

ASSESSMENT REPORT for Modification Proposal P172
Modification Proposal P172 Removal of Emergency Instructions taken
for System reasons from Imbalance Price

Prepared by: Pricing Issues Standing Modification Group (PSMG)

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This document has been distributed in accordance with Section F2.1.10¹ of the Balancing and Settlement Code.

RECOMMENDATIONS

The Modification Group invites the Panel to;

- **AGREE that the Proposed Modification P172 should not be made;**
- **AGREE a provisional Implementation Date for Proposed Modification P172 of 5 Working Days after an Authority decision;**
- **AGREE that the Alternative Modification P172 should be made;**
- **AGREE a provisional Implementation Date for Alternative Modification P172 of 5 Working Days after an Authority decision;**
- **AGREE that Modification Proposal P172 be submitted to the Report Phase; and**
- **AGREE that the draft Modification Report be issued for consultation and submitted to the Panel Meeting of 13 January 2005.**

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¹ The current version of the Balancing and Settlement Code (the 'Code') can be found at <http://www.elexon.co.uk/bscrelateddocs/BSC/default.aspx>

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SUMMARY OF IMPACTED PARTIES AND DOCUMENTS

As far as the PSMG has been able to assess the following parties/documents have been identified as being potentially impacted by Modification Proposal 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"/>	I <input type="checkbox"/>	Core Industry Documents	
ECVNA <input type="checkbox"/>	J <input type="checkbox"/>	Grid Code <input type="checkbox"/>	
MVRNA <input type="checkbox"/>	K <input type="checkbox"/>	Supplemental Agreements <input checked="" type="checkbox"/> ²	
BSC Agents			
SAA <input checked="" type="checkbox"/>	L <input type="checkbox"/>	Ancillary Services Agreements <input type="checkbox"/>	
FAA <input type="checkbox"/>	M <input type="checkbox"/>	Master Registration Agreement <input type="checkbox"/>	
BMRA <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Data Transfer Services Agreement <input type="checkbox"/>	
ECVAA <input type="checkbox"/>	O <input type="checkbox"/>	British Grid Systems Agreement <input type="checkbox"/>	
CDCA <input type="checkbox"/>	P <input type="checkbox"/>	Use of Interconnector Agreement <input type="checkbox"/>	
TAA <input type="checkbox"/>	Q <input checked="" type="checkbox"/>	Settlement Agreement for Scotland <input type="checkbox"/>	
CRA <input type="checkbox"/>	R <input type="checkbox"/>	Distribution Codes <input type="checkbox"/>	
Teleswitch Agent <input type="checkbox"/>	S <input type="checkbox"/>	Distribution Use of System Agreements <input type="checkbox"/>	
SVAA <input type="checkbox"/>	T <input checked="" type="checkbox"/>	Distribution Connection Agreements <input type="checkbox"/>	
BSC Auditor <input type="checkbox"/>	U <input type="checkbox"/>	BSCCo	
Profile Administrator <input type="checkbox"/>	V <input type="checkbox"/>	Internal Working Procedures <input checked="" type="checkbox"/>	
Certification Agent <input type="checkbox"/>	W <input type="checkbox"/>	Other Documents	
MIDP <input type="checkbox"/>	X <input checked="" type="checkbox"/>	Transmission Licence <input type="checkbox"/>	
Other Agents			
SMRA <input type="checkbox"/>		System Operator-Transmission Owner Code <input type="checkbox"/>	
Data Transmission Provider <input type="checkbox"/>			

² Were P172 approved consequential changes may be made to Condition C16 Statements (specifically the balancing principles statement). The Transmission Company have taken an action to progress this change. However, it should be noted that P172 is not dependent on these changes being approved.

1 DESCRIPTION OF PROPOSED MODIFICATION AND ASSESSMENT AGAINST THE APPLICABLE BSC OBJECTIVES

1.1 Modification Proposal

Modification Proposal P172 'Removal of Emergency Instructions taken for System reasons from Imbalance Price' (P172, Reference 1)) was raised on 25 August 2004 by British Gas Trading (BGT). P172 seeks to remove Emergency Instructions issued for System balancing reasons from Energy Imbalance Prices. It is the intention of the Proposer that P172 would apply on a purely prospective basis (i.e. would **not** apply to historic Emergency Instructions).

Current Arrangements:

Under the current baseline, in accordance with Section Q5.1.3 (b) of the Code, an Emergency Instruction issued in respect of a BM Unit under the Grid Code is classed as an Acceptance for the purpose of Settlement. The Code does not 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 2), 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 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, therefore the Acceptance Volume 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 Energy 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.

Proposed Modification P172:

Under Proposed Modification 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 Energy 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). P172 proposes that the treatment of Emergency Instructions issued for energy purposes would be unchanged.

History:

The first Emergency Instruction was issued under NETA on 19 May 2004, 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 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 will impact the calculation of System Sell Price (SSP) for the relevant periods. ELEXON's estimate of the revised SSPs which will result from the inclusion of the Bid Acceptance is:

- -£96.68/MWh in Settlement Period 27³; 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.

As a purely prospective Modification Proposal, P172 would not apply to the Damhead Creek incident.

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

The PSMG have met four times, on the 14 September 2004, 11 October 2004, 12 November and the 22 November 2004. The Modification Proposal was issued for industry consultation to seek the views of industry participants on the issues discussed and to support the Group's assessment against the Applicable BSC Objectives. BSC Agent, Transmission Company and participant impact assessment was conducted.

It should be noted that Modification Proposal P171 'Retrospective removal of Emergency Instructions taken for System reasons from Imbalance Price' (P171, Reference 4), Modification Proposal P173 'Revised Settlement Arrangements for Emergency Instructions' and Modification Proposal (P173, Reference 5) and P175 'Development of Provisions Related to Certain Bid-Offer Acceptances Issued Pursuant to the Grid Code (e.g. BC2.9 and BC2.10)' (P175, Reference 6) also seek to amend the treatment of Emergency Instructions within Settlement and were considered by the PSMG in parallel with P172. P171, P173 and P175 are considered in separate documents.

³ 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).

1.2 Issues raised by the Proposed Modification

The PSMG have considered the following aspects of the Modification Proposal:

- **Circumstances when an Emergency Instruction may be issued under the Grid Code;**
- **Impact on Energy Imbalance Prices;**
- **Process or mechanism for differentiating between the energy and System balancing elements of Emergency Instructions;**
- **Potential Alternative Modifications;**
- **Solution development; and**
- **Interaction with other Modification Proposals.**

Details of PSMG discussions on these issues are included in the remainder of this document.

1.2.1 Circumstances when an Emergency Instruction may be issued under the Grid Code;

The PSMG requested details of the circumstances which would require an Emergency Instruction to be issued under the Grid Code via Transmission Company impact assessment (see Annex 4).

The Transmission Company indicated that all Emergency Instructions are issued in order to preserve the integrity of the GB Transmission System and any synchronously connected External System. Grid Code Section BC 2.9 gives examples of the types of Emergency Instructions that may be issued:

*BC2.9.1.2 Examples of circumstances that may require the issue of **Emergency Instructions** include:-*

- (a) **Events on the GB Transmission System or the System of another User; or***
- (b) **the need to maintain adequate System and Localised NRAPM in accordance with BC2.9.4 below; or***
- (c) **the need to maintain adequate frequency sensitive Generating Units in accordance with BC2.9.5 below; or***
- (d) **the need to implement Demand Control in accordance with OC6; or***
- (e) (i) **the need to invoke the Black Start process or the Re-Synchronisation of De-Synchronised Island process in accordance with OC9; or***
*(ii) **the need to request provision of a Maximum Generation Service.***

*BC2.9.2.3 In all cases under this BC2.9 except BC2.9.1.2 (e) where **NGC** issues an **Emergency Instruction** to a **BM Participant** which is not rejected under BC2.9.2.1, the **Emergency Instruction** shall be treated as a **Bid-Offer Acceptance**. For the avoidance of doubt, any **Emergency Instruction** issued to a **Network Operator** or to an **Externally Interconnected System Operator** will not be treated as a **Bid-Offer Acceptance**.*

The PSMG noted that Emergency Instructions may be issued for a range of different circumstances and the solution to P172 must be flexible to these circumstances.

1.2.2 Impact on Energy Imbalance Prices

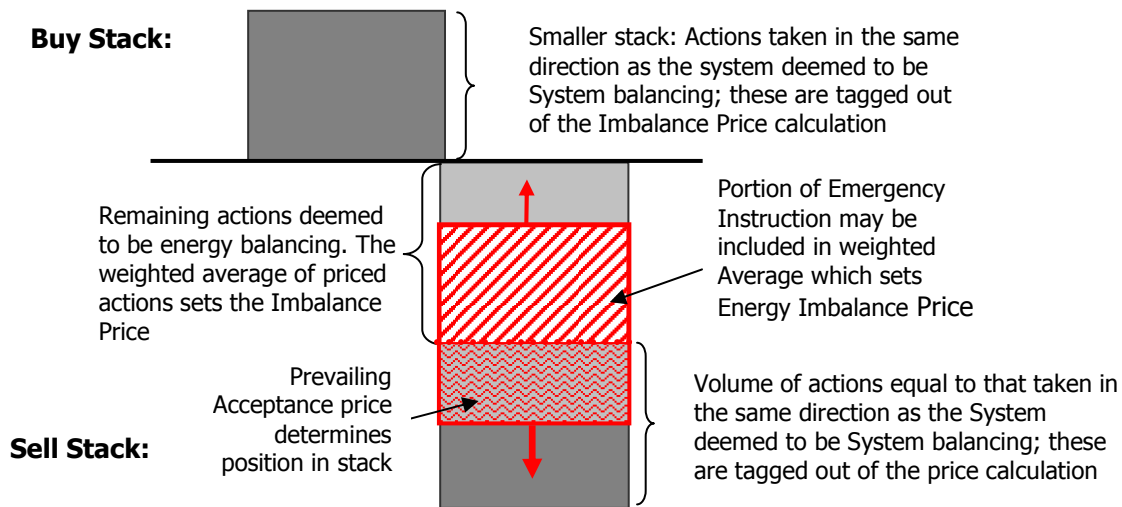
P172 proposes Acceptances resulting from Emergency Instructions issued for System reasons (as determined by the Transmission Company) would be included in the calculation of Energy Imbalance Price as an un-priced volume. The PSMG have considered how this would affect the calculation of Energy Imbalance Prices.

It should be noted that the treatment of Acceptances resulting from Emergency Instructions issued for System reasons proposed under P172 is equivalent to that of Bid Offer Acceptances that are Continuous Acceptance Duration Limit (CADL) Tagged. Where an action is not specifically identified as being taken for System reasons the existing arrangements will apply.

The following diagrams illustrate the treatment of an Emergency Instruction under the current arrangements and P172. In the examples, an Emergency Instruction has been issued reducing the output of a BM Unit during a Settlement Period when the System would otherwise be long.

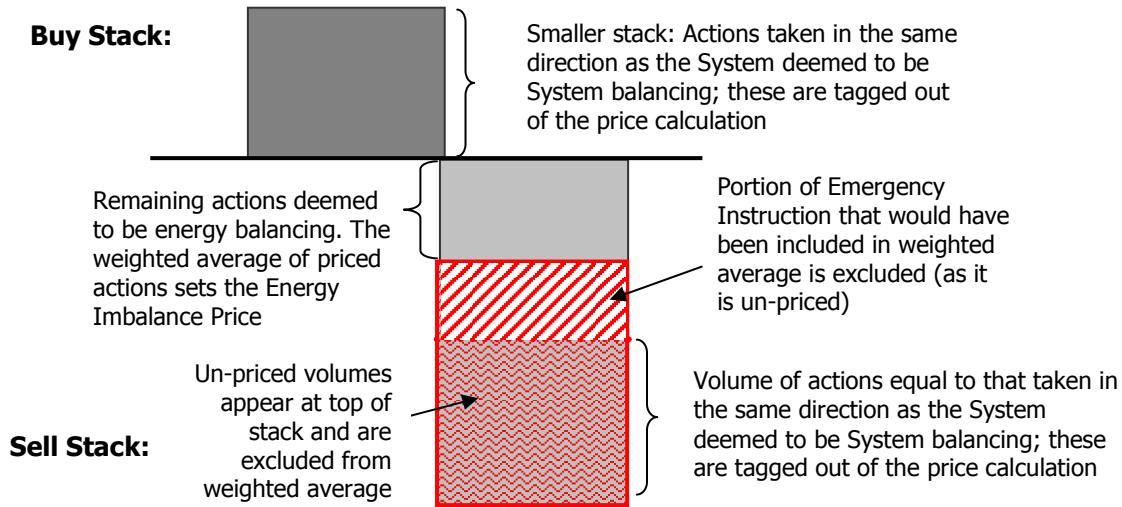
Current Baseline:

Under the current baseline the prevailing Bid/ Offer Price determines the position of the Emergency Instruction Acceptance within the NIV tagging stack. It is therefore possible that the Emergency Instruction may be included in the portion of the stack which is deemed to be energy balancing and, as a consequence, may be included in the weighted average which sets the Energy Imbalance Price.



