# Assessment Report

# P316 'Introduction of a single marginal cash-out price'

This Modification seeks to introduce a single marginal imbalance price, in place of the dual imbalance prices currently in use.

The Proposer believes that P316 will increase the certainty of a single marginal price being implemented in a timely manner.

The Workgroup recommends **approval** of the P316 Alternative Modification and **rejection** of the P316 Proposed Modification

This Modification is expected to impact:

- BSC Trading Parties
- The Balancing Mechanism Reporting Agent (BMRA)
- The Settlement Administration Agent (SAA)
- ELEXON

ELEXON

**Phase**

Initial Written Assessment

Definition Procedure

Assessment Procedure

Report Phase

Implementation

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# About This Document

This document is the P316 Workgroup's Assessment Report to the BSC Panel. ELEXON will present this report to the Panel at its meeting on 12 February 2015. The Panel will consider the Workgroup's recommendations, and will agree an initial view on whether this change should be made. It will then consult on this view before making its final recommendation to the Authority on 12 March 2015.

There are four parts to this document:

- This is the main document. It provides details of the solution, impacts, costs, benefits, drawbacks and proposed implementation approach. It also summarises the Workgroup's key views on the areas set by the Panel in its Terms of Reference, and contains details of the Workgroup's membership and full Terms of Reference;
- Attachment A contains the draft redlined changes to the BSC for the P316 Proposed Modification;
- Attachment B contains the draft redlined changes to the BSC for the P316 Alternative Modification; and
- Attachment C contains the full responses received to the Workgroup's Assessment Procedure Consultation.


**Contact**

**Talia Addy**

020 7380 4043

talia.addy@elexon.co.uk


# 1 Summary

## Why Change?

National Grid raised P305 'Electricity Balancing Significant Code Review Developments' to progress the conclusions of Ofgem's Electricity Balancing Significant Code Review (EBSCR).

RWE Supply and Trading GmbH raised P316 'Introduction of a single marginal cash-out price' on 4 November 2014. This Modification seeks to implement a single marginal imbalance price, two key elements of the balancing arrangements reform identified by Ofgem in its EBSCR. The Proposer notes that P316 interacts with P305 and believes that P316 will increase the certainty of a single marginal price being implemented in a timely manner.

## Solutions

The P316 Proposed Modification seeks to:

- introduce a single imbalance price; and
- reduce the Price Average Reference (PAR) value to 50MWh and the Replacement PAR (RPAR) value to 1MWh upon implementation, with a further reduction in the PAR value to 1MWh on 1 November 2018.

The Workgroup have developed an Alternative Modification which seeks to:

- introduce a single imbalance price; and
- reduce the PAR value to 100MWh and the RPAR value to 1MWh upon implementation.

## Impacts & Costs

The total central implementation costs for the P316 Proposed and Alternative Modifications is approximately **£125k** to make the necessary changes to the BSC central systems. Changes are needed to the Settlement Administration Agent (SAA) and the Balancing Mechanism Reporting Agent (BMRA) systems to move to a single price.

We do not anticipate any direct impacts on BSC Parties or Party Agents.

## Implementation

The Workgroup recommends an Implementation Date for P316 of **5 November 2015** as part of the November 2015 BSC Systems Release.

## Recommendation

The Workgroup recommends by majority that the P316 Alternative Modification should be approved and the Proposed Modification should be rejected.

# 2 Why Change?

## What are imbalance prices?

Imbalance prices, which are known as 'cash-out' prices, are a key part of the wholesale electricity trading arrangements in Great Britain.

The wholesale electricity market is set up such that BSC Parties enter into bilateral contracts with each other in order for generators to be able to sell the energy they produce to Suppliers to supply their customers. However, contracts between participants are not always exactly delivered in real time causing an imbalance between energy generation and demand on the Transmission System. This can cause problems as electricity cannot easily be stored economically in large quantities and generation must always match consumer demand in real time if a stable system is to be maintained.

For any given Settlement Period (each half hour), Parties may trade with each other up to Gate Closure, which occurs one hour prior to the start of that Settlement Period. Parties aim to balance their position for a given Settlement Period by Gate Closure to ensure that the amount of energy they generate or buy matches the amount of energy they consume or sell. However, there are circumstances where this does not happen, for example, if a generator experiences an unexpected outage that does not allow them to generate their contracted amount of energy, or if a Supplier over or under estimates the amount of energy their customers actually use. This leaves the Party in an imbalanced position for that Settlement Period.

To balance energy on the Transmission System the Transmission Company, acting as System Operator (SO), assesses the amount of generation and the amount of demand expected for each Settlement Period. If required, the SO will take balancing actions[1] to balance the system so that the total amount generated matches the total amount consumed. The SO does this by issuing Bids and Offers via the Balancing Mechanism or Balancing Service Adjustment Actions (BSAA)[2] to participants (usually generators) to increase or decrease the amount of energy they need to produce (or consume) to ensure the system is balanced. The SO will do this prior to and throughout the Settlement Period to ensure the system is balanced at all times.

Following the end of a Settlement Period, ELEXON (using the BSC Systems) will compare the amount of energy each Party contracted with its metered volumes for the Settlement Period, accounting for any accepted Bids and Offers and other applicable balancing service volumes. Any surplus or shortfall that the Party has is called the imbalance volume and is paid for using the relevant imbalance price:

- If the Party is **short** (it consumed more energy than it had bought or sold more energy than it had generated) then it pays for its shortfall at the **System Buy Price** (SBP).
- If the Party is **long** (it generated more energy than it had sold or bought more energy than it had consumed) then it is paid for its surplus at the **System Sell Price** (SSP).

[1] A balancing action is an instruction to a Party, in accordance with agreed rules, to either increase or decrease generation, or increase or decrease demand. Parties must also submit details of their contracts to the BSC Systems.

[2] Balancing Service Adjustment Actions (BSAA) are the technical services that the System Operator purchases outside the Balancing Mechanism. This is described in Balancing Services Adjustment Data (BSAD) Methodology Statement.

There are two methods for calculating the imbalance price:

- The **Main Price** is based on the costs of energy balancing actions incurred to the Transmission Company for that Settlement Period.
- The **Reverse Price** is based on the short term market price of wholesale electricity traded on the power exchanges for that Settlement Period.

The method (Main Price or Reverse Price) which is to be applied to an imbalance price (SBP or SSP) for each Settlement Period is determined by whether the system as a whole was long (Net Imbalance Volume (NIV) is zero or negative) or short (NIV is positive) for that Settlement Period:

- If the system is long, the SSP will be the Main Price and the SBP will be the Reverse Price.
- If the system is short, the SBP will be the Main Price and the SSP will be the Reverse Price.

As a result, the Main Price is applied to any Party whose imbalance was in the same direction to, and is considered to have contributed to, the overall system imbalance. These Parties will therefore face the costs of the balancing actions accepted by the SO to resolve energy imbalance on the system. Conversely, the Reverse Price is applied to any Party whose imbalance was in the opposite direction to the net imbalance, and is considered to have helped to reduce the overall system imbalance. Therefore, these Parties might face the costs they would have incurred had they traded out their imbalance position on the power exchanges near Gate Closure.

## What is the PAR volume?

The PAR volume is used in the Main Price calculation. It is a volume of the most expensive actions remaining at the end of the Main Price calculation once all 'tagging and flagging' processes have been completed. The volume weighted average of these actions is calculated and used to set the Main Price. The PAR value is currently 500MWh, meaning the most expensive 500MWh of these actions is used to calculate the Main Price.

