Connection and Use of System Code (CUSC) CMP432: Improve "Locational Onshore Security Factor" for TNUoS Wider Tariffs

	The Authority[1] has decided to reject[2] this modification
Target audience	National Energy System Operator (NESO), Parties to the CUSC, the CUSC Panel and other interested parties
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Background

Transmission Network Use of System ('TNUoS') charges recover the annual cost of provision, maintenance, and upgrade of the National Electricity Transmission System (the 'NETS') by the Transmission Owners ('TOs'). TNUoS charges are calculated by the NESO and applicable to transmission connected generators, those generators with a capacity of over 100MW connected to the distribution network, and demand. There are two sets of TNUoS charges paid by generators, 'Wider[3]' and 'Local'. 'Wider' TNUoS charges are designed to reflect the relative long-run marginal costs or benefits conferred to the NETS by a generator's choice of location and relate to the Main Integrated Transmission System (the 'MITS'), which constitutes the 'meshed' network shared by all electricity consumers and producers. Generally, generators located closer to centres of demand will tend to face very low, or negative Wider TNUoS charges whereas those generators located further away will attract higher charges. Some generators also pay 'Local' TNUoS charges which relate to any assets connecting the generator to the MITS.

[1] References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.
[2] This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.
[3] 'Wider' is the name given collectively to the individual Peak, Year Round Shared, Year Round Not Shared and Adjustment Tariffs as they may apply to a generator (herein 'generation Wider'). Demand consumers also face a locational tariff which is the sum of the inverse of the generation Peak, Year Round Shared and Year Round Not Shared tariffs, floored at £0 (herein 'demand Wider').

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The NESO calculates Wider TNUoS charges using the Direct Current Load Flow - Investment Cost Related Pricing (ICRP) transport model. The ICRP model starts by considering the routes by which power flows across the transmission system and expresses these flows in 'MWkm' (e.g., 10MW flowing 10km would be 100MWkm).

As TNUoS is a long-run marginal cost signal, the ICRP calculates the marginal MWkm that would be created by the addition of new generation or demand. The model adds an incremental 1MW of generation at each point on the system (with a corresponding 1MW offtake of demand distributed across all points), to then calculate the additional MWkm that additional load would create. These incremental MWkm reflect the additional transmission infrastructure required to facilitate that additional 1MW in comparison to the baseline network. The greater the km distance between generation and demand, the greater the incremental MWkm will be.

These incremental MWkm are then multiplied by a £/MWkm value (the Expansion Constant and where appropriate the applicable Expansion Factor[4]) which is based on the actual, historical costs incurred by the Transmission Owners in transporting 1MW over 1km. Multiplying the incremental MWkm by the £/MWkm value creates the initial TNUoS charge for a specific location. The greater the distance between generation and demand (as above, the greater the incremental MWkm), the higher the TNUoS charge.

The TOs plan for a secure network based on the Security and Quality of Supply Standard ('SQSS').[5] The SQSS sets out the criteria and methodology for planning and operating the NETS. To achieve a secure and reliable system, the NETS requires a level of redundancy (additional network transfer capacity) for resilience purposes i.e. to allow the network to continue to accommodate power flows in the event of network faults, and or, outages.[6]

To reflect the SQSS requirement for network redundancy in Wider TNUoS charges, the NESO uses its 'Secure Load Flow (SECULF)' model to calculate a Locational Onshore Security Factor

[4] Neither the Expansion Constant nor Expansion Factors are in scope of this CMP432. The method used in their derivation is set out in Section 14 of CUSC.
[5] National Electricity Transmission System (NETS) Security and Quality of Supply Standard (SQSS). Version 2.10 April 2025
[6] 'Secured events', during which the NETS must continue to operate, are listed in the SQSS in Sections 4.6-4.66

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('LSF').[7] The LSF itself is a measure of the extent of security needs in the overall system, and is calculated (in summary terms) by identifying the number of MWkm on the transmission system under 'normal' conditions, and comparing that to the number of MWkm on the transmission system in a scenario (set out in the SQSS) where there are network outages (i.e., parts of the transmission system are unavailable). The ratio between the two values is the LSF (currently 1.76). The CUSC requires that this LSF is recalculated for each price control period (i.e., every five years). In this way, we consider that the charging regime and SQSS are aligned.