P172 Proposed:

Under P172 the Emergency Instruction (where issued for System purposes) would be included as an un-priced volume within the NIV tagging stack. Under this approach the associated volume is included in the NIV tagging process but can not feed into the weighted average on which the Energy Imbalance Price is set.



The previous examples illustrate that P172 would ensure the cost of an Emergency Instruction issued for System purposes would not be included in the Energy Imbalance Price. However, the PSMG noted that there may be occasions where it could be considered appropriate to include elements of an Emergency Instruction issued for System purposes within the Energy Imbalance Price as considered further in section 1.2.3.

1.2.3 Differentiation of System and Energy Actions

P172 proposes a treatment of Emergency Instructions which requires individual Emergency Instructions to be specifically tagged as System balancing in some situations. It was recognised that in the majority of cases an Emergency Instruction would be issued primarily for System reasons. Therefore, the PSMG considered the possibility that all Emergency Instructions should be treated as System balancing. However, it was noted there were feasible circumstances under which an Emergency Instruction may be issued for energy balancing purposes (in particular instructions for BM Units to operate outside their dynamics in periods of supply/demand imbalance⁴). Therefore, it was agreed that the solution should recognise the situation where an Emergency Instruction is issued primarily for energy purposes.

The Group therefore considered how to differentiate between energy and System balancing actions. It was suggested that criteria could be included in the Code detailing the type of actions that should be deemed to be System balancing actions. The Transmission Company could then state whether an action was System balancing or not when the Acceptance is submitted. The alternative solution was that the Transmission Company would use its discretion to decide whether an Emergency Instruction was System balancing based on the current criteria contained in the Balancing Services Adjustment Data (BSAD) methodology for dealing with Balancing Services. Having considered the initial Transmission Company analysis the Group agreed that the Transmission Company should have the discretion to flag Emergency Instructions as System balancing and that they would base their decision on the criteria currently contained in the BSAD methodology rather than having a further set of criteria contained in the Code.

The PSMG then considered whether it was appropriate to treat an Emergency Instruction carried out for System purposes as an un-priced volume. In practice an Emergency Instruction (even if issued for System purposes) may deliver both energy and System balancing.

⁴ Note that Acceptances are not issued as a result of Demand Control.

In the case of the Damhead Creek incident, an Acceptance resulting from an Emergency Instruction issued for System reasons has influenced the Energy Imbalance Price. On initial consideration it appears that NIV tagging has not fully functioned, since a System balancing action has been included in the Energy Imbalance Price. However, this is not necessarily the case since, although an action may be taken primarily for System reasons, it may consequently deliver an element of energy balancing. This can be illustrated via the example where the System is long and it is necessary to issue an Emergency Instruction reducing the output of a BM Unit for System reasons. In this case the Emergency Instruction has also delivered an element of energy balancing, since it has reduced output onto the System and thereby reduced the energy actions required to balance the System.

The PSMG noted that treating any individual action as distinctly energy or System balancing is a simplification which is required within the calculation of Energy Imbalance Prices in order to allow efficient processing. However, some members of the PSMG were of the view that in the limited circumstance of an Emergency Instruction and where the associated Acceptance was being entered into Settlement post Gate Closure it may be possible to utilise an approach which differentiated the System and energy balancing delivered.

In recognition of the potential for an Emergency Instruction issued primarily for System balancing to deliver consequential energy balancing, the PSMG developed an alternative solution to P172. This potential Alternative Modification P172 would utilise replacement Acceptances, based on the Bid/Offer available to Transmission Company that would have been taken in the absence of the Emergency Instruction. The normal NIV tagging process would then be used to determine whether these Acceptances, or part thereof, were defined as a 'System' rather than 'energy'. 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. This potential Alternative Modification P172 is considered in more detail within section 1.2.4.

Conclusions of the PSMG:

- **Under P172 the Transmission Company would identify specific 'System' Emergency Instructions;**
- **Emergency Instructions issued for System reasons may deliver consequential energy balancing; and**
- **Proposed Modification P172 does not recognise any consequential energy balancing delivered by an Emergency Instruction.**

1.2.4 Potential Alternative Solution

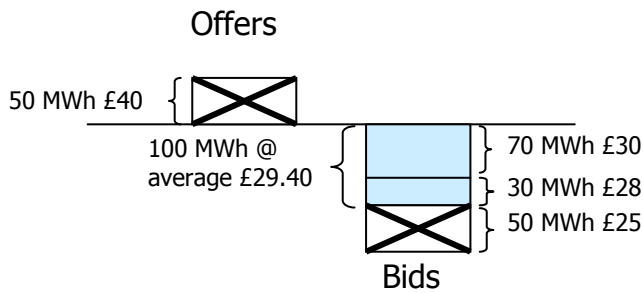
Noting that Proposed Modification P172 would not recognise any consequential energy balancing delivered by an Emergency Instruction, the PSMG considered a potential alternative solution.

As initially developed, under the potential Alternative Modification 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 the 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 reasons.

The following scenarios demonstrate the rationale for, and impact of, this potential alternative approach. These examples illustrate how the use of a replacement price could be considered to give an Energy Imbalance Price more closely aligned with that calculated in the absence of an Emergency Instruction.

Scenario A: Market Long (No Emergency Instruction)

- Market 'long' by 100 MWh

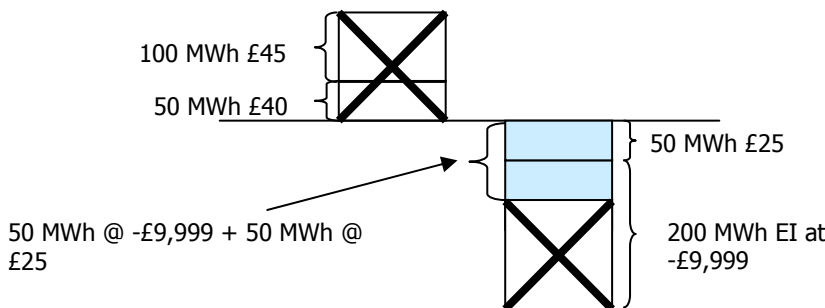


- SO takes 50MWh of Offers and 50MWh of Bids for 'System' purposes
- SO takes 100 MWh of Bids for 'Energy' purposes
- NIV Tagging removes 50 MWh of Offers and 50 MWh of Bids
- **Market 'long' & Main Price SSP = £29.40** (30x0.7+28x0.3)

In this scenario the market is long and the cost of the Bids deemed to deliver energy balancing is reflected in the resulting Energy Imbalance Price.

Scenario B: Market Long Prior to Emergency Instruction (Current Code Baseline)

- Market 'long' by 100 MWh prior to Emergency Instruction
- Emergency Instruction issued which reduces market length by 200 MWh

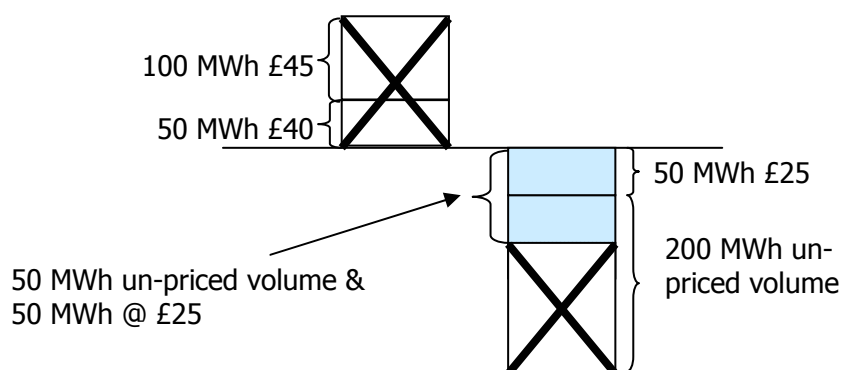


- SO issues BOA for 200 MWh (at prevailing Bid price -£9,999) to affected Party
- SO takes 50 MWh of Bids & 50 MWh of Offers (it is assumed that these were taken at a price equal to those actions deemed 'System' in Scenario A on the basis that the same System conditions were being addressed)
- SO takes 100 MWh of Offers to counteract effect of Emergency Instruction
- NIV Tagging removes 150 MWh of Offers and 150 MWh of Bids (i.e. a portion of the Emergency Instruction)
- **Market 'long' & Main Price SSP = -£4,987 (i.e. -9,999x0.5 + 25x0.5)**

In this scenario, since a proportion of the Emergency Instruction is deemed to have delivered energy balancing, the cost of the Emergency instruction is reflected in the resulting Energy Imbalance Price. Hence, the Emergency Instruction has directly influenced the Energy Imbalance Price (in this case resulting in a large negative SSP). Therefore, under the current baseline any consequential energy balancing delivered by an Emergency Instruction is explicitly priced at the prevailing Bid/ Offer price.

Scenario C: Market Long Prior to Emergency Instruction (Proposed)

- Market 'long' by 100MWh prior to Emergency Instruction
- Emergency Instruction issued which reduces market length by 200 MWh



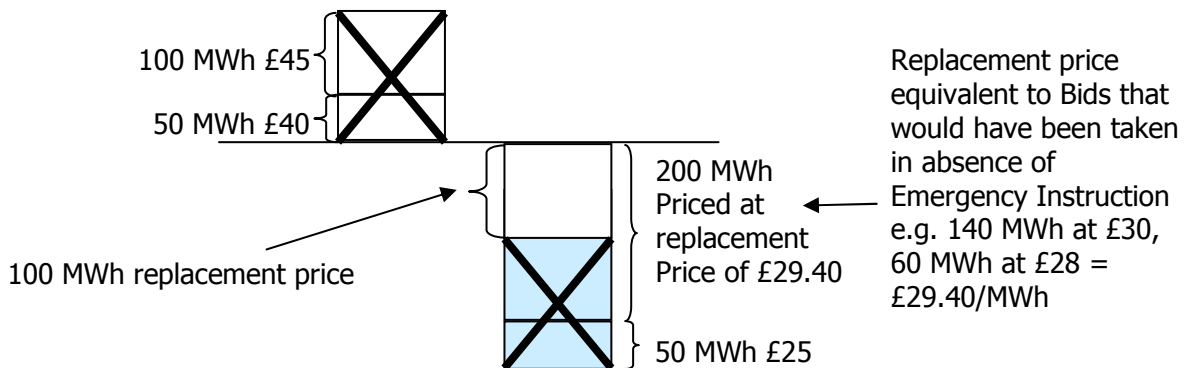
- Emergency Instruction volume (200 MWh) feeds into Bid stack as un-priced 'System' volume
- SO takes 50 MWh of Bids and 50 MWh of Offers (it is assumed that these were taken at a price equal to those actions deemed 'System' in Scenario A on the basis that the same System conditions were being addressed)
- SO takes 100 MWh of Offers to counteract effect of Emergency Instruction
- NIV Tagging removes 150 MWh Offers and 150 MWh of Emergency Instruction Volume
- **Market 'long' & Main Price SSP (un-priced vol. not included) = £25.00**

In this scenario, a proportion of the Emergency Instruction that would be deemed energy balancing has been explicitly tagged as System balancing (i.e. as an un-priced volume). As such the action is not included in the weighted average which sets the price. Hence, neither the cost of the Emergency Instruction nor the cost of the actions that would have been required in the absence of the Emergency Instruction is reflected in the resulting Energy Imbalance Price (in this case, seen by a decrease in SSP in comparison to the scenario where no Emergency Instruction is issued). Therefore, under the Proposed Modification any consequential energy balancing delivered by an Emergency Instruction is implicitly priced at the average price of other actions deemed to be taken for 'energy' purposes in the Settlement Period.

