitted to a three month Assessment Procedure to be carried out by the Pricing Standing Modification Group (PSMG). The Assessment Report is scheduled to be presented at the Panel meeting on 9 December 2004.

To date the PSMG have met once, on the 14 September 2004, to consider P171 and P172. This document sets out the interpretation of P171 and P172 and the issues considered by the PSMG during the initial part of the Assessment Procedure. The purpose of this document is to identify the requirements for implementation of Modification Proposal P171 and P172, in order to allow the cost and impact of the different implementation options to be identified. It is intended that this document be used as a basis for the Impact Assessment by Parties, BSC Agents, BSCCo, Core Industry Document Owners and the Transmission Company. Responses to Impact Assessment will enable the PSMG to agree an implementation approach and reach a recommendation on whether P171 and/ or P172 would better facilitate achievement of the Applicable BSC Objectives.

1.3 Details of the Modification Proposals:

Current Arrangements:

Under the current baseline, in accordance with Section Q5.1.3 (b) of the Code, an Emergency Instruction issued by the Transmission Company in respect of a BM Unit under the Grid Code is classed as a Bid/ Offer Acceptance for the Purpose of Settlement. The Code does not currently contain provisions for applying an alternative price to Acceptances issued as a result of an Emergency Instruction. Therefore, the Lead Party of the affected BM Unit will be paid (or pay) for the Acceptance resulting from an Emergency Instruction at the prevailing Bid or Offer price.

In accordance with the Balancing Principles Statement (Reference 3), under normal operation, the Transmission Company issues Acceptances on an economic basis (i.e. by selecting Bids or Offers in order of relative cost to the Transmission Company until the required balancing volume has been obtained). However, in extreme situations, such as in the case of an Emergency Instruction, it is clearly necessary for the Transmission Company to consider factors other than cost. As a result, it is possible that the Acceptance associated with an Emergency Instruction may be at a prevailing Bid or Offer price

which is significantly higher (in terms of relative cost to the Transmission Company) than would have been selected under normal operation.

Currently Acceptances resulting from Emergency Instructions are not distinguished within Settlement in any way. Hence, the Acceptance resulting from an Emergency Instruction will have the following effect:

- The Lead Party of the affected BM Unit will either be paid (or pay) for the Acceptance at the prevailing Bid or Offer price via the Period BM Unit Cashflow;
- As a result of the impact on the Period BM Unit Cashflow for the Lead Party of the affected BM Unit, there will be an impact on Balancing System Use of System (BSUoS) charges for all Parties; and
- The Acceptance Volume will feed into the Imbalance Price calculation at the prevailing Bid or Offer price. This may, subject to the existing tagging rules, impact imbalance payments, and consequentially Residual Cashflow Reallocation Cashflow (RCRC), for all Parties.

Changes Proposed under P171 and P172:

Under Proposed Modifications P171 and P172, Acceptances resulting from Emergency Instructions would be distinguished within Settlement in the following way:

- The Lead Party of the affected BM Unit would continue to be paid (or pay) for the Acceptance at the prevailing Bid or Offer price via the Period BM Unit Cashflow;
- As a result of the impact on the Period BM Unit Cashflow for the Lead Party of the affected BM Unit, there would continue to be an impact on BSUoS payments for all Parties; and
- Where the Emergency Instruction was issued for system balancing reasons, the associated Acceptance would feed into the Imbalance Price calculation as an un-priced volume.

Under this approach the Acceptance Volume would still be used in the derivation of the Net Imbalance Volume (NIV), thereby contributing to the determination of which balancing actions set the imbalance price. However, as an un-priced volume, the Acceptance would not contribute to the derivation of Energy Imbalance Price (based on the weighted average of priced Acceptance Volumes which are not NIV tagged). P171 and P172 propose that the treatment of Emergency Instructions issued for energy purposes would be unchanged.

Background:

In raising P171 and P172 the Proposer refers to the first Emergency Instruction issued under NETA and the consequential impact on Settlement. Details of this incident were outlined in ELEXON Circular (EL01201) and are summarised here.

On 19 May 2004, it was determined that a piece of high voltage equipment was showing signs of distress and needed to be taken out of service as soon as possible in order to prevent an unsafe situation. The location of the distressed equipment meant that it was necessary to stop Damhead Creek Power Station exporting to the Transmission System. At 12:51 BST on 19 May 2004, NGC issued an Emergency Instruction to Damhead Creek Power Station to perform a controlled shutdown and desynchronise the BM Unit as quickly as possible. The power station complied with the instruction and the equipment was isolated safely.

In this case, the prevailing Bid Price for a large proportion of the Acceptance Volume was £-9,999/MWh. NGC initially postponed submitting the Acceptance Data due to the likely Settlement implications for Market Participants. A Trading Dispute was eventually raised by Damhead Creek Power Station in order to include the Acceptance Volume in Settlement.

The Trading Disputes Committee (TDC) heard the Trading Dispute on 19 August 2004 and agreed that a Settlement Error had occurred. The TDC directed that a Bid Acceptance should be entered into Settlement in the R3 Reconciliation Run on 15 December 2004. Inclusion of the Acceptance Data impacts the calculation of System Sell Price (SSP) for the relevant periods. ELEXON's estimate of the revised System Sell Prices which will result from the inclusion of the Bid Acceptance is:

- -£96.68/MWh in Settlement Period 27¹; and
- -£5,870.87/MWh in Settlement Period 28.

NGC has also indicated that the £3.55M cost of the Bid Acceptance and the associated impact on Incentivised Balancing Costs will result in changes to BSUoS charges for the relevant periods.

1.4 Potential Alternative Modification

During progression of P171 and P172 the PSMG have developed a potential Alternative Modification.

P171 and P172 propose Acceptances resulting from Emergency Instructions taken for system purposes are excluded from Imbalance Prices. The PSMG noted that, in practice an Emergency Instruction (even if issued for System purposes) may deliver both energy and system balancing.

