Assessment Procedure Consultation

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 Workgroup are considering three options to achieve this. To cap the price that enters the BSC Imbalance price calculation at the Value of Lost Load (VoLL – currently £6,000/MWh), applicable either for Interconnector trades only, or alternatively for all actions used in the Imbalance price calculation. VoLL under the BSC represents the value to customers of unsupplied energy. These two options would enable National Grid Electricity System Operator (NGESO) to take any actions it deems necessary, but would apply the cap in the Imbalance price calculation where the relevant actions exceed VoLL. The third option proposes to stop NGESO trading with Interconnector Users at a price that is above VoLL.

This Assessment Procedure Consultation for P443 closes:

5pm on **Wednesday 1 March 2023**

The Workgroup may not be able to consider late responses.

The P443 Workgroup are considering two potential alternative solutions and seek your views on them

The P443 Workgroup initially recommends **rejection** of P443

The P443 Workgroup **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

Not sure where to start? We suggest reading the following sections:

- Have 5 mins? Read the Summary section
- Have 15 mins? Read sections 1 and 7
- Have 30 mins? 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*

The purpose of this P443 Assessment Procedure Consultation is to invite BSC Parties and other interested parties to provide their views on the merits of P443. The P443 Workgroup will then discuss the consultation responses, before making a recommendation to the BSC Panel at its meeting on 9 March 2023 on whether or not to raise an Alternative Modification and whether or not to approve P443.

There are three parts to this document:

This is the main document. It provides details of the solution, impacts, costs, benefits/drawbacks and proposed implementation approach. It also summarises the Workgroup's key views on the areas set by the Panel in its Terms of Reference, and contains details of the Workgroup's membership and full Terms of Reference.

Attachment A contains the draft redlined changes to the BSC for the P443 Proposed Solution (not for the two Potential Alternative Solutions).

Attachment B contains the specific questions on which the Workgroup seeks your views. Please use this form to provide your response to these questions, and to record any further views or comments you wish the Workgroup to consider.

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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 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.

At present these trades are included in the Balancing Services Adjustment Data (BSAD) file, which is sent from NGESO to Elexon's BSC Agents, the Settlement Administration Agent (SAA) and the Balancing Mechanism Reporting Agent (BMRA), who process the BSAD file for the purposes of Settlement and reporting. Therefore, where the traded price is greater than VoLL, it will need to be capped at VoLL prior to processing of the Imbalance price calculation. This capping could be performed either by NGESO (before sending the file to BMRA/SAA), or by the BMRA/SAA following receipt of the file. The Workgroup want the capped and uncapped trades published for transparency.

The Workgroup are keen to gather industry views on two other possible solutions, which have been considered and are set out in more detail in Section 3 (Solution) to help them decide whether to formally raise an Alternative Modification.

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.

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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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[4] would therefore be required and possibly its Licence. This potential Alternative would apply only to trades with Interconnector Users, not to Emergency Assistance or Emergency Instructions.

Impacts & Costs

We seek confirmation of the impacts on NGESO and on Industry systems and processes via this Assessment Procedure Consultation, including expected costs.

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

The Proposed Solution and Potential Alternative Solution 1 would require changes either to NGESO systems, or to BSC Agent (BMRA/SAA) systems, depending on who is responsible for applying the price cap to the relevant BSAD Actions:

Costs Estimates for Proposed Solution or Potential Alternative Solution 1			
Organisation	Implementation (£k)	On-going (£k)	Impacts
Elexon	Within a range of ~20-50 plus 150 for the reporting requirement	0 [per year]	Systems, documents and processes
NGESO	Magnitude of ~100k. To be confirmed by NGESO during Assessment Procedure Consultation	0	Systems and processes
Industry	Parties are invited to provide details of any system or process impacts in their consultation responses	0	Systems and processes
Total	20 to 200	0	

For BSCCo to amend the 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[5]. The cost for this will be approximately £150k, therefore a total of £50-200K. We explain more about Insights vs BMRS in Section 4.