A decrease in SSP is a disbenefit for Parties that are long as they will get paid this price for their imbalance volume. Therefore, in the scenario above, a Party which has over contracted would be in a slightly worse financial position as a result of the Emergency Instruction than they would be had the emergency action not been taken (Scenario A).

Scenario D: Market Long Prior to Emergency Instruction (Alternative)

- Market 'long' by 100 MWh prior to Emergency Instruction
- Emergency Instruction issued which reduces market length by 200 MWh



- Emergency Instruction volume (200 MWh) feeds into Bid stack at the 'replacement' price.
- SO takes 50 MWh of Bids and 50 MWh of Offers (it is assumed that these were taken at a price equal to those actions deemed 'System' in Scenario A on the basis that the same System conditions were being addressed)
- SO takes 100 MWh of Offers to counteract Emergency Instruction
- NIV Tagging removes 150 MWh Offers and 150 MWh of Bids (including a portion of the Emergency Instruction)
- **Market 'long' & Main Price SSP = £29.40 (i.e. 1.0x£29.40)**

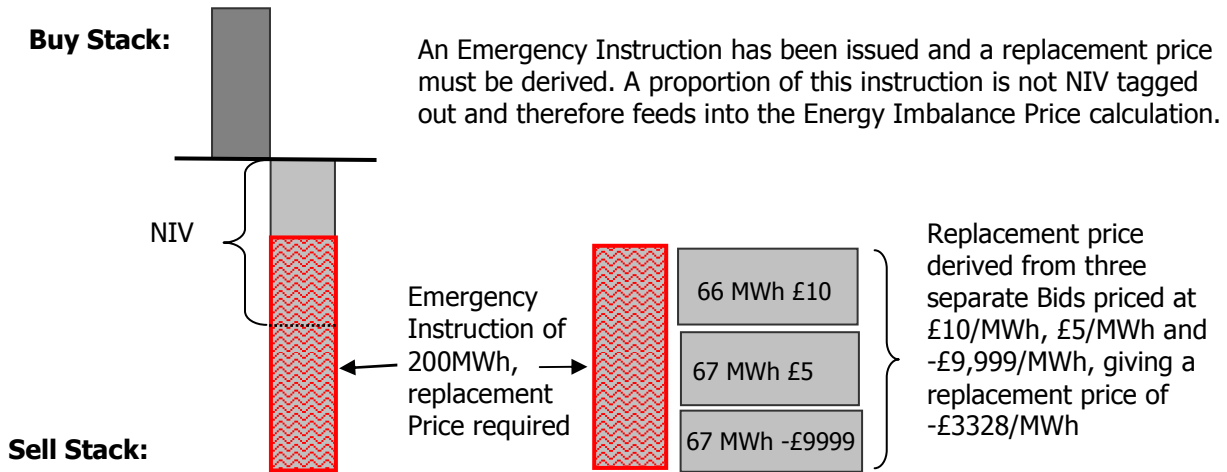
In this scenario, the proportion of the Emergency Instruction that is deemed energy balancing has been included in the Energy Imbalance Price calculation at the average price of Bids that would have been acceptance in the absence of an Emergency Instruction. Hence, the direct cost of the Emergency Instruction is not included in the Energy Imbalance Price, however the cost of the actions that would have been required in the absence of the Emergency Instruction is reflected (this is observed via an SSP equal to that in the scenario where no Emergency Instruction is issued). Therefore, under the Alternative Modification any consequential energy balancing delivered by an Emergency Instruction is explicitly priced at the average cost of actions that would have been taken in the absence of an Emergency Instruction.

In the scenario above, a Party which has over contracted would be in the same financial position, as a result of the Emergency Instruction, that it would be had the emergency action not been taken (since the SSPs are equal).

The Group agreed that if there were not enough Bid-Offer Pairs to offset the relevant Acceptance Volume, or only enough Bid-Offer Pairs to offset a portion of the relevant Acceptance Volume, then the relevant Acceptance Volume (or part thereof) would be included in the Energy Imbalance Price calculation at the price associated with the Bid or Offer that the Transmission Company had actually accepted (i.e. the Emergency Instruction). Consideration of the mechanics of this process led to further development of the alternative solutions as follows:

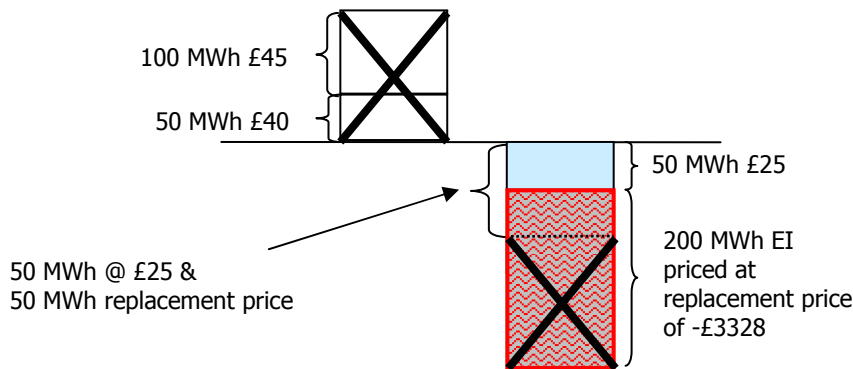
Further development of the alternative solution:

The PSMG initially agreed that the replacement price should be derived based on the average cost of Bids and Offers that would have been taken by the Transmission Company in the absence of the Emergency Instruction. This replacement price would then be applied to the entire Emergency Instruction Acceptance Volume. However, it was noted that this approach may give significantly different results in comparison to the situation where the Transmission Company took a number of individual actions in order to realise an equivalent volume. This is illustrated in the following example:



Scenario 1: single Emergency Instruction Volume

Inclusion of the entire Emergency Instruction volume at the average price of a number of Bids can result in each of the Bids used to set the replacement price influencing the Energy Imbalance Price (as illustrated via impact of -£9,999 Bid).

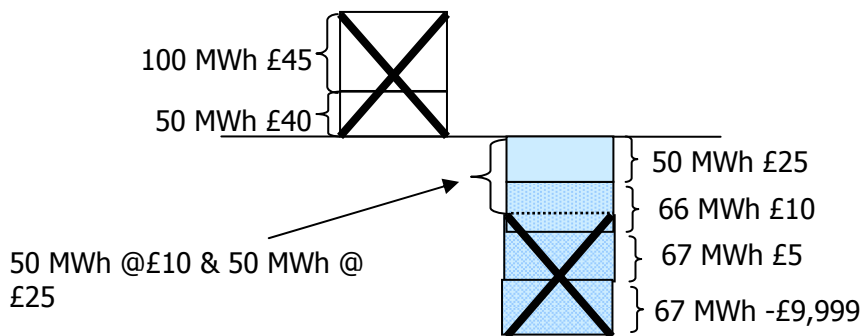


- Emergency Instruction volume (200 MWh) feeds into Bid stack at the replacement price.
- NIV Tagging removes 150 MWh Offers and 150 MWh of Emergency Instruction
- **Market 'long' & Main Price SSP = £-1676.5 (i.e. 25x0.5+ -3328x0.5)**

The previous example (scenario 1) demonstrated that, where a single replacement volume is used for the Emergency Instruction, each of the actions used to set the replacement price could potentially influence the Energy Imbalance Price. However, use of a replacement price is intended to give an Energy Imbalance Price equivalent to that which would be calculated in the absence of an Emergency Instruction, comparison of scenario 1 and scenario 2 illustrates how this may not be the case when a single replacement volume is used:

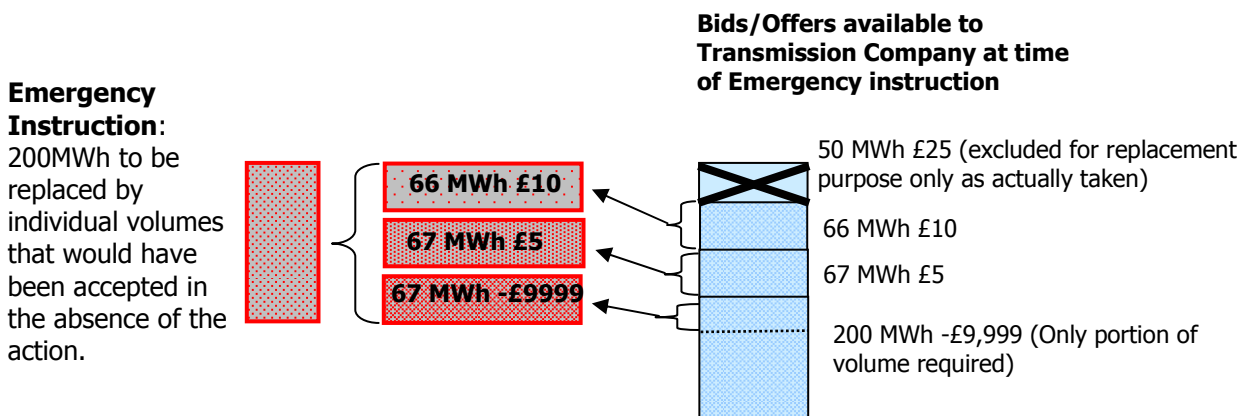
Scenario 2: No Emergency Instruction

Here the high cost Bids have been tagged out of the price calculation and therefore do not influence the Energy Imbalance Price.



- Emergency Instruction volume (200 MWh) feeds into Bid stack at the replacement price.
- NIV Tagging removes 150 MWh Offers and 150 MWh of Bids (including the -£9,999 Bid)
- **Market 'long' & Main Price SSP = £17.5 (i.e. 0.50*£25+0.5*£10)**

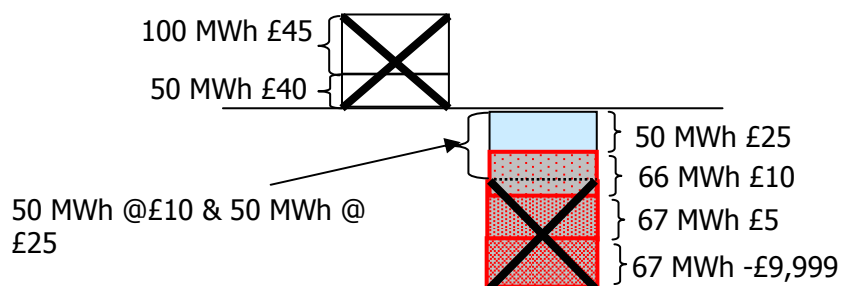
The PSMG recognised that, in order to give an Energy Imbalance Price aligned with that generated in the absence of an Emergency Instruction; the associated volume would have to be separated to represent each of the individual Acceptances from which the replacement price is derived. This would be achieved by identifying the Bids Offer Pairs available to the Transmission Company at the time of the Emergency Instruction. From this list, those Bids/ Offers that were actually taken by the Transmission Company (with the exception of the Emergency Instruction Bid/Offer) would be excluded for the purpose of replacing the Emergency Instruction. Replacement volumes would then be selected from the remaining Bids/Offers (in accordance with the Transmission Company’s normal methodology for accepting Bids/ Offers) as illustrated in the example below:



Comparison of scenario 2 and scenario 3 illustrates that splitting the Emergency instruction into separate volumes results in an Energy Imbalance Price more closely aligned with that generated in the absence of an Emergency Instruction.

Scenario 3: Split Emergency Instruction Volume

Three separate volumes are included in the calculation in order to represent the Emergency Instruction.