Under the potential Alternative Modification P171/P172, a replacement Bid/Offer price would be derived from the Bids and Offers that would have been taken by the Transmission Company had the Emergency Instruction not been issued. The Acceptance would then be included in the existing Imbalance Price calculation at this replacement Price. However, the Lead Party would continue to be paid for Acceptance at the prevailing Bid/ Offer price. This approach would be utilised in an attempt to represent the consequential Energy balancing that may be delivered by an Emergency Instruction issued for System balancing reasons

1.5 Requirements Specification Overview

This version of the Requirements Specification is based on the conclusions reached by the PSMG as of 14 September 2004. The document includes three potential implementation options currently being considered by the PSMG:

1. Implementation of Proposed Modification P171/P172 via an automated system whereby Central System functionality would be amended to allow individual Acceptances to be specifically tagged as System balancing for the purpose of the Imbalance Price Calculation;
2. Implementation of Proposed Modification P171/P172 via a manual workaround whereby Balancing Services Adjustment Data (BSAD) would be manipulated to give Imbalance Prices equivalent to those that would have been generated had individual Acceptances been specifically tagged as System balancing for the purpose of the Imbalance Price Calculation;
3. A potential Alternative Modification P171/P172 where a replacement Acceptance Price would be determined based on the Bid/Offer available to Transmission Company at the time of issuing the Emergency Instruction and entered into Settlement. Ad-hoc Trading Charges would then be calculated in order to realise an overall payment to (or from) the Lead Party of the affected BM Unit at the prevailing Bid/Offer Price.

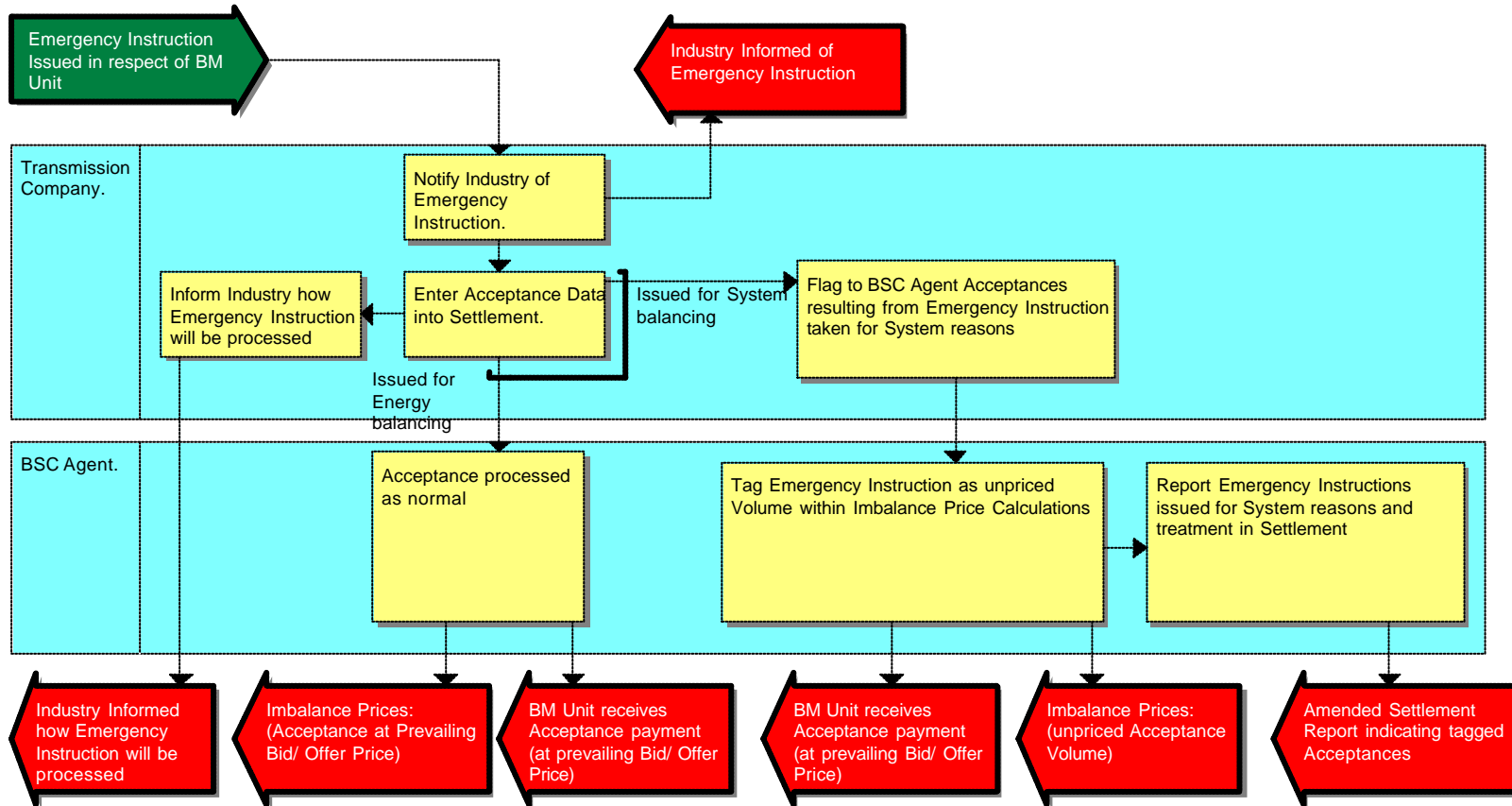
Each of these implementation options is considered in Section 2 of this document and Impact Assessment of each option should be conducted.

¹ NB: A negative SSP will mean that a Party who was 'long' during the Settlement Period will pay the absolute value of SSP for its imbalance volume (rather than receive it).

2 IMPLEMENTATION OPTIONS

2.1 OPTION 1: P171/P172 Automated solution

The following diagram illustrates, at a high level, how P171 and P172 would be implemented under a partially automated solution; each stage of the process is considered in detail in sections 2.1.1 to 2.1.7.



2.1.1 Inform Industry (D)

The Transmission Company would inform the industry (on a reasonable endeavours basis), as soon as possible following an Emergency Instruction being issued to a BM Unit, via the BMRS (using existing System Warning message functionality). This information would be limited to the time of the Emergency Instruction and the affected BM Unit.

2.1.2 Enter Acceptance Data into Settlement (II)

Following Post event analysis of the Emergency Instruction records, the Transmission Company would determine appropriate Acceptance Data to represent the Emergency Instruction within Settlement.

Since an Emergency Instruction may take a BM Unit outside normal operational Dynamics, it may not be possible for the Transmission Company to issue the required Acceptance Data electronically. Therefore, the Acceptance would be manually entered into Settlement post event (NB: the system functionality to perform this exists and is currently utilised under the Manifest Error process). This would be conducted prior to the Interim Information (II) Run performed at D+5WD.

