

BSC Modification Proposal Form		At what stage is this document in the process?
P462 Mod Title: The removal of subsidies from Bid Prices in the Balancing Mechanism.		01 Modification 02 Workgroup Report 03 Draft Modification Report 04 Final Modification Report
Purpose of Modification: The purpose of this Modification is to remove the distortion of subsidies from Bid Prices in the Balancing Mechanism, reducing the potential for actions to be taken outside of consumer cost order when following the Bid stack merit order.		
Is this Modification likely to/Does this Modification impact any of the European Electricity Balancing Guideline (EBGL) Article 18 Terms and Conditions held within the BSC? ☒ Yes ☐ No		
	The Proposer recommends that this Modification should: be assessed by a Workgroup and submitted into the Assessment Procedure This Modification will be presented by the Proposer to the BSC Panel on 9th November. The Panel will consider the Proposer's recommendation and determine how best to progress the Modification.	
	High Impact: <i>Balancing Mechanism participants who hold support mechanism arrangements</i> There is a high impact on all Balancing Mechanism participants who hold support mechanism arrangements. This Proposed Modification provides them with the ability to compete with unsubsidised units on a consumer cost base but also means existing bid pricing policies may need to be reviewed in line with wider market rules. There is a high consumer impact. Using worst case modelling of persistently high Day Ahead Prices, low CfD Strike Prices and the leading the way FES scenario data, up to £16bn of consumer costs may be incurred by 2030 under a do-nothing scenario.	
	Medium Impact: <i>Elexon</i> There is a medium impact on all Balancing Mechanism participants from this Modification as it will change competitive pressures within the bid stack, enabling	

	units holding subsidy contracts to compete. It is also expected that this will reduce the imbalance price risk from significantly negatively priced energy actions.
	Low Impact: <i>ESO</i> Unlikely to impact ESO system as processes will not be changed.

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Timetable		 Any questions?
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1 Why Change?

What is the issue?

Due to current market arrangements, generation units which hold support mechanisms through Contracts for Difference (CfD) or Renewable Obligation Certificates (ROC), need to price recover an expected subsidy in their Bid Prices. This prevents them from pricing on equal terms with un-subsidised units and means that their Bid Price is not reflective of the consumer cost or savings of this transaction. This is a structural issue with the interaction between the Balancing Mechanism (BM) and support mechanism arrangements because all subsidies are currently based upon metered output recovery, whilst a BM Bid Acceptance will reduce output and thus lead to the subsidies being lost. This means transactions taken in Bid Price order are not in line with consumer cost order and could lead to less cost-effective actions being taken.

Furthermore, the current system creates clustering pressures at levels undercutting specific support mechanism recovery tranches. Units with different support mechanism levels and merchant units compete at these price points rather than competing with the wider Balancing Mechanism.

Under current market structures, the direct consumer cost of accepting a Bid for a unit holding a support mechanism corresponds only to any marginal cost added to this price beyond the expected subsidy revenue itself. For example, if a unit would have received a £60 payment due to their support mechanism, then a £65 bid payment (-£65/MWh Bid Price) leads to a marginal £5 consumer cost because the unit gets paid £65 through the BM but loses the £60 which would have been paid out under its support mechanism. Conversely a merchant unit which seeks a £50 bid payment (-£50/MWh Bid Price) has a £50 marginal consumer cost as there is no support mechanism to recover. This means when an action is taken in cost order in the BM (Bid Price stack), it is not always equivalent to the consumer cost order.

Worked Examples

This regularly occurs in the BM with the most common interaction observed between units with CfDs whose Bid Price vary based upon a Day Ahead market reference price and units which are subsidised via ROCs. The lower the market price, the greater the support mechanism revenue that the CfD unit must recover. In order to do this, the CfD unit must continually reduce their bid price, as the Day Ahead market clears at a lower price to recover its support mechanism. This means a ROCs unit which has a high marginal consumer cost, but a lower support mechanism level becomes cheaper in the BM. This disincentivises both units from competing, as the CfD unit cannot reasonably increase their Bid Price to above the ROC unit, whilst the ROC unit is not incentivised to seek a lower marginal rate as there is less competition. Similarly, if Day Ahead Prices are very high, a CfD unit may have a negative support mechanism level (payment owed to the Low Carbon Contracts Company) meaning that the ROC unit cannot reasonably increase their bid price to above the CfD unit, whilst the CfD unit is not incentivised to seek a lower marginal rate.