Originally under the current arrangements, imbalance prices were calculated as an average of all actions taken by the SO to balance the system. This was subsequently changed to the most expensive 500MWh of actions under P205 'Increase in PAR level from 100MWh to 500MWh' in November 2006. This level of 500MWh has since been maintained.

Further information on imbalance prices, PAR and RPAR can be found on the imbalance pricing page of our website.

### Replacement Price Average Reference

The RPAR value is a set volume of the most expensive priced actions remaining at the end of the Main Price calculations, and is currently 100MWh. The volume-weighted average of these actions, known as the Replacement Price, is used to provide a price for any remaining unpriced actions prior to PAR Tagging.

## What is the Electricity Balancing Significant Code Review?

In August 2012, Ofgem launched the Electricity Balancing Significant Code Review to address long-standing concerns on electricity balancing arrangements raised in its 2010 Project Discovery Report. In particular, Ofgem expressed concerns that imbalance prices

were not providing cost reflective signals to incentivise efficient balancing behaviour by BSC parties.

Ofgem completed its review of the electricity balancing arrangements and published its Final Policy Decision on 15 May 2014. The final decision document lays out Ofgem's conclusions and builds on the extensive analysis and stakeholder engagement conducted during the EBSCR.

### P304, P305 and P314

Following publication of its Final Policy Decision, Ofgem, as the Authority, directed National Grid, as the Transmission Company, to raise the relevant Modifications to put the package of reforms in place.

National Grid raised P305 'Electricity Balancing Significant Code Review Developments' to progress the package of changes that came out of the EBSCR, as follows:

- reduce the PAR value to 50MWh and the Replacement PAR (RPAR) value to 1MWh upon implementation, and reduce the PAR value further to 1MWh on 1 November 2018;
- introduce a single imbalance price;
- introduce pricing for Short Term Operating Reserve (STOR) actions; and
- introduce pricing for Demand Control actions and a process for correcting participants' imbalance volumes following such an event.

National Grid also raised P304 'Reduction in PAR from 500MWh to 250MWh' which proposed a reduction in the PAR value to 250MWh. However, this Modification has since been rejected by the Authority along with related Modification P314 'Reduction in PAR from 500MWh to 350MWh'.

## What is the issue?

RWE Supply and Trading GmbH raised P316 'Introduction of a single marginal cash-out price' on 4 November 2014. P316 seeks to implement only the single marginal imbalance price elements of the balancing arrangements reform identified by Ofgem in its EBSCR. The Proposer notes that while the other elements of reform that P305 seeks to introduce (a reserve pricing function and the pricing of demand control measures into the imbalance price) are desirable, the potential solutions are complex which may preclude early implementation of P305 (at least in time for winter 2015/16). The Proposer believes that P316 will increase the certainty of a single marginal price being implemented in a timely manner and ahead of winter 2015/16.

**Significant Code Review Modifications**

BSC Section F 5.3 states that:

- The Authority may direct the Transmission Company to raise an SCR Modification Proposal; and
- that the Authority's SCR Conclusions (if any) or direction in respect of the SCR Modification Proposal **shall not** fetter the views of the relevant Workgroup, the voting rights of the Panel or the recommendation of the Modification Report in respect of such an SCR Modification Proposal.

# 3 Solution

## Proposed Modification

P316 seeks to progress two of the four reforms outlined by the Authority in its EBSCR Final Policy decision in order to introduce a single marginal imbalance price. Under the Proposed Modification this will be done by:

- introducing a single imbalance price; and
- reducing the PAR value to 50MWh and the RPAR value to 1MWh upon implementation, with a further reduction in the PAR value to 1MWh on 1 November 2018.

Full details on each area of the EBSCR reform and the rationale behind them can be found in Ofgem's Final Policy Decision. Full details of the Proposed Modification requirements can be found in Appendix 1.

### Introduction of a single imbalance price

The Proposer contends that a single imbalance price should be applied in place of the dual imbalance prices currently in use. Both the SBP and SSP will be retained, but they will be set equal to each other, with that single price being calculated using the Main Price methodology.

The NIV (Net Imbalance Volume) will determine whether the main pricing method is based on the SBP or SSP calculations, as follows:

- if the NIV is negative, the single energy imbalance price will be determined according to the existing Main Pricing methodology for calculating the System Sell Price, with the SBP being set equal to the SSP;
- if the NIV is positive, the single energy imbalance price will be determined according to the existing Main Pricing methodology for calculating the System Buy Price, with the SSP being set equal to the SBP; or
- if NIV is equal to zero the default single price shall be the market reference price, calculated on the basis of the current methodology.

### Reduction in the PAR and RPAR values

The Proposed Modification seeks to introduce a reduction in the PAR value from 500MWh to 50MWh upon implementation with a further reduction to 1MWh on 1 November 2018. The Proposer contends that this will create an imbalance price which is more reflective of the marginal cost of balancing energy for a given Settlement Period.

The Proposer originally intended to reduce the PAR value down to 1MWh upon implementation but has since determined that it would be pragmatic to align the P316 Proposed Modification with the P305 Proposed Modification.

In order to align this Modification with the EBSCR, and to mitigate any risk due to the value of RPAR being greater than the value of PAR, this Modification also proposes a reduction in the RPAR value from 100MWh to 1MWh upon implementation.

### Proposed draft legal text changes

The draft legal text changes to the BSC for the Proposed Modification can be found in Attachment A.

Changes to Code Subsidiary Documents (CSDs), Configurable Item and Core Industry Document may also be required to implement P316. A list of these documents can be found in Section 4. The changes to these documents will be prepared and consulted upon separately.

## Alternative Modification

The P316 Workgroup developed an Alternative Modification which seeks to:

- introduce a single imbalance price; and
- reduce the PAR value to 100MWh and the RPAR value to 1MWh upon implementation.

The Alternative Modification proposes a reduction in the PAR value from 500MWh to 100MWh upon implementation. A majority of the Workgroup believe that reducing PAR to 100MWh will go towards creating an imbalance price which is more reflective of the marginal cost of balancing energy for a given Settlement Period but mitigate any potential risks to participants.

The P316 Workgroup agreed with the Proposer's view that a single imbalance price should be applied in place of the dual imbalance prices currently in use. Therefore, the Alternative Modification will include the introduction of a single imbalance price, as per the Proposed Modification.

Full details of the Alternative Modification solution requirements can be found in Appendix 1.

### Proposed draft legal text changes

The draft legal text changes to the BSC for the Workgroup's Alternative Modification can be found in Attachment B.

Changes to Code Subsidiary Documents (CSDs), Configurable Item and Core Industry Documents will also be required to implement P316. A list of these documents can be found in Section 4. The changes to these documents will be prepared and consulted upon separately.

# 4 Impacts & Costs

## Estimated central implementation costs of P316

The total central implementation cost for both the P316 Proposed and Alternative Modifications is approximately **£125k** to make the necessary changes to the BSC central systems. Changes are needed to the SAA and the BMRA systems to move to a single price.

## Indicative industry costs of P316

We do not anticipant any direct impacts on BSC Parties or Party Agents (meaning no mandatory effort is required to implement P316). However, if industry participants have optionally elected to store or use the value of PAR or replicate any of the imbalance price calculations in their own systems there may be a cost associated with changing these.

Some respondents to the P316 Assessment Consultation indicated that the implementation of this Modification would result in one off costs ranging from **£10k - £150k**.

