Public

# P410 'Changing imbalance price calculations to comply with the Imbalance Settlement Harmonisation regulations'

Workgroup 1

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# Meeting Objectives

# Meeting Objectives

- Understand the extent of the impact of the ISHP on the BSC and the changes that will be required to the BSC to remain compliant.
- Discuss the intent of a Value of Avoided Activation of balancing Energy (VOAA) and agree principles for how this could/should be calculated
  - This will enable more detailed analysis into the impact the changes will have on the Imbalance Price.
- Consider other areas of the BSC that may be influenced by the ISHP and determine which of these will need to be assessed under the scope of P410

# Potential challenges of P410

- The ISHP allows 18 months for the necessary changes to be implemented
  - P410 will need to be delivered by January 2022
- To meet this timescale, we had planned a four month Assessment Period to allow time for the system changes to be delivered.
- The Panel requested that the Workgroup also assess the impacts of changing the Market Index Price for an Imbalance Settlement Harmonisation Regulation compliant Value of Avoided Activation.
  - This may require a substantial amount of analysis of data. Some of which such as TERRE and MARI is not fully available yet.

# Terms of Reference (specific)

| ToRs |
| --- |
| How can a VOAA be calculated in compliance with the ISHP? |
| Is there any value to keeping references to the MIP in the BSC? |
| Is the BPA permissible in its current form? |
| Is the use of PAR1 compliant with the ISHP and it optimal? |
| Do components of the BPA need to change, or should a new parameter be introduced to account for relevant costs? |
| What are the the impacts of changing the Market Index Price for an Imbalance Settlement Harmonisation Regulation compliant Value of Avoided Activation |

# Terms of Reference (standard)

| ToRs |
| --- |
| How will P410 impact the BSC Settlement Risks? |
| What changes are needed to BSC documents, systems and processes to support P410 and what are the related costs and lead times? When will any required changes to subsidiary documents be developed and consulted on? |
| Are there any Alternative Modifications? |
| Should P410 be progressed as a Self-Governance Modification? |
| Does P410 better facilitate the Applicable BSC Objectives than the current baseline? |
| Does P410 impact the EBGL provisions held within the BSC, and if so, what is the impact on the EBGL objectives? |

# Overview of issue

# Why do we have to change?

- The Imbalance Settlement Harmonisation Proposal sets out rules for harmonising the application of imbalance settlement and the calculation of an imbalance price across EU member states, and GB.
- The proposal will come into force 18 months from the time it is approved. It was approved on 15 July 2020, which makes the deadline for implementation 15 January 2022.
- The majority of the proposal requires member states to operate in a way that we are already compliant with. We have only identified one area of the proposal that we believe does require a change. This relates to the use of the Market Index Price (MIP) in situations where there has been no activation of balancing energy (NIV=0, or Replacement Price scenarios)

# Why can't we continue using the MIP?

- The proposal (as written 16 July 2020) requires the use of the 'value of avoided activation of balancing energy' (VOAA) as a boundary condition for both positive and negative energy where neither has been activated, per Article 9(1) and 9(2)

*In case there is no positive[negative] balancing energy activated for this connecting TSO, then the value of avoided activation of balancing energy calculated in accordance with Article 10, shall be the lower[upper] bound for the imbalance price for negative[positive] imbalance.*

- The proposal further defines what can contribute towards the calculation of the VOAA.

# What can go into the VOAA?

- Article 10 specifies how the VOAA can be calculated.

*For calculating the value or values of avoided activation in accordance with paragraph 2 or 3, each connecting TSO may only, if relevant, use the following prices:*

*the bid price or bid prices, per direction, for balancing energy for frequency restoration process available to this TSO for this ISP;*

*the bid price or bid prices, per direction, for balancing energy for replacement reserve process available to this TSO for this ISP.*

- This means that only prices from Frequency Restoration Reserve (FRR) or Replacement Reserve (RR) products can be used for the calculation of the imbalance price.