At this point in the process it would also be necessary to determine if the Emergency Instruction should be specifically treated as System balancing within Settlement. The PSMG are currently considering the following options for making this determination:

1. Treat all Emergency Instructions as System Balancing;
2. Allow the Transmission Company to determine whether or not an individual Emergency Instructions should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation; and
3. Provide defined criteria within the Code against which the Transmission Company would judge whether or not an individual Emergency Instructions should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation.

NB: For all Emergency Instructions the Acceptance Data will be entered into Settlement prior to the II Run (i.e. whether or not the Emergency Instruction is to be treated specifically as System balancing), it is only the consequential steps in the process which differ.

2.1.3 Inform Industry of approach for settling Emergency Instruction (II)

Having determined the required Acceptance Data and whether or not the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Transmission Company would inform the industry how the Emergency Instruction will be processed, including the following information:

- Details of the Acceptance Data to be entered into Settlement; and
- Whether or not the resulting Acceptance will be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation. Including an explanation of the rationale for this decision.

2.1.4 Process Acceptance as Normal (II)

Where it has been determined that the Emergency Instruction should not be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Acceptance will be processed within Settlement as per the existing baseline, as a consequence:

- The Lead Party of the affected BM Unit will either be paid (or pay) for the Acceptance at the prevailing Bid or Offer price via the Period BM Unit Cashflow;

- The Acceptance Volume will feed into the existing Imbalance Price calculation at the prevailing Bid or Offer price. As such the normal tagging process will determine how the Acceptance contributes to the calculation of Imbalance Prices.

Therefore, where it has been determined that the Emergency Instruction should not be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Emergency Instruction will be 'correctly' reflected in Settlement from the II Run onwards.

2.1.5 Flag Acceptance as System Balancing (II)

Where it has been determined that the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Transmission Company will inform the BSC Agent (SAA) at the point that the data is entered into Settlement (i.e. prior to the II Run). Therefore, where it has been determined that the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Emergency Instruction will be 'correctly' reflected in Settlement from the II Run onwards.

It should be noted that the Credit Cover calculation is based on Trading Charges generated in the II Run, hence the Imbalance Prices used within the Credit Cover calculation will be correctly based on the P171/172 methodology under an Automated solution.

2.1.6 Tag Emergency Instruction within Imbalance Price calculation (II)

On receipt of notification from the Transmission Company that an Acceptance should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the BSC Agent will differentiate such Acceptance within Settlement as follows:

- The Acceptance Volume will be included in the Period BM Unit Total Accepted Offer Volume (QAO_{ij}^n) or the Period BM Unit Total Accepted Bid Volume (QAB_{ij}^n) as applicable. Hence, the Lead Party of the affected BM Unit will either be paid (or pay) for the Acceptance at the prevailing Bid or Offer price via the Period BM Unit Offer Cashflow (CO_{ij}^n) or Period BM Unit Bid Cashflow (CB_{ij}^n) as applicable.
- The Acceptance Volume will **not** be included in the Period BM Unit Total Priced Accepted Offer Volume ($QAPO_{ij}^n$) or Period BM Unit Total Priced Accepted Bid Volume ($QAPB_{ij}^n$), hence:
 - The Acceptance Volume will be included in the System Total Accepted Offer Volume ($TQAO_j$) or System Total Accepted Bid Volume ($TQAB_j$) as applicable; and
 - The Acceptance Volume will also be included in the System Total Un-Priced Accepted Offer Volume ($TQUAO_j$) or System Total Un-Priced Accepted Bid Volume ($TQUAB_j$) as applicable.
- Consequently, the Acceptance Volume will be included in the Net Imbalance Volume (NIV_j), calculated as follows (as per the current baseline):

$$NIV_j = \{S_i S^n QAPO_{ij}^n + EBVA_j + SBVA_j + TQUAQ\} - \{S_i S^n (-QAPB_{ij}^n) + (-ESVA_j) + (-SSVA_j) + (-TQUAB_j)\}$$

where S_i is the sum over all BM Units and S^n is either the sum over all Accepted Offers that are not De Minimis Accepted Offers and not Arbitrage Accepted Offers, or the sum over all Accepted Bids that are not De Minimis Accepted Bids and not Arbitrage Accepted Bids, as the case may be.

- Furthermore, the Acceptance Volume will **not** be included in the calculation of System Sell Price (SSP) or System Buy Price (SBP) which, where the Market Price does not apply, will be calculated base on priced Offers and Bid Volumes as follows (as per the current baseline):

$$SBP_j = \{ \{ S_i S^n \{ QAPO_{ij}^n * PO_{ij}^n * TLM_{ij} \} + UEBCA_j \} / \{ S_i S^n \{ QAPO_{ij}^n * TLM_{ij} \} + UEBVA_j \} \} + \{ BPA_j \}$$

where S_i represents the sum over all BM Units and S^n represents the sum over those accepted Offers that are not De Minimis Accepted Offers and not Arbitrage Accepted Offers and not NIV Tagged Offers;

$$SSP_j = \{ \{ S_i S^n \{ QAPB_{ij}^n * PB_{ij}^n * TLM_{ij} \} + UESCA_j \} / \{ S_i S^n \{ QAPB_{ij}^n * TLM_{ij} \} + UESVA_j \} \} + \{ SPA_j \}$$

where S_i represents the sum over all BM Units and S^n represents the sum over those accepted Bids that are not De Minimis Accepted Bids and not Arbitrage Accepted Bids and not NIV Tagged Bids;