## P316 impacts

| Impact on BSC Parties and Party Agents | |
|---|---|
| Party/Party Agent | Potential Impact |
| BSC Parties/Agents | We do not anticipate a direct impact on BSC Parties or Party Agents and P316 should not require any mandatory effort in implementing P316. All aspects of calculating imbalance prices are done centrally so participants' systems should only be impacted if they have elected to replicate any of these processes or related parameters within their systems, which is optional. |

| Impact on Transmission Company |
|---|
| There will be no impact on the Transmission Company in implementing this Modification. |

| Impact on BSCCo |
|---|
| ELEXON will be impacted through the implementation of the new arrangements and the corresponding document changes as well as ensuring that any business-as-usual processes are adapted accordingly. |

| Impact on BSC Systems and processes | |
|---|---|
| BSC System/Process | Impact |
| BMRA | Changes will be required to reflect the changes to the imbalance price calculations. |
| SAA | |

| Impact on Code | |
|---|---|
| Code Section | Potential Impact |
| Section T | Changes will be required to implement this Modification. |

| Impact on Code Subsidiary Documents | |
|---|---|
| CSD | Impact |
| BMRA Service Description | Changes will be required to reflect changes to existing processes and/or the introduction of new processes for the relevant BSC Agents. |
| SAA Service Description | |
| BMRA User Requirement Specification | |
| SAA User Requirement Specification | |

| Impact on other Configurable Items | |
|---|---|
| Configurable Item | Impact |
| Market Index Definition Statement | Updates to this document will be required to reflect the revised use of Market Index Data under the BSC. |

| Other Impacts | |
|---|---|
| Item impacted | Impact |
| Imbalance Pricing Guidance Note | Changes will be required as a result of this Modification. |
| Electricity Trading Arrangements Beginners Guide | |

# 5 Implementation

## Recommended Implementation Date

The Workgroup unanimously agreed an Implementation Date for both the P316 Proposed and Alternative Modifications of:

- **5 November 2015** as part of the November 2015 BSC Release.

This will allow both the Proposed and Alternative Modifications to be implemented in time for winter 2015/16 and also align this Modification's implementation (if approved) with the possible implementation of P305 (which is also proposed for implementation on 5 November 2015).

ELEXON will be able to implement the necessary BSC central system changes for P316 in time for implementation on 5 November 2015, should the Modification be approved[3].

### Assessment Consultation respondents views on the proposed Implementation Date

A **majority** of respondents to the Assessment Consultation **agreed** with the proposed Implementation Date. Respondents noted that P316 is a variant of P305 and that the EBSCR changes and November 2015 implementation have been well signalled to the market. Other respondents agreed with aligning the implementation of P316 with what Ofgem proposed in its EBSCR Policy Decision. Implementation of P316 ahead of winter 2015/16 was supported as it will allow the intended benefits to be realised when capacity margins are expected to tighten.

A **minority** of respondents **disagreed** with the proposed Implementation Date. A number indicated that there would not be enough time for Parties to respond to the changes and that the industry should be given as much notice as possible of the Modification being implemented. Some respondents preferred the implementation of P305 compared to P316. Others noted that P316 could be implemented operationally but not commercially and that aligning the Implementation Date with the EBSCR Policy Decision was putting pressure on the industry to make the changes.

[3] ELEXON will submit the Panel's Final Modification Report to the Authority in mid-March.

## Interactions between P305 and P316

P316 was raised during the Assessment Procedure of P305, to which it closely relates. Due to the interactions between the Modifications it was deemed prudent to align their progression. Therefore, the Workgroup membership for both Modifications is substantially the same, with joint Workgroup meetings being held to efficiently progress both P316 and P305. Furthermore, much of the discussion had at the Workgroup meetings relates to both P316 and P305 and has such been reflected in this document.

The Workgroup noted the possibility that P316 could be implemented ahead of P305 in order to deliver the single marginal price parts of the EBSCR earlier than the RSP and Demand Control parts. However, if the approaches to the reduction in the PAR value did not align between the two Modifications then there would be a possibility that the PAR value approved under P305 would overwrite that approved under P316.

P305 and P316 are two separate Modifications, and neither can be dependent or reliant on the other. However, the Workgroup has noted that co-ordination on this aspect of the solution should be considered to facilitate a possible phased implementation of the EBSCR conclusions. The P316 Proposer and the Workgroup therefore believed it pragmatic to align any reduction in PAR under P316 with that of P305. This alignment would also enable the Authority to make a decision on P305 and P316 without worrying about one or the other being overwritten.

## What should the value of PAR be?

Ofgem's EBSCR proposed a reduction in the PAR value to 50MWh upon implementation with a further reduction to 1MWh in 2018. When P316 was raised the Proposer looked to reduce PAR directly to 1MWh upon implementation. The Proposer has since come to the conclusion that it would be pragmatic to align the changes to the PAR value under this Modification with the P305 Proposed Modification which seeks to reduce PAR to 50MWh on implementation and a further reduction to 1MWh in 2018.

The Workgroup considered the EBSCR conclusions and were supportive of a phased and cautious approach to lowering the PAR value. However, some members had concerns over the marginal values proposed by Ofgem and felt an even more cautious approach to reducing the PAR value should be considered.

### Concerns around tagging and possible distortions

A concern was raised over the impacts that incorrect tagging of system actions by the Transmission Company could have on the imbalance price. The Transmission Company does retrospectively check all tagged actions to ensure that they were correctly tagged, but it does not check the actions it did not tag (i.e. to check whether they should in fact have been tagged). Some members felt this created the potential for an action that should have been tagged out to go on to set the imbalance price. However, other members felt that a process for allowing participants to challenge the Transmission Company's system action tagging should be introduced to mitigate the potential impacts.

The Workgroup considered that marginal values could amplify existing inefficiencies in the current calculation. They noted that the Transmission Company can sometimes accept a high-priced Offer in one Settlement Period to resolve an issue at that time, but because of

the dynamics of the BM Unit called upon, that Offer may have to persist for several hours, impacting future Settlement Periods where a lower-priced Offer would otherwise have been accepted. They noted that without these potential distortions they would be in favour of moving to a value of 1MWh.

## Staggered and phased PAR reduction approaches

The Workgroup considered a 'staggered' approach to lowering PAR, i.e. lowering PAR to an intermediate value with no further scheduled reduction as part of the Modification, and a 'phased' approach, i.e. lowering PAR upon implementation and hardwiring into the BSC a further decrease at a future date.

Workgroup members felt that a staggered approach to lowering the PAR value would be beneficial, and that a less marginal value should be the first step. This would allow the impacts to be assessed before lowering the value further. A Workgroup member believed that the impacts of a lower PAR value are not linear, and are likely to get steeper as the PAR value gets closer to 1MWh. A jump from 500MWh to 250MWh, as was proposed by P304, or possibly as low as 100MWh should have little overall impact. However, once the value goes below 100MWh the effects and impacts will begin to be more noticeable.

Some members agreed that a cautious approach should be taken, potentially with a value of 100MWh or 250MWh. It was noted that this would allow the market more time to adapt to the new arrangements. There were concerns that, with the rejection of P304 and P314, P316 would seek to dramatically reduce the value of PAR from the current 500MWh to 50MWh or 1MWh. Other members were in favour of moving to 50MWh, or even directly to a lower PAR value, and felt that setting too high a PAR value may undermine the intent of the EBSCR, and so may be rejected by the Authority.