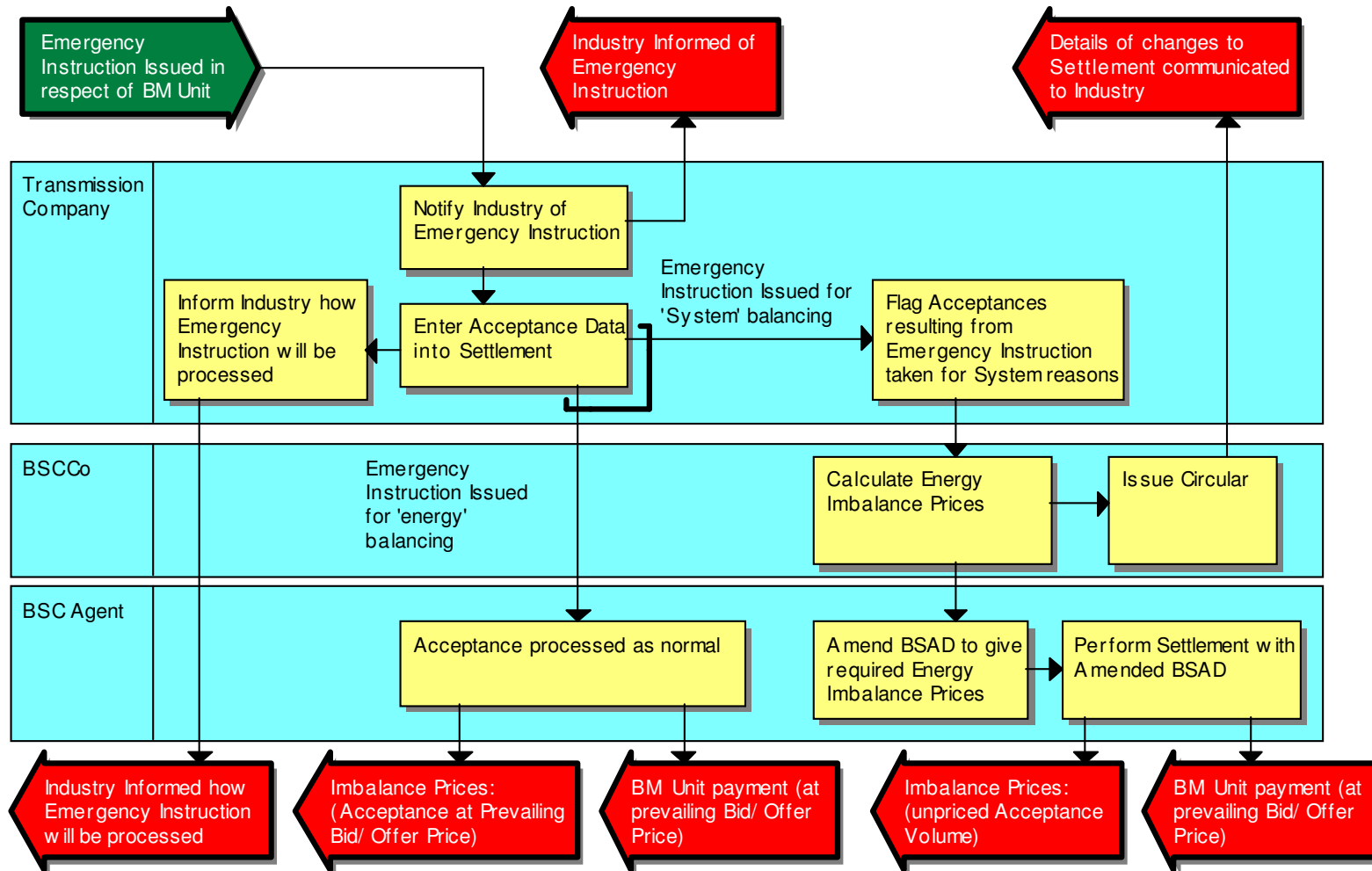
- Three separate Volumes feed into Bid stack to represent the Emergency Instruction.
- NIV Tagging removes 150 MWh Offers and 150 MWh of Bids (including the -£9,999 and £5 Bids)
- **Market 'long' & Main Price SSP = £17.5 (i.e. 25x0.5+ 10*0.5)**

The PSMG therefore agreed that, under the potential alternative solution, the Emergency Instruction would be replaced in the Energy Imbalance Price calculation by those Bids/ Offers that would have been taken by the Transmission Company in the absence of the Emergency Instruction.

The PSMG considered whether this alternative solution to P172 would better facilitate the Applicable BSC Objectives as compared to the Proposed Modification, and as such should form Alternative Modification P172. These discussions are outlined in section 1.5.

1.2.5 Proposed Modification Solution development

The PSMG have considered both a manual and an automated solution to P172. Having identified the cost of implementing an automated solution via impact assessment and noting the expected infrequency of occurrences, the PSMG agreed that a manual solution should be progressed. Details of the manual solution are included here, for background on the automated solution considered see Reference 7. The following diagram illustrates, at a high level, how P172 would be implemented under the manual solution agreed by the PSMG; each stage of the process and the relevant discussion of the PSMG are then considered below.



1.2.5.1 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 Balancing Reporting Mechanism System (BMRS) (using existing System Warning message functionality). This information would be limited to the time of the Emergency Instruction and the affected BM Unit. The PSMG agreed that this notification would be required in order to allow the industry to obtain prior warning that a post event Acceptance would be entered into Settlement (consequently impacting Energy Imbalance Prices).

1.2.5.2 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 (at this stage the Acceptance would be included at the prevailing Bid/ Offer price).

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 electronically⁵. Therefore, the Acceptance would be manually entered into Settlement post event (NB: the system functionality to perform this exists and is currently utilised under BSCP18 'Corrections to Bid-Offer Acceptance Related Data'). In the majority of cases this would be conducted prior to the Interim Information (II) Run performed at D+5WD. However, in extreme circumstances (for example where a number of Emergency Instructions were issued in close succession), this timescale may not be met and data would be entered into Settlement at the first available Settlement Run, which should be the Initial Settlement (SF) Run.

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 agreed that the Transmission Company would make this determination using the methodology currently used for Balancing Services. It should be noted that where the Transmission Company have not identified an individual Emergency Instruction as being issued for System reasons the associated Acceptance will be subject to the normal tagging process and this will determine whether or not the action will be deemed to be System or energy balancing (as such the cost of the Emergency Instruction may be included in the Energy Imbalance Price).

1.2.5.3 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 (via the BMRS) 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.

1.2.5.4 Process Acceptance as Normal (II)

Where the Transmission Company determines 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:

⁵ Note that Emergency Instructions are not issued electronically as they must be preceded with the words "This is an Emergency Instruction" (BC2.9.2.2). Additionally, Grid Code BC2.6.2 says that Emergency Instructions will normally be issued by telephone. Therefore the Acceptances would need to be entered into Settlement manually, post event.

- 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 would be an impact on BSUsS payments for all Parties; and
- 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 first available Settlement Run (which should be the II Run) onwards.

1.2.5.5 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 first available Settlement Run, which should be the II Run). The PSMG agreed that BSCCo would be informed via the manual interface currently utilised to amend Acceptance data under BSCP18. 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. This has Credit Cover implications as considered in section 1.2.5.9.

1.2.5.6 BSCCo Calculate the Energy Imbalance Prices (SF)

Prior to the first available Settlement Run, which should be the Initial Settlement Run (SF) on D+16WD, BSCCo will calculate the Energy Imbalance Prices that would have been generated had the P172 requirements been applied, as follows:

1. The Settlement Report (SAA-I014 flow) produced at II (D+5WD) will include the Acceptance Data associated with the Emergency Instruction at the prevailing Bid/ Offer Price, as a consequence it will indicate that:
 - The Lead Party of the affected BM Unit will be paid (or Pay) for the Acceptance at the prevailing Bid/ Offer Price (this cashflow is 'correct');
 - The Energy Imbalance Prices will be calculated including the Acceptance Volume at the prevailing Bid/ Offer Price (these prices are 'incorrect'); and
 - The latest BSAD data will be included un-modified (this data is 'correct').

It should be noted that no actual cashflows would result from the II Run as this contains purely indicative information.

2. BSCCo will calculate the Energy Imbalance Prices that would have been generated had the 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).
3. The 'correct' Energy Imbalance Prices would then be communicated to the Settlement Administration Agent (SAA) such that they can be reflected in the SF Run.

1.2.5.7 SAA Perform Settlement with amended BSAD (SF).

On receipt of the 'correct' Energy Imbalance Prices from BSCCo, the 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 BSCCo and the 'incorrect' Prices generated in the II Run, the required adjustments to the Imbalance Prices (ΔBP_j and ΔSP_j) would be calculated;
2. These adjustments (ΔBP_j and ΔSP_j) would then be included in the BSAD price adjustment data such that:

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

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

(NB: Original refers to BSAD as submitted by NGC and Adjusted refers to BSAD amended to give the desired Imbalance Prices)

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

For the avoidance of doubt, "adjusted" BSAD is the mechanism that would be used in order to provide an adjusted Energy Imbalance Price as part of this process. BSAD published on the BMRA will not be amended as a consequence of this process.

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 being paid (or paying) for the Acceptance at the prevailing Bid/ Offer Price (this cashflow is 'correct');
2. Energy Imbalance Prices including the Acceptance Volume resulting from the Emergency Instruction as an un-priced volume (these prices are 'correct'); and
3. Adjusted BSAD data (this data is 'incorrect').

Prior to conducting the actual Settlement Run the SAA 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.

1.2.5.8 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 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. For example, the final Imbalance Prices generated at RF would be based on R3 data.

1.2.5.9 Credit Cover Implications

The PSMG noted that part of the Credit Cover calculation is based on Trading Charges generated in the II Run, hence under a manual solution the Imbalance Prices used within the Credit Cover calculation will not be based on P172 methodology (representing the Acceptance at the prevailing Bid/Offer price rather than as an un-priced volume).

Where an Emergency Instruction had been issued to a BM Unit with a high prevailing Bid/ Offer Price, the Energy Imbalance Prices in the II Run as performed by the SAA may be higher than they would be if the calculation were performed in accordance with P172. Subsequently, Parties' Credit Cover Percentage may be falsely inflated. However, the PSMG noted that in such a situation BSCCo may be able to apply material doubt in accordance with section M 1.2.1 (e) of the Code:

- (e) *in relation to a Trading Party and Settlement Day, where BSCCo:*
- i) *is aware that the ECVAA has not received relevant Interim Information Settlement Run data from the SAA in accordance with Section T5.3.5; or*
 - ii) *has substantial evidence or other reasons to believe that the data to be derived from the Initial Settlement Run for that Trading Party and that Settlement Day are likely to be significantly different (in the context of that particular Trading Party) from the corresponding Interim Information Settlement Run data received by the ECVAA from the SAA in accordance with Section T5.3.5;*

the absence of such data or the likelihood of such a significant difference (as the case may be) may, if BSCCo so decides and to the extent that it materially affects matters, constitute a material doubt for the purposes of paragraph 3.4.3(a)(ii).

1.2.6 Interaction between P171, P172, P173, P175 and P177

This section outlines at a high level the similarities and differences between the key elements of P171, P172, P173, P175, P177 and the potential Alternative Modifications currently being considered by the PSMG.

	P171 & P172	P173	P175
Implementation	Retrospective (P171) Prospective (P172)	Prospective	Prospective
Scope	Emergency Instructions (Proposed & Alternative)	Emergency Instructions (Proposed & Alternative)	Emergency Instructions & Intertrips
Prevailing Acceptance price within Imbalance Price Calculation	BOA un-priced in cash out (Proposed)	BOA at Avoided Costs (Proposed)	BOA replaced by BOA that would have been taken in absence of action
	BOA replaced by BOA that would have been taken in absence of action (Alternative)	BOA priced at "amended avoided costs" (Alternative)	
Volume within Imbalance Price Calculation	Included as "system" volume (Proposed)	BOA volume in cash out (Proposed & Alternative)	BOA volume in cash out
	BOA volume in cash out (Alternative)		
Payment to affected	Party paid (pays) prevailing Bid/ Offer Price (Proposed & Alternative)	Party paid (pays) for BOA at Avoided Costs (Proposed)	Party may claim costs

Party under BSC		Party paid (pays) for BOA at amended Avoided Costs (Alternative)	
Compensation	N/A	N/A	Affected Party able to make compensation claim under BSC (when not able to under other arrangements)

Table 1: Interactions

The PSMG noted that there were elements of each proposal which were similar that resulted in a number of combinations which, depending on the legal drafting developed, could, in theory be implemented together.

