Draft Modification Report

P443 'To Cap NGESO Interconnector Trades at the Value of Lost Load (VoLL)'

This Modification seeks to limit the exposure of all GB parties, including consumers, to extreme prices because of tight margins across the European energy markets. The proposed solution is to cap the price that enters the BSC Imbalance Price calculation at the Value of Lost Load (VoLL – currently £6,000/MWh), for Interconnector actions only. VoLL under the BSC represents the value to customers of unsupplied energy. National Grid Electricity System Operator (NGESO) would still be able to take Interconnector actions it deems necessary, but these would be capped in the Imbalance Price calculation where the relevant actions exceed VoLL.

The BSC Panel initially recommends **rejection** of P443

The BSC Panel **does** believe P443 impacts the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC

This Modification is expected to impact:

- Generators
- Suppliers
- Interconnector Users, Operators and Owners
- Non Physical Traders
- Customers
- National Grid ESO
- Balancing and Settlement Code Company (BSCCo)

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Phase

Initial Written Assessment

Definition Procedure

Assessment Procedure

Report Phase

Implementation

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About This Document

This is the P443 Draft Modification Report, which Elexon will present to the Panel at its meeting on 8 June 2023. It includes the responses received to the Report Phase Consultation on the Panel's initial recommendations. The Panel will consider all responses, and will agree a final recommendation to the Authority on whether the change should be made.

There are five 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, and contains details of the Workgroup's membership and full Terms of Reference.
- Attachment A contains the draft redlined changes to the BSC for P443.
- Attachment B contains the full responses received to the Workgroup's Assessment Procedure Consultation.
- Attachment C contains the National Electricity Transmission System Operator (NETSO) Impact Assessment.
- Attachment D contains the full responses received to the Panel's Report Phase Consultation.

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Not sure where to start?

We suggest reading the following sections:

- Have 5 minutes? Read section 1
- Have 15 minutes? Read sections 1, 8 and 9
- Have 30 minutes? Read all except section 6
- Have longer? Read all sections and the annexes and attachments.
- *You can find the definitions of the terms and acronyms used in this document in the BSC Glossary*[1]

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1 Summary

Why Change?

At the current time NGESO can trade at prices above the Value of Lost Load (VoLL – as defined in BSC Section T 'Settlement and Trading Charges' 1.12[1], currently set at £6,000/MWh, unless otherwise defined). The Proposer's view is that this adds to customers' costs and sends a signal to the markets that customers[2] are willing to buy power at any price. In a cost of living crisis the Proposer does not believe that the British public are prepared to buy energy at any price and that measures are needed to limit the impact of trades above VoLL on the prices paid by consumers (or potentially prevent them from occurring at all).

Solution

The Proposed Solution will cap the price of Interconnector trades at VoLL, for purposes of calculating Imbalance Prices as per BSC Section T 'Settlement and Trading Charges'[3] of the BSC. This cap will not affect the price at which NGESO makes the trade i.e. NGESO can still pay more than VoLL to the counterparty (Interconnector User or Externally Connected System Operator), but the trade will be treated in the Imbalance Price calculation as if it had been priced at VoLL. This cap will apply to all Buy actions taken over Interconnectors, including trades with Interconnector Users, SO-SO Trades, Emergency Assistance and Emergency Instructions. The capped and uncapped trades will be published by Elexon for transparency.

The Workgroup consulted on two other possible solutions, but these have not been taken forward. More detail on these alternative options can be found in Section 3 and Section 6.

Impacts & Costs

This Modification is expected to impact Generators, Suppliers, Interconnector Users, Operators and Owners, Non Physical Traders, Customers, NGESO and BSCCo.

Costs Estimates			
Organisation	Implementation (£)	On-going (£)	Impacts
Elexon	Within a range of ~20-50 plus 150 for the reporting requirement	0 [per year]	Systems, documents and processes
NGESO	0	0	None
Industry	Low to Medium	Low	The majority of consultation respondents who provided a view on cost impacts estimated it to be Low or Medium and expected the greater cost impact to be on BSCCo.

What is VoLL?

VoLL is a defined parameter in the BSC and is based on an assessment of the average value that electricity users attribute to the security of electricity supply. It was originally set at £3,000/MWh and increased to £6,000/MWh on 1 November 2018, as per approved Modification P305 'Electricity Balancing Significant Code Review Developments'.

VoLL is reviewed from time to time by the Imbalance Settlement Group or on request from Ofgem.

What is an Interconnector?

An interconnector is a high-voltage power cable system that enables the transfer of electrical energy between different countries or regions. It acts as a bridge between two or more electrical power grids, allowing energy to be traded between them, thereby increasing the overall stability and efficiency of the energy network.

In Great Britain, Interconnectors exist between Northern Ireland, France, Holland and the Republic of Ireland

[1] https://bscdocs.elexon.co.uk/bsc/bsc-section-t-settlement-and-trading-charges#section-t-1-1.12

[2] In this context "customers" means domestic and Industrial & Commercial consumers of electricity. Reference to "customers/consumers" is meant in this context throughout this document unless otherwise stated

[3] https://bscdocs.elexon.co.uk/bsc/bsc-section-t-settlement-and-trading-charges

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Costs Estimates			
Organisation	Implementation (£)	On-going (£)	Impacts
Total	20 to 200	0	

For BSCCo to amend the Balancing Services Adjustment Data (BSAD) file automatically on receipt from NGESO the cost will be in the range of £20-50K. For reporting the capped and uncapped actions, we propose to publish this data on our Insights Solution[4]. The cost for this will be approximately £150k, therefore a total of £50-200K. We explain more about Insights vs BMRS in Section 4.

There are no implementation or ongoing costs for NGESO.

Implementation

The P443 Workgroup recommends an Implementation Date of **2 November 2023** as part of the standard November 2023 BSC Release, so that P443 can be effective in advance of the next winter period.

The solution will require Elexon IT system changes, so to implement this solution as soon as possible (as requested by the Proposer), an interim manual workaround is proposed for Elexon to amend the BSAD file and send an Elexon Circular to notify industry of any occurrence (including the capped and uncapped prices) until the enduring automatic solution is implemented in 2024.

Panel's Initial Recommendation

The Panel initially agreed by majority that P443 **does not better facilitate** Applicable BSC Objectives (c) and (d) and initially agreed unanimously that P443 **does not better facilitate** Applicable BSC Objectives (e).

The Panel therefore initially recommend by majority that P443 is not better than the current baseline and should therefore be **rejected**.

[4] https://bmrs.elexon.co.uk/

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2 Why Change?

What is the issue?

At the current time, NGESO can trade at prices above VoLL (although they do have obligations to maintain an economic, efficient, and co-ordinated system). This adds to customers costs and sends a signal to the markets that customers are willing to buy power at any price. In a cost of living crisis, the Proposer does not believe that the British public are prepared to buy energy at any price and therefore a price cap seems a sensible safety net. The Proposer has stressed that ordinarily they do not believe in capping markets, but that extraordinary times require actions are taken to reduce costs for consumers.

The Proposed Solution would offer some protection to consumers by limiting the extent to which very high-priced trades are able to feed through into Imbalance Prices and wholesale prices (and hence the costs faced by consumers).

The Proposer believes that NGESO should not simply buy through spiralling prices. Instead, it should cease to buy energy and start to use other energy management tools when Offers to sell power are above VoLL. The Proposer would see these other actions as being:

- Issuing Capacity Market Warnings (CMW), to which Interconnectors have an obligation to respond;
- Use Electricity Margin Notices (EMNs); and
- Start to manage demand, either via Demand Side Response (DSR) services or if necessary via load shedding.

In normal times, we would never expect to see prices reaching these levels. However, we have seen such prices (on 20 July 2022 – see NGESO Data Portal – Interconnector Requirements and Auction Summary[5], there haven't been any since), albeit that NGESO bought the energy for system reasons and not energy balancing reasons. The market rules need to reflect not only the needs of the industry parties, but also the needs of Customers.

By limiting the extent to which these trades drive up wholesale prices, this Modification will better reflect the needs of consumers and protect them from extraordinary prices.

It is also the case that the GB market participants are regulated by Ofgem. The Proposer's view is that if parties selling power into the GB market from outside GB are thought to be in some way abusing their positions, for example taking advantage of a transmission constraint, exhibiting anti-competitive behaviour, etc. Ofgem can do nothing. As it can take no actions against such companies, the Proposer suggests that the best way for Ofgem to fulfil its primary duty to Customers is to take proactive action to protect them, for example by setting a price cap on their behalf.

[5] https://data.nationalgrideso.com/trade-data/interconnector-requirement-and-auction-summary-data/r/interconnector_requirements_and_auction_summary

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Background

Value of Loss Load (VoLL)

The VoLL price in the BSC is an assessment of the average value that electricity consumers attribute to the security of supply. It is currently set at £6,000/MWh.

VoLL was introduced into the BSC by P305 'Electricity Balancing Significant Code Review Developments'[6] which was raised by NGESO on 30 May 2014 to progress the outcomes of the Electricity Balancing Significant Code Review (EBSCR)[7] and implemented on 5 November 2015.

P305 introduced pricing for Demand Control actions. The volumes of any disconnections and voltage reduction instructed by the Transmission Company ("System Operator (SO) instructed Demand Control actions") would be included in the Imbalance Price calculation at a price referred to as the VoLL price. This price was set to £3,000/MWh upon implementation, rising to £6,000/MWh on 1 November 2018 ahead of the winter 2018/19 season. This value was hard-wired into the Code, and could be amended at any time via a Modification. The intent to begin with a VoLL value of £3,000/MWh was intended as an introduction for participants.

A VoLL review process was introduced into the BSC to allow the BSC Panel to initiate a review of the value at any time or upon the request of the Authority. The VoLL review process:

- would be initiated by the Panel from time to time or upon the request of the Authority, with no maximum period between reviews;
- would allow the Authority to contribute its views to the review;
- would include consultation with the industry; and
- would allow the Panel to raise a corresponding Modification if the review recommended a change be progressed, with no minimum lead time on any change.

This process does not prevent any other participant eligible to do so from raising their own Modification at any time to propose a revised VoLL value.

Further information on this price and how the proposed values were calculated can be found in the Department for Energy and Climate Change (predecessor to BEIS) (DECC)-Ofgem study by London Economics on The Value of Lost Load (VoLL) for Electricity in Great Britain[8].

In the P305 Authority decision letter[9] approving P305, they stated that "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."

The VoLL in the Capacity Market is £17,000/MWh and is deemed to be the value that consumers place on avoiding the loss of electricity supply.

[6] https://www.elexon.co.uk/mod-proposal/p305/
[7] https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/electricity-balancing-significant-code-review-ebscr
[8] https://www.ofgem.gov.uk/sites/default/files/docs/2013/07/london-economics-value-of-lost-load-for-electricity-in-gb_0.pdf
[9] https://assets.elexon.co.uk/wp-content/uploads/2014/05/28163531/P305D-v2.0.pdf

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In Europe, the average VoLL is 8,000 Euros/MWh[10].

Are there any caps currently in place or being considered in GB/EU?

The UK government currently has schemes in place to protect certain consumers from the full impact of high wholesale electricity prices. For Domestic Consumers, the Energy Price Guarantee[11] limits the electricity price they are exposed to (with Suppliers compensated for this from general taxation). Therefore, for as long as this scheme continues (currently April 2024), any reduction in wholesale prices or (in the case of Potential Alternative Solution 2 – prevent Interconnector trades above VoLL) balancing costs will benefit taxpayers generally rather than Domestic Consumers.

For Non-Domestic Consumers, the Energy Bills Discount Scheme[12] will run from April 2023 to March 2024. It will offer a limited discount on electricity prices, but will not prevent high balancing costs being passed through to consumers.

Ofgem is also considering actions to prevent a repeat of high balancing costs which they believe occurred in winter 2021. They issued an Open letter on responding to the high balancing costs[13] in July 2022, and a Call for Input on options to address high balancing costs[14] in November 2022. The Call for Input stated that their preferred option was a new licence condition, prohibiting Licensed Generators from gaining excessive benefit after they have reduced their Physical Notifications (PNs) to zero. The P443 Proposer believes that these proposals strengthen the case for applying the Proposed Solution to Interconnector Users, but not to GB generators.

On 13 February 2023, Ofgem published a Consultation on the Inflexible Offers Licence Condition[15], drawing on the responses to the Call for Input on options to address high balancing costs. Ofgem are proposing to introduce the preferred of six options, a new licence condition called the Inflexible Offers Licence Condition (IOLC), and not apply a price cap, which was one of the options consulted on. The new licence condition will prohibit Generators from obtaining excessive benefit from Offers in the Balancing Mechanism when their units are operated inflexibly in a manner that limits their responsiveness to market and system conditions. In addition to protecting consumers from the high balancing costs witnessed in recent years Ofgem anticipate that the IOLC will further encourage investment in new flexible production and Demand Side Response. The intention of IOLC is to protect consumers by placing an additional restriction on licensees in relation to how they set their Offer prices.

The EU has also taken measures to limit profits made by generators as a result of high market prices. The Regulation on an emergency intervention to address high energy prices (EU 2022/1854[16]) was adopted on 6 October 2022, and includes a temporary cap on revenues for electricity producers using certain lower-cost sources of energy (such as renewables and nuclear).

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[10] https://www.researchgate.net/publication/337646625_The_Value_of_Lost_Load_VoLL_in_European_Electricity_Markets_Uses_Methodologies_Future_Directions

[11] https://www.gov.uk/government/publications/energy-bills-support/energy-bills-support-factsheet-8-september-2022

[12] https://www.gov.uk/guidance/energy-bills-discount-scheme

[13] https://www.ofgem.gov.uk/publications/open-letter-responding-high-balancing-costs

[14] https://www.ofgem.gov.uk/publications/call-input-options-address-high-balancing-costs

[15] https://www.ofgem.gov.uk/publications/consultation-inflexible-offers-licence-condition

[16] https://eur-lex.europa.eu/eli/reg/2022/1854

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How do NGESO decide how to take Balancing Actions?

The Electricity National Control Centre (ENCC) of NGESO uses a suite of tools, including the Balancing Mechanism (BM), to balance supply and demand of electricity in Great Britain. The BM is an online auction that runs every 30 minutes, with market participants submitting "Bids" or "Offers" for electricity consumption or generation. NGESO selects the most efficient and cost-competitive bids and offers, and issues Bid Offer Acceptances (BOAs) to participants to adjust their output and maintain balance in the system. The balancing team at ENCC continuously monitors the BM data and decides on balancing actions based on cost, enhanced actions, and emergency actions as necessary. The Order of Action outlines the steps taken by NGESO in maintaining balance, but they may adapt to changing circumstances. More detail on this can be found in Appendix 2.

What is the Interconnector User role?

Interconnector Users are Trading Parties that import and export electricity across an Interconnector. They buy and sell electricity from Generators, Suppliers and other Trading Parties operating in the market.

It is usual for all Interconnector Users to have agreements with the Interconnector owner, the Interconnected System Operator and Externally Interconnected System Operator. All these agreements are outside the scope of the BSC but are necessary pre-requisites for trading across an Interconnector.

These agreements will also need to include the relationship between Interconnector Users and the Interconnector Administrator who will report the Export (electricity flows on to the GB Total System) or Import (electricity flows from the GB Total System) energy volumes for each user to Elexon for Settlement purposes.

Further information on how NGESO decide how to take Balancing Actions and trade with Interconnector Users can be found in Appendix 2.

What happened on 20 July 2022?

In the Proposal Form[17], the Proposer referenced 20 July 2022 as a day with very high prices for Interconnector trades, although the Proposer recognised that in this scenario NGESO bought energy for system and not energy balancing reasons.

NGESO explained that Power market tightness eased on 20 July 2022 compared to the previous day (where GB Gas had been trading at a significant discount to European Gas – 74 Euros/MWh vs. 158 Euros/MWh), while tightness on the continent intensified (Day Ahead Spread to France, i.e. difference between prices, was up to £424/MWh).

Strong spread to the continent caused exports on the South Coast Interconnectors (to the Netherlands, Belgium and France). Combined with London demand, this drove Power flows across the LE1 (South East) and South Coast (SC) boundaries. These boundaries had been weakened by unplanned outages in July, which reduced the amount of Power

[17] https://www.elexon.co.uk/documents/change/modifications/p401-p450/p443-proposal-form/

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that NGESO can transmit across the boundary. Therefore, this drove a requirement to bring Power back from the continent.

To buy Power back from the continent, NGESO ran a series of Auctions with around 20 counterparties who have the ability to trade Power in both markets (GB and the other side of the Interconnector). NGESO will chose the cheapest price. These Auctions are generally very liquid and very competitive.

Therefore, NGESO bought Power from Interconnector Users to manage flows across the LE1 and SC boundaries. Scarcity in the continent (due to French Nuclear fleet unavailability) resulted in extreme prices on 20 July 2022, of around £9,500/MWh in one Settlement Period. These trades were System flagged.

The total trade expenditure was ~£69m.

Understanding BSC Systems impacted by P443

BSC Systems impacted by P443	
System	What is it?
Settlement Administration Agent (SAA)	It calculates the credit and debit payments resulting from trades made in the Balancing Mechanism (BM) from imbalances between contracted positions and actual generation or consumption
BMRS	Is the primary system for providing operational data relating to the GB Electricity Balancing and Settlement arrangements
Insights	Elexon's new data platform making use of the latest technology to provide a smart and flexible central data platform for the industry and is expected to become the BMRS, replacing the legacy systems

What is BSAD?

BSAD reports any Balancing Services where the costs are recovered through Balancing System Use of System (BSUoS) charges (i.e. any balancing action taken by the NGESO outside of the BM).

NGESO are required to publish BSAD under Standard Condition C16 of the Transmission License and BSAD is used as part of the Imbalance Price calculation specified in BSC Section T 'Settlement and Trading Charges' 4.4[18]. This calculation determines a £/MWh charge for any imbalance (difference between contracted and metered volumes).

BM data is used to adjust Parties' imbalance positions so that they are not disadvantaged or penalised for any NETSO instructions that require them to move away from their contracted position. Following the implementation of P354 'Use of ABSVD for non-BM

[18] https://bscdocs.elexon.co.uk/bsc/bsc-section-t-settlement-and-trading-charges#section-t-4-4.4

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Balancing Services at the metered (MPAN) level'[19] on 1 April 2020, non-BM actions and data are also used to adjust Parties' imbalance positions.

Desired outcomes

The original desired outcome as stated on the Proposal Form was to limit the exposure of GB parties to high prices as a result of the tight margins across the European energy markets. Set a clear price at which point the market will expect NGESO to take other actions rather than buy energy at any price.

However, as the Workgroup discussions and solution development have progressed, the Proposer adopted a solution they believed stood the best chance of approval, whilst still addressing the fundamental issue P443 seeks to address, by limiting the impact of high prices on consumers.

The Proposed Solution (cap Interconnector actions to VoLL in the Imbalance Price calculation) will not prevent NGESO trading above VoLL, so costs incurred by NGESO will be passed through to those Parties (and ultimately end customers) as it will be included in BSUoS charges. However, the actions above VoLL will not be included in the Imbalance Price calculation.

Urgency request

P443 was raised by Saltend Cogeneration Company Ltd on 17 August 2022. The Proposer requested that the Modification be treated as Urgent. The Panel considered the request for urgency and recommended it to Ofgem, but the Authority ultimately rejected the request for urgency as the Proposer did not provide enough evidence to show how the modification proposal satisfied the Authority's urgency criteria. The Authority stated that the Proposer did not provide enough information on the perceived commercial impact of the proposal. The table below summarises the timeline for the urgency request.

P443 urgency timetable	
Event	Date
P443 raised	17 August 2022
Urgent Panel meeting 329A	18 August 2022
Urgency letter sent to the Authority	19 August 2022
Authority reject urgency	25 August 2022

Appendix 3 provides further detail on the urgency request and outcome.

What is an Urgent Modification?

The Modification process can be expedited as an Urgent Modification if requested by the Proposer, Elexon, or NGESO and deemed necessary by Ofgem on a case-by-case basis. The Panel will first consider the request for urgency before making a recommendation to Ofgem. If granted, Ofgem will determine the timetable and process for the Urgent Modification, including industry consultation of one month if it impacts the EBGL Article 18 terms and conditions.

[19] https://www.elexon.co.uk/mod-proposal/p354/

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3 Solution

The table below summarises the Proposed Solution, and the two Potential Alternative Solutions which were considered by the Workgroup. After considering the responses to the Assessment Procedure Consultation, the Workgroup decided not to formally raise an Alternative Modification.

Proposed solution

The Proposed Solution is to alter the BSC to cap the price of Interconnector trades in the calculation of Imbalance Prices (as per Section T of the BSC).

The Workgroup agreed that Elexon will apply the cap [as opposed to NGESO], as this would provide the capped and uncapped prices alongside other data used for Imbalance calculations. NGESO will send uncapped data in the BSAD file (no change from baseline), and when the criteria is met (Interconnector User trades above VoLL - £6,000/MWh) the value of the trade will be capped in the BSAD file as part of pre-processing of the file and then the amended file will be sent to both the BMRA and SAA systems before using them in Settlement. This will be achieved by amending BSC Section T 'Settlement and Trading Charges' to cap the prices of the actions within the Settlement calculation (allowing NGESO to continue sending uncapped prices in the BSAD file). This approach allows Elexon to report the uncapped and capped prices, and avoids the need for NGESO to make system changes. The original BSAD file will be shared with Insights for reporting purposes.

The Proposed Solution will not prevent NGESO from taking actions over Interconnectors at prices above VoLL, but it will prevent such actions from causing the Imbalance Price (applied under the BSC to Energy Imbalance volumes) to increase above VoLL.

It should be noted that, even under the current baseline, an action priced above VoLL will not necessarily cause the Imbalance Price to rise to that level:

The action will not set the price if it is System Flagged by NGESO (indicating that it was required to manage a transmission constraint, rather than for energy balancing purposes) and is higher-priced than all the non-System Flagged actions. For example, this would have prevented the high-priced Interconnector trades on 20 July 2022 from setting the Imbalance Price; and

Even if the action is not System Flagged, it may not set the price if there is a sufficient quantity of Sell Actions (in the same Settlement Period) for the 'Net Imbalance Volume (NIV) Tagging' mechanism to remove the high-priced Interconnector trades from the calculation.

In these circumstances the high-priced trade would not set the Imbalance Price, and therefore any effect (or benefit) of the Proposed Solution would be small. However, if a situation did arise in which NGESO took a large volume of high-priced Interconnector trades for energy balancing reasons, the Proposed would have the effect of capping the Imbalance Price at VoLL.

Attachment B contains the Draft redlining to the BSC.

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NGESO's ability to trade

The Proposed Solution will not prevent NGESO trading above VoLL, rather it will cap NGESO trades with Interconnectors in the Balancing Services Adjustment Data (BSAD) file at VoLL. The BSAD is used in the Imbalance Price calculation, which feeds into Imbalance Settlement.

Under the Proposed Solution, NGESO will recover its costs via the Balancing Services Use of System charges (BSUoS) levied on both Suppliers and Generators (until the implementation of Connection and Use of System (CUSC) Modification Proposal CMP308: Removal of BSUoS charges from Generation[20] on 1 April 2023, which will mean that from this date BSUoS will only be levied on Suppliers) and passed onto customers through bills.

How does the Proposed Solution address the Issue?

Whilst the Proposed Solution was not what the Proposer had in mind when they raised P443, they still believe that it addresses the issue. The Proposed Solution will still offer some protection to consumers by limiting the extent to which very high-priced trades are able to feed through into Imbalance Prices and wholesale prices (and hence the costs faced by consumers).

The Proposer would still prefer a solution that prevents NGESO making Interconnector trades above VoLL (which the Workgroup considered as Potential Alternative Solution 2 – see below), but has listened to the feedback from the P443 Workgroup that this will be more challenging to get approved, especially before the next winter period, due to:

- The legal advice given that this does not sit within the intended scope of the BSC;
- Its potential impact on NGESO's licence; and
- The 'higher bar' to provide evidence to justify the change.

Proposer approach to address the Issue

The Proposer is not wedded to using the BSC as a means to cap prices. In fact, including the cap in the C16 Balancing Principles Statement would seem the logical place. However, amending the C16 Statement is not something an industry party can formally propose, it is unlikely to happen in the timescales needed to address this issue, and would not have the advantages of an open Modification process that allows for discussion at an industry Workgroup. Further, the Proposer understands that NGESO can use the outcome of any BSC Modification process to feed into C16 Statement amendments, if deemed appropriate. Therefore, at the current time the Proposer could see no other manner to address this defect, other than a BSC Modification.

Reporting

BMRS will publish capped and uncapped prices for transparency under the enduring solution. An interim solution will report capped and uncapped data via an Elexon Circular.

[20] https://www.nationalgrideso.com/industry-information/codes/cusc/modifications/cmp308-removal-bsuos-charges-generation

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The effect of this workaround is that both Imbalance Prices and Imbalance Charges will be calculated correctly, using capped Interconnector prices, where the price is above VoLL, but the uncapped prices will not be made available on BMRS and instead will be sent out manually.

The capped and uncapped prices will not be made available in the SAA-I014 (Settlement Report) file. This is on the basis that it will be published elsewhere and will reduce Elexon implementation costs and impacts to users of the SAA-I014.

Potential Alternative Solutions considered by the Workgroup

The Workgroup considered two Potential Alternative Solutions. The Workgroup consulted on both solution options, in addition to the Proposed, to help inform their decision on whether to raise an Alternative Modification or not. Following the Assessment Procedure Consultation the Workgroup decided not to raise an Alternative Modification.

The Proposer and majority of the Workgroup were keen to get both an Imbalance Price (Proposed Solution and Potential Alternative Solution 1 – cap all actions to VoLL in the Imbalance Price calculation) and a trade (Potential Alternative Solution 2 – prevent NGESO trading above VoLL) cap presented to industry.

The Workgroup discussions on the Potential Alternative Solutions and more details are in Section 6 (Workgroup's Discussions) of this document.

