Modification proposal:	**Balancing and Settlement Code (BSC) P305: Electricity Balancing Significant Code Review Developments**		
Decision:	The Authority[1] directs that modification P305 Proposed be made[2]		
Target audience:	National Grid Transmission Plc (NGET), Parties to the BSC, the BSC Panel and other interested parties		
Date of publication:	2 April 2015	Implementation date:	5 November 2015

Background

Electricity market participants (parties) are exposed to cash-out prices when they generate or consume more or less electricity than they have contracted for. The difference between actual electricity generated or consumed in a half hour period, and the volume parties have contracted for, is known as their imbalance volume.

Cash-out prices are a key incentive to balance because parties face these prices on their imbalance volumes. The Electricity Balancing Significant Code Review (EBSCR) identified a number of defects in the calculation of cash-out prices[3]:

- they are calculated using an average of the cost of the actions that National Grid Electricity Transmission (NGET – the System Operator or 'SO' for GB) takes to balance the system, rather than the marginal action;
- the 'dual price' arrangements create unnecessary imbalance costs for parties because the price for 'helpful' imbalances does not reflect the savings these imbalances create for the SO[4];
- they exclude the costs borne by the consumer during disconnection and voltage reduction;
- the current method for pricing reserve costs into cash-out does not accurately reflect the real time value of this reserve, and excludes the cost of some reserve products altogether.

The EBSCR Final Policy Decision concluded that these defects could increase the cost of ensuring security of supply to consumers because it could lead to inefficient balancing and dampen incentives for the market to provide flexibility[5]. The Final Policy Decision outlined a number of reforms to the cash-out arrangements to address these defects.

On 15 May 2014 the Authority directed[6] NGET to raise a modification proposal to give effect to the conclusions of the EBSCR.

[1] References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.
[2] This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.
[3] The EBSCR was Ofgem's review of the electricity balancing and cash-out arrangements in GB: https://www.ofgem.gov.uk/electricity/wholesale-market/market-efficiency-review-and-reform/electricity-balancing-significant-code-review
[4] Parties face the 'main' price when they have an imbalance in the same direction as the system and the 'reverse' price when they have an imbalance in the opposite direction. The main price is calculated using the SO's balancing actions. The reverse price is calculated from trading in the short-term market. It is intended to reflect the price a party would have obtained if it had bought or sold its imbalance on a power exchange.
[5] Reliable demand or generation capacity which can act quickly in response to price signals.
[6] https://www.ofgem.gov.uk/publications-and-updates/direction-national-grid-electricity-transmission-plc-relation-electricity-balancing-significant-code-review

The modification proposal

Modification proposal P305[7] (P305 Proposed) was raised by NGET (the Proposer) on 30 May 2014. It proposes the following changes to the cash-out calculation:

- 'Reducing PAR': the introduction of a marginal cash-out price, starting by reducing the Price Average Reference Volume (PAR)[8] from 500MWh (PAR500) to 50MWh (PAR50) on 5 November 2015, before reducing it to 1MWh (PAR1) on 1 November 2018[9];
- 'A single cash-out price': the introduction of a single cash-out price;
- 'VoLL pricing': the inclusion of a cost for disconnections and voltage reduction into the cash-out price calculation based on an administrative Value of Lost Load (VoLL), and a process for correcting parties imbalance volumes in these events, starting with a VoLL price of £3,000/MWh on 5 November 2015 before moving to £6,000/MWh on 1 November 2018;
- 'RSP': pricing Short Term Operating Reserve (STOR)[10] actions into cash-out using a Reserve Scarcity Pricing (RSP) function[11], starting with a 'static' RSP function on 1 November 2015 before moving to a 'dynamic' RSP function on 1 November 2018[12].

The Proposer believes P305 Proposed will better facilitate BSC applicable objectives[13] (b) and (c), for the reasons described in our assessment against these objectives.

P305 Alternative

The P305 workgroup developed an Alternative solution (P305 Alternative) to P305 Proposed. P305 Alternative is identical to P305 Proposed except that it:

- proposes the introduction of PAR100 in November 2015 with no further reductions in PAR; and
- would not introduce a dynamic RSP function in November 2018, and instead would continue with a static RSP function.

Modification P316

A related modification, P316[14], was raised on 4 November 2014 by RWE seeking to increase the certainty of a single, marginal cash-out price being implemented ahead of winter 2015/16. P316 was progressed to allow the Authority to consider this related proposal at the same time as P305.