Some members were not confident in a hardwired phased approach for a reduction in PAR, similar to that of P305. One member noted that it may be possible to do a phased reduction where the value would step down over a number of years and if at any point on that journey there are unintended consequences the progression could be halted. The Ofgem Representatives were cautious of such an approach to a phased reduction, feeling that this could create uncertainty in the industry as to whether a further reduction was to take place and thereby undermine the behaviour change the reform is intended to motivate. Other members queried why a phased approach is necessary, believing that if a lower value is seen as ultimately beneficial then the industry should move directly to it. It was noted that by placing all the steps for a phased approach in the BSC at the point P316 was implemented would mean those steps would take place unless and until a further Modification was raised and approved to change that.

## PAR review process

It was considered whether a PAR review process should be introduced, to allow for regular reviews of the PAR value. However, members did not see the benefit of this, noting that if anyone wanted to propose a change to the PAR value then they could simply raise a Modification. All of the analysis that would be carried out under a review would be carried out under a Modification, and so there would be no benefit in introducing a new review process.

## PAR value options

The Workgroup considered several potential PAR values that could be adopted. The values considered are as follows:

- 50MWh upon implementation then 1MWh from 1 November 2018 (P305 and P316 Proposed Modifications);
- 250MWh upon implementation then 100MWh 12 months later;
- 100MWh upon implementation with no further change under P316;
- 50MWh upon implementation with no further change under P316; and
- 1MWh upon implementation with no further change under P316 (original P316 Proposed Modification).

The Workgroup requested industry views on these PAR values, as part of the Assessment Consultation, as there was no initial clear consensus among members at the time as to which approach they initially prefer.

The Workgroup considered how may Bids or Offers tend to form the price under different PAR values. The Ofgem Representatives noted this had been looked at under the EBSCR[4], and that for a PAR value of 1MWh an average of three to four actions would set the price, rising to six for a PAR value of 50MWh. This is compared to around 15 under the current PAR value of 500MWh. Even under a 1MWh PAR value, it is possible that actions from several different Parties could contribute to setting the imbalance price.

Having taken Assessment Consultation respondents views into consideration, as well as the P305 analysis, the Workgroup agreed by majority that PAR should be reduced to 100MWh. This would allow for the benefits of a reduced PAR to be realised but mitigate the risks to industry participants.

## Assessment Consultation respondents views on different PAR values

Respondents to the P316 Assessment Consultation provided views on the different PAR values considered by the Workgroup. The Workgroup considered the views provided, however there was no clear majority preference. The below tables set out respondents' first choices for a reduction in PAR:

| Single Reduction to PAR | |
|---|---|
| Value | First Choice |
| 1MWh | 4 |
| 50MWh | 2 |
| Between 50 – 100MWh | 1 |
| 100MWh | 2 |
| Between 100 – 200MWh | 1 |
| 250MWh | 1 |
| 350MWh | 1 |

[4] https://www.ofgem.gov.uk/ofgem-publications/82295/ebscr-draft-policy-decision-impact-assessment.pdf

| Phased Reduction to PAR/Other | |
|---|---|
| Value | First Choice |
| Staged reduction, then hold value at 50MWh | 1 |
| 50MWh at implementation, reduce to 1MWh | 2 |
| 250MWh at implementation, reduce to 100MWh | 5 |
| Reduce by 100MWh each year for 5 years | 1 |
| Align PAR values and approach with final P305 Solution | 1 |
| P305 with 100MWh, P316 implemented later with lower PAR | 1 |
| No reduction in PAR at this time | 2 |

## Introduction of a single imbalance price

The P316 Workgroup agreed with the Proposer's view that a single imbalance price should be applied in place of the dual imbalance prices currently in use, as per the Proposed Modification detailed in Section 3.

## What impacts could P316 have on credit?

Members were concerned on the impacts that P316 may have under the credit arrangements. It was noted that several other Modifications have been or are being progressed, notably P306 'Expanding the definition of a 'Letter of Credit' to include regulated insurance companies', P307 'Amendments to Credit Default arrangements', P308 'Alternative security product for securing credit under the BSC' and P310 'Revised Credit Cover for Exporting Supplier BM Units', which would amend the credit arrangements in different ways. However, Modifications cannot be contingent on each other, and so P316 cannot be made contingent on the outcomes of these other changes, but it was felt that P316 may have an indirect impact on credit. Members therefore felt that the implications of P316 on participants' Credit Cover needed to be highlighted.

### Assessment Consultation respondents views on potential impacts on credit

As part of the P316 Assessment Consultation the Workgroup asked the industry what impacts P316 may have on the current credit arrangements. Consultation respondents noted a number of indirect impacts on credit, including the following:

- adverse impact on the amount of credit cover a Party may need;
- increase in operational costs due to higher credit cover being required;
- parties may post additional credit in order to cover higher imbalance costs; and
- small Parties will be impacted more than others under the credit arrangements.

Some respondents noted that if P307, P308 and/or P310 were approved an implemented they may go some way towards mitigating the risks on the credit arrangements should P316 implemented.

There were no direct impacts on the credit arrangements identified by respondents.

## What impacts might P316 have on liquidity?

The Workgroup noted a number of comments made by respondents to the P316 Assessment Consultation regarding market liquidity, with some Workgroup members voicing concern over the comments made.

Some respondents believed that the implementation of P316 would have a positive impact on liquidity. It was noted that strengthening the energy imbalance price signal through PAR reform will incentivise market participants to trade to balance their positions ahead of Gate Closure. This will result in increased liquidity in the forward market and benefit competition by encouraging investment in flexible capacity (flexible generation, demand participation and other technologies).

A number of respondents were concerned over potential negative impacts on liquidity should P316 be implemented. There were concerns that a single imbalance price may be detrimental to wholesale market liquidity, particularly when the system is tight. One respondent noted that further evaluation of the impacts of a single price is required to confirm whether a move to a single price better facilitates the applicable BSC Objectives.

It was added that at times of system scarcity, liquidity is reduced which leaves smaller Parties particularly exposed to higher and more volatile imbalance prices without the ability to respond effectively to the price signal. One respondent believes that at times of system stress/scarcity liquidity would fall, unduly impacting non vertically-integrated players. A key element of an efficient competitive market is liquidity and confidence that prices reflect the value.

Additionally, there was concern over the impact this Modification may have on intraday liquidity due to the lack of differential between the SSP and SBP under a single imbalance price. This may result in a large reduction in intraday liquidity with many players forced to finalise positions a day ahead.

## Consideration of the P305 historical analysis

The P305 Workgroup requested a recalculation of historical imbalance prices and that any analysis should recreate an output similar to the analysis conducted for P304 and P314, spanning a time period of 15 February 2010 to 17 May 2014.

The P305 analysis looked at different elements of the Proposed Modification including PAR values of 350MWh, 250MWh, 100MWh, 50MWh and 1MWh. ELEXON recalculated imbalance charges, RCRC and the net impact across this period, comparing the results to the 'live' data. ELEXON noted that the analysis would not take account of any behaviour change as a consequence of P305. The Workgroup concluded that analysis conducted under P305 would be sufficient to assess P316.

There were strong feelings from some Workgroup members that there was insufficient analysis on potential distributional impacts to the industry should P316 and/or P305 be implemented. It was noted that these impacts were clearly presented under P304 and P314 but no analysis was done for P305 and P316 due to time constraints. Some respondents to the P316 Assessment Consultation agreed with this view with further comments saying there was all together insufficient analysis on P316.

