

## **ASSESSMENT REPORT for Modification Proposal P194 'Revised Derivation of the Main Energy Imbalance Price'**

**Prepared by: P194 Modification Group**

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This document has been distributed in accordance with Section F2.1.10 of the Balancing and Settlement Code.<sup>1</sup>

**Proposed Modification P194** seeks to amend the Energy Imbalance Price calculation. Under P194 the volume weighted average of a pre-defined maximum volume (100MWh) of the most expensive (to the System) balancing actions remaining following application of the existing tagging mechanisms would set the 'Main' Energy Imbalance Price.

No Alternative Modification has been developed.

### **MODIFICATION GROUP'S RECOMMENDATIONS**

The P194 Modification Group invites the Panel to:

- **AGREE that Proposed Modification P194 should not be made;**
- **AGREE a provisional Implementation Date for Proposed Modification P194 of 2 November 2006 if an Authority decision is received on or before 23 March 2006, or 22 February 2007 if the Authority decision is received after 23 March 2006 but on or before 13 July 2006;**
- **AGREE the draft legal text for Proposed Modification P194;**
- **AGREE that Modification Proposal P194 be submitted to the Report Phase; and**
- **AGREE that the P194 draft Modification Report be issued for consultation and submitted to the Panel for consideration at its meeting of 8 December 2005.**

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<sup>1</sup> The current version of 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 Modification Group has been able to assess, the following parties/documents would be impacted by P194.

Please note that this table represents a summary of the full impact assessment results contained in Annex 4.

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

## 1 EXECUTIVE SUMMARY

The key conclusions of the P194 Modification Group ('the Group') are outlined below.

The Group:

- **AGREED** by **MAJORITY** that the Proposed Modification would not better facilitate the achievement of Applicable BSC Objectives and would have a detrimental impact on achievement of Applicable BSC Objectives (b) and (c)<sup>2</sup>;
- **CONSIDERED** a number of variants on the solution but **AGREED** not to develop these solutions further. Options considered were based on the use of alternative pre-defined volumes for identifying actions which will be used to set the main<sup>3</sup> Energy Imbalance Price, as follows:
  - Various different fixed volumes; and
  - Use of a variable volume equal to a fixed percentage of the Net Imbalance Volume for each Settlement Period.
- **NOTED** that the implementation costs for the Proposed Modification were estimated to be approximately £630k;
- **AGREED** an Implementation Date for the Proposed Modification of 2 November 2006 if an Authority decision is received on or before 23 March 2006, or 22 February 2007 if the Authority decision is received after 23 March 2006 but on or before 13 July 2006; and
- **AGREED** that the draft legal text delivers the intended solution for the Proposed Modification.

A description of the P194 solution is provided in Section 2. Further information regarding the Group's discussions of the areas set out in the P194 Terms of Reference is contained in Section 3, including details of the Group's recommended implementation approach and the estimated implementation costs of P194.

A summary of the Group's views regarding the merits of the Proposed Modification can be found in Section 4. A copy of the Group's full Terms of Reference can be found in Annex 2, whilst a summary of the responses to the Assessment Procedure consultation and impact assessment can be found in Annexes 3 and 4 respectively.

## 2 DESCRIPTION OF MODIFICATION

For a full description of the original Modification Proposal as submitted by National Grid (which is consistent with the Proposed Modification as developed by the Modification Group), please refer to the P194 Initial Written Assessment (IWA).

## 3 AREAS CONSIDERED BY THE MODIFICATION GROUP

This section outlines the conclusions of the Modification Group regarding the areas set out in the P194 Terms of Reference and highlighted by respondents to industry consultation.

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<sup>2</sup> '(b) the efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System'

(c) - "Promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity"

### 3.1 PAR Volume

P194 requires the use of a pre-defined volume for identifying actions which will be used to set the main<sup>3</sup> Energy Imbalance Price (under the Proposed Modification this value would be set to 100MWh). This volume has been referred to as the Price Average Reference (PAR) Volume. The Modification Group considered the introduction of the PAR volume as a concept and potential alternative values that could be used.

It should be noted that the size of the PAR Volume can vary the resulting Energy Imbalance Price from a purely average price as calculated by the current baseline (as the PAR Volume tends to NIV) to a purely marginal price (as the PAR Volume tends to zero).

#### 3.1.1 Modification Group's Initial Discussions

Under the Proposed Modification the PAR Volume would be 100 MWh. The Proposer indicated that this value had been chosen to more closely align Energy Imbalance Prices with the price of the most expensive balancing action remaining following application of the existing tagging mechanisms (i.e. the most expensive balancing action deemed to be energy balancing via the existing tagging mechanisms). Using a defined volume of actions rather than the single most expensive (in terms of cost to the System) action is intended to avoid any issues raised by using a single or small volume balancing action to set the Energy Imbalance Price.

A number of members of the Modification Group expressed concern with the proposed introduction of the PAR Volume, since they believed there could be no rational justification for any value used. The only basis for setting the value would be to look at the effects based on historic data. It was noted that justifying the value on the basis of historic data may lead to the introduction of a value inappropriate for future use.

On the basis that the PAR Volume is intended to avoid using a single or small volume acceptance to set Energy Imbalance Prices, it was suggested that the one approach would be to set the PAR Volume based on the average Bid/ Offer Acceptance Volume. The Group considered using the average Acceptance Volume (34 MWh), however it was recognised that this would suggest statistically that a single balancing action would be used to set the price 50% of the time. It was noted that, using the average value plus two standard deviations (approximately 113 MWh) would statistically suggest that more than one balancing action would be used to set the price approximately 95% of the time. Therefore, the Group concluded that a PAR volume of 100 MWh would ensure that the Energy Imbalance Price was set by more than one action the majority of time.

In order to support consideration of potential Alternative Modifications, the Group performed analysis of historic Bid / Offer Acceptance Volumes (NB: only volumes eligible to set Energy Imbalance Prices have been considered, i.e. above the current De Minimis limit of 1MWh):

	All	Bids	Offers
<b>Count</b>	131,000	65,500	65,500
<b>Average Volume (MWH)</b>	<b>34</b>	<b>31</b>	<b>36</b>
<b>MAX Volume (MWH)</b>	584	584	301
<b>MIN Volume (MWH)</b>	1	1	1
<b>Standard Deviation</b>	39.5	34	45

<sup>3</sup> The Energy Imbalance Price applied to imbalances in the same direction as the system.

### 3.1.2 Views of Respondents to Assessment Procedure Consultation

Q	Consultation question	Yes
8.	Were P194 to be implemented, what value do you believe the PAR volume should be?	100 MWh – 6 Respondents  500 MWh – 2 Respondents  No Appropriate Value – 9 Respondents

A significant proportion of consultation respondents shared the concerns expressed by a number of Modification Group Members with the introduction of the PAR Volume, since they believed there could be no rational justification for any value used.

The majority of respondents expressing an opinion indicated that, were P194 to be implemented, 100 MWh would be the most appropriate value for the PAR Volume. An Alternative Modification whereby the PAR Volume would be 500MWh was suggested by one respondent not in support of P194, on the basis that this would present a negligible change under normal operating conditions whilst providing a strengthened pricing signal during periods of system stress.

### 3.1.3 Modification Group's Conclusions

Having considered the consultation responses, the majority of Modification Group members were concerned with the proposed introduction of the PAR volume, since they believed there could be no rational justification for any value used. The only basis for setting the value would be to look at the effects based on historic data. It was noted that justifying the value on the basis of historic data may lead to the introduction of a value inappropriate for future use.

A view was also expressed by one Modification Group member in support of a marginal pricing signal that the use of a PAR volume rather than a purely marginal approach would be a compromise that had disadvantages of both an average approach and a purely marginal mechanism.

A minority of Modification Group Members believe that the use of the PAR Volume provides the benefits of a pricing signal closer to that of the marginal balancing action whilst addressing concerns related to small or single actions setting the price and therefore believe its introduction would be appropriate.

The group unanimously agreed that, were P194 to be approved, 100MWh would be an appropriate value to use as the PAR Volume. It was considered, a value of 100MWh would meet the objective of the proposed mechanism i.e. would create a pricing signal more closely aligned with the marginal energy balancing action whilst limiting occurrences of a single balancing action setting the Energy Imbalance Price.

## 3.2 Potential Alternative Modifications

### 3.2.1 Modification Group's Initial Discussions

The Modification Group identified a number of potential Alternative Modifications for consideration. It was noted by the Modification Group that, in setting the Group's Terms of Reference, the Panel had noted:

- Proposed Modification P194 requires that the PAR volume is set to 100MWh. This value should be included in the BSC such that it is only subject to change via a Modification Proposal;
- Other values and mechanisms for determining the PAR volume provide potential Alternative Modifications and should be considered by the Modification Group; and

- The defect identified within the Modification Proposal is isolated to the derivation of the main Energy Imbalance Price from the volume weighted average of all priced actions following NIV tagging. Therefore, consideration of potential Alternative Modifications should be limited to looking at variations on how the PAR mechanism is set.

In this context the Modification Group identified the following potential Alternative Modifications:

- Potential Alternative Modifications where the PAR volume is a value other than 100MWh; and
- A potential Alternative Modification where the PAR volume would be a set percentage of the NIV, this volume would be parameterised with a minimum volume limit (i.e. if NIV is small such that the set percentage of NIV gives a volume below the limit, the PAR volume would default to the minimum volume value).

It should be noted that the issues raised by the potential Alternative Modifications are closely aligned with those of the Proposed Modification as considered in the remainder of this document. Analysis performed in support of P194 contained in this report considers PAR volumes of 1, 100, 200 and 500 MWh.

### 3.2.2 Views of Respondents to Assessment Procedure Consultation

Q	Consultation question	Yes	No
7.	Do you believe any of the potential Alternative Modifications identified would better facilitate the achievement of the Applicable BSC Objectives (as compared to either the current baseline or Proposed Modification P194)? Options being considered include alternative PAR Volumes and the use of a PAR Volume which is a fixed percentage of NIV.	2 (10, 0)	20 (58, 5)

There was no support for an approach where the PAR volume would be a set percentage of the NIV from consultation respondents. It was recognised that under a percentage approach the volume of actions setting the price would be higher during periods where the NIV was larger and the System may be stressed. It was considered this may not give the pricing signals during periods of System stress envisaged by P194 and therefore would not address the perceived defect as appropriately as the Proposed Modification.

One respondent indicated that 100 MWh may be too small, as the average error in the estimation of NIV resulting from the Transmission Company's demand forecasts was approximately 200MWh. One respondent, not in support of P194, suggested an Alternative Modification where the PAR Volume would be 500 MWh as considered in section 3.1 of this document.

It was suggested that, were P194 approved, there may be some merit including the PAR Volume as a BSC parameter that could be reviewed by the Panel on an annual basis to ensure it remained appropriate.

### 3.2.3 Modification Group's Conclusions

The Modification Group unanimously agreed that no Alternative Modification P194 should be developed.

The Modification Group concluded that an approach where the PAR Volume was a set percentage of the NIV may not give the pricing signals during periods of System stress envisaged by P194 and therefore would not address the perceived defect as appropriately as the Proposed Modification. Therefore, the Group unanimously agreed that this approach should not form Alternative Modification P194.

As outlined in section 3.1 of this document the Group concluded that 100 MWh would provide the most appropriate PAR Volume were P194 to be implemented. Therefore, the Modification Group agreed unanimously that no Alternative Modification whereby the PAR Volume had a value other than 100MWh should be developed.

There was a mix of views within the Modification Group as to whether or not it would be better for the PAR volume to be subject to regular review and approval by the BSC Panel (rather than included in the BSC such that it can only be amended via a Modification Proposal). Some members believed this approach would be more appropriate, as it would provide the BSC Panel with the ability to amend the value if necessary and ensure the value would be subject to regular review. Other members of the Modification Group believed that the impact of changes to the value could be significant, both within the BSC and the wider context of the Electricity market. Therefore, changes to the PAR Volume should be subject to the transparency provided by the Modification Procedures and associated Authority approval. It was also recognised that the level of assessment and consultation that would be required under both approaches would be the same due to the significant consequences of any change. In light of the advice provided to the Modification Group by the Panel that the PAR volume should only be subject to change via a Modification Proposal, the Modification Group agreed unanimously that no Alternative Modification should be developed whereby the PAR volume was subject to review and approval by the BSC Panel.

### **3.3 Impact on Energy Imbalance Prices**

#### **3.3.1 Current Baseline**

It is suggested by the Proposer that Energy Imbalance Prices under the current arrangements do not provide a good proxy for the marginal cost of balancing energy (for further detail see [Annex 9 - Proposer's Presentation](#)). This is especially considered to be a concern at times of energy shortage when the differential between the average price and the marginal price of balancing energy is likely to be greatest.