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[7] http://www.elexon.co.uk/mod-proposal/p305/
[8] PAR is the volume of (most expensive) balancing actions used in the calculation of the main cash-out price.
[9] It also proposes to reduce the Replacement Price Average Reference volume (RPAR) to 1MWh on 5 November 2015. RPAR is the volume of actions used to calculate a replacement price for balancing actions flagged as system. For more information please see the P305 modification proposal.
[10] STOR is a contracted balancing service, whereby the service provider delivers a contracted level of power when instructed by the SO, in exchange for payments for being available and a pre-agreed utilisation price. The proposal also includes STOR products which are not currently instructed via the Balancing Mechanism (non-BM STOR). The costs of using non-BM STOR do not currently feed into cash-out.
[11] The RSP function would produce a price each half hour period, based on a product the VoLL and the Loss of Load Probability (LOLP). When STOR is used, the RSP price would replace the utilisation price of each STOR action if it exceeds that particular action's utilisation price. The proposals would also require the SO to release indicative information which can be used to calculate the likely RSP price in advance of each half hour period.
[12] For further information on the 'static' and 'dynamic' methodologies, please see the modification proposal.
[13] As set out in Standard Condition C3(3) of NGET's Transmission Licence: https://epr.ofgem.gov.uk
[14] https://www.elexon.co.uk/mod-proposal/p316/

Modification proposal P316 (P316 Proposed) proposes to introduce a single cash-out price and reduce PAR from 500MWh to 50MWh on 5 November 2015, and to 1MWh on 1 November 2018. It is therefore identical to P305 Proposed in relation to reducing PAR and a single cash-out price, but does not include the RSP and VOLL pricing proposals in P305 Proposed.

The P316 workgroup developed an Alternative solution (P316 Alternative) to P316 Proposed. The P316 Alternative proposes to introduce a single cash-out price and reduce PAR from 500MWh to 100MWh on 5 November 2015, with no further reduction in PAR. It is therefore identical to P305 Alternative in relation to reducing PAR and a single cash-out price, but does not include the RSP and VOLL pricing proposals in P305 Proposed. Annex 1 summarises, at a high level, the content of P316 and P305 and how one forms a subset of the other.

We have published our decision to reject P316 in a separate P316 decision letter[15].

BSC Panel[16] recommendation

At the BSC Panel meeting on 12 March 2015, a majority of the BSC Panel considered that both P305 Proposed and P305 Alternative would not better facilitate the applicable BSC objectives. The Panel therefore did not recommend their approval.

On the same day, the BSC Panel held its final discussions on P316 Proposed and P316 Alternative. The majority of the Panel considered that P316 Alternative would better facilitate the achievement of applicable BSC objectives than the baseline (current arrangements). A majority of the Panel considered that P316 Proposed would not better facilitate the achievement of the applicable BSC objectives. The Panel therefore recommended that the P316 Alternative solution should be approved and that P316 Proposed should not.

The Authority's decision

We have considered the issues raised by the modification proposal and the P305 Final Modification Report (FMR) [17] dated 13 March 2015. We have considered and taken into account the responses to the industry consultations which are attached to the P305 FMR. We have concluded that:

- implementation of P305 Proposed or P305 Alternative will better facilitate the achievement of the applicable objectives of the BSC;
- implementation of P305 Proposed will better facilitate the achievement of the applicable objectives compared to P305 Alternative;
- directing that P305 Proposed be made is consistent with our principal objective and statutory duties.[18]

We further consider that implementation of P305 Proposed will better facilitate the achievement of the applicable BSC objectives compared to related modification P316

[15] https://www.ofgem.gov.uk/publications-and-updates/balaning-and-settlement-code-bsc-p316-introduction-single-marginal-cash-out-price
[16] The BSC Panel is established and constituted pursuant to and in accordance with Section B of the BSC and Standard Special Licence Condition C3 of the Electricity Transmission Licence available at: www.epr.ofgem.gov.uk
[17] BSC modification proposals, modification reports and representations can be viewed on the Elexon website at www.elexon.co.uk
[18] The Authority's statutory duties are wider than matters which the Panel must take into consideration and are detailed mainly in the Electricity Act 1989.

(Proposed and Alternative). Further details of our views on P316 can be found in our P316 decision letter.

Reasons for our decision

We consider that both P305 Proposed and P305 Alternative will better facilitate BSC objectives (b) and (c), with P305 Proposed delivering the greater benefit of the two against both objectives. We also consider that both solutions will have a modestly negative impact on applicable objective (d). We consider that both solutions will have a neutral impact on objectives (e) and a positive impact on objective (f). On balance, we consider that both proposals better facilitate the BSC objectives, and that P305 Proposed better facilitates the BSC objectives than P305 Alternative. We set out our assessment against each relevant objective in greater detail below. We do not consider that objective (a) is impacted by these proposals.

(b) the efficient, economic and co-ordinated operation of the national electricity transmission system

In this section we outline our view that:

- both proposals better facilitate objective (b) because they ensure cash-out prices better reflect both the marginal costs of energy imbalances and the value consumers assign to secure electricity supplies during tight margins, which will:
  - lead to more efficient market balancing (which evidence suggests would lead to benefits to consumers of over £200m by 2030);
  - better reveal the value of flexible capacity and encourage more efficient innovation and investment in this capacity;
  - better incentivise imports over our interconnectors during system stress;
  - reduce the cost of ensuring security of supply for consumers in the presence of the Capacity Market (CM).
- P305 Proposed best facilitates this objective as it would more accurately reflect marginal imbalance costs, and the value consumers assign to electricity during tight margins, reducing costs for consumers further.