Potential Alternative Solution 1 – cap all actions to VoLL in the Imbalance Price calculation

Potential Alternative Solution 1 is similar to the Proposed Solution, but would cap any actions used in the Imbalance Price calculation to VoLL, not just Interconnector trades i.e. this is applicable to all GB parties including all Generators, Traders, Suppliers, etc. This would include Emergency Assistance and Emergency Instructions.

As for the Proposed Solution, this cap could be implemented either by NGESO (capping the prices in the BSAD file before sending it to BMRA/SAA), or by BMRA/SAA (applying the cap to the prices received in the BSAD file before using them to calculate Imbalance Prices).

Like the Proposed Solution, this Potential Alternative Solution would not prevent NGESO from trading above VoLL (and recovering those costs from parties through BSUoS). However, it would mitigate the impact of such highly-priced actions on Imbalance Prices (and hence the financial impact on Parties with short positions, and their customers).

Potential Alternative Solution 2 – prevent Interconnector trades above VoLL

Potential Alternative Solution 2 would prevent NGESO from trading with Interconnector Users above VoLL. A consequential change in NGESO's C16 Statements would therefore be required. This option would apply only to trades with Interconnector Users i.e. NGESO would still be able to use Emergency Assistance and Emergency Instructions (even at prices above VoLL).

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NGESO did not fully impact assess this Potential Alternative Solution, which would affect its processes and systems for balancing the GB system. NGESO confirmed it would assess this option if it was formally raised by the Workgroup. NGESO indicated to the Workgroup that it does not support this solution, with justification and details of the Workgroup discussion on this given in Section 6.

Benefits

The Proposed Solution will reflect the VoLL into the traded market to the benefit of customers. Any short parties (Supplier or Generators) will be protected from excessive prices, which will reduce the likelihood of them going out of business and creating additional structural problems within the GB energy market this winter.

It's the Proposer's view that given the tight margins across the European energy markets, there is a risk that each market will try to outbid each other in order to secure power and this could lead to spiralling prices that go beyond the reasonable definition of "scarcity pricing" and instead could create excessive profits for a few parties at the expense of customers. The Proposer's view is that there has to be a price at which point customers would reasonably say that they do not wish to buy power, instead accepting some rationing. In the electricity markets this value is referred to as VoLL (Value of Lost Load).

Under the BSC, Ofgem set VoLL at £6,000/MWh to give a price to go into Settlement to compensate customers if they are cut off. The Proposer recognises that VoLL is different for different customers at different times of day, different times of year, etc. and in the Capacity Market (CM) assessment was suggested by BEIS to be £17,000/MWh. However, as this Modification is a change to the BSC we have used the VoLL used in the BSC so as to not create additional confusion. The Modification proposed that NGESO should not be allowed to buy electricity beyond £6,000/MWh and should instead use other system tools to keep the lights on or instigate load shedding. However, the Proposed Solution still enables NGESO to buy electricity from Interconnector Users above VoLL, but the price is capped to VoLL in the Imbalance Price calculation.

This change will reflect the VoLL into the traded market to the benefit of customers. It will also protect any short parties (Supplier or Generators) from excessive prices, which will reduce the likelihood of them going out of business and creating additional structural problems within the GB energy market this winter.

The Proposer notes that there are already a number of price caps, implemented in different ways, across the European energy sector. While the Proposer generally does not favour such market interventions, these are extraordinary times and Ofgem should be mindful of their primary legislative duty to protect GB customers. Ofgem and BEIS should both agree that there is a price at which customers are generally unwilling to pay, and this needs to be reflected in market arrangements.

Finally, Ofgem has significant power to investigate parties they believe are acting in an anti-competitive manner within the GB market. However, it has no power over some parties in third party countries. By setting VoLL Ofgem has tried to reflect average customer price limits and stopping parties in other countries trying to supply at prices above the level of VoLL will directly protect customers.

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Responses to the Assessment Consultation

Do you believe Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) or Potential Alternative Solution 2 (prevent Interconnector trades above VoLL), or a potential other Alternative Modification is better than the Proposed (cap Interconnector actions to VoLL in the Imbalance price calculation)?

The majority of respondents did not believe that either Potential Alternative Solution 1 or 2 or a potential other Alternative Modification are better than the Proposed Solution. Two respondents felt that Potential Alternative Solution 1 was fairer as it would cap all actions not just Interconnector actions, which is the Proposed Solution. One respondent stated that as Ofgem had recently ruled out capping offers from GB Generators, who are regulated and can be penalised under competition law, however, Ofgem have yet to address the behaviour of Interconnector Users based in third party countries.

Legal text

Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation)

The redlined changes to the BSC can be found in Attachment B. We consulted on two versions of the legal text:

1a) NGESO amend trade price for Interconnector User trades above VoLL to VoLL before sending Balancing Services Adjustment Data (BSAD) file to BSCCo; or

1b) BSCCo amend trade price in BSAD file for Interconnector User trades above VoLL to VoLL.

The Proposer adopted 1b, which is reflected in Attachment B [and not 1a].

Responses to the Assessment Consultation

Do you agree with the Workgroup that the draft legal text delivers the intention of P443 Proposed 1a and 1b?

The majority of respondents agreed with the Workgroup that the draft legal text does deliver the intention of P443 Proposed, either 1a (NGESO apply the cap in the BSAD file) or 1b (Elexon apply the cap in the BSAD file). The only one rationale provided was that the respondent agreed that the draft legal text does deliver the intention, however, they disagree with the Modification Proposal.

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4 Impacts & Costs

We have defined cost impacts as:

- High: >£1 million
- Medium: £100k to £1 million
- Low: <£100k

Estimated costs of P443

Implementation cost estimates			
Organisation	Item	Implementation (£k)	Comment
Elexon	Systems	170 to 200	Within a range of ~20 to 50 for system changes to apply the price cap. Additional cost of up to 150k for reporting of price capping on Insights platform.
	Documents	<1	
NGESO	No impact	0	No impacts to NGESO.
Industry	Systems & processes	Low to Medium	The majority of consultation respondents who provided a view on cost impacts estimated it to be Low or Medium and expected the greater cost impact to be on BSCCo.
	Total	Low to Medium	

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On-going cost estimates		
Organisation	Implementation (£)	Comment
Elexon	500k to 600k	Extra 0.5 FTE
NGESO	500k	
Industry	200k to 1000k	Extrapolated from limited response to RfI / to be confirmed via consultation / Judgement provided by Workgroup/Proposer. If cannot indicate then give a High/Medium/Low
Total	1200k to 2100k	

Elexon Lead time and need for a workaround

Our Service Provider's Rough Order of Magnitude (ROM) Impact Assessment indicates a lead time of 6-10 weeks for building a new capping process that would intercept BSAD files received from NGESO, and apply the VoLL price cap to relevant actions, before passing on the files to BMRA and SAA.

In addition, the Workgroup believes that both capped and uncapped prices should be reported to the market. We propose to do this using our Insights Solution[21] (bmrs.elexon.co.uk), which is currently operating alongside the BMRS platform[22], and is ultimately expected to provide parties with flexible reporting of both BMRS data and Open Settlement Data. The Service Providers ROM Impact Assessment indicated delivery of the reporting functionality would take between 2-4 months.

Due to other commitments in our pipeline and the tight timescales to implement P443, we do not believe the full solution could be implemented in time for winter 2023. The Proposer is concerned about possible financial impacts on consumers during next winter, and we therefore propose that the Proposed Solution would, if approved, be implemented initially using a workaround solution.

This workaround would not be able to report the impact of capping on the Imbalance Price on BMRS, but would apply the cap in Settlement to protect parties from high Imbalance Charges. In the interim the reporting of capping would be via an Elexon Circular. We are continuing to assess the required workaround, but on the assumption that trades priced higher than VoLL will remain rare events we anticipate that the operational costs will be relatively low.

Estimated on-going costs of P443

Until the enduring BSC system changes are implemented, there will be small on-going costs for Elexon to operate a workaround. These are not expected to be material and will be absorbed into existing operations. Once the enduring system changes are implemented, Elexon do not expect any on-going costs.

[21] https://bmrs.elexon.co.uk/
[22] https://www.bmreports.com/

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Consultation responses suggested little or no ongoing cost to market participants, apart from the associated cost impact of Imbalance Prices potentially being affected by the Proposed Solution.

P443 impacts

The Assessment Procedure Consultation responses indicated that the Proposed Solution will have a relatively limited impact on Parties, as they would only impact Imbalance Prices in situations of extreme energy shortage (which fortunately have not occurred to date). The Workgroup did consider whether to include the capped and uncapped prices in the SAA-I014 (Settlement Report) file, which would have had cost and system impacts for market participants who receive the Settlement Report, however, the Workgroup have decided this is not part of the Proposed Solution. The discussion is covered in Section 6.

The Proposed Solution also brings a potential financial benefit of reduced Imbalance Charges for any Imbalance Parties (Generators, Suppliers, Interconnector Users, Non-Physical Traders or VLPs) who had short Imbalance positions (metered volumes greater than contract volumes) at a time of extreme energy shortage. And there would be a corresponding disbenefit to Imbalance Parties who did not have short positions at such times (and would benefit through Residual Cashflow Reallocation Cashflow from the Imbalance Charges paid by those who were short).

Impact on BSC Parties and Party Agents (Proposed Solution)		
Party/Party Agent	Impact	Estimated cost
Generators	Responses to the Assessment Procedure Consultation have indicated the expected cost to be Low as there is no impact to systems and processes.	Low
Suppliers		
Interconnector Users		
Non Physical Traders		
Customers		
Interconnector Operators/owners		
BSCCo	Additional impacts for implementing proposed workaround solution.	Medium

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Impact on the NETSO	
Impact	Estimated cost
NGESO would be still be able to trade with Interconnectors above VoLL but the value of the trade would be capped to VoLL in the BSAD file. In the NETSO IA, NGESO stated that there would be no impacts to their systems and processes and therefore no implementation or ongoing cost. The IA also confirmed that the Proposed Solution requires no changes to NGESO Core Industry Documents or the System Operator Transmission Owner Code. However, they did state that as this solution limits exposure to parties who are short in a particular settlement run, there is the risk that this could de-incentivise parties to maintain their reported position (PN's) or pose a disbenefit to those parties who are long. This risk has possible implications of affecting system security forecasting. NETSO also has concerns that the Proposed Solution conflicts with Retained European Law.	None

Impact on BSCCo		
Area of Elexon	Impact	Estimated cost
Operations team	Operate workaround until enduring system changes are made	Low

Impact on BSC Settlement Risks
No impacts are expected on the BSC Settlement Risks. BSCCo would not seek to provide any additional validation or checking for the BSAD files as a result of P443. BSCCo currently do not do this for existing trades and do not believe that this Modification, if approved, would significantly affect any of our existing BSC Settlement Risks. The approach to Assurance that Elexon undertakes is to assess situations based on the impact on Settlement Risks, and then deploy monitoring or mitigation actions in line with this assessment. Therefore, this approach is no different from any other existing steps we take for any other Risk areas.

Impact on BSC Systems and process	
BSC System/Process	Impact
BMRA/SAA	Amend the BSAD file on receipt from NGESO, if criteria is met (Interconnector User trade above VoLL - £6,000/MWh). The BSAD file will be amended as part of a routing mechanism and then both BMRA and SAA will receive and process the same capped data.
Insights Solution	Visibility of instances where the data in the BSAD file has been capped, expected to be captured under System messages. The original BSAD file will be shared with Insights to enable this reporting.

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Impact on BSC Agent/service provider contractual arrangements	
BSC Agent/service provider contract	Impact
No impact	No impact on BSC Agent/service provider contractual arrangements.

Impact on Code	
Code Section	Impact
BSC Section T 'Settlement and Trading Charges'	As BSSCo will amend the BSAD file on receipt from NGESO, a new paragraph will need to be inserted into Section T.
BSC Section X-2: Technical Glossary	As BSCCo will amend the BSAD file on receipt from NGESO, a new defined term will need to be inserted into Section T and then maintained in Section X-2.

Impact on EBGL Article 18 terms and conditions
P443 impacts the EBGL balancing terms and conditions within the BSC, specifically Section T4. The Workgroup hold mixed views as to whether P443 is consistent or inconsistent with the EBGL objectives and the majority of Assessment Consultation respondents believe P443 would be detrimental against the EBGL objectives and not in line with the TCA. Section 6 provides details of these views.

Impact on Code Subsidiary Documents	
CSD	Impact
No impact expected	No impact expected

Impact on other Configurable Items	
Configurable Item	Impact
No impact expected	No impact expected

Impact on Core Industry Documents and other documents	
Document	Impact
Ancillary Services Agreements	No impact expected
Connection and Use of System Code	
Data Transfer Services Agreement	
Distribution Code	
Grid Code	
Retail Energy Code	

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Impact on Core Industry Documents and other documents	
Document	Impact
Supplemental Agreements	
System Operator-Transmission Owner Code	
Transmission Licence	
Use of Interconnector Agreement	
C16 Statements	

Impact on a Significant Code Review (SCR) or other significant industry change projects
Ofgem confirmed on 18 August 2022 that P443 does not fall within the scope of any open SCRs.

Costs and Impacts identified for Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation)

Costs for Potential Alternative Solution 1 were identified to be similar to the Proposed Solution, as they differ only in which BSAD Actions the price cap applies to. The impacts will also be comparable, except the solution would impact all Trading Parties directly, not just Interconnector Users.

Impact on BSC Parties and Party Agents (Potential Alternative Solution 1)		
Party/Party Agent	Impact	Estimated cost
Generators	Responses to the Assessment Procedure Consultation have indicated the expected cost to be Low as there is no impact to systems and processes.	Low
Suppliers		
Interconnector Users		
Non Physical Traders		
Customers		
Interconnector Operators/owners		
BSCCo	Additional impacts for implementing proposed workaround solution.	Medium

Costs and Impacts identified for Potential Alternative Solution 2 (prevent Interconnector trades above VoLL)

Potential Alternative Solution 2 would primarily impact NGESO, as they would need to amend their systems and processes to ensure that they do not purchase power from Interconnector Users at prices above VoLL. NGESO did not impact assess this option, as they would only do so if formally raised as an Alternative Modification.

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There would be less direct (but still potentially significant) impacts on those parties that fund NGESO's balancing activities through BSUoS (e.g. Suppliers) and ultimately customers and consumers. By not having the option to trade on the interconnector there would be an impact to the order of actions taken by the ESO as there would be less options available. Therefore, this could result in the possible requirement of using more expensive Emergency Actions or Demand Disconnection.

Impact on BSC Parties and Party Agents		
Party/Party Agent	Impact	Estimated cost
Generators	No impact expected for Potential Alternative Solution 2.	None
Suppliers		
Interconnector Users	Potential changes to systems and processes arising from the cap on prices for trades with NGESO.	Medium
Non Physical Traders	No impact expected for Potential Alternative Solution 2.	Low
Customers		
Interconnector Operators/owners		
BSCCo	No impact expected	None

Impact on the environment and consumer benefit areas

The table below summarises the impact on the environment and consumer benefit areas of the Proposed Solution, and the two Potential Alternative Solutions which were considered by the Workgroup. After considering the responses to the Assessment Procedure Consultation, the Workgroup decided not to formally raise an Alternative Modification.

What are the consumer benefit areas?

1) Will this change mean that the energy system can operate more safely and reliably now and in the future in a way that benefits end consumers?

2) Will this change lower consumers' bills by controlling, reducing, and optimising spend, for example on balancing and operating the system?

3) Will this proposal support:

i) new providers and technologies?

ii) a move to hydrogen or lower greenhouse gases?

iii) the journey toward statutory net-zero targets?

iv) decarbonisation?

4) Will this change improve the quality of service for some or all end consumers. Improved service quality ultimately benefits the end consumer due to interactions in the value chains across the industry being more seamless, efficient and effective.

5) Are there any other identified changes to society, such as jobs or the economy.

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Impact of the Modification on the environment and consumer benefit areas:			
Consumer benefit area	Proposed Solution	Potential Alternative Solution 1	Potential Alternative Solution 2
1) Improved safety and reliability	**Neutral**: This should not change system reliability or safety as ESO will still be able to trade and all the balancing tools will all still exist. A Workgroup Member expected occurrences to be rare but felt it would reduce system reliability.	As per Proposed	**Neutral:** This should not change system reliability as other balancing tools will still exist.
2) Lower bills than would otherwise be the case	**Positive**: This will stop prices above VoLL for Interconnector Users feeding into the cashout calculation and that will ultimately put a cap on the prices in the wholesale market to the benefit of customers. The Workgroup felt occurrences would be rare but noted that costs would still be recovered through BSUoS and it was not clear that the impact on the Imbalance Price would directly benefit customers.	As per Proposed	**Positive:** This will stop NGESO accepting excessive prices and that will ultimately put a cap on the prices in the wholesale market to the benefit of customers.
3) Reduced environmental damage	**Neutral**: No impact identified.	As per Proposed	As per Proposed
4) Improved quality of service	**Neutral**: No impact identified.	As per Proposed	As per Proposed

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5) Benefits for society as a whole	**Positive**: The UK is suffering a cost of living crisis. Any small changes can be made to put some downward pressure on energy prices will benefit the economy as whole. While we would not expect this price cap to kick in very often (and hopefully not at all), it will be important in sending a signal to the neighbouring electricity markets that GB customers will not simply pay any price to keep the lights on. A Workgroup Member felt it would be a rare occurrence and noted that the costs will be still be recovered through BSUoS.	As per Proposed	As per Proposed

The Proposer's view was included in the Assessment Procedure Consultation. NGESO provided their views in their response to the Assessment Procedure Consultation. Their view was that under the Proposed Solution there would be a Neutral impact on customer bills and society as a whole as the cost of Actions above VoLL would still be recovered through BSUoS. For Potential Alternative Solution 2, NGESO's view was that removing an Action would likely lead to needing to call on more expensive Actions and/or increase the risk of Demand Disconnection.

Other consultation respondents stated that the consumer benefits of the Proposed and Potential Alternative Solution 1 had not been sufficiently evidenced and that it was not clear that reducing Imbalance prices on occasion would result in lower costs to customers. A respondent stated that there would be a clear customer detriment from Potential Alternative Solution 2 as it would lead to more likely Demand Control and Rota Disconnection.

The Workgroup did not discuss impacts on the environment and consumer benefits areas from the two Potential Alternative Solutions at their meeting to consider responses to the Assessment Procedure Consultation as they did not decide to raise either as an Alternative Modification.

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Responses to the Assessment Consultation

Do you agree with the Workgroup's assessment of the impact on the BSC Settlement Risks?

The majority of respondents agreed with the Workgroup's assessment of the impact on the BSC Settlement Risks. The only rationale provided was one response that felt there was low risk that there would be incorrect calculations in the Imbalance Price calculation process. Elexon note that this is a project implementation risk that would be managed as part of standard project management practices, including extensive testing, and was not a risk to Settlement as a result of the P443 solution.

Will P443 impact your organisation?

Respondents were asked to provide their views on whether P443 will impact their organisation and the Workgroup were keen to understand the different impacts from the Proposed and two Potential Alternative Solutions. Respondents stated that overall there would be low impact to their systems and processes, particularly for the Proposed and Potential Alternative Solution 1 but this may need further assessment. However, NGESO stated that there would be impacts on the trading team and the control room, and also the settlement team, requiring changes to systems, documents and processes for the Proposed or Potential Alternative Solution 1 if NGESO were to apply the cap in the BSAD file before submitting to BSCCo. Some respondents raised the wider point that Potential Alternative Solution 2 is likely to increase the likelihood of supply emergencies and market suspension, and the use of Emergency Actions over interconnectors. A respondent made a broader point that all of the Solutions (Proposed and two Potential Alternatives) would help to protect GB energy companies and their customers from excessive energy prices.

How much will it cost your organisation to implement P443?

The respondents who did provide a view suggested that the implementation cost for their organisation would be low (e.g. small cost to receive amended SAA-I014 if the capped and uncapped trade values were included) or none and that there would only be cost impacts for NGESO and Elexon. NGESO stated that there would need to be consideration of the cost implications under Potential Alternative Solution 2 (prevent Interconnector trades above VoLL) and also the wider risk to security of supply. Another respondent stated that the wider socio-economic impacts need to be considered, particularly in Potential Alternative Solution 2, which in their view would make demand disconnections more likely, which would have significant wider impacts on consumers and the economy more broadly.

What will the ongoing cost of P443 be to your organisation?

The majority of respondents who provided a view that there would be no or low ongoing cost for their organisation. As for the implementation costs, there was the same view that Elexon and NGESO would be most impacted. NGESO stated there would also be the same considerations as for implementation costs, in terms of the wider risk to security of supply and needing to fully impact assess Potential Alternative Solution 2. Another respondent stated the wider socio-economic impacts need to also be considered for the ongoing cost as for the implementation costs.

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Do you agree with the Workgroup's assessment that P443 does impact the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC?

The majority of respondents agreed with the Workgroup's assessment. One respondent did not provide a view as they had no opinion. One respondent stated that they do not think the capping of interconnector actions in the Imbalance Price calculation (Proposed Solution and Potential Alternative Solution 1) facilitates competition because of the inconsistency in the treatment of these actions compared with other actions with unlicenced entities. One respondent stated they would take this opportunity to urge the Department of Energy Security and Net Zero (DESNZ) to consider removing this retained EU legislation, as where there are EBGL impacts it does add an extra month to the decision timeline.

Do you have any comments on the impact of P443 on the EBGL objectives?

One respondent noted the concerns that targeting P443 (Proposed and Potential Alternative Solution 2) on Interconnector actions only could be seen as anti-competitive but in their view Interconnectors already have a competitive advantage over GB generators as they do not have to pay network charges, and therefore that they do not believe P443 would have any significant impact on EU competition. They noted the EBGL objective on transparency and that the current arrangements with SO-SO trades is not transparent. They would welcome an Ofgem review so that the arrangements are consistent with competition and transparency, noted concerns around NGESO reporting of constraints for example. However, other respondents did provide their view that there are concerns over discrimination and competition and that P443 would not be consistent with the EBGL objectives on competition, efficiency, and fair and liquid markets.

Do you agree with the Proposer's views on the impacts P443 will have on the environment and consumers?

There were mixed views on the Proposer's views on the impacts P443 will have on the environment and consumers. In terms of consumer benefits, two respondents noted that P443 could lead to lower Imbalance Prices on occasion (under the Proposed and Potential Alternative 1) but that it was not clear how consumers would benefit as the cost of actions would still be recovered via BSUoS. A respondent noted that Imbalance Prices are signals to the market and that if it was affected by capping of actions, there could be unintended consequences, that balancing costs and BSUoS can end up higher than otherwise would have been. Another respondent felt that the consumer benefits of the Proposed and Potential Alternative 1 had not been sufficiently evidenced and that Potential Alternative 2 could lead to potential consumer detriment from the increased likelihood of Demand Control and Rota Disconnections.

Further comments on P443

The majority of respondents had no further comments on P443. One respondent provided their view that any form of price cap can act as a disincentive in the market for investments

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(as it caps the possible return on investment). They also stated that VoLL should be changed to correctly reflect the actual cost of load shedding. NGESO responded that although both the Proposed and Potential Alternative 1 do not restrict the operational tools that are available to them, the solutions do not comply with the retained EU legislation. Their view is that Potential Alternative 2 is likely to see an increase in costs as NGESO may need to take more expensive actions when a cheaper action is available. They note that this solution could lead to the increased likelihood of demand disconnection and the loss of consumer supplies.

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5 Implementation

Recommended Implementation Date

The Workgroup recommends an Implementation Date for P443 of:

- **2 November 2023** as part of the standard November 2023 BSC Release if the Authority's decision is received on or before 31 July 2023; or
- Three months after the Authority's decision, if the Authority's decision is received after 31 July 2023.

This approach would implement P443 at the earliest opportunity and importantly ahead of the next winter period. A three month implementation lead time has currently been included to ensure sufficient time to implement the workaround.

The Proposer still believes that P443 should be implemented as soon as possible, and ideally prior to Winter 2023/24. However, given the likely timescales for an Authority decision, and the difficulty of incorporating additional work into a planned schedule of IT system changes at short notice, it is unlikely that required system changes can be delivered within those timescales. The Workgroup's proposed approach would be to deliver the solution via a manual workaround in the first instance. This would allow a proposed Implementation Date of 2 November 2023 as part of the standard November 2023 BSC Release.

This would implement an interim workaround as soon as possible in time for winter, for BSCCo to manually amend the BSAD file on receipt from NGESO and to notify industry via an Elexon Circular. The enduring solution to automatically amend the BSAD file on receipt and to report occurrences on the Insights Solution would be implemented in summer 2024.

The interim workaround solution would be manual, and **would not be capable of capping prices close to real time**. This means that Imbalance Prices reported on the BMRS would be calculated using the uncapped prices of BSAD actions, with the correct capped data used for calculating prices in Settlement. The use of an Elexon Circular to notify Parties that price capping was required would be on a 'best endeavours' basis, depending on what monitoring Elexon was able to put in place.

Responses to the Assessment Consultation

Do you agree with the Workgroup's recommended Implementation Date (whether or not you agree with P443)?

The respondents were split on whether they agreed with the Workgroup's recommended Implementation Date. Those who agreed did not provide any rationale and those who disagreed did so as they did not approve of the Modification Proposal. One respondent stated that even the interim workaround solution would require some systems development at their organisation.

Given that an enduring solution cannot be put in place until summer 2024, do you agree that it is better to implement an interim workaround solution for winter

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2023/24, even if this means the workaround will not be able to apply the cap until Settlement timescales (but an enduring solution will)?

There were mixed views, those who favoured the interim workaround were keen for a solution to be implemented as soon as possible, to help address the cost of living crisis and protect customers. One respondent stated that as a matter of principle they do not support price caps, but also believe, in their view, that when traders are offering power to the GB market above VoLL, it's not in the interest of GB customers. Respondents who do not agree with the Modification Proposal overall did not favour an interim workaround.

How long (from the point of approval) would you need to implement P443?

Two respondents provided their view. If the solution were to be implemented and the SAA-I014 file (Settlement Report) were to be amended (which it is not), one respondent would require at least a month's notice to ensure that their systems could handle the amended file. NGESO responded that it would be dependent on the solution taken forward, but could be a significant lead time over 12 months, where they are required to make system changes. For other respondents there was either little or no material impact and therefore no lead time.