Having multiplied the incremental MWkm identified above by the Expansion Constant (and where relevant the Expansion Factor), the NESO then applies the LSF as a proxy for costing the security needs of the system within network charges. Therefore, the LSF has a material impact on transmission tariffs and charges.

The modification proposal

SSE (the 'Proposer') raised CUSC Modification Proposal CMP432[8] (the 'Proposal') on 7 March 2024. The Proposal seeks to modify the TNUoS charging methodology in Section 14 of the CUSC by removing the LSF from all generation and demand Wider TNUoS tariff calculations. This would have the practical effect of removing the concept of network redundancy from the charging regime.

The Proposer considers that, as compared the current charging arrangements ("the Baseline") CMP432 better facilitates Applicable CUSC Objectives[9] (hereafter 'ACOs') (d), (e), (f) and (h), with a neutral impact against ACO (g). The Proposer states that the Proposal will better facilitate effective competition between generators by delivering better predictability of Wider locational TNUoS charges and will, they say, no longer inappropriately amplify the cost of TNUoS charges, thus reducing the difference in charges between GB generators in different locations, as well as generators in international markets. The Proposer also considers that CMP432 will result in

[7] As described in the CUSC Section 14.15.88-90A.
[8] CMP432: Improve "Locational Onshore Security Factor" for TNUoS Wider Tariffs
[9] Applicable CUSC Objectives are defined in paragraph 4 of SLC E2 of NESO's Electricity System Operator Licence

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charges that better reflect the cost of incremental network investment and the cost of actual network build; and that by removing the need for the SECULF model and its use in the methodology, this will improve the efficiency and administration of the charging methodology.

On 20 January 2025, we granted the Proposer's request that CMP432 be treated as an Urgent CUSC Modification Proposal in accordance with our Urgency Criteria[10].

Workgroup and Code Administrator Consultation

The Workgroup Consultation was held between 27 February 2025 and 7 March 2025 and received 21 responses. Twelve responses considered that the Proposal better facilitated one or more of the ACOs. This was generally on the basis that removing the LSF would, respondents said: make costs more reflective of network build; and/or improve predictability in TNUoS charges; and/or address perceived issues in relation to cost differentials across GB; and/or improve competition. Some respondents to the Workgroup Consultation raised concerns about ensuring that consistency in the charging framework, via the use of both incremental and average costs elements, should be maintained. Several respondents raised concerns about a lack of information regarding how the SECULF model operated and the constraints of working to an urgent timeline. Where respondents didn't support the Proposal, it was generally because of concerns around reducing cost reflectivity and the need for this Proposal to be considered alongside other changes to the methodology, rather than in isolation; a small number of responses raised concerns about potential increases to southern generators' cost bases (owing to a reduction in the value of the negative charges, i.e., credits, they currently face).

The Code Administrator Consultation (CAC) was held between 28 April 2025 and 6 May 2025 and received 21 non-confidential responses and one confidential response. The following numbers of respondents believed the ACOs were better facilitated by the Proposal than the Baseline: 13 for ACO(d), 14 for ACO(e), 9 for ACO(f), 2 for ACO(g) and 12 for ACO(h). Where respondents supported the Proposal, it was generally believed that removing the LSF would be more cost reflective as it would better reflect actual network build, and that the LSF's removal

[10] Ofgem: Code Modification Urgency Criteria - December 2024

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would correct investment signal distortions between northern and southern generators, which would improve competition. Seven respondents considered that none of the ACOs were better facilitated by the Proposal, largely because the Proposer had not presented convincing evidence for their case, and that the Proposal would not be cost-reflective. Some respondents thought that any change needed to be considered within a wider review of the network and charging methodologies, rather than in isolation.

CUSC Panel[11] recommendation

At the CUSC Panel meeting on 15 May 2025, the CUSC Panel (the 'Panel') by majority considered that CMP432 would not better facilitate the ACOs than the Baseline, and therefore did not recommend its approval. This was generally on the basis that most Panel members considered the Proposal did not better reflect the network's current and future need for capacity, compared to the current arrangements, and as such CMP432 would lead to inefficient investment signals. Some Panel members considered a review of the methodology used to calculate charges for network security might be appropriate but did not support the LSF's removal from the methodology. Further details on the views of the Panel members are set out in the Final Modification Report (FMR).[12]

We note that when assessing the FMR, many of the voting statements of Panel members did not appear to be of the quality and standard we would ordinarily expect, particularly with regard to ensuring that views were clearly set out against the relevant ACOs with supporting rationale. We also note that in several cases, the assessment by Panel members appear to focus on matters beyond the scope of the ACOs (for instance, 'Net Zero'). Despite these issues we have been able to form an opinion on this Proposal, based on the assessment across the information made available to us and our own independent assessment. We would reiterate that it is the responsibility of the Panel to exercise their duties with due diligence and in accordance with the requirements set out in Section 8 of the CUSC. We expect that future Panel assessments will be

[11] The CUSC Panel is established and constituted from time to time pursuant to and in accordance with section 8 of the CUSC.
[12] CMP432: Final Modification Report

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of a higher standard and note that the outcome of the Panel votes impact the nature of parties' rights of appeal.

Technical analysis

The Proposer submitted their own technical analysis and engaged the consultancy Trident Economics (TE) to provide further analysis. This analysis is detailed in the Appendix.

Our decision

We have considered the issues raised by the modification Proposal and the FMR dated 15 May 2025, taking account of representations made including the responses to the industry consultations on the Proposal. We have also taken into account the views expressed and the votes of the Workgroup and CUSC Panel on CMP432[13], as well as the technical analysis presented. We have concluded that implementation of the Proposal will not better facilitate the achievement of the ACOs. We also note our view that the modification is likely to be inconsistent with our principal objective[14] and statutory duties[15].

Reasons for our decision

We consider that the Proposal would have a negative impact on ACOs (d), (e), (f) and (h), and a neutral impact on ACO (g). Therefore, we have decided to reject CMP432 for the reasons set out below.

Given our assessment of cost reflectivity under ACO (e) has interactions with elements of competition under ACO (d), we set out our assessment of ACO (e) first.

Our assessment against the ACOs:

[13] Those views are incorporated within the 'Workgroup and Code Administrator Consultation' section and our assessment of ACOs.
[14] Our principal objective is to protect the interests of existing and future consumers.
[15] The Authority's statutory duties are wider than matters which the Panel must take into consideration and are detailed mainly in the Electricity Act 1989 as amended.

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(e) that compliance with the Use of System Charging methodology results in charges which reflect, as far as is reasonably practicable, the costs (excluding any payments between transmission licensees which are made under and in accordance with the STC) incurred by transmission licensees in their transmission businesses and which are compatible with standard condition C11 (Requirements of a connect and manage connection);

The Proposer considers that CMP432 is positive regarding ACO (e), as the removal of the LSF from the methodology will result in Wider TNUoS charges which better reflect the cost of incremental network investment, and therefore improve cost reflectivity. The Proposer states that where additional network transfer capacity connects to a network that is already secure, this new build does not generally trigger a requirement for any additional redundant network capacity, as the existing circuits provide enough redundancy to ensure the network remains secure. In addition, the Proposer considers that as charges should reflect the incremental cost associated with incremental security, the removal of the LSF will improve cost reflectivity, because the LSF is currently based on a measure of average additional network capacity required for security.

The Panel had mixed views on the Proposal in relation to ACO (e), with a majority considering that the removal of the LSF would have a negative impact on cost reflectivity. Where Panel members expressed the view that the Proposal was negative when compared to the Baseline, it was on the basis that removal of the LSF would not reflect the true capacity and costs of the existing transmission network, especially considering the expansion in the network that is needed to meet Net Zero targets. It was also highlighted by a Panel member that any change to the LSF should not be undertaken in isolation from other elements in the TNUoS tariff calculation but instead within a wider review. Additionally, it was stated that reducing cost reflective signals at a time when the Review of Electricity Market Arrangements (REMA) process[16] is considering enhancing signals is counter intuitive.

[16] The UK Government's REMA process was underway at the time of the Panel meeting. The REMA decision has since been made: Review of electricity market arrangements (REMA): Summer update, 2025

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However, where Panel members expressed a view that the Proposal was positive in relation to ACO (e), it was on the basis that it would improve cost reflectivity for both generation and demand by better reflecting incremental network investment and providing more efficient economic signals. Several responses to the CAC included further arguments in support of the Proposal: that the LSF value was incorrect, its calculation method not supported by evidence, and that it generally did not reflect the actual level of network build necessary to comply with the SQSS, with some responses drawing on the technical analysis of the Proposer, and/or TE to support their view. Several respondents to the Workgroup Consultation expressed the view that price signals should reflect the incremental cost of providing incremental security, that users can only respond to incremental costs and therefore averaging was an inefficient signal. However other Workgroup Consultation and CAC responses considered that the LSF's removal would not be cost-reflective of network build.

Our view

Overall, we consider that the Proposal would reduce cost reflectivity in charging arrangements. Removing the references to the LSF has the practical effect of removing from the methodology the recognition that the GB transmission system is built to a secure standard and that this will, in general require the expenditure of additional costs to provide for such redundancy. Whilst there are specific examples put forward by the Proposer/TE of TO investments that have not driven security-related costs, there are multiple examples where TO investments have provided additional redundancy. If removing the LSF is argued to be more reflective of the investments made where no additional costs for security were incurred, then it follows that it would be less reflective of the investments which did in fact incur security-related costs. It was open to the Proposer, Workgroup and to relevant stakeholders to bring forward alternative methods of calculation of the LSF, or to Propose a more locationally-specific methodology rather than a deletion that does not reflect the costs incurred by the TOs.

The GB electricity transmission network is, by design, resilient against certain foreseeable 'secured events', such as network outages, as stipulated in the SQSS and the Grid Code[17]. To achieve this level of security and resilience in the network, redundant network capacity, i.e.

[17] NESO: Digitalised Grid Code documents

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network capacity which is not needed under normal conditions, but is necessary under conditions of outages, is generally needed across the whole of the network.[18] In other words, network redundancy is an inherent feature of the design and build of the GB transmission network. The provision of this redundant network, for security, entails financial cost.

The charging methodology aims to present a long-run signal of the incremental cost that a user would have on required investment in the network. As set out above, where generation is distant from where energy is consumed, there is an increased need to invest in the network, compared to a case where generation is located close to major demand centres. This is reflected in the marginal MWkm value, which is multiplied by the Expansion Constant (and also Expansion Factor where applicable) and then the LSF. The greater the number of incremental MWkm modelled, the higher the charge for that location. As a result, users face higher charges where the power they export or import increases the total MWkm flows on the network.

In general, and over the long term, it will tend to be more expensive to build a secured system where there are significant distances between generation and demand than where those distances are shorter, particularly as redundancy is needed throughout the network. We consider that ongoing provision of security is generally needed, including in most instances of ongoing network reinforcement. The use of the LSF in the charging methodology brings a measure of the costs of the network redundancy which the network owners are obliged to build and maintain. Costs of network redundancy are not included in wider locational charges in any other way (i.e., there is no "double-counting" of security measures). The Proposal would remove from tariff calculations all consideration of the necessity of redundant network to conform with the requirement for security, and thus we find the Proposal to be less cost-reflective than the current methodology.

The Proposer and several other parties presented their reasoning for the Proposal being, in their views, beneficial to cost-reflectivity. We examine these arguments below.

[18] In some places, network redundancy is complemented by other equipment or operational methods to achieve security.

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Use of averages

In respect of arguments raised regarding the need for charges to reflect incremental cost of security and the use of an average LSF value being negative in terms of cost-reflectivity, we consider that use of an average value is not unique to the LSF, as other elements (such as the Expansion Constant) used within the charging methodology adopt an averaging approach when calculating the resultant incremental cost value. We believe that a simplified approach to the calculation of the LSF (via the use of an average rather than a locationally specific LSF), which is consistent with other parts of the methodology, is more cost reflective than removing it in its entirety.

We further believe that additional network for security will continue to be required for some projects, and considering the whole lifetimes of assets, even taking an incremental approach to the LSF calculation would still on average result in an overall value greater than one. As such, we consider the total removal of security considerations from charges would not be cost-reflective under any approach.

The need for additional network to provide security

The technical analysis submitted to us by the Proposer has several limitations. Firstly, we do not believe that the use of a simplified regional network example necessarily provides an overall and accurate view of the additional security requirements for the entire meshed transmission network. Secondly, we find that although additional network capacity was not needed in order to provide security for the Proposer's selected reinforcement project[19], this single project is unlikely to be representative of the generality of new network projects.

As the network is expanded, there are cases where new build network is of greater capacity than the network it connects to, and so this new network build increases the magnitude of the most severe outage (or "fault condition") that must be planned for, and thus generally requires additional redundant network (i.e. an LSF greater than 1). The Proposer argues that an increase in network capacity of individual branches is not recurring and will not continue indefinitely, and so such cases should be excluded from the charging methodology. However, we have viewed a

[19] The Western Link, built in 2018, and its effects on B6, B7 and B7a transmission boundaries

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sample of forthcoming network projects across GB and found in many cases the work will in fact increase the capacity of individual circuits. We also reviewed a sample of major network reinforcement projects in the recent past, and found that often the reinforcement work increased the capacity of the largest circuit in part of the network. These observations find against the Proposer's view that any increase in capacity of an individual circuit is a one-off step increase which is not recurring. Rather, this situation seems commonplace and highlights that whilst it may not be the case that all projects result in capacity increases, there are those that do and so a wholesale deletion of the concept of the LSF from the Wider charging regime would fail to capture those projects appropriately.

In considering the Proposer's single example of a major network project[20] requiring no additional network for redundancy (i.e. project-specific LSF of around 1), we have assessed a number of projects from the recent past[21], and found, in contrast, that project-specific LSFs significantly exceeded 1. Whilst we consider it to have limitations, we do agree with the TE analysis finding that a project-specific LSF would vary considerably from project to project and would often exceed 1. Overall, our examination of this approach suggests that additional network is indeed often built, providing security, though the additional network requirement for security varies from one project to another. We thus conclude that the approach adopted within this part of the Proposer's analysis, which looked at a single, unrepresentative project, is not suitable to determine system-wide costing of and charging for network security across GB within the TNUoS methodology.

Finally, TE and the Proposer state that network build connecting Scotland with other parts of the GB network is significantly less than generation capacity within Scotland, multiplied by the LSF. Similar views were also presented in several responses to the Workgroup consultation and the CAC. However, no parties have presented similar analysis regarding other parts of the GB

[20] The Western Link, 2018, crossing transmission boundaries B6, B7 And B7a.

[21] Projects assessed were: Trawsfynydd-Treudden reconductoring (2014) and its effect on the NW3 boundary; Beauly-Denny upgrade (2015) and its effect on the B2 boundary; combined effects of Beauly-Denny upgrade and Beauly-Blackhillock-Kintore upgrade (both 2015) on the B1 boundary; the effect of the Hunterston-Kintyre link (2015) on the B3b boundary; the combined effects of Beauly-Denny upgrade and the Hunterston-Kintyre link (both 2015) on the B4 boundary; and the effect of the Caithness-Moray link (2018) on the B0 and B1 boundaries.

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network, and as such we consider the analysis to be limited, in particular in the context of a single, GB-wide LSF being the baseline arrangement. We note that the Proposal does not suggest varying LSFs across different network points (although it was open to the Proposer, Workgroup and respondents to the Workgroup Consultation to suggest such alternatives together with relevant evidence to support), in response to its criticism of the use of an averaged LSF. We consider that removal of the LSF altogether from charges would not be reflective of generators' need to use the network to connect with the major demand centres within GB, and the associated need to build network for contingency purposes.

Absolute cost-reflectivity

In respect to arguments raised relating to Wider charges under the current methodology not being fully cost reflective[22], both generation and demand Wider TNUoS charges are, by design, cost-reflective in a relative but not absolute sense (i.e., a charge of £20/kW levied on a generator does not mean that that generator confers exactly £20/kW of cost to the transmission system). The deletion of the LSF would not result in TNUoS charges that did reflect the absolute costs conferred by a generator to the transmission system.

We consider that long-run investment signals should support the efficient siting of generation (in particular), as well as the efficient use and design of the electricity network, and that users today face charges which are broadly representative of the relative costs they are likely to confer to the TOs. Ultimately, when well designed, cost reflective charges, combined with other market signals, should lead to efficient siting of assets, and reduce system cost and network reinforcement by doing so. This should lead to lower bills for consumers than would have otherwise been the case.

It is our view that the current methodology to derive the LSF is more cost reflective than assuming that the network's need for security should not be costed at all within Wider charges. However, there may be options to improve on the existing methodology for calculating a LSF (or to incorporate network security into charges via some other means), but CMP432 does not provide for a solution that could achieve that. It was open to the Proposer and wider industry

[22] For example, generators in some areas being paid TNUoS credits.

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to seek to change the underlying calculation of the LSF to address any perceived defects in that calculation or to seek to improve its cost-reflectivity. No alternative options other than the wholesale deletion of the LSF have been brought forward, and the evidence before us does not support a conclusion that the LSF itself is an unnecessary or extraneous aspect of the overall TNUoS methodology. Therefore, we conclude that the Proposal would result in a negative outcome for ACO (e).

(d) that compliance with the Use of System Charging methodology facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity;

The Proposer raised concerns about the Wider TNUoS charging methodology and the tariffs, as did several of the responses to the Workgroup Consultation and CAC. They considered that the current differential in tariffs between northern and southern generators, and the fact that GB but not all overseas generators are liable to pay TNUoS charges, were detrimental to competition. These views were generally in the context that they considered the LSF is itself not cost-reflective[23], and thus its removal would improve cost-reflectivity of tariffs under current arrangements, a change which they believe would benefit competition. It was also highlighted that projected increases in TNUoS tariffs, resulting from changes to other inputs[24] into TNUoS tariff calculations, cause charging signals to be, in their view, volatile and unpredictable, a situation which they believe increases risk and the cost of capital. They consider that the LSF inappropriately amplifies these perceived 'defects' and therefore concluded that implementation of the Proposal would facilitate a level playing field and efficiency in Contract for Difference and/or Capacity Market auctions.

The Panel had mixed views on whether the Proposal better facilitates this objective, with the majority considering that it will negatively impact competition and ACO (d). This was generally on the basis that the Proposal would introduce a significant change in charges for all parties, where some would benefit from a reduction in TNUoS charges, and others might see increases (i.e. the Proposal would result in lower charges for portfolios heavily weighted with northern

[23] Arguments relating to cost-reflectivity are discussed under ACO (e) above.
[24] Other inputs into TNUoS tariffs that can change from year to year include the location and capacity of generation and demand, and network reinforcement.

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assets, and lower credits for southern-weighted portfolios). Panel members generally expressed their views on the effect of the Proposal on competition in the context of its impact on cost-reflectivity of charges. Related to these arguments, a fundamental lack of evidence to support the removal of the LSF from the charging methodology was also highlighted among the Panel's deliberations.

However, where the two Panel members considered the Proposal to be positive against ACO (d) it was generally on the basis that there had been no credible evidence presented to support the current LSF value, and as such its removal from the methodology would in their view address what they considered to be a confirmed defect. They considered that this would also improve the predictability of TNUoS tariffs and prevent what they considered to be existing tariff distortions, which they said negatively impact competition.

Our View

In general terms, the extent to which a charging-related CUSC Modification Proposal might facilitate competition depends on whether, or the degree to which, it facilitates a level playing field as between competitors. A level playing field is facilitated where parties are exposed, via network charges, to the costs or benefits they confer to the system as a result of their commercial choices. In the context of this CMP432, we consider that competition would likely be detrimentally affected by the loss of cost-reflectivity caused by the deletion of the LSF.

On predictability, and on reducing the charges faced by some parties

We recognise that some parties consider implementation of CMP432 would benefit competition by i) reducing the perceived unpredictability of TNUoS; and ii) by reducing the absolute value of Wider charges in some areas. We agree that - to the extent that parties currently find it difficult to predict their Wider TNUoS liabilities - stabilising charges, or reducing the range in which they might fall would in principle be better for competition by removing a potential barrier to entry, and/or enabling generators to compete on matters other than their ability to predict TNUoS charges.

Where parties' costs reduce because of efficiencies or innovations they themselves create, that will tend to be as a result of, and will itself, improve competition. However, we do not agree

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that simply reducing TNUoS charges aids competition between generators. In fact, we consider that cost-reflectivity in charging arrangements supports competition by reflecting the differences in network costs driven by parties' commercial choices, whereas a reduction (other than on the grounds of cost-reflectivity) could be distortive. We have not received clear evidence to substantiate claims that the absolute value of charges hampers generation investment decisions.

Removing the LSF would result in a reduction in the range of possible charges. However, the extent to which this enhances predictability is limited since the LSF is a stable multiplier (insofar as it changes once per price control – every five years), and in our view the year-on-year charge variation is primarily driven by other components of the charging methodology. Whilst we recognise the potential benefits of a reduction in the range of possible charges that the approval of CMP432 could create, we consider that this benefit is limited in practice as the Proposal does not – and is not intended to – preclude TNUoS charges reaching any particular value.

For example, if generation Wider charges within a zone were currently expected to fall between £30 and £45/kW (a range of £15), the approval of CMP432 might reduce those charges to £17 and £25 (a range of £8). However, as the network develops or generation and demand loads change year-on-year, it is still possible that in subsequent years those charges would still fall within the same range (i.e., £8) but they could reach *absolute* values of any figure (for instance, they might fall between £37 and £45/kW). It is equally possible that the range could expand again for similar reasons.

It is possible therefore that year-on-year charges do not necessarily become easier to predict, but that the magnitude of variation, which is driven by other factors within the wider charge methodology, is lessened under the Proposal.

On cross-border trade

In respect of the argument made in relation to impacts on cross-border competition, we note that generation Wider TNUoS charges are levied on a £/kW basis and do not contribute to the marginal cost of production of electricity. A generator in GB wishing to export power will pay TNUoS charges at a £/kW level whether it exports or not. As TNUoS is not a marginal cost of

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production (to GB generators), when competing against a generator in another country, the fact that that GB generator faces a power-based TNUoS charge will not affect the price at which that generator is able to sell their power in that interconnected market. It is therefore not the case that a £/kW charge in GB distorts cross-border trade even in circumstances where a competing overseas generator does not face a TNUoS-equivalent charge. We therefore disagree that the Proposal would have any effect on cross-border trade.

Other purported defects in the TNUoS regime, and the potential for unanticipated gains/losses

Some stakeholders expressed views regarding perceived defects in other parts of the TNUoS charging methodology.[25] Those go beyond our assessment of CMP432, and would be considered on their own merits should they be raised in future modifications. In the context of this decision, we deem those arguments relating to other perceived defects to not have direct relevance to the question as to whether the removal of the LSF from the charging methodology better facilitates the ACOs when compared to the baseline. Some stakeholders commented that network expansion is triggered by strategic planning, or that charges should facilitate the SSEP.[26] We recognise that the context of anticipatory investment and strategic planning is relevant to the design of future network charges – it forms a key part of our, and the government's future reform project on network charging but it is not a feature of the baseline against which CMP432 is assessed, (nor is the upcoming reform project), and generally reviewing the principles underpinning the Wider charging methodology is not within the scope of this Proposal.

We note the concerns raised by some parties about the risk of unanticipated gains and losses that might occur as a result of implementing the Proposal. Leaving aside the inherent nature of the charging framework and that it must allow for changes, we have not received any specific evidence regarding the potential magnitudes of any gains or losses that could arise from implementation of the Proposal. Taking this into account, we consider there to be greater adverse impacts on competition flowing from the reduction in cost reflectivity than the limited positive impacts that may flow from decreased exposure of parties to variation in charges.

[25] In particular, concerns were raised that the current methodology is perceived to be overly sensitive to changes in input data such as demand/generation capacities.
[26] NESO's Strategic Spatial Energy Planning

Overall, we consider that the material detriment to cost reflectivity in the charging regime that CMP432 would likely cause would harm competition as between generators. This harm would in our view be more detrimental than any potential benefit or dampening the impact of year-on-year variation in Wider charges. The LSF is fixed for a five-year term and is not the root cause of year-on-year changes in the values of charges faced by parties; its removal would serve to reduce the range of possible charges, but would not meaningfully enable parties to more easily predict charges in either the near- or long-term.

(f) that, so far as is consistent with sub-paragraphs (a) and (b), the Use of System Charging methodology, as far as is reasonably practicable, properly takes account of the developments in transmission licensees' transmission businesses and the ISOP business;

The Proposer considers that the Proposal would better facilitate ACO (f). In their view, new network investment, particularly in Scotland, is not being built with accompanying pro-rata levels of additional surplus redundant network capacity for security purposes, and therefore removing the LSF will better align with what occurs with transmission network planning and how the network is built.

However, the Panel had mixed views regarding the Proposal and its effect on ACO (f), with the majority of Panel members considering the Proposal to be neutral against this objective, although no, or limited rationale was provided. Two Panel members considered the Proposal to better facilitate ACO (f), with one Panel member stating that further build out of the transmission system is needed, with much of the work already in progress to deliver the capacity required without the need of redundant capacity. However, another stated that the system is already larger than needed to provide unsecured transfer capacity i.e. than would be needed when all parts of the network are working normally, and locational signals should reflect this. The Panel member who voted that CMP432 was negative in relation to ACO (f) considered it inappropriate to change the current charging system pending the outcome of the REMA decision[27].

[27] Review of electricity market arrangements (REMA): Summer update, 2025 (accessible webpage) - GOV.UK

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Several CAC responses expressed the view that removal of the LSF would better align with the actual growth of the transmission network; however, those that did not support the Proposal generally considered removal of the LSF would underestimate necessary network build.

Our view

We agree that the large-scale and near-term (i.e., within the next decade) transmission investments are likely a relevant development in TOs' businesses to the extent that they could be said to mark a departure from historical planning and building approaches.

As set out above, we consider that at a GB-wide level, when building new network the TOs will continue to be required to ensure that the expanded system conforms to the standards set out in the SQSS, part of which requires network redundancy. Over the long-term therefore, the removal of the LSF from the charging regime is expected to be negative against this ACO as it would not provide a means by which to reflect the need for redundancy in relation to that additional network in the charging methodology. We believe this is an extension of the issues we have identified in respect of cost reflectivity.

(g) compliance with the Electricity Regulation[28] and any relevant legally binding decisions of the European Commission and/or the Agency

The Proposer considered the Proposal would be neutral regarding ACO (g). The Workgroup held the same view. However, in the Code Administrator Consultation, two respondents stated that the Proposal would better facilitate ACO (g). One of those responses stated that the Proposal would do so by improving the cost-reflectivity and transparency of the tariffs, and that a LSF of 1 [the material effect of the Proposal] aligns with the regulation by reflecting actual system build and investment needs, thereby avoiding unjustified network charges. The other CAC response which considered the Proposal beneficial to ACO (g) also stated they agreed with the Workgroup that the Proposal was neutral for this ACO and was in that respect self-contradictory.

[28] The Electricity Regulation referred to in objective (g) is Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast) as it has effect immediately before IP completion day as read with the modifications set out in the SI 2020/1006

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Every Panel member considered the Proposal to be neutral regarding ACO (g).

Beyond the Panel's assessment and the responses to the Workgroup Consultation and CAC, we received separate representations (from a CUSC Party) that focuses in large part on this ACO and so, for completeness we address those points below.

Our view

The relevant aspects of the Electricity Regulation in relation to which compliance concerns have been raised relates to Article 18. Article 18 makes various provisions as regards network charging including (but not limited to) that they be 'cost reflective, transparent, take into account the need for network security and flexibility'. For the reasons set out below, our view is that the current charging methodology is compliant with Article 18 of the Electricity Regulation. Whilst we consider that approval of the Proposal would result in less cost reflective charges, we do not consider that it necessarily follows that the Proposal would be negative against this ACO. As such, our assessment is that the Proposal would be neutral against this objective.

Aligned with the views expressed by two workgroup respondents, we have received a representation that – in summary terms – contended that the approval of the Proposal would be positive against this ACO (e.g. in improving cost reflectivity and reflecting actual costs incurred). We address the views of the workgroup respondents and the additional representation below.

The view was expressed that we are required under ACO (g) to approve those CUSC Modification Proposals which are necessary to ensure compliance with the Electricity Regulation. In this context, it was contended that approval of CMP432 was required to ensure compliance with Article 18 of the Electricity Regulation. In particular, to ensure that charges be cost reflective and reflect actual costs incurred. We have explained above that the removal of the LSF from the charging methodology