Views of the Proposer, BSC Panel, workgroup and respondents

The Proposer considers that P305 Proposed better facilitates this objective by strengthening the incentive on parties to make efficient balancing decisions. In its view this would reduce the total cost incurred by the market and the SO in balancing the system. The Proposer also considers that P305 Proposed would encourage investment and innovation which drives down the cost of achieving security of supply in the long run. It also believes that by better reflecting the value of flexible generation, P305 Proposed could help to counteract the tightening of availability.

The majority of BSC Panel members believed that P305 Proposed would better facilitate this objective for broadly the same reasons as the Proposer. Workgroup members and consultation respondents had mixed views on the proposals against this objective. A number agreed with the Proposer, with some also considering that P305 Proposed could drive liquidity and help the market balance before Gate Closure[19]. The main reasons provided as to why P305 Proposed would not better facilitate objective (b) are that:

[19] The point in time, one hour ahead of each half hour period, by which parties must finalise their positions.

- a low PAR could amplify the risk of cash-out prices being 'polluted' by system balancing actions or the SO taking 'reserve creation'[20] actions, sending inefficient signals to the market;
- the RSP methodology is not robust and could produce incorrect, unreliable and unpredictable signals that could lead to an irrational response by the market;
- sharper, more volatile prices could encourage parties to go long before Gate Closure, reducing balancing efficiency;
- generators may be over compensated in the presence of a Capacity Market (CM).

Many held the same views on P305 Alternative against objective (b) as they did for P305 Proposed. However, a number of those who thought P305 Proposed would not better facilitate objective (b) felt that that P305 Alternative would. This was mainly because they believed PAR100 would mitigate certain risks (outlined above) involved with moving to PAR50 and PAR1.

Our assessment

We consider that both P305 Proposed and P305 Alternative will drive down the cost of ensuring consumers receive secure electricity supplies and therefore better facilitate objective (b). We explain our reasoning below.

Link between cash-out prices and efficiency

Both electricity market participants (parties) and the SO incur costs in balancing the market. Parties incur costs by trading before Gate Closure and by taking actions in the long term to manage their imbalance risk. The SO incurs costs by contracting for reserve and taking balancing actions in real time to resolve energy imbalances left by the market. Cash-out prices are the key incentive on parties to balance their positions and take actions to reduce imbalance risk. They therefore have an important role in determining what the market does and what the SO has to do to ensure consumers receive uninterrupted electricity supplies.

We consider that parties should be exposed to the full costs which a failure to balance creates for the SO and consumers, including the costs consumers face when their supplies are interrupted. This helps ensure the market, through its trading and investment decisions, does as much as it efficiently can to reduce these costs. We consider that this is more likely to drive innovation in balancing solutions, which could reduce future balancing costs, than if this is left to the SO alone. Efficiency and innovation in balancing is becoming increasingly important as system intermittency grows and balancing costs rise[21].

High level impact of the proposals

We consider that each of the cash-out changes in P305 Proposed and P305 Alternative will have the following impacts:

- reducing PAR will lead to cash-out prices which more accurately reflect the cost of the SO's energy balancing actions at the margin. This will send a signal to parties to explore, create and exhaust additional balancing opportunities in the market

[20] This is the use of balancing actions in order to create sufficient flexibility and responsiveness to meet variations in the supply/demand balance. For example, due to plant dynamics, the SO may take a relatively more expensive action in one period in order to create reserve and lower costs in a future period.
[21] Balancing costs incurred by the SO reached approximately £850m in 2013/14 and are expected to rise substantially in the future as we see changes in the generation mix and tighter margins.

which are currently being overlooked, even though these balancing opportunities could be less costly than the SO's actions;

- a single cash-out price will ensure that parties face a cash-out price which reflects the savings they have created for consumers when they have a 'helpful' imbalance. This would ensure parties – particularly smaller parties with variable output or demand – incur total imbalance costs that more accurately reflect the costs they have created for consumers. This would reduce the risk of parties investing too much in balancing improvements, such as forecasting equipment;
- VoLL pricing will mean parties have a much greater incentive to create and exhaust available options in the market to mitigate the risk of Demand Control, on behalf of consumers;
- RSP will target STOR costs into periods where STOR is valued the most, and would remove an implicit cap on prices, which is far below the value consumers place on capacity during very tight margins[22]. This will incentivise parties to take actions to mitigate the risk of being short during these times, which are currently not being taken, even though they would be valued by the consumer. In addition, including non-BM STOR utilisation costs into the cash-out calculation would make cash-out prices more reflective of the SO's energy balancing costs. This is important as non-BM STOR is increasingly used by the SO[23].