# What RR and FRR products are available?

- The most obvious RR and FRR products are the 'standard products' traded on the TERRE and MARI platforms.
- These products are definitively RR and FRR products, and System Operators (SOs) must utilise them in preference to other RR and FRR products.
- Other balancing products may also be classified as RR or FRR products. Grid Code Modification GC0114 'System Operator Guidelines Prequalification Processes' produced a mapping spreadsheet of other products. These have not been designated by Ofgem, and do not include new products (such as Optional Downward Flexibility Management, ODFM)

# Permissible Products continued

| Balancing Services | | Proposed Final Product Type | | Estimated activation date of final product type | Current Product Type |
|---|---|---|---|---|---|
| Contract Type | Service | Group | Type | | |
| Mandatory frequency response | Primary response | FCR | Specific | 2022+ (TBC) | GB existing |
| | High response | FCR | Specific | 2022+ (TBC) | GB existing |
| | Secondary response | FRR | Specific | 2022 | GB existing |
| Commercial Frequency Response Service | Primary response | FCR | Specific | 2022+ (TBC) | GB existing |
| | High response | FCR | Specific | 2022+ (TBC) | GB existing |
| | Secondary response | FRR | Specific | 2022 | GB existing |
| Firm frequency response (FFR) | Primary response | FCR | Specific | 2022+ (TBC) | GB existing |
| | High response | FCR | Specific | 2022+ (TBC) | GB existing |
| | Secondary response | FRR | Specific | 2022 | GB existing |
| Enhanced frequency response | Enhanced frequency response | FCR | Specific | 2022+ (TBC) | GB existing |
| Commercial Frequency Management Service | N/A | FCR | Specific | 2022+ (TBC) | GB existing |
| STOR | Delivery < 15 minutes | FRR | Specific | 2022 | GB existing |
| | Delivery > 15 minutes | RR | Specific | 2020 | GB existing |
| Demand Turn Up | Delivery < 15 minutes | FRR | Specific | 2022 | GB existing |
| | Delivery > 15 minutes | RR | Specific | 2020 | GB existing |
| Fast Reserve | | FRR | Specific | 2022 | GB existing |
| BM Bids and Offers | Delivery < 15 minutes | FRR | Specific | 2022 | GB existing |
| | Delivery > 15 minutes | RR | Specific | 2020 | GB existing |
| Fast Start | | FRR | Specific | 2022 | GB existing |
| MARI | | FRR | Standard | 2021 | Draft Standard Product |
| TERRE | | RR | Standard | H2 2019 | Draft Standard Product |

# Principles of calculating a VOAA

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# Principles of the VOAA

- While the VOAA can be constructed from these products, it must also attempt to provide the best possible incentive for Parties to remain in balance.
- The MIP was seen as the best proxy for this as it is the closest to real time representation of the price that Parties are willing to pay for both the purchase and sale of electricity.
- It follows that any VOAA should generally outturn at or close to the MIP.
- Following today's discussion of options we will look to perform analysis demonstrating estimated outturn prices of various product combinations against the MIP.
  - This will be difficult for standard products, as there are no historic prices we can use for analysis.
  - We may be able to perform some analysis using the Spanish and Czech markets, however we do not have access to the raw data.

# Discussion – Options for the VOAA

- Some European TSOs suggested during ISHP discussions that the clearing price from the TERRE and MARI platforms should be used as components for the VOAA.
  - These platforms will calculate a clearing price for a TSO even if they do not submit any need to the platform.
  - If using prices from the TERRE platform, we would need to average across the two prices available in a single settlement period as TERRE is a 15 minute product.
  - If using prices from the MARI platform, we would need to average across the six prices available in a single settlement period as MARI is a 5 minute product.
  - Any marginal need would represent a marginal deviation from this clearing price, and therefore it may be considered a reasonable proxy for the cost of energy.
  - This option depends on NGESO still being able to access products from the TERRE and MARI platforms after Brexit. If NGESO cannot access the platforms we would still need to use an ISHP compliant VOAA, but would not be able to rely on the prices from the platforms