2.1.7 Report details of Acceptances specifically tagged as System actions (II)

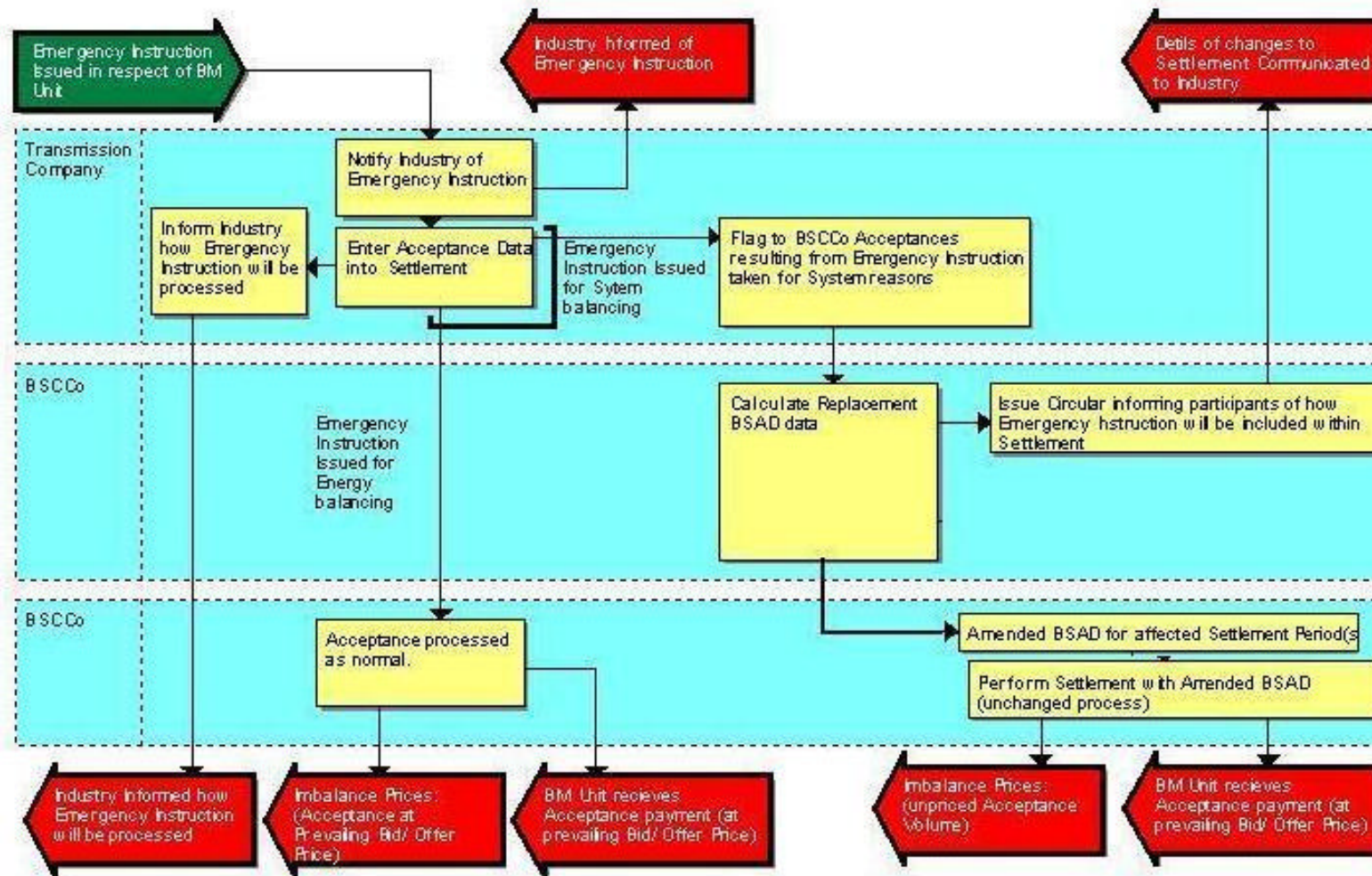
The BSC Agent will report details of any Acceptance Volumes which have been specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation within the Settlement Report (SAA-I014).

2.1.8 Iteration of Process

Once the Acceptance Data has been entered into Settlement and tagged as specifically System balancing, each Settlement Run will be conducted in accordance with the P171/P172 methodology (hence iteration of the process will not be required).

2.2 OPTION 2: P171/P172 Manual solution

The following diagram illustrates, at a high level, how P171 and P172 would be implemented under a manual solution; each stage of the process is considered in detail in sections 2.2.1 to 2.2.8.



2.2.1 Inform Industry (D)

The Transmission Company would inform the industry (on a reasonable endeavours basis), as soon as possible following an Emergency Instruction being issued to a BM Unit, via the BMRS (using existing System Warning message functionality). This information would be limited to the time of the Emergency Instruction and the affected BM Unit.

2.2.2 Enter Acceptance Data into Settlement (II)

Following Post event analysis of the Emergency Instruction records, the Transmission Company would determine appropriate Acceptance Data to represent the Emergency Instruction within Settlement.

Since an Emergency Instruction may take a BM Unit outside normal operational Dynamics, it may not be possible for the Transmission Company to issue the required Acceptance Data electronically. Therefore, the Acceptance would be manually entered into Settlement post event (NB: the system functionality to perform this exists and is currently utilised under the Manifest Error process). This would be conducted prior to the Interim Information (II) Run performed at D+5WD.

At this point in the process it would also be necessary to determine if the Emergency Instruction should be specifically treated as System balancing within Settlement. The PSMG are currently considering the following options for making this determination:

1. Treat all Emergency Instructions as System Balancing;
2. Allow the Transmission Company to determine whether or not an individual Emergency Instructions should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation; and
3. Provide defined criteria within the Code against which the Transmission Company would determine whether or not an individual Emergency Instructions should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation.

NB: the Acceptance Data will be entered into Settlement prior to the II Run in all cases (i.e. whether or not the Emergency Instruction is to be treated specifically as System balancing), it is only the consequential steps in the process which differ.

It should be noted that the Credit Cover calculation is based on Trading Charges generated in the II Run, hence the Imbalance Prices used within the Credit Cover calculation will not be based on P171/172 methodology (representing the Acceptance at the prevailing Bid/Offer price rather than as an un-priced volume).

2.2.3 Inform Industry of approach for settling Emergency Instruction (II)

Having determined the required Acceptance Data and whether or not the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Transmission Company would inform the industry of how the Emergency Instruction will be processed, including the following information:

- Details of the Acceptance Data to be entered into Settlement; and
- Whether or not the resulting Acceptance will be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation. Including an explanation of the rationale for this decision.

2.2.4 Process Acceptance as Normal (II)

Where it has been determined that the Emergency Instruction should not be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Acceptance will be processed within Settlement as per the existing baseline, as a consequence:

- The Lead Party of the affected BM Unit will either be paid (or pay) for the Acceptance at the prevailing Bid or Offer price via the Period BM Unit Cashflow;
- The Acceptance Volume will feed into the existing Imbalance Price calculation at the prevailing Bid or Offer price.

Therefore, where it has been determined that the Emergency Instruction should not be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Emergency Instruction will be 'correctly' reflected in Settlement from the II Run onwards.

2.2.5 Flag Acceptance as System Balancing (II)

Where it has been determined that the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Transmission Company will inform BSCCo (prior to the II Run). Where it has been determined that the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Emergency Instruction will not be 'correctly' reflected in Settlement until the SF Run.