	P171 Pro	P171 Alt	P172 Pro	P172 Alt	P173 Pro	P173 Alt	P175
P171 Pro					Y	Y	N
P171 Alt					Y	Y	N
P172 Pro					Y	Y	N
P172 Alt					Y	Y	N
P173 Pro	Y	Y	Y	Y			N
P173 Alt	Y	Y	Y	Y			N
P175	N	N	N	N	N	N	

P171 and P172 (Proposed and Alternatives)

P171 and P172 have the same requirements, with the element of retrospection the only difference between the two proposals; hence the possibility of both proposals being implemented together has not been considered.

Retrospective Element of P171

It was noted that P171 has a retrospective element; the PSMG considered whether it would be possible to implement P171 for historic Emergency Instructions only, whilst implementing another proposal as an ongoing solution (effectively ‘turning off’ P171 prospectively). However, it was recognised that in order to do this the enduring change would need to amend the P171 baseline (effectively amending or overwriting sections of the Code which do not currently exist), since the legal drafting of a Modification Proposal must be against the current baseline this approach is not feasible. Therefore, in order to achieve this outcome, a Modification Proposal would have to be raised against the P171 baseline following an Authority decision on P171.

P171/P172 Proposed and P175

Proposed Modifications P171 and P172 require that Acceptances resulting from Emergency Instructions be tagged as un-priced in the Energy Imbalance Price calculation. P175 requires that the same Acceptances are replaced, for the purpose of the Energy Imbalance Price calculation, with Acceptances that would have been taken in the absence of the Emergency Instruction. This different treatment within the Energy Imbalance Price calculation is incompatible; therefore P171/2 Proposed Modifications are incompatible with P175. In addition the scope of P175 extends to intertrips.

P173 Proposed/Alternative and P175

Proposed Modifications P173 requires that Parties affected by an Emergency Instruction would receive Avoidable Costs (or amended Avoidable Costs under the Alternative) incurred in responding to the instruction. Under P175 affected Parties would recover cost incurred via a claim for compensation. Therefore, P173 Proposed and Alternative Modifications are incompatible with P175. In addition the scope of P175 extends to intertrips.

P171/P172 Alternative and P175

Alternative Modifications P171 and P172 require that Acceptances resulting from Emergency Instructions are replaced, for the purpose of the Energy Imbalance Price calculation only, with Acceptances that would have been taken in the absence of the Emergency Instruction. P175 requires the same treatment of Emergency Instructions within the Energy imbalance Price calculation but includes additional elements (such as removal of the BM Unit Cashflow for the instruction and introduction of a compensation claim process). Since P175 would deliver the changes to the Energy Imbalance Price calculation proposed under P171/2 Alternative, with the exception of the retrospective element of P171 as considered above, there is no reason for approving both P175 and P171/2 Alternative Modification. In addition the scope of P175 extends to intertrips.

P173 Proposed/ Alternative and P171/P172 Proposed

P173 proposes that the prevailing Bid/ Offer price of an Acceptance resulting from an Emergency Instruction is adjusted to represent the Avoidable Costs incurred in responding to that Emergency Instruction. Proposed Modifications P171 and P172 require that the same Acceptances be tagged as un-priced in the Energy Imbalance Price calculation. These two individual changes would be achieved via amendment of separate sections of the Code. It is possible that both changes could be made with the following effect:

- Acceptance price is amended to reflect Avoidable Costs;
- For the purpose of the BM Unit Cashflow the Acceptance is priced to reflect Avoidable Costs, affected Parties therefore receive Avoidable Costs as payment for the Bid/ Offer; and
- For the purpose of the Energy Imbalance Price calculation the Acceptance is tagged as un-priced. As a result the Acceptance is not included in the weighted average which sets the Energy Imbalance Price.

Therefore, P171/2 Proposed Modifications are theoretically compatible with P173, depending on the legal drafting developed.

Conclusion:

The PSMG agreed that, where possible, the legal drafting should not restrict any feasible combination of proposals available to the Authority. However, it was the view of the PSMG that, whilst certain combinations of Modifications Proposals may be possible as set out above, it could not be considered that such a combination had not been fully assessed (since a combination of proposals presents an entirely different outcome than any of the proposals when considered independently as required by the Modification Procedures). As such, it was the view of the PSMG that all the Modification Proposals should be viewed as mutually exclusive.

1.3 Assessment of how the Proposed Modification will better facilitate the Applicable BSC Objectives

The PSMG have considered the arguments for and against achievement of the Applicable BSC objectives under Proposed Modification P172 as follows:

- Energy Imbalance Prices are intended to represent the cost of energy balancing actions. The processing, under the current Code baseline, of Emergency Instruction may result in actions taken for system reasons significantly distorting Energy Imbalance Prices. This has the potential for Parties to be exposed to Energy Imbalance Prices that are unrepresentative of the energy balancing actions taken by the Transmission Company. P172 would reduce this potential exposure to unrepresentative Energy Imbalance Prices. It was the view of the PSMG that these benefits would better facilitate achievement of Applicable BSC Objective (c)

“Promoting effective competition in the generation and supply of electricity and promoting such competition in the sale and purchase of electricity”; and

- Some members of the Group noted that under P172 Parties could submit high Bid/ Offer prices with the confidence that were these accepted as a result of an Emergency Instruction they would not be subject to high Energy Imbalance Prices. It was suggested that this could result in Parties submitting even more extreme Bid/Offer prices. It was the view of these PSMG members that if this occurred it would be detrimental to Applicable BSC Objective (b). However, having considered the responses to industry consultation the PSMG agreed that, due to the relative infrequency of Emergency Instructions, Parties would be unlikely to change their approach to submission of Bid/ Offer prices were P172 implemented.

On balance, it was the unanimous view of the PSMG that Proposed Modification P172 would reduce the potential for Parties to be exposed to Energy Imbalance Prices unrepresentative of the energy balancing actions taken by the Transmission Company, thereby better facilitating achievement of the Applicable BSC Objectives.

1.4 Alternative Modification

As outlined in section 1.5, the PSMG considered a potential alternative solution to P172.

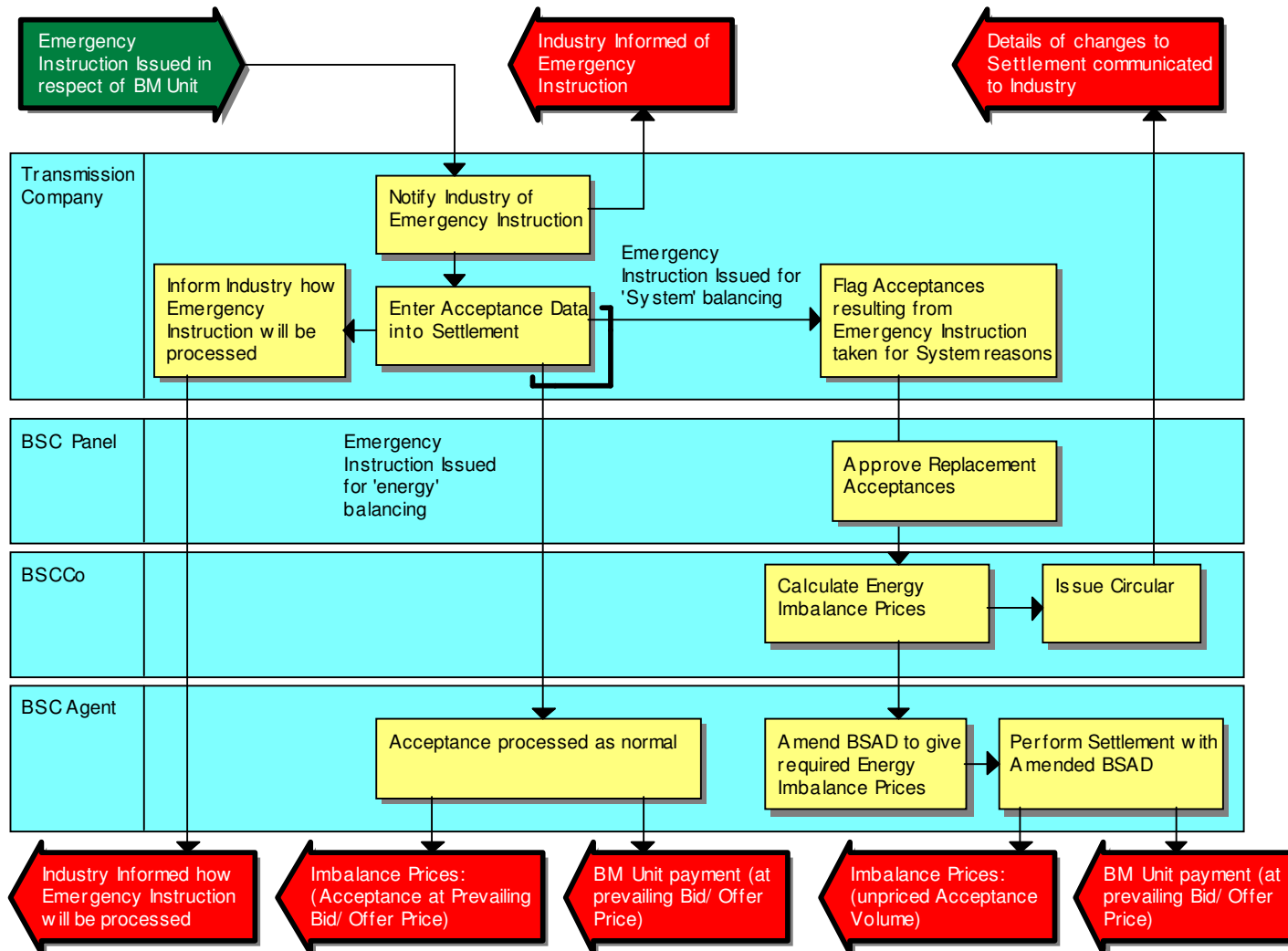
P172 propose that Acceptances resulting from Emergency Instructions taken for System purposes are excluded from Imbalance Prices. The PSMG noted that, in practice an Emergency Instruction (even if issued for System purposes) may deliver both energy and System balancing.

Under the potential Alternative Modification P172, replacement Bid/ Offers would be derived from the Bids and Offers that would have been taken had the Emergency Instruction not been issued. These Acceptances would then be included in the existing Imbalance Price calculation in place of the Emergency Instruction. However, the Lead Party would continue to be paid for the original Emergency Instruction 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.

The rationale for development of Alternative Modification P172 are set out in section 1.2.4.

1.4.1 Alternative Modification solution development

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



1.4.1.1 Initial Process identical to Proposed Modifications (II)

The following steps would be followed under the Alternative Modification which are identical to Proposed Modification P172:

- Inform Industry (D)
- Enter Acceptance Data into Settlement (II)
- Inform Industry of approach for settling Emergency Instruction (II)

1.4.1.2 Flag Acceptance as System Balancing (II)

The PSMG discussed whether it would be necessary for the Transmission Company to flag Acceptances as System balancing actions, or whether replacement Acceptances should be identified for all Emergency Instructions. Some members of the Group were of the view Acceptances should be flagged as System balancing actions to be consistent with the Proposed Modification and on efficiency grounds - by avoiding the use of an additional process where an Emergency Instruction was issued for solely energy balancing reasons. However, other members of the Group felt that replacement Acceptances should be calculated for all Emergency Instructions and the NIV tagging process would determine whether each Acceptance (or part thereof) was classed as "System" rather than "energy". These members felt that the calculation of the replacement price would act as a double check that the instruction was based solely on energy balancing actions. If this was the case then the replacement Acceptance would be the same as the actual Emergency Instruction Acceptance, as it would have been the Bid/Offer that the Transmission Company would have taken even if there had not been an emergency situation. In addition it was noted that this would avoid the need for the Transmission Company to decide whether or not the action was taken for System purposes. The Group agreed to specifically ask a question in the consultation on which approach should be used.