It is generally accepted that the overall objective of any cash out regime is that the cash out prices should be the best proxy of the marginal cost of energy required, in an efficient market, for the relevant System Operator (SO) to bring the system into balance within each balancing period. It is also generally recognised that, in perfect market conditions, the average price of energy would tend to the marginal price. Therefore, the view that cash out prices should be a proxy for the marginal cost of energy required does not in its self infer either an average or marginal mechanism for calculating Energy Imbalance Prices.

The Modification Group have considered the extent to which the Energy Imbalance Prices are aligned with the marginal cost of energy required by the System Operator to bring the system into balance.

#### **Bid / Offer Prices:**

The Modification Group considered analysis of the Bid / Offer price patterns ([Annex 5 – Bid / Offer Price Analysis](#)).

On consideration of this analysis the Group noted:

- The pattern of Bid / Offer price submission does not vary significantly between Settlement Periods;
- The pattern of Bid / Offer prices submitted does not vary significantly between Settlement Periods with different System conditions;



- The average price of Bids / Offers accepted by the System Operator does not correlate with the Price of the most expensive Bid/ Offer Acceptance which was not removed from the price calculation by the current tagging mechanism (i.e. the price of the most expensive balancing action deemed to be taken for energy balancing purposes under the current baseline).

Therefore, the Group concluded that Bid / Offer Price submissions are such that the average price does not generally tend to the marginal cost of energy. It was noted that there are a number of reasons why this does not occur in the electricity market, including the existence of Gate Closure (which prevents Parties from adjusting prices up to real time), the lack of perfect market information and the fact that Bid and Offer prices represent more than a pure energy price (for example delivery timescales).

### **Energy Imbalance Prices**

The Modification Group considered analysis illustrating the difference between the Energy Imbalance Prices calculated under the current baseline (i.e. the volume weighted average price of balancing actions not removed via the current Tagging Mechanisms) and the price of the most expensive<sup>4</sup> balancing action deemed to be energy balancing (i.e. remaining following application of the current tagging mechanisms) - [Annex 6 - Price Analysis](#). It was noted by the Modification Group that:

- In the majority of Settlement Periods, prices under the current baseline are fairly closely aligned with the price of the most expensive balancing action remaining following application of the existing tagging mechanisms; and
- During some periods, Energy Imbalance Prices under the current baseline may not be closely aligned with the price of the most expensive balancing action remaining following application of the existing tagging mechanisms. These periods appear to align with times where there was a large net imbalance on the System and variations in demand (for example over sunset periods).

The Modification Group concluded that there is a divergence between Energy Imbalance Prices calculated from the volume weighted average of all balancing actions following application of the existing tagging mechanisms and the price of the most expensive balancing action remaining following application of the existing tagging mechanisms (i.e. the most expensive action deemed to be taken for purely energy balancing purposes under the current baseline). It was also noted by the Group that this difference appeared to be more substantial during periods of System stress and/ or when the System Operator is managing a changing demand.

### **3.3.2 Proposed Modification and potential Alternative Modifications**

The Group considered analysis of the prices that would have been generated for historic Settlement Periods had the P194 arrangements applied (all other factors being equal) - [Annex 6 - Price Analysis](#).

The Group agreed that the prices generated under P194 would be more closely aligned with the price of the most expensive action deemed to be energy balancing under the current baseline. On this basis it was recognised that some of the areas for consideration under P194 would be aligned with those identified under rejected Modification Proposals P136 – 'Marginal Definition of the 'main' Energy Imbalance Price' (P136) and P137 – 'Revised Calculation of System Buy Price and System Sell Price' (P137). P136 and P137 both proposed a marginal methodology for the calculation of Energy Imbalance

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<sup>4</sup> It should be noted that 'most expensive' should, in this context, be considered in relation to the benefit of the system. Offers are bought by the system for an increase in energy, thus the 'most expensive' will be the Offer that cost the most to take. Since Bids are paid to the system by Parties for a reduction in energy, the most expensive Bid will be the one that pays the system the least. A negative Bid price will be even more expensive to the system, as the system is paying (rather than being paid) to reduce energy.

Prices alongside a number of other changes affecting the inputs to the calculation and the tagging methodologies. The Group revisited the relevant issues raised under these Modification Proposals, identifying differences and similarities. These discussions are set out in the following sections.

### 3.4 Actions Setting Energy Imbalance Prices

#### 3.4.1 Modification Group's Initial Discussions

Under P136 and P137 consideration was given as to whether or not it was appropriate for a single balancing action to set Energy Imbalance Prices. In its decision letter for P136 the Authority indicated concern that;

*"....marginal cash-out prices could create distortions because they could be set based on a very small volume of energy accepted by the SO or alternatively based on a System Balancing action."*

It was considered by the Group that the concerns expressed by the Authority were based on the following:

- It is generally considered that Energy Imbalance Prices should be based on balancing actions taken to resolve the energy imbalance on the System, rather than actions which have been taken to resolve constraints on the System. It is widely acknowledged that it is impossible to determine whether or not any individual balancing action was a pure energy balancing action. Therefore, any tagging mechanisms used to remove balancing actions from the pricing calculation not considered purely energy balancing will be imperfect. Taking the volume weighted average of all un-tagged actions could be considered to reduce the impact of any imperfections in the tagging mechanisms. Therefore, using a small volume of energy or a single action to set the price could be considered to increase the influence of actions which are not purely energy balancing.
- It could be considered that using a single action to set the price could make the arrangements more open to manipulation. Since, if a single action regularly sets the price and this single action is consistently taken on the same BM Unit, this BM Unit may be in a position to manipulate the energy Imbalance Price. Although the Group noted that no credible method to achieve this manipulation had been identified during the progression of P136 and P137.

By proposing to set the Energy Imbalance Price on a volume weighted average of a defined proportion of actions rather than a single marginal action, P194 seeks to address these concerns. Therefore, the Modification Group considered the extent to which these concerns would exist under P194.

The Group noted that it is possible for a single energy balancing action or a small volume of energy to set the price under the current baseline (for example when the NIV is 'small' or where a single balancing action is the only action in the NIV). The Modification Group also noted that:

- If 100MWh is not considered a 'small' volume of energy, P194 does not increase the possibility that a 'small' volume of energy is used to set Energy Imbalance Prices when compared to the current baseline. Therefore, P194 would not increase the possibility of Energy Imbalance Prices being set on a 'small' volume of energy. The Group agreed that 100 MWh was not a small volume of energy in this context.
- Where  $PAR < NIV$ , P194 reduces the number of actions used to set the Energy Imbalance Price. Where  $PAR > NIV$  there would be no impact on the number of actions used to set the Energy Imbalance Price. Therefore, overall P194 reduces the number of actions used to set Energy Imbalance Prices, increasing the probability that a single action could set the price. This in turn increases the possibility that a single BM Unit could set the price, as compared to the

current baseline. However, it was recognised that this would occur to a lesser extent than under a purely marginal methodology.

- Overall P194 reduces the volume of actions used to set Energy Imbalance Prices. Assuming actions which are not purely energy balancing and not removed by the current tagging mechanisms are more expensive (and therefore not removed proportionately by P194); this will increase the impact on Energy Imbalance Prices of any such actions. However, it was recognised that this may occur to a lesser extent than under a purely marginal price.

In an attempt to quantify the impact identified above, the Modification Group considered analysis of the balancing actions which would have set Energy Imbalance Prices historically had the P194 mechanism been applied - [Annex 6 - Price Analysis](#).

The Group noted that in the majority of cases more than one balancing action would set the main Energy Imbalance Price under P194. In addition, the Group noted that the marginal action remaining following application of the existing tagging rules was taken on different BM Units. The Group also agreed that, even were a Party consistently providing the balancing action which sets the main Energy Imbalance Price, it would be difficult / impossible for such Party to manipulate the situation to its own benefit. Therefore, the Group did not have a concern that P194 would increase the ability of Parties to manipulate Energy Imbalance Prices as a consequence of increasing the probability of a single balancing action setting the main Energy Imbalance Price.

Some members of the Group believed that the current tagging mechanisms used to remove actions not reflective of the cost of energy balancing contain imperfections, such that some actions not reflective of the cost of energy balancing are not be removed under the current baseline. These members of the Group believed that P194 would increase the influence of these actions on Energy Imbalance Prices. Other members of the Group believed that, for the purpose for assessing P194, it must be considered that (by definition) the current tagging mechanism removes the correct actions and that this issue should not be considered under P194.

### 3.4.2 Views of Respondents to Assessment Procedure Consultation

Q	Consultation question	Yes	No
5.	Do you believe P194 would increase the potential for Parties to manipulate Energy Imbalance Prices?	12 (26, 0)	8 (37, 4)

A significant number of consultation respondents indicated they believed P194 would increase the potential for Parties to manipulate Energy Imbalance Prices by reducing the number of actions setting Energy Imbalance Prices. However, no further explanation of how this could be achieved was provided.

It was noted by a number of respondents, which did not believe P194 would increase the potential for manipulation, that no argument as to how this could be achieved had been articulated.

A number of respondents highlighted concerns that, post the introduction of the British Electricity Trading and Transmission Arrangements (BETTA), a significant number of negative priced Bids had been accepted from BM Units in the north of the country and high priced Offers from BM Units in the south of the country and that the cost of these actions have been included in the Energy Imbalance Price. It was suggested that P194 would increase the influence of such actions on Energy Imbalance Prices.

### 3.4.3 Modification Group's Conclusions

The Modification Group concluded that P194 would not increase the ability of Parties to manipulate Energy Imbalance Prices. It was considered that the complexity of the cash flows involved meant it

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would be virtually impossible for any Party to consistently benefit from any attempted manipulation and even if they were successful it could easily be detected. It was also noted that on the basis of historical data it would be unlikely that a single BM unit would set the Energy Imbalance Price under P194.

The Modification Group noted that there could be considered imperfections in the current tagging mechanisms which meant actions not reflective of the pure cost of energy balancing influence the Energy Imbalance Price. It was considered that these imperfections are illustrated by the recent influence of the significant number of negative priced Bids accepted from BM Units in the north of the country and high priced Offers from BM Units in the south of the country on Energy Imbalance Prices.

The majority of Modification Group members believed P194 would increase the influence of any failure of the current tagging mechanisms to identify balancing actions not reflective of the pure cost of energy balancing on Energy Imbalance Prices. However, a minority of Modification Group members indicated that any failure of the current tagging mechanisms in this area is outside the scope of P194 and should not be considered within the assessment of P194 against the Applicable BSC Objectives.

### **3.5 Requirements for increased incentives to balance**

#### **3.5.1 Modification Group's Discussions**

The Proposer provided a presentation to the Group outlining the rationale for P194 and the requirement for increased incentives for Parties to balance their positions. This information is included in [\*Annex 9 – Proposer's Presentation\*](#).

In particular, the Proposer suggested that the inability of Energy Imbalance Prices to send appropriate signals to the forward market was noticeable in the cold snap of late February and early March of 2005. During this time there was sustained period of contracted energy shortfall across the period 25th February 2005 to 10 March 2005. It is the Proposer's view that during this time Energy Imbalance Prices did not rise to sufficient levels to ensure a market response to the energy shortfall. As a consequence the market was short for a prolonged period. A number of the Modification Group members reinforced the point that BSC participants have no license obligation to balance their contractual positions by Gate Closure. As far as it is possible, the imbalance positions of participants will be based on an economic assessment between the relative costs of resolving their positions forwards and the cost of imbalance cash out prices.

To date there has not been a situation where the Transmission Company has not been able to balance the System. Therefore, some members of the group were of the view that there is no requirement for increased incentives to balance and the current baseline provides for more efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System than would be the case under P194. For example, the events described above occurred following a late cold spell, after the normal winter peak conditions. Some generators were contractually committed to outages at this time and therefore completely unable to respond to market signals on a half-hourly basis. However it was also noted by other members that as the capacity existed in the market, participants were able, if they felt it economically viable, to resolve that imbalance in the forward markets.

### 3.5.2 Views of Respondents to Assessment Procedure Consultation

Q	Consultation question	Yes	No
2.	Do you agree with the view of the Proposer that the current baseline does not provide sufficient incentives for Parties to contract ahead of Gate closure to avoid exposure to Energy Imbalance Prices?	6 (22, 0)	18 (52, 5)

Arguments expressed were consistent with those of the Modification Group. The majority of Consultation responses believe that the current baseline provides sufficient incentives for Parties to contract ahead of Gate closure to avoid Energy Imbalance Prices. The minority of respondents supported the view of the Proposer that sufficient incentive is not provided, particularly at periods of System stress.

## 3.6 Incentives to balance

### 3.6.1 Modification Group's Initial Discussions

The Modification Group considered the impact of P194 on the incentives for Parties to balance.