The above would require IT system changes, so to implement these solutions as soon as possible, an interim manual workaround is proposed for Elexon to amend the BSAD file and send an Elexon Circular to notify industry of any occurrence until the enduring automatic solution is implemented in 2024.

[4] https://www.nationalgrideso.com/industry-information/codes/balancing-settlement-code-bsc/c16-statements-and-consultations
[5] https://bmrs.elexon.co.uk/

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Potential Alternative Solution 2 (prevent Interconnector trades above VoLL)

Potential Alternative Solution 2 affects NGESO, who would need to change their systems to prevent buying power from Interconnector Users above VoLL. The cost and impact of this option is not yet known by NGESO. By not having the option to trade on the interconnector there will be an impact to the order of actions taken by the ESO as there will be less options available. Therefore, this may result in the possible requirement of using more expensive Emergency Actions or Demand Disconnection.

If the Workgroup chooses this solution, more time for assessment will be needed and a revised Implementation Date may be required.

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.

Recommendation

The **majority** of the P443 Workgroup initially believe that the P443 Proposed Solution will not be better than the current baseline and should therefore be **rejected**.

Whilst the P443 Workgroup have not formally raised an Alternative Modification yet, they are considering two options, Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) and Potential Alternative Solution 2 (prevent NGESO trading with Interconnector Users above VoLL).

The **majority** of the P443 Workgroup initially believe that both Potential Alternative Solution 1 and 2 **would not be better** than the current baseline. The Workgroup will compare the solutions, using responses to this consultation to inform their views.

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

Potential Alternative Solution 2 (prevent NGESO trading above VoLL) would further protect consumers by ensuring they do not have to fund such high-priced trades (through Balancing Services Use of System (BSUoS)). It would also signal to the market that NGESO will not simply buy through spiralling prices. Instead, it would 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[6], 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 (or preventing them entirely, in the case of Potential Alternative Solution 2 (prevent NGESO trading above VoLL)), this Modification will better reflect the needs of consumers and protect them from extraordinary prices. Potential Alternative Solution 2 (prevent NGESO trading above VoLL) will allow NGESO to consider the price beyond which customers are not willing to buy energy and instead expect the System Operator to use other tools to manage the network.

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.

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

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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.

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'[7] which was raised by NGESO on 30 May 2014 to progress the outcomes of the Electricity Balancing Significant Code Review (EBSCR)[8] 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 for GB consumers[9].

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

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In the P305 Authority decision letter[10] 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.

In Europe, the average VoLL is 8,000 Euros/MWh[11].

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[12] 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[13] 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[14] in July 2022, and a Call for Input[15] 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 (or Potential Alternative Solution 2 – prevent Interconnector trades above VoLL) to Interconnector Users, but not to GB generators.

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).

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

[10] https://assets.elexon.co.uk/wp-content/uploads/2014/05/28163531/P305D-v2.0.pdf
[11] https://www.researchgate.net/publication/337646625_The_Value_of_Lost_Load_VoLL_in_European_Electricity_Markets_Uses_Methodologies_Future_Directions
[12] https://www.gov.uk/government/publications/energy-bills-support/energy-bills-support-factsheet-8-september-2022
[13] https://www.gov.uk/guidance/energy-bills-discount-scheme
[14] https://www.ofgem.gov.uk/publications/open-letter-responding-high-balancing-costs
[15] https://www.ofgem.gov.uk/publications/call-input-options-address-high-balancing-costs
[16] https://eur-lex.europa.eu/eli/reg/2022/1854

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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 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.

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

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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 that could be 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.

What is BSAD?

Balancing Service Adjustment Data (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 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.

[18] https://bscdocs.elexon.co.uk/bsc/bsc-section-t-settlement-and-trading-charges#section-t-4-4.4
[19] https://www.elexon.co.uk/mod-proposal/p354/

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However, as the Workgroup discussions and solution development have progressed, the Proposed Solution and two Potential Alternative Solutions will have slightly different outcomes due to the impacts.