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6 Workgroup's Discussions

In this section we detail the thinking behind the Workgroup's solution, the options considered and the outcomes.

Workgroup meetings were held on 15 September 2022[23], 22 November 2022[24], 7 December 2022[25], 16 January 2023[26] , 20 January 2023[27] and 20 March 2023[28] .

The Proposer is currently of the view that the Modification should be narrowly focussed, to address only the impact of high Interconnector User trades in the Imbalance price. This makes the Modification more manageable and avoids potential licence changes. The Proposer believes, following Workgroup discussions, that the Potential Alternative Solutions that were considered are more likely to get rejected and so has moved away from their original position to try and stop NGESO making trades with Interconnector Users above VoLL. However, they were keen, along with other Workgroup Members, to keep the original Solution (in the Proposal Form, and now Potential Alternative Solution 2 – prevent Interconnector trades above VoLL) 'on the table' and to consult on this to help determine whether to raise an Alternative Modification.

Whilst the Workgroup hold mixed views on P443, there was a consensus that it would be good to understand from Ofgem whether they think NGESO should be prevented from trading with Interconnector Users above VoLL. By keeping that as a solution option, this would ensure both a narrowly focussed solution and a solution that more robustly addresses the defect were 'on the table' and if taken forward as an Alternative Modification it would be put in front of Ofgem for decision.

The Workgroup considered the following P443 Specific Terms of Reference:

- Should the solution only apply to Interconnectors?
- Assurance and validation – should Elexon validate that NGESO have not executed Interconnector Trades above VoLL?
- Is this consistent with EBGL objectives and other retained EU law
- What is the appropriate value of VoLL that should be used?
- What could be the unintended consequences of the proposed solution?

Should the solution only apply to Interconnectors?

The Proposer raised this Modification to apply to Interconnectors. However, the draft redlining in the Proposal Form had square brackets around "provided using an Interconnector" to generate a discussion on whether the solution should only apply to Interconnectors.

[23] https://www.elexon.co.uk/meeting/p443-workgroup-1/
[24] https://www.elexon.co.uk/meeting/p443-workgroup-2/
[25] https://www.elexon.co.uk/meeting/p443-workgroup-3/
[26] https://www.elexon.co.uk/meeting/p443-workgroup-4/
[27] https://www.elexon.co.uk/meeting/p443-workgroup-5/
[28] https://www.elexon.co.uk/meeting/p443-workgroup-6/

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The Proposer believes it should only apply to Interconnectors because all GB Generators/Traders/Suppliers are licenced and regulated by Ofgem and can be investigated if prices are believed to no longer be cost reflective and/or go beyond scarcity pricing. The Proposer is also keen that customers who offer Demand Side Response (DSR) are free to do so at a price that will reflect their own VoLL. For some industries that may be higher than £6,000/MWh. The paper[29] that was used by Ofgem to help determine the VoLL to be used in the BSC explained (see page number xiv of the paper, which is page 16 of the document) that the vast majority of average Industrial & Commercial VoLLs are around £6,000/MWh or lower. Conversely, not all Interconnector Users are entities registered or licenced in Great Britain and so Ofgem are not able to investigate or take direct action. Concerns could be raised with the Agency for the Cooperation of Energy Regulators (ACER), but this is not seen as a sufficient control, particularly following Brexit.

NGESO will accept Offers from Interconnector Users in order to signal their desire for the Interconnectors to either export less or to switch to importing into the GB market. The Proposer understands that if NGESO cannot buy energy (as a cap has been reached) the Proposer's view is that if Interconnectors do not respond to a Capacity Market Warning, the first emergency action NGESO will take is to shut off the Interconnectors. Therefore the Proposer's view is that the demand to supply third party countries would be impacted before the demands of GB customers go unmet. While GB generally believes in markets, the Proposer believes that there should be a price at which there is not an assumption that the GB customers are willing to go on buying.

This argument was not accepted by all of the Workgroup. Some Workgroup Members held the view that capping prices that enter the cashout calculation is an intervention that dampens price signals, which will disincentives Parties to participate in the BM, as it will not reflect price scarcity. Others thought that the use of VoLL is a signal of price scarcity.

The Proposer commented that ideally the ESO would call DSR before the cap kicked in.

The Proposer's view is that GB Generators are regulated and investigated by Ofgem, as seen in the recent review of high balancing costs and their Call for Input on options to address high balancing costs[30]. This has not been the case for Interconnector entities without GB licences.

A Workgroup Member asked if there was any cap or restrictions on the other side of the Interconnector, to understand the reciprocal arrangements. The Proposer's representative explained that both Ireland and Norway do restrict flow.

A Workgroup Member raised a concern that the justification for the Modification is the current unprecedented situation (France having issues with Nuclear, War in Europe, etc.) and that therefore this may not be a long term solution as prices may not always be near VoLL. Even if that is the case, it is prudent to ensure a cap is in place to protect parties and consumers, but that any solution should be proportionate, given the assumed low occurrence of the issue.

The Proposer's view is that this is a major issue for Generators, and questioned at what point NGESO would use the Capacity Market (CM), which customers are currently paying for. NGESO could use the CM and issue a CM warning, as Interconnectors are obligated to provide power in the CM.

[29] https://www.ofgem.gov.uk/sites/default/files/docs/2013/07/london-economics-value-of-lost-load-for-electricity-in-gb_0.pdf
[30] https://www.ofgem.gov.uk/publications/call-input-options-address-high-balancing-costs

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Some Workgroup Members felt that only applying the solution to Interconnectors would be discriminatory, anti-competitive and anti-market. They challenged the Proposer's supposition that Interconnector Users were "taking advantage" and suggested that if the market is working as expected it will set efficient price levels, and that applying a cap on Interconnector trades shouldn't be considered.

Consequently, the Workgroup believe a potential Alternative solution that may better address the issue, would be to apply a cap to all actions in the cashout calculation, as this would treat all actions equally. The Workgroup are therefore considering a Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation – see Section 3 for details).

Responses to the Assessment Consultation

Should the solution only apply to Interconnector Users?

The majority of consultation respondents did not believe that the solution should only apply to Interconnector Users. Some respondents felt there was no justification to discriminatorily focus on one type of action if the issue that the Modification is trying to address, is to protect consumers. A respondent felt that applying to all actions (not just Interconnector Users) in the Imbalance Price calculation was better than the Proposed. A respondent felt that it should apply to all, however, would be interested to understand why on 20 July 2022 (the day highlighted by the Proposer) the ESO took Interconnector trades rather than local assets. A respondent who felt that the solution should only apply to Interconnector Users noted that Ofgem had not launched a review of the Interconnector arrangements and Interconnector trades at £9,000/MWh, however, they had investigated GB parties for a breach of the Transmission Constraint Licence Condition (TCLC) for prices circa £4,000/MWh.

How do NGESO instruct Interconnectors?

The Proposer's representative was keen to understand where it is written down how NGESO instruct Interconnectors, as for Generators it is covered in the Grid Code. NGESO explained that it is contained within Interconnector bilateral agreements. The Proposer's representative was concerned that Interconnector agreements were not transparent, particularly in the scenario where NGESO could contract with another subsidiary company of National Grid.

NGESO further explained where it is written (in the Grid Code (GC)[31] or bilateral agreements) how they instruct Interconnectors. This can be found in Appendix 3.

Operating protocols include services which are market based such as SO-SO trades and Net Transfer Capacity (NTC) / Interconnector Transfer Limits (ITLs). Interconnectors are still bound by the Grid Code (as is the same for all parties). The operational agreements[32] for the Interconnector are written based on the Grid Code but tailored to the individual

[31] https://www.nationalgrideso.com/industry-information/codes/grid-code-gc/grid-code-documents

[32] Operational agreements for the Interconnector are known as the Interconnector operating protocols. These are bilateral agreements with the Interconnector owner and not in the Grid Code

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Interconnector technical capabilities and the respective connected TSO at the end of the Interconnector.

NGESO stated their position that they "will continue to preserve demand by taking every available commercial and market action (including accepting costs above the administered VoLL) as well as using Emergency Actions where necessary". Disconnection of demand will be a last resort emergency measure taken only when all other options are exhausted.

What type of Interconnector trades should be in scope of the Proposed Solution?

In developing the solution, the Workgroup have considered which of NGESO's actions would be in scope of the solution. The Workgroup considered whether the following types of trades should be in scope of P443:

- Trades with Interconnector Users
- SO to SO trades; and
- Emergency Actions taken by NGESO.

The Proposer and the Workgroup's view is that the Proposed Solution and the Alternative solution options only apply when NGESO is buying, not selling power, as this is in keeping with the intent of P443. If Sell actions were included, it could have the opposite effect and reduce opportunities to sell energy to neighbouring countries, for the benefit of GB parties.

SO to SO Trades

Under all of the solutions being considered by the Workgroup, the Workgroup agreed that these trades should be in scope of P443 as they are key trades made by NGESO and fit within the remit of P443.

Trades with Interconnector Users

Under all of the solutions being considered by the Workgroup, the Workgroup agreed that these trades should be in scope of P443 as they are key trades made by NGESO and fit within the remit of P443.

Emergency Actions

There are two types of Emergency Actions, which NGESO explained to the Workgroup in more detail:

Emergency Assistance (EA):

- A commercial service which is mandatory (BC2.9.6) for NGESO & the IC Owner but not for the connecting SO, and can be used to increase or decrease flows of energy on the Interconnector with prior agreement from the connecting SO

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- This can only be used in order to prevent the SO requiring assistance from entering an Emergency situation and is therefore not used as a normal operational action considered in cost order
- The instructing SO will change to Alert/Emergency state in the EAS as soon as reasonably practicable, this may be after the request is made

Emergency Instruction (EI):

- A non-commercial, mandatory service, enabling the instructing SO to immediately reduce the import/export flow. It can only be used to reduce the flow to 0MW and cannot change to flow direction
- This can only be used in an Emergency situation and is therefore not used as a normal operational action considered in cost order
- This is set out in Grid Code BC2
- The instructing SO will change to Emergency state in the EAS as soon as reasonably practicable, this may be after the instruction is given

It's NGESO's view that use of EA and EI do not have an impact on P443 as they are emergency actions only and can only be used for unforeseen issues, they cannot be a planned action ahead of real time. NGESO's view is that P443 only concerns commercial order of actions taken in the normal markets to manage the system. NGESO therefore believe that EA and EI should not be in scope of P443.

The Workgroup considered whether EA/EI should be in in scope for each of the solution options under consideration. Important factors in this consideration was:

- Whether EA/EI actions could go above VoLL – based on information provided by NGESO (see below), both EA and EI could go above VoLL and were therefore seen as important actions to consider for the P443 scope.
- Whether they could impact the system price – EA/EI can, in certain scenarios impact the system price and were therefore seen as important actions to consider for the P443 scope.

Emergency Action impacts on cashout

NGESO confirmed that EA/EI actions are system flagged. This means that there is still a chance that they could set the system price, if they become Second Stage Unflagged due to a high-priced non-flagged action which is then removed from the stack by NIV tagging.

NGESO were strongly of the view that EA/EI should be out of scope of P443, as they are a special case that are not used for planning ahead of time. The Workgroup discussed the P443 objective to protect consumers from excessive prices. To that extend putting EA/EI into scope would better meet this objective, given they can impact cashout prices. This does not affect how NGESO can use EA/EI, but may limit the extent to which use of EA/EI priced at higher than VoLL can raise cashout prices above VoLL.

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Conclusion

The Workgroup concluded that NGESO should not be prevented from taking these special actions, but that for the Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation) and Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) they should be capped in the cashout calculations, as this would better meet the objective of P443 to protect parties from extreme prices. This means:

- Proposed Solution: Any EA/EI actions taken over Interconnectors should be capped at VoLL in cashout;
- Potential Alterative Solution 1: Any EA/EI actions taken should be capped at VoLL in cashout;
- Potential Alternative Solution 2: Any EA/EI actions taken over Interconnectors will go into cashout at their actual (uncapped) price.

Responses to the Assessment Consultation

Should the solution include Emergency Actions within scope of any cap?

There were mixed views as to whether the solution should include Emergency Actions. A respondent raised concerns over the pricing of these actions and that there needed to be transparency to the market to allay concerns over two or more monopolies (System Operators) making arrangements and therefore it is unreasonable to expose market participants to the costs of these actions. Other respondents felt that as by their nature these actions are taken in an emergency and not a BAU basis, they are only taken after other actions have been exhausted. A respondent raised a point as to whether given recent market volatility the cost of maintaining security of supply should be a more prominent decision making parameter for NGESO, but that this should be a wider industry debate, rather than considered in a BSC Workgroup.

Who should amend the BSAD file to cap the price to VoLL?

The Workgroup considered two options for amending the BSAD file to cap the price of Interconnector trades to VoLL for the Proposed Solution, or for all actions for Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation), either:

- 1a - NGESO amend the trade price to VoLL before sending to BSCCo; or
- 1b - BSCCo amend the trade to VoLL on receipt from NGESO.

Under Potential Alternative Solution 2 (prevent Interconnector trades above VoLL), no BSAD amendment is required, as NGESO would not be permitted to make the trades with Interconnector Users and so there would be no action to include in the BSAD file.

The Workgroup expressed a preference for Elexon making the amendment to the BSAD file, as this would more easily facilitate the publishing of the capped and uncapped prices. If NGESO submitted a BSAD file with capped prices it would have to separately publish the uncapped price. This would mean interested parties would have to look in two places (on a NGESO and an Elexon reporting platform) to gather both the capped and uncapped prices.

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The Workgroup were also comfortable with the initial Impact Assessment from Elexon for doing this.

Assurance and validation – should Elexon validate that NGESO have not executed Interconnector Trades above VoLL?

The Workgroup considered whether any validation should be conducted on the BSAD file by Elexon, where NGESO amend the BSAD file. This would involve checking that the BSAD file does not include Interconnector actions priced higher than VoLL.

Elexon's view was that BSCCo would not seek to provide any additional validation or checking for the BSAD files as a result of P443. BSCCo does not currently do this for existing trades and do not believe that this Modification, if approved, would significantly affect any of our existing BSC Settlement Risks[33]. The approach to Assurance that Elexon undertakes is to assess situations based on the impact on Settlement Risks, and then deploy monitoring or mitigation actions in line with this assessment. Therefore, this approach is no different from any other existing steps we take for any other Risk areas. Following this update, the Workgroup agreed to this approach.

Is this consistent with EBGL objectives and other retained EU law?

A Workgroup Member expressed their view that that P443, unless targeting all Trading Parties (not just Interconnectors), could be perceived as anti-competitive. There were also concerns as to whether the solution would be consistent with The UK/EU Trade and Cooperation Agreement (TCA)[34] and the TCA's intent to not treat cross-border any differently than GB, so P443 singling out Interconnectors could be seen as discriminatory. The Proposer's representative's view was that discrimination itself is not illegal, but undue discrimination is. The Proposer was of the view that P443 was applying discrimination against those that fall outside the jurisdiction of the GB regulator Ofgem. This approach was about protecting GB parties and consumers.

Elexon provided a view to the Workgroup for discussion that the following EBGL Objectives may be negatively impacted:

- Fostering effective competition, non-discrimination and transparency in balancing markets;
- integrating balancing markets and promoting the possibilities for exchanges of balancing services while contributing to operational security;
- contributing to the efficient long term operation and development of the electricity transmission system and electricity sector in the Union while facilitating the efficient and consistent functioning of day ahead, intraday and balancing markets; and
- ensuring that the procurement of balancing services is fair, objective, transparent and market based, avoids undue barriers to entry for new entrants, fosters the

[33] https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-processes/settlement-risks-risk-visualisation-tool/
[34] https://www.gov.uk/government/publications/ukeu-and-eaec-trade-and-cooperation-agreement-ts-no82021

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liquidity of balancing markets while preventing undue distortions within the internal market in electricity.

And:

- apply the principles of proportionality and non-discrimination;
- ensure that TSOs make use of market based mechanisms, as far as possible, in order to ensure network security and stability; and
- respect the responsibility assigned to the relevant TSO in order to ensure system security, including as required by national legislation.

The Workgroup noted that there were no impacts on transparency as all of the solutions under consideration will require any actions or adjusted actions to be published.

Proposed Solution

There were mixed views on the impacts of the Proposed Solution on the EBGL Objectives – some Workgroup Members believed that the positives outweighed any negatives, others abstained as they were not sure and others believed the negatives outweighed the positives. Overall, the majority of the Workgroup believed the Proposed Solution was consistent with the EBGL. Views that thought the Proposed Solution would be consistent with the EBGL objectives were:

- If the prices from Interconnectors are not cost reflective, it is better for competition, as it stops Interconnector trades at any price entering cashout and therefore putting Parties into higher Imbalance
- It protects GB Parties from unlicenced entities
- It lowers costs for Parties, which should, through competitive forces be passed on to consumers, which supports the optimisation aims
- Any constraints or adjustments made by P443 will still use market mechanisms
- Could improve liquidity, by limiting Parities exposure to cashout prices set by Interconnector prices beyond VoLL

Views that thought the Proposed Solution would be inconsistent were:

- It is discriminatory against non-GB parties
- There is a lack of evidence that non-GB entities are acting inappropriately or are submitting non-cost reflective prices
- P443 could deter parties from trading with NGESO over the Interconnector, for the two reasons above

The Workgroup noted that the situation under which P443 would be triggered had only occurred once to date and was likely to remain a rare occurrence. However, as the analysis shows (see below) this could still have a significant impact on participants and the market.

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Potential Alternative Solution 1 (cap all actions to VoLL in cashout)

The majority of the Workgroup thought that Potential Alternative Solution was consistent with the EBGL Objectives for the reasons given for the Proposed Solution. Workgroup Members with this majority view added that this Potential Alternative Solution would better protect consumers (as it would apply to all actions) and could be seen as fairer.

Potential Alternative Solution 2 (prevent Interconnector trades above VoLL)

The majority of the Workgroup thought that Potential Alternative Solution 2 would not be consistent with the EBGL objectives as they believed it was not consistent with the principles of cost reflectivity and was discriminatory against non-GB parties. The Workgroup discussed whether demand disconnection or higher prices were worse, but did not reach a conclusion with the information available. The Workgroup noted that in the absence of any information on this being available currently, they would need to conduct their own research which would likely be costly and take more than six months (Elexon added a procurement activity would also be needed, which would take at least three months).

Is the BSC the best place to address the defect?

Elexon provided a view on the legal considerations and an independent view as to where the defect can be best addressed.

Within the regulatory framework for electricity, the scope and purpose of the BSC is set out in the ESO licence – it is limited to balancing and settlement arrangements. Obligations and constraints on the ESO in respect of balancing actions and balancing services it can or must undertake sit within the Transmission Licence, and within relevant retained EU regulations. There is a significant legal risk that Ofgem would consider Potential Alternative Solution 2, to prevent ESO from trading with Interconnectors above VoLL, is not really within scope of the BSC. Consequently, they would be likely to reject any such proposal if it were included within the BSC (this makes no judgement on whether the proposal itself should be approved or rejected, only on where best the proposal sits).

If P443 proposes a market intervention involving setting a price cap for certain trades and restricting ESO actions, the BSC is likely not the most appropriate vehicle, the ESO licence is likely a more appropriate place.

The Electricity Transmission Licence Standard Conditions contain primary obligations for the ESO to procure balancing services economically and efficiently, and not to discriminate as between any persons or classes of persons in its procurement or use of balancing services (taking into account pricing and technical differences). NGESO were of the view that Potential Alternative Solution 2 (prevent NGESO trading above VoLL) would be a breach of its licence.

If a P443 solution seeks to cut across those primary ESO licence obligations, again, the BSC is not necessarily the right place for that, given it is subsidiary to the Transmission licence. The licence would potentially be a better vehicle to reframe those obligations.

In response to hearing this legal analysis the Proposer amended their preferred Proposed Solution from stopping NGEO trading with Interconnector Users above VoLL to applying a cap to Interconnector trades for the purposes of the cashout calculation. In particular, they

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highlighted that it was better to get something approved and were concerned that the risk of requiring a change to NGESO's licence and the risk that it would be rejected if included in the BSC were enough to justify moving to a more focussed and narrow solution, which would still help protect GB parties from extreme Imbalance prices caused by Interconnector trades.

They added that they would prefer the original solution (now Potential Alternative 2 - prevent Interconnector trades above VoLL) to be presented to Ofgem to understand if it was in principle open to preventing certain trades. A Workgroup Member agreed and suggested they consult on the original option and use the responses to the consultation to inform a Workgroup decision which solution(s) to take forward and recommend to the Panel.

P443 impacts on the TCA

The UK/EU Trade and Cooperation Agreement (TCA) contains obligations in respect of wholesale electricity markets to:

- ensure wholesale prices reflect actual supply and demand, and
- ensure wholesale market rules: encourage free price formation, do not set technical limits on pricing that restrict trade, and enable the efficient dispatch of electricity generation assets, energy storage and demand response and the efficient use of the electricity system.

Respondents to the Assessment Procedure Consultation stated that the TCA encourages free price formation that does not set technical limits on pricing and that it was unclear that the Proposed Solution satisfies this requirement as excluding trades from the Imbalance Price calculation over a certain value will therefore impact the Imbalance price used in Settlement calculations.

What is the appropriate value of VoLL that should be used?

The Workgroup discussed whether VoLL was the appropriate parameter to use as a cap. The Proposer commented that the definition of VoLL seemed to fit well with what the intent of the cap was – the price at which consumers would prefer to stop paying to keep the lights on. Whilst not all Workgroup Members agreed that VoLL was the right parameter, no alternative was put forward. Most of the disagreement focussed on what value VoLL should be.

The Workgroup have considered what is the appropriate value of VoLL that should be used in the solution and have considered three options:

- £6,000/MWh in the BSC[35]
- £17,000/MWh in the Capacity Market[36]

[35] https://bscdocs.elexon.co.uk/bsc/bsc-section-t-settlement-and-trading-charges#section-t-1-1.12

[36] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005672/capacity-market-cfe.pdf

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- €8,000/MWh which is the average value in Europe[37]

Workgroup Members were concerned that VoLL in the BSC was not intended to be a price cap and raised the question as to whether this Modification should be accompanied by a review of VoLL.

P305 'Electricity Balancing Significant Code Review Developments' introduced VoLL as a concept in the BSC, it also introduced a VoLL review process to allow the Panel to initiate a review of the value at any time or upon the request of the Authority. This is explained in Section 2 of this document under Background. Elexon's view was that amending the value of VoLL [in the BSC] should be done as part of the established process. For the purposes of P443, amending the value of VoLL was a second order effect and outside the scope of P443. The P443 Workgroup should agree whether the purpose of VoLL in the BSC should be used to set a cap. Elexon agreed to provide the P443 Workgroup's view that the value of VoLL should be reviewed to the relevant team.

The Workgroup recognise that the current value of VoLL was set a number of years ago and questioned if it was still relevant. P305 introduced VoLL at a value of £3,000/MWh rising to £6,000/MWh with effect from 1 November 2018.

The Workgroup appreciated that different types of customers (domestic and commercial) would have different views on what their VoLL would be, dependent on the day of the week and also the length of time that they would be willing to be disconnected.

A Workgroup Member noted that in July 2021, BEIS had stated that the VoLL used in the CM (currently £17,000/MWh) was to be considered for review as part of the CM review[38] .

NGESO confirmed that the level of VoLL in other European countries was on average 8,000 Euros, according to a research paper[39] .

Elexon explained that VoLL (in the BSC) is used for two things; increasing the price of Short Term Operating Reserve (STOR) actions and the price where Demand Control goes into the price stack. The Proposer believed that £6k felt about right and was conformable that the purpose of a VoLL could extend to using it as a cap.

Responses to the Assessment Consultation

Do you agree with the principle of using VoLL as a parameter to set the cap?

There were mixed views on the principle of using VoLL as a cap and also whether the current value of VoLL is at the right level and should be reviewed. Respondents felt that VoLL was never intended to be a cap and also that VoLL as a value would differ for different types of customers on their value of disconnection. A respondent noted that the study to set the current value of VoLL in the BSC was conducted over 10 years ago and may not be reflective or representative of the current market. Another respondent

[37] https://www.researchgate.net/publication/337646625_The_Value_of_Lost_Load_VoLL_in_European_Electricity_Markets_Uses_Methodologies_Future_Directions

[38] https://www.gov.uk/government/consultations/capacity-market-2021-call-for-evidence-on-early-action-to-align-with-net-zero

[39] https://www.researchgate.net/publication/337646625_The_Value_of_Lost_Load_VoLL_in_European_Electricity_Markets_Uses_Methodologies_Future_Directions

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welcomed a review of VoLL, but felt it was a wider policy discussion outside the confines of a BSC Workgroup.

What is NGESOs view on taking actions above VoLL?

NGESO published a statement on Balancing Actions above the Value of Lost Load (VoLL)[40] on their website and explained their position to the Workgroup as to the current state of play.

They explained that due to the ongoing situation in Europe and tighter operating conditions in GB, they are having to take more expensive actions to manage the System. Recently they had to accept actions that are larger than the cost of VoLL as stipulated within the BSC leading to queries from stakeholders as to whether Demand Control should be utilised instead of taking actions at these prices.

They believe that it is correct for NGESO to preserve demand by taking every available commercial and market action (including accepting costs above the administered VoLL) as well as using Emergency Actions where necessary. Disconnection of demand will be a last resort and that emergency measures are taken only when all other options are exhausted.

Through their Market Monitoring obligations, the ESO will continue to assess the actions of market participants and will highlight any potentially adverse market behaviour to the Authority.

Given the length of time since VoLL was last considered the ESO supports a considered review of what the administrative value of VoLL should be and what the value of scarcity to consumers is. This may be best picked up and considered in the context of wider market design and the consideration of the benefits of any reform.

What could be the unintended consequences of the Proposed Solution?

All of the unintended consequences identified by the Workgroup to date relate to Potential Alternative Solution 2 (prevent Interconnector trades above VoLL).