It was noted that, under identical conditions, Parties exposed to the main Energy Imbalance Price under P194 would be liable for the same or increased Energy Imbalance Charges as compared to the current baseline. Therefore, it was noted that P194 will provide additional incentives for Parties to avoid being in imbalance in the same direction as the overall imbalance of the system. The incentive for Parties to avoid being in Energy Imbalance in the opposite direction to the overall imbalance of the system will be unchanged (since the derivation of the market price will be the same). The Modification Group considered whether overall P194 would lead to Parties balancing their position in a more efficient manner.

In order to quantify the increased incentive to avoid exposure to the Main Energy Imbalance Price introduced under P194, the Modification Group considered the financial impact of P194. This information is included in - *Annex 8 – Cashflow Analysis*.

Some members of the Group believe that P194 may have the effect of aligning Parties more closely with the system (potentially improving the efficiency of the system). For example, where the System is short, Parties will be under an incentive to cover their position by the risk of exposure to an increased System Buy Price. Where the System is long, there is less incentive to go long(er), as there is the risk of exposure to a lower System Sell Price. It should be noted that a number of the Group do not believe that the effect will be symmetrical. It is suggested that, Parties may prefer to be long to avoid exposure to a charge whatever the size of that charge, and / or that there may be an increase of volatility / size of the System Buy Price that will be greater than the effect on the System Sell Price, such that Parties would be under an incentive to go long to avoid exposure to the SBP. Therefore some members of the Group believe P194 would increase an existing asymmetry in the market.

A number of the Group stated that they believed a potential effect of P194 (particularly at times of system stress) would be to encourage potentially excessive length in the market, i.e. Parties, in particular Suppliers, would go (very) long to protect themselves from the risk of exposure to the System Buy Price, thus creating an inefficient level of reserve, by collective over contracting in the case of Suppliers or spilling in the case of Generators. These members of the Group believe that it could be considered to be more efficient for the Transmission Company to obtain the reserve for Parties, i.e. one body buying the reserve. Thus a number of the Group believe there to be two extremes; Parties covering all of their demand at all times, individually creating the requisite level of reserve or the other

extreme of the Transmission Company carrying all of the reserve to cover Parties shortfalls. The most efficient situation would lie somewhere between these two extremes.

Some of the Group believe that the incentives should be on each Party to 'insure' themselves by forward contracting in sufficient volumes to cover peak periods, with the Transmission Company undertaking the residual balancing in real time, i.e. striking an efficient balance between the two extremes. Thus, to achieve this incentive, pricing signals (from the Energy Imbalance Prices into the forwards markets) should be strong enough to indicate what the market is 'doing', i.e. entering a period of stress or surplus.

As noted above, a number of the Group believe that P194 will have the incentive of encouraging (potentially excessive) length at a Party level, as Parties will try to avoid the risk of exposure to the System Buy Price, and that therefore P194 would not achieve the objective of placing an incentive on individual Parties to balance their positions.

However, a number of members of the Group noted that P194 affects the main price; the System Buy Price where the System is short, and the System Sell Price where the system is long. Therefore exposure to an increased System Sell Price will occur where the system is long (potentially as a consequence of individual Parties carrying excessive length) which will discourage Parties from carrying inefficient length. Thus these members of the Group believe that P194 would encourage a more efficient response to emerging price signals than the current baseline.

Some members of the Group held the view that Parties may not be able to balance their positions any more accurately than they do at the present time. In particular small Parties may be detrimentally affected, since there may not be products on the market which allow them to trade in small enough volumes to avoid imbalance. Therefore, the introduction of an increased incentive to balance which can not be responded to would penalise some Party types.

Some members suggested that the extent to which Parties balance their positions and whether sufficient incentives are provided under the current baseline was not the appropriate question to consider. Rather the important question is whether the 'correct' Energy Imbalance Prices are generated. Providing Energy Imbalance Prices that correctly reflect the cost of energy required for the System Operator to bring the system into balance, means that appropriate incentives would be placed on Parties. Each individual Party could make their own commercial decision on the most appropriate level of balance and be exposed to the appropriate cost for any imbalance.

### 3.6.2 Views of Respondents to Assessment Procedure Consultation

Q	Consultation question	Yes	No
3.	Do you agree with the view of the Proposer that P194 would provide additional incentives for Parties to contract ahead of Gate Closure to avoid exposure to Energy Imbalance Prices?	11 (28, 0)	13 (46, 5)

A number of respondents indicated that P194 would provide an incentive for Parties to contract ahead of gate closure, in order to avoid exposure to Energy Imbalance Prices (which, in otherwise identical conditions, would be higher than under the current baseline).

Some respondents indicated that rather than encouraging Parties to contract ahead of Gate Closure to avoid Energy Imbalance Prices, P194 would provide incentives for Parties to over contract to avoid exposure to SBP, on the basis that P194 would affect SBP to a greater extent than SSP.

A number of respondents expressed a view that, although P194 would provide financial incentives for Parties to contract ahead of Gate Closure, these incentives could not be responded to. For example it may not be possible for Parties to reduce their levels of imbalance for a number of reasons including

the accuracy of demand estimates, the risk of plant failure and the lower limit on the volume of energy that can be traded. In particular, a number of the smaller Parties expressed this view.

Q	Consultation question	Yes	No
4.	What overall impact do you believe P194 will have on Parties (i.e. do you agree with the view expressed that P194 would encourage excessive length in the market)?	15 (40, 4)	4 (21, 0)

The majority of consultation respondents supported the view of some Modification Group members that P194 would result in Parties adopting a long position and would encourage increased length in the market. Some respondents supported the view that P194 would provide increased incentives to avoid both SSP and SBP and therefore would not encourage excessive length in the market.

### 3.6.3 Modification Group's Conclusions

As outlined previously there was a mix of views within the Modification Group as to whether or not P194 would cause Parties to adopt trading strategies to avoid exposure to SBP and therefore promote increased length in the market. Some members of the group believed that the effect of P194 would be asymmetrical as SBP would be affected to a greater extent than SSP, as such it would promote increased length in the market. Other members believed that as P194 would affect both SBP and SSP there would be increased incentives to avoid being in imbalance in the same direction as the overall imbalance on the System whichever direction that was in.

However, the Modification Group concluded that the question of the impact on trading approaches utilised by Parties is secondary to the question of whether or not the cost of the System Operator resolving imbalance is appropriately reflected onto those Parties with imbalance positions. Provided that the cost of imbalance is appropriately reflected onto those Parties with imbalance positions, Parties will adopt whatever trading strategy is financially most efficient for them. The most efficient ratio of Parties balancing their own position and the Transmission Company resolving any residual imbalance will follow.

## 3.7 Cost Reflectivity of Energy Imbalance Prices

### 3.7.1 Modification Group's Discussions

A number of the Modification Group believe that a purely volume weighted average methodology consistently understates the marginal cost and value of energy balancing the system, particularly at times of system shortage, and is therefore not reflective of the costs of energy balancing the system, and furthermore sends price signals that do not reflect the state of the system. Thus these members of the Group believe that implementation of P194 would have the effect of better reflecting the underlying opportunity costs of balancing the system, sending more accurate price signals regarding the state of the System.

Conversely, a number of the Group believe that, as a consequence of there being imperfect information and the inability to perfectly differentiate between system and energy balancing products, that an average methodology is a more cost reflective methodology than the P194 price methodology. It is the view of some members that the current GB Electricity Market is not a perfect market and that the industry should therefore be cautious about the consequences of applying market theory to an imperfect world.

It is impossible to apportion the cost of each individual MWh taken as a balancing action back to the individual Party that incurred that cost. A number of the Modification Group members argued that each Party in imbalance (in the same direction as the system) has incurred the marginal cost of energy



balancing the system. Therefore, by applying a price more closely aligned with the most expensive balancing action that has not been identified as being taken for reasons other than purely energy balancing, a more accurate reflection of the costs incurred by the Transmission Company emerges, which is targeted back at those in imbalance.

However, some of the Group believe that a marginal Energy Imbalance Price does not target the costs incurred in the energy balancing of the system, as use of an Energy Imbalance Price more closely aligned with the marginal action remaining following tagging may consistently over recover the costs incurred in balancing the system, whereas a purely volume weighted average Energy Imbalance Price is less likely to lead to consistent over recovery.

A number of Modification Group members indicated that they believe that the Energy Imbalance Price mechanism is not about recovering the costs of energy balancing the system, as this is achieved by Balancing Services Use of System (BSUoS) charging (undertaken by the Transmission Company), and therefore the main objective of the Energy Imbalance Price mechanism should be seen as cost reflectivity, not cost recovery. If the Energy Imbalance Prices are more cost reflective, then they could be considered to be better targeting the costs of addressing the energy imbalance at those in imbalance.

### **3.7.2 Views of Respondents to Assessment Procedure Consultation**

Views expressed by consultation respondents in terms of the cost reflectivity of Energy Imbalance Prices were consistent with those of the Modification Group outlined in section 3.7.1 above.

## **3.8 Impacts On Behaviour**

### **3.8.1 Modification Group's Initial Discussions**

A number of the members of the Group raised concerns that the risk of exposure to a higher Energy Imbalance Price may have the effect of increasing the Bid – Offer Prices being submitted into the Balancing Mechanism, reflecting the (perceived) increase in risk via Energy Imbalance Prices.

However, the Group noted that historically Bid – Offer prices are relatively static and do not appear to change in response to changes in Energy Imbalance Prices and thus it could be assumed that Bid – Offer pricing strategies are adopted for reasons other than Energy Imbalance Price fluctuations.

Some members of the Modification Group believe that generators may not enter into contracts in order to avoid potential exposure to SBP under P194. These members believe that a generator may choose not to contract, since by contracting they would potentially be exposed to SBP (for example if the plant breaks down and they are unable to generate). However, by withholding the generation and offering it into the Balancing Mechanism or spilling the energy (paid at SSP) they could avoid any potential exposure to SBP.

Other members of the Group believe that generators would be under incentives to contract, since contracting would provide a guaranteed income; where as an Offer into the balancing mechanism may not be accepted. It was also noted that an increased SBP may raise the potential contractual price available to the generator (since demand side would be under an incentive to contract ahead to a greater extent in response to any uplift in SBP), thereby encouraging them to contract in advance.

## **3.9 Changes to risk, and consequential risk management**

### **3.9.1 Modification Group's Discussions**

For otherwise identical conditions, P194 will increase Energy Imbalance Prices as compared to the current baseline. Based on analysis of the period 1 April 2004 to 30 June 2005, Energy Imbalance Price



extremes would be  $SBP = £663$  and  $SSP = -£63/\text{Mwh}$  under P194 (as compared to  $SBP = £349/\text{MWh}$  and  $SSP = £0.5/\text{MWh}$  under the current baseline)<sup>5</sup>.

Some members of the Group believe that P194 would increase the possibility of 'high' Energy Imbalance Prices and that the risk of exposure to 'high' Energy Imbalance Prices introduces an unmanageable risk.

Their view is that currently the risk of exposure to imbalance under the average price methodology is reflected in the contract prices and the Bid – Offer prices of Parties. Although the Energy Imbalance Price has the potential to be extreme with an average methodology, the risk is perceived to be lower than with the P194 methodology, and therefore more easily factored into the contract / Bid – Offer prices for a Party. However, some members of the Modification Group believe that under P194 Energy Imbalance Prices could reach extreme levels which could have the effect of bankrupting a Party exposed to the imbalance price, and therefore impose such an extreme risk that it cannot be (adequately) factored into the contract / Bid – Offer prices.

These members of the Group believe that, this risk would be unmanageable, because there are currently no insurance products available to mitigate the risk of exposure to imbalance charges resulting from a failure of some description after Gate Closure. Furthermore, they believe that the potential for more 'extreme' Energy Imbalance Prices may prevent the development of such products.

Conversely, other members of the Group believe the previously mentioned perception of the risk to be predicated on the assumption that the Energy Imbalance Prices will be more 'extreme'. In their opinion this is unlikely to be the case, and therefore the risk associated with P194 is no greater than the risk associated with an average imbalance price methodology, and is therefore a risk that can be factored into contracts and Bid – Offer prices in the same way as currently, or for which insurance products may emerge over time to mitigate this risk. Furthermore, these members of the Group noted that there are current strategies for risk management which would apply equally well under the P194 methodology, namely improving the reliability of plant, improving demand forecasts and buying options.

Furthermore, stronger price signals from the Energy Imbalance Prices and consequentially the forward market may mitigate the likelihood of extreme events, such as extreme system shortage, and demand control being required, as Parties can see the emerging price signals and respond to them, thus averting the extreme event. This may have the effect of reducing the overall risk to the market.

### **3.10 Impact on the Residual Cashflow Reallocation Cashflow**

#### **3.10.1 Modification Group's Initial Discussions**

For otherwise identical conditions, P194 will increase (or have no effect on) Energy Imbalance Prices as compared to the current baseline. It in turn follows that, for otherwise identical conditions, P194 will increase the Residual Cashflow Reallocation Cashflow (RCRC).