The combined impact of these proposals will therefore be to ensure cash-out prices better reflect both the cost to consumers of energy imbalances and the value they assign to secure electricity supplies during tight margins. This will ensure that parties' forward trading and investment decisions more accurately take account of:

- the costs and savings their balancing activities create for consumers; and
- the value consumers place on flexible capacity to mitigate the risk of interruption.

This should have positive impacts on balancing efficiency, investment in flexibility, interconnector flows and ultimately the cost of security of supply in the presence of a CM, as described further below.

PAR and RSP concerns

We have carefully considered the concerns that a low PAR, and the RSP methodologies delivered by the workgroup, could result in prices which send inefficient signals to the market. In particular, whether a low PAR would not be better at revealing the marginal energy imbalance cost, and whether the RSP methodologies developed by the workgroup are sufficiently robust.

We consider existing 'flagging and tagging'[24] processes are effective at minimising the extent to which system actions can pollute cash-out prices, and could even overcompensate for the removal of pollution[25]. We also do not consider that 'reserve

[22] STOR products involve utilisation payments and availability payments which are agreed in advance. Therefore, when STOR is used, a volume of actions will enter the cash-out calculation at a price that may not reflect system dynamics. It is also impossible to accurately determine when STOR will be used and therefore accurately target availability costs (which represent the bulk of STOR costs) into cash-out. The current methodology for targeting STOR availability costs – via the Buy Price Adjuster – produces inaccurate cash-out signals. It applies a relatively small uplift to periods based on historical STOR utilisation, which does not take account of whether STOR was used or valued. These issues are particularly material during very tight margins, as they place an implicit cap on prices (at approximately the pre-agreed utilisation price of STOR) well below VoLL. Please see page 22 of the EBSCR Final Policy Decision for more information.
[23] From November 2009-2013, the SO instructed over 1.5 times as much non-BM STOR as BM STOR.
[24] These are processes which remove or re-price 'system' balancing actions to minimise their impact on the main cash-out price. For more information, please see Elexon's Imbalance Pricing Guidance: https://www.elexon.co.uk/wp-content/uploads/2014/11/imbalance_pricing_guidance_v8.0.pdf
[25] Please see P217A preliminary analysis and Chapter 7 of the EBSCR Draft Policy Decision Impact Assessment

creation' issues merit a higher PAR. This is because a PAR higher than PAR1 would systematically dampen cash-out prices in all periods and be less likely to reveal the marginal energy cost on average[26].

We also consider that the RSP methodologies developed by the workgroup are robust and will lead to efficient behavioural change. They will lead to price increases at the right time – when margins are tightest – by design[27]. Indicative information provided by the SO in the run up to Gate Closure will also provide an indication of the periods when Loss of Load Probability (LOLP) will be high[28]. Nevertheless, we agree that the RSP methodologies have room to be strengthened further. The work carried out by the workgroup provides a good platform for this and we expect the industry to take an active role in improving and refining the RSP methodology over time.

Impact on balancing efficiency

The proposals will mean parties' balancing strategies, in particular their trading and hedging, and the amount they invest in balancing improvements, would be more closely aligned with the consumer interest. This will reduce total balancing costs compared to the current arrangements. Modelling carried out by Baringa during the EBSCR suggests that, as a result of more efficient balancing decisions, these proposals could deliver benefits to consumers with a net present value of over £200m by 2030[29].

We disagree with the concern raised that volatile prices would encourage parties to go 'too long' before Gate Closure and create inefficient costs for consumers. This is because, under more cost-reflective cash-out prices, parties will face an incentive to avoid inefficiently long positions[30]. The proposals will encourage parties to adopt and refine their trading and hedging strategies in response to the changing cash-out signals, until there is an efficient split between balancing actions in the market and the SO's balancing activities[31].

Impact on investment and innovation in flexible capacity

We consider that Baringa's modelling is likely to significantly underestimate the total efficiency benefits from these proposals. This is largely because the modelling does not take the impact the proposals will have on investment and innovation in flexible capacity and demand-side response into account. Increased cash-out exposure during tight margins (as a result of reduced PAR, RSP and VoLL pricing) would increase demand for

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https://www.ofgem.gov.uk/ofgem-publications/40803/p217a-preliminary-analysis.pdf
https://www.ofgem.gov.uk/ofgem-publications/82295/ebscr-draft-policy-decision-impact-assessment.pdf

[26] As reserve creation actions are taken for energy reasons, we consider they should be included in the cash-out calculation. Whist analysis for modification P217a suggests that reserve creation costs fall broadly in the right period (i.e. close to the periods where the reserve is used), ideally these costs would be fully targeted into the periods reserve is created for. Nevertheless, we do not consider this lack of targeting merits a PAR higher than PAR1 because, on average, it would dampen prices below the marginal energy cost (for example, there are periods when reserve creation doesn't happen or where it has already dampened costs during peak periods).

[27] There is a clear historical relationship between LOLP and de-rated margin under the dynamic LOLP methodology, which has been used to derive a curve for the static RSP function.