2.2.6 BSCCo Calculate the Energy Imbalance Prices (SF)

Prior to the Initial Settlement Run (SF) on D+16WD, BSCCo will calculate the Energy Imbalance Prices that would have been generated had the P171/P172 requirements been applied (see section 2.1.6), as follows:

1. The SAA-1014 flow produced at II (D+5WD) for the Settlement Day will include the Acceptance Data associated with the Emergency Instruction at the prevailing Bid/ Offer Price, as a consequence:
 - The Lead Party of the affected BM Unit Cashflow will be paid (or Pay) for the Acceptance at the Prevailing Bid/ Offer Price (correct);
 - The Imbalance Prices will be calculated including the Acceptance Volume at the prevailing Bid/ Offer Price (incorrect); and
 - The latest BSAD data will be included un-modified (correct).
2. BSCCo will calculate the Energy Imbalance Prices that would have been generated had the P171/P172 rules been applied at the II Run (i.e. the Imbalance Prices that would have been generated had the Acceptance Volume resulting from the Emergency Instruction been included as an Un-Priced Volume, as set out in section 2.1.6 of this document).
3. The 'correct' Energy Imbalance Prices would then be communicated to the BSC Agent (SAA) such that they can be reflected in the SF Run.

2.2.7 BSC Agent (SAA) Perform Settlement with amended BSAD (SF).

On receipt of the 'correct' Energy Imbalance Prices from BSCCo, the BSC Agent (SAA) would calculate the amendments required to give the correct Imbalance Prices in the SF Run. This would then be implemented via adjustment of BSAD for the affected Settlement Period (s) as follows:

1. By comparison of the 'correct' Imbalance Prices calculated by TOMAS and the 'incorrect' Prices generated in the II Run, the required adjustments to the Imbalance Prices (?BP_j and ?SP_j) would be calculated;
2. These adjustments (?BP_j and ?SP_j) would then be included in the BSAD price adjustment data such that (NB: Original refers to BSAD as submitted by NGC and Adjusted refers to BSAD amended to give the desired Imbalance Prices):

$$\text{'Adjusted' BPA}_j = \text{'Original' BPA}_j + ?BP_j$$

$$\text{'Adjusted' SPA}_j = \text{'Original' SPA}_j + ?SP_j$$

3. The Settlement Run would then be conducted using 'adjusted' BSAD and would give the 'correct' Imbalance Prices as follows:

$$SBP_j = \{ \{S_i S^n \{QAPO_{ij}^n * PO_{ij}^n * TLM_{ij}\} + UEBCA_j \} / \{S_i S^n \{QAPO_{ij}^n * TLM_{ij}\} + UEBVA_j \} \} + \{ \text{'Adjusted' BPA}_j \}$$

$$SSP_j = \{ \{S_i S^n \{QAPB_{ij}^n * PB_{ij}^n * TLM_{ij}\} + UESCA_j \} / \{S_i S^n \{QAPB_{ij}^n * TLM_{ij}\} + UESVA_j \} \} + \{ \text{'Adjusted' SPA}_j \}$$

The SF Run would be performed using 'adjusted' BSAD, giving Energy Imbalance Prices equivalent to those that would have been generated if the Acceptance Volume resulting from the Emergency Instruction had been included as an Un-Priced Volume. Therefore, the SAA-I014 flow produced at SF for the Settlement Day will include:

1. The Lead Party of the affected BM Unit Cashflow will be paid (or Pay) for the Acceptance at the Prevailing Bid/ Offer Price (correct);
2. Imbalance Prices including the Acceptance Volume resulting from the Emergency Instruction as an Un-Priced Volume (correct); and
3. Adjusted BSAD data (incorrect).

Prior to conducting the actual Settlement Run the BSC Agent would conduct a 'dry-run' and seek confirmation from BSCCo that the adjustments to BSAD had given the required Energy Imbalance prices. The actual Settlement Run would only be conducted once confirmation had been received from BSCCo.