Under P136 and P137 it was suggested that Parties may take a view that the risk of exposure to Energy Imbalance Prices can be offset by a return via RCRC. The assumption is that where there is a high price (and Parties are, in general, short), the BM cashflows are potentially going to be consistently over recovered, and the residual cashflow will be high. This could mean that Parties may recover a 'lump' of the exposure to imbalance paid at SBP back from RCRC, reducing the overall cost of imbalance, and mitigating the effect of the price signal from the Energy Imbalance Price. Furthermore, it was suggested that the expectation of receipt of RCRC will affect, as a second order effect, forward contracting behaviour for some Parties.

<sup>5</sup> NB: This excludes the prices that result from the Emergency Instruction issued 19 May 2004, since the impact of Emergency instructions has been addressed via Approved Modification P172.

It was also suggested that any increase in the RCRC may potentially distort competition as, due to the asymmetry of RCRC, some types of Party may consistently receive more RCRC than others. For example a single site generator that fails will be exposed to SBP but will not receive any RCRC to offset their exposure to imbalance (since their metered volume will be zero). In contrast to this, a Supplier that does not contract for its energy use is exposed to SBP but has metered volumes and therefore receives a proportion of the RCRC. This situation would be the same under P194 as under the current baseline, although the impact could be increased were Energy Imbalance Prices to rise.

However, the counter view expressed under P136 and P137 was that RCRC could be considered to be a side effect of the Settlement calculations. Furthermore, one which is unpredictable as the relative sizes of the SSP and SBP could lead to the RCRC being a debit, rather than a credit, especially where the system is persistently short. Therefore, the inability to predict the RCRC may mean that it has little to no influence on Parties incentives, and will not cause Parties to change their behaviour.

In order to quantify the perceived impact of the RCRC, the Modification Group considered analysis of the net impact on cash flows at an Energy Account level - [\*Annex 8 – Cashflow Analysis\*](#).

The Group noted that, for otherwise identical conditions under P194 (as compared to the current baseline):

- Parties with imbalances in the opposite direction to the System would be better off. Since Parties with exposure to the increased main Energy Imbalance Price will increase the RCRC (either by paying more or receiving less);
- Parties with imbalances in the same direction as the System could be either better or worse off as a consequence of the net change in Imbalance Charges and RCRC. However,
  1. Any Party short when the market was short, would have been better off being less short. Since its net increase in Imbalance Charges would be lower and the RCRC pot would have increased; and
  2. Any Generator which was long when the market was long, would have been better off had it contracted all of its output. Since the net increase in lost opportunity cost of contracting spilt energy (i.e. the difference between the potential contract price and SSP) would be less and the RCRC pot would have increased; and
  3. Any Supplier which was long when the market was long, would have been better off had it contracted to its demand (since the net difference between the contract price paid and the return via SSP would be more and the RCRC pot would have increased).

Therefore, all Parties would be under an increased incentive to avoid exposure to the main Energy Imbalance Price under P194 via increasing the proportion of their energy input or output covered by contract. Any increased incentive to balance provided by an increase in Energy Imbalance Prices is not removed by the RCRC. Therefore, the Group concluded that RCRC does not distort the incentive to balance provided by Energy Imbalance Prices.

### **3.10.2 Views of Respondents to Assessment Procedure Consultation**

A number of Parties expressed concern that any increase in Energy Imbalance Prices would increase the RCRC and that this may benefit larger Parties (in this context Parties with higher magnitude metered volumes and hence a large share of the RCRC) to the disadvantage of smaller Parties.

### **3.10.3 Modification Group's Conclusions**

The Modification Group concluded that the impact of P194 on the RCRC was not a significant factor in the assessment of P194.

The Modification Group concluded that, since the RCRC is allocated in proportion to metered volumes, any increase in the RCRC would be redistributed to Parties in proportion to their metered volumes. Hence, it could not be considered that P194 would increase the RCRC to the advantage of large Parties and the detriment of small Parties. However, the Group noted that there is a valid argument that the current mechanism could work to the disadvantage of generation in comparison to Supply. Where a generator is tripped of the System it will pay Imbalance Charges for its contracted output but will have no Metered Volume against which to receive a proportion of the RCRC. Supply side metered volumes are independent of imbalance. Hence it could be argued that the current RCRC reallocation mechanism disadvantages generation.

Overall the Modification Group concluded that any disproportionate effects associated with the RCRC re-allocation mechanism are a feature of the current baseline. However, it was recognised that, were it considered that a defect existed in this area it could be considered that any change which increased the RCRC would exacerbate this issue. It was noted that P194 would only increase the RCRC if Parties did not respond to the increased incentive to balance provided (i.e. the levels of imbalance did not change as a consequence of P194). If for example Parties adopted a trading strategy where they would be longer for a larger proportion of the time than under the current baseline (as suggested by a number of consultation respondents), the RCRC would generally be more negative or less positive, to the disadvantage of Parties with a larger share of the reallocation. It is difficult to accurately assess whether or not P194 would actually increase or decrease the RCRC.

### **3.11 Impact on Credit Cover**

#### **3.11.1 Modification Group's Initial Discussions**

Under the current baseline, Parties are required to provide Credit Cover against an estimate of their Trading Charge liability to avoid being in Credit Default. Under P194 Parties would continue to be required to post Credit Cover against an estimate of their Trading Charge liability. Under P194 the estimated liabilities of any individual Party may be more or less than they would be under the current baseline. However, assuming the Energy Imbalance Prices are appropriate, the liabilities being estimated are appropriate and hence the level of Credit Cover required would be no more or less appropriate than under the current baseline.

#### **3.11.2 Views of Respondents to Assessment Procedure Consultation**

A number of respondents raised concerns that P194 would increase the level of Credit Cover market participants are required.

#### **3.11.3 Modification Group's Conclusions**

The Modification Group concluded that the impact of P194 on the Credit Cover was not a significant factor in the assessment of P194.

The Modification Group recognised that the current Credit Cover arrangements are an area of concern for some market participants (in particular small Parties or relatively new market entrants). It was also recognised that some Parties may have increased Credit Cover requirements under P194, particularly if such Parties were unable to balance their positions any more than they do at present (for example due to the finite resolution to which contractual positions can be profiled due to the lower limit on the volume of energy that can be traded). However, where Parties are subject to Trading Charges it is considered appropriate that Credit Cover is maintained against these liabilities and the current baseline provides a mechanism for estimating these liabilities. Were P194 implemented it would remain appropriate for Parties to maintain Credit Cover against their estimated liabilities.

### **3.12 Impact on liquidity**

#### **3.12.1 Modification Group's Discussions**

Some Modification Group members expressed the view that P194 may improve liquidity in the market as a consequence of Parties trading more in order to achieve balanced positions. Other members of the Group were of the opinion generators may not contract directly with Suppliers to avoid exposure to imbalance prices and may prefer to offer capacity into the balancing mechanism or sell the energy to the System at SSP, this may reduce liquidity in the market.

#### **3.12.2 Views of Respondents to Assessment Procedure Consultation**

A number of consultation respondents supported the view that P194 would increase liquidity in the market as Parties trade to a greater extent in response to the increased incentive to balance their position.

A number of respondents expressed the view that there may be insufficient liquidity in the market for participants to balance their positions any more than they do currently, therefore it any increase in imbalance prices would be inappropriate.

Some respondents expressed the view that P194 would increase imbalance charges disproportionately for smaller Parties (since small Parties are unable to refine their contractual positions to the same degree of accuracy as larger Parties may be able to) and that these charges would be redistributed disproportional via RCRC to the benefit of larger Parties. Overall this would provide incentives for vertical integration and reduce liquidity in the market.

### **3.13 Impact on Specific Participant Types**

The Modification Group noted the significant number of responses to industry consultation on P194 and the number of smaller companies that had provided comments. The Modification Group welcomed these responses and agreed that it would be helpful to highlight the issues raised by a number of participants in relation to specific Party types:

- A number of small Suppliers indicated that it is difficult to estimate demand and trade energy in sufficiently small volumes to avoid imbalance exposure. As such these respondents indicated that any increase in Energy Imbalance Prices will have a disproportionate impact on small Suppliers;
- Some Parties suggested that variable generation (such as Wind generation) faces a disproportionate imbalance risk and therefore would be detrimentally affected by any increase in Energy Imbalance Prices;
- It was noted that it could be considered that single site generators face an unavoidable risk of exposure to imbalance charges. In the absence of a portfolio of output, where a plant trips a single site generator will be exposed to SBP for its entire contracted output. This situation is exacerbated, as the Party will have no metered volumes upon which a proportion of RCRC will be received. NB: this may be a benefit or dis-benefit to the Party as RCRC can be a credit or a debit, however it is likely to be a credit in periods where a plant has tripped (since the generator itself will be providing a significant increase in the RCRC via Imbalance Charges on the contracted output of the plant which has tripped) and therefore a disadvantage. Any increase in Energy Imbalance Prices would could therefore be considered to further disadvantage single site generators;
- A number of comments were received from smaller Parties in relation to concerns that P194 would increase Credit Cover requirements as considered in section 3.11; and

- A number of comments were received from smaller Parties in relation to concerns that P194 would disadvantage smaller Parties because of the mechanism used to apportion the RCRC as considered in section 3.11.

It was noted by the Modification Group that it is important that Imbalance Prices appropriately reflect the costs incurred by the Transmissions Company to balance the System. Provided this is the case, Parties could make their own commercial decision on the most efficient balance between resolving their imbalance positions and allowing the Transmission Company to resolve any imbalance on their behalf. Therefore, provided Energy Imbalance Prices appropriately reflect the costs incurred by the Transmissions Company to balance the System there would be no disproportionate impact on any Party type. The Modification Group considered whether or not this would be the case as outlined in section 3.7 of this document.

### **3.14 Other areas identified by consultation respondents**

The Modification Group considered the following areas raised by respondents to the industry consultation that are not covered in the previous sections:

#### **3.14.1 Wider issues**

A number of consultation respondents highlighted wider issues with the cash out arrangements and suggested alternative / additional changes that may be appropriate:

- One respondent indicated that the treatment of standing reserve, options fees, constraints and National Grid forward trades has a greater influence on Energy Imbalance Prices than the areas raised under P194;
- One respondent indicated that, were P194 to be implemented, it would be necessary to progress changes to the treatment of Balancing Services Adjustment Data to include all trades in a disaggregated format;
- One respondent referred to the impact of imperfections in the tagging mechanisms and suggested that, were P194 approved, further changes should be made to address these imperfections;
- One respondent suggested that the introduction of a price cap could be used to reduce the influence of imperfections in the tagging mechanisms;
- One respondent suggested the 'pay as bid' principle would not be appropriate under P194 and Parties should be paid the marginal Bid or Offer price for Acceptance Volumes; and
- One respondent supported the argument put forward that Energy Imbalance Prices do not rise to appropriate levels but believed there are more appropriate ways to achieve this than the mechanism proposed.

The Modification Group noted that a number of these areas / issues are currently being considered as part of Ofgem's ongoing review of the Electricity and Gas cash out arrangements. The Modification Group also noted that any change to the areas highlighted above would be outside the scope of P194. However, the Modification Group has acknowledged perceived imperfections of the current baseline in its assessment of P194 against the Applicable BSC Objectives.

#### **3.14.2 Impact on Customers**

One respondent suggested that the Modification Group should consider the pass through of imbalance costs to customers. The Modification Group noted that any impact on customers is outside the scope of its assessment of P194 against the Applicable BSC Objectives. However, it was noted that the ability to

manage Imbalance Charges will be reflected in the prices that can be offered to customers. Therefore, the extent to which a competitive price can be offered to customers depends on the ability to manage exposure to Imbalance Charges. This dependency may increase under P194, although it was noted that based on historic data, on average, Energy Imbalance Prices would not be significantly affected under P194 and the price offered to customers is unlikely to be impacted.

One respondent considered that P194 is an inappropriate Modification Proposal at a time when there are wider concerns relating to energy prices. Again the Modification Group noted that any impact on customers is outside of its assessment against the Applicable BSC Objectives. It was noted by some Modification Group members that P194 may actually reduce energy prices in the long term by increasing liquidity, promoting competition and increasing the incentive to invest in new capacity.

### **3.14.3 Analysis Provision**

One respondent commented that it was inappropriate for the Proposer to provide analysis to support the assessment of its own proposal. The Modification Group agreed that there was no concern relating to the impartiality of the analysis conducted and thanked the Proposer for providing this information.

### **3.14.4 Data Provision**

One respondent commented that there is insufficient transparency of market information. It was noted by the Modification Group that National Grid has a number of ongoing projects to increase the availability information.