[28] While there are very limited examples of high LOLP values in the workgroup's historical analysis, the analysis does suggest that the periods where Gate Closure LOLPs were highest were preceded by higher indicative LOLPs: https://www.elexon.co.uk/wp-content/uploads/2014/05/P305-Final-Modification-Report.zip

[29] Please see Chapter 7 of the EBSCR Final Policy Decision Impact Assessment.

[30] This is because, if all parties were to adopt this strategy, they would continually face System Sell Prices which could fall well below the market price of this additional electricity.

[31] It may be the case that as a result of these proposals, some parties ultimately adopt a longer position in order to mitigate the risk of facing a sharper System Buy Price during tight periods. However, this could be an efficient market response. It could be less costly overall for consumers for the market to procure slightly more electricity before Gate Closure in order to mitigate the risk of the SO having to take relatively more costly balancing actions, as a result of unanticipated electricity shortages after Gate Closure.

flexible capacity products in forward markets. This is because parties who expect to be out of balance in the same direction as the system would be willing to pay more for flexible capacity products in the run up to Gate Closure. This would have a knock on impact on forward prices and send a more accurate signal to the market of the value of flexibility.

RSP and VoLL pricing in particular will significantly increase cash-out exposure during times of system stress, driving much stronger demand for flexible capacity in these moments. Parties may also want to mitigate the risk of facing RSP prices in advance by agreeing capacity options with flexible providers. In particular, the proposals would create a much stronger incentive for suppliers to seek out and contract with underutilised demand-side response. In response to these increased revenue opportunities, there would be greater incentives for capacity providers to innovate and invest in physical assets and technologies which can provide this flexibility. Even though the SO may have some incentive to seek such opportunities, we consider that signalling the value of these products to the market is important, because competitive market forces are more likely to encourage innovation and efficiency.

Impact on interconnector flows

The proposals (particularly RSP and VoLL pricing) will also be important for incentivising efficient interconnector flows during tight margins. In particular, they will reduce the probability of GB exporting during system stress, even though the price of capacity on the continent could be well below the value GB consumers assign to this capacity. They achieve this by allowing prices to rise appropriately at times of system stress. Increasing the probability of importing over our interconnectors during system stress could reduce the costs of ensuring capacity adequacy. Modelling carried out by Baringa during the EBSCR, suggests that these proposals could reduce capacity costs by £3-7m per year as a result of more responsive interconnector flows[32].

Impact in the presence of a Capacity Market

Whilst the Government's Capacity Market (CM) should ensure there is an efficient level of capacity, the modification proposals will play a key role in ensuring the performance, reliability and flexible capability of this capacity, and in incentivising imports during system stress. This would lead to a capacity mix (with a combination of flexible and inflexible capability) which could more efficiently cope with increasing intermittency on the system. This will drive down the cost of achieving security of supply in the long run. The view that a CM should not come at the expense of an efficient, well-functioning energy market was shared by the European Commission in their decision to grant State Aid for the CM[33].

We have carefully considered concerns that the introduction of both EBSCR and the CM could over compensate generators. For example, because participants might discount energy revenues from these proposals from their CM bids due to regulatory uncertainty. We disagree with these concerns and expect generators to factor in the impact of these proposals into their CM bids[34]. We also expect generators to factor CM payments into their pricing decisions in the wholesale market. We consider that the changes introduced

[32] Please see p10-11 of Baringa's 'further analysis to support Ofgem's Updated Impact Assessment': https://www.ofgem.gov.uk/ofgem-publications/87788/electricitybalancingsignificantcodereview-furtheranalysistosupportofgemsupdatedimpactassessment.pdf

[33] Please see: http://ec.europa.eu/competition/state_aid/cases/253240/253240_1579271_165_2.pdf

[34] There is always a risk that capacity payments do not align with energy market revenues to perfectly recoup missing money each year, as energy market revenues cannot be perfectly forecasted. However, competition in the CM would ensure CM participants update their bids to reflect any change in revenue expectations or missing money requirements based on out-turn revenue in the previous years.

by the proposals would be fully credible and would not carry material regulatory risk. This is because we consider that these proposals: will drive significant benefits to consumers; have been robustly designed and assessed over a number of years; were developed with the Department of Energy and Climate Change (DECC) to ensure consistency with the CM; are consistent with the direction of travel in Europe.

Summary

Overall, we consider that the modification proposals strongly facilitate this objective. They will result in behavioural change which delivers a more efficient energy market and drives down the cost of ensuring consumers receive secure electricity supplies.