Having considered the responses to industry consultation the PSMG agreed replacement Acceptances should be used for Emergency Instructions which the Transmission Company had not indicated as being taken purely for energy purposes. It was agreed that this approach would be more efficient as, in the case that an Emergency Instruction was issued for purely energy balancing reasons, there would be no need to determine replacement Acceptances.

1.4.1.3 Process Acceptance as Normal (II)

If the Transmission Company determines the Emergency Instruction was issued for energy purposes 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.

1.4.1.4 Determine Replacement Acceptances (SF)

For Emergency Instructions issued for System purposes it would be necessary for the Panel to identify replacement Acceptances to represent the Emergency Instruction 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 Acceptances 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 manner similar to that used to determine a replacement price under the Manifest Errors process (as detailed in BSCP14) and section Q7.5.2 of the Code.

Section Q7.5.2 (a) of the Code states that "the Panel shall determine (in its opinion) in consultation with the Transmission Company:

- i) what other Bid-Offer Pairs (submitted by any Party) were available to, and not already accepted by, the Transmission Company at the Bid-Offer Acceptance Time;
- ii) which of those other Bid-Offer Pairs would (in the circumstances which gave rise to the Transmission Company accepting the Error Bid-Offer Pair(s), and 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 Bid-Offer Acceptance Time, if it had not accepted (by the relevant Acceptance) the Error Bid-Offer Pair;
- iii) the Bid Price or Offer Price of such Bid-Offer Price (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

and for these purposes it shall be assumed that one or more of the Bid/Offer Pairs referred to in paragraph a(i) would have been accepted."

The Group noted that the process for determining the replacement Acceptances under P172 would be slightly different to the Manifest Error provisions. Firstly the Manifest Error provisions state that the Panel will determine which of those 'other' Bid-Offer Pairs would have been accepted. The PSMG felt that the Transmission Company may have actually accepted the same Bid or Offer in normal circumstances as it did in the emergency situation and therefore the Panel should not limit itself to looking at 'other' Bid-Offer Pairs.

In addition the Group noted that although the Panel should have regard to the principles on which the Transmission Company generally selects Bid-Offer Pairs, there should be no reference to the circumstances which gave rise to the Transmission Company accepting the relevant Bid/Offer. In fact the Panel should specifically look at what Bid-Offer Pair(s) would have been accepted if there had not been an emergency situation. The PSMG suggested that this should be defined as the Bid-Offer Pair(s) that would have been accepted without taking into account System constraints.

Finally the Group noted that if there were not enough Bid-Offer Pairs to offset the relevant Acceptance Volume, or only enough Bid-Offer Pairs to offset a portion of the relevant Acceptance Volume, then the relevant Acceptance Volume (or part thereof) would be included in the Energy Imbalance Price calculation at the price associated with the Bid or Offer that the Transmission Company had actually accepted (i.e. the Emergency Instruction). It was noted that this approach would address the potential scenarios identified in Transmission Company Impact assessment (see Annex 4).

1.4.1.5 BSCCo Calculate the Energy Imbalance Prices (SF)

Prior to the first available Settlement Run, which should be the Initial Settlement Run (SF) on D+16WD, BSCCo will calculate the Energy Imbalance Prices that would have been generated had the P172 Alternative Modification requirements been applied, as follows:

1. The Settlement Report (SAA-I014 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 it will indicate that:
 - The Lead Party of the affected BM Unit will be paid (or Pay) for the Acceptance at the prevailing Bid/ Offer Price (this cashflow is 'correct');

- The Energy Imbalance Prices will be calculated including the Acceptance Volume at the prevailing Bid/ Offer Price (these prices are 'incorrect'); and
- The latest BSAD data will be included un-modified (this data is 'correct').

It should be noted that no actual cashflows will result from the II Run as this contains purely indicative information.

2. BSCCo will calculate the Energy Imbalance Prices that would have been generated had the P172 rules been applied at the II Run (i.e. the Imbalance Prices that would have been generated if the Emergency Instruction had not been issued and the replacement Acceptances had been taken instead)⁶.
3. The 'correct' Energy Imbalance Prices would then be communicated to the Settlement Administration Agent (SAA) such that they can be reflected in the SF Run.

1.4.1.6 SAA Perform Settlement with amended BSAD (SF).

On receipt of the 'correct' Energy Imbalance Prices from BSCCo, the 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 BSCCo and the 'incorrect' Prices generated in the II Run, the required adjustments to the Imbalance Prices (ΔBP_j and ΔSP_j) would be calculated;
2. These adjustments (ΔBP_j and ΔSP_j) would then be included in the BSAD price adjustment data such that:

$$\text{'Adjusted' } BPA_j = \text{'Original' } BPA_j + \Delta BP_j$$

$$\text{'Adjusted' } SPA_j = \text{'Original' } SPA_j + \Delta SP_j$$

(NB: Original refers to BSAD as submitted by NGC and Adjusted refers to BSAD amended to give the desired Imbalance Prices)

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

For the avoidance of doubt, 'adjusted' BSAD is the mechanism that is used in order to provide an adjusted Energy Imbalance Price as part of this process. BSAD published on the BMRA will not be amended as a consequence of this process.

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 removed and replaced by the Acceptances that would have been taken in the absence of the action. Therefore, the SAA-I014 flow produced at SF for the Settlement Day will include:

1. The Lead Party of the affected BM Unit being paid (or paying) for the Acceptance at the prevailing Bid/ Offer Price (this cashflow is 'correct');
2. Energy Imbalance Prices including the replacement Acceptance Volumes instead of the Emergency Instruction (these prices are 'correct'); and
3. Adjusted BSAD data (this data is 'incorrect').

⁶ NB: Where the replacement Acceptances are not known in time for a particular Run, BSCCo will perform the calculation as if the Emergency Instruction would be included as an un-priced volume (consistent with P171 Proposed).

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.

1.4.1.7 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 Energy Imbalance Prices that should have been generated based on the previous Settlement Run data and the latest 'correct' BSAD data. The SAA would then need to amend the BSAD data for each Reconciliation Run to produce the desired Energy Imbalance Prices.

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

1.4.1.8 Credit Cover Implications

The Credit Cover implications of the P172 Alternative Modification solution are the same as those under the Proposed Modification (see section 1.2.5.9).

1.5 Assessment of how the Alternative Modification will better facilitate the Applicable BSC Objectives

The PSMG have considered the arguments for and against achievement of the Applicable BSC objectives under Alternative Modification P172 as follows (NB: these arguments are consistent with those under the Proposed Modification):

- Energy Imbalance Prices are intended to represent the cost of energy balancing actions. The processing, under the current Code baseline, of Emergency Instruction may result in actions taken for system reasons significantly distorting Energy Imbalance Prices. This has the potential for Parties to be exposed to Energy Imbalance Prices that are unrepresentative of the energy balancing actions taken by the Transmission Company. P172 would reduce this potential exposure to unrepresentative Energy Imbalance Prices. It was the view of the PSMG that these benefits would better facilitate achievement of Applicable BSC Objective (c) "Promoting effective competition in the generation and supply of electricity and promoting such competition in the sale and purchase of electricity";
- Some members of the Group noted that under P172 Parties could submit high Bid/ Offer prices with the confidence that were these accepted as a result of an Emergency Instruction they would not be subject to high Energy Imbalance Prices. It was suggested that this could result in Parties submitting more extreme Bid/Offer Prices. It was the view of these PSMG members that if this occurred it would be detrimental to Applicable BSC Objective (b). However, having considered the responses to industry consultation the PSMG agreed that, due to the relative infrequency of Emergency Instructions, Parties would be unlikely to change their approach to submission of Bid/Offer prices were P172 implemented.

On balance, it was the unanimous view of the PSMG that Alternative Modification P172 would reduce the potential for Parties to be exposed to Energy Imbalance Prices unrepresentative of the energy balancing actions taken by the Transmission Company, thereby better facilitating achievement of the Applicable BSC Objectives as compared to the existing baseline.

The PSMG also considered whether the Alternative Modification would better facilitate the Applicable BSC Objectives as compared to Proposed Modification P172 as follows:

- Energy Imbalance Prices are intended to represent the cost of energy balancing actions. Under the Proposed Modification, the cost of any consequential energy balancing delivered by an Emergency Instructions would not be included in Energy Imbalance Prices. The Alternative Modification includes the costs that would have been incurred to deliver this energy balancing had the Transmission Company not been restricted in its choice of balancing actions by the circumstances that gave rise to the Emergency Instruction. Thereby, Alternative Modification P171 would reduce, to a greater extent than the Proposed Modification, the potential for Parties to be exposed to unrepresentative Energy Imbalance Prices. It was the view of the PSMG that this benefit in terms of the calculation of Energy Imbalance Prices would better facilitate achievement of Applicable BSC Objective (c);
- Some members of the PSMG were of the view the requirement to derive replacement acceptances would add an additional level of complexity to the Settlement Arrangements and that this could be detrimental to efficiency and thus the facilitation of Applicable BSC Objective (d);
- Some members of the PSMG were of the view that, due to the additional process to identify replacement Acceptances, the time during which Parties would be unsure of their exposure (due to uncertainty in Energy Imbalance Prices) would be extended under the Alternative Modification. This uncertainty could be detrimental to effective competition and the facilitation of Applicable BSC Objective (c); and
- A minority of the PSMG were of the view that the use of a replacement Acceptances would depart from the established tagging principles whereby actions are considered distinctly energy or System balancing rather than a combination of both. Introducing this additional approach could be viewed to be inefficient and as such detrimental to the achievement of Applicable BSC Objective (d).

On balance, by a slim majority, the PSMG were of the opinion Alternative Modification P172 would better facilitate the Applicable BSC Objectives as compared to the Proposed Modification. The majority of members in support of this view believed the competitive benefits of a further reduction in the potential exposure to unrepresentative Energy Imbalance Prices would outweigh any detrimental impact on efficiency. The contrary view held by the minority was that any detrimental impact in terms of efficiency would not be justified by the competitive benefits of a reduction in the potential exposure to unrepresentative Energy Imbalance Prices in the very limited circumstance of an Emergency Instruction.

1.6 Governance and regulatory framework assessment

Under P172 (Proposed and Alternative) the Transmission Company would determine whether an Emergency Instruction should be considered specifically as a System action. The Transmission Company indicated that this determination would be made in accordance with the methodology currently used to tag System actions for Balancing Services (as set out in the BSAD methodology statement). The Transmission Company impact assessment indicated that a consequential change to the Condition C16 statements (specifically the Balancing Principles Statement) would be made to clarify this process. It should be noted that the implementation of P172 is not dependent on this change being made.

For the avoidance of doubt, the manual solution which requires the SAA to manipulate the BSAD file submitted by the Transmission Company does not impact either BSAD the methodology or the submission of BSAD by the Transmission Company.

2 COSTS⁷

PROGRESSING MODIFICATION PROPOSAL	
Meeting Costs	£500
Legal/expert Costs	£500 ⁸
Impact Assessment Costs	£5,000
ELEXON Resource	50 Man days £12,500

IMPLEMENTATION COSTS P172 PROPOSED				
		Stand Alone Cost	Incremental Cost	Tolerance
Service Provider⁹ Cost				
	Change Specific Cost	£41,542 ¹⁰	£41,542 ¹⁰	+/- 0%
	Release Cost	£0	n/a	+/- 0%
	Incremental Release Cost	£0	£0	+/- 0%
	Total Service Provider Cost	£41,542	£41,542	+/- 0%
Implementation Cost				
	External Audit	£0	£0	+/- 0%
	Design Clarifications	£0	£0	+/- 0%
	Additional Resource Costs ¹¹	£0	£0k	+/- 0%
	Additional Testing and Audit Support Costs	£0		+/- 0%
Total Demand Led Implementation Cost		£41,542k	£41,542k	+/- 0%

ELEXON Implementation		210 Man days	80 Man days £18k	+/- 10%
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⁷ Clarification of the meanings of the cost terms in this section can be found in Annex 7 of this report

⁸ This estimate was made at the Initial Written Assessment stage. However, during the Assessment Procedure, additional legal advice was taken. Therefore, the legal costs will be greater than this estimate.