One respondent noted that there is a time delay in the publication of Energy Imbalance Prices; hence it is impossible to respond to any short term signal provided by these prices. The Modification Group noted that P194 would have no adverse impact on publication timescales.

## **3.15 Implementation Approach and Costs**

### **3.15.1 Modification Group's Initial Discussions**

The Modification Group considered a number of approaches to implementation based on the changes to central system reporting that would be made to support P194. The following options were considered:

**Option A** – No changes to SAA reporting would be made. This approach would reduce the impact of P194, both in terms of the changes to Central Systems and the impact on BSC Parties (and will have an associated reduction in testing requirements). However, under this approach, the ability of Parties to verify the Energy Imbalance Price calculation may be adversely impacted. Whilst it would be possible to identify the total volume of different actions removed via both NIV and PAR tagging, it may not be possible to separate the element removed by NIV tagging and those removed by the P194 mechanism. This approach provided potential benefits via reducing the overall implementation lead times and the cost of changes to central systems. However, industry assessment indicated this approach would not be desirable as it may limit the ability of Parties to verify settlement calculations and could reduce the transparency of the pricing mechanism.

**Option B** – Changes to SAA reporting would be introduced on initial implementation of the change. This approach would ensure Parties could distinguish between the impact of the existing tagging mechanisms and the P194 mechanism. However, the additional reporting changes would incur further costs and require increased lead times to allow participant testing to be performed in order to allow Parties to ensure their systems would be capable of receive the amended Settlement reports. This approach was preferred by participants and it was considered that the additional costs (included in the P194 Assessment Consultation) would not be significant; and

**Option C**– No change to SAA reporting when the change is initially implemented, however reporting changes would be delivered as part of a later release. This approach would allow the requirement for reporting changes to be supported whilst reducing the lead-time for the main changes to the price calculation to be introduced. However, it was noted that separating the reporting of the new tagging mechanism from the changes to the price calculation and publication would be undesirable. In addition it was recognised that separating implementation into two parts may incur significant additional costs as there would be the requirement for two separate projects to amend central systems (hence two project overheads may be incurred).

The Modification Group concluded that implementation approach B should be followed were Proposed Modification P194 Approved. Therefore, estimated Implementation costs included in this document are based on option B. Details of the estimate implementation costs of these options can be found in the P194 Assessment consultation document.

### 3.15.2 Results of Proposed Modification Impact Assessment

#### PROPOSED MODIFICATION IMPLEMENTATION COSTS<sup>6</sup>

		Stand Alone Cost	Incremental Cost	Tolerance
<b>Service Provider<sup>7</sup> Cost</b>	Change Specific Cost	£ 270,581	£270,581	+/- 5% (£yy)
	Release Cost	£ 208,148		+/-0% (£yy)
	Incremental Release Cost	£ 16,411	£16,411	+/-0% (£yy)
	<b>Total Service Provider Cost</b>	<b>£ 495,140</b>	<b>£ 286,992</b>	+/- 2%
<b>Implementation Cost</b>	External Audit	£ 0	£ 0	+/- 0%
	Design Clarifications	£ 24,757	£ 14,350	+/- 100%
	Additional Resource Costs	£ 0	£ 0	+/- 0%
	Additional Testing and Audit Support Costs	£ 40,000		+/- 10%
<b>Total Demand Led Implementation Cost</b>		<b>£ 559,897</b>	<b>£ 301,342</b>	+/- 5%

<b>ELEXON</b>		320 Man Days	190 Man Days	+/- 3%
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<sup>6</sup> An explanation of the cost terms used in this section can be found on the BSC Website at the following link:  
[http://www.elexon.co.uk/documents/Change\\_and\\_Implementation/Modifications\\_Process\\_-\\_Related\\_Documents/Clarification\\_of\\_Costs\\_in\\_Modification\\_Procedure\\_Reports.pdf](http://www.elexon.co.uk/documents/Change_and_Implementation/Modifications_Process_-_Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf)

<sup>7</sup> BSC Agent and non-BSC Agent Service Provider and software costs.

<b>Implementation Resource Cost</b>		£ 70,400	£ 41,800	
<b>Total Implementation Cost</b>		<b>£ 630,297</b>	<b>£ 343,142</b>	<b>+/- 5%</b>

## PROPOSED MODIFICATION ONGOING SUPPORT AND MAINTENANCE COSTS

	<b>Stand Alone Cost</b>	<b>Incremental Cost</b>	<b>Tolerance</b>
Service Provider Operation Cost	£ 0 per annum	£ 0 per annum	+/- 0%
Service Provider Maintenance Cost	£ 0 per annum	£ 0 per annum	+/- 0%
ELEXON Operational Cost	£ 0 per annum	£ 0 per annum	+/- 0%

### a) BSC Agent Impact

The BSC Agent cost estimates outlined above reflect the following activities:

- Changes to Balancing Mechanism Reporting Agent and Settlement Administration Agent (SAA) software and documentation to amend the Energy Imbalance Price calculation;
- Changes to SAA reporting and the Interface Definition documentation to detail the impact of the new PAR tagging mechanism within the Settlement Report (SAA-I014);
- Unit, Module, System, Change Specific, Operational Acceptance and Deployment/ Backout testing.

### b) BSCCo Impact

The BSCCo cost estimates outlined above reflect the following activities:

- Review of changes to BMRA and SAA software and documentation;
- Review of Logica test documentation;
- Operation of ELEXON testing, including participant and parallel run testing;
- Project management and planning activities;
- Changes to the Trading Operations Market Analysis System (NB: the estimate of this cost is in the demand led service provider costs);
- Audit activities; and
- Changes to operational procedures

### c) BSC Party and Party Agent Impact

BSC Parties would be impacted by changes to the price calculation (in order to update their price estimation systems) and changes to SAA reporting. Party impact assessment indicated that these changes would cost between £10-200k and require lead times from 4-9 months (NB: one Party initially indicated a required lead time of at least 12 months but has confirmed that they would be able to support timescales being recommended by the Modification Group).



### 3.15.3 Modification Group's Conclusions

The Modification Group therefore agreed the following recommended implementation approach for P194:

- An Implementation Date for Proposed Modification P194 of 2 November 2006 if an Authority decision is received on or before 23 March 2006, or 22 February 2007 if the Authority decision is received after 23 March 2006 but on or before 13 July 2006.

If approved, P194 would apply to Settlement Runs and Volume Allocation Runs carried out in relation to Settlement Days on or after the Implementation Date. Settlement Runs and Volume Allocation Runs carried out in relation to Settlement Days before the Implementation Date would not be affected by P194.

### 3.16 Legal Text

The Modification Group walked through the legal drafting at its final meeting and further reviewed the text via correspondence.

The legal drafting can be summarised as follows:

- Section T amended to include the PAR volume of 100MWh;
- Amendments to Annex T-1 to identify balancing actions to be excluded from the price calculation. This change introduces a PAR Tagging mechanism which will identify actions which are not within the PAR volume. The drafting approach is consistent with that currently used to specify the current NIV tagging process;
- Amendments to the price calculation to exclude PAR tagged balancing actions; and
- Section X introduction of new definitions.

It was recognised by the Modification Group and the group recommended a full plain English version of the legal text should be developed further in support of the report phase consultation.

A copy of the draft legal text can be found in Annex 1.

## 4 ASSESSMENT AGAINST APPLICABLE BSC OBJECTIVES

This section outlines the views of consultation respondents and the Modification Group regarding the merits of P194 when assessed against the Applicable BSC Objectives.

### 4.1.1 Views of Respondents to Assessment Procedure Consultation

Q	Consultation question	Yes	No
1.	Do you believe Proposed Modification P194 better facilitates the achievement of the Applicable BSC Objectives?	5 (27, 0)	19 (47, 5)

The majority view of respondents to the Assessment Procedure consultation was that the Proposed Modification would not better facilitate the achievement of the Applicable BSC Objectives.

**Applicable BSC Objective B – ‘the efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System’**

The following arguments were expressed by respondents **not** in support of the Proposed Modification:

- Parties will take a long(er) position to avoid System Buy Price, thereby increasing the overall cost of balancing the System;
- Less reliable plant will not be made available due to potential exposure to imbalance, thereby increasing the overall cost of balancing the System;

The following arguments were expressed by respondents in support of the Proposed Modification:

- A pricing signal more closely aligned with the marginal energy balancing action provides a more appropriate incentive to balance and in turn promotes liquidity in the market. A more appropriate incentive to balance would increase efficiency of the operation of the Transmission Service by the Transmission Company;
- Parties will be encouraged to trade ahead of Gate Closure; increasing security of supply will increase efficiency of the operation of the Transmission Service by the Transmission Company.

**Applicable BSC Objective – (c) - "Promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity"**

The following arguments were expressed by respondents **not** in support of the Proposed Modification:

- There would be a disproportionate financial impact on smaller Parties, thereby adversely affecting this area of the market and discouraging market entry;
- There would be a disproportionate increased risk to single site generators (as they do not have the ability to mitigate the risk of imbalance exposure via use of alternative assets) thereby adversely affecting this area of the market and discouraging market entry;
- P194 would inappropriately increase imbalance charges to variable output generation (e.g. wind) thereby adversely affecting this area of the market and discouraging market entry;
- Greater volatility in prices will introduce unnecessary risk for Parties, thereby discouraging market entry;
- P194 would increase the impact of imperfections in the tagging mechanism on imbalance prices; therefore Parties would be exposed to Energy Imbalance Prices which are not reflective of the true cost of energy balancing the system. This would inappropriately target the costs of balancing the System to the disadvantage of some Parties;
- Although marginal pricing may provide the appropriate price signal in principal, P194 utilises an arbitrary mechanism that cannot be justified. This would inappropriately target the costs of balancing the System to the disadvantage of some Parties;

The following arguments were expressed by respondents in support of the Proposed Modification:

- Energy Imbalance Prices would better reflect the marginal cost associated with energy balancing the System and more appropriately target the costs of balancing the System at Parties with imbalance positions. Therefore Parties would self manage balancing performance and risk profiles rather than sharing the costs under the average imbalance price. This appropriate targeting of costs in this manner would promote competition; and
- A pricing signal more closely aligned with the marginal energy balancing action provides a more appropriate incentive to balance and in turn promotes liquidity in the market and therefore encourages competition.

**Applicable BSC Objective d) – “The promotion of efficiency in the implementation and administration of the balancing and settlement arrangements”**

The following arguments were expressed by respondents **not** in support of the Proposed Modification:

- Introducing a new variable (i.e. the PAR Volume) could lead to more Modification Proposals and instability in the market and would be inefficient; and
- No defect exists, hence there is no requirement for change and incurring costs to support implementation of P194 would be inefficient.

**4.1.2 Modification Group’s Assessment**

The majority view of the Modification Group was that the Proposed Modification would have a detrimental impact on achievement of Applicable BSC Objectives (b) and (c) when compared to the current Code baseline, for the following reasons:

**Applicable BSC Objective B – “the efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System”****Arguments identified not in support of P194:**

P194 may encourage Parties to take a long(er) position to avoid System Buy Price, thereby increasing the overall cost of balancing the System. Therefore, P194 may lead to excessive length in the market, leading to an increase in the balancing requirements of the Transmission Company and, overall, less efficient operation of the Transmission System.

Single site generators may avoid contracting outside the Balancing Mechanism or withhold plant in case of trip in order to avoid exposure to System Buy Price. Were this to occur it would be to the detriment of the efficient, economic and co-ordinated operation of the Transmission System by the Transmission Company.

To date there have been no situations where the Transmission Company has not been able to balance the System. As such there is no requirement for increased incentives to balance and the current baseline provides for more efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System than would be the case under P194.

**Arguments identified in support of P194:**

P194 would provide an increased incentive to balance. Thereby P194 would encourage Parties to trade ahead of Gate Closure, reducing the number of balancing actions required by the Transmission Company and benefiting security of supply. Hence, P194 would benefit the efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System. The requirement for increased incentives to balance can be illustrated via historic periods where Energy Imbalance Prices have not risen to sufficient levels to induce a market response, resulting in prolonged periods where the market was short.

Ensuring Energy Imbalance Prices rise to appropriate levels at times of energy shortage will provide the correct signals into the forward markets and help promote new plant build. This will assist the efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System over the long term.

**Applicable BSC Objective – (c) - "Promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity"**

**Arguments identified not in support of P194:**

P194 would increase the impact of imperfections in the tagging mechanism on imbalance prices; therefore Parties would be exposed to Energy Imbalance Prices which are not reflective of the true cost of energy balancing the system. This would inappropriately target the costs of balancing at the System to the disadvantage of some Parties. This would have a detrimental impact on promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity.