Assessment of P305 Proposed versus P305 Alternative

We consider that both P305 Proposed and P305 Alternative better facilitate objective (b). Of the two modifications, we consider that P305 Proposed best facilities this objective, for the following reasons:

- PAR50 and PAR1 will more accurately reveal the marginal energy imbalance cost than PAR100 and is therefore more likely to encourage efficient balancing and signal the value of flexible capacity to the market. We have also not seen any convincing evidence to justify the choice of PAR100;
- Whilst we do not consider that there is currently a large difference between the static and dynamic RSP function proposals[35], in the long term, we consider the dynamic function would be more likely to remain robust and create efficient balancing signals in the future. This is in part because it will automatically update in response to system developments, but also because a dynamic function would encourage greater industry engagement with the Loss of Load Probability (LOLP) calculation, which could increase the likelihood of improvements to the methodology.

(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

In this section we outline our views that:

- both proposals better facilitate objective (c) because:
  - they ensure that parties that improve their balancing performance gain a competitive advantage which better reflects the savings this improvement has created for consumers;
  - they help remove a competitive disadvantage currently faced by flexible capacity providers in the electricity market;
  - they remove a distortion which inflates balancing costs and that impacts smaller parties in particular;
  - they support liquidity.
- extensive analysis by Baringa, Ofgem and Elexon, and measures contained in the proposals to help parties manage risk, suggest that the distributional effects of the proposals will not lead to detrimental impacts on competition (and indeed for many parties, including smaller parties, the proposals would lead to average improvements in their positions);

[35] This is because the current dynamic methodology does not appear to provide for a large variation in LOLPs for a given de-rated margin. As such, parties should have a good degree of certainty about the LOLP for a given de-rated margin due to the historical analysis performed by the workgroup. Equally, this means the scope for more accurate signals under a dynamic function is currently limited.

- P305 Proposed best facilitates the objective as it best ensures that parties that improve their balancing performance gain a competitive advantage which reflects the savings they have created for consumers, best removes a competitive disadvantage faced by flexible capacity providers and best supports liquidity.

Views of the Proposer, BSC Panel, workgroup and respondents

The Proposer believes P305 Proposed will better facilitate applicable objective (c) by removing obstacles for flexible parties to enter the market. The Proposer also believes that the effect of the single cash-out price, which reduces net imbalance costs for many parties, and especially for smaller BSC parties, may encourage market participation and assist competition. Finally, the proposer considers that strengthening the imbalance price signal, as put forward by P305 Proposed, should incentivise parties to trade in order to balance their positions ahead of Gate Closure, supporting liquidity in the forward market and thereby assisting competition.

A majority of the BSC Panel considered that the proposals would not better facilitate competition. Panel members believed P305 Alternative would alleviate some competition concerns, but would nevertheless not better facilitate this objective. The key reasons provided by industry participants as to why P305 Proposed and P305 Alternative would not better facilitate objective (c) are that:

- liquidity might be negatively impacted, particularly during scarcity, impeding behaviour change and aggravating distributional impacts;
- the proposals would have detrimental effects on smaller parties;
- parties would not be able to respond to signals, for example due to unexpected RSP prices at Gate Closure, creating unmanageable risk.

Our assessment

We consider that both P305 Proposed and P305 Alternative promote effective competition and better facilitate objective (c). We explain our reasoning below.

Link between cash-out prices and competition

Parties that can reduce the costs they face through cash-out[36] will get a competitive advantage over other parties. In addition, as cash-out expectations have an important impact on demand for flexible capacity in the forward markets, they therefore impact upon the revenues flexible providers can earn in the electricity market and their ability to compete with other types of capacity.

How the proposals better promote effective competition

The proposals will mean that the charges parties face through cash-out are more closely aligned with the costs or savings they have created for consumers. This will ensure that parties who improve their balancing performance (by reducing the frequency and volume of their 'unhelpful' imbalances) gain a competitive advantage which better reflects the savings this improvement has created for consumers. So, any party that is able to reduce its cash-out costs will be able to sell or buy electricity more competitively.

PAR reduction, RSP and VOLL pricing increase the competitive advantage gained by parties that avoid worsening the system imbalance, particularly during tight margins.

[36] This includes their imbalance charges and Residual Cashflow Reallocation Cashflow (RCRC) receipts. RCRC is the net cashflow received by Elexon through energy imbalance charges. This is reallocated amongst participants based on their credited energy volumes on a half hourly basis.

This increases demand for flexible capacity during tight margins, and ensures that relatively more expensive but flexible capacity providers are able to earn revenue in the electricity market that more closely reflects the value they provide. The proposals therefore address a distortion to competition in existing arrangements which disadvantages flexible capacity providers.

A single cash-out price supports competition by removing a defect that inflates balancing costs and that hurts smaller parties in particular. This is because smaller parties have helpful imbalances and face the 'reverse' cash-out price[37] more often than larger parties. Under the dual cash-out price arrangements, the reverse price does not reflect the balancing cost savings created by this helpful imbalance. Consequently, smaller parties are more likely to incur imbalance charges which are too high in the absence of a single cash-out price.

Impact on liquidity

We consider that the modification proposals will support the efficient provision of liquidity, as they will lead to more efficient short term prices and more appropriate signals to balance[38]. They would also drive liquidity further up the curve as parties seek to contract with flexible capacity providers in anticipation of higher prices during system tightness.