Clustering Pressures

The figure below reviews the Bid Price stack across a constraint boundary using volume weighted average figures from 1 January 2021 to 31 December 2022 and every unit which can resolve the SCOTEX (B6) constraint, demarked by fuel types. This constraint boundary is for energy export out of Scotland where there is a large concentration of wind units and therefore large presence of subsidised units with a regular requirement to compete for downwards energy transactions to manage the thermal congestion.

The figure shows distinct groupings of units with specific subsidies, but also the negative Bid Price pressure exerted by this long tail of increasingly negative prices. Highlighted is a cluster of units which have support from ROCs. For every 1MWh of energy produced these units receive 1 ROC, these certificates have been priced at approximately £59/MWh across this period meaning that the Bid Price of this cluster starts just below -£59/MWh with a small distribution depending on the units marginal cost and profit targets. However, it shows that there is another cluster of units which are unsubsidised and priced slightly above this level. The direct consumer cost of taking actions on these unsubsidised units is the full £55+/MWh whereas the consumer cost of accepting the units holding ROCs, is only their marginal Bid Price beyond -£59/MWh. This means that, when an action is taken in merit order, the units which have the highest consumer cost are taken first on average until the units holding ROCs are reached, at which point they are bought in consumer cost order based on the marginal price beyond support mechanism recovery.

This results in an interaction that is anti-competitive as the best value units for the end consumer seeking the smallest marginal rates are not always those with the lowest price point.

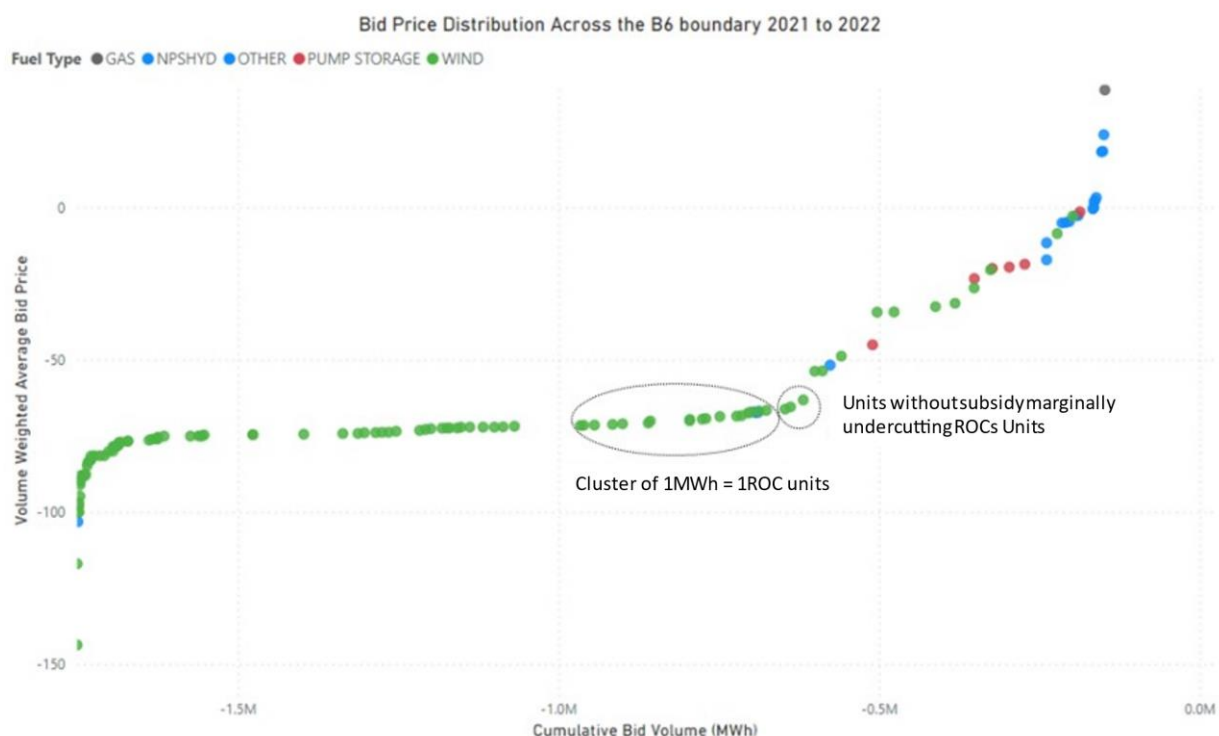


Figure 1 Volume weighted average accepted Bid Price distribution curve for the B6 (SCOTEX) constraint boundary between 1st January 2021 to 31st December 2022 plotted against each unit's cumulative total bid volume when taken to manage this constraint condition.