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) 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.

Under Potential Alternative Solution 2 (prevent Interconnector trades above VoL) the desired outcome is that as NGESO are prevented from executing Interconnector trades above VoLL, they will seek alternative actions or call on Demand Side Response. This would mean that NGESO's costs are decreased and the additional cost is not passed through to consumers as a non-energy cost.

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.

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3 Solution

Solution	Which Parties does the solution affect?	Which actions does the solution apply to?	Impacts Imbalance Price calculation?	Stops ESO making trades?
Proposed	Parties paying Imbalance charges and RCRC	All Buy actions taken over Interconnectors, including trades with Interconnector Users, SO-SO Trades, Emergency Assistance and Emergency Instructions	Yes – as a consequence of adjusting the data entering the cashout calculation	No
Potential Alternative 1	As per Proposed	All Buy Actions taken in the Balancing Mechanism or included in Balancing Services Adjustment Data	Yes – as a consequence of adjusting the data entering the cashout calculation	No
Potential Alternative 2	As per Proposed and also Parties paying BSUoS	Trades with Interconnector Users, not to SO-SO Trades, Emergency Assistance or Emergency Instructions	Yes – as a consequence of not being allowed to make the trade	Yes

Proposed Solution

The Proposer's preferred 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 has identified two potential mechanisms for achieving this.

The Workgroup initially showed a preference for Elexon to apply the cap, as this would provide the capped and uncapped prices alongside other data used for Imbalance calculations. However, this was done without a full understanding of NGESO's costs and impacts, which will be provided as part of this consultation. The Workgroup will decide on which approach is appropriate following this consultation.

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

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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.

1a: NGESO apply the cap

The first is to amend BSC Section Q 'Balancing Mechanism Activities'[20] to add in a new paragraph as follows:

6.3.2D For any Balancing Services Adjustment Action provided using an Interconnector and with a positive Balancing Services Adjustment Volume, the Balancing Services Adjustment Cost shall not be greater than VoLL * Balancing Services Adjustment Volume

This approach to implementing the Proposed Solution would require NGESO to cap the prices of Interconnector actions in the BSAD file they sent to BSC Systems (BMRA and SAA). BSC Systems would not 'know' whether a price had been capped or not, and would therefore not be able to report uncapped prices (but NGESO could report these on its own website).

1b: Elexon apply the cap

The second possible approach to implementing the Proposed Solution would be for NGESO to send uncapped data in the BSAD file, and for BMRA/SAA to apply the cap to the prices before using them in Settlement. This would 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). Both approaches fundamentally achieve the same outcomes, but the option of amending Section T would allow Elexon to report the uncapped prices, and would avoid the need for NGESO to make system changes.

Attachment A contains the Draft redlining to the BSC for both sub-options.

NGESO's ability to trade

The Proposed Solution as drafted would not actually prevent NGESO trading above VoLL, rather it would 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.

Either approach to implementing the Proposed will mean that the Imbalance price calculation will not be affected by any Interconnector trades above VoLL.

[20] https://bscdocs.elexon.co.uk/bsc/bsc-section-q-balancing-mechanism-activities

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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[21] 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 (Potential Alternative Solution 2), 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

The Workgroup want capped and uncapped data published for transparency. A preference for Elexon making this available as expressed, but was done in the absence of costs and impacts of NGESO publishing the data. NGESO will provide this information as part of this consultation, so that the Workgroup can decide who they want to publish the data.

Currently the Workgroup do not believe the capped and uncapped data needs to 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. 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

[21] https://www.nationalgrideso.com/industry-information/codes/connection-and-use-system-code-cusc-old/modifications/cmp308-removal

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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).

Assessment Consultation Question
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 Workgroup invites you to give your views using the response form in Attachment B

Potential Alternative Solutions being considered by the Workgroup

The Workgroup have not formally raised an Alternative Modification at this stage, however, two Alternative Modifications are being considered, and the Workgroup welcome consultation respondent's views on both to help inform their decision on whether to raise an Alternative solution or not (the Workgroup can only raise one Alternative Modification).