# Discussion – Options for the VOAA

- We believe that calculations for an ISHP compliant VOAA should also include submitted Bid-Offer Pairs (BOPs) for the Balancing Mechanism, as this is (and likely will continue to be) a well used RR/FRR product.
  - An average would need to be taken for the next-most-expensive viable Bid and Offer
  - This may include prices for actions taken for system reasons as they were available for energy balancing during the Settlement Period, or exclude them and only consider volumes available at the end of the Settlement Period.
  - Prior to performing the averaging calculation, there would need to be some cleansing of the submitted BOPs.
    - When we analysed the BOP data available to Elexon we found submissions from units which had closed. Additionally, some submissions may not be available for operational reasons (e.g. constraints).

# Other elements that may be in scope of P410

# Other specific elements of ISHP – Use of FRR and FCR

- The ISHP requires the Imbalance Price to be calculated from standard or specific RR, FRR and FCR products
- The standard RR, FRR and FCR products come into being when the Implementation Framework is agreed.
  - The Implementation Framework for TERRE (RR) has been agreed
  - The Implementation Framework for MARI (FRR) and FCR have not been agreed. MARI Implementation Framework should be agreed in Summer 2022
- Specific products come into being when an NRA approves a TSO submission for specific products, according to Article 26 of EBGL.
  - Ofgem has received but not yet approved NGESO's submission for RR products
  - NGESO are not planning on making a submission for FRR until 6 months before the MARI Implementation Framework is agreed
- If specific products for FRR and FCR are not submitted by NGESO and agreed by Ofgem prior to the ISHP deadline (16 December 2021) their inclusion in the imbalance price may not be compliant with the ISHP.

# Other specific elements of ISHP – Use of FRR and FCR

- This would necessitate the removal of the following products from the imbalance price calculations until specific products are approved;

| Balancing Services | | Proposed Final Product Type | | Estimated activation date of final product type | Current Product Type |
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| MARI | | FRR | Standard | 2021 | Draft Standard Product |

# Other specific elements of the ISHP - BPA

- We considered whether the Buy[Sell] Price Price Adjuster (BPA/SPA) (and BSAA more widely) can still be considered a valid component of the imbalance price.
- Our initial view was that it did not fall into any of the listed categories of valid pricing components.
- Recently, as discussions progressed, we have come to the view that BPA/SPA can be considered:

*an incentivising component to be used to fulfil nationally defined boundary conditions;*

- Incentivising components are permitted in 6(b). We consider that the imbalance price plus BPA could be considered a boundary condition (where this boundary condition represents the cost of maintaining system balance).
- The WG may wish to consider whether all elements of the BPA(SPA) are compliant with the wider aims of the Harmonisation Regulations.

# Other specific elements of ISHP – PAR1

- Article 9 of the ISHP requires that imbalance prices are calculated using

  *…the weighted average approach and/or the maximum price approach…*

- We consider that using PAR1 constitutes a maximum price approach, although two or more different prices may contribute to the PAR1 calculation.
  - We performed some initial analysis on settlement periods since PAR1 was introduced and it appears that 0.9% of settlement periods have had more than one action contributing to the price.
- We discussed using the PAR1 approach during the development of the ISHP, and it was not seen as a problem to continue using PAR1.

# Other specific elements of ISHP – NIV Tagging

- The ISHP specified boundary conditions for the price of negative and positive balancing energy, then stipulating that the price for each becomes equal by applying the relevant price based on the imbalance of the system.
- We consider that the NIV tagging process was established because there is only balancing energy in one direction for any given settlement period. Any balancing actions taken in the opposite direction are system balancing.
  - This principle was confirmed in BSC Modification P360 'Making the BSC's imbalance price compliant with the European Balancing Guideline'.
- Therefore, in any given settlement period, we only need to consider the boundary condition for the energy stack after NIV tagging has been applied.
  - This means that we believe we do not need to revisit the NIV tagging process.

# A.O.B. and next steps