CfD units with high Day Ahead Prices

Specifically reviewing the Contracts for Difference (CfD) support mechanism regime. The current market structure does not incentivise passing on any savings that may be made in avoided payments to LCCC, when the Day Ahead Price clears higher than their Strike Price.

Figure 2, below, demonstrates how a CfD generator may price given current competitive pressures, by setting its Bid Price against ROC units as the principal competition in the BM bid stack under high day ahead price scenarios and bidding at reduced prices when the reference price falls below the Strike Price

to recover lost support mechanism payments. This combined approach would maximise income while the reference price is greater than the Strike Price and, avoids any loss in the BM when the reference price is less than the Strike Price whilst keeping the unit competitive in the wider bid stack. This form of competitive pressure against specific subsidy recovery thresholds is not in consumers interests and can lead to excess costs.

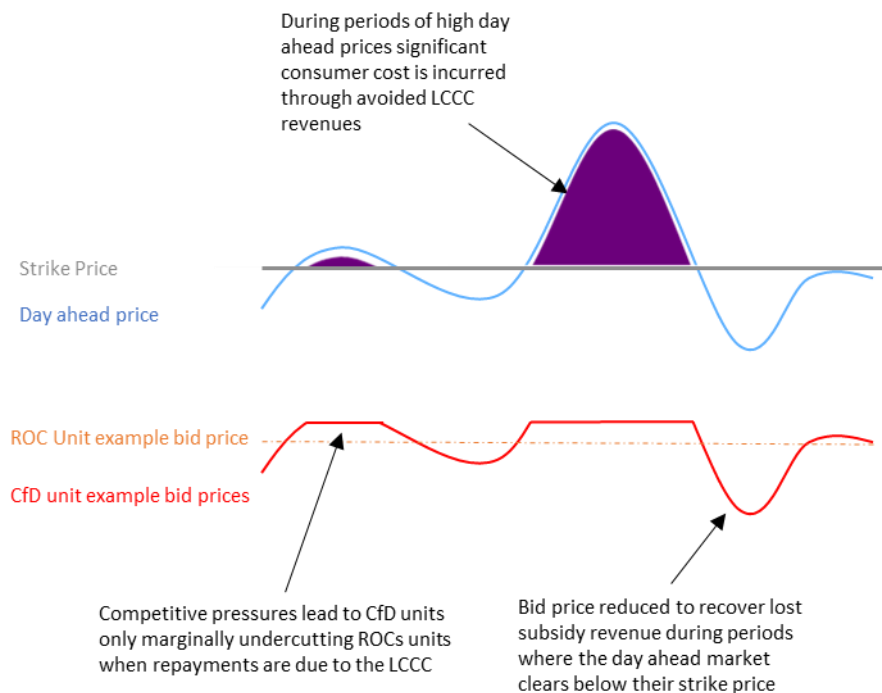


Figure 2: Illustration of the structural BM issue as occurring across 2022 with interactions between CfD units and ROCs units bid prices shown. Day Ahead Price (Blue), Bid Price (Red), Approximate excess consumer cost when if a bid were accepted (Purple)

Summary

Due to current market arrangements, subsidised units need to price recover their subsidies in their Bid Price. However, the market structure does not lead to suitable competition between subsidised units, nor enable them to compete with units operating without a support mechanism based on their marginal costs. This is a structural issue with the market and creates problems such as actions taken out of consumer cost merit order, clustering pressures and no commercial incentive to reflect any repayment obligations within the Bid Price. This should be resolved through changes to the market.

Desired outcomes

The desired outcome of this modification is to reduce costs to the end consumer by reflecting consumer costs in the wider BM merit order and reducing out of overall merit order transactions. Further benefits may be anticipated from limiting the imbalance price volatility as this could reduce the imbalance risk premium that is built into units pricing, improving market efficiency.

In addition, allowing all units to compete based on marginal costs without the distortion of subsidies could create a more efficient BM and may reduce the tendency for clustering behaviours.

The change will look to ensure that the subsidised unit receives the payment it was due had they generated and remove the current interaction that creates excess consumer cost from taking actions in bid price merit order which are not in consumer merit order by making this interaction transparent. It should lead to improvement in transparency of costs for both BM prices and subsidies.