NGESO highlighted that the Proposed Solution could lead to impacts to their relationships with both Interconnectors owners/operators and Interconnector Users.

The Proposer's representative's view was that an unintended consequence of not implementing Potential Alternative Solution 2 (prevent Interconnector trades above VoLL) would be that there would be a signal to Interconnectors that they can trade at any price.

The Workgroup raised concerns that an unintended consequence of capping trades could be impacts on investment and that if prices (for Interconnectors) are capped this would make the investment case less attractive. However, Interconnector investment is not affected by extreme price differentials between markets because all proposed GB Interconnectors are supported under the Cap and Floor arrangements[41].

NGESO's view is that by removing a particular action by restricting ESO's ability to trade with Interconnector Users, it would likely lead to Demand Control earlier. They believe that

[40] https://www.nationalgrideso.com/document/268121/download
[41] https://www.ofgem.gov.uk/publications/cap-and-floor-regime-handbook

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they should be able to make trades at any price, if available, to keep the lights on. The Proposer commented that there was a moral obligation to draw a line at a certain price point. The Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation) and Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) are unlikely to cause any increased use of Demand Control, as NGESO would still be able to trade above VoLL, but the value of the trade being used in the Imbalance price calculation would be capped at VoLL.

Responses to the Assessment Consultation

Do you believe there are any unintended consequences of the Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation), Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) and Potential Alternative Solution 2 (prevent Interconnector trades above VoLL?

A few respondents provided their view that Potential Alternative Solution 2 would likely lead to an increased likelihood of Demand Control and Rota Disconnections. A respondent stated that this solution would represent a significant policy shift and so therefore requires wider industry discussion and debate. For Potential Alternative Solution 1, where all actions are capped to VoLL in the Imbalance Price calculation, this would mean that effectively the wholesale market is capped at VoLL. The respondent who replied felt that NGESO has the ability to look for more economic solutions rather than taking actions at any price.

Impact of P443 on cash flows (BSUoS and RCRC)

Elexon set out some analysis on the impact of P443 on cashflows Balancing Services Use of System (BSUoS), Energy Imbalance Charges and Residual Cashflow Reallocation Cashflow (RCRC).

Elexon presented a simple spreadsheet model of the potential cashflow implications of reducing the Imbalance Price to VoLL (relevant to all options) and reducing the money recovered through BSUoS (relevant to Potential Alternative Solution 2 - prevent Interconnector trades above VoLL). This model was based on a scenario outlined by the Proposer, in which NGESO was required to reverse the flow on Interconnectors for energy balancing reasons (e.g. due to a shortage of power in tight winter conditions). Elexon noted that given the large number of variables and potential scenarios, doing a more comprehensive analysis of potential scenarios would be extremely complex and would not necessarily provide a better picture of what to expect. In general, the impact of P443 on cash flows will depend on:

- Whether reducing the price of expensive trades in the Imbalance Price calculation reduces the calculated Imbalance Price (which in some scenarios it may not, due to the complexities of the Imbalance Price calculation, particularly the interaction between System Flagging and Net Imbalance Volume (NIV Tagging); and
- In the case of Potential Alternative Solution 2 (prevent Interconnector trades above VoLL), what actions NGESO took in place of the Interconnector trades it was prevented from taking.

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The modelling done considers a reasonable likely case (based on the example in the Proposal Form), but the model can be amended and is available for participants to use. Elexon also noted that the scenarios have never occurred before and hopefully remain an unlikely event.

BSUoS

BSUoS charges are levied by NGESO to recover the costs of balancing the system in each Settlement Period. From 1 April 2023 (with the implementation of CUSC Modification Proposal CMP308) BSUoS will be recovered from Suppliers responsible for Final Demand. Prior to that BSUoS will be recovered from both demand and generation.

The Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation) and Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) have no impact on BSUoS (as NGESO actions are unaffected). For Potential Alternative Solution 2 (prevent Interconnector trades above VoLL) the costs recovered through BSUoS could increase or decrease.

If Interconnector trades can be replaced with other commercial ('Everyday') actions, they will be more expensive, and BSUoS costs will increase.

If Interconnector trades are replaced with last resort ('Enhanced' or 'Emergency') actions, these are likely to be cheaper (i.e. priced at VoLL or less):

- Emergency Assistance (from other SOs)
- Demand Flexibility Product (available for winter 2022-23, may not be available in future)
- Winter Contingency units (available for winter 2022-23, may not be available in future)
- Emergency Instructions to other SOs
- OC6 Demand Control (no cost recovered through BSUoS)
- ESEC Rota Disconnections (no cost recovered through BSUoS)

The Workgroup were keen to understand what modelling or studies had been done on economic impact of demand disconnection (OC6 and Rota Disconnection). At the time of writing the Workgroup have not been made aware of any, but note this would better help them understand the impacts of Potential Alternative Solution 2 (cap all actions to VoLL in the Imbalance price calculation) in particular.

Imbalance price

Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation) and Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation)

For purposes of calculating the Imbalance Price, P443 Proposed reduces the price of certain Interconnector trades to BSC defined VoLL (currently £6,000/MWh).

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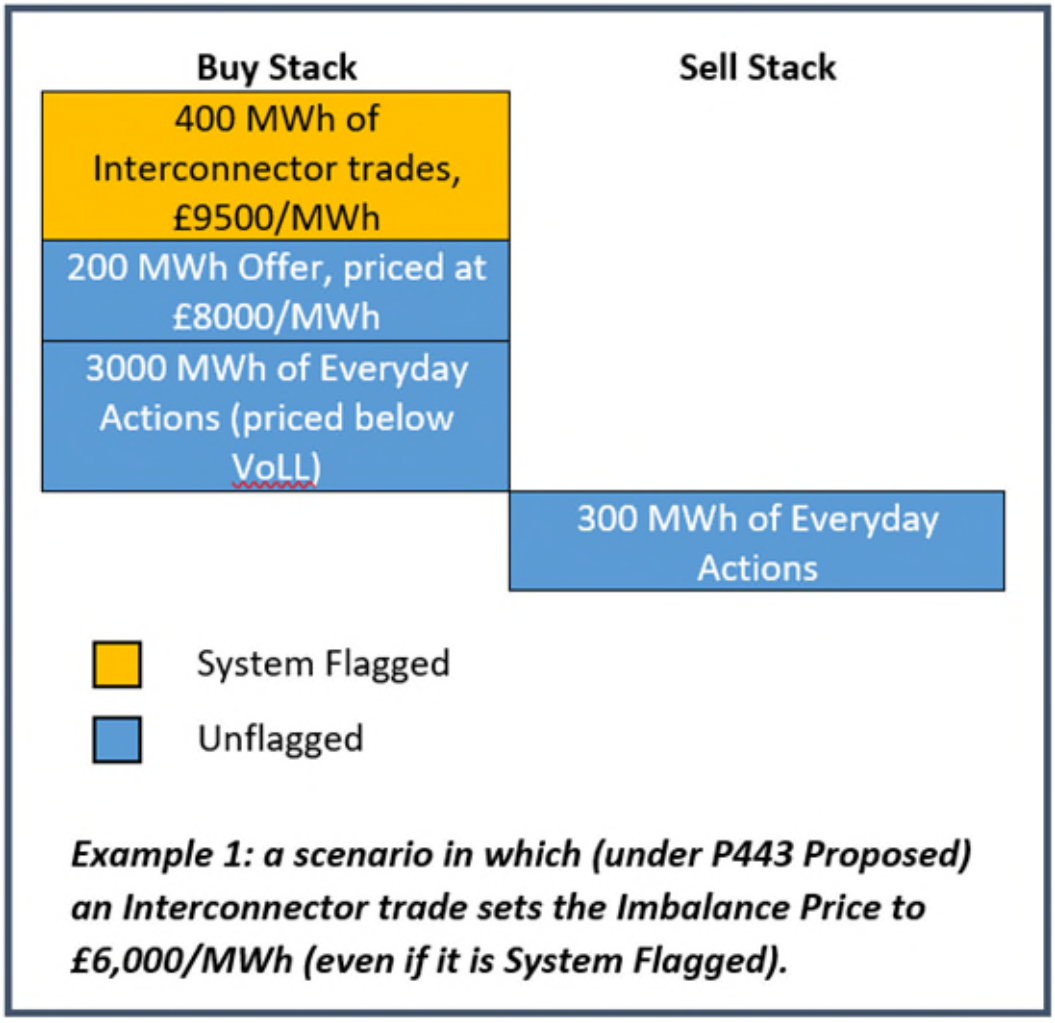
The effect varies depending on whether those action were System Flagged (by the SO), and how they interact with Net Imbalance Volume (NIV) tagging:

- In the scenario suggested by the Proposer (of a large volume of trades taken for Energy purposes), the Proposed Solution (or Potential Alternative Solution 1) are likely to have the effect of reducing the Imbalance Price from the price of the trades to VoLL. This is a benefit to Parties with short positions (as it reduces the extreme Imbalance Prices they would otherwise be exposed to), and a corresponding disbenefit to payers of RCRC (who would receive the Imbalance Charges paid by Parties with short positions).
- In a scenario like 20 July 2022 (with a relatively small volume of trades taken for System reasons), the interconnector trades are unlikely to set the Imbalance Price, and therefore P443 is unlikely to impact cash flows. However, this does depend on what actions are in the Sell Stack.
- Example 1 shows how a System Flagged action can still set the price. In this type of scenario the Proposed Solution (or Potential Alternative Solution 1) could still reduce the Imbalance Price, even in cases where Interconnector trades are taken for System balancing reasons:



Example 1: a scenario in which (under P443 Proposed) an Interconnector trade sets the Imbalance Price to £6,000/MWh (even if it is System Flagged).

Currently, the Interconnector trade would 'protect' the £8,000/MWh Offer from NIV Tagging, allowing it to set the price.

Under the Proposed Solution, the £8,000/MWh Offer would move to the top of the stack. The Interconnector trade would become Second Stage Unflagged (because of the higher-

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priced Unflagged Offer). The £8,000/MWh Offer would be NIV Tagged, and the Interconnector trade would set the Imbalance Price to £6,000/MWh.

In this particular example, the Proposed Solution gives the same £6,000/MWh Imbalance Price whether the Interconnector trade is System Flagged or not.

P443 Alternative Solution 2 (prevent Interconnector trades above VoLL)

Under P443 Alternative Solution 2, Interconnector trades above VoLL would have to be replaced by another action (as the Interconnector action above VoLL would not be made and would therefore not feed into BSUoS or cashout), such as:

- An even higher priced Offer (or other 'Everyday Action')
- Emergency Assistance (from other SOs) typically priced at VoLL or below
- Demand Flexibility Product (available for winter 2022-23, may not be available in future)
- Winter Contingency units priced at £0/MWh in the Imbalance price calculation (available for winter 2022-23, may not be available in future)
- Emergency Instructions to other SOs typically priced at VoLL or below
- OC6 Demand Control priced at VoLL for the Imbalance price calculation purposes
- ESEC Rota Disconnections not included in the Imbalance price calculation at all?!

The potential effect on Imbalance Price is complex, depending on what type(s) of action (from the above list) replace the Interconnector trade, and the interaction with NIV tagging.

But, as a broad generalization, replacing an Unflagged Interconnector trade (priced at £X/MWh > VoLL) with one of the above is most likely to reduce the Imbalance Price from £X/MWh to VoLL or below.

The Workgroup noted that they have seen RCRC passed through in Power Purchase Agreements (PPA). They noted that the Proposed Solution is protecting Parties who are short from higher prices, but disbenefits Parties who are long, and Parties who receive RCRC. Although the benefit favoured Parties who are short, in doing so it brought benefits for all Parties by protecting them from the risk that high prices contribute to insolvency risks and risk premiums being built into BOAs. A Workgroup Member queried whether this could encourage gaming. Elexon commented that this would be unlikely as the Party would still lose money by being short in this scenario.

The Workgroup noted that RCRC is currently paid (or received) by both Generators and Suppliers. From 1 April 2023 there will therefore be a mismatch between the Parties paying BSUoS (i.e. Final Demand) and those paying or receiving RCRC. There may be arguments for aligning the two (by bringing the rules for RCRC in line with those for BSUoS), but this would be outside the scope of P443.

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Workgroup discussions on the Assessment Procedure Consultation responses

The Workgroup considered the responses to the Assessment Procedure Consultation at its meeting on 20 March 2023.

The P443 Assessment Procedure Consultation was issued on Thursday 9 February 2023 for 15 Working Days, with responses invited by 5pm on Wednesday 1 March 2023.

In total 8 responses were received from the following respondents:

Respondent	Role(s) Represented
Northpool b.v.	Interconnector User, Non Physical Trader
Triton Power	Generator
Uniper UK Ltd	Generator, Interconnector User, Non Physical Trader, ECVNA, MVRNA
EPEX SPOT SE	ECVNA
ElecLink Limited	Interconnector Administrator, Interconnector Error Administrator
National Grid Ventures	Interconnector Administrator, Interconnector Error Administrator
RWE Supply & Trading GmbH	Generator
Electricity System Operator (ESO)	NETSO

Are Ofgem looking into the actions of Interconnector Users?

The Proposer's representative stated that this Modification had been raised as the Proposer couldn't see any other way to try and influence NGESO's actions and the transparency of their trading with Interconnector Users.

In response to a direct question from the Proposer's Representative, the Ofgem representative stated that it is something they are looking into and they will come back when they have something to share.

The Workgroup considered whether there could be a time limited solution pending the outcome of the Ofgem review but decided not to pursue that potential course of action, given the scope and timescales of the Ofgem review was not clear.

Are there any Alternative Modifications?

The Workgroup consulted on two Potential Alternative Solutions in the Assessment Procedure Consultation to help them determine whether to formally raise an Alternative Modification, Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) and Potential Alternative 2 (prevent Interconnector trades above VoLL).

The Workgroup decided not to formally raise an Alternative Modification.

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Reporting of capped and uncapped trade values

Would you want to see both the capped and uncapped trade value in the SAA-I014 (Settlement Report) file, taking into consideration the additional costs and impacts this will have?

The majority of respondents to the Assessment Consultation did want to see both the capped and uncapped trade value in the Settlement Report file and either provided no further rationale for this or felt it was important for transparency. The respondent who said no felt it was better to only have the uncapped value in the file, as it would be clear to industry that any prices above VoLL would be capped to VoLL if the trade met the criteria of the P443 implemented solution.

The Workgroup discussed whether they would want to see both the capped and uncapped trade value in the SAA-I014 (Settlement Report) file as it was not part of the current solution. The Workgroup were keen to have visibility of the capped and uncapped trade value and were comfortable with the proposed solution to report this on BMRS/Insights, as this will reduce costs and impacts on market participants whilst ensuring transparency.

Elexon commented that respondents may not have realised that the capped and uncapped prices will be published on BMRS/Insights in any case. This question could have made it clearer that publishing the prices in the SAA-I014 was in addition to BMRS/Insights.

Amending the Settlement Administration Agent (SAA) system to receive both capped and uncapped prices and report them both on the SAA-I014 is estimated to have an implementation cost of c. £130k (in addition to the c. £150k cost of reporting capped and uncapped prices on the Insights platform, described in Section 4 - Impacts & Costs).

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7 Workgroup's Conclusions

The Proposer's representative and the Workgroup provided their final views on the Proposed Solution at its final meeting on 20 March 2023. Initial Workgroup views, including on Potential Alternative Solutions 1 and 2, can be found at the end of this section.

The Workgroup views remained broadly the same between their initial and final views.

Overall, the Proposer believes P443 is better than the current baseline, whereas the majority of the Workgroup believe it is worse than the current baseline. The P443 Workgroup therefore recommend P443 is rejected.

Proposed Solution

Does the P443 Proposed Solution better facilitate the Applicable BSC Objectives?		
Obj	Proposer's Views	Other Workgroup Members' Views[42]
(a)	• Neutral – no impact	• Neutral
(b)	• Neutral – no impact	• Neutral
(c)	• **Positive**	• **Neutral (majority)** • Negative (minority) • Positive (minority)
(d)	• **Positive**	• **Neutral (majority)** • Positive (minority)
(e)	• Neutral	• **Neutral (majority)** • Negative (minority)
(f)	• Neutral – no impact	• Neutral – no impact
(g)	• Neutral – no impact	• Neutral – no impact
	Overall	**Majority** not better than baseline Minority better than baseline

View against the Applicable BSC Objectives

The majority of the Workgroup do not think that the Proposed Solution is better than the current baseline, as it discriminates against one particular type of market participant and that costs incurred in the market should be used to set the Imbalance price.

Several members expressed their support for what the Proposer was trying to achieve (protecting and minimising the impact on consumers from excessive prices) but they did not believe a price cap was the right solution, nor could they identify any better alternatives.

The Workgroup's view were largely unchanged from the initial views provided however, four Voting Members downgraded their views (from Neutral to Negative, or Positive to

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

What are the Applicable BSC Objectives?

(a) The efficient discharge by the NETSO 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

(g) Compliance with the Transmission Losses Principle

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Neutral) having listened to views responses provided in the Assessment Procedure Consultation.

Applicable BSC Objective (c)

The majority of the Workgroup (4/9) believed P443 was neutral against Objective (c). Some Workgroup Members believed there were no impacts on competition from P443, as the costs for the trades would still ultimately end up on consumer's bills as the actions could still be taken by NGESO. Others believed that actual costs should be used to set prices, but could see that there was an asymmetric situation in that licenced participants are under an informal price cap already that is not applied across borders. Therefore, they could see pros and cons against competition, which cancel each other out, and hence held a neutral view for this Objective overall. One Voting Member changed their final view from Positive (initial view) to Neutral as they noted that there are other unlicenced entities and therefore it was not fair to only apply the solution to Interconnector Users.

A minority of the Workgroup (3/9) believed that P443 would be detrimental against Objective (c). Two Voting Members changed their final view from Neutral (initial view) to Negative as they were uncomfortable with the capping of prices as it's detrimental to setting cost reflective prices, which in turn is detrimental to efficient markets. Capping suppresses efficient price signals and moves away from marginal pricing, which is detrimental against effective competition. Another Voting Member changed their final view from Positive (initial view) to Negative as although they have sympathy with the premise of the Modification Proposal, they don't believe it helps competition and was swayed by the concern expressed on sending appropriate price signals.

A minority of the Workgroup (two members, including Proposer) believed that P443 would better facilitate competition. Arguments to support this were that the cap would limit the impact on cashout, which would protect Trading Parties from system prices caused by entities that Ofgem may not be able to investigate or take enforcement action against. Further, as it is not possible for Ofgem to investigate whether high prices from non-GB entities are fair then a cap would facilitate competition by protecting GB participants. It was also argued that P443 would improve liquidity in the market, as it would cap excessive prices (for which they had no control over) that could otherwise put parties off submitting BOAs. It would reduce price shocks to participants. A Workgroup Member commented that you should only be exposed to prices that you can do something about, which is not usually the case for trades taken by NGESO over Interconnectors.

Applicable BSC Objective (d)

The majority (5/9) of the Workgroup believed P443 was neutral agonist Objective (d), whilst the minority believed it was positive (4/9, including the Proposer).

Neutral views believed there was either no impact or any positives (as described below) were cancelled out by the complexities of the solution targeting specifically Interconnectors and dampening price signals, which would mean the BSC arrangements were not as efficient as they could be.

Those that believed it better facilitated Objective (d) argued that it could help reduce bad debt for Parties, which in turn would reduce the burden on Elexon to manage defaulting Parties and protect non-defaulting Parties from paying for this bad debt.

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One Voting Member changed their final view from Negative (initial view) to Neutral, as he could see in principle it could help reduce debt management tasks for Elexon, but that any marginal benefits were cancelled out by the added complexity.

Applicable BSC Objective (e)

The majority of the Workgroup, including the Proposer believed P443 was neutral against Objective (e) as there was no impact. Minority views (3/9) believed P443 was detrimental against Objective (e) due to EBGL and potential TCA impacts (noting the Workgroup did not believe they were best placed to provide views on these impacts, as they were not lawyers), such as discriminating against Interconnectors and price formulation.

One Voting Member changed their final view from Neutral (initial view) to Negative as having looked again at the TCA they do not believe that P443 is compliant with legislation.

Workgroup decision not to raise an Alternative Modification Proposal

At the post Assessment Procedure Consultation meeting the Workgroup decided not to formally raise Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation), Potential Alternative Solution 2 (prevent NGESO taking actions with Interconnector Users above VoLL) or any other Alternative Modification and therefore provided their final on the Proposed Solution only.

The Workgroup debated the impact of Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) on the Demand Flexibility Service (DFS) and DSR. The consensus was that this solution could cap DSR and therefore act as a disincentive to provide this service. The impact on DFS would depend on the terms under which it would be procured for subsequent winters. These concerns resonated with the Proposer who decided to stick with their Proposed Solution, rather than adopt one of the Potential Alternative Solutions.

The Workgroup, whilst recognising the argument that Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) could be seen as less discriminatory (whilst the Proposer would argue it is due discrimination), would also effectively be a cap on wholesale prices, which they did not support. This is because market participants are likely to choose to go short into cashout at a price up to VoLL rather than buying in the wholesale market above it. They may also sell volume in the wholesale market as sooner than they otherwise would. In this scenario, NGESO are likely to have to dispatch a very large proportion of Generators and/or Interconnectors in the Balancing Mechanism to cover a very large amount of demand.

A Workgroup Member commented that they believed Ofgem could still take some action against unlicenced entities in other countries, but accepted this would be difficult in practice.

Given the strong feedback in the Assessment Consultation the Workgroup did not believe it appropriate to keep Potential Alternative Solution 2 (prevent NGESO taking actions with Interconnector Users above VoLL) ‘on the table’.

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Workgroup views against Potential Alternative Solution 1 and 2

The Workgroup provided their views against the Applicable BSC Objectives for Potential Alternative Solution 1 and 2 at its meeting before the Assessment Consultation was issued. These views were consulted on in the Assessment Consultation. As the Workgroup decided not to take these solutions options forward, final views were not gathered [after the Assessment Procedure Consultation].

Potential Alternative Solution 1 – cap all actions to VoLL in the Imbalance price calculation

Does P443 Potential Alternative Solution 1 better facilitate the Applicable BSC Objectives?		
Obj	Proposer's Views	Other Workgroup Members' Views[43]
(a)	• Neutral	• Neutral
(b)	• **Positive**	• **Neutral (majority)** • Negative (minority)
(c)	• **Positive**	• **Neutral (majority)** • Positive (minority)
(d)	• Neutral	• **Neutral (majority)** • Positive (minority)
(e)	• Neutral	• **Neutral (majority)** • Negative (minority)
(f)	• Neutral – no impact	• Neutral – no impact
(g)	• Neutral – no impact	• Neutral – no impact
	Overall	**Majority** not better than baseline Minority better than baseline

Proposer's initial views

The Proposer's initial view is that Potential Alternative Solution 1 would be positive against Applicable BSC Objective (c) as it allows for the consideration of demand in the equation. The Proposer also believes that this option would be positive against Applicable BSC Objective (b). NGESO's Emergency Actions with all Trading Parties are within scope of this solution, and if the price of these feeding into the Imbalance price is capped at VoLL, the Proposer believes NGESO would be incentivised to take alternative actions.

Workgroup's initial views

The majority of the Workgroup did not feel that capping Generators at VoLL was a good idea, particularly when they perceived VoLL to be low and that the value of VoLL should be looked at again before it is used for this purpose.

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

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Applicable BSC Objective (b)

The majority of the Workgroup believed that Potential Alternative Solution 1 was neutral against Applicable BSC Objective (b) as it had no impact. A minority felt that it was negative against Applicable BSC Objective (b) due to it being uneconomic to down-price scarcity driven prices above VoLL in the cashout calculation. It may be infrequent, but there could be scenarios with cost base prices above VoLL.

Applicable BSC Objective (c)

The majority of the Workgroup shared similar views against Applicable BSC Objective (c) for Potential Alternative Solution 1 as the Proposed Solution, believing it to be neutral. A Workgroup Member expressed that they do not feel this solution would ultimately help end consumers, as with the Proposed Solution.

Where the majority believed that Potential Alternative Solution 1 was positive against Applicable BSC Objective (c), this was because they felt it provided clarity over exposure that parties would face during high price periods and the solution would not discriminate against one subset of the market, as it would apply to all Trading Parties. One Workgroup Member did note that in expanding the solution to cover all Trading Parties, it could be argued that it is beyond the scope of the original defect which highlighted trades with Interconnector Users specifically.

Applicable BSC Objective (d)

The Workgroup views against Applicable BSC Objective (d) were the same for Potential Alternative Solution 1 as they were for the Proposed, highlighting some minor positives in the reduced cost of managing Party defaults.

Applicable BSC Objective (e)

The majority of the Workgroup believed that Potential Alternative Solution 1 was neutral against Applicable BSC Objective (e) due to there being no impact. One Workgroup Member felt that there was less discrimination in this solution compared to the Proposed Solution (due to the pricing cap being applicable to all Parties), but that this was not sufficiently strong to turn the view into a positive.

A minority of the Workgroup expressed a different view, noting that this solution would be negative against Applicable BSC Objective (e) due to it being contrary to EU objectives on market-based mechanisms for setting prices.

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Potential Alternative Solution 2 (prevent Interconnector trades above VoLL)

Does P443 Potential Alternative Solution 2 better facilitate the Applicable BSC Objectives?		
Obj	Proposer's Views	Other Workgroup Members' Views[44]
(a)	• Neutral	• **Negative (majority)** • Positive (minority)
(b)	• **Positive**	• **Negative (majority)** • Neutral (minority) • Positive (minority)
(c)	• **Positive**	• **Neutral (majority)** • Negative (minority) • Positive (minority)
(d)	• Neutral	• **Neutral (majority)** • Positive (minority)
(e)	• Neutral	• **Neutral (majority)** • Positive (minority)
(f)	• Neutral – no impact	• Neutral – no impact
(g)	• Neutral – no impact	• Neutral – no impact
	Overall	**Majority** not better than baseline Minority better than baseline

Proposer's initial views

The Proposer's initial view is that the Potential Alternative Solution 2 would better facilitate Applicable BSC Objectives (b) and (c) as it would likely lead to NGESO using the Demand Flexibility Service or other Demand Side Response actions sooner.