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 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).

NGESO has not yet assessed the impact of this potential Alternative solution, which would affect its processes and systems for balancing the GB system (as it is not yet clear whether the Workgroup will progress it as an Alternative Solution). NGESO has 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.

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The Proposer and majority of the Workgroup is 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 Ofgem for consideration.

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

Benefits

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 therefore proposes 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.

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.

Further, the Interconnectors are part of the Capacity Market and have been paid by customers for holding an obligation to deliver power in a system Stress Event. At the point that NGESO is no longer able to buy power, it will be able to consider the Interconnectors as demand within their margin calculations and if necessary issue a Capacity Market Warning (CMW). This signal should bring any additional generation to the market, get CM DSR providers to turn down, and the Interconnectors to import. Customers having paid for this insurance policy may need to use it.

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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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)

The Proposed Solution and Potential Alternative Solution 1 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.

Potential Alternative Solution 2 (prevent Interconnector trades above VoLL)

Potential Alternative Solution 2 will also reflect the VoLL into the traded market to the benefit of customers. In this scenario, as NGESO are prevented from trading with Interconnector Users above VoLL, the Proposer's view is that this will mean that NGESO will seek cheaper actions or will seek to use Demand Side Response. A potential disbenefit is that by removing a potential action (being able to trade with Interconnector Users above VoLL) this could lead increase the likelihood of Demand Control / Rota Disconnections.

Legal text

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

Elexon has drafted two versions of the legal text to cover both scenarios in the Proposed Solution where either:

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 redlined changes to the BSC can be found in Attachment A of the document for both scenarios.

Once the Proposer and the Workgroup have decided what option will be taken forward, subject to formal NGESO impact assessment, only one set of redlining will be considered, but both sets have been developed for consideration.

Assessment Consultation Question
Do you agree with the Workgroup that the draft legal text in Attachment A delivers the intention of P443 Proposed 1a and 1b?
The Workgroup invites you to give your views using the response form in Attachment B

Potential Alternative solution options:

Redlining of the draft legal text for the Potential Alternative solution options has not been drafted at this stage, given that the Workgroup are seeking industry views in this

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Assessment Procedure Consultation to help them decide whether or not to raise one of the two potential Alternative solution options as an Alternative Modification.

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4 Impacts & Costs

Estimated implementation costs of P443

The Proposed Solution or Potential Alternative Solution 1 would impact either NGESO systems and processes, or BSC Agent (BMRS/SAA) systems and processes, depending on which was responsible for applying the cap to relevant BSAD actions (which is a decision the Proposer and Workgroup will make following the consultation). Details of the total estimated costs (as established so far) are provided in the table below. Costs for the Proposed Solution and Potential Alternative Solution 1 are expected to be similar (as they differ only in which BSAD Actions the price cap applies to):

Implementation cost estimates – Proposed Solution and Potential Alternative Solution 1			
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	Systems & processes	TBC	Costs to be confirmed via this consultation.
Industry	Systems & processes	No specific impacts on systems or processes identified at this stage.	Costs to be confirmed via this consultation.
	Total	170 to 200	

If you believe that your organisation would incur costs to implement P443, we invite you to submit these estimated implementation costs in your consultation response.

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[22] (bmrs.elexon.co.uk), which is currently operating alongside the BMRS platform[23], and is ultimately expected to provide parties with flexible reporting of both BMRS data and Open Settlement Data. We are still assessing the required lead time for the reporting functionality.

Given the lead time for these IT developments, 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 (or Potential Alternative Solution 1 - cap all actions to VoLL in the Imbalance price calculation) would, if approved, be implemented initially using a workaround solution. This

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

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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. 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.

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 has not yet assessed the cost or impact of this option. Should the Workgroup decide to progress Potential Alternative Solution 2 we anticipate that the Assessment Procedure may require additional time to clarify the impact.