2 Solution

Proposed Solution

The proposed solution is to amend the BSC to make a BMU whole for any lost support mechanism value, by changing the formula for the BM Unit Cashflow, as outlined in Figure 3. Currently the support mechanism is included implicitly within the Bid Price which not only effects the merit order stack but is also driving negative pricing as seen in Figure 4 & 5 and clustering behaviour as described in the problem statement. The proposed solution should pay the lost support mechanism explicitly to remove the need for BMU Bid Prices to include it. This is represented through the amendments to the BMU cashflow calculation. In its simplest form:

[BSC T3.11](#) BMU cashflow would become:

$$CBM_{ij} = \sum^n CO^n_{ij} + \sum^n CB^n_{ij} + [NQB_{ij}] * [SRP_{ij}]$$

Figure 3

Where:

CBM is Period BM Unit Cashflow

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

COⁿ is Period BM Unit Offer Cashflow

CBⁿ is Period BM Unit Bid Cashflow

For the avoidance of doubt the Bid Price (**CBⁿ**) itself remains set at the operator's discretion and should continue to reflect reasonable recovery of costs and profits in line with wider market rules on pricing. This modification does not establish any new limitations on bid prices.

NQB is the bid volume net of unwind offers, i.e., the sum of bids and offers for pairs where $n < 0$. NQB is zero or negative.

SRP is the support mechanism replacement price, as appropriate:

- RO: buy-out price multiplied by the banding rate (e.g. 0.9)
- CFD: difference between Market Reference Price and Strike Price

The sign of SRP aligns with that for bid prices and will usually be negative. When the (negative) bid volume is multiplied by the Subsidy Replacement Price, the sign of the resulting cashflow will align with the other cashflow terms, i.e. a positive cashflow indicates cash to the BMU.

It may be appropriate to make other changes to ensure that the implementation achieves the intent. This may include, for example, inserting additional lines to calculate the new terms above and ensuring future support mechanism arrangements are able to be appropriately settled.

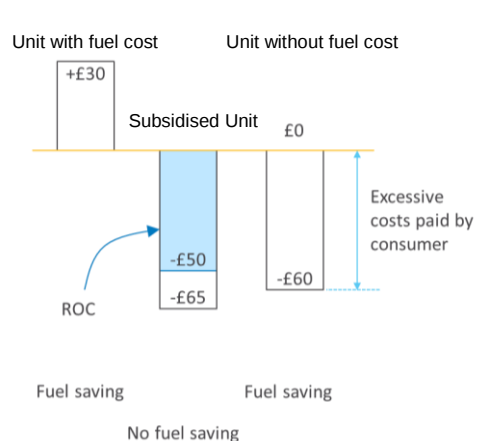


Figure 4

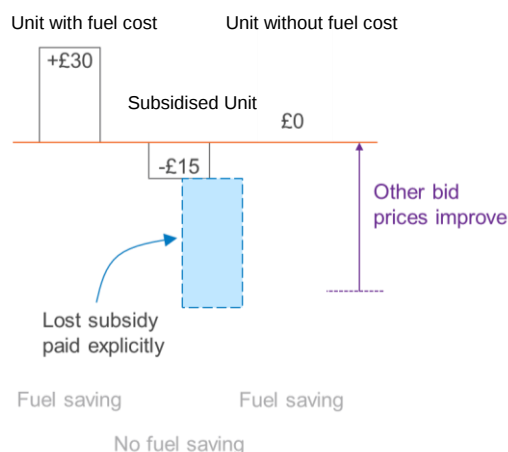


Figure 5

If a unit has a support mechanism agreement, they can expect to receive a specific payment from generating, for example under CfD, which is regulated through an LCCC payment of the difference between the Strike Price and the Market Reference Price.

When the Support mechanism Replacement Price is negative (ie CFD with market reference price greater than Strike Price) the generator will be required to make (rather than receive) an additional payment in relation to the Bid.

Benefits

1. Consumer Benefit

Savings to end consumers are expected from the removal of costs identified through CfD to BM interactions and unsubsidised unit clustering behaviours, further savings would be expected for improving the transparency of marginal prices beyond subsidy recovery and enabling greater competition between ROCs units, CfD units and merchant units. This would be achieved through the enablement of units with a support mechanism to compete, creating greater competition for units which do not hold a support mechanism, providing greater transparency, and the limiting imbalance risks.