Generators will have a strong incentive to trade forward before Gate Closure during system tightness. By refusing to sell additional availability in the market to short parties with similarly high cash-out expectations, generators would forego significant and certain earnings.

Analysis on distributional impacts and risk

There is a significant amount of analysis available to help determine the likely distributional impacts of the modification proposals. This includes:

- historical analysis conducted by Ofgem for the period 2010-12[39];
- modelling conducted by Baringa to determine the impact of the EBSCR proposals on different party types' imbalance costs and credit risk, in 2015, 2020, 2025 and 2030, taking account of behavioural change[40];
- further historical analysis conducted by the P305 workgroup for the period 2010-14[41].

The analysis above concluded that a single cash-out price would significantly mitigate the effects of sharper prices for most party types on average. In particular, it suggests that smaller parties would see an improvement in their average positions. Baringa's modelling also suggests that there will not be a significant increase in credit risk for any party[42]. Furthermore, historical analysis conducted for the EBSCR Impact Assessment suggests the proposals will not place unmanageable risk on parties[43].

[37] Smaller parties' imbalances are less likely to correlate with the direction of the system imbalance than larger parties. This is because, for example, a small demand forecasting error on a very large customer base is likely to dwarf the effect of a relatively larger forecasting error on a small customer base.
[38] While we note that a single cash-out price could temper positive impacts on liquidity, we consider that, given uncertainty about system length, trading forward will be the dominant strategy for parties.
[39] Please see the Chapter 5 of EBSCR Draft Policy Decision Impact Assessment.
[40] Please see Baringa's 'further analysis to support Ofgem's Updated Impact Assessment'.
[41] Please see Elexon's historical analysis for P305: https://www.elexon.co.uk/mod-proposal/p305
[42] Please see page 28-30, 53 and Appendix B of Baringa's 'Further analysis to support Ofgem's Updated Impact Assessment'.
[43] Please see Chapter 4 of the EBSCR Final Policy Decision Impact Assessment, 'Severe Exposure' analysis.

Measures to help parties manage additional risk

In addition, the modification proposals contain measures which should help parties manage the transition to the new arrangements and make increased cash-out risk manageable:

- the RSP provides a signal of system tightness and therefore presents parties with an additional tool to manage the risk of high cash-out charges, including that the cash-out price is set at VoLL upon voltage reduction or disconnection;
- the SO will provide indicative LoLPs and de-rated margins to the market ahead of Gate Closure, which would provide parties with information to help manage the risk that the cash-out price is set by RSP;
- the proposals are phased to assist transition and to allow parties to adjust strategies over time based on learning.

In light of the extensive analysis available, and the measures to help parties manage risk, we disagree with the concerns raised that they could place unmanageable risk on smaller parties. We are therefore confident that the modification proposals will not introduce any significant short run disruption or change in market concentration that could have a detrimental impact on competition.

Summary

Overall, we therefore consider that that P305 Proposed and P305 Alternative both strongly facilitate objective (c). They will mean that parties that improve their balancing performance gain a competitive advantage which better reflects the savings this improvement has created for consumers, and they will help remove distortions that disadvantage flexible capacity providers and smaller parties in particular.

Assessment of P305 Proposed versus P305 Alternative

We consider that both P305 Proposed and P305 Alternative better facilitate the achievement of applicable objective (c). We consider that P305 Proposed better facilitates this objective than P305 Alternative as:

- it better ensures that parties that improve their balancing performance gain a competitive advantage which reflects the savings this improvement has created for consumers. It achieves this by ensuring cash-out prices more closely reflect the cost of balancing and the value the consumer places on secure electricity supplies at the margin;
- it better removes a disadvantage faced by flexible capacity providers;
- it better supports liquidity, as a more marginal and responsive cash-out price will provide appropriate signals to balance and more accurately reveal the value of intra-day liquidity;
- assessment of the potential unintended consequences and risks of PAR1 suggests they are modest and manageable.

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

Views of the Proposer, BSC Panel, workgroup and respondents

A majority of the Panel considered that P305 Proposed would not better facilitate objective (d). The Panel were split on whether P305 Alternative did not better facilitate the objective or was simply neutral. A minority of the workgroup felt that both solutions were detrimental against this objective.

A key concern noted was that the new processes were complex and would be costly for Elexon and NGET to implement and administer, while simultaneously offering little if any proven benefit to the arrangements.

Our assessment

We consider that under both P305 Proposed and P305 Alternative there will be a marginally detrimental effect on applicable objective (d) because they would add some cost and a small level of additional complexity to the arrangements. However, we consider this to be significantly outweighed by the positive impacts we have assessed against the other BSC objectives, and that the additional costs and complexity of administering the BSC are warranted by the benefits to competition and efficiency in the market.

Assessment of P305 Proposed versus P305 Alternative

Owing to the minor differences between the two proposals we consider them to be equally detrimental to this objective (and that this impact is outweighed by the benefits we have discussed in our assessment against the other BSC objectives).