Workgroup's initial views

Applicable BSC Objective (a)

The majority of the Workgroup believed that Potential Alternative Solution 2 was negative against Applicable BSC Objective (a). Some took this view because they felt it is outside the vires of the BSC to impose rules on trading actions by NGESO, also noting that it was not for the BSC to restrict how NGESO contracted to fulfil its Licence obligations. Others stated that this solution could potentially prevent efficient actions being taken by NGESO and that it was uneconomic to restrict transactions above VoLL.

The minority expressed a different opinion, believing that this solution option was positive against Applicable BSC Objective (a) as NGESO would be forced to seek more long term arrangements at a better price.

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

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Applicable BSC Objective (b)

For similar reasons to Applicable BSC Objective (a), the majority of the Workgroup also believed that Potential Alternative Solution 2 was negative against Applicable BSC Objective (b). Restricting the trading activity of NGESO could prevent them from taking efficient actions. The majority of the Workgroup felt it was a negative that this solution would make demand disconnection events more likely. One Workgroup Member noted the need for a wider discussion on the use of VoLL and how NGESO manages the market but that it was not appropriate for that policy debate to take place under a BSC Modification Workgroup.

The minority of the Workgroup who felt that this solution was positive against Applicable BSC Objective (b) took that view as they felt it supported the notion that NGESO could not buy anything at any price, and so would need to seek more efficient arrangements.

Applicable BSC Objective (c)

The Workgroup had mixed views about Potential Alternative Solution 2 against Applicable BSC Objective (c), with the majority believing it was neutral with no impact. Where the minority felt it was negative, this was due to their view that it would put Interconnector Users at a disadvantage, creating discrimination. A minority believed that this solution could be considered marginally positive against Applicable BSC Objective (c) as NGESO is a monopoly and there would be no distributional impact from this solution option.

Applicable BSC Objective (d)

Due to Potential Alternative Solution 2 not having a direct impact on the cashout price calculation process, the majority of the Workgroup believed that this solution option was neutral against Applicable BSC Objective (d). Where the minority felt that it was positive, this related to the potential mitigation of BSC defaults and management of mutualised costs.

Applicable BSC Objective (e)

The majority of Workgroup Members expressed the view that this solution was neutral against Applicable BSC Objective (e) due to no impact. The minority felt that Potential Alternative Solution 2 did not better facilitate Applicable BSC Objective (e) as it introduced a level of unfair discrimination against Interconnector Users and it was contrary to EU objectives to have pricing on market-based mechanisms.

Responses to the Assessment Procedure Consultation

Consultation respondents were asked to respond separately on their views as to whether they agreed with the Workgroup's initial views that neither the Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation), Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) or Potential

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Alternative Solution 2 (prevent Interconnector trades above VoLL) better facilitate the Applicable BSC Objectives.

In summary, the majority of respondents agreed with the Workgroup's initial majority view that the Proposed and two Potential Alternative Solutions do not better facilitate the Applicable BSC Objectives.

Do you agree with the Workgroup's initial majority view that the P443 Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline?

The majority of respondents agreed with the Workgroup's initial majority view that the P443 Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline.

Whilst not all respondents gave views against specific Objectives, of those that did concern of detrimental impacts were voiced for:

Detrimental impacts	
Objective	Reasons given
(c)	• setting a cap on Imbalance prices may hinder the proper reflection of costs and impact market signals, thus affecting market efficiency and security of supply • Insufficient evidence of clear consumer benefit • Discriminatory to focus on Interconnectors • could negatively impact system security forecasting
(d)	• Would impact the marginal price and would not reflect the true cost of energy at that time
(e)	• Discriminatory to focus on Interconnectors • question whether the proposal satisfies the Trade and Cooperation Agreement's requirement for free price formation

Conversely, positive support was voiced for:

Positive impacts	
Objective	Reasons given
(c)	• will protect customers from being forced to buy power at prices above VoLL • NGESO could secure reserve energy at lower prices and promote transparency in Interconnector trading

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Positive impacts	
Objective	Reasons given
(d)	• Improve the operation of the BSC and protect customers from the negative effects of Generator defaults • It would also not be in the interests of customers to see Generators defaulting because their plant has tripped and they are also left potentially exposed to cash-out prices at VoLL that NGESO has deemed acceptable to use

Do you agree with the Workgroup's initial majority view that the P443 Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline?

The majority of respondents agreed with the Workgroup's initial majority view that the P443 Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline. The views expressed broadly agreed with the Workgroup views and brought similar themes as those expressed for the Proposed Solution.

The themes were:

- VoLL as a price cap: Some argue that VoLL should represent the price cap up to which customers are willing to pay for energy, and that the risks of prices above VoLL outweigh any benefits in terms of investment signals. However, there seems to be no need to cap prices within the GB market since the parties are regulated by Ofgem and UK competition laws. P443 is seen as a safety net for customers rather than a wider interference with the efficient operation of the market
- Consistency and fairness: Some respondents believe that applying a cap to all actions in the imbalance price calculation, not just those for Interconnectors, is more consistent and fair in promoting competition. However, they also question whether VoLL is set at the right level for this purpose
- Clear evidence of consumer benefit: The broad application of Potential Alternative Solution 2 mitigates the discrimination concern, but some respondents still argue that clear evidence of consumer benefit is needed to support a market intervention of this kind
- Applicable Objectives: Concerns remain around Applicable BSC Objectives (c) and (e), as it is unclear whether the outcomes in all scenarios are necessarily a fair reapportionment of the costs for taking actions. Furthermore, the Trade and Cooperation Agreement (TCA) encourages free price formation without setting technical limits on pricing, and it is unclear whether the proposed solution satisfies this requirement
- Impact on the marginal price: Some respondents argue that excluding trades above VoLL in the Imbalance price calculation would impact the marginal price in a particular Settlement Period, as this would not reflect the true cost of energy at that time, negatively affecting BSC Objectives (b) and (d)

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- Costs recovery through BSUoS: The costs for trades over VoLL will still be recovered through BSUoS and, in turn, the end consumer. As a result, this would not positively impact Applicable BSC Objective (c)
- Retained EU Law: As with the Proposed Solution, the two Potential Alternative solutions also impact the same elements of retained EU Law

Do you agree with the Workgroup's initial majority view that the P443 Potential Alternative Solution 2 (prevent NGESO taking actions with Interconnector Users above VoLL) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline?

The majority of respondents agreed with the Workgroup's initial majority view that the P443 Potential Alternative Solution 2 (prevent NGESO taking actions with Interconnector Users above VoLL) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline.

The views expressed against this solution option were:

- Protection of customers: Some respondents support the alternative proposal as it provides protection for customers in the absence of direct regulation of parties selling power into the GB market and the opacity of Interconnector actions
- Tools available to NGESO: Some respondents suggest that NGESO has other tools at its disposal, such as securing more reserve energy, alleviating system constraints, making BM access easier for smaller parties, and raising a CM Rule change for more flexibility in calling CM Warnings
- Discrimination and compliance concerns: Some respondents argue that Potential Alternative Solution 2 could be discriminatory against interconnectors and interconnector users without suitable justification, and may make Demand Control and Rota Disconnections more likely. There are also concerns about compliance with the Trade and Cooperation Agreement (TCA) by potentially discriminating against cross-border trading
- Inefficiency and cost implications: Some respondents believe that disallowing the NETSO from entering into Interconnector trades could lead to inefficiencies and more expensive actions, as well as bring the network operation closer to demand control. There is also a suggestion that the VoLL arrangements and principles require an in-depth review
- Licence conditions and BSC objectives: Some respondents argue that the alternative proposal does not reflect the ESO's licence conditions, and that any changes to those should be considered a change in policy, which would require a review by the regulator. They also state that the proposal conflicts with Applicable BSC Objectives (a), (b), (c), and (e)
- Impact on merit order and Transmission Licence principles: Limiting the availability of Interconnector trades based on an artificially derived price cap could conflict with the principles of the ESO's Transmission Licence and lead to artificial and inflated prices for alternative actions

What is the Self-Governance Criteria?

A Modification that, if implemented:
(a) does not involve any amendments whether in whole or in part to the EBGL Article 18 terms and conditions; except to the extent required to correct an error in the EBGL Article 18 terms and conditions or as a result of a factual change, including but not limited to:
(i) correcting minor typographical errors;
(ii) correcting formatting and consistency errors, such as paragraph numbering; or
(iii) updating out of date references to other documents or paragraphs;
(b) is unlikely to have a material effect on:
(i) existing or future electricity consumers; and
(ii) competition in the generation, distribution, or supply of electricity or any commercial activities connected with the generation, distribution, or supply of electricity; and
(iii) the operation of the national electricity transmission system; and
(iv) matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies; and
(v) the Code's governance procedures or modification procedures; and

(c) is unlikely to discriminate between different classes of Parties.

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8 Panel's Initial Discussions

The Panel considered the P443 Assessment Report at its meeting on 13 April 2023[45]. The Panel provided their initial views against the Applicable BSC Objectives, the Proposed Implementation Date, Draft Legal Text, EBGL impacts and whether P443 should be Self-Governance.

The Panel initially agreed by majority that P443 **does not better facilitate** Applicable BSC Objectives (c) and (d) and initially agreed unanimously that P443 **does not better facilitate** Applicable BSC Objectives (e).

The Panel therefore initially recommend by majority that P443 is not better than the current baseline and should therefore be **rejected**.

The Panel unanimously agreed that P443 should not be treated as a Self-Governance Modification, that P443 does impact the EBGL Article 18 Terms and Conditions, agreed the Implementation Date and Draft Legal Text and that P443 should be submitted to the Report Phase.

Panel's initial discussions

A Panel Member stated that having read the P443 Assessment Report, they were surprised with the Workgroup's recommendation, given the defect identified and the suggested positive benefits. The Panel Member described that VoLL exists for the reason of market failure, and potentially the defect could be considered a market failure in terms of regulation. However, it was noted that the Workgroup had concerns over the application of a price cap and also what was the appropriate value of VoLL that should be used.

A Panel Member explained that they had sympathy with the intent of the Modification and what the Proposer was seeking to do, given the lack of transparency and regulatory framework around Interconnector trading, but that they were concerned with the unintended consequences of the Modification Proposal identified through the Assessment Phase.

A Panel Member asked the Ofgem representative if they were planning to review Interconnector trading, given concerns raised over transparency and regulation compared to GB Generators. The Ofgem representative stated that they are going to look at this area, but did not provide scope or timescales for any review at this stage. As a result of the Panel's discussion, the Panel agreed they would write a letter to Ofgem sharing the concerns around Interconnector trading highlighted by the Assessment Report. Additionally, the NGESO Panel Member also noted they had an open action to review and feedback what information could be shared publicly on Interconnectors and Interconnector trading.

Panel's Initial Views

Following discussion, the Panel were invited to:

- **Agree** that P443:

[45] https://www.elexon.co.uk/meeting/bsc-panel-337/

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- **Does not** better facilitate Applicable BSC Objective (c);
- **Does not** better facilitate Applicable BSC Objective (d); and
- **Does not** better facilitate Applicable BSC Objective (e);

- **Agree** an initial recommendation that P443 should be rejected;
- **Agree** that P443 **does** impact the EBGL Article 18 terms and conditions held within the BSC;
- **Agree** the impact on the EBGL objectives;
- **Agree** an initial Implementation Date of:
  - 2 November 2023 if an Authority decision is received on or before 31 July 2023; or
  - Three months after the Authority's decision, if the Authority's decision is received on or before 31 July 2023;
- **Agree** the draft legal text;
- **Agree** an initial view that P443 should not be treated as a Self-Governance Modification;
- **Agree** that P443 is submitted to the Report Phase; and
- **Note** that Elexon will issue the P443 draft Modification Report (including the draft BSC legal text) for a one month consultation (where impacts EBGL terms and conditions) and will present the results to the Panel at its meeting on 8 June 2023.

Panel views against Applicable BSC Objectives		
Recommendation	Panel Voting	Panel Overall Position
Agree that P443 **does not** better facilitate Applicable **BSC Objective (c)**	• **Agree (majority)** • Neutral (minority) • Disagree (minority)	P443 does not better facilitate Applicable BSC Objective (c)
Agree that P443 **does not** better facilitate Applicable **BSC Objective (d)**	• **Agree (majority)** • Neutral (minority) • Disagree (minority)	P443 does not better facilitate Applicable BSC Objective (d)
Agree that P443 **does not** better facilitate Applicable **BSC Objective (e)**	• **Agree (unanimous)**	P443 does not better facilitate Applicable BSC Objective (e)
Overall - Agree an initial recommendation that P443 should be rejected	**Agree** – recommendation to reject	

In relation to Applicable BSC Objective (c), the majority of the Panel agreed with the Workgroup view that P443 does not better promote competition within the electricity market, with some believing it would have a negative impact and others considering it neutral. The minority of the Panel disagreed with the Workgroup and believed that P443

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has a positive impact on competition for the same reasons that some of the Workgroup expressed during the Assessment Phase.

Similarly, the majority of the Panel agreed with the Workgroup view that P443 does not better facilitate Applicable BSC Objective (d) as they do not believe it promotes efficiency within the BSC arrangements, for the same reasons as those outlined by the Workgroup. The minority of the Panel disagreed with the Workgroup and believed there could be some efficiency benefits arising from a reduction in the defaulting Parties under the BSC, as considered by some of the Workgroup.

The Panel were unanimous in their agreement with the Workgroup that P443 does not better facilitate Applicable BSC Objective (e) for the same rationale expressed by the Workgroup.

Following consideration of P443 against all of the Applicable BSC Objectives, the Panel agreed by majority with the Workgroup, and initially recommend that P443 is not better than the current baseline and should therefore be rejected.

The Panel initially unanimously agreed that P443 should not be treated as a Self-Governance Modification, that P443 does impact the EBGL Article 18 Terms and Conditions, agreed the Implementation Date and Draft Legal Text and that P443 should be submitted to the Report Phase.

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9 Report Phase Consultation Responses

This section summarises the responses to the Panel's Report Phase Consultation on its initial recommendations. You can find the full responses in Attachment D.

Two responses were received, from the Proposer organisation (representing the role of Generator) and also from a respondent (representing the roles of Generator and Supplier) who had not responded to the Assessment Procedure Consultation or previously engaged with P443.

Summary of P443 Report Phase Consultation Responses				
Question	Yes	No	Neutral/ No Comment	Other
Do you agree with the Panel's initial majority recommendation that P443 should be rejected?	1	1	0	0
Do you agree with the Panel that the redlined changes to the BSC deliver the intention of P443?	1	0	1	0
Do you agree with the Panel's recommended Implementation Date?	2	0	0	0
Do you agree with the Panel's initial view that P443 should not be treated as a Self-Governance Modification?	1	0	1	0
Do you agree with the Panel's initial consideration that P443 does impact the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions related to balancing held within the BSC?	1	0	1	0
Do you have any comments on the impact of P443 on the EBGL objectives?	1	0	1	0
Do you have any further comments on P443?	0	2	0	0

There were mixed views, which are summarised below, on the Panel's initial views.

Views on Panel's initial majority view that P443 should be rejected

One respondent agreed with the Panel's initial majority recommendation that P443 should be rejected. Their rationale was that the Proposer had only identified one day (20 July 2022) where there were high trade prices with Interconnector Users, and therefore that as this was a rare event there would need to be careful consideration over putting in a market intervention to prevent this. They also had security of supply concerns over amending Imbalance Prices as it is a useful signal to incentivise market participants to take actions. They recognised that customers need to be protected from expensive trading actions, but noted that neither the Proposer nor the Workgroup had identified that the ESO is

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disincentivised to trade in the most economical way and actually that the ESO has an obligation to trade in an economic manner and can be challenged if it's felt they are not.

The respondent (the P443 Proposer) who disagreed with the Panel's initial majority view reiterated their concern around transparency of Interconnector data, in terms of the counterparty, the price and also the reason, to be consistent with transparency of other BM data. They had wanted to progress their original proposed solution to prevent NGESO trading with Interconnector Users above VoLL, and that the current proposed solution to cap the action in the Imbalance Price calculation was a compromise recognising that there may be times when Ofgem/DESNZ consider it appropriate to keep power flowing at higher prices. The respondent reiterated their call for greater regulation of parties selling into the GB market.

Redlined changes to the BSC

One respondent (the P443 Proposer) agreed with the Panel that the redlined changes to the BSC deliver the intention of P443, whilst the other respondent did not provide a view.

Implementation Date

Both respondents agreed with the recommended Implementation Date, and one respondent stated they would welcome the manual workaround which if approved would be implemented for this winter.

Self-Governance

One respondent (the P443 Proposer) agreed with the Panel that the P443 should not be treated as a Self-Governance Modification and should therefore be sent to the Authority for decision, whilst the other respondent did not provide a view.

EBGL impacts

One respondent (the P443 Proposer) agreed with the Panel's initial consideration that P443 does impact the EBGL Article 18 terms and conditions held within the BSC

This respondent reiterated their view that the way that interconnector Users trade is consistent with competition as, for example, Interconnector flows do not pay Transmission Network Use of System (TNUoS) charges (and therefore in the respondent's view aren't contributing to the efficient development of the GB market) and that pricing of Interconnector actions is not consistent with transparency requirements for GB participants, and therefore their view is that the market arrangements are currently discriminatory against GB parties compared to Interconnector Users.

The respondent also questioned the value of the UK's compliance with EBGL, particularly as leads to the requirement for an extended consultation period (one month) and urge DESNZ to review this.

The other respondent did not provide a view or any comments.

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10 Recommendations

We invite the Panel to:

- **AGREE** that P443:
    - **DOES NOT** better facilitate Applicable BSC Objective (c);
    - **DOES NOT** better facilitate Applicable BSC Objective (d); and
    - **DOES NOT** better facilitate Applicable BSC Objective (e);
- **AGREE** that P443 should not be treated as a Self-Governance Modification;
- **AGREE** that P443 **DOES** impact the EBGL Article 18 terms and conditions held within the BSC;
- **AGREE** that P443 is neutral against the EBGL objectives;
- **AGREE** a recommendation to the Authority that P443 should be **rejected**;
- **APPROVE** an Implementation Date for P443 of:
    - **2 November 2023** if an Authority decision is received on or before 31 July 2023; or
    - **Three months** after the Authority's decision, if the Authority's decision is received after 31 July 2023;
- **APPROVE** the draft BSC Legal Text for P443; and
- **APPROVE** the P443 Modification Report.

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Appendix 1: Workgroup Details

Workgroup's Terms of Reference

Specific areas set by the BSC Panel in the P443 Terms of Reference	Conclusion
Should the solution only apply to Interconnectors?	Proposed (cap Interconnector actions to VoLL in the Imbalance price calculation) – Yes Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) – No Potential Alternative Solution 2 = prevent Interconnector trades above VoLL – Yes
Assurance and validation – should Elexon validate that NGESO have not executed Interconnector Trades above VoLL?	No. In the Proposed Solution and Potential Alternative Solution 1, NGESO could still execute trades above VoLL, but the actions would be capped in VoLL in the Imbalance price calculation and these instances would be reported to market participants. In Potential Alternative Solution 2, Elexon would not seek to carry out any additional assurance and validation, as it does not do so for existing trades and P443 is not expected to significantly affect any existing Settlement risks.
Is this consistent with EBGL objectives and other retained EU law?	The Workgroup believe that the Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation) and Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) are consistent with the EBGL Objectives as it would cap actions to VoLL in the Imbalance price calculation, not prevent NGESO trading. The Workgroup believe that Potential Alternative Solution 2 (prevent Interconnector trades above VoLL) would not be consistent with the EBGL Objectives as it would prevent NGESO from trading with Interconnectors above VoLL and therefore discriminates against a specific market participant.

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Specific areas set by the BSC Panel in the P443 Terms of Reference	Conclusion
What is the appropriate value of VoLL that should be used?	Using VoLL in the BSC, CM, and in European markets has been considered. The BSC value is preferable as this is a BSC Modification, however, the Workgroup have considered.
What could be the unintended consequences of the proposed solution?	The Workgroup have considered a number of unintended consequences including impacts on BSUoS and RCRC prices and an increased risk of Demand Control as a result of Potential Alternative Solution 2 (prevent Interconnector trades above VoLL) as an action may be unavailable to NGESO.

Assessment Procedure timetable

P443 Assessment Timetable	
Event	Date
Panel submits P443 to Assessment Procedure	18 August 2022
Workgroup Meeting 1	15 September 2022
Workgroup Meeting 2	22 November 2022
Workgroup Meeting 3	7 December 2022
Workgroup Meeting 4	16 January 2023
Workgroup Meeting 5	20 January 2023
Assessment Procedure Consultation	9 February 2023 - 1 March 2023
Workgroup Meeting 6	20 March 2023
Panel considers Workgroup's Assessment Report	13 April 2023

Workgroup membership and attendance

P443 Workgroup Attendance							
Name	Organisation	15 Sep 22	22 Nov 22	7 Dec 22	16 Jan 23	20 Jan 23	20 Mar 23
Members							
Keren Kelly	Elexon *(Chair)*	✓	✗	✗	✗	✓	✗
Lawrence Jones	Elexon *(Chair)*	✗	✓	✓	✓	✗	✓
Paul Wheeler	Elexon *(Lead Analyst)*	✓	✓	✓	✓	✓	✓
Lisa Waters	Waters Wye Associates *(Proposer's representative)*	✓	✓	✓	✓	✓	✓

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P443 Workgroup Attendance							
Name	Organisation	15 Sep 22	22 Nov 22	7 Dec 22	16 Jan 23	20 Jan 23	20 Mar 23
Andrew Colley	SSE	✓	✓	✓	✓	✓	✓
Lauren Jauss	RWE	✓	✓	✓	✓	✓	✓
Leo Michelmore	ElecLink	✗	✗	✓	✓	✓	✗
Louise Trodden	National Grid ESO	✓	✓	✓	✓	✓	✓
Paul Jones	Uniper	✓	✓	✓	✓	✓	✓
Paul Youngman	Drax	✗	✗	✓	✗	✓	✗
Peter Frampton	VPI	✓	✓	✓	✓	✓	✓
Tom Edwards	Cornwall Insight	✓	✓	✓	✓	✓	✓
Vince Hammond	National Grid Ventures	✓	✓	✓	✓	✗	✓
Attendees							
John Lucas	Elexon *(Design Authority)*	✓	✓	✓	✓	✓	✓
Rashmi Radhakrishnan	Elexon *(Design Authority)*	✓	✓	✓	✓	✓	✗
Eden Ridgeway	Elexon *(Lead Lawyer)*	✓	✓	✓	✗	✗	✗
Nicholas Brown	Elexon *(Lead Lawyer)*	✗	✗	✗	✓	✗	✗
Steve Francis	Elexon *(Solution Architect)*	✗	✗	✓	✗	✗	✗
Arjan Geveke	Energy Intensive Users Group	✓	✓	✗	✓	✓	✗
Iqra Latif	ElecLink	✓	✓	✓	✗	✗	✓
Jan Hoogstraaten	BritNed	✗	✗	✗	✗	✗	✓
Michael Thorsson	BritNed	✗	✓	✗	✗	✓	✗
Vera Stam	BritNed	✓	✗	✓	✗	✗	✗
Ridwan Ibrahim	Ofgem	✓	✗	✗	✗	✗	✗
Andrew Macdonell	Ofgem	✗	✓	✓	✓	✓	✓
Hannah Kernthaler	National Grid ESO	✓	✗	✗	✗	✗	✗
Janet Hamilton	National Grid ESO	✓	✓	✓	✓	✓	✓
Mark Burridge	National Grid ESO	✓	✓	✓	✗	✗	✗
Oliver Garfield	National Grid ESO	✗	✗	✓	✓	✗	✗
Paul Rowe-Jones	National Grid ESO	✓	✗	✗	✗	✗	✗
Richard Price	National Grid ESO	✓	✓	✗	✓	✗	✗
Russell Woodman	National Grid ESO	✓	✗	✗	✗	✗	✗

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How do National Grid ESO decide how to take Balancing Actions?

NGESO's Electricity National Control Centre (ENCC) has a suite of tools required to keep GB's electricity system in balance.

The Balancing Mechanism (BM) is NGESO's primary tool to balance supply and demand on GB's network. In the ENCC, NGESO use the BM to buy and sell the right amount of electricity required to balance the system. NGESO do this minute by minute, second by second, to balance supply and demand in real time.

The BM is a continuously open online auction, with thousands of trades issued daily. Each trading period is 30 minutes long.

For every half hour, the BM signals how much it will cost to provide power at that time.

The auction gate opens 60 to 90 minutes before real time. During this window, market participants submit "Bids" or "Offers" into the BM. A Bid is the price they've calculated to either consume more electricity or generate less electricity; an Offer is the price to consume less or generate more. What the ENCC needs at any point in time will depend on the current system frequency.

At Gate Closure, the market closes for that half hour period. The ENCC then begins to accept Bids and Offers.

To decide on which participants to choose or which Bids and Offers to accept, NGESO review the technical parameters of all participants to see what they're physically capable of providing. From those that can deliver what NGESO need, NGESO instruct the ones that are the most efficient regarding both their ability and cost. Generally, NGESO go with the most competitively priced Bids and Offers, but sometimes they consider other operational and locational factors in their selection.

Once NGESO accept a Bid or Offer, NGESO issue Bid Offer Acceptances (BOAs), which are an instruction to the participant that NGESO want them to change their output. Participants have to accept these BOAs, meaning that they then agree to act on these instructions and adjust their output accordingly. These agreements therefore keep the system in balance.

The balancing team in the ENCC continuously reviews BM data, reviewing Bids and Offers and issuing instructions 24/7 to keep the system in balance, and the frequency stable.

NGESO have an Order of Actions, which shows how they decide to take Balancing Actions, although sometimes operational circumstances and rapidly evolving scenarios will mean that NGESO take options out of this order. The below outlines this:

Order of Actions

This list of Order of Actions below was presented to the Workgroup at their first meeting on 15 September 2022 and was valid at that time. However, we understand that the Order of Actions was subsequently updated for winter 2022/2023[46].