2. Fair Competition

The proposed Modification facilitates fairer competition by allowing subsidised and unsubsidised units to compete against each other based on consumer cost, without external influence. The units will be able to set their Bid Price without the distortion of the subsidies creating a level playing field between subsidised and unsubsidised units.

3. Increased efficiency

By restricting the price volatility, generators should be able to reduce their imbalance risk premium in their pricing strategy, which should in turn lead to reduced prices being offered across the board. This would aim to have the effect of improved market efficiency.

4. Increased Transparency

Whilst the true cost of all BM transactions can be derived from public data it is currently not transparent. This will remove implicit costs and show the direct cost of transactions clearly.

Solutions considered and not progressed

Make changes to contracts

Whilst changes to support mechanism contracts have the potential to take account of Balancing Mechanism volumes, most contracts would not allow for retrospective changes to be made. Furthermore, whilst this might remove the consumer cost, it does not bring the same degree of transparency.

Make changes to the bid stack itself

An option which could create similar outcomes without changes to the market itself would be for control room actions to be in consumer cost merit order rather than Bid Price order with a re-pricing algorithm estimating any subsidies to create the stack. However, from the market perspective this could significantly reduce transparency and add complexity to pricing strategies, whilst also resulting in erratic imbalance and BSUOS prices which would become more difficult to forecast.

Do nothing

This option becomes less viable over time as more units move to support mechanism contract arrangements that will be crucial in enabling net zero. Deferring action will result in continued consumer costs and continuation of issues described in the problem statement. Using worst case modelling of persistently high Day Ahead Prices, low CfD Strike Prices and industry-leading FES scenario data, up to £16bn of consumer costs may be incurred by 2030 under a do-nothing scenario. However, even best-case modelling for this specific issue shows £518M in consumer costs by 2030 under the scenario of low Day Ahead Prices, high Strike Prices and the falling short scenario.

3 Relevant Objectives

Impact of the Modification on the Relevant Objectives:	
Relevant Objective	Identified impact
a) The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence	Neutral
(b) The efficient, economic and co-ordinated operation of the National Electricity Transmission System	Positive
(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	Positive
(d) Promoting efficiency in the implementation of the balancing and settlement arrangements	Neutral
(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]	Neutral
(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	Neutral
(g) Compliance with the Transmission Losses Principle	Neutral

Outlined are the explanations to the identified positive impacts on the BSC Objectives:

b) Identified as a positive impact as if this issue is resolved, it could lead to more efficient Balancing Mechanism actions by ESO, reducing costs to end consumers.

c) This Modification facilitates fairer competition by allowing subsidised and unsubsidised units to compete against each other based on consumer cost. The units marginal price can be reflected in their Bid Price without the distortion of the subsidies and thus levelling the playing field between units with a support mechanism and those units without.

4 Potential Impacts

Impacts on Core Industry Documents

Impacted Core Industry Documents			
☐ Ancillary Services Document	☐ Connection and Use of System Code	☐ Data Transfer Services Agreement	☐ Use of Interconnector Agreement
☐ Retail Energy Code	☐ Transmission License	☐ System Operator Transmission Owner Code	☐ Supplemental Agreements
☐ Distribution Code	☐ Grid Code	☐ Other (please specify)	☒ None

No impacts have been identified on other codes.

Impacts on BSC Systems

Impacted Systems				
☒ CRA	☐ CDCA	☐ PARMS	☒ SAA	☒ BMRS
☐ EAC/AA	☐ FAA	☐ TAAMT	☐ NHHDA	☐ SVAA
☐ ECVA	☐ ECVA Web Service	☐ Elexon Portal	☐ Other (Please specify)	

The Customer Solution (which is the system used by the Central Registration Agent to hold BM Unit registration data) will need to be amended to identify BM Units eligible for CFD or RO payments, and store related standing data (CFD Strike Price, number of ROCs per MWh).

The SAA will need to be amended to implement the revised calculation of Period BM Unit Cashflow (CBMij), and report details of the calculation on the Settlement Report (SAA-I014).

There may also be additional reporting requirements for the Insight Platform (used by the Balancing Mechanism Reporting Agent to report data relating to the Balancing Mechanism).