(e) compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency

Views of the Proposer, BSC Panel, workgroup and respondents

Both the Panel and the workgroup unanimously considered that P305 Proposed and P305 Alternative were neutral against this objective.

Our assessment

While not yet a binding European Regulation, it is important to note that the development of the European Electricity Balancing Network Code is at an advanced stage. Throughout the EBSCR process Ofgem has sought to ensure that the direction of reform to GB arrangements is consistent with the direction of travel at a European level. The draft European Balancing Network Code submitted by the European Network of Transmission System Operators for Electricity (ENTSO-E) to the Agency for the Cooperation of Energy Regulators (ACER) contained the following proposals:

- Marginal pricing for balancing energy markets;
- *At a minimum*, a weighted average imbalance price (thus, also allowing for marginal imbalance prices).

ACER is expected to issue a reasoned opinion on the balancing network code in May 2015. Following consultation with stakeholders in early 2015, we expect the reasoned opinion to contain the following updated, additional proposals:

- A single imbalance price;
- The imbalance price to reflect the real-time value of energy.

After publication of ACER's reasoned opinion, we would expect the European Commission to then begin the process of preparing the code for discussion and ratification by Member States via the 'Comitology' process. As the Electricity Balancing Network Code is not yet a European law, we do not consider it possible to state that the proposals better facilitates BSC objective (e). However, we do consider that it is important to recognise

that the changes it introduces are likely to be, on the balance of probability, consistent with a European Law likely to enter into force within the next 12-18 months and to apply directly to all parties.

Assessment of P305 Proposed versus P305 Alternative

We consider that both solutions are neutral against this objective. We note however that P305 Proposed aligns closer to the European direction of travel.

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

Views of the Proposer, BSC Panel, workgroup and respondents

The Panel considered that both P305 Proposed and P305 Alternative were neutral against this objective.

Our assessment

We consider that the P305 Proposed better facilitates applicable objective (f) as it supports the efficient operation of the CM.

Ofgem and the Department of Energy and Climate (DECC) worked closely together during the development and design of cash-out reform and the CM. Both reforms were therefore designed and tested based on a credible scenario that the other would be in place. In particular, the CM's penalty regime and its initial demand curve[44] have been built on assumption that cash-out reform would be in place and prices would rise to £6,000/MWh during system stress.

The proposals are therefore consistent with promoting the efficient operation of the CM. The current arrangements undermine the efficiency of the CM auction in the absence of these changes and could require DECC to undertake additional work, in particular to modify their penalty regime.

Assessment of P305 Proposed versus P305 Alternative

We consider P305 Proposed and P305 Alternative equally facilitate this objective.

Our commitment to monitor the impact of P305

The initial step to PAR50 provides a window to monitor and review arrangements before the final phased step in 2018. We are committed to using this transition period to closely monitor and evaluate the impact of P305 proposed.

We will have discussions with industry on a regular basis to help identify the impacts. We will also arrange a series of industry workshops to test and develop our monitoring framework and to help identify appropriate indicators and metrics. This monitoring will inform a fuller ex-post review of the impact of the proposals before the final steps in November 2018.

[44] The CM demand curve and target volume is based on the net Cost of New Entry (CONE), which takes into account expected energy market revenues resulting from these proposals. DECC's modelling, which produced the initial net CONE value, has as an input assumption that they would be in place.

BSC modification proposal P316

In a separate decision letter on P316 'Introduction of a single marginal cash-out price', we outline that we consider both P316 Proposed and P316 Alternative better facilitate the relevant BSC objectives compared to the current baseline. Although P316 covers issues addressed by P305, it does not however include VoLL pricing or RSP. We therefore consider P305 Proposed is overall the most beneficial proposal against the BSC objectives and Ofgem's principal objective. In light of this, we have decided to reject P316 (Proposed and Alternative) and approve P305 Proposed. Full details of our decision on P316 can be found in a separate decision letter published today.

Decision notice

In accordance with Standard Condition C3 of NGET's Transmission Licence, the Authority hereby directs that the Proposed modification proposal BSC P305: 'Electricity Balancing Significant Code Review Developments' be made.

Rachel Fletcher
Senior Partner
Signed on behalf of the Authority and authorised for that purpose

Annex 1 – High level overview of P316 as a subset of P305

Modifications		P305 Proposed	P305 Alternative	P316 Proposed	P316 Alternative
PAR	2015	50 MWh	100 MWh	50 MWh	100 MWh
	2018	1 MWh	100 MWh	1 MWh	100 MWh
Pricing	2015	Single	Single	Single	Single
Value of Lost Load (VoLL)	2015	£3,000/MWh	£3,000/MWh	-	-
	2018	£6,000/MWh	£6,000/MWh	-	-
Reserve Scarcity Pricing (RSP) function	2015	Static	Static	-	-
	2018	Dynamic		-	-