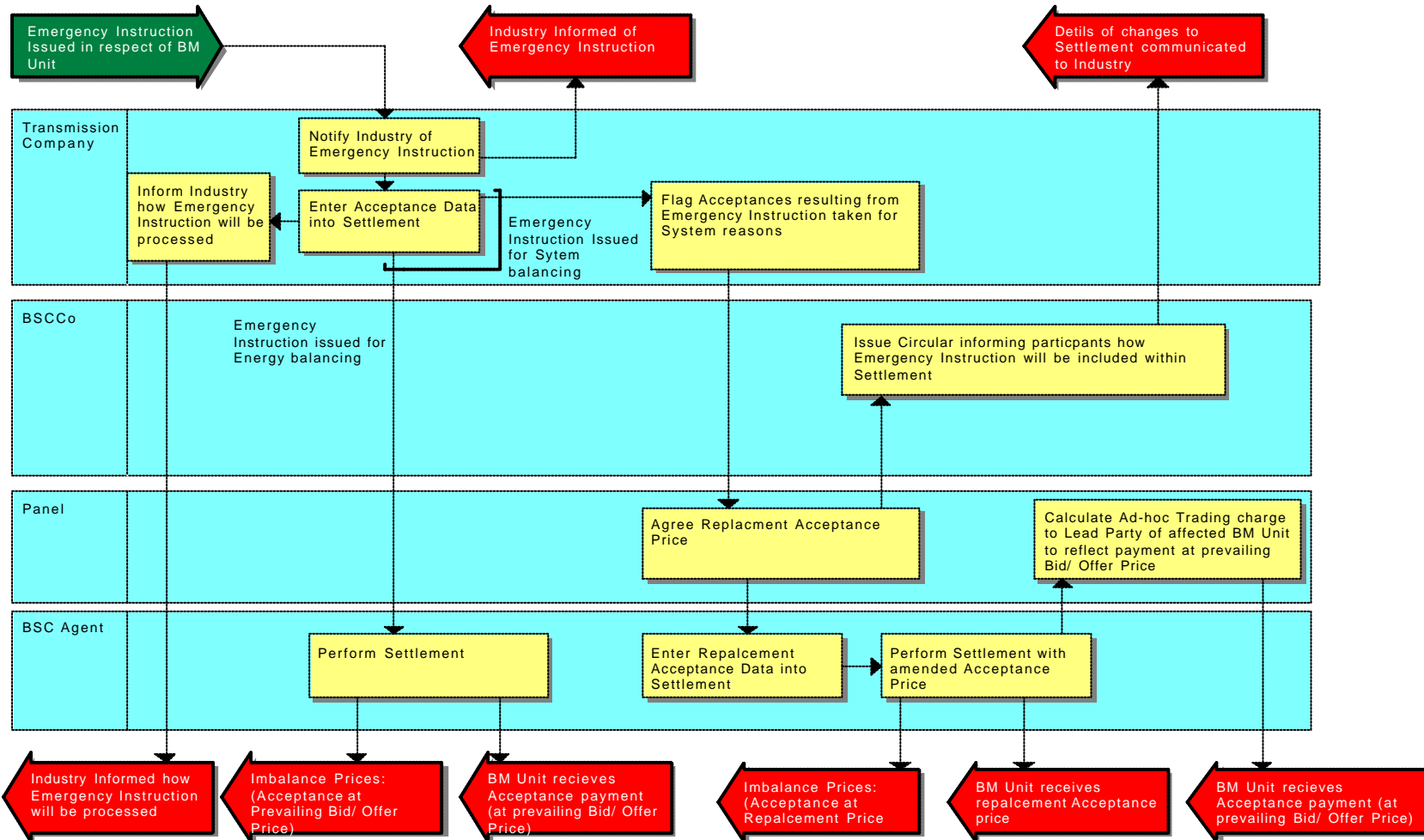
2.2.8 Iteration of Process

In order to reflect any changes to the underlying data between Settlement Runs it would be necessary to re-iterate the process for each Reconciliation Run. Therefore, prior to each Reconciliation Run it would be necessary for BSCCo to recalculate the Imbalance Prices that should have been generated based on the previous Settlement Run data and the latest 'correct' BSAD data. The BSC Agent (SAA) would then need to amend the BSAD data for each Reconciliation Run to produce the desired Imbalance Prices.

It should be noted that under the manual solution Imbalance Prices would always be based on the previous Settlement Run data. Hence, the final Imbalance Prices generated at RF would be based on R3 data.

2.3 OPTION 3: P171/P172 Potential Alternative

The following diagram illustrates, at a high level, how the potential Alternative Modification P171 and P172 would be implemented; each stage of the process is then considered in detail in sections 2.3.1 to 2.3.9.



2.3.1 Inform Industry (D)

The Transmission Company would inform the industry (on a reasonable endeavours basis), as soon as possible following an Emergency Instruction being issued to a BM Unit, via the BMRS (using existing System Warning message functionality). This information would be limited to the time of the Emergency Instruction and the affected BM Unit.

2.3.2 Enter Acceptance Data into Settlement (II)

Following Post event analysis of the Emergency Instruction records, the Transmission Company would determine appropriate Acceptance Data to represent the Emergency Instruction within Settlement.

Since an Emergency Instruction may take a BM Unit outside normal operational Dynamics, it may not be possible for the Transmission Company to issue the required Acceptance Data electronically. Therefore, the Acceptance would be manually entered into Settlement post event (NB: the system functionality to perform this exists and is currently utilised under the Manifest Error process). This would be conducted prior to the Interim Information (II) Run performed at D+5WD.

At this point in the process it would also be necessary to determine if the Emergency Instruction should be specifically treated as System balancing within Settlement. The PSMG are currently considering the following options for making this determination:

1. Treat all Emergency Instructions as System Balancing;
2. Allow the Transmission Company to determine whether or not an individual Emergency Instructions should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation; and
3. Provide defined criteria within the Code against which the Transmission Company would determine whether or not an individual Emergency Instructions should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation.

NB: the Acceptance Data will be entered into Settlement prior to the II Run in all cases (i.e. whether or not the Emergency Instruction is to be treated specifically as System balancing), it is only the consequential steps in the process which differ.

It should be noted that the Credit Cover calculation is based on Trading Charges generated in the II Run, hence the Imbalance Prices used within the Credit Cover calculation will not be based on P171/172 methodology.

2.3.3 Inform Industry of approach for settling Emergency Instruction (II)

Having determined the required Acceptance Data and whether or not the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Transmission Company would inform the industry of how the Emergency Instruction will be processed, including the following information:

- Details of the Acceptance Data to be entered into Settlement; and
- Whether or not the prevailing Acceptance is to be treated as System Balancing such that the price will consequently be amended. Including an explanation of the rationale for this decision.

2.3.4 Process Acceptance as Normal (II)

Where it has been determined that the Emergency Instruction should not be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Acceptance will be processed within Settlement as per the existing baseline, as a consequence:

- The Lead Party of the affected BM Unit will either be paid (or pay) for the Acceptance at the prevailing Bid or Offer price via the Period BM Unit Cashflow;
- The Acceptance Volume will feed into the existing Imbalance Price calculation at the prevailing Bid or Offer price. As such the normal tagging process will determine how the Acceptance contributes to the calculation of Imbalance Prices.

Therefore, where it has been determined that the Emergency Instruction should not be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Emergency Instruction will be 'correctly' reflected in Settlement from the II Run onwards.

2.3.5 Flag Acceptance as System Balancing (II)

Where it has been determined that the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Transmission Company will inform BSCCo. Where it has been determined that the Emergency Instruction should be specifically tagged as System balancing for the purpose of Energy Imbalance Price calculation, the Emergency Instruction will not be 'correctly' reflected in Settlement until the SF Run.

2.3.6 Determine replacement Acceptance Price (SF)

For Emergency Instructions issued for System it would be necessary for the Panel to agree a replacement price for the associated Acceptance, to be applied for the purpose of Imbalance Price calculation (NB: it is envisaged that the Panel would delegate its responsibility for agreeing the Replacement Bid/ Offer Price to an appropriate Panel Sub Committee).

The Panel would determine the replacement Price by considering which Bids and Offers would have been taken by the Transmission Company had the Emergency Instruction not been issued. This process would be conducted in a similar manner to that used to determine a replacement price under the Manifest Errors process (as detailed in BSCP14, Reference 5). The Panel would determine, in consultation with the Transmission Company, the replacement Acceptance Price as follows:

- (i) The Bid-Offer Pairs (submitted by any Party) which were available to, and not already accepted by, the Transmission Company at the time of issuing the Emergency Instruction would be identified;
- (ii) The Panel will then determine which of those other Bid-Offer Pairs would (having regard to the principles on which the Transmission Company generally selects Bid-Offer Pairs for acceptance) have been accepted by the Transmission Company, at the time of the Emergency Instruction, if it had not issued the Emergency Instruction; and
- (iii) The replacement Acceptance Price would then be the Bid Price or Offer Price of such Bid-Offer Pair (or where it determines that more than one would have been accepted, the average of such prices, weighted according to the quantities (in MWh) of each which would have been accepted).