Impacts on BSC Parties

Impacted Parties			
☐ Supplier	☐ Interconnector User	☐ Non Physical Trader	☒ Generator
☐ Licensed Distribution System Operator	☐ National Electricity Transmission System Operator	☐ Virtual Lead Party	☐ Other (Please specify)

Impacts on consumers and the environment

Impact of the Modification on consumer benefit areas:	
Consumer benefit area	Identified impact
Improved safety and reliability	Neutral
Lower bills than would otherwise be the case Savings to end consumers are expected from the removal of costs identified just through CfD to BM interactions and unsubsidised wind unit clustering behaviours. Further savings would be expected for ROCs. This would be achieved through the enablement of units with a support mechanism to compete, greater competition for units which do not hold a support mechanism, greater transparency, and the limitation of imbalance risks.	Positive
Reduced environmental damage	Neutral
Improved quality of service Identified as positive as it provides greater transparency in how consumer money is being split between different support mechanism regimes. This allows for the whole industry to become more efficient as they are competing on level terms without this distortion. This can also reduce the complexity of bid structures.	Positive
Benefits for society as a whole. Identified as a positive impact as if this issue is resolved, it would lead to more efficient Balancing Mechanism actions by ESO, reducing costs to end consumers. It should lead to improvement in transparency of costs for both BM prices and subsidies.	Positive

Legal Text Changes

We envisage changes will be needed to BSC Section T as a minimum. However, the exact impacts will be assessed and developed as part of the Workgroup stage.

5 Governance

Self-Governance

☒ Not Self-Governance – A Modification that, if implemented:	
☐ materially impacts the Code's governance or modification procedures	☐ materially impacts sustainable development, safety or security of supply, or management of market or network emergencies
☒ materially impacts competition	☒ materially impacts existing or future electricity consumers
☒ materially impacts the operation of national electricity Transmission System	☐ is likely to discriminate between different classes of Parties
☒ involves any amendments to the EBGL Article 18 Terms and Conditions related to Balancing; except to the extent required to correct an error or as a result of a factual change	
☐ Self-Governance – A Modification that, if implemented:	
Does not materially impact on any of the Self-Governance criteria provided above	

We do not believe this Proposal meets the Self-Governance criteria as it will materially impact competition by creating a 'level playing field' between subsidised and unsubsidised units. It will also materially benefit consumers, if the current distortion is removed and lead to more efficient Balancing Mechanism actions by ESO, reducing costs to end consumers. Moreover, it is likely to impact the EBGL balancing terms and conditions held within the BSC and so must be submitted to Ofgem for decision.

Progression route

☒ Submit to assessment by a Workgroup – A Modification Proposal which:	
does not meet any criteria to progress via any other route.	
☐ Direct to Report Phase – A Modification Proposal whose solution is typically:	
☐ of a minor or inconsequential nature	☐ deemed self-evident
☐ Fast Track Self-Governance – A Modification Proposal which meets the Self-Governance Criteria and:	
is required to correct an error in the Code as a result of a factual change including but not limited to:	
☐ updating names or addresses listed in the Code	☐ correcting minor typographical errors
☐ correcting formatting and consistency errors, such as paragraph numbering	☐ updating out of date references to other documents or paragraphs
☐ Urgent – A Modification Proposal which is linked to an imminent issue or current issue that if not urgently addressed may cause:	
☐ a significant commercial impact on Parties, Consumers or stakeholder(s)	☐ a Party to be in breach of any relevant legal requirements.
☐ a significant impact on the safety and security of the electricity and/or gas systems	

We believe this modification should be submitted for assessment by a Workgroup, as it is a significant and complex problem to solve that would benefit from careful industry input and engagement.

Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

No. We therefore request Ofgem treat this Modification as an SCR Exempt Modification Proposal.

Does this modification impact the code drafting and system development for Market wide Half Hourly Settlement (MHHS), if so, how?

No. This proposal will amend how Bid Prices are calculated, which are not in scope for MHHS.

Does this Modification impact any of the EBGL Article 18 Terms and Conditions held within the BSC?

Yes. It is likely this Proposal will impact the EBGL balancing terms and conditions. The Workgroup should consider the impact on the EBGL objectives.

Implementation approach

Due to the high impact of this Modification and high cost to end consumers, the timeline would be that of implementation within a year but with sufficient time for communications to be disseminated across subsidised units to allow consideration of any impacts on their current commercial strategies. Considerations will also need to be made on impacts to any IT systems. Given the proposed progression timeline for this proposal and the current planned deliveries in 2024, Elexon believe delivery will likely be in 2025 at the earliest.