Estimated on-going costs of P443

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

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.

No specific on-going operational costs for have been identified for market participants, but we invite views on this via consultation.

Potential Alternative Solution 2 (prevent Interconnector trades above VoLL)

We understand that NGESO will need to operate a workaround, until such time that they can implement enduring system changes. The costs and associated timescales for this will be assessed by NGESO as part of this consultation.

No specific on-going operational costs for have been identified for Elexon or market participants, but we invite views on this via consultation.

P443 impacts

We expect that the Proposed Solution or Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) would 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). However, there may be some impact (on processes that replicate the Imbalance Price calculation, or on contingency plans for times of extreme prices), and we therefore invite views on this via the consultation.

The Proposed Solution or Potential Alternative Solution 1 (cap all actions to VoLL in the Imbalance price calculation) also bring 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 at a time of extreme energy shortage. And there would be a corresponding disbenefit to Imbalance Parties who did not

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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 and Potential Alternative Solution 1)		
Party/Party Agent	Impact	Estimated cost
Generators	Impact expected to be low (subject to impact assessment) - see above.	Low
Suppliers		
Interconnector Users		
Non Physical Traders		
Customers		
Interconnector Operators/owners		
BSCCo	Additional impacts for implementing proposed workaround solution.	Medium

Potential Alternative Solution 2 (prevent Interconnector trades above VoLL)

Potential Alternative Solution 2 will have the same impacts as the Proposed Solution (via its impact on Imbalance Charges), but will also have a more direct impact on Interconnector Users and NGESO, as it will limit the price at which NGESO accepts Offers from Interconnectors Users for purposes of balancing the system. There will 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 will be an impact to the order of actions taken by the ESO as there will be less options available. Therefore, this may result in the possible requirement of using more expensive Emergency Actions or Demand Disconnection.

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

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Impact on the NETSO	
Impact	Estimated cost
Under the Proposed Solution, 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. Under the Potential Alternative Solutions being considered by the Workgroup: 1) NGESO would still be able to trade with any Party above VoLL, but the value of the trade would be capped to VoLL in the BSAD file for the Imbalance price calculation, or 2) NGESO would be prevented from trading with Interconnector Users above VoLL.	Low to Medium for Proposed or Potential Alternative Solution 1. High for Potential Alternative Solution 2. (All subject to impact assessment).

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	In the Proposed Solution, under the option where BSSCo amend the BSAD file on receipt from NGESO, a system change will be required to amend. No BSC system changes are required if NGESO amend the BSAD file before submitting to BSCCo
Insights Solution	Visibility of instances where the data in the BSAD file has been capped

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

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Impact on BSC Agent/service provider contractual arrangements	
BSC Agent/service provider contract	Impact

Impact on Code	
Code Section	Impact
BSC Section Q 'Balancing Mechanism Activities'	If under the Proposed Solution, NGESO amend the BSAD file before sending to BSSCo, then a new paragraph will need to be inserted into Section Q.
BSC Section T 'Settlement and Trading Charges'	If under the Proposed Solution, BSSCo amend the BSAD file on receipt from NGESO, then a new paragraph will need to be inserted into Section T.
BSC Section X-2: Technical Glossary	If under the Proposed Solution, BSSCo amend the BSAD file on receipt from NGESO, then a new defined term will need to be inserted into Section T.

Impact on EBGL Article 18 terms and conditions
All solutions under consideration will impact EBGL. The Workgroup hold mixed views as to whether P443 is consistent or inconsistent with the EBGL objectives. 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	
Supplemental Agreements	

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Impact on Core Industry Documents and other documents	
Document	Impact
System Operator-Transmission Owner Code	
Transmission Licence	
Use of Interconnector Agreement	
C16 Statements	A change may be required to the C16 Statements if NGESO were to be prevented from trading with Interconnector Users above VoLL (Potential Alternative Solution 2)

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.