More information on the analysis conducted can be found in the P305 Assessment Report, with the underlying data available on the ELEXON Portal.

## Consideration of Ofgem's SCR analysis

The Workgroup considered the analysis that had been undertaken by Ofgem under the SCR.

A Workgroup member noted that while Ofgem had done a significant amount of analysis under the EBSCR, the Workgroup had been charged with doing further analysis as it saw fit to assess the impacts of P305. This could include endorsing Ofgem's analysis, but did not preclude the Workgroup from doing its own. The Ofgem Representatives did not disagree with this, but emphasised that any analysis undertaken should be done on a pragmatic basis.

Members noted that the EBSCR analysis only assessed the EBSCR conclusions as a whole package, and did not account for individual elements. It would therefore be difficult to draw conclusions on the impacts of just the single marginal price elements from this analysis for use in assessing P316.

Some Workgroup members were keen to undertake historical analysis of recent years with the P316 arrangements in place. Other members were unsure what this would show, noting that participants' behaviour would have been different in a single price regime and so whatever such analysis produced would be inconclusive. The Ofgem Representatives were also unsure of the merits of performing historical analysis when the intent of the EBSCR is to drive behavioural changes. However, participants in favour suggested that this would show the worst-case scenario should participants not change their behaviour in response to the proposed changes. It would also allow distributional effects to be assessed, and could be used to assess the most suitable PAR value(s) to adopt. It was also felt that the data should be made available to all participants, so that they can assess the impacts on their own organisations for themselves. There was also a view that should ELEXON's analysis support Ofgem's conclusions then this may provide more comfort to participants, while if it does not then this would suggest areas that need to be considered further.

ELEXON has undertaken a comprehensive piece of analysis for the P305 Workgroup, and a summary of the results can be found in the P305 Assessment Procedure Consultation. As part of this analysis, ELEXON has broken the data down by solution area, and therefore this analysis also shows the impacts of only having the single marginal price elements of the P305 solution in place, as proposed under P316.

In addition, the raw Party-level data from this analysis is available on the ELEXON Portal for participants to download and consider.

Full details of the analysis completed under P305 can be found in Attachment A of the P305 Assessment Consultation.

## Additional areas for consideration

The Workgroup noted that it would be very difficult to assess the potential impacts on intermittent generators through analysis. The Workgroup therefore requested information on this area from respondents to the Assessment Consultation. The majority of respondents noted that P316 may have some impact on intermittent generators:

- intermittent generators have less certainty over output, therefore greater exposure to imbalance prices;

- the market will need to determine new competitive price for Power Purchase Agreements (PPAs) after assessment of risks;
- windfarms will pass balancing risk to PPA providers and negative impacts on PPAs due to reassessment of risks;
- there may be potential issues due to renegotiation clauses in contracts;
- offtakers may factor imbalance price increases into discounts given for renewable PPAs; and
- increase in PPA costs may result in an inflation of strike price bids, impacting competition between intermittent generators within a mix of technologies in an auction pot.

The Workgroup also requested respondents' views on the interaction that P316 may have with the Capacity Market (CM) or with Contracts for Difference (CfD). The majority of respondents indicated that there may be an impact on the CM or CfD arrangement should P316 be implemented:

- potential increased risk of extreme imbalance prices which may increase revenue (and strike prices) under CfD;
- only negligible impacts on CfD and CM;
- portfolio generators may be better placed to manage risks than single sites which could introduce restraint on competition;
- could result in low CM bids but this is difficult to determine;
- may be instances where projects bid too low and suffer 'winners curse' in CfD auction; and
- sharper prices could compliment what the CM arrangements seek to achieve.

Details of the responses to the Assessment Consultation can be found in Attachment C.

# 7 Workgroup's Conclusions

## Workgroup's recommendation to the Panel

The Workgroup has concluded that:

- the Proposed Modification **does not** better facilitate the Applicable BSC Objectives when compared to current Baseline and so should be **rejected**;
- the Alternative Modification **does** better facilitate the Applicable BSC Objectives when compared to the Proposed Modification and so should be put forward; and
- the Alternative Modification **does** better facilitate the Applicable BSC Objectives when compared to current Baseline and so should be **approved**.

Therefore, the Workgroup recommends to the Panel that the **P316 Alternative Modification should be approved and the P316 Proposed Modification should be rejected**.

| Workgroup's Voting *(15 members were eligible to vote, including the Proposer)* | |
|---|---|
| Does the Proposed Modification better facilitate the Applicable BSC Objectives than the current Baseline? | |
| Votes for Proposed Modification | 5 |
| **Votes for current Baseline** | **10** |
| Does the Alternative Modification better facilitate the Applicable BSC Objectives than the Proposed Modification? | |
| **Votes for Alternative Modification** | **10** |
| Votes for Proposed Modification | 5 |
| Does the Alternative Modification better facilitate the Applicable BSC Objectives than the current Baseline? | |
| **Votes for Alternative Modification** | **10** |
| Votes for current Baseline | 5 |

The views given by the Proposer, Workgroup members and Assessment Procedure Consultation respondents against the Applicable BSC Objectives are detailed below.

## Proposer's views against the Applicable BSC Objectives

### Applicable BSC Objective (b)

The proposed changes to the imbalance price calculation will make prices more reflective of the value to consumers of balancing, particularly during times of very tight system margins. In doing so, market participants will be incentivised to make more efficient balancing and investment decisions. This should result in a reduction in the total costs (to the SO and to the market) of maintaining a balanced system, whilst presenting savings on the costs of delivering secure electricity supplies in the future.

Making imbalance prices sharper will signal the commencement of reforms designed to better reflect the value of flexible plant in the balancing arrangements. It may therefore

**What are the Applicable BSC Objectives?**

(a) The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence

(b) The efficient, economic and co-ordinated operation of the National Electricity 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

(d) Promoting efficiency in the implementation of the balancing and settlement arrangements

(e) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency [for the Co-operation of Energy Regulators]

(f) Implementing and administrating the arrangements for the operation of contracts for difference and arrangements that facilitate the operation of a capacity market pursuant to EMR legislation

contribute to deferring the mothballing of flexible plant and help counteract potential tightening of margins.

### Applicable BSC Objective (c)

Reflecting the value that actions deliver supports effective competition by aligning competitive incentives of market participants with the interests of the consumer. A single marginal imbalance price eliminates distortions in the arrangements that currently impede value reflectivity, thereby supporting effective competition that drives value for the consumer.

Strengthening the energy imbalance price signal through PAR reform should incentivise market participants to trade to balance their positions ahead of Gate Closure. This should increase liquidity in the forward market and benefit competition by encouraging investment in flexible capacity (flexible generation, demand participation and other technologies).

The inclusion of a single imbalance price removes the existing inefficient price spread and for many market participants, in particular smaller parties who are less likely to drive the system length. This should reduce net imbalance costs and therefore help to mitigate the potential imbalance risk faced by market participants.

The single marginal imbalance price may alter the incentives for parties to enter the market. The reforms address existing inefficiencies which limit the potential for some parties, in particular those offering services that facilitate flexibility and balance (such as Demand Side Response (DSR) or storage), to participate in the wholesale electricity market.

## Workgroup's views against the Applicable BSC Objectives

### Applicable BSC Objective (b)

The Workgroup considered that a reduction in the PAR value to 50MWh and then to 1MWh (Proposed Modification) may increase the likelihood of amplifying existing distortions in the calculation of the imbalance price. In particular, high-priced Offers accepted in one Settlement Period could go on to set the price in later Settlement Periods when the Transmission Company couldn't end that Offer sooner due to the nature of the plant called upon, despite the action no longer being needed.