It may be the case that Parties can not balance their positions any more accurately than they do at the present time. In particular small Parties may be detrimentally affected, since there may not be products on the market which allow them to trade in small enough volumes to avoid imbalance. Therefore, the introduction of an increased incentive to balance which can not be responded to would penalise some Party types, presenting a barrier to market entry and impeding the promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity competition.

It may not be possible to provide any rationale justification for any PAR Volume used. Therefore, the PAR Volume is an arbitrary value designed to deliver the desired results. On this basis it would be impossible to justify any value used as the PAR Volume apart from via consideration of its effects historically. Setting the parameter on historic data may be inappropriate for future periods and could result in inappropriate Energy Imbalance Prices. This would inappropriately target the costs of balancing the System to the disadvantage of some Parties. This would have a detrimental impact on promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity.

Any change to market rules creates uncertainty and is detrimental for the promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity competition. Since, instability of the market rules is a significant disincentive to new entrants or for existing parties to invest in new generation assets. In particular if the rule change is based on an arbitrary methodology design to deliver particular results via consideration of historic data.

**Arguments identified in support of P194:**

P194 will enhance the signals provided by Energy Imbalance Prices to the forward markets which will benefit the promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity by encouraging Parties to trade ahead of Gate Closure.

Increasing the incentive to trade ahead of Gate Closure will increase liquidity in the market and benefit the promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity.

Ensuring Energy Imbalance Prices rise to appropriate levels at times of energy shortage will provide the correct signals into the forward markets and, over the long term, help to promote new plant build where necessary thereby benefiting the promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity.

### **Applicable BSC Objective d) – “The promotion of efficiency in the implementation and administration of the balancing and settlement arrangements”**

#### **Arguments identified not in support of P194:**

Introducing a new variable (i.e. the PAR Volume) could lead to more Modification Proposals and introduce instability in the market and would be inefficient; and

No defect exists, hence there is no requirement for change and incurring costs to support implementation of P194 would be inefficient.

## **4.2 Final Recommendation to the Panel**

On the basis of the above assessment, the Modification Group therefore agreed a **MAJORITY** recommendation to the Panel that:

- The Proposed Modification **SHOULD NOT** be made.

Details of the Group’s recommended Implementation Date and legal text can be found in Section 3.

## **5 TERMS USED IN THIS DOCUMENT**

Other acronyms and defined terms take the meanings defined in Section X of the Code.

<b>Acronym/Term</b>	<b>Definition</b>
PAR Volume	Price Average Reference Volume, the volume of actions that would be used to set the Energy Imbalance Prices under P194
PAR Tagging	The process of removing Acceptance Volumes from the calculation of Energy Imbalance Prices that would be introduced under P194
Main Energy Imbalance Price	The Energy Imbalance Price applied to imbalances in the same direction as the system.
Energy balancing actions	Balancing actions taken purely to increase the level of generation or demand on the Transmission System.
System balancing actions	Balancing actions which are not taken purely to increase or decrease the level of generation or demand on the Transmission System. For example to resolve a constraint on the physical flow of electricity caused by the finite capacity of the Transmission System.
NIV	Net Imbalance Volume
SO	System Operator
SBP	System Buy Price
SSP	System Sell Price
RCRC	Residual Cashflow Reallocation Cashflow
BSAD	Balancing Services Adjustment Data
SAA	Settlement Administration Agent
BMRA	Balancing Mechanism Reporting Agent

## 6 DOCUMENT CONTROL

### 6.1 Authorities

Version	Date	Author	Reviewer	Reason for Review
0.1	31/10/05	Tom Bowcutt	Modification Group	For Modification Group review
0.1	31/10/05	Tom Bowcutt	Sarah Jones	For technical review
0.2	03/11/05	Tom Bowcutt	Alex Grieve	For quality review
1.0	04/11/05	Change Delivery	BSC Panel	For Panel decision

### 6.2 References

Ref.	Document Title	Owner	Issue Date	Version
1	P136 - Marginal Definition of the 'main' Energy Imbalance Price <a href="#">ELEXON - Website P136</a>	BSCCo	-	-
2	P137 -Revised Calculation of System Buy Price and System Sell Price <a href="#">ELEXON Website - P137</a>	BSCCo	-	--

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## ANNEX 1 DRAFT LEGAL TEXT

The latest version of the Legal Text is attached to the P194 Modification Report.

## ANNEX 2 PROCESS FOLLOWED

Copies of all documents referred to in the table below can be found on the BSC Website at:

<http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=212>

Date	Event
26/08/05	Modification Proposal raised by National Grid
08/09/05	IWA presented to the Panel
15/09/05	First Assessment Procedure Modification Group meeting held
23/09/05	Requirements Specification issued for BSC Agent impact assessment
28/09/05	Second Assessment Procedure Modification Group meeting held
10/10/05	Request for Party/Party Agent impact assessments request issued
10/10/05	Request for Transmission Company analysis issued
10/10/05	Request for BSCCo impact assessment issued
27/09/05	BSC Agent impact assessment response returned
24/10/05	Party/Party Agent impact assessment responses returned
24/10/05	Transmission Company analysis returned
30/09/05	BSCCo impact assessment returned
07/10/05	Assessment Procedure consultation issued
24/10/05	Assessment Procedure consultation responses returned
27/10/05	Third Assessment Procedure Modification Group meeting held
10/11/05	Assessment Report presented to the Panel

## ESTIMATED COSTS OF PROGRESSING MODIFICATION PROPOSAL<sup>8</sup>

<b>Meeting Cost</b>	£2,000
<b>Legal/Expert Cost</b>	£5,000
<b>Impact Assessment Cost</b>	£5,000
<b>ELEXON Resource</b>	65 Man days £17,000

### MODIFICATION GROUP MEMBERSHIP

Member	Organisation	15/09/05	28/09/05	27/10/05	Legal Text Agreed?
Sarah Jones	Elexon (Chair)	Y	Y	Y	-
Rob Smith	National Grid (Proposer)	Y	Y	Y	-
Paul Mott	EDF Energy	Y	N	N	-
Stephen Moore	EDF Energy	N	Y	Y	Y
Libby Glazebrook	International Power	Y	N	N	-
Garth Graham	Scottish and Southern	Y	Y	N	-
Martin Mate	British Energy	Y	Y	N	-
Bill Reed	RWE	Y	Y	Y	-
Jan Devito	Jade Energy	N	Y	N	-
Mark Manley	BGT	Y	Y	Y	-
Man Kwong Liu	SAIC Ltd	Y	N	Y	Y
Neil Smith	E.On	Y	N	N	-
Paul Jones	E.On	N	Y	Y	Y
Paul Dawson	Barclays Bank Plc	N	Y	Y	Y
Maurice Smith	Independent	N	Y	N	-
Rekha Patel	Connco Philips	Y	N	N	-
Tom Bowcutt	ELEXON (Lead Analyst)	Y	Y	Y	-

<sup>8</sup> Clarification of the meanings of the cost terms in this annex can be found on the BSC Website at the following link:  
[http://www.elexon.co.uk/documents/Change\\_and\\_Implementation/Modifications\\_Process\\_-\\_Related\\_Documents/Clarification\\_of\\_Costs\\_in\\_Modification\\_Procedure\\_Reports.pdf](http://www.elexon.co.uk/documents/Change_and_Implementation/Modifications_Process_-_Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf)



<b>Attendee</b>	<b>Organisation</b>	<b>15/09/05</b>	<b>28/09/05</b>	<b>27/10/05</b>
Ben Woodside	Ofgem	Y	Y	Y
Hannah Mckinney	Ofgem	N	N	Y
Sophie Tolley	Ofgem	Y	N	N
Sakib Azam	Elexon (Analyst)	N	Y	N
Peter O'Donovan	Elexon (Operations)	N	Y	N

### **MODIFICATION GROUP TERMS OF REFERENCE (Version 1.0)**

**Modification Proposal P194 will be considered by the P188 Modification Group comprised of members of the Pricing Standard Modification Group (PSMG) in accordance with the PSMG Terms of Reference and the Annex attached.**

#### **P194 – Revised Derivation of the 'Main' Energy Imbalance Price'**

##### **Assessment Procedure**

The Modification Group will carry out an Assessment Procedure in respect of Modification Proposal P194 pursuant to section F2.6 of the Balancing and Settlement Code.

The Modification Group will produce an Assessment Report for consideration at the BSC Panel Meeting on 10 October 2005

The Modification Group shall provide an ongoing report of its progress to the Panel.

The Modification Group shall consider and/or include in the Assessment Report as appropriate:

- An assessment of the impact of Modification Proposal P194 on Energy Imbalance Prices and associated pricing signals;
- Consideration of different values and mechanisms for the Price Average Reference Volume which could form alternative Modification P194;
- Whether P194 would cause generators to withhold capacity in order to reduce potential exposure to Energy Imbalance Prices;
- Any relevant background provided by previous Modification Proposals and Ofgem's Cash Out Review.

### ANNEX 3 RESULTS OF ASSESSMENT PROCEDURE CONSULTATION

24 responses (representing 67 Parties and 5 non-Parties) were received to the P194 Assessment Procedure consultation.

A summary of the consultation responses is provided in the table below (bracketed numbers represent the number of Parties and non-Parties represented by respondents). NB: where the number of responses does not sum to the total number of responses received this indicates one or more respondents choose not to comment on the question.

Q	Consultation question	Yes	No
1.	Do you believe Proposed Modification P194 better facilitates the achievement of the Applicable BSC Objectives?	5 (27, 0)	19 (47, 5)
2.	Do you agree with the view of the Proposer that the current baseline does not provide sufficient incentives for Parties to contract ahead of Gate closure to avoid exposure to Energy Imbalance Prices?	6 (22, 0)	18 (52, 5)
3.	Do you agree with the view of the Proposer that P194 would provide additional incentives for Parties to contract ahead of Gate Closure to avoid exposure to Energy Imbalance Prices?	11 (28, 0)	13 (46, 5)
4.	What overall impact do you believe P194 will have on Parties (i.e. do you agree with the view expressed that P194 would encourage excessive length in the market)?	15 (40, 4)	4 (21, 0)
5.	Do you believe P194 would increase the potential for Parties to manipulate Energy Imbalance Prices?	12 (26, 0)	8 (37, 4)
6.	Do you prefer any of the implementation approaches described in the consultation document?	Approach A – 1 Respondents Approach B – 11 Respondents Approach C – 2 Respondents	
7.	Do you believe any of the potential Alternative Modifications identified would better facilitate the achievement of the Applicable BSC Objectives (as compared to either the current baseline or Proposed Modification P194)? Options being considered include alternative PAR Volumes and the use of a PAR Volume which is a fixed percentage of NIV.	2 (10, 0)	20 (58, 5)
8.	Were P194 to be implemented, what value do you believe the PAR volume should be?	100 MWh – 6 Respondents 500 MWh- 2 Respondents No Appropriate Value – 9 Respondents	
9.	Does P194 raise any issues that you believe have not been identified so far and that should be progressed as part of the Assessment Procedure?		

Details of the arguments made by respondents can be found in Sections 3 and 4, along with the Modification Group's consideration of these arguments. Full copies of the consultation responses are attached as a separate document, Annex 3A.

## ANNEX 4 RESULTS OF IMPACT ASSESSMENT

During the Assessment Procedure an impact assessment was undertaken in respect of all BSC systems, processes, documentation and parties. The following have been identified as impacted by P194.

For details of the costs associated with these impacts, please refer to Section 3.

### a) Impact on BSC Systems and Processes

The impact on BSC Agents is summarised in section 3.15.2 of this report, a copy of the full BSC Agent impact assessment is attached as a separate document, Annex 4c.

### b) Impact on BSC Parties and Party Agents

The impact on BSC Parties and Party Agents is summarised in section 3.15.2 of this report, full copies of the Party and Party Agent impact assessment responses are attached as a separate document, Annex 4b.

### c) Impact on Transmission Company

As a recipient of the SAA-I014 the Transmission Company would be impacted, however there is no further impact on the Computer systems of the Transmission Company. The Transmission Company indicated that P194 would assist the operation of an efficient, economical and co-ordinated Transmission System and would benefit Security of Supply. A full copy of the Transmission Company analysis is attached as a separate document, Annex 4a.

### d) Impact on BSCCo

The impact on BSCCo is summarised in section 3.15.2 of this report.

### e) Impact on Code Subsidiary Documents

Document	Impact of Proposed/Alternative Modification
SAA Service Description	The SAA Service Description will be impacted
BMRA Service Description	The SAA Service Description will be impacted
Reporting Catalogue	Impacted by changes to SAA reporting requirements.