[46] https://www.nationalgrideso.com/document/270586/download

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Everyday Actions

Order #1 – Based on Cost:

- All deliverable Offer actions on all available BM participants
- Issue warming instructions to cold BM participants
- Buy energy from the continental Europe
- Reconfigure Combined Cycle Gas Turbines (CCGTs) to increase available energy (e.g. sync additional Gas Turbines (GTs))
- System Operator (SO)-SO trade in cost order
- Reconfigure Transmission Network to reduce network congestion, including: Change substation running arrangements, Tap Quad Boosters, to control flow of energy and Making use of enhanced ratings

Enhanced Actions

- #2 Recall Transmission Owner (TO) assets from outage to increase network availability and increase available capacity
- #3 Issue an Electricity Margin Notice (EMN)
- #4 Taking additional actions obtained through EMN
- #5 A Capacity Market Notice (CMN) is automatically triggered to alert CM participants

Emergency Actions

- #6 Issue a High Risk of Demand Reduction (HRDR) system warning
- #7 Emergency Assistance (EA) request to other SO
- #8 Emergency Instruction (EI) to other SO
- #9 Issue Demand Control Imminent (DCI) system warning
- #10 Operating Code (OC) 6 demand control instructions to DNOs

How does NGESO currently trade with Interconnector Users?

NGESO explained that for Interconnector trades, they trade with Parties who have capacity on the Interconnector rather than with a Generator. It was explained that the current market arrangements mean that Interconnectors cannot be in the BM, because trades in the BM are conducted with GB Generators and the Interconnector User/owner/operator is not a Generator. Pre Brexit, there were a number of standard EU balancing products (such as TERRE (Trans European Replacement Reserve Exchange),) that GB would be required to participate in, alongside using BM actions with GB generators. GB Generators would

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also be able to participate in the EU markets. However, as GB is no longer part of the Internal Energy Market, this is no longer possible. The ESO is also able to conduct SO-SO trades with the Interconnector in the same timescales as taking Generator actions in the BM. These trades are not always acted on as they can be rejected by the connecting TSO.

In the absence of any mechanism for Interconnector Users to participate in the BM, NGESO operates its own auctions within intraday timescales (four hours to ninety minutes ahead of physical delivery). NGESO posts details of its energy and system balancing requirements, and Interconnector Users (on the appropriate Interconnectors) bid in to meet those requirements. Auction results are posted on the NGESO website in the Data Portal[47].

All Interconnectors are able to participate in energy requirements as they are system wide but the constraints are location specific.

Where is it written in the Grid Code how NGESO instruct Interconnectors?

Where is it written in the Grid Code how NGESO instruct Interconnectors?	
Section of Grid Code	Relevant information
Planning Code	Data for Interconnectors and High Voltage Data Current (HVDC)
Connection conditions & European connection conditions	Technical Requirements for HVDC Systems
Operating Code	OC2 Outages for Interconnector Owners and operators OC5 HDVC equipment Testing OC7 Externally Interconnector SO or Interconnector User - Operational Liaison OC9 States the process for support in Restoration which is generally considered as an Emergency situation OC10 Reporting of events
Balancing Code	BC1 Special note for Interconnectors provisions on Physical Notifications (PNs) and special actions by manual or auto means BC2.6.4 Communication with Externally interconnected system operators in Emergency circumstances BC2.9.6 EA to and from external systems BC2.12.1 Liaison with externally connected interconnected system operators BC2.13 Liaison with Interconnector Owners

Pricing of Emergency Actions

If EA/EI prices are likely to be below VoLL then it may be more proportionate to leave them out of scope of P443. NGESO explained that any fixed elements in the EA/EI costs would

[47] https://data.nationalgrideso.com/

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not be above VoLL, but any cost element that feeds in from cashout could lead to the costs being above VoLL.

Emergency Assistance (EA) pricing:

Emergency Assistance prices vary depending on the Interconnector. The actual prices are commercially sensitive but the price paid for EA will be one of the following 3 options:

- Fixed Prices agreed annually with the connected TSO. These could typically be around £400/MWh
- Price is equal to the agreed settlement period's Imbalance price in either of the TSO markets depending on the flow change direction i.e. buying or selling
- Price is equal to the most expensive balancing action taken by the Assisting/Delivering TSO in the corresponding settlement period

The price of EA therefore could be above VoLL in options 2 & 3 if the market prices have risen above VoLL.

Whichever of these options is the case, this must be paid as well as keeping the IC owner whole with regards to the Imbalance faced by the EA activation. This Imbalance is either moved from the Interconnector account to the requestor's account or the Imbalance penalty value in the connected TSO's market is paid to the connected SO or the Interconnector owner depending the IC's arrangements. The cost of Imbalance could be above VoLL if the market prices have risen above this level.

Emergency Instruction (EI) pricing:

This consists solely of keeping the IC owner whole with regards to the Imbalance faced by the EI activation. This Imbalance is either moved from the IC account to the requestor's account or the Imbalance penalty value in the connected TSO's market is paid to the connected SO or the IC owner depending on the IC's arrangements. The cost of Imbalance could be above VoLL if the market prices have risen above this level.

Therefore EI could be a cheaper option than using EA however for some Interconnectors it could be more expensive depending on the agreed fixed prices. It does not take account of the impact on the Assisting/Delivering TSO's margins nor any rebalancing actions that must be taken to counter the loss/gain of MW resulting from the EI, whereas EA does by using one of the 3 options above.

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Appendix 3: Request to treat P443 as an Urgent Modification Proposal

Urgent Panel meeting 329A

The Panel considered the request at an Urgent Panel meeting on 18 August 2022 and voted by majority to recommend to the Authority that P443 should be treated as an Urgent Modification Proposal.

Urgency letter sent to the Authority

The Urgency letter was sent to the Authority on 19 August 2022 with a response kindly requested by 25 August 2022.

In seeking urgency, the Proposer was mindful of Ofgem's Urgency Criteria[48] and believed that this Modification Proposal is linked to an imminent or current issue that if not urgently addressed may cause a significant commercial impact on Parties, Consumers or stakeholders.

The Proposer's view is that the unprecedented cost of living crisis has led to exceptional risk of extremely high prices that could not reasonably be in line with what customers are willing to pay, given the VoLL.

The 'significant commercial impact' arises for Customers, Suppliers and Generators as they could be exposed to extraordinary costs if NGESO is prepared to buy energy at any price. These parties face a significant commercial impact from this current issue. The 'significant commercial impact' on customers is most keenly seen on industrial customers who are exposed to rising wholesale energy costs and many of whom compete in international markets. In some of those markets' energy prices are being capped. For them, anything that reduces prices must be helping their competitive position in their own markets. Further, lowering costs to sectors such as food manufacturing will also help to marginally ease the inflationary pressure the whole economy is witnessing.

For domestic customers, while their prices are capped, that cap rightly reflects the actual cost of supply. If the market can signal that excessive prices will not be accepted, the chances are that the price cap will be at a lower level than could otherwise have been the case.

It is the Proposer's view that for Generators or Suppliers who find themselves short, for example due to a sudden change in the weather, a plant trip, etc., it is also important that their risk of significant Imbalance charges can be managed. It is the Proposer's view that there should be no need for NGESO to take actions that are markedly above the price of electricity in interconnected markets just to try get Interconnector parties to change the Interconnectors' flow direction and that it would not be in customers' interests if such actions then create secondary impacts, for example pushing companies out of business.

NGESO's Winter Outlook 2022/23[49] identifies the biggest risks to system demand to be in December 2022. The Panel therefore added that any solution should be put forward for

[48] https://www.ofgem.gov.uk/publications/ofgem-guidance-code-modification-urgency-criteria-0
[49] https://www.nationalgrideso.com/research-publications/winter-outlook

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decision and ideally implementation before this, which could only be achieved under an urgent timetable.

The Panel also recognised, given the very significant implications of this proposal, that it should be considered carefully and robustly, which would be very challenging under the proposed urgent timetable. However, they noted the BSC arrangements allow the Panel to submit implemented urgent Modifications to review by a Workgroup in order to report whether any alternative Modification could, as compared with the urgent Modification, better facilitate achievement of the Applicable BSC Objective(s). This could result in subsequent Modifications being introduced to refine the solution.

Authority reject urgency

The Authority replied to the Urgency letter on 25 August 2022 to state that they had considered both the Panel's and the Proposer's arguments and decided that P443 should not be progressed on an urgent basis.

The Authority considered the proposal and the Panel's views on urgency. They had assessed the request against the urgency criteria set out in their published guidance and, in particular, whether this modification proposal is related to an imminent or current issue that if not urgently addressed may cause a significant commercial impact on parties, consumers, or other stakeholders(s).

The Authority stated that when requesting a formal decision on a request for urgency, as in this case, it is important that evidence and a fully articulated rationale for the request is made. A stated impact should be justified with evidence and should clearly articulate how the request satisfies the Authority's Urgency Criteria. The Authority considered that the Proposer has provided insufficient evidence to show how the Modification Proposal satisfies the Authority's Urgency Criteria. The Authority were therefore unconvinced that the issue may cause a significant commercial impact on parties, consumers or other stakeholder(s) if not addressed urgently.

In particular, the Authority stated that the Proposer did not provide sufficient information on the perceived commercial impact. The proposal states that customers, suppliers or generators could be exposed to extraordinary costs if NGESO were to enter into trades to reduce or increase flows across Interconnectors at prices above £6,000/MWh. However no evidence is provided to support this assertion or to articulate the expected significance of the commercial impacts on customers, suppliers or generators (for example, the likelihood or magnitude of the impact).

P443 therefore followed a Standard Assessment Procedure. The timetable was presented at the Urgent Panel meeting on 18 August 2022 in the event that urgency was not granted by the Authority.

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Assessment Procedure Consultation Responses

P443 'To Cap NGESO Interconnector Trades at the Value of Lost Load (VoLL)'

This Assessment Procedure Consultation was issued on 9 February 2023, with responses invited by 1 March 2023.

Phase

- Initial Written Assessment
- Definition Procedure
- Assessment Procedure
- Report Phase
- Implementation

Consultation Respondents

Respondent	Role(s) Represented
Northpool b.v.	Interconnector User, Non Physical Trader
Triton Power	Generator
Uniper UK Ltd	Generator, Interconnector User, Non Physical Trader, ECVNA, MVRNA
EPEX SPOT SE	ECVNA
ElecLink Limited	Interconnector Administrator, Interconnector Error Administrator
National Grid Ventures	Interconnector Administrator, Interconnector Error Administrator
RWE Supply & Trading GmbH	Generator
Electricity System Operator (ESO)	NETSO

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Question 1: Do you agree with the Workgroup's initial majority view that the P443 Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline?

Summary

Yes	No	Neutral/No Comment	Other
7	1	0	0

Responses

Respondent	Response	Rationale
Northpool b.v.	Yes	No rationale provided.
Triton Power	No	Very expensive trading over the interconnectors in the last year has illustrated that the trading of electricity across the interconnectors is an opaque activity. NGESO clearly believes that it has the right to take any actions at any costs to secure the system, despite less expensive alternative options being available. It also seems to favour interconnector trading over trying to use smaller GB based generators to help them balance the market. The implication being that NGESO believe that customers will buy power at any cost, which we do not believe is true. Were it to be true then the market arrangements would have no need for any VoLL figures to be used. Further, the Government would not have capped energy prices if they believed that customers should pay any price for energy. We believe that this modification, and the potential alternatives, better fulfils BSC applicable objectives (c) and (d). (c) Ofgem directly regulates the behaviour of generators in the GB energy market, recently considering a cap on BM offer prices. However, they have no power over the parties selling power from the EU into the GB market. Until Ofgem or DESNZ directly address the behaviour of NGESO when trading over interconnectors, the best we can do is ensure that such trades do not damage the rest of the market. It therefore seems reasonable to set a market limit on the price of power that can set imbalance when it is being bought from parties not

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Respondent	Response	Rationale
		directly regulated by Ofgem. The exclusion of out of the market prices from cash-out will have no material impact on NGESO's trading activity, but it would clearly indicate that Ofgem is trying to protect the interests of customers by ensuring they cannot forced to buy power at a price above VoLL. There are also energy products available in the UK that NGESO could use to provide the energy at lower prices than they have bought power across the interconnectors at. For example, they could secure reserve energy at prices below VoLL by doing more buying of reserve day ahead, if necessary with regional markets to compete directly with the interconnectors. As noted in the working group meetings, NGESO's interconnector trading is opaque, with no published price, emergency assistance notified but not with which overseas System Operator they are working, etc. If NGESO cannot trade transparently with these parties then it should not trade with them at all. Competitive markets rely on information to operate efficiently and it cannot be in the interests of customers that NGESO does "secret" trades with any parties, let alone other monopolies. While we recognise that the July 22 issues were as a result of transmission constraints, we note that the NOA process is also owned by NGESO. So we believe Ofgem should be concerned that NGESO's failure to address constraints with the TOs in a timely manner is resulting in customers paying more than is necessary for energy. Relieving constraints would make the market work more efficiently. (d) The BSC is designed to deliver a competitive market that in turn delivers the lowest cost power to customers. However, in recent years we have seen significant Supplier defaults as energy prices escalates, liquidity reduces and parties have been left struggling to manage their imbalance risk. Reducing the probability of cash-out prices that could be disastrous for short portfolios would improve the operation of the BSC. It would also not be in the interests of customers to see generators defaulting because their plant has tripped and they are also left potentially exposed to cash-out prices at VoLL that NGESO has deemed acceptable to use. We cannot stress enough to Ofgem that the role of the interconnectors needs to be reviewed, the way that they are traded, the prices and the

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Respondent	Response	Rationale
		transparency surrounding trades or other interconnector actions, such as emergency actions. The current regime is not in the best interests of the GB parties & consumers.
Uniper UK Ltd	Yes	We have sympathy with the views put forward by the proposer of this modification. We are generally uncomfortable about capping prices in the market, however, even imbalance prices. Imbalance prices provide important signals to the market both in balancing timescales and those prior to this, and should where possible properly reflect the costs of actions taken. This should help ensure that parties are appropriately incentivised to trade in timescales prior to gate closure to prevent inefficient short positions being taken into gate closure timescales and so that security of supply is maintained.
EPEX SPOT SE	Yes	Referring to objective (c) setting a cap does not help promote effective competition. From the PX point of view, we have price caps which are set not to frustrate trading opportunities. We apply those caps to protect against erroneous orders and to allow the management of credit positions. However, PXs are only one route to market. If the price cap is set to protect against an abuse of market power, then Ofgem should have sufficient powers to investigate. We would welcome further explanation about the limit to Ofgem's powers to investigate market abuse in this example.
ElecLink Limited	Yes	Insufficient evidence of clear consumer benefit has been provided to justify this market intervention. Further to the points effectively summarised in section 7 of the consultation paper, we would re-emphasise our concern that the focus on interconnector actions only in the Proposed Solution appears discriminatory, contrary to BSC Objectives (c) and (e).
National Grid Ventures	Yes	AGREE. Main areas of concern are around Applicable Objectives a), d), e). Even if all balancing actions are permitted, by adjusting the financial effects via the proposed solution is not clear that in all scenarios the outcomes are necessarily a fair reapportionment of the costs for taking the actions. Furthermore the TCA encourages free price formation, that does not set technical limits on

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Respondent	Response	Rationale
		pricing. It is unclear that the proposed solution satisfies this requirement.
RWE Supply & Trading GmbH	Yes	We note that the proposer believes the solution should only apply to Interconnectors because all GB Generators/Traders/Suppliers are licenced and regulated by Ofgem and can be investigated if prices are believed to no longer be cost reflective and/or go beyond scarcity pricing. We do not quite agree. Not all market participants are licenced and neither are DSR customers. We would expect NGESO actions and trades with these entities to be used in the imbalance calculation. Therefore we cannot see a justification for applying a cap to specifically Interconnector actions in the imbalance calculation.
Electricity System Operator (ESO)	Yes	The ESO agrees that the proposal does not better facilitate the Applicable BSC Objectives and is not better than the current base line. There is the possibility that the exclusion of trades above VoLL over the interconnectors would impact the marginal price in a particular settlement period as this would not reflect the true cost of energy at that time impacting Objective (b) and (d). Whilst the proposal still allows trades at prices above and below VoLL to be accepted over the interconnector, it excludes them in the cashout calculation for that imbalance settlement period. These costs are still passed through to the consumer in the BSUoS recovery mechanism. Whilst limiting to VoLL does limit exposure to parties who are short in a particular settlement run, there is the risk that this could de-incentivise parties to maintain their reported position (PN's) or pose a disbenefit to those parties who are long. This risk has possible implications of affecting system security forecasting and has a negative impact on Objective (c). As part of retained EU law within the Electricity Balancing Guidelines (EBR), excluding trades from cashout over a certain value will impact the imbalance and settlement prices in a particular period. This could impact EBR objective (a) Fostering effective competition, non-discrimination and transparency in balancing markets; and (b) enhancing efficiency of balancing as well as efficiency of European and national balancing markets, and (e) ensuring that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for

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Respondent	Response	Rationale
		new entrants, fosters the liquidity of balancing markets while preventing undue distortions within the internal market in electricity;. Similarly, there are also references within The Trade and Cooperation Agreement provisions within Article 304 to require wholesale pricing to reflect the actual price for supply and demand and also ensuing that the wholesale market encourages free price formation. Taking these general objectives into account, the effect of this change could result in the true cost of energy not being reflected at a particular settlement period.

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Question 2: Do you agree with the Workgroup's initial majority view that the P443 Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline?

Summary

Yes	No	Neutral/No Comment	Other
7	1	0	0

Responses

Respondent	Response	Rationale
Northpool b.v.	Yes	No rationale provided.
Triton Power	No	The VoLL is meant to be a representation of the price cap up to which customers are prepared to pay for energy, and as noted above, the potential risks from prices above VoLL outweighs any benefit that could be achieved in terms of investment signals. However, there seems no need to cap prices within the GB market as the parties are regulated by Ofgem and the UK's competition laws. The issue with the parties NGESO is trading across the interconnectors is that they are not regulated in anyway within the GB market. Ofgem has no powers to protect GB customers from anti-competitive behaviour by such parties and the modification was designed to act as a safety net for customers rather than a wider interference with the efficient operation of the market. Further, we note that Ofgem has ruled out a price cap on GB generators only recently so we believe that this alternative would put in place a cap that would only ever be applied to interconnectors as we cannot envisage GB generators operating at that level.
Uniper UK Ltd	Yes	For similar reasons as mentioned in our response to question 1. However, we do believe this would be a more appropriate solution to P443 and if the modification were to be implemented this would be our preferred solution. It is more consistent to cap all actions to VOLL in the imbalance price calculation, not just those for interconnectors, on the basis that this is the price at which involuntary demand control is priced.

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Respondent	Response	Rationale
EPEX SPOT SE	Yes	Yes. Whilst applying it to all seems a fair way to promote competition, it should be assessed whether VoLL is set to the right level. Or the use of VoLL for this purpose.
ElecLink Limited	Yes	The broad application of Alternative Solution 2 mitigates the discrimination concern noted above, but the wider objections as captured in section 7 of the consultation paper and above still apply, noting the need for clear evidence of consumer benefit to support a market intervention of this kind.
National Grid Ventures	Yes	AGREE. Main areas of concern are around Applicable Objectives a), d), e). Even if all balancing actions are permitted, by adjusting the financial effects via the Alt 1 solution it is not clear that in all scenarios the outcomes are necessarily a fair reapportionment of the costs for taking the actions. Furthermore the TCA encourages free price formation, that does not set technical limits on pricing. It is unclear that the proposed solution satisfies this requirement.
RWE Supply & Trading GmbH	Yes	If all actions were capped in the imbalance price calculation at VoLL, the wholesale market would in effect also be capped at VoLL. This is because market participants are likely to choose to go short into cashout at a price up to VoLL rather than buying in the wholesale market above it, and may also sell volume in the wholesale market as soon as, and if, the price did go above VoLL. In this scenario, NGESO are likely to have to dispatch a very large proportion of generators and/or interconnectors in the balancing mechanism and through Schedule 7a trades to cover a very large amount of demand.
Electricity System Operator (ESO)	Yes	The ESO agrees that the proposal does not better facilitate the Applicable BSC Objectives and is not better than the current base line as there is the possibility that the exclusion of trades above VoLL in the imbalance price calculation would impact the marginal price in a particular settlement period as this would not reflect the true cost of energy at that time impacting BSC Objective (b) and (d). As with all Ancillary Services, costs are recovered through BSUoS (including Response, Reserve, Constraints, Intertrips, Black Start, Interconnectors) plus any Electricity trading costs and BOA;s- meaning the costs for any such trades over VoLL

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Respondent	Response	Rationale
		will still be recovered through BSUoS and in turn the end consumer so this is not positively impacting BSC Objective (c). As with the proposed this solution also impacts the same elements of retained EU Law.

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Question 3: Do you agree with the Workgroup's initial majority view that the P443 Potential Alternative Solution 2 (prevent NGESO taking actions with Interconnector Users above VoLL) does not better facilitate the Applicable BSC Objectives and is not better than the current baseline?

Summary

Yes	No	Neutral/No Comment	Other
7	1	0	0

Responses

Respondent	Response	Rationale
Northpool b.v.	Yes	A very strong Yes
Triton Power	No	This seems a sensible solution while there is no direct regulation of parties selling power into the GB market and the interconnector actions remain opaque. This is not so much about the promotion of competition as it is about the protection of customers. The Government (via the CM) and Ofgem (via the BSC) has decided that there is a price (VoLL) at which customers are unwilling to buy power. As the cost of living crisis bites, we agree that the system operator should be cognisant that customers simply cannot afford to pay just any price. NGESO also has other tools at its disposal that it could use before defaulting to accepting energy at any price: • It could secure more reserve energy from non-BM parties to use to compete with EU traders and GB generators within the day; • It could do more to alleviate system constraints to ensure that available power can get to market; • It could make BM access easier for smaller parties to increase the energy options available to it in real time; and • It could raise a CM Rule change to give it more flexibility in calling CM Warnings to prompt a response in tight periods, including from the interconnectors who have CM obligations (though we remain sceptical about their ability to deliver).

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Respondent	Response	Rationale
Uniper UK Ltd	Yes	It may be necessary for the ESO to take high priced actions for short periods of time across interconnectors in order to maintain security of supply or stability on the system. We do not believe that it would be appropriate to prevent this from occurring and risk involuntary demand control as a consequence.
EPEX SPOT SE	Yes	Tend to agree not to discriminate across technologies. Presumably if the policy is to promote technologies over reliance on interconnection flexibility then this could be achieved in other ways.
ElecLink Limited	Yes	Further to the concerns effectively summarised in section 7 of the consultation paper, we would emphasise our strong view that Alternative Solution 2 both (a) would be discriminatory against interconnectors and interconnector users, without suitable justification, and (b) would likely have the effect of making OC6 demand control and rota disconnections more likely, the socio-economic impacts of which would be wide-ranging and significant. We would welcome a wider debate on VoLL, but do not consider that a BSC workgroup is the appropriate forum for this to happen.
National Grid Ventures	Yes	AGREE. Areas of concern are around Applicable Objectives a), b), c), e). By disallowing the NETSO from entering into Interconnector Trades, which might genuinely be the next action to take in cost order, it could lead to other actions being taken which would be more expensive, thereby creating inefficiency, as well as discriminating against certain industry parties. There is a presumption underlying the proposal that prices of Interconnector trades are not formed based on genuine market dynamics. However if the auction with interconnector Users as described in the consultation document is a sufficiently competitive process (and the consultation document implies that it is) then the proposal would remove a useful option from the ESO, and could take the network operation a step closer to demand control. Whilst the Proposer raises a valid question that there could be a price beyond which consumers may wish to pay, it would seem to be beyond the scope of the BSC to make such a judgement, whether resulting from trades from one or all classes of trading party.

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Respondent	Response	Rationale
		There is also a question against TCA compliance, by potentially discriminating against cross-border trading compared within GB trades.
RWE Supply & Trading GmbH	Yes	If NGESO are not able to take actions with Interconnector Users above VoLL, demand control may be necessary as an alternative where adjacent markets are priced higher than VoLL. As we understand it, NGESO are currently permitted to take actions at any price, suggesting that there is no cost too great for the consumer to bear. We think the VoLL arrangements and principles require an in depth review.
Electricity System Operator (ESO)	Yes	The ESO has obligations under its licence to balance the electricity transmission system and to operate it safely and securely within certain standards. In taking any actions/using tools to achieve this. To do this we use balancing services and the ESO has an obligation to do this in an efficient and coordinated economic manner. Trades over the interconnector are one of the tools available to ESO and the effect of this solution would be to limit the availability of this based on an artificially derived price cap, rather than as today against an assessment of what is the efficient, cost effective and appropriate tool available to address the system or balancing issue at that time. This solution does not reflect the ESO licence conditions and any changes to those are out of scope of the BSC. Whilst the BSC can drive change, any changes to the licence conditions or the way in which the ESO operates the system should be considered as a change in policy. This change in policy would need to be reviewed by the Regulator and absent such review this solution would be in conflict to BSC Objective (a). BSC objective (b) stipulates 'the efficient, economic and co-ordinated operation of the national electricity transmission system', therefore by limiting the available actions for the ESO to operate the system in this manner means that the BSC would not be fulfilling its own conditions. It is for these reasons that the ESO does not feel that the potential alternate is in scope of the BSC. The current baseline allows the ESO to fulfil its licence obligations to operate in an efficient, economical and co-ordinated manner, using commercial actions in merit order to maintain demand. This can be

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Respondent	Response	Rationale
		through domestic action or by trading via the interconnectors. The consequence of not being able to trade at prices above VoLL means that some commercial actions available to the ESO (i.e. trading actions) are excluded from the total merit order of actions list, therefore conflicting with the principles of ESO's transmission licence. There is also the risk that setting a cap on prices for ESO instructed interconnector trades creates artificial and inflated prices for alternative actions, such as expensive alternative actions in the Balancing Mechanism, Emergency Instructions and/or demand control prices which could spike higher than the cap at VoLL of £6k/MWh. This could result in, for example, the ESO taking actions in the BM at a price greater than that which is available through interconnector trading. The ESO also believes that there is an impact on the obligations within the retained European Network Codes (Regulation (EU) 2019/943 of the internal market for electricity). The obligations are in Article 3 (a) and (b) Regulation (EU) 2019/943 of the internal market for electricity- specifically; 3(a) prices shall be formed on the basis of demand and supply; b) market rules shall encourage free price formation and shall avoid actions which prevent price formation on the basis of demand and supply; Proposed Alternative 2 could impact the Trade and Cooperation Agreement provisions within Article 304 to require wholesale pricing to reflecting the actual price for supply and demand and also ensuing that the wholesale market encourages free price formation whilst not introducing technical limits on pricing to restrict trade. Implementing this change would go against the above requirements, as NGESO would have to exclude trades from cashout over a certain value which will then impact the imbalance and settlement prices in a particular period, therefore, not reflecting the true cost of energy at a particular settlement period. This would therefore negatively impact BSC Objectives (c) and (e).