A minority of members believe that the Proposed Modification would be beneficial against Applicable BSC Objective (b). Those in support generally agree with the reasons given by the Proposer above.

Some Workgroup members who felt that the Proposed Modification would be detrimental against Applicable BSC Objective (b) felt that the Alternative Modification resolved enough of their concerns that it could instead be beneficial compared to the current Baseline. All other members' views remain unchanged. This means that a majority of Workgroup members believe the Alternative Modification would be beneficial against Applicable BSC Objective (b).

## Applicable BSC Objective (c)

Some Workgroup members believed that a move to a PAR value of 50MWh was too large a single step to take, and that a more cautious approach should be taken. This would allow time to assess the impacts of reducing the PAR value, and would allow changes to be halted if it was having too detrimental an effect.

There was also concern that the changes proposed by P316 could have a detrimental impact on liquidity in the market, which would make it harder for smaller participants to trade. In particular, a single price may result in some of the larger vertically integrated participants not trading in the market, reducing the ability for smaller participants to trade.

However, a minority of members felt that P316 would be beneficial against Applicable BSC Objective (c). Many members agreed with the reasons put forward by the Proposer above. In addition, it was felt that a single price would be beneficial to competition as it would bring more participants into the market which is a key to greater liquidity. Furthermore, there was concern that the current arrangements were dampening signals of scarcity, and that sharpening imbalance prices would send out stronger signals.

Some members felt that the Proposed Modification would be detrimental against Applicable BSC Objective (c) but felt that the alternative resolved enough of their concerns that it could instead be beneficial compared to the current Baseline. All other members' views remain unchanged. This means that a majority of Workgroup members believe the Alternative Modification would be beneficial against Applicable BSC Objective (c).

## Applicable BSC Objective (d)

One Workgroup member felt that both solutions would be detrimental against Applicable BSC Objective (d) due to costs incurred by ELEXON and the Transmission Company to implement and administer the solutions.

However, the rest of the Workgroup felt that P316 was neutral against Applicable BSC Objective (d).

| Summary of Workgroup Members' Views[5] | | |
|---|---|---|
| Obj | Proposed Modification | Alternative Modification |
| **(a)** | **Neutral** *(unanimous)* | **Neutral** *(unanimous)* |
| **(b)** | **Beneficial** *(minority)*<br>• Strengthens incentive to balance efficiently, particularly in times of tight margin<br>• Improvements in cost-reflectivity will encourage investment, driving long run cost savings<br>• Better reflects the value of flexible generation<br>• Potential increase in liquidity which will help participants balance ahead | **Beneficial** *(majority)*<br>• Strengthens incentive to balance efficiently, particularly in times of tight margin<br>• Improvements in cost-reflectivity will encourage investment, driving long run cost savings<br>• Better reflects the value of flexible generation<br>• Potential increase in liquidity which will help participants balance ahead of |

[5] Shows the different views expressed by the other Workgroup members – not all members necessarily agree with all of these views.

| Summary of Workgroup Members' Views[5] | | |
|---|---|---|
| Obj | Proposed Modification | Alternative Modification |
| | of Gate Closure<br>• Reduces number of actions required by the SO<br>**Detrimental** *(majority)*<br>• Volatile prices may cause participants to take longer positions to avoid the consequences of being short<br>• More marginal prices increases the risk of balancing actions incorrectly impacting the imbalance price in subsequent Settlement Periods | Gate Closure<br>• Higher PAR value means less risk of amplifying distortions that feed into the imbalance prices<br>• Less marginal price may reduce volatility and the risk of participants taking longer positions<br>**Detrimental** *(minority)*<br>• Volatile prices may cause participants to take longer positions to avoid the consequences of being short |
| **(c)** | **Beneficial** *(minority)*<br>• Improves incentives for flexible and reliable plant to enter the market<br>• Single price removes the inefficient price spread and the net imbalance costs that creates<br>• Incentivises participants to balance positions, increasing liquidity and encouraging investment in flexible capacity<br>• Sharpens the signals of scarcity to the market<br>**Detrimental** *(majority)*<br>• Volatile prices will have a detrimental effect on smaller participants<br>• The distributional effects of P316 are unknown<br>• The reduction in PAR to 50MWh is too large a step and the impacts this will have are unknown<br>• Single price may result in less trading, reducing liquidity | **Beneficial** *(majority)*<br>• Improves incentives for flexible and reliable plant to enter the market<br>• Single price removes the inefficient price spread and the net imbalance costs that creates<br>• Incentivises participants to balance positions, increasing liquidity and encouraging investment in flexible capacity<br>• Sharpens the signals of scarcity to the market<br>• Less marginal price with no further step change will be more beneficial for participants and mitigate risks of reducing PAR<br>**Detrimental** *(minority)*<br>• Volatile prices will have a detrimental effect on smaller participants<br>• The distributional effects of P316 are unknown<br>• The reduction in PAR to 100MWh is still too large a step and the impacts this will have are unknown<br>• Single price may result in less trading, reducing liquidity |
| **(d)** | **Detrimental** *(minority)*<br>• Introduces costs to ELEXON and Transmission Company with little proven benefit<br>**Neutral** *(majority)* | **Detrimental** *(minority)*<br>• Introduces costs to ELEXON and Transmission Company with little proven benefit<br>**Neutral** *(majority)* |
| **(e)** | **Neutral** *(unanimous)* | **Neutral** *(unanimous)* |

| Summary of Workgroup Members' Views[5] | | |
|---|---|---|
| Obj | Proposed Modification | Alternative Modification |
| **(f)** | **Neutral** *(unanimous)* | **Neutral** *(unanimous)* |

## Participant's views against Applicable BSC Objectives

Views of respondents to the Assessment Procedure Consultation were mixed, with the majority believing that P316 would not better facilitate the Applicable BSC Objectives. Like the Workgroup, respondents felt that the relevant Applicable BSC Objectives were (b), (c) and (d).

Respondents who believed that P316 would better facilitate Applicable BSC Objective (b) noted that the Modification would make prices more cost reflective and create further incentives for participants to be more efficient and balance their positions ahead of Gate Closure. It was also noted by some respondents that the implementation of P316 would result in a reduction of actions being required by the SO as participants should be incentivised to balance their own positions instead of relying on SO actions. Respondents also noted that the implementation of P316 would allow for more market participants to enter the market and therefore increase liquidity.

Respondents who believe that P316 would better facilitate Applicable BSC Objective (c) felt that the implementation of this Modification would align competitive incentives of market participants with the interests of consumers. It was also noted that P316 would go some way to eliminating distortions in the current balancing arrangements. Some respondents felt that by reducing the PAR value, resulting in sharper imbalance prices, would help strengthen the energy imbalance price signal (especially when system margins are tight). This will in turn encourage investment in flexible capacity and benefiting competition.

Respondents that believed that P316 would not better facilitate the Applicable BSC Objectives noted that a move to a PAR value of 1MWh would be too radical a change from the current 500MWh. There is also potential for a 1MWh PAR value to pollute imbalance prices. Some respondents believe that a move to a single imbalance price may be detrimental to market liquidity and there is not enough time for participants to react to a reduction in PAR or a move to a single imbalance price. It was noted by some respondents that, although a great deal of analysis has been done, there has been no analysis on behaviour changes of market participants. Therefore, this Modification cannot be considered against the Applicable BSC Objectives. Some respondents indicated that there are benefits in implementing P316 but the detrimental impacts outweigh any benefit. In addition, detrimental impacts against Objective (d) were noted but these impacts were more in relation to the potential costs incurred by participants and the overall efficiency of the arrangements.