2.3.7 BSC Agent amends prevailing price of Acceptance (SF)

Once the Panel has agreed the replacement Acceptance price this will be entered into Settlement (by D+ 14WD) and the BSC Agent (SAA) will conduct the SF Run with this data. The SAA-I014 flow

produced at SF (D+16WD) for the Settlement Day will include the Acceptance Data associated with the Emergency Instruction at the replacement Bid/ Offer Price, as a consequence:

- The Lead Party of the affected BM Unit will be paid (or pay) for the Acceptance at the replacement Bid/ Offer Price via the Period BM Unit Cashflow (incorrect);
- The Lead Party will pay Non-Delivery charges based on the replacement Bid/ Offer Price (incorrect);
- The System Operator will pay (or be paid) for the Acceptance at the replacement Bid/ Offer Price via the System Operator Cashflow (incorrect); and
- Imbalance Prices in accordance with the existing calculation, including the Acceptance Volume at the replacement Bid/ Offer Price (correct). The normal tagging process will then determine how the Acceptance, at the replacement price, will contribute to the calculation of Imbalance Prices.

Therefore, once the replacement Acceptance price has been entered into Settlement it will be necessary to calculate ad-hoc cashflows to the Lead Party of the affected BM Unit and the Transmission Company in order to reflect the original Bid/ Offer Price.

2.3.8 BSCCo calculates Ad-Hoc Trading Charge to correct cashflow to Lead Party of affected BM Unit Post (SF)

Since Settlement Runs would have been conducted by the BSC Agent (SAA) with the replacement price, BSCCo would calculate Ad-Hoc Trading Charges (as defined in Section N6.9 of the Code) to reflect the following:

1. Amendments required to the Period BM Unit Cashflow for the affected BM Unit

Within the Settlement Run conducted by the BSC Agent (SAA) the Period BM Unit Cashflow (CBM_{ij}) for the affected BM Unit will reflect the replacement Acceptance Price as follows:

$$CBM_{ij} = \sum^n CO_{ij}^n + \sum^n CB_{ij}^n$$

where \sum^n represents the sum over all Bid-Offer Pair Numbers for the BM Unit and

$$CO_{ij}^n = QAO_{ij}^n * TLM_{ij} * \text{'Replacement' } PO_{ij}^n$$

$$CB_{ij}^n = QAB_{ij}^n * TLM_{ij} * \text{'Replacement' } PB_{ij}^n$$

In order to produce a cashflow equivalent to the Period BM Unit Cashflow (CBM_{ij}) reflecting the prevailing Bid/ Offer Price an additional Ad-hoc cashflow would be required such that:

$$\text{Ad-hoc cashflow} = \sum^j \sum^n (QA_{ij}^n * TLM_{ij} * (\text{Original } PO_{ij}^n \text{ or } PB_{ij}^n - \text{Replacement } PO_{ij}^n \text{ or } PB_{ij}^n))$$

Where:

- QA_{ij}^n is the Volume of Acceptance associated with the Emergency Instruction in Band n for BM Unit i in Settlement Period j;
- Original PO_{ij}^n / PB_{ij}^n is the prevailing Bid or Offer price in Band n for BM Unit i in Settlement Period j;
- Replacement PO_{ij}^n / PB_{ij}^n is the Replacement Bid/ Offer Price for BM Unit i in Settlement Period j;
- \sum^j represents the sum over all Settlement Periods within the Settlement Day for which a Replacement Bid or Offer Price has been applied.

2. Non-Delivery Charge for the affected BM Unit

Within the Settlement Run conducted by the BSC Agent, the Period BM Unit Period Non-Delivery Charge (CND_{ij}) for the affected BM Unit will reflect the replacement Acceptance Price.

The calculation of non-Delivery Charges is set out in Section T 4.8 of the Code. At a high level, where it has been determined that a Non Delivery Volume exists the Non-Delivery charges are calculated by ranking the relevant Acceptances (i.e. Offers where the Non-Delivery Volume is positive and Bids where it is negative) in order of price (with the most expensive relative to the Transmission Company first). The Non-Delivery Volume is then allocated to the Acceptances in the list in order until the Period BM Unit Non-Delivered Volume is fully apportioned; effectively this determines which Acceptances will be deemed to have been 'non-delivered'.

Non-Delivery Charges are applied to those Acceptances deemed to be non-delivered as follows:

In respect of each Settlement Period, for each BM Unit, for each accepted Offer, the Non-Delivered Offer Charge will be determined as follows:

$$CNDO_{ij}^n = QNDO_{ij}^n * \text{Max}\{(\mathbf{PO}_{ij}^n - SBP_j), 0\} * TLM_{ij}$$

In respect of each Settlement Period, for each BM Unit, for each accepted Bid, the Non-Delivered Bid Charge will be determined as follows:

$$CNDB_{ij}^n = QNDB_{ij}^n * \text{Min}\{(\mathbf{PB}_{ij}^n - SSP_j), 0\} * TLM_{ij}$$

Therefore, using the replacement Acceptance Price rather than the prevailing Bid/ Offer price would impact in the following areas:

- Altering the Acceptance Price will affect which Acceptances are deemed to have been Non-Delivered (since the order in which Acceptances Volumes are assigned Non-Delivery may be affected)
- Should the Acceptance associated with the Emergency Instruction be deemed to have been non-Delivered, charges will be based on the replacement Bid/ Offer price rather than the prevailing Bid/ Offer Price.

Therefore, the ad-hoc cashflow may be required to correct any non-Delivery Charges for the affected BM Unit.

3. Amendments required to the System Operator Cashflow

An ad-hoc cashflow to the System Operator equal and opposite to that made to the Lead Party of the affected BM Unit would also be required (since the Transmission Company receives all Non-Delivery Charges and pays/ is paid for all accepted Bids and Offers via the Daily System Operator BM Cashflow (CSOBM)).

2.3.9 Iteration of Process

In order to reflect any changes to the underlying data between Settlement Runs it would be necessary to re-iterate the process for each Reconciliation Run. Therefore, following each Reconciliation Run it would be necessary for BSCCo to recalculate the ad-hoc cashflows to the Lead Party and System Operator.

3 IMPACTS

3.1 Impact on BSC Systems and processes

An assessment has been undertaken by the PSMG in respect of all BSC Systems and processes and the following have been identified as potentially being impacted by the Modification Proposal.