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Question 4: Do you agree with the Workgroup that the draft legal text in Attachment A delivers the intention of P443 Proposed 1a and 1b?

Summary

Yes	No	Neutral/No Comment	Other
5	0	4	

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	Yes	No rationale provided.
Uniper UK Ltd	Yes	No rationale provided.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	No response	No rationale provided.
National Grid Ventures	Yes	AGREE that it would, although this is academic given the fundamental concerns with the proposal.
RWE Supply & Trading GmbH	Yes	No comment.
Electricity System Operator (ESO)	Yes	No rationale provided.

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Question 5: Do you agree with the Workgroup's recommended Implementation Date (whether or not you agree with P443)?

Summary

Yes	No	Neutral/No Comment	Other
2	2	3	1

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	Yes	No rationale provided.
Uniper UK Ltd	Yes	No rationale provided.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	No response	No rationale provided.
National Grid Ventures	No	DISAGREE – given the fundamental concerns raised with the proposal.
RWE Supply & Trading GmbH	No	The use of a workaround solution will require some systems development at RWE before implementation. Given that we do not agree with the proposal, we do not agree that this work would be an efficient use of our resources.
Electricity System Operator (ESO)	N/A	N/A as the ESO does not believe that implementation of P443 is better than the baseline.

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Question 6: Given that an enduring solution cannot be put in place until summer 2024, do you agree that it is better to implement an interim workaround solution for winter 2023/24, even if this means the workaround will not be able to apply the cap until Settlement timescales (but an enduring solution will)?

Summary

Yes	No	Neutral/No Comment	Other
1	4	3	1

Responses

Respondent	Response	Rationale
Northpool b.v.	No	We would prefer there is always as much clarity to the market as possible. Therefor we would prefer if any changes get implemented it gets implemented correctly and with clarity right away.
Triton Power	Yes	It is disappointing to see that NGESO has been unable to price up a solution to implement this rule change if approved. It is difficult for parties to weigh up the costs and benefits of any modification without the necessary information. We raised this modification because of the cost of living crisis that many in the UK are facing. As an industry we believe we have an obligation to try to protect the interests of customers. We do not believe that those interests are best served by NGESO taking actions at any price. People, including those in the communities where we all live and work, are making difficult decisions about heating and eating, and energy prices will only go up if NGESO takes energy actions at any price when there are alternatives. We support the original and second alternative, as pragmatic solutions, and we are grateful for the support of the working group in trying to find ways to protect customers. As a matter of principle we do not support price caps, but also believe that when traders are offering power to the GB market above VoLL, knowing the regulator has no powers to come after them for anticompetitive behaviour, that is not interest of GB customers. Ofgem has recently expressed concerns about generators being paid c£4,000/MWh in the BM. This is less than half the £9,000/MWh that GB customers paid to EU parties last July. It cannot be right that

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Respondent	Response	Rationale
		Ofgem is seeking to influence the behaviour of parties in GB without addressing the behaviour of Parties in EU which are active in the GB market. Ofgem cannot directly regulate them, but must be seen to be doing something and it can stop NGESO from trading with them at any price.
Uniper UK Ltd	No	We do not support the modification so would not support an early implementation.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	No response	No rationale provided.
National Grid Ventures	No	DISAGREE – given the fundamental non-support of the proposal.
RWE Supply & Trading GmbH	No	See Question 5.
Electricity System Operator (ESO)	N/A	N/A as the ESO does not believe that implementation of P443 is better than the baseline.

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Question 7: Do you believe Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) or Potential Alternative Solution 2 (prevent Interconnector trades above VoLL), or a potential other Alternative Modification is better than the Proposed (cap Interconnector actions to VoLL in the Imbalance price calculation)?

Summary

Yes	No	Neutral/No Comment	Other
2	5	0	1

Responses

Respondent	Response	Rationale
Northpool b.v.	No	We believe the proposed solution and Alternative solution 1 will both have equal effect. We believe Potential Alternative Solution 2 will be worse and will potentially cause an unnecessary increase in demand responds and Rota disconnections.
Triton Power	Yes	We still support the original modification, as we believe it is most likely to be acceptable to Ofgem, by still allowing NGESO to trade above VoLL, but limit any impact on customers and GB electricity companies. At the same time as accepting the change, Ofgem could take the opportunity to fully review the operation of interconnectors and the transparency around the way NGESO uses them. We would also like to see DESNZ review whether it is appropriate for the interconnectors to be in the CM given the way that interconnector trading and emergency arrangements operate. Having said that, capping the price of trades across interconnectors at VoLL may send a clearer message to EU parties that the GB customers will not pay for energy at any price. We see no need to cap GB parties' prices as Ofgem can investigate any prices that they are worried about and can penalise parties found to be in breach of competition law. As Ofgem has recently ruled out capping offers from GB generators, that would appear to send a clear signal that they would be unlikely to support such a modification. However, they have yet to address the behaviour of interconnector users based in third party countries.

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Respondent	Response	Rationale
Uniper UK Ltd	Yes	Solution 1 - capping all actions in the imbalance price calculation, would be a better solution to the original proposal, as outlined in our answer to question 2.
EPEX SPOT SE	No	Potentially we could support Alternative 1 if the value of VoLL is set to a level that does not frustrate trades. Capping prices to minimise cost distorts the price signals and could impact the confidence and liquidity in the market. High prices would indicate scarcity or market power.
ElecLink Limited	No	We do not consider that either of the Alternative Solutions better facilitate the Applicable BSC Objectives than the current baseline.
National Grid Ventures	Potential Alternative Solution 1 – Yes Potential Alternative Solution 2 - No	NGV considers that Alternative solution 1 is marginally less problematic than the proposed solution, in that, if the principle that underlies the original proposal is to protect consumers from high prices, then the consumer is unlikely to be concerned just by prices originating from a certain class of trading party, and it would likely expect a blanket protection (notwithstanding any different ability of Ofgem to investigate excessive generator pricing). Concerns remain though whether the Alternative solution 1 creates a better reapportionment of costs from the current baseline. NGV does NOT consider that Alternative 2 is better that the proposal, given the points made under Q3.
RWE Supply & Trading GmbH	No	Please see answers to Questions 2 & 3.
Electricity System Operator (ESO)	No	Please refer to above comments in Q1, 2 and 3 for reason why these solutions are not better than the baseline.

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Question 8: Do you agree with the Workgroup's assessment of the impact on the BSC Settlement Risks?

Summary

Yes	No	Neutral/No Comment	Other
5	0	3	0

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	Yes	No rationale provided.
Uniper UK Ltd	Yes	No rationale provided.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	No response	No rationale provided.
National Grid Ventures	Yes	AGREE that if implemented, it would be low risk that BSC did not achieve the correct calculations as required by the modification. Concerns remain as to risk that reapportionment of costs would be a fair and appropriate outcome.
RWE Supply & Trading GmbH	Yes	No comment.
Electricity System Operator (ESO)	Yes	No rationale provided.

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Question 9: Do you agree with the Workgroup's assessment that P443 does impact the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC?

Summary

Yes	No	Neutral/No Comment	Other
7	0	1	0

Responses

Respondent	Response	Rationale
Northpool b.v.	Yes	No rationale provided.
Triton Power	Yes	We would take this opportunity to urge DESNZ to get rid of this retained EU legislation that results in the GB energy rules being unable to make necessary changes in a timely manner.
Uniper UK Ltd	Yes	No rationale provided.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	Yes	As noted in the consultation paper.
National Grid Ventures	Yes	AGREE. (see points made under Q10).
RWE Supply & Trading GmbH	Yes	We do not think the capping of interconnector actions in the imbalance calculation facilitates competition because of the inconsistency in the treatment of these actions compared with other actions with unlicenced entities.
Electricity System Operator (ESO)	Yes	No rationale provided.

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Question 10: Do you have any comments on the impact of P443 on the EBGL objectives?

Summary

Yes	No	Neutral/No Comment	Other
4	3	1	0

Responses

Respondent	Response	Rationale
Northpool b.v.	No	No rationale provided.
Triton Power	Yes	We note that there are concerns about the different treatment of interconnector trades could be seen as anticompetitive. However, there are many different ways the GB market now trades with interconnected markets. For example, the EU has stopped the UK from participating in the TERRE market, which arguably may have added to competition and reduced the need for this type of price capping. Likewise EU generators usually do not pay network charges as GB generators do, but Ofgem has not removed these charges in order to ensure that the GB generators are in the same competitive position at EU gencos. We therefore do not believe, on balance, that this modification will have any significant impact on EU competition. We would note that the GB market is the only market where interconnectors are treated like generators in our Capacity Market, but do not face the charges gencos face such as TNUoS. While this confuses the interconnectors with energy market participants, which is at best unhelpful, it does seem to imply some moral obligation to ensure that any trades across them are in the interests of customers. Customers support the interconnector's with both a cap and floor regime to protect their income and via direct Capacity Market payments. This is above the level of support mechanisms even regulated monopolies secure. We would also note that the EBGL objectives include transparency. As noted above, we do not believe that the way the SO trades across the interconnectors is in anyway transparent. We would therefore urge Ofgem to review these arrangement as a matter of urgency to make sure that they are far more consistent with the general obligations around competition and transparency. It is often

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Respondent	Response	Rationale
		noted at the ECNN meetings that NGESO seems to ignore many EU obligations, for example around REMIT reporting of constraints, which could have allowed for increased competition in resolving constraints rather than taking excessively priced energy actions from EU countries.
Uniper UK Ltd	No	No rationale provided.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	Yes	The key likely impact on the EBGL objectives is effectively summarised in the consultation paper, but we would emphasise in particular (i) the likely breach of the non-discrimination provisions in the EBGL objectives for the Proposed Solution and Alternative Solution 2, (ii) the hampering of market-based price formation, and (iii) the potential for undue distortion of the balancing market as a result.
National Grid Ventures	Yes	Concerns around Objectives a), b), d) for Proposed and Alternative 1) around efficiency of Balancing (which we are assuming relates to Settlement also). And regarding Alternative 2 additional concerns against Objective c) given the security of supply implications.
RWE Supply & Trading GmbH	No	No comment.
Electricity System Operator (ESO)	Yes	The Proposed Alternate 2 could be perceived as discriminatory to interconnected parties. As part of retained EU law within the Electricity Balancing Guidelines (EBR), this impacts objectives (a) Fostering effective competition, non-discrimination and transparency in balancing markets; and (b) enhancing efficiency of balancing as well as efficiency of European and national balancing markets, and (e) ensuring that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, fosters the liquidity of balancing markets while preventing undue distortions within the internal market in electricity;.

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Question 11: Will P443 impact your organisation?

Summary

Solution	High	Medium	Low	None	Other
Proposed	1	1	5	1	0
Potential Alternative 1	2	1	4	1	0
Potential Alternative 2	4	1	2	1	0

Responses

Respondent	Response	Rationale
Northpool b.v.	Low/Low/High	No rationale provided.
Triton Power	High	All of these changes would help to protect GB energy companies and their customers from excessive energy prices.
Uniper UK Ltd	Low	There is likely to be low impact to our processes and systems.
EPEX SPOT SE	No impact	As a PX our price limit is set at the value of VoLL so we do not expect any impact. Typically, in a well organised market changing the Price Limit is a straightforward task.
ElecLink Limited	Low for Proposed and Potential Alternative Solution 1, higher for Potential Alternative Solution 2	The direct impact of the Proposed Solution and Alternative Solution 1 is likely to be low on ElecLink, although further assessment would need to be conducted in this respect. Alternative Solution 2 would likely have a materially higher impact on ElecLink as it would increase the likelihood of NGESO relying on emergency actions over interconnectors, or other services offered by interconnectors, to help ensure that GB security of supply is maintained.
National Grid Ventures	Low	No significant implementation or operational impacts on NGV. Alternative 2 would potentially lead to different flow transfers, however no more difficult to facilitate than flows that would occur under the current baseline.
RWE Supply & Trading GmbH	Proposed – Low	We do not think interconnector trades will set settlement prices above VoLL very often if at all. Alternative 1 will have a significant impact on the wholesale market during times of high prices above VoLL, as described above. Alternative 2 will make

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Respondent	Response	Rationale
	Potential Alternatives 1 and 2 – High	supply emergencies and market suspension more likely in our view.
Electricity System Operator (ESO)	Proposed and Potential Alternative 1 – Medium Potential Alternative 2 – High	There is likely to be impacts to the internal operating process within the trading team and the control room. This will also require system changes should the proposed alternative be recommended and implemented. There will also be an impact to the settlement team process and possible system changes will be required depending on the preferred method to capture the changes to the BSAD files.

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Question 12: How much will it cost your organisation to implement P443?

Summary

Solution	High	Medium	Low	None	Other
Proposed	0	1	2	3	2
Potential Alternative 1	0	1	2	3	2
Potential Alternative 2	0	0	0	5	3

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	No	We would not expect there to be any costs to GB parties except Elexon and NGESO.
Uniper UK Ltd	Low	There could be a small cost if the SAA-I014 file is changed. Otherwise we are likely to see little cost.
EPEX SPOT SE	No impact	No expected cost.
ElecLink Limited	To be determined	It is not possible to confidently estimate the cost of implementation for ElecLink at this stage, but beyond this it is important to consider the wider socio-economic impacts of Alternative Solution 2 in particular. As above, if implemented this would make demand disconnection more likely, with significant wider impacts on consumers and the economy more broadly. These impacts should be taken into account.
National Grid Ventures	None	No implementation costs foreseen.
RWE Supply & Trading GmbH	Proposed and Potential Alternative 1 – Low Potential Alternative 2 – None	A small amount of systems development is likely to be required in the Original and Alternative 1.
Electricity System Operator (ESO)	Proposed and Potential	The values included in the table above are the costs associated annually and ongoing to the ESO. Potential Alternative 2 costs will need to consider

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Respondent	Response	Rationale
	Alternative 1 – £125k + Potential Alternative 2 – To be determined if adopted as an alternate	the operational costs if ESO is not able to maintain operational system requirements. It will also be important to consider the cost of making regulatory changes allowing the ESO to potentially not take all available actions therefore risking security of supply. There is also a question to answer about the cost to consumers for any loss of supply.

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Question 13: What will the ongoing cost of P443 be to your organisation?

Summary

Solution	High	Medium	Low	None	Other
Proposed	0	0	2	2	4
Potential Alternative 1	0	0	2	2	4
Potential Alternative 2	0	0	1	2	5

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	No responses	No rationale provided.
Uniper UK Ltd	Low to none	Likely to be little to no ongoing cost.
EPEX SPOT SE	No impact	No expected cost.
ElecLink Limited	To be determined	See answer to question 12.
National Grid Ventures	No impact	No change to operational costs, other than the potentially different imbalance costs that would result from each of Proposed and Alternative solutions.
RWE Supply & Trading GmbH	Unknown	No comment.
Electricity System Operator (ESO)	Proposed and Potential Alternative 1 – £100k Potential Alternative 2 – To be determined if adopted as an alternate	The values included in the table above are the costs associated annually and ongoing to the ESO. Potential Alternative 2 costs will need to consider the operational costs if ESO is not able to maintain operational system requirements. It will also be important to consider the cost of making regulatory changes allowing the ESO to potentially not take all available actions therefore risking security of supply.

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Question 14: How long (from the point of approval) would you need to implement P443?

Summary

0-6 months	6-12 months	>12 months	Other
1	0	1	6

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	No impact	We do not believe this rule change will have any material impact on any parties but Elexon and NGESO.
Uniper UK Ltd	At least 1 month	If any changes to the SAA-I014 settlement file were to be made than we would need at least a month's notice for implementation and for an example file to be provided in the new format, so that we could test loading it into our systems.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	No response	No rationale provided,
National Grid Ventures	No impact	No implementation tasks that involve any lead time.
RWE Supply & Trading GmbH	No response	Specifics are not known at this stage, but we would expect to need to make some small systems changes.
Electricity System Operator (ESO)	> 12 months	This will be dependent on the solution that requires implementing but due to the other ongoing development of ESO systems we expect that a significant lead time of over 12 months would be required.

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Question 15: Would you want to see both the capped and uncapped trade value in the SAA-I014 (Settlement Report) file, taking into consideration the additional costs and impacts this will have?

Summary

Yes	No	Neutral/No Comment	Other
5	1	2	0

Responses

Respondent	Response	Rationale
Northpool b.v.	Yes	No rationale provided.
Triton Power	Yes	As noted above information is critical to the efficient operation of the market. However, there are other changes that we would value more than this, for example NGESO making available all data on transmission constraints as they arise, providing information on the state of the system, etc.
Uniper UK Ltd	No	We agree with the workgroup that it would not be necessary. It may be better to have the uncapped trade value alone included in the file. Participants will know that any prices which are above VOLL will be capped. If the capped price is included in the file then participants wouldn't know what the pre capped value was.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	No response	No rationale provided.
National Grid Ventures	Yes	Whilst not in support of the proposal, if implemented then we would like to see all trade values (capped and uncapped) in the SAA file.
RWE Supply & Trading GmbH	Yes	Full transparency will be important to facilitate effective market competition.
Electricity System Operator (ESO)	Yes	NGESO would like to see both the capped and uncapped trade values in this report.

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Question 16: Do you agree with the Proposer's views on the impacts P443 will have on the environment and consumers?

Summary

Solution	Yes	No	Neutral/No comment	Other
Proposed	2	4	2	0
Potential Alternative 1	1	4	2	0
Potential Alternative 2	I	4	2	0

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	Yes	No rationale provided.
Uniper UK Ltd	No	Not fully. Short term effects would be to reduce imbalance prices on occasion, but it is not clear that this will result in lower costs to customers. The imbalance price is borne by parties out of balance and it is not clear that this would automatically result in lower costs being seen by customers, particularly if the mechanism is only used rarely. Additionally, imbalance prices should accurately reflect costs incurred so that parties take action to minimise the size of the imbalance being covered and the resulting costs which arise from this and are recovered through BSUoS. If those incentives are reduced, the balancing costs incurred, and the resulting BSUoS costs, could be higher than necessary.
EPEX SPOT SE	No response	No rationale provided.
ElecLink Limited	No	We share the proposer's strong desire to help consumers in a cost of living crisis, but consider that the consumer benefits of the Proposed Solution and Alternative Solution 1 have not been sufficiently evidenced. We also consider that there is clear potential consumer detriment arising from Alternative Solution 2, i.e. in the form of more likely demand control and rota disconnection. It may be that consumers would accept these demand control measures in those circumstances, but we do not have evidence that this is the case.

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Respondent	Response	Rationale
National Grid Ventures	No	Unclear that the reduced imbalance charges will be beneficial or even neutral to consumers, depending how costs are reapportioned under the proposed and Alternative solutions. Alternative 2 has further consumer risk with potential for higher priced options to be taken than under the current baseline and/or putting security of supply at risk.
RWE Supply & Trading GmbH	Yes for Proposed	Evaluation has only been provided for Original.
Electricity System Operator (ESO)	No	Respondent provided their own assessment of the impacts that they believe P443 Proposed Solution, Potential Alternative Solution 1 and Potential Alternative Solution 2 have on the environment and consumers. This will be shared with the P443 Workgroup.

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Question 17: Should the solution only apply to Interconnector Users?

Summary

Yes	No	Neutral/No Comment	Other
2	5	1	0

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	Yes	As noted above, the reason we proposed the change as only applying to interconnector is because they are not regulated by Ofgem. There is no way for Ofgem to protect the interests of customers if they believe EU parties are acting anti-competitively. In the last year GB power prices went to c£4,000/MWh and a number of parties were investigated for breach of the TCLC, NGEOS launched a review of the BM and subsequently Ofgem has proposed a new licence condition on inflexible plant. Interconnector trades, in a constraint period, went to £9,000/MWh, but Ofgem has done nothing and as far as we can tell, not even launched a review of interconnector arrangements. The prices seen, on the face of it, looks a lot like parties taking advantage of a constraint in a way that GB generators are explicitly prevented from doing. It is simply not in the interest of customers that such behaviour is allowed to continue unchecked.
Uniper UK Ltd	No	If implemented, then the alternative to cap all costs in the imbalance calculation would be preferable.
EPEX SPOT SE	No	However, we'd like to understand why IC trades were the ones that were procured by the ESO and not local assets. We'd agree that the separate market for the ESO and IC capacity users is unusual and would welcome greater transparency and oversight on these arrangements.
ElecLink Limited	No	As noted above and as referred to in the consultation paper, in our view the focus on interconnector users lacks the necessary justification and as such is likely to be discriminatory.
National Grid Ventures	No	If the objective as stated by Proposed is to protect the consumer from high prices then that would seem to be a generic matter, whether or not it is

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Respondent	Response	Rationale
		sourced via I/C or other GB party. Even if there is an Ofgem process to ensure GB-generator prices are not excessive, that does not prevent them from being high in extreme circumstances, and a generic approach is more even-handed and scenario-proofed than singling out a certain category of trading party.
RWE Supply & Trading GmbH	Yes	See above.
Electricity System Operator (ESO)	No	The ESO does not support the proposed or the alternates. Additionally applying only to interconnectors could be seen as discriminatory – as highlighted above.

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Question 18: Do you agree with the principle of using VoLL as a parameter to set the cap?

Summary

Yes	No	Neutral/No Comment	Other
3	4	1	0

Responses

Respondent	Response	Rationale
Northpool b.v.	No	In accordance with the calculation of BEIS actual VoLL should be £17,000. Recently ACM calculated the VoLL for the Netherlands, and calculated it at 68.887 €/MWh. In any regard the current used VoLL price in UK is not a correct indication, and therefore an unsuitable bench mark.
Triton Power	Yes	It is the value set by DESNZ and Ofgem as the value at which customers are prepared to buy power up to. As this is a BSC mod we would propose using the BSC VoLL value. However, Ofgem could review this if it decides to.
Uniper UK Ltd	Yes	If it is implemented yes VOLL is the appropriate value to use. It may be worth reviewing the current value of VOLL to see if it is still at the correct level.
EPEX SPOT SE	No response	Unclear. We don't really understand the purpose of VoLL if the ESO is going to bid through it.
ElecLink Limited	No	Our view is that a cap should not be set through P443 at all. That said, we would welcome a wider policy discussion on VoLL, outside the confines of a BSC working group.
National Grid Ventures	Yes	A difficulty in using VOLL is the fact that it is an administrative value and may not reflect all, or even any, consumers' preferences about the value of disconnection, and hence its implementation could lead to undesirable consequences.
RWE Supply & Trading GmbH	No	No, not in its current form. VoLL is different for different users, and the current term "VoLL" is used to describe an estimated average value, which we do not believe is appropriate as both a cap and a floor. We think the VoLL arrangements and principles require an in depth review.
Electricity System Operator (ESO)	No	As a concept VoLL was not introduced as price cap. VoLL was introduced to suggest an economic and fair value of energy. The study conducted for VoLL

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Respondent	Response	Rationale
		was conducted over 10 years ago. The value of VoLL in the BSC as its stands today is £6k/MWh and may not be reflective or representative of the current market. The Clean Energy Package Article 11, (2) Value of Lost Load states *The relevant authority shall update its estimate of the value of lost load at least every five years, or earlier where it observes a significant change*. As this value was determined some time ago, and the reference to the above legislation, the ESO would support a review of this value.

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Question 19: Should the solution include Emergency Actions within scope of any cap?

Summary

Yes	No	Neutral/No Comment	Other
3	2	2	1

Responses

Respondent	Response	Rationale
Northpool b.v.	No response	No rationale provided.
Triton Power	Yes	This is actually impossible to answer as we do not know the pricing of these actions. In theory emergency actions are "special" being used to maintain the system security more acutely. It seems unlikely they would set cash-out, though that remains slightly unclear. This is a good illustration as to why these arrangements need to be made transparent as a matter of urgency. Last time NGESO asked for emergency assistance (25/1/23) it did not tell the market which interconnector(s) were being asked, if it was a system or energy issues, the volume or the price. It is unconceivable that NGESO would be allowed to agree such arrangements with a generator in the GB market? This is a case of two or more monopolies making secret arrangements between themselves and then providing minimal information to the market. The result will always be rumour, speculation and an inefficient market response. This must be stopped by Ofgem as a matter of urgency.
Uniper UK Ltd	Yes	All actions should be capped if it is implemented.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	No	NGESO's stated position is currently to prioritise maintaining GB security of supply if at all possible, with emergency actions forming a key part of this. Given recent market volatility it is sensible to consider whether the cost of maintaining security of supply should be a more prominent decision-making parameter for NGESO, but this should be a wider industry debate, rather than a BSC working group discussion.
National Grid Ventures	Yes – only under Alternative 1.	If the reservation over trades with I/C parties is the concern over the origins of the price basis, it is unclear that the same concerns apply for

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Respondent	Response	Rationale
		emergency I/C trades which tend to be via SO-SO arrangements. SOs are of course licensed entities (equivalent in EU albeit different terminology) and hence unlikely therefore that prices for SO-SO trades would be outside justifiable market levels. Emergency Actions could therefore be relevant only under Alternative 1, (which relates to all trades above VOLL being limited to the VOLL cap in cash-out). However note the fundamental concerns over this generally, as set out in Answer to Q2.
RWE Supply & Trading GmbH	Yes	There is no transparency of these Emergency Action prices, so it is unreasonable to expose market participants to the cost of these actions.
Electricity System Operator (ESO)	No	Emergency actions are by their nature emergency actions and are not taken on a BAU basis. The action of trading on the Interconnector is a standard action in the commercial order of actions, as are Balancing Mechanism (BM) actions. Emergency Actions are only considered once all the BAU available actions have been exhausted and ESO has no other way of maintaining the system requirements. Therefore, Emergency Actions are only used when ESO has no alternative basis and cannot be planned for. Where an Emergency Action is taken for system reasons this action is NIV tagged and removed from the cashout calculation (unless this is representative of the current costs for energy in that given settlement period where Elexon will remove the tag).