# 8 Recommendations

The P316 Workgroup invites the Panel to:

- **AGREE** that the P316 Proposed Modification:
  - **DOES NOT** better facilitate Applicable BSC Objective (b); and
  - **DOES NOT** better facilitate Applicable BSC Objective (c);
- **AGREE** that the P316 Alternative Modification:
  - **DOES** better facilitate Applicable BSC Objective (b); and
  - **DOES** better facilitate Applicable BSC Objective (c);
- **AGREE** that the P316 Alternative Modification is better than the P316 Proposed Modification;
- **AGREE** an initial recommendation that the P316 Alternative Modification should be **approved** and that the P316 Proposed Modification should be **rejected**;
- **AGREE** an initial Implementation Date for the Proposed Modification of:
  - 5 November 2015;
- **AGREE** an initial Implementation Date for the Alternative Modification of:
  - 5 November 2015;
- **AGREE** the draft legal text for the Proposed Modification;
- **AGREE** the draft legal text for the Alternative Modification;
- **AGREE** that P316 is submitted to the Report Phase; and
- **NOTE** that ELEXON will issue the P316 draft Modification Report (including the draft BSC legal text) for a 12 Working Day consultation and will present the results to the Panel at its meeting on 12 March 2015.

# Appendix 1: Solution Requirements

## P316 Solution Requirements

The below table summaries which requirements are applicable to the Proposed Modification and which are applicable to the Alternative Modification:

| | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 |
|---|---|---|---|---|---|---|---|---|
| Proposed | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ |
| Alternative | | | | ✓ | ✓ | ✓ | ✓ | ✓ |

### Changes to PAR and RPAR values under the Proposed Modification

| Requirement 1 | |
|---|---|
| The value of PAR will be set to 50MWh. | |
| 1.1 | The SAA (BPO service provider) will set the value of PAR within central systems to 50MWh effective from the P316 Implementation Date. This value will apply to all Settlement Days from the P316 Implementation Date onwards. |
| 1.2 | Participants who store the value of PAR within their internal systems will need to update this value effective from the P316 Implementation Date. |

| Requirement 2 | |
|---|---|
| The value of RPAR will be set to 1MWh. | |
| 2.1 | The SAA (BPO service provider) will set the value of RPAR within central systems to 1MWh effective from the P316 Implementation Date. This value will apply to all Settlement Days from the P316 Implementation Date onwards. |
| 2.2 | Participants who store the value of RPAR within their internal systems will need to update this value effective from the P316 Implementation Date. |

| Requirement 3 | |
|---|---|
| The value of PAR will be set to 1MWh effective from 1 November 2018 (November 2018 BSC Systems Release). | |
| 3.1 | The SAA (BPO service provider) will set the value of PAR within central systems to 1MWh effective from 1 November 2018. This value will apply to all Settlement Days from 1 November 2018 onwards. |
| 3.2 | Participants who store the value of PAR within their internal systems will need to update this value effective from 1 November 2018. |

### Changes to PAR and RPAR values under the Alternative Modification

| Requirement 4 | |
|---|---|
| The value of PAR will be set to 100MWh | |
| 4.1 | The SAA (BPO service provider) will set the value of PAR within central systems to 100MWh effective from the P316 Implementation Date. This value will apply to all Settlement Days from the P316 Implementation Date onwards. |

| Requirement 4 | |
|---|---|
| 4.2 | Participants who store the value of PAR within their internal systems will need to update this value effective from the P316 Implementation Date. |

| Requirement 5 | |
|---|---|
| The value of RPAR will be set to 1MWh. | |
| 5.1 | The SAA (BPO service provider) will set the value of RPAR within central systems to 1MWh effective from the P316 Implementation Date. This value will apply to all Settlement Days from the P316 Implementation Date onwards. |
| 5.2 | Participants who store the value of RPAR within their internal systems will need to update this value effective from the P316 Implementation Date. |

## Introduction of a single imbalance price under the Proposed and Alternative Modifications

| Requirement 6 | |
|---|---|
| If the NIV value is greater than zero in a given Settlement Period, the SBP will be calculated according to the Main Price calculation and the SSP will be set equal to the SBP. | |
| 6.1 | For any Settlement Period on or after the P316 Implementation Date for which the NIV value is greater than zero, the BMRA (BPO service provider) and the SAA (BPO service provider) will calculate the SBP in accordance with BSC Section T4.4.2(a), referred to in this document as the Main Price calculation. |
| 6.2 | For any Settlement Period on or after the P316 Implementation Date for which the NIV value is greater than zero, the BMRA (BPO service provider) and the SAA (BPO service provider) will set the SSP to be equal to the SBP. |
| 6.3 | For all Settlement Periods prior to the P316 Implementation Date, the values of SBP and SSP will continue to be calculated according to the methodology in force at the time (BSC Sections T4.4.2 and T4.4.3). |
| 6.4 | Participants who calculate the values of SBP and SSP within their internal systems will need to update these methodologies accordingly effective from the P316 Implementation Date. |

| Requirement 7 | |
|---|---|
| If the NIV value is less than zero in a given Settlement Period, the SSP will be calculated according to the Main Price calculation and the SBP will be set equal to the SSP. | |
| 7.1 | For any Settlement Period on or after the P316 Implementation Date for which the NIV value is less than zero, the BMRA (BPO service provider) and the SAA (BPO service provider) will calculate the SSP in accordance with BSC Section T4.4.3(a), referred to in this document as the Main Price calculation. |
| 7.2 | For any Settlement Period on or after the P316 Implementation Date for which the NIV value is less than zero, the BMRA (BPO service provider) and the SAA (BPO service provider) will set the SBP to be equal to the SSP. |
| 7.3 | For all Settlement Periods prior to the P316 Implementation Date, the values of SBP and SSP will continue to be calculated according to the methodology in force at the time (BSC Sections T4.4.2 and T4.4.3). |

| Requirement 7 | |
|---|---|
| 7.4 | Participants who calculate the values of SBP and SSP within their internal systems will need to update these methodologies accordingly effective from the P305 Implementation Date. |

| Requirement 8 | |
|---|---|
| If the NIV value is equal to zero in a given Settlement Period, the SBP will be set to the Market Price and the SSP will be set equal to the SBP. | |
| 8.1 | For any Settlement Period on or after the P316 Implementation Date for which the NIV value is equal to zero, the BMRA (BPO service provider) and the SAA (BPO service provider) will calculate the SBP in accordance with BSC Section T4.4.2(b) with reference to the Market Price. |
| 8.2 | For all Settlement Periods on or after the P316 Implementation Date for which the NIV value is equal to zero, the BMRA (BPO service provider) and the SAA (BPO service provider) will set the SSP to be equal to the SBP. |
| 8.3 | For all Settlement Periods prior to the P316 Implementation Date, the values of SBP and SSP will continue to be calculated according to the methodology in force at the time (BSC Sections T4.4.2 and T4.4.3). |
| 8.4 | Participants who calculate the values of SBP and SSP within their internal systems will need to update these methodologies accordingly effective from the P316 Implementation Date. |
| 8.5 | For all Settlement Periods, the BPO service provider will continue to calculate the Market Price as per BSC Section T4.3A and publish the Market Index Data on the ELEXON Portal in line with the current requirements. |