BSC System / Process	All Options
Balancing Mechanism Activities	A new process would be required in order to allow Acceptances which result from Emergency Instructions to be identified within Settlement. It may be necessary for the Transmission Company to identify Emergency Instructions and potentially to flag whether each instruction was issued for energy or System reasons.
Settlement	Settlement Systems and/ or process would require amending in order to allow Acceptances which result from Emergency Instructions to be differentiated within Settlement.

3.2 Impact on other systems and processes used by Parties

An assessment has been undertaken by the PSMG in respect of systems and processes used by Parties and the following areas have been identified as potentially impacted by the Modification Proposal.

System / Process	All Options
Settlement Calculations	Parties may be required to amend their systems to account for the amended treatment of Emergency Instructions within Settlement.

3.3 Impact on documentation

3.3.1 Impact on Balancing and Settlement Code

An assessment has been undertaken by the PSMG in respect of all Sections of the Code and the following areas have been identified as potentially impacted by the Modification Proposal. It should be noted that the changes to the Code to be implemented under Options 1 and 2 would be identical, only the method of implementation these Code changes would vary.

Item	Option 1 and Option 2	Option 3
Q	New requirement for Transmission Company to identify Acceptances resulting from Emergency Instructions and to flag whether each instruction was taken for system or energy reasons.	New requirement for Transmission Company to identify Acceptances resulting from Emergency Instructions and to flag whether each instruction was taken for system or energy reasons. Methodology for determining the replacement Acceptance Price for Emergency Instructions to be added.
T	Amendments to allow Acceptances resulting from Emergency Instructions issued for system reasons to be included in the Energy Imbalance Price calculation at zero price.	Amendments to allow Acceptances resulting from Emergency Instructions issued for system reasons to be included in the Energy Imbalance Price at the replacement

	Acceptance price.
X	New definitions required.

3.3.2 Impact on Code Subsidiary Documents

An assessment has been undertaken by the PSMG in respect of all Code Subsidiary Documents and the following documents have been identified as potentially impacted by the Modification Proposal.

Item	Option 1	Option 2	Option 3
SAA SD	The Settlement Administration Agent Service Description would need to be amended in line with changes to the calculation of Energy Imbalance Prices where an Emergency Instruction has been issued.	The Settlement Administration Agent Service Description would need to be amended to support the adjustment of BSAD in order to give Energy Imbalance Prices representative of the P171/ P172 methodology.	The Settlement Administration Agent Service Description would need to be amended to support the adjustment of Acceptance Prices.
BMRA SD	The Balancing Mechanism Reporting Agent Service would need to be amended in line with changes to the calculation of Energy Imbalance Prices where an Emergency Instruction has been issued.	Changes may be required to the BMRA SD	Changes may be required to the BMRA SD
BSCP18	A new process for the treatment of Emergency Instructions may be required.		
NDFC	NETA Data File Catalogue would require amendment		
Reporting Catalogue	Amended to reflect changes to SAA-I014.	N/A	N/A

3.4 Impact on Core Industry Documents

An assessment has been undertaken by the PSMG in respect of Core Industry Documents and the following documents have been identified as potentially being impacted by the Modification Proposal.

Item	All Options
Grid Code	Although P171 and P172 do not propose to amend the treatment of Emergency Instructions under the Grid Code there is a potential interaction to be considered.
Supplemental Agreements	Potentially impacted, this depends on where it is deemed appropriate for the methodology for differentiating between energy and System balancing Emergency Instructions to sit.

3.5 Impact on other configurable items

An assessment has been undertaken by the PSMG in respect of other configurable items and the following have been identified as potentially impacted by the Modification Proposal.

Item	Option 1	Option 2	Option 3
SAA URS	The Settlement Administration Agent User Requirements Specification would need to be amended in line with changes to the calculation of Energy Imbalance Prices where an Emergency Instruction has been issued.	The Settlement Administration Agent Service Description would need to be amended to support the adjustment of BSAD in order to give Energy Imbalance Prices representative of the P171/ P172 methodology.	The Settlement Administration Agent Service Description would need to be amended to support the adjustment of Acceptance Prices.
BMRA URS	The Balancing Mechanism Reporting Agent User Requirements Specification potentially impacted depending on the solution progressed, see section 1.2.2.	Changes may be required to the BMRA User Requirements Specification	Changes may be required to the BMRA User Requirements Specification
IDD	New interface from Transmission Company to Central Systems required Changes to the SAA-I014 required	New interface from BSCCo to Central Systems potentially required	New interface from BSCCo to Central Systems potentially required

4 IMPACT ON BSCCO

An assessment has been undertaken by the PSMG in respect of BSCCo and the following have been identified as potentially impacted by the Modification Proposal.

Area of Business	Option 1	Option 2	Option 3
BSCCo Systems	There would be an impact on the BSCCo Market monitoring system (TOMAS) and potential changes to: <ul style="list-style-type: none"> TOMAS Requirement Catalogue TOMAS DATA Catalogue TOMAS System Design TOMAS User Guide		
BSCCo Procedures	N/A	New Procedures would be required to support the calculation of Energy Imbalance Prices and communication to the SAA	New Procedures would be required to support the calculation of AD-Hoc cashflows to/from the Lead Party of the affected BM Unit and the System Operator

5 DOCUMENT CONTROL

a Authorities

Version	Date	Author	Reviewer	Reason for review
0.1	22/09/04	Change Delivery	PSMG	Modification Group Review
0.1	22/09/04	Change Delivery	Design Authority	Technical Review
0.1	22/09/04	Change Delivery	Service Delivery	Technical Review
1.0	28/09/04	Change Delivery	Industry	Impact Assessment

b References

Ref	Document	Owner	Issue date	Version
1	Modification Proposal P171 – ‘Retrospective removal of Emergency Instructions taken for System reasons from Imbalance Price’	ELEXON	03/09/04	1.0
2	Modification Proposal P172 – ‘Removal of Emergency Instructions taken for System reasons from Imbalance Price’	ELEXON	03/09/04	1.0
3	Initial Written Assessment P171 – ‘Retrospective removal of Emergency Instructions taken for System reasons from Imbalance Price’	ELEXON	03/09/04	1.0
4	Initial Written Assessment P172 – ‘Removal of Emergency Instructions taken for System reasons from Imbalance Price’	ELEXON	03/09/04	1.0
5	BSCP14 – ‘Processing of Manifest Error Claims’	ELEXON	20/06/04	3.0

Modification documentation is available for download on the BSC website at:

<http://www.elexon.co.uk/changeimplementation/ModificationProcess/modificationdocumentation/default.aspx>