### f) Impact on Other Configurable Items

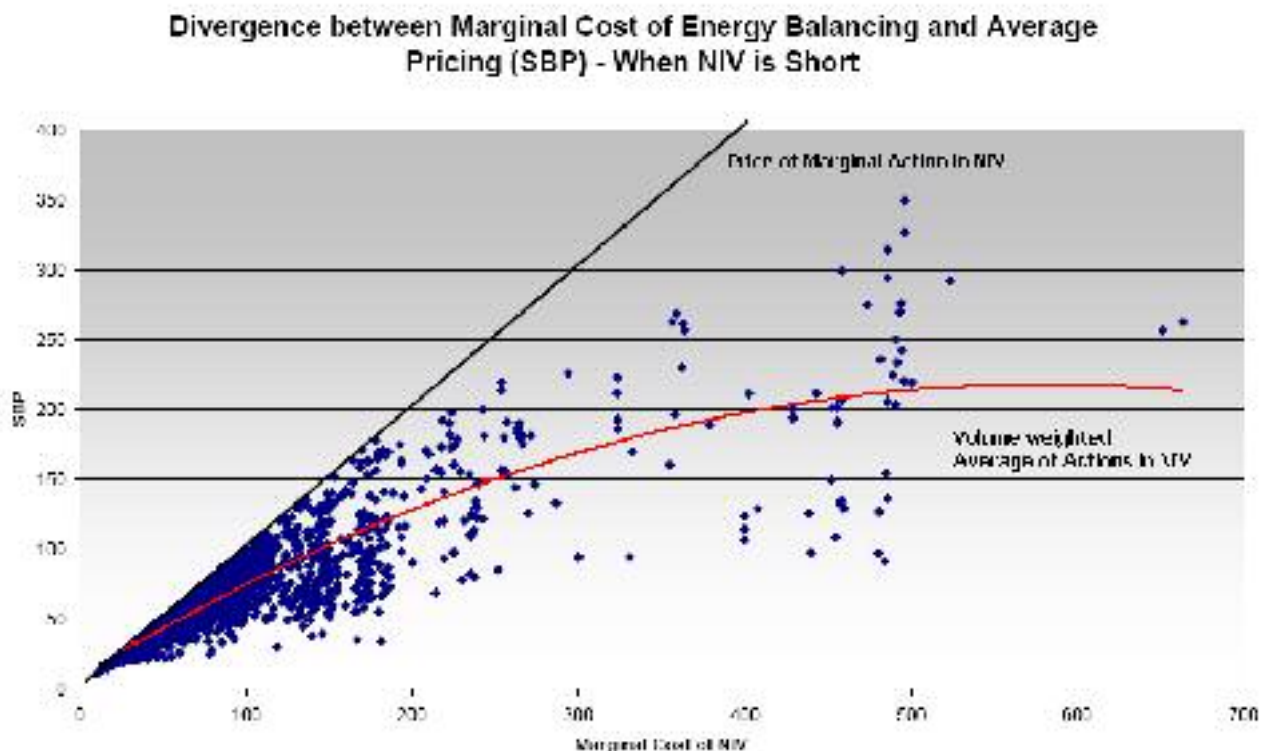
Document	Impact of Proposed/Alternative Modification
SAA User Requirements Specification (and system documentation)	SAA documentation would require amendment to detail the amendments to the Energy Imbalance Price calculation.
BMRA User Requirements Specification (and system documentation)	BMRA documentation would require amendment to detail the amendments to the Energy Imbalance Price calculation.
BSC Business Process Model	The ELEXON BPM would require amendment to reflect the amendments to the Settlement calculations.
IDD Part 1	Impacted by changes to SAA reporting requirements.

## ANNEX 5 – BID / OFFER PRICE ANALYSIS

The Modification Group considered analysis of the Bid / Offer price patterns.

### **Annex 1 - Graph A**

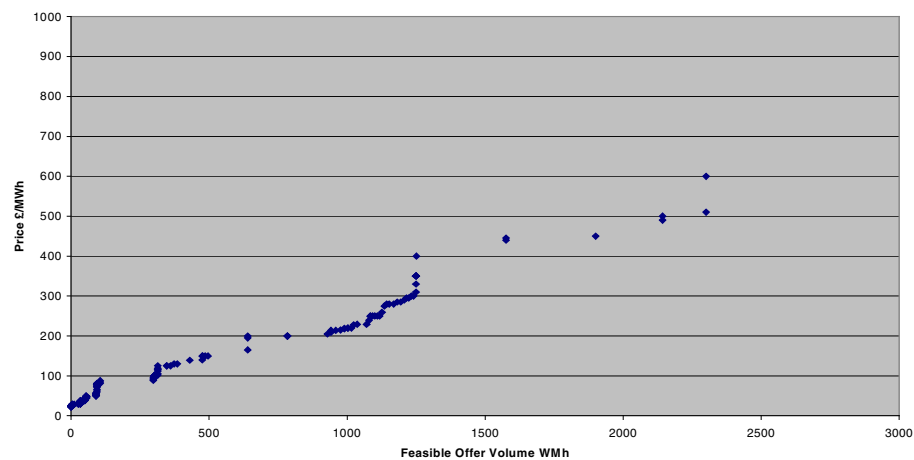
The following graph, provided by the Proposer, illustrates the divergence between the price of the marginal balancing action remaining following application of the existing tagging mechanisms and the volume weighted average of all balancing actions remaining following application of the existing tagging mechanisms (i.e. current SBP). The period considered was 1 April 2004 to 30 June 2005.



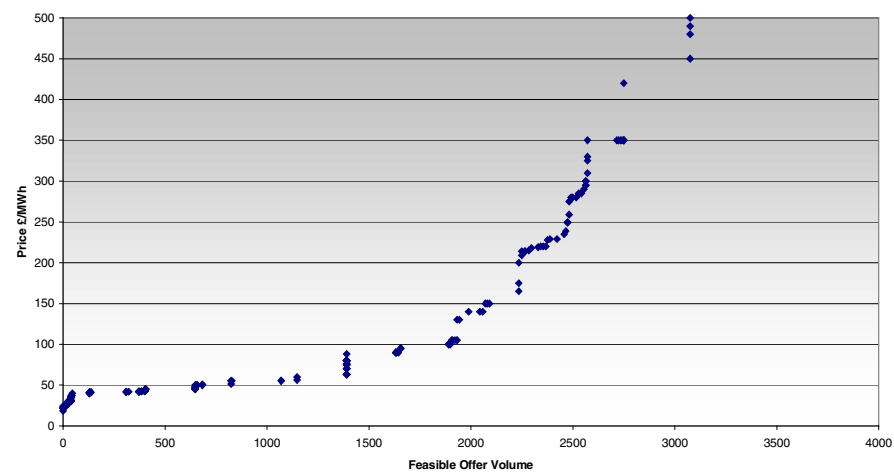
**Annex 1 - Graphs B to E**

The following graphs, provided by the Proposer, illustrate the prices of feasible Bids and Offers for the 01 December 04 Period 34 and the 6 April 2004 period 24.

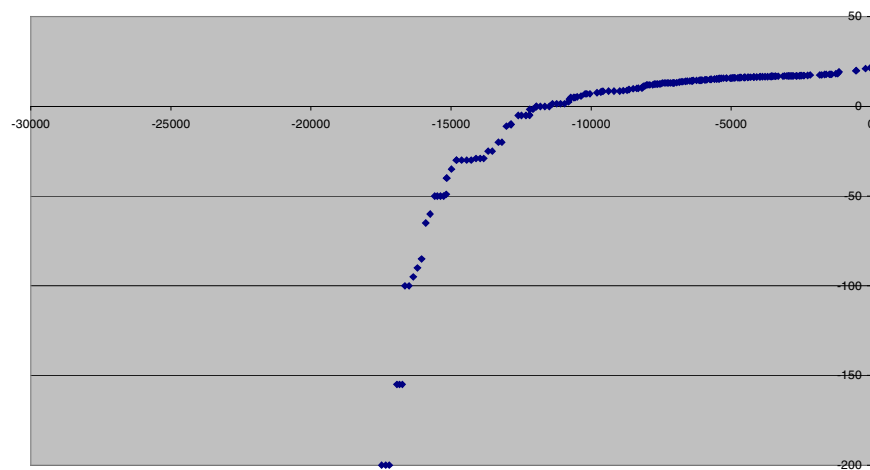
Cumulative Offer Volume 01 Dec 04 Period 34



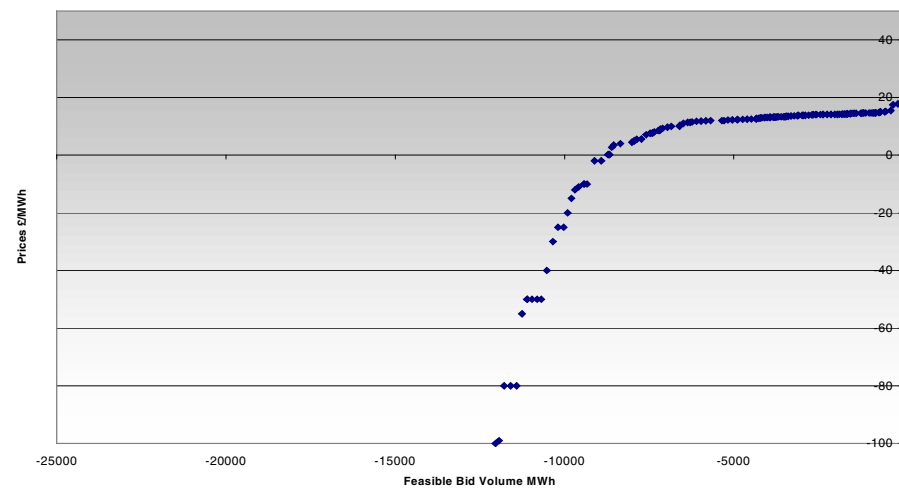
Cumulative Offer Volume 06Apr 04 Period 24



Cumulative Bid Volume 01DEC 04 Period 34



Cumulative Bid Volume 06Apr 04 Period 24



## ANNEX 6 – PRICE ANALYSIS

The Modification Group considered analysis of the Energy Imbalance Prices generated under the P194 mechanism based on historic data. The period 1 April 2004 to 30 June 2005 was considered. High level annual analysis and detailed Settlement Period level data was considered. The following days were considered in detail:

Day Type	Settlement Day	Day Type	Settlement Day
Summer (Apr 04 - Aug 04) Peak	06/04/04	Triad Day 1	01/12/04
Summer (Apr 04 - Aug 04) Off Peak	13/06/04	Triad Day 2	13/12/04
Autumn Equinox (Sep 04) Peak	29/09/04	Triad Day 3	24/01/05
Autumn Equinox (Sep 04) Off Peak	12/09/04	Spring Equinox (Mar 05) Peak	02/03/05
Winter (Oct 04 - Feb 05) Peak	13/12/04	Spring Equinox (Mar 05) Off Peak	27/03/05
Winter (Oct 04 - Feb 05) Off Peak	03/10/04		

NB: Peak determined as day with highest Demand Period. Off Peak determined as day with lowest demand period.

The following information was considered:

- Weekly Average SSP and SBP values and comparison to the current baseline for PAR = 1, 100, 200, and 500 MWh;
- Settlement Period SSP and SBP for the current baseline and PAR = 1, 100, 200, and 500 MWh;
- Settlement Period NIV;
- For Par = 100 MWh, the number of balancing actions in the NIV; and
- The BM Unit of the marginal action in the NIV.

This analysis is included as a separate attachment – **Annex 6a: P194 Price Analysis**

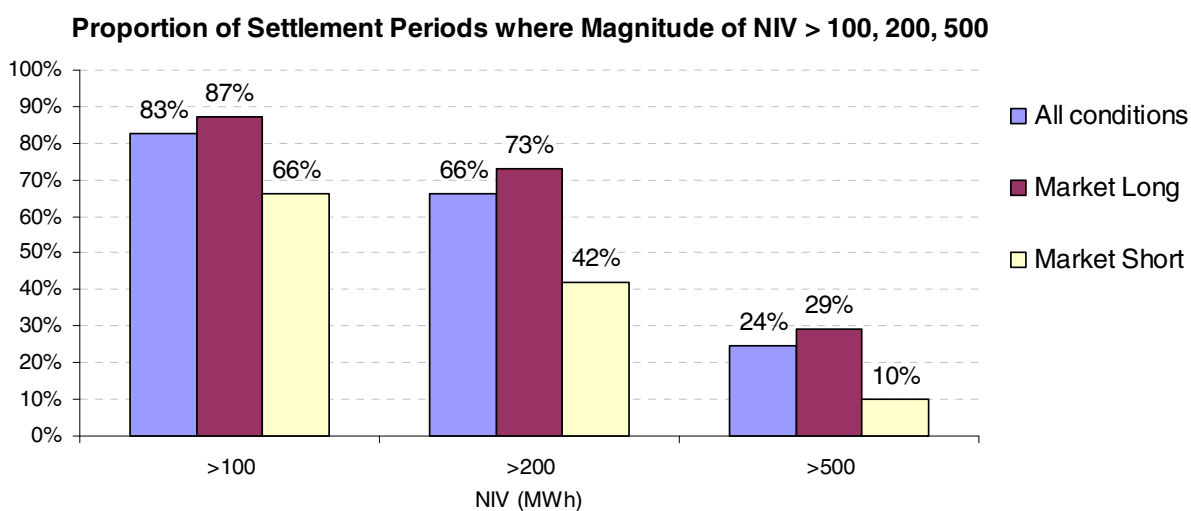
## ANNEX 7 – NET IMBALANCE VOLUME ANALYSIS

The Modification Group conducted analysis of the size of NIV over the period 1 April 2004 to 30 June 2005.