# Appendix 2: Workgroup Details

## Workgroup's Terms of Reference

| Specific areas set by the BSC Panel in the P316 Terms of Reference |
|---|
| Is the Proposed Modification the most appropriate way to implement the EBSCR conclusion in relation to a single imbalance price and a marginal imbalance price? |
| Consider the Workgroup analysis and assessment of P305:<br>• Does any additional work need to be completed to appropriately assess P316? |
| What is the most appropriate Implementation Date for P316? |
| What changes are needed to BSC documents, systems and processes to support P316 and what are the related costs and lead times? |
| Are there any Alternative Modifications? |
| Does P316 better facilitate the Applicable BSC Objectives than the current baseline? |

## Assessment Procedure timetable

| P316 Assessment Timetable | |
|---|---|
| Event | Date |
| Panel submits P316 to Assessment Procedure | 13 Nov 14 |
| Workgroup Meeting 1 (joint with P305) | 28 Nov 14 |
| Workgroup Meeting 2 (joint with P305) | 01 Dec 14 |
| Assessment Procedure Consultation | 15 Dec 14 – 14 Jan 15 |
| Workgroup Meeting 3 (joint with P305) | 21 Jan 15 |
| Workgroup Meeting 4 (joint with P305) | 23 Jan 15 |
| Panel considers Workgroup's Assessment Report | 12 Feb 15 |

## Workgroup membership and attendance

| P316 Workgroup Attendance | | | | | |
|---|---|---|---|---|---|
| Name | Organisation | 28 Nov 14 | 01 Dec 14 | 21 Jan 15 | 23 Jan 15 |
| Members | | | | | |
| Dean Riddell | ELEXON *(Chair)* | ✓ | ✓ | ✓ | ✓ |
| Talia Addy | ELEXON *(Lead Analyst)* | ✓ | ✓ | ✓ | ✓ |
| Bill Reed | RWE *(Proposer)* | ✓ | ✓ | ✓ | ✓ |
| Sally Lewis | National Grid | ✗ | ✗ | ✓ | ✓ |
| Esther Sutton | E.ON | ✓ | ✓ | ✓ | ✓ |
| Olaf Islei | APX | ✓ | ✓ | ✓ | ✓ |
| Sarah Owen | Centrica | ✓ | ✓ | ✓ | ✓ |
| James Anderson | Scottish Power | ✗ | ✗ | ✓ | ✓ |
| Tom Edwards | Cornwall Energy | ✓ | ✓ | ✗ | ✓ |

| P316 Workgroup Attendance | | | | | |
|---|---|---|---|---|---|
| Name | Organisation | 28 Nov 14 | 01 Dec 14 | 21 Jan 15 | 23 Jan 15 |
| Andy Colley | SSE | ✓ | ✓ | ✓ | ✓ |
| Libby Glazebrook | GDF Suez | ☎ | ✓ | ✓ | ☎ |
| Colin Prestwich | SmartestEnergy | ✓ | ✓ | ✓ | ✓ |
| Cem Suleyman | Drax | ✗ | ✗ | ✓ | ✓ |
| Martin Mate | EDF | ✓ | ✓ | ✓ | ✓ |
| Christine Hough | Haven | ✗ | ✓ | ✗ | ✗ |
| Alan Goodbrook | Good Energy | ✓ | ✓ | ✓ | ✓ |
| Keith Munday | First Utility | ✓ | ✓ | ✓ | ✓ |
| Stephen Mason | Hess | ✗ | ✓ | ✓ | ✓ |
| Attendees | | | | | |
| David Kemp | ELEXON *(P305 Lead Analyst)* | ✓ | ✓ | ✓ | ✓ |
| Nick Rubin | ELEXON *(Design Authority)* | ✓ | ✓ | ✓ | ✓ |
| Nick Brown | ELEXON *(Lead Lawyer)* | ✗ | ✗ | ✗ | ✓ |
| Alex Haffner | National Grid | ✓ | ✓ | ✗ | ✗ |
| Stephen Casement | National Grid | ✓ | ✗ | ✗ | ✗ |
| Matthew Roberts | National Grid | ✓ | ✗ | ✗ | ✗ |
| Dominic Scott | Ofgem | ✓ | ✓ | ✓ | ✓ |
| Dipali Raniga | Ofgem | ✓ | ✓ | ✗ | ✗ |
| David Beaumont | Ofgem | ✓ | ✓ | ✗ | ✗ |
| James Soundraraju | Ofgem | ✗ | ✗ | ✓ | ✓ |
| Adam Gilham | Ofgem | ✗ | ✗ | ✓ | ✓ |
| Richard Devenport | EDF | ✓ | ✗ | ✓ | ✓ |
| Sam Hollister | Energy UK | ✓ | ✗ | ✗ | ✗ |
| Jeremy Guard | First Utility | ✗ | ✓ | ✓ | ✓ |
| Peter Bolitho | Waters Wye Associates | ✓ | ✓ | ✓ | ✗ |

# Appendix 3: Glossary & References

## Acronyms

Acronyms used in this document are listed in the table below.

| Glossary of Defined Terms | |
|---|---|
| Acronym | Definition |
| BMRA | Balancing Mechanism Reporting Agent |
| BPO | Business Process Operations |
| BSAA | Balancing Services Adjustment Actions |
| BSAD | Balancing Services Adjustment Data |
| CfD | Contracts for Difference |
| CM | Capacity Market |
| CSD | Code Subsidiary Documents |
| DSR | Demand Side Response |
| EBSCR | Electricity Balancing Significant Code Review |
| NIV | Net Imbalance Volume |
| PAR | Price Average Reference |
| PPA | Power Purchase Agreement |
| RPAR | Replacement Price Average Reference |
| RSP | Reverse Scarcity Price |
| SAA | Settlement Administration Agent |
| SBP | System Buy Price |
| SMAF | System Management Actions Flagging |
| SO | System Operator |
| SSP | System Sell Price |
| VoLL | Value of Lost Load |

## External links

A summary of all hyperlinks used in this document are listed in the table below.

All external documents and URL links listed are correct as of the date of this document.

| External Links | | |
|---|---|---|
| Page(s) | Description | URL |
| 3 | BSAD and SMAF Methodology Statements on the National Grid website | https://www2.nationalgrid.com/UK/Industry-information/Electricity-transmission-operational-data/Codes-principles-methodologies/Methodologies/ |
| 4 | Imbalance pricing information page on the ELEXON website | https://www.elexon.co.uk/reference/credit-pricing/imbalance-pricing/ |

| External Links | | |
|---|---|---|
| Page(s) | Description | URL |
| 4 | P205 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p205-increase-in-par-level-from-100mwh-to-500mwh/ |
| 5 | EBSCR page on the Ofgem website | https://www.ofgem.gov.uk/electricity/wholesale-market/market-efficiency-review-and-reform/electricity-balancing-significant-code-review |
| 5 | Final EBSCR Policy Decision on the Ofgem website | https://www.ofgem.gov.uk/publications-and-updates/electricity-balancing-significant-code-review-final-policy-decision |
| 5 | P305 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p305/ |
| 5 | P304 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p304/ |
| 5 | P314 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p314/ |
| 7 | P316 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p316/ |
| 15 | P306 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p306/ |
| 15 | P307 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p307/ |
| 15 | P308 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p308/ |
| 15 | P310 page on the ELEXON website | https://www.elexon.co.uk/mod-proposal/p310/ |