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Question 20: Do you believe there are any unintended consequences of the Proposed Solution (cap Interconnector actions to VoLL in the Imbalance price calculation), Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) and Potential Alternative Solution 2 (prevent Interconnector trades above VoLL)?

Summary

Yes	No	Neutral/No Comment	Other
6	1	1	0

Responses

Respondent	Response	Rationale
Northpool b.v.	Yes	C (Potential Alternative Solution 2): In tight situations in the continent this can cause the NGESO to not be able to do the NG trades the system needs, and there by increasing the amount of demand responds and Rota disconnections.
Triton Power	No	We believe that NGESO has the ability to look for more economic solutions than buying through energy offers at any price. A few ideas have been given above.
Uniper UK Ltd	Yes	Preventing interconnector trades from being undertaken could result in involuntary demand control being undertaken which should be avoided if possible. Occasional instances of high prices are likely to be preferable for customers.
EPEX SPOT SE	No response	No opinion.
ElecLink Limited	Yes	As above, while we share the proposer's desire to enhance GB consumer benefit wherever possible, particularly in light of recent market conditions, our view is that (a) the consumer impact of P443 is not sufficiently well understood at this stage, and (b) Alternative Solution 2 in particular would negatively impact GB security of supply. It may be that this reflects overall GB consumer and industry sentiment, but P443 would represent a significant policy shift in this respect and so requires wider industry discussion and debate.
National Grid Ventures	Yes	Under a) (Proposed Solution) and b) (Potential Alternative Solution 1) certain or all high priced ESO balancing actions would not be reflected in the cashout mechanism. This discrepancy potentially means the effectiveness of the pricing signal is lost.

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Respondent	Response	Rationale
		Whilst no-one wants to see extreme prices passed through to residential consumers and business, the right way to avoid it is for the ESO to invest in new services and tools (e.g. Demand Flexibility). Under c) (Potential Alternative Solution 2) ESO would be unable to accept certain balancing actions above VOLL. What happens if this is the only available action? Presumably the high-priced actions on the 20th July were required to ensure the system remained intact. Given that VOLL is only an administrative value and has been shown to not reflect consumers actual preference in terms of the value of disconnection, basing a cap on this level (or any other) could lead to undesirable impacts.
RWE Supply & Trading GmbH	Yes	As described above, if all actions were capped in the imbalance price calculation at VoLL as per Alternative Solution 1, the wholesale market would in effect also be capped at VoLL. This is because market participants are likely to choose to go short into cashout at a price up to VoLL rather than buying in the wholesale market above it, and may also sell volume in the wholesale market as soon as, and if, the price did go above VoLL. In this scenario, NGESO are likely to have to dispatch a very large proportion of generators and/or interconnectors in the balancing mechanism and through Schedule 7a trades to cover a very large amount of demand.
Electricity System Operator (ESO)	Yes	Please see responses above.

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Question 21: Do you have any further comments on P443?

Summary

Yes	No
2	6

Responses

Respondent	Response
Northpool b.v.	Any form of price cap can disincentivise the market to make the proper investments to provide what the system needs. And can therefor cause the opposite of what intended. Also we believe VoLL price should be changed to correctly display the actual cost of load shedding.
Triton Power	No further comments.
Uniper UK Ltd	No further comments.
EPEX SPOT SE	No further comments.
ElecLink Limited	No further comments.
National Grid Ventures	No further comments.
RWE Supply & Trading GmbH	No further comments.
Electricity System Operator (ESO)	Proposed and the Proposed alternative 1 do not restrict the operational tools that the ESO has available, however, these both do not comply with the retained legislation. Alternate 2 is likely to see increases in costs either through ESO having to take more expensive actions to resolve system imbalances due to the providers being less incentivised to deliver as nominated (by reducing the imbalance charges to providers) or through ESO having to take more expensive actions through the BM or Emergency Actions when a cheaper alternative (Interconnector trades) were available. Also, alternative 2 risks ESO's ability to meet the GB system requirements resulting in the potential for increased demand disconnection and loss of consumer supplies. The industry should always be working to reduce costs to the consumer and increase the security and guarantee of supplies. ESO believes P443 will do the opposite of this.

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P443 'To Cap NGESO Interconnector Trades at the Value of Lost Load (VoLL)'

Response Form

The National Electricity Transmission System Operator (NETSO) is requested to complete an impact assessment for P443. In particular, we ask for your responses to the following questions and your reasons for those responses.

Your Details

Respondent	
Name	Louise Trodden
Organisation	Electricity System Operator (ESO)
Contact telephone number	07866 165538

Your response

You are requested to respond to the questions in this form.

How to return your response

Please send responses, entitled 'P443 NETSO Analysis', to bsc.change@elexon.co.uk by **5pm** on **Wednesday 1 March 2023**.

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NETSO Analysis Questions

Question 1
Please describe the impact(s) of P443 on your ability as the NETSO to discharge your obligations efficiently under the Transmission Licence and to operate an efficient, economical and co-ordinated transmission system. Where applicable, please state any difference in impacts between the Workgroup's proposed solutions.
Proposed Solution 1a – NGESO apply the cap. This solution allows the ESO to continue to trade with all parties above and below VoLL, however, this does present the ESO with conflicts in relation to its obligations to comply with Retained European Law.
Proposed Solution 1b – Elexon apply the cap This solution allows the ESO to continue to trade with all parties above and below VoLL, however, this does present the ESO with conflicts in relation to its obligations to comply with Retained European Law.
Potential Alternative Solution 1a – NGESO apply the cap This solution allows the ESO to continue to trade with all parties above and below VoLL, however, this does present the ESO with conflicts in relation to its obligations to comply with Retained European Law.
Potential Alternative Solution 1b – Elexon apply the cap This solution allows the ESO to continue to trade with all parties above and below VoLL, however, this does present the ESO with conflicts in relation to its obligations to comply with Retained European Law.
Potential Alternative Solution 2 - The obligations placed on the ESO to fulfil requirements of its Transmission Licence require the ESO to operate in an efficient and economical coordinated way to maintain demand. The ESO has a licence condition to ensure non-discriminatory participation in the provision of balancing services. This solution prevents trades over a certain value, therefore implementation of this solution could be seen as discriminatory if there was a restriction on trades above VoLL only on interconnectors. There is the risk that the ESO may not be able to preserve demand if the option to trade on the Interconnector over the Value of Lost Load (VoLL) is removed. There is an additional risk that the cost of alternative actions could be even higher, e.g. volume procured through a Bid Offer Acceptance (BOA) in the Balancing Mechanism may be priced greater than VoLL (due to scarcity in the market) which would result in an overall higher cost incurred.

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Question 2
Please outline the impact of P443 on the computer systems and processes of the NETSO. Include details of any changes needed as a result of implementing P443, and the lead time required for those changes. Where applicable, please state any difference in impacts between the Workgroup's proposed solutions.
Proposed Solution 1a – NGESO apply the cap If the ESO is to apply the cap before the data is sent to Elexon, then there will be changes to the BSAD file and related internal systems. This process could take 6-9 months or more depending on the complexities of implementation.
Proposed Solution 1b– Elexon apply the cap There are no impacts to the ESO computer systems and process should Elexon apply the cap to the BM and NBM data supplied. .
Potential Alternative Solution 2a– NGESO apply the cap If the ESO is to apply the cap before the data is sent to Elexon, then there will be changes to the BSAD file and related internal systems. This process could take 6-9 months or more depending on the complexities of implementation
Potential Alternative Solution 2b – Elexon apply the cap There are no impacts to the ESO computer systems and process should Elexon apply the cap to data supplied for BM and NBM units
Potential Alternative Solution 2
If this solution is adopted by the workgroup as an alternate to the proposed, then a more in-depth impact assessment on the ESO system and processes will be completed as per the consultation document. At a high level (and not exhaustive) this will require changes to systems and processes that are used in the trading team and the control room.

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Question 3
Please provide an estimate of development, capital and operating costs in appropriate detail which you as the NETSO anticipate that you would incur in implementing P443. Where applicable, please state any difference in costs between the Workgroup's proposed solutions.
Proposed Solution 1a – NGESO apply the cap The ESO believes that the costs to do this are as discussed in the workgroup and in excess of £125K. Costs are likely to exceed this estimated figure once the impact to teams (e.g. Settlement Teams, Control Room, Trading Team) and the level of complexity of introducing new systems and processes is fully understood. This cost would only be for ESO to make system changes to the BSAD file, not for any costs associated with the updates to ELEXON insights system or other ESO processes.
Proposed Solution 1b – Elexon apply the cap There are no impacts to the ESO computer systems and process should Elexon apply the cap to the BM and NBM data supplied.
Potential Alternative Solution 1a – NGESO apply the cap The ESO believes that the costs to do this are as discussed in the workgroup and in excess of £125K. Costs are likely to exceed this estimated figure once the impact to teams (e.g. Settlement Teams, Control Room, Trading Team) and the level of complexity of introducing new systems and processes is fully understood. This cost would only be for ESO to make system changes to the BSAD file, not for any costs associated with the updates to ELEXON insights system or other ESO processes.
Potential Alternative Solution 1b – Elexon apply the cap There are no impacts to the ESO computer systems and process should Elexon apply the cap to the BM and NBM data supplied
Potential Alternative Solution 2
If this solution is adopted by the workgroup as an alternate to the proposed, then a more in-depth impact assessment on the ESO system and process will be completed as per the consultation document. At a high level (and not exhaustive) this will require changes to systems and processes that are used in the trading team and the control room.

Question 4
Please provide details of any consequential changes to Core Industry Documents and/or the System Operator Transmission Owner Code that would be needed as a result of implementing P443, and the lead time required for those changes. Where applicable, please state any difference in impacts between the Workgroup's proposed solutions.
Proposed Solution 1a – NGESO apply the cap No impact expected
Proposed Solution 1b – Elexon apply the cap No impact expected
Potential Alternative Solution 1a – NGESO apply the cap No impact expected

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Question 4
Potential Alternative Solution 1b – Elexon apply the cap. No impact expected
Potential Alternative Solution 2 This would require changes to the ESO transmission licence and the C16 statements. The ESO transmission licence would be reviewed and updated by Ofgem- this timeline would need to be provided by the regulator. The C16 statements are consulted on annually as a requirement in the ESO transmission licence. However, there could be scope to conduct an ad hoc consultation if this was required.

Question 5
Please outline any potential issues relating to security of supply arising from P443.
Proposed Solution: As this solution limits exposure to parties who are short in a particular settlement run, there is the risk that this could de-incentivise parties to maintain their reported position (PN's) or pose a disbenefit to those parties who are long. This risk has possible implications of affecting system security forecasting.
Potential Alternative Solution 1. As above
Potential Alternate Solution 2: By removing an option to trade on the Interconnector over the Value of Lost Load (VoLL) there is the risk that the ESO may not be able to preserve demand. There are times where the ESO is not able to instruct domestic generation to meet demand as it is not available. This was the case on the 20th July 2022 when as a result of a system constraint, the ESO took a trade over the interconnector above VoLL. This increases the risk that the requirement of energy to meet demand may not be available in the GB Market. Not being able to preserve demand could then result in demand disconnection. By reducing the order of commercial actions that the ESO has to manage the system (by preventing trades over the interconnectors) above VoLL could present a situation that forces the need to take Enhanced or Emergency actions. Emergency actions are by their nature emergency actions and are not taken on a BAU basis. The action of trading on the Interconnector is a standard action in the commercial order of actions, as are Balancing Mechanism (BM) actions. Emergency Actions are only considered once all the BAU available actions have been exhausted and ESO has no other way of maintaining the system requirements. Therefore, Emergency Actions are only used when ESO has no alternative. basis and cannot be planned for. Where an Emergency Action is taken for system reasons this action is NIV tagged and removed from the cashout calculation (unless this is representative of the current costs for energy in that given settlement period where Elexon will remove the tag)

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Question 6

Please outline your views and rationale on whether P443 would help to achieve the Applicable BSC Objectives.

Proposed Solution

The ESO agrees that the proposed does not better facilitate the Applicable BSC Objectives and is not better than the current base line. There is the possibility that the exclusion of trades above VoLL over the interconnectors would impact the marginal price in a particular settlement period as this would not reflect the true cost of energy at that time impacting BSC Objective (b) and (d)

Whilst the proposal still allows trades at prices above and below VoLL to be accepted over the interconnector, it excludes them in the cashout calculation for that imbalance settlement period. These costs are still passed through to the consumer in the BSUoS recovery mechanism. Whilst this does limit exposure to parties who are short in a particular settlement run, there is the risk that this could de-incentivise parties to maintain their reported position (PN's) or pose a disbenefit to those parties who are long. This risk has possible implications of affecting system security forecasting and has an impact negatively on BSC Objective (c) There is not a clear benefit demonstrated to how this is positively impacting the end consumer.

Additionally, as part of retained EU law within the Electricity Balancing Guidelines (EBR), excluding trades from cashout over a certain value will impact the imbalance and settlement prices in a particular period. Therefore, not reflecting the true cost of energy at a particular period in time. This could impact EBR objective *(a) Fostering effective competition, non-discrimination and transparency in balancing markets; and (b) enhancing efficiency of balancing as well as efficiency of European and national balancing markets, and (e) ensuring that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, fosters the liquidity of balancing markets while preventing undue distortions within the internal market in electricity;.*

Additionally, (Article 3 (a) and (b) Regulation (EU) 2019/943 of the Internal market for electricity)

(a)prices shall be formed on the basis of demand and supply;

b) market rules shall encourage free price formation and shall avoid actions which prevent price formation on the basis of demand and supply; are impacted as result of excluding trades from cashout over a certain value will impact the imbalance and settlement prices in a particular period. Therefore, not reflecting the true cost of energy at a particular period in time. Similarly, there are also references within The Trade and Cooperation Agreement provisions within Article 304 to require wholesale pricing to reflecting the actual price for supply and demand and also ensuing that the wholesale market encourages free price formation. Therefore, not reflecting the true cost of energy at a particular settlement period.

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Question 6
Potential Alternative Solution 1
The ESO agrees that the proposed does not better facilitate the Applicable BSC Objectives and is not better than the current base line as there is the possibility that the exclusion of trades above VoLL over all parties would impact the marginal price in a particular settlement period as this would not reflect the true cost of energy at that time impacting BSC Objective (b) and (d) Whilst this solution does reduce concerns regarding discrimination against parties, as with all Ancillary Services, costs are recovered through BSUoS (including Response, Reserve, Constraints, Intertrips, Black Start, Interconnectors) plus any Electricity trading costs and BOA;s- meaning the costs for any such trades over VoLL will still be recovered through BSUoS and in turn the end consumer so this is not positively impacting BSC Objective (c). This solution has the same EBR impacts as the Proposed above.
Potential Alternative Solution 2
This solution presents a change to the ESO licence conditions which the ESO believe is out of scope of the BSC. Whilst the BSC can drive change, any changes to the licence conditions or the way in which the ESO operates the system should be considered as a change in policy. This change in policy would be reviewed by the Regulator and would be in conflict to BSC Objective (a). BSC objective (b) stipulates 'the efficient, economic and co-ordinated operation of the national electricity transmission system', therefore by limiting the available actions for the ESO to operate the system in this manner means that the BSC would not be fulfilling its own conditions. It is for these reasons that the ESO does not feel that the potential alternate is in scope of the BSC. The current baseline allows the ESO to fulfil its licence obligations to operate in an efficient, economical and co-ordinated manner, using commercial actions in merit order to maintain demand. This can be through domestic actions or by trading via the interconnectors. Whilst this alternate to the proposed still allows actions above VoLL to be taken domestically, the BSC Objective (b) is still negatively impacted as this solution presents risk to the ESO. The consequence of not being able to trade at prices above VoLL means that some commercial actions available to the ESO (i.e. trading actions) are excluded from the total merit order of actions list, therefore conflicting with the principles of ESO's transmission licence. There is also the risk that setting a cap on prices for ESO instructed interconnector trades creates artificial and inflated prices for alternative actions, such as expensive alternative actions in the Balancing Mechanism, Emergency Instructions and/or demand control prices which could spike higher than the cap at VoLL of £6k/MWh. This could result in, for example, the ESO taking actions in the BM at a price greater than what is available through interconnector trading.

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Question 6
The ESO has a licence condition to ensure non-discriminatory participation in the provision of balancing services. This solution prevents trades over a certain value, therefore implementation of this solution could be seen as discriminatory if there was a restriction on trades above VoLL only on interconnectors. The ESO also believes that there is an impact on the obligations within the retained European Network Codes (Regulation (EU) 2019/943 of the internal market for electricity). The obligations are in Article 3 (a) and (b) Regulation (EU) 2019/943 of the internal market for electricity- specifically; *3(a)prices shall be formed on the basis of demand and supply;* *b) market rules shall encourage free price formation and shall avoid actions which prevent price formation on the basis of demand and supply;* Proposed Alternative 2 could impact the Trade and Cooperation Agreement provisions within Article 304 to require wholesale pricing to reflecting the actual price for supply and demand and also ensuing that the wholesale market encourages free price formation whilst not introducing technical limits on pricing to restrict trade. Implementing this change would go against the above requirements, as NGESO would have to exclude trades from cashout over a certain value which will then impact the imbalance and settlement prices in a particular period, therefore, not reflecting the true cost of energy at a particular settlement period. This would therefore negatively impact BSC Objectives (c) and (e).

Does P443 have any interaction with the European Balancing Guidelines (EB GL)? Please provide any impacts and details, including whether it impacts the Terms and Conditions for balancing in Great Britain, as defined in Article 18 of the EB GL.
Proposed Solution
Potential Alternative Solution 1
Potential Alternative Solution 2 . The Proposed Alternate 2 could be perceived as discriminatory to interconnected parties. As part of retained EU law within the Electricity Balancing Guidelines (EBR), this impacts objectives (a) Fostering effective competition, non-discrimination and transparency in balancing markets; and (b) enhancing efficiency of balancing as well as efficiency of European and national balancing markets, and (e) ensuring that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, fosters the liquidity of balancing markets while preventing undue distortions within the internal market in electricity;.

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Question 8
Please provide any other comments you may have on P443.
Proposed and the Proposed alternative 1 do not restrict the operational tools that the ESO has available, however, these both do not comply with the retained legislation. Alternate 2 is likely to see increases in costs either through ESO having to take more expensive actions to resolve system imbalances due to the providers being less incentivised to deliver as nominated (by reducing the imbalance charges to providers) or through ESO having to take more expensive actions through the BM or Emergency Actions when a cheaper alternative (Interconnector trades) were available. Also, alternative 2 risks ESO's ability to meet the GB system requirements resulting in the potential for increased demand disconnection and loss of consumer supplies. The industry should always be working to reduce costs to the consumer and increase the security and guarantee of supplies. ESO believes P443 will do the opposite of this.

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Further Information

To help us process your response, please:

- Email your completed response form to bsc.change@elexon.co.uk, entering "P443 NETSO Analysis" in the subject line
- Respond by **5pm** on **Wednesday 1 March 2023.**

Applicable BSC Objectives

The Applicable BSC Objectives are:

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

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

(g) Compliance with the Transmission Losses Principle

EBGL Objectives

The EBGL Objectives are:

(a) Fostering effective competition, non-discrimination and transparency in balancing markets;

(b) enhancing efficiency of balancing as well as efficiency of European and national balancing markets;

(c) integrating balancing markets and promoting the possibilities for exchanges of balancing services while contributing to operational security;

(d) contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union while facilitating the efficient and consistent functioning of day-ahead, intraday and balancing markets;

(e) ensuring that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, fosters the

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liquidity of balancing markets while preventing undue distortions within the internal market in electricity;

(f) facilitating the participation of demand response including aggregation facilities and energy storage while ensuring they compete with other balancing services at a level playing field and, where necessary, act independently when serving a single demand facility;

(g) facilitating the participation of renewable energy sources and support the achievement of the European Union target for the penetration of renewable generation.

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Report Phase Consultation Responses

P443 ‘To Cap NGESO Interconnector Trades at the Value of Lost Load (VoLL)’

ELEXON

Phase

- Initial Written Assessment
- Definition Procedure
- Assessment Procedure
- Report Phase
- Implementation

This Report Phase Consultation was issued on 17 April 2023, with responses invited by 17 May 2023.

Consultation Respondents

Respondent	Role(s) Represented
EDF	Generator, Supplier
Triton Power	Generator

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Question 1: Do you agree with the Panel's initial majority recommendation that P443 should be rejected?

Summary

Yes	No	Neutral/No Comment	Other
1	1	0	0

Responses

Respondent	Response	Rationale
EDF	Yes	EDF does not support this modification. Our response and rationale for reaching this decision is set out below. • The proposer points to one occurrence, on 20th July 2022, where the trades cost ~£69m / £9,500MWh were above the VoLL at £6,000/MWh. This is a rare event and putting in market interventions to prevent these situations needs to be carefully considered. • Security of Supply is an important consideration. Imbalance prices provide useful signals for market participants to be incentivised to take actions before gate closure. Removing the usefulness of this signal could promote behaviour that would become inefficient. • Customers need to be protected from expensive trading actions. The proposer and the workgroup report has not clearly identified that the ESO is dis-incentivised to trade in the most economical way. The ESO has an obligation placed on them to trade in an economic manner and therefore if they are deemed to not act in that way can be challenged.
Triton Power	No	Triton understands the concerns around this change proposal. However, since it was raised NGESO has done nothing to try and address the concerns that led to this mod being raised. We would have more effective competition (objective c) if we had greater transparency around interconnector actions and their prices. The market needs far more clarity around interconnector actions; why, with which interconnector and at what price. This is just the basic information that all BMUs have to provide to the market when they are used via the BM. We still believe that it will be more efficient (objective d) if the market (including customers) are not running the risk of potential cash-out prices being

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Respondent	Response	Rationale
		set above VoLL due to interconnector actions over which they have no control and limited visibility. We have grave concerns that NGESO continues to believe that it can act to keep the lights on with no consideration of the potential impacts on those who pay the bills. The BSC cannot be efficient if it runs the risk of putting parties out of business because NGESO has taken actions which does not impact its own economics and with parties that are not regulated by Ofgem. In an ideal world we would have pushed to limit NGESO's interconnector trades to VoLL, but we recognise that there may be times when Ofgem and/or DESNZ would rather keep power flowing at higher prices. The proposal to just cap these trades at VoLL for the purpose of cash-out is a compromise. However, we believe that Ofgem could approve the change to meet their statutory obligation to protect the interests of customers while they address the wider issues associated with interconnector trading and the transparency surrounding interconnector actions and prices. We would further urge DESNZ to consider how future trading relationships with the EU and other interconnected markets could make the regulatory relationship clearer. If parties are to be allowed to sell into the GB electricity market then either NGESO needs to manage the price at which they trade or Ofgem needs to have some ability to hold parties in third countries to account.

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Question 2: Do you agree with the Panel that the redlined changes to the BSC deliver the intention of P443?

Summary

Yes	No	Neutral/No Comment	Other
1	0	1	0

Responses

Respondent	Response	Rationale
EDF	No response	No rationale provided
Triton Power	Yes	No rationale provided

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Question 3: Do you agree with the Panel's recommended Implementation Date?

Summary

Yes	No	Neutral/No Comment	Other
2	0	0	0

Responses

Respondent	Response	Rationale
EDF	Yes	No rationale provided
Triton Power	Yes	We very much welcome the proposal for a manual workaround as we believe that the coming winter looks tighter than last winter.

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Question 4: Do you agree with the Panel's initial view that P443 should not be treated as a Self-Governance Modification?

Summary

Yes	No	Neutral/No Comment	Other
1	0	1	0

Responses

Respondent	Response	Rationale
EDF	No response	No rationale provided
Triton Power	Yes	It does not meet the self-governance criteria.

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Question 5: Do you agree with the Panel's initial consideration that P443 does impact the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC?

Summary

Yes	No	Neutral/No Comment	Other
1	0	1	0

Responses

Respondent	Response	Rationale
EDF	No response	No rationale provided
Triton Power	Yes	No rationale provided

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Question 6: Do you have any comments on the impact of P443 on the EBGL objectives?

Summary

Yes	No	Neutral/No Comment	Other
1	0	1	0

Responses

Respondent	Response	Rationale
EDF	No response	No rationale provided
Triton Power	Yes	As noted previously, we do not believe that the way interconnectors trade is consistent with competition. For example the interconnector flows do not pay TNUoS, so cannot be said to be competing on a equitable basis with those that do. The transparency around the actions over interconnectors and more importantly the pricing of those actions is also not consistent with the transparency requirements that all other GB market players have to comply with. Discrimination is not an issue, but undue discrimination is and we believe that the market arrangements are unduly discriminatory against GB parties compared to those trading over the interconnectors. We would further note that the EU does not allow the UK to participate in TERRE and there are resulting interconnector trade prices that do not appear to be market related (for example the BALIT prices for SO to SO transactions). The timing of trades is also an issue. Interconnectors also do not contribute to the efficient development of the GB market as they do not pay TNUoS and if their operations change (as they have been know to do) they can add to constraint costs, which they also do not pay. So again the role and operation of interconnectors really need to be revisited. More widely, EBGL causes wider issues in the market, such as extended consultation times. We would urge DESNZ to review the UK's compliance with the EBGL given they seem to add not value to UK plc.

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Question 7: Do you have any further comments on P443?

Summary

Yes	No
0	2

Responses

Respondent	Response	Rationale
EDF	No response	No rationale provided
Triton Power	No	No rationale provided

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