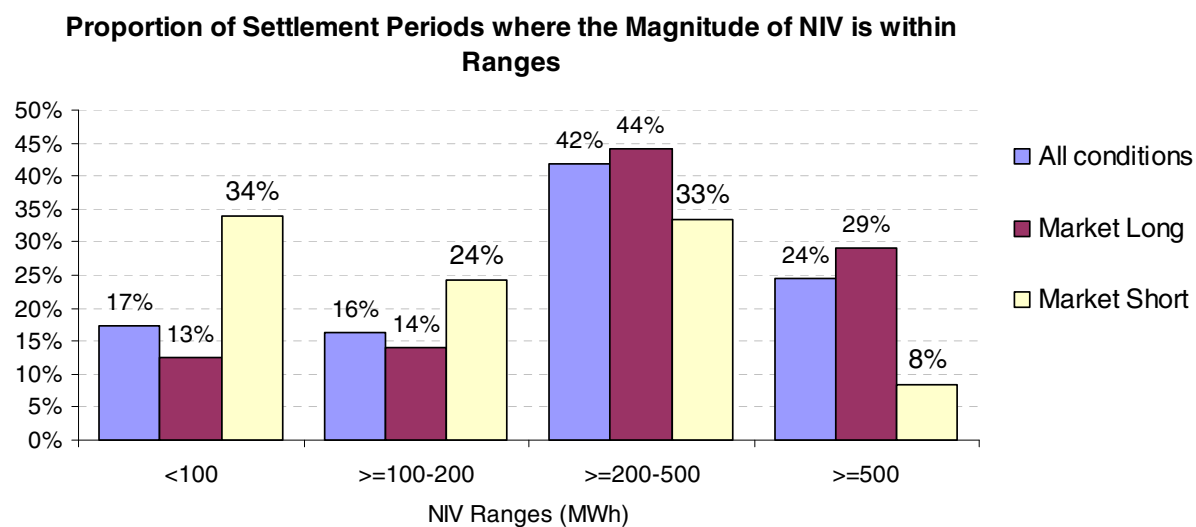
**Table 1: NIV Statistics**

	Average	Standard Deviation	Max (magnitude)	Min (magnitude)
<b>All Conditions (magnitudes)</b>	347	255	1644	0.04
<b>Market Short (NIV &gt;0)</b>	212	186	1395	0.07
<b>Market Long (NIV &lt;0)</b>	-386	259	1644	0.04

**Graph 1:**



**Graph 2:**



## ANNEX 8 – CASH FLOW ANALYSIS

The Modification Group conducted the following analysis of the impact of P194 on market cash flows.

### Approach:

Two approaches have been used to analyse the impact of P194 on market cash flows.

### **High Level Analysis:**

The table below illustrates the financial impact on an Energy Account exposed to the changes in Energy Imbalance Price in the Settlement Periods where P194 gave the largest divergence from the current baseline (in the period 1 April 2004 to 30 June 2005). The Energy Account shown is that with the largest exposure to the main Energy Imbalance Price (i.e. the largest imbalance in the same direction as the system). The table also illustrates the financial impact at a Market level in the Settlement Periods considered.

**Table 1: Financial Impact**

	<b>SBP Change</b> (£/MWh)	<b>SSP Change</b> (£/MWh)	<b>IMB</b> (MWh)	<b>NIV</b> (MWh)	<b>IMBC Change</b> (£/%)	<b>RCRC Change</b> (£/%)	<b>NET</b> (£/%)
<b>Energy Account 1</b>	+300	0	-252	+651	+75,600 (114%)	-7,400 (124%)	+68,201 (113%)
<b>Market Total</b>	+300	0	-901 <i>(exposed to SBP change)</i>	+651	+270,000	+£270,000	0
<b>Energy Account 2</b>	0	-63	+208	-555	+13,100 (900%)	-£3,700 (8500%)	+9,400 (700%)
<b>Market Total</b>	0	-63	+852 <i>(exposed to SSP change)</i>	-555	+54,000	-54,000	0

### **Detailed Analysis:**

For the Settlement Period with the greatest difference between the marginal price and the current baseline, the financial impact on each Energy Account was considered as a consequence of the:

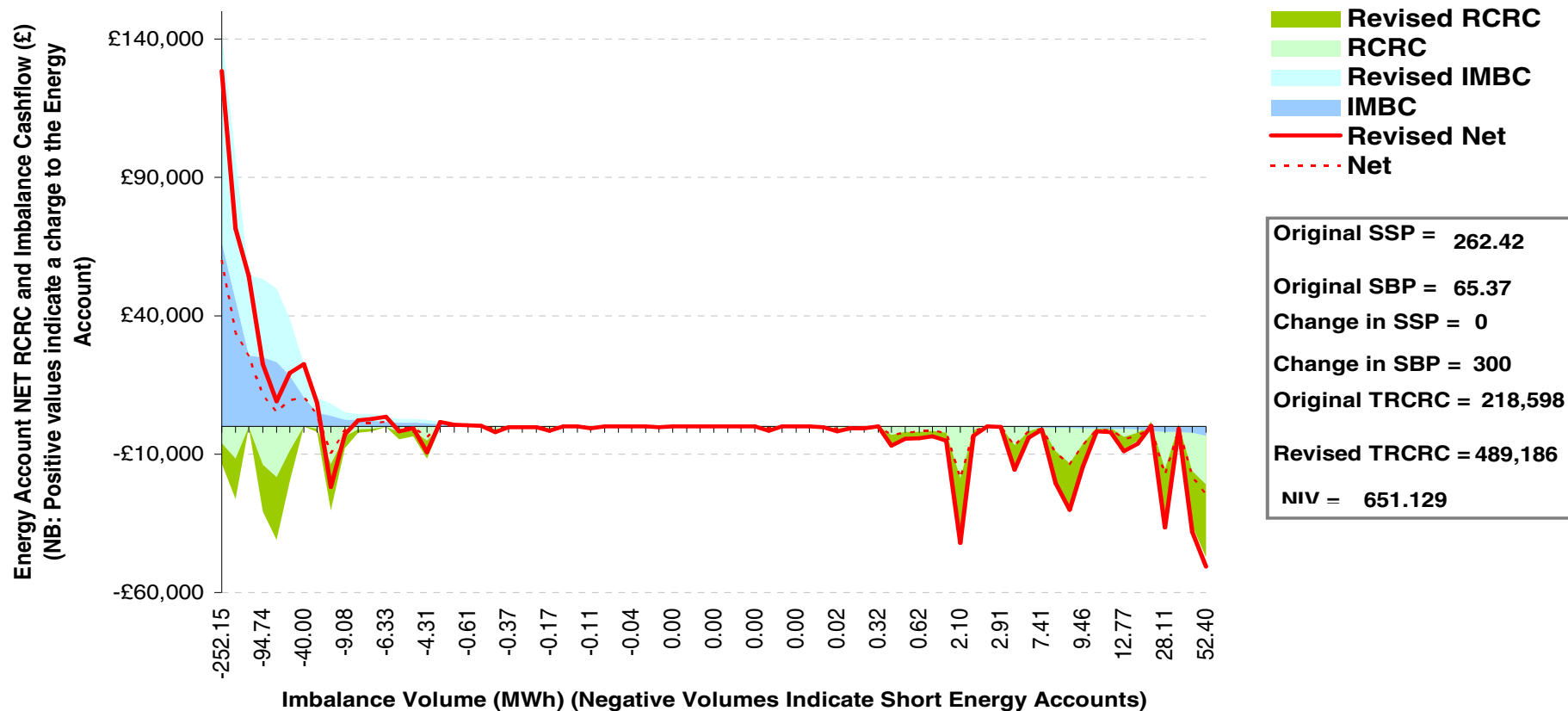
- Max SSP Change for PAR = 100MWh
- Max SBP Change for PAR = 100MWh



## Detailed Level Cash Flow Analysis:

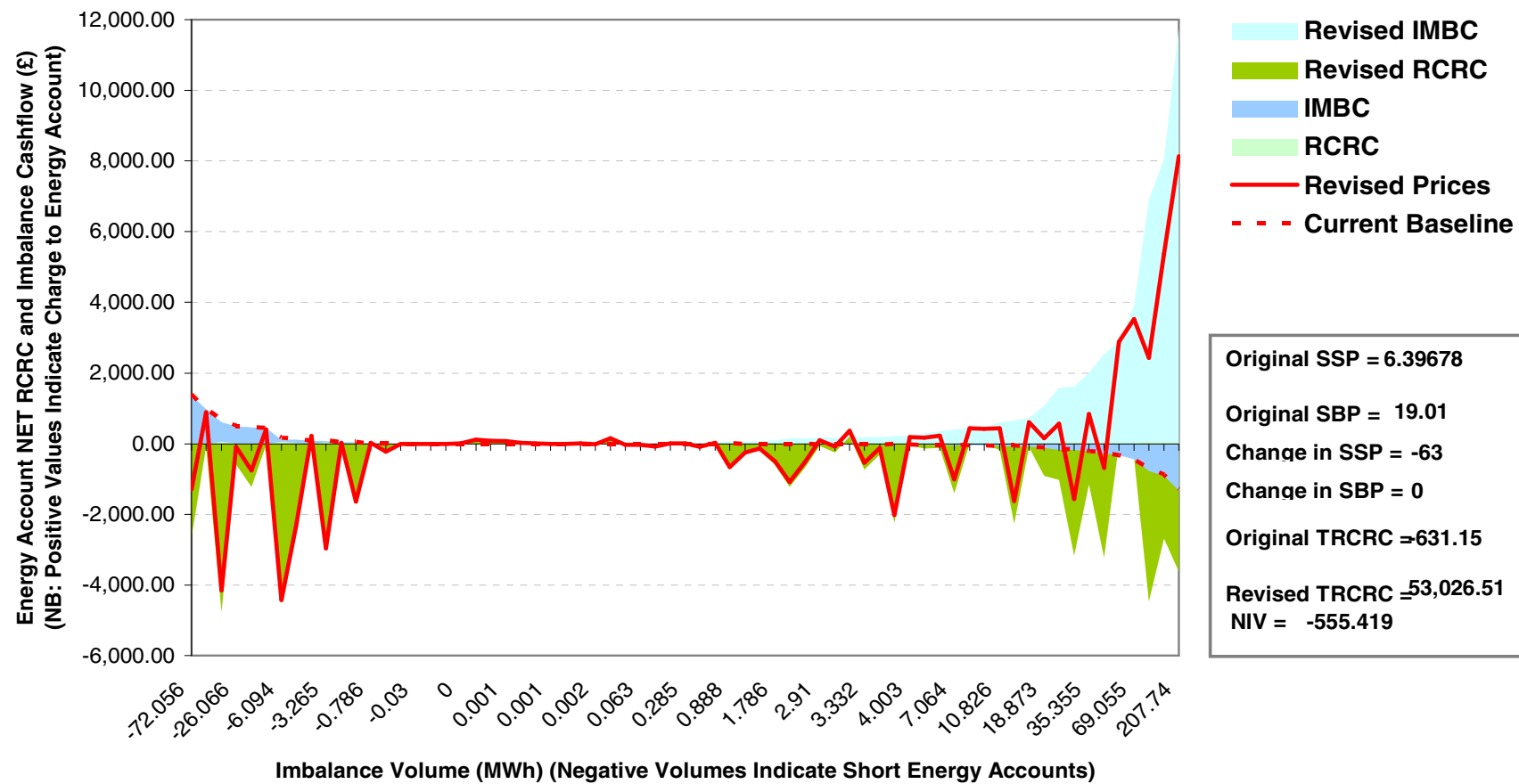
### Graph 3: Cash flow Impact (Max SBP Change)

**Energy Account Cashflow by Imbalance Volume for variations in SSP and SBP (18 November 2004)**



**Graph4: Cash flow Impact (Max SSP Change)**

### Energy Account Cashflow by Imbalance Volume for variations in SSP and SBP (26 October 2004)



## **ANNEX 9 – PROPOSER’S PRESENTATION**

The Proposer’s presentation on P194 is included as a separate attachment – **Annex 9a: Proposer’s Presentation**