⁹ BSC Agent and non-BSC Agent Service Provider and software Costs

¹⁰ The cost of changes to TOMAS are included in this figure

Resource Cost		£46k		
Total Implementation Cost		£87,542k	£59,542k	+/- 10%

ONGOING SUPPORT AND MAINTENANCE COSTS (Proposed)

	Operational Cost	Tolerance
Service Provider Operation Cost	£ 527 per incident	+/- 0%
Service Provider Maintenance Cost	£ 0	+/- 0%
ELEXON Operational Cost	£220 per incident	+/-10%

IMPLEMENTATION COSTS P172 ALTERNATIVE

	Stand Alone Cost	P172 Alternative Incremental Cost	Tolerance
Service Provider¹² Cost			+/- 0%
Change Specific Cost	£41,542 ¹⁰	£41,542 ¹⁰	+/- 0%
Release Cost	£0	£0	+/- 0%
Incremental Release Cost	£0	£0	+/- 0%
Total Service Provider Cost	£41,542	£41,542	
Implementation Cost	£0	£0	+/- 0%
External Audit	£0	£0	+/-0%
Design Clarifications	£0	£0	+/-0%
Additional Resource Costs	£0		+/-0%
Additional Testing and Audit Support Costs	£0	£0	+/- 0%
Total Demand Led Implementation Cost			

ELEXON Implementation Resource Cost		210 Man days £46k	80 Man days £18k	+/- 10%
Total Implementation		£87,542k	£59,542k	+/- 10%

¹² BSC Agent and non-BSC Agent Service Provider and software Costs

Cost				
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ONGOING SUPPORT AND MAINTENANCE COSTS (ALTERNATIVE)		
	Operational Cost	Tolerance
Service Provider Operation Cost	£527 per incident	+/- 10%
Service Provider Maintenance Cost	0	+/- 0%
ELEXON Operational Cost	£550 per incident	+/- 10%

3 RATIONALE FOR MODIFICATION GROUP'S RECOMMENDATIONS TO THE PANEL

3.1 Proposed/ Alternative Modification

The unanimous view of the PSMG was that Alternative Modification P172 would reduce the potential exposure to unrepresentative Energy Imbalance Prices which may occur due to the issuing of Emergency Instructions for system purposes. As such, Alternative Modification P172 would better facilitate the achievement of Applicable BSC Objective c).

It was also the unanimous view of the PSMG that Proposed Modification P172 would better facilitate achievement of the Applicable BSC Objectives in comparison to the current baseline for the same reasons as under the Proposed Modification.

However, it was the majority view that Alternative Modification P172 would also better facilitate the achievement of the Applicable BSC Objectives as compared to Proposed Modification P172. The view held by the 'slim' majority was that the use of replacement Acceptances would result in Energy Imbalance Prices more closely aligned with those that would have been generated in the absence of an Emergency Instruction.

As such, it was the majority view of the PSMG that Proposed Modification P172 should not be made, while Alternative Modification should be made.

3.2 Implementation Approach

3.2.1 Proposed Modification

The recommended Implementation Date for Proposed Modification P172 allows a 5 Working Day lead time following an Authority decision in order to implement the Code changes. Documentation and process changes to support the amended Code obligations would then be delivered in the next available Release. This approach was favoured by the PSMG as it would reduce the potential for an Emergency Instruction to be issued post Authority approval but prior to the Implementation Date. Therefore, the recommended Implementation Date for P172 Proposed Modification is:

- 5 Working Days following and Authority determination.

Document and process changes would be delivered on 29 June 2005, if an Authority decision is received by 9 March 2005. Alternatively, should an Authority determination be received after this date, but on or before 6 July 2005, the changes would be delivered on 2 November 2005.

If approved, Proposed Modification P172 would be implemented on a Settlement Day basis. As such P172 would only apply to Emergency Instructions issued on Settlement Days on or after the the Implementation Date.

3.2.2 Alternative Modification

The recommended Implementation Date for Alternative Modification P172 allows a 5 Working Day lead time following an Authority decision in order to implement the Code changes. The documentation and process changes to support the amended Code obligations would then be delivered in the next available Release. This approach was favoured by the PSMG as it would reduce the potential for an Emergency Instruction to be issued post Authority approval but prior to the Implementation Date. Therefore, the recommended Implementation Date for P172 Alternative Modification is:

- 5 Working Days following and Authority determination.

Document and process changes would be delivered on 29 June 2005, if an Authority decision is received by 9 March 2005. Alternatively, should an Authority determination be received after this date, but on or before 6 July 2005, the changes would be delivered on 2 November 2005.

If approved, Alternative Modification P172 would be implemented on a Settlement Day basis. As such P172 would only apply to Emergency Instructions issued on or after Settlement Days post the Implementation Date.

4 IMPACT ON BSC SYSTEMS AND PARTIES

An assessment has been undertaken in respect of BSC Systems and Parties and the following areas have been identified as potentially being impacted by the Proposed and Alternative Modifications.

4.1 BSCCo

4.1.1 Proposed

The CVA Programme and CVA Operations will be required to support implementation and document the processes for dealing with Emergency Instructions. In addition ELEXON Systems Assurance will be required to support the implementation of P172. In addition, an operational cost would be incurred per Emergency Instruction.

Changes would also be required to TOMAS in order to allow prices to be calculated in accordance with Proposed Modification P172 (specifically to allow individual Acceptances to be treated as Un-Priced). The required changes to TOMAS would incur an estimated demand led cost of £33,700.

4.1.2 Alternative

The CVA Programme and CVA Operations will be required to support implementation and document the processes for dealing with Emergency Instructions. In addition ELEXON Systems Assurance will be required to support the implementation of P172. BSCCo would also be required to support the Panel in the determination of the replacement Acceptances. Hence, an operational cost greater than that for the Proposed would be incurred per Emergency Instruction.

Changes would also be required to TOMAS in order to allow prices to be calculated in accordance with Alternative Modification P171. The required changes to TOMAS would incur an estimated demand led cost of £33,700.

4.2 BSC Agents

4.2.1 Proposed

The BSC Agent (SAA) would be required to enter Emergency Instruction data into Settlement and adjust BSAD to give Energy Imbalance Prices as notified by BSCCo. This would require changes to documentation to formalise the process. In addition there would be an operational cost per incident for making the required data changes.

4.2.2 Alternative

The BSC Agent (SAA) would be required to enter Emergency Instruction data into Settlement and adjust the prevailing price of the Acceptance at a later Settlement Run. This would require changes to documentation to formalise process. In addition there would be an operational cost per incident for making the required data changes.

4.3 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.

5 IMPACT ON CODE AND DOCUMENTATION

5.1 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.

Item	Proposed Modification	Alternative Modification
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.	As per proposed, plus methodology for determining replacement Acceptances 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 as an Un-Priced volume.	Amendments to allow Acceptances resulting from Emergency Instructions issued for system reasons to be replaced in the Energy Imbalance Price calculation.
X	New definitions required.	

Draft legal text for both the Proposed and Alternative Modifications is included in Annex 1 of this report.

5.1.1 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	Proposed / Alternative
SAA SD	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 P172 methodology.
BSCP18	Amended in order to allow the Transmission Company to flag data Acceptance Data related to an Emergency instruction as specifically System balancing if appropriate.
BSCPXX	A new BSC Procedure for the processing of Emergency Instructions would be required.
NDFC	The NETA Data File Catalogue would require amendment.

5.2 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	Proposed / Alternative
SAA URS	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 P172 methodology.
IDD	New interface from BSCCo to Central Systems required

5.3 BSCCo Memorandum and Articles of Association

An assessment has been undertaken by the PSMG in respect of BSCCo Memorandum and Articles of Association as a consequence of the Proposed Modification and the Alternative Modification and no impact has been identified.

5.4 Impact on Core Industry Documents and supporting arrangements

Under P171 (Proposed and Alternative) the Transmission Company would determine whether an Emergency Instruction should be considered specifically as a System action. The Transmission Company indicated that this determination would be made in accordance with the methodology currently used to tag System actions for Balancing Services (as set out in the BSAD methodology statement). Transmission Company impact assessment indicated that a consequential change to the Condition C16 statements (specifically the Balancing Principles Statement) would be made to clarify this process. It should be noted that the implementation of P171 is not dependent on this change being made.

For the avoidance of doubt, the manual solution which requires the SAA to manipulate the BSAD file submitted by the Transmission Company does not impact either the BSAD methodology or the submission of BSAD by the Transmission Company.

6 SUMMARY OF CONSULTATIONS

A consultation document was issued on 28 October 2004, with a deadline for responses of 9 November 2004. Eleven responses were received. The responses are attached as Annex 3 of this report and summarised in the table below.

Consultation question	Respondent agrees	Respondent disagrees	No opinion expressed
1. Do you believe Proposed Modification P172 better facilitates the achievement of Applicable BSC Objectives?	8	1	2
2. Do you believe Alternative Modification P172 better facilitates the achievement of the Applicable BSC Objectives?	6	3	2
3. Do you support the manual implementation approach preferred by the Modification Group?	9	0	2
4. Do you believe there are any alternative solutions that the Modification Group has not identified and that should be considered?	0	9	2
5. Do you support the proposed methodology for determining the 'Replacement Acceptance Price' under P172 Alternative Modification?	8	1	2
6. Under the P172 Alternative Modification, do you believe that a replacement price should be calculated for all Emergency Instructions?	All - 3	System only - 5	3
7. Do you believe P172 will have an impact on the Bid/Offer prices submitted by your company?	1 * N/A	7 + 1 * N/A	3

6.1 Modification Group's summary of the consultation responses

6.1.1 Assessment of Proposed Modification against the Applicable BSC Objectives

The majority of respondents believed that Proposed Modification P172 better facilitated Applicable BSC Objective c) by removing the risk of a high priced system action significantly affecting the energy imbalance prices. The respondent against Proposed Modification P172 argued that the cost of the Emergency Instruction remained in BSUoS (since the Lead Party of the affected BM Unit would still be paid the prevailing Bid/Offer price), thus this expense was shared amongst all Parties.

6.1.2 Assessment of Alternative Modification against the Applicable BSC Objectives

Those respondents in favour of Alternative Modification P172 believed that including the likely energy cost of the action in Energy Imbalance Prices would be more accurate than using an un-priced volume, especially as Emergency Instructions issued for system purposes may deliver both system and energy balancing. Some respondents were not in support of the Alternative due to additional complexity. One respondent also believed that the use of a replacement price would be inconsistent with the treatment of other balancing actions which are "tagged" by the imbalance pricing mechanism, and thus included as un-priced volumes if deemed system balancing.

6.1.3 Implementation Approach

It was the unanimous view of the respondents that either solution proposed by the Group should have a manual implementation approach, given that Emergency Instructions are issued very rarely.

6.1.4 Alternative Modifications

No further alternative solutions were identified.

6.1.5 Replacement price methodology

The majority of the respondents supported the proposed methodology for calculation of the replacement price for the Alternative Modification i.e. it should be based on the existing manifest error provisions and would account for the energy balancing resulting from an Emergency Instruction. One respondent also noted that the replacement price could be the same as the actual price submitted by the BM Unit. The respondent not in support of the proposed methodology believed that a similar process to that used for Manifest Errors should be devised (NB this is the approach progressed by the PSMG).

6.1.6 Tagging of System actions under alternative solution

By a slim majority, the respondents did not believe that a replacement price should be applied to all Emergency Instructions. Of this majority, the key argument expressed was that it would be more efficient to tag actions as System if appropriate, such that a replacement price process would not then be required. The key view expressed by the minority of the respondents of the view replacement prices should be calculated for all Emergency Instructions was that this approach removes an element of discretion from the Transmission Company.

6.1.7 Impact on Bid/Offer price submission

Of the respondents who expressed an opinion, it was the unanimous view that P172 would not affect the Bid/Offer prices submitted by their company. This was due to the rare nature of Emergency Instructions. However, it was noted that Parties would not influence cash-out prices if they submitted sleeper prices, and thus they could be more likely to submit these extreme Bids/Offers.

7 SUMMARY OF TRANSMISSION COMPANY ANALYSIS

7.1 Analysis

The full analysis may be found in Annex 4.