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Impact 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.	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.	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
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.	As per Proposed	As per Proposed

This table captures the Proposer's initial views. The Workgroup seek your views via this Consultation.

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Assessment Consultation Questions
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?
Do you have any comments on the impact of P443 on the EBGL objectives?
Do you agree with the Workgroup's assessment of the impact on the BSC Settlement Risks?
Will P443 impact your organisation?
How much will it cost your organisation to implement P443?
What will the ongoing cost of P443 be to your organisation?
How long (from the point of approval) would you need to implement P443?
Do you agree with the Proposer's views on the impacts P443 will have on the environment and consumers?
Do you have any further comments on P443?
The Workgroup invites you to give your views using the response form in Attachment B

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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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 (for the Proposed Solution – cap Interconnector actions to VoLL in the Imbalance price calculation) or Potential Alternative Solution 1 – cap all actions to VoLL in the Imbalance price calculation) would be to deliver the solution via a manual workaround in the first instance. This would allow a proposed Implementation Date (for the Proposed Solution or Potential Alternative Solution 1) 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.

Assessment Consultation Question
Do you agree with the Workgroup's recommended Implementation Date (whether or not you agree with P443)?
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)?
The Workgroup invites you to give your views using the response form in Attachment B

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Implementation Date in the Proposal Form

When P443 was raised and the Proposer requested Urgency (which was rejected by the Authority) they originally requested a proposed Implementation Date of +2 Working Days as the original solution was a document only change which they wanted to be implemented in time for winter 2022. However, with system impacts now identified, implementation in +2 WD is no longer possible.

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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[24], 22 November 2022[25], 7 December 2022[26], 16 January 2023[27] and 20 January 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 alternative solutions under consideration 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 are keen, at this stage, 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.'

Whilst the Workgroup hold mixed views on P443, the consensus was that it would be good to understand from Ofgem whether Ofgem 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 are 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.

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)

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

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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 16) 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.

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.

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).

[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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Assessment Consultation Question
Should the solution only apply to Interconnector Users?
The Workgroup invites you to give your views using the response form in Attachment B

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 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.

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

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:

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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.

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.

Assessment Consultation Question
Should the solution include Emergency Actions within scope of any cap?
The Workgroup invites you to give your views using the response form in Attachment B

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:

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NGESO amend the trade price to VoLL before sending to BSCCo; or

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 on an Elexon reporting platform) to gather both the capped and uncapped prices. 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 EU-UK 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;

[33] https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-processes/settlement-risks-risk-visualisation-tool/
[34] https://commission.europa.eu/strategy-and-policy/relations-non-eu-countries/relations-united-kingdom/eu-uk-trade-and-cooperation-agreement_en

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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 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 cahsout 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.

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The Workgroup noted that the situation under which P43 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.

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

The majority of the Workgroup thought this potential 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 the 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 Alternative 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.

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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 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.

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]

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

[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

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

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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. The Workgroup are keen to understand what market participants think should be the right value to use as a cap and will re-visit this question following the Assessment Consultation.

Assessment Consultation Question
Do you agree with the principle of using VoLL as a parameter to set the cap?
The Workgroup invites you to give your views using the response form in Attachment B

[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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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.

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 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.

[40] https://www.nationalgrideso.com/document/268121/download

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Assessment Consultation Question
Do you believe there are any unintended consequences of the a) Proposed Solution – cap Interconnector actions to VoLL in the Imbalance price calculation; b) Potential Alternative Solution 1 – cap all actions to VoLL in the Imbalance price calculation; and c) Potential Alternative Solution 2 – prevent Interconnector trades above VoLL.
The Workgroup invites you to give your views using the response form in Attachment B

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[41] 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.

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

[41] https://www.elexon.co.uk/documents/change/modifications/p401-p450/p443-simple-cashflow-model/

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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

Winter Contingency units

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

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)

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

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.

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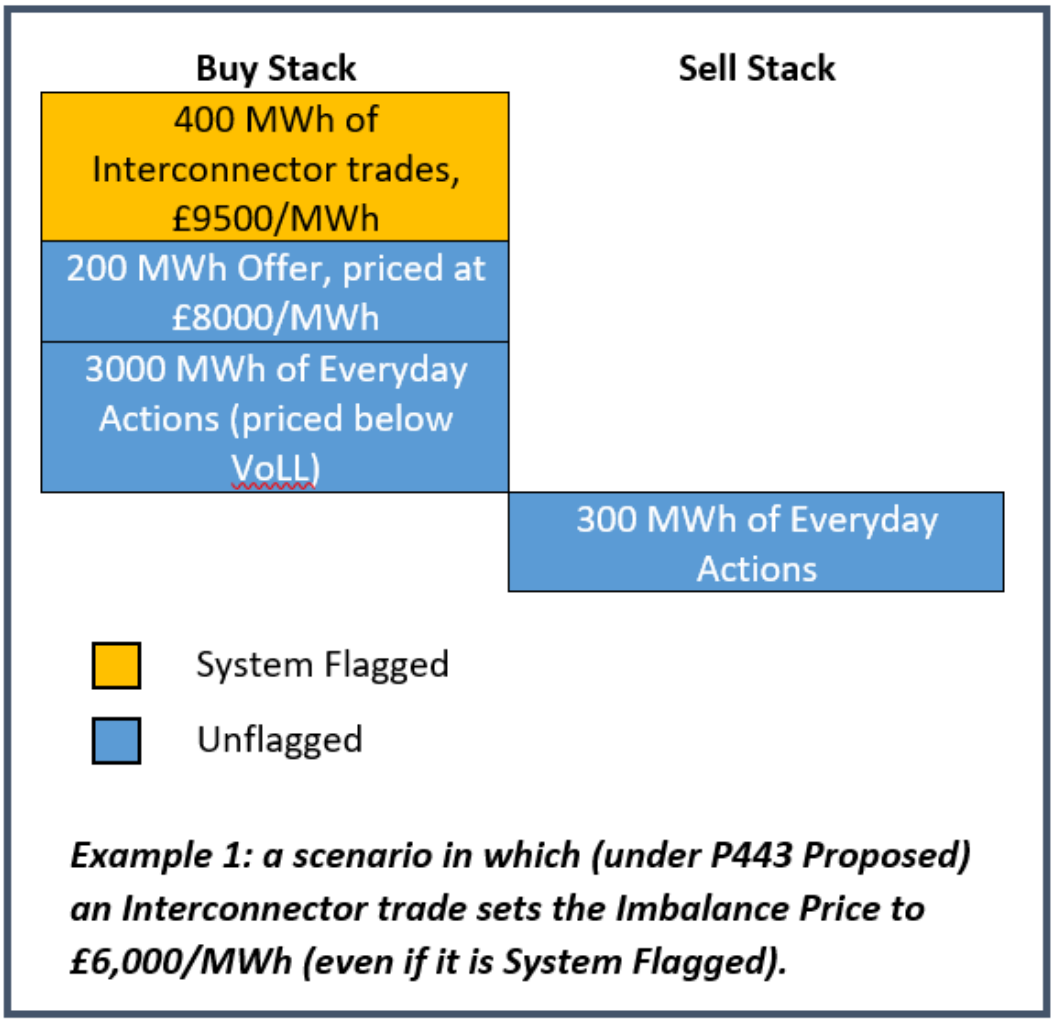
- Example 1 shows how a System Flagged action can still set the price. In this type of scenario the Proposed Solution (or Potential Alternative Solution 1) could still reduce the Imbalance Price, even in cases where Interconnector trades are taken for System balancing reasons:



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-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

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Winter Contingency units priced at £0/MWh in the Imbalance price calculation

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.

Additional considerations outside of P443

In drafting this Modification Proposal it became apparent to the Proposer that there is actually little formal regulation of Interconnector trading. Not only does Ofgem have no regulatory powers in third party countries, but NGESO does not used Bid Offer Acceptances (BOAs) for Interconnector trades. Instead it has constructed its own auction process that sits outside the industry codes, under the C16 Licence Condition statements. This is neither transparent nor subject to open governance. Further, System Operator (SO) to SO transactions appear to be transacted at prices that are unrelated to the cost of energy in either market at the point it is traded. While this Modification does not address all of these issues, with the significant volumes of energy now flowing through Interconnectors, we would urge the Department for Business, Energy & Industrial Strategy (BEIS) and Ofgem to address the wider regulatory framework.

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7 Workgroup's Initial Conclusions

The Proposer's representative and the Workgroup provided their initial views on both the Proposed Solution and the two Potential Alternative Solutions. The Workgroup have not compared the Proposed Solution with the Potential Alternative Solutions at this stage. They have only considered each solution against the current baseline. They will use the response from this consultation to decide what options to take forward, which will require formally comparing any Alternative Modification Proposal against the Proposed Modification Proposal.

Overall, the Proposer believes all solution options are better than the baseline, whereas the majority of the Workgroup believe they are all worse than the current baseline.

Proposed Solution

Does the P443 Proposed Solution better facilitate the Applicable BSC Objectives?		
Obj	Proposer's Views	Other Workgroup Members' Views[42]
(a)	• Neutral	• Neutral
(b)	• Neutral	• **Neutral (majority)** • Negative (minority)
(c)	• **Positive**	• **Positive/Neutral (equal split)**
(d)	• **Positive**	• **Positive (majority)** • Neutral (minority) • Negative (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 initially 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.

The majority did however think that it would improve competition and would help to protect the market (and the BSC community) from market failure.

[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 Transmission Company of the obligations imposed upon it by the Transmission Licence

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

(c) Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity

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

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

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

(g) Compliance with the Transmission Losses Principle

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Objective (b)

The majority of the Workgroup (including the Proposer) believed the Proposed Solution was neutral against Objective (b) as it had no impact. A minority view believed that it was detrimental, as it would dampen the price signal to Trading Parties.

Objective (c)

Half of the Workgroup, including the Proposer believed P443 would better facilitate Objective (c). 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.

Half of the Workgroup believe P443 is 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.

Objective (d)

The majority of the Workgroup, including the Proposer, believed P443 better facilitated Objective (d) on the basis 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.

Minority neutral views believed there was either no impact or any positives (as described above) 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.

Objective (e)

The majority of the Workgroup, including the Proposer believed P443 was neutral against Objective (e) as there was no impact. Minority views 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).

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Assessment Consultation Question
Do you agree with the Workgroup's initial majority view that P443 does not better facilitate the Applicable BSC Objectives and is not better than the current baseline?
The Workgroup invites you to give your views using the response form in Attachment B

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
(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

View against the Applicable BSC Objectives

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.

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Objective (b)

As with the Proposed Solution, 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.

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.

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.

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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Assessment Consultation Question
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 Workgroup invites you to give your views using the response form in Attachment B

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
(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)** • 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

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

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

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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.

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.

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.

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.

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.

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Assessment Consultation Question
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 Workgroup invites you to give your views using the response form in Attachment B

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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	2 March 2023
Panel considers Workgroup's Assessment Report	9 March 2023

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Workgroup membership and attendance

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

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P443 Workgroup Attendance						
Name	Organisation	15 Sep 22	22 Nov 22	7 Dec 22	16 Jan 23	20 Jan 23
Richard Price	National Grid ESO	✓	✓	✗	✓	✗
Russell Woodman	National Grid ESO	✓	✗	✗	✗	✗

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Appendix 2: Background: NGESO trading (Interconnectors)

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 Action, 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[43].

[43] 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 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.

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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[44].

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

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

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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[45] 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[46] identifies the biggest risks to system demand to be in December 2022. The Panel therefore added that any solution should be put forward for decision and ideally implementation before this, which could only be achieved under an urgent timetable.

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

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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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