The Transmission Company was not of the view the Proposed or Alternative Modification would impact its ability to efficiently discharge its obligations under the Transmission Licence or its ability to operate an efficient, economical and co-ordinated Transmission System. Also, the Transmission Company did not believe either the Proposed or Alternative Modification would have any impact on the security of supply. Minimal costs were identified in relation to the implementation of either the Proposed or Alternative Modification.

It was the view of the Transmission Company that the costs of balancing taken for "System" reasons should not affect Energy Imbalance Prices, and also that tagging these "System" actions is consistent with other tagging methodologies employed in the BSC to treat the Bid-Offer Acceptance as an un-priced volume. The Transmission Company was concerned that the use of a replacement price would be inconsistent with these other tagging methodologies and would require proof that this approach would be better than using un-priced volumes. Also, the Transmission Company were of the view

Proposed Modification P172 better facilitates the achievement of Applicable BSC Objective c) compared to both the current baseline and Alternative Modification P172.

A further point was made by the Transmission Company regarding BSUoS charges and RCRC cashflows. At present, the RCRC payments will be approximately equal and opposite to the increase in BSUoS charges created by the Emergency Instruction. If P171 is implemented, this "offset" provided by the RCRC cashflow will be removed and this will simply serve to change the "winners and losers". The Transmission Company believe that the fundamental issue to be addressed is the cost of the Bid-Offer Acceptance as well as the impact on Imbalance Prices. As such, the Transmission Company do not believe that P171 alone would achieve this.

8 SUMMARY OF EXTERNAL ADVICE

No external advice was commissioned by the PSMG.

9 DOCUMENT CONTROL

9.1 Authorities

Version	Date	Author	Reviewer	Change Reference
0.1	19/11/04	Change Delivery	PSMG	Initial Draft
0.2	25/11/04	Change Delivery	PSMG	For PSMG Review
0.3	01/12/04	Change Delivery	Change Delivery	Technical Review
1.0	03/12/04	Change Delivery	Panel	For Decision

9.2 References

Ref No.	Document Title	Owner	Issue Date	Version	Hyperlink
1	Modification Proposal P172	-	25.08.2004	-	http://www.elexon.co.uk/documents/Change_and_Implementation/CVA_-_Circulars/P172.pdf
2	Balancing Principles Statement	NGC	04.10.2004	4.1	http://www.nationalgrid.com/uk/indinfo/balancing/pdfs/Appendix_B_BPS_v1.pdf
3	Modification Proposal P172 Initial Written Assessment	ELEXON	03.09.2004	1.0	http://www.elexon.co.uk/documents/BSC_Panel_and_Panel_Committees/BSC_Panel_Meetings_2004_-_082_-_Papers/82_006a.pdf
4	Modification Proposal P171	-	25.08.2004	-	http://www.elexon.co.uk/documents/modifications/171/P171.pdf
5	Modification Proposal P173	-	25.08.2004	-	http://www.elexon.co.uk/documents/Change_and_Implementation/CVA_-_Circulars/P173.pdf
6	Modification Proposal P175	-	01.10.2004	-	http://www.elexon.co.uk/documents/modifications/175/P175.pdf
7	Modification Proposal P171 and P172 Requirements Specification	PSMG	28.09.2004	1.0	http://www.elexon.co.uk/documents/modifications/172/P1712AS_FINAL_101.pdf

ANNEX 1 DRAFT LEGAL TEXT

This document forms Annex 3 to the P172 Modification Report, therefore legal text is not attached and the reader should refer to the Modification Report.

ANNEX 2 MODIFICATION GROUP DETAILS

Member	Organisation	14/09	11/10	12/11	22/11	29/11
Sarah Parsons	ELEXON (Chairman)	✓	✓	✓	✓	✓
Tom Bowcutt	ELEXON (Lead Analyst)	✓	✓	✓	✓	✓
Danielle Lane	(Proposer) P171 and P172	✓	X	X	x	X
Mark Duffield	Proposer P173	✓	✓	✓	✓	✓
Garth Graham	Scottish and Southern	✓	✓	✓	✓	✓
Man Kwong Liu	SAIC	X	X	✓	✓	✓

Bill Reed	RWE Trading	✓	✓	✓	✓	✓
Paul Jones	E.On Uk	✓	✓	✓	✓	X
Lisa Waters	Waters Wye	✓	X	X	x	X
Jan Devito	Jade Energy	✓	X	✓	✓	X
Martin Mate	British Energy	✓	X	✓	x	✓
Helen Bray	EDF	x	✓	✓	✓	X
Mark Manley	BGT	x	✓	✓	✓	✓
Mark Brackley	National Grid	✓	✓	✓	✓	✓

Attendee	Organisation					
Simon Bradbury	Ofgem	✓	✓	✓	✓	✓
Fiona Lewis	Ofgem	✓	✓	✓	X	✓
Paul Chesterman	EDF	✓	X	X	X	✓
Adam Cooper	Energy-Koch	✓	X	X	X	X
Rekha Patel	Conocophillips	✓	X	✓	X	X
Roger Salomone	ELEXON	x	✓	✓	✓	✓
Sanjukta Round	Cornwall Consulting	x	X	✓	X	X
Barbara Vest	GDF	x	Part	✓	X	X
Keith Munday	Bizzenergy	x	x	x	✓	X
John Capener	British Energy	x	x	x	✓	X
David White	ELEXON	✓	x	x	✓	X

Terms of reference for the PSMG included:

- **Energy/ System balancing:** Details of an appropriate process or mechanism for differentiating between the energy and System balancing elements of Emergency Instructions;
- **Solution development:** Details of the solution to P172, including;
 - A mechanism to allow Emergency Instructions issued for System reasons to be differentiated within Settlement;
 - An assessment of the relative merits of both manual and automatic solutions; and
 - Details of the point in the Settlement/ Reconciliation process that the price of the Acceptance within the Imbalance Price calculation should be amended.
- **Background:** Details of the circumstances under which and Emergency Instruction may be issued under the Grid Code;

- **Consideration of the interaction with P171 and P173:** Details of the interaction between P171, P172 and P173; and
- **Alternative Modifications:** Details of any Alternative Modification that would better facilitate achievement of the Applicable BSC Objectives in comparison to P172.

ANNEX 3 ASSESSMENT CONSULTATION RESPONSES

Attached in separate document

ANNEX 4 TRANSMISSION COMPANY ANALYSIS

Attached in separate document

ANNEX 5 BSC AGENT IMPACT ASSESSMENTS

Attached in separate document

ANNEX 6 PARTY AND PARTY AGENT IMPACT ASSESSMENTS

Attached in separate document

ANNEX 7 CLARIFICATION OF COSTS

There are several different types of costs relating to the implementation of Modification Proposals. ELEXON implements the majority of Approved Modifications under its CVA or SVA Release Programmes. These Programmes incur a base overhead which is broadly stable whatever the content of the Release. On top of this each Approved Modification incurs an incremental implementation cost. The table of estimated costs of implementing the Proposed/Alternative Modification given in section 2 of this report has three columns:

- **Stand Alone Cost** – the cost of delivering the Modification as a stand alone project outside of a CVA or SVA Release, or the cost of a CVA or SVA Release with no other changes included in the Release scope. This is the estimated maximum cost that could be attributed to any one Modification implementation.
- **Incremental Cost** - the cost of adding that Modification Proposal to the scope of an existing release. This cost would also represent the potential saving if the Modification Proposal was to be removed from the scope of a release before development had started.
- **Tolerance** – the predicted limits of how certain the cost estimates included in the template are. The tolerance will be dependent on the complexity and certainty of the solution and the time allowed for the provision of an impact assessment by the Service Provider(s).

The cost breakdowns are shown below:

PROGRESSING MODIFICATION PROPOSAL	
Meeting Cost	This is the cost associated with holding Modification Group meetings and is based on an estimate of the travel expenses claimed by Modification Group members.

Legal/expert Cost	This is the cost associated with obtaining external expert advice, usually legal advice.
Impact Assessment Cost	Service Provider Impact Assessments are covered by a pre-determined monthly contractual charge. Therefore the cost included in this report is an estimate based on the level of impact assessment that the modification is expected to require and may not reflect the actual cost attributed to the modification, which will be based on a percentage of the contractual impact assessment costs for each month that it is assessed.
ELEXON Resource	This is the ELEXON Resource requirement to progress the Modification Proposal through the Modification Procedures. This is estimated using a standard formula based on the length of the Modification Procedure.

SERVICE PROVIDER¹³ COSTS

Change Specific Cost	Cost of the Service Provider(s) Systems development and other activities relating specifically to the Modification Proposal.
Release Cost	Fixed cost associated with the development of the Service Provider(s) Systems as part of a release. This cost encompasses all the activities that would be undertaken regardless of the number or complexity of changes in the scope of a release. These activities include Project Management, the production of testing and deployment specifications and reports and various other standard release activities.
Incremental Release Cost	Additional costs on top of base Release Costs for delivering the specific Modification Proposal. For instance, the production of a Test Strategy and Test Report requires a certain amount of effort regardless of the number of changes to be tested, but the addition of a specific Modification Proposal may increase the scope of the Test Strategy and Test Report and hence incur additional costs.

IMPLEMENTATION COSTS

External Audit	Allowance for the cost of external audit of the delivery of the release. For CVA BSC Systems Releases this is typically estimated as 10% of the total Service Provider Costs, with a tolerance of +/- 20%. At present the SVA Programme does not use an external auditor, so there is no External Audit cost associated with an SVA BSC Systems Release.
Design Clarifications	Allowance to cover the potential cost of making any amendments to the proposed solution to clarify any ambiguities identified during implementation. This is typically estimated as 5% of the total Service Provider Costs, with a tolerance of +/- 100%.
Additional Resource	Any short-term resource requirements in addition to the ELEXON resource available. For CVA BSC Systems Releases, this is typically only necessary if

¹³ A Service Provider can be a BSC Agent or a non-BSC Agent, which provides a service or software as part of the BSC and BSC Agent Systems. The Service Provider cost will be the sum of the costs for all Service Providers who are impacted by the release.

Costs	<p>the proposed solution for a Modification Proposal would require more extensive testing than normal, procurements or 'in-house' development.</p> <p>For SVA BSC Systems Releases, this will include the management and operation of the Acceptance Testing and the associated testing environment.</p> <p>This cost relates solely to the short-term employment of contract staff to assist in the implementation of the release.</p>
Additional Testing and Audit Support Costs	<p>Allowance for external assistance from the Service Provider(s) with testing, test environment and audit activities. Includes such activities as the creation of test environments and the operation of the Participant Test Service (PTS). For CVA BSC Systems Releases, this is typically estimated as £40k per release with at tolerance of +/-25%. For SVA BSC Systems Releases this is estimated on a Modification Proposal basis.</p>

TOTAL DEMAND LED IMPLEMENTATION COSTS

This is calculated as the sum of the total Service Provider(s) Cost and the total Implementation Cost. The tolerance associated with the Total Demand Led Implementation Cost is calculated as the weighted average of the individual Service Provider(s) Costs and Implementation Costs tolerances. This tolerance will be rounded to the nearest 5%.

ELEXON IMPLEMENTATION RESOURCE COSTS

Cost quoted in man days multiplied by project average daily rate, which represents the resources utilised by ELEXON in supporting the implementation of the release. This cost is typically funded from the "ELEXON Operational" budget using existing staff, but there may be instances where the total resources required to deliver a release exceeds the level of available ELEXON resources, in which case additional Demand Led Resources will be required.

The ELEXON Implementation Resource Cost will typically have a tolerance of +/- 5% associated with it.

ONGOING SUPPORT AND MAINTENANCE COSTS

ELEXON Operational Cost	Cost, in man days per annum multiplied by project average daily rate, of operating the revised systems and processes post implementation.
Service Provider Operation Cost	Cost in £ per annum payable to the Service Provider(s) to cover staffing requirements, software or hardware licensing fees, communications charges or any hardware storage fees associated with the ongoing operation of the revised systems and processes.
Service Provider Maintenance Cost	Cost quoted in £ per annum payable to the Service Provider(s) to cover the maintenance of the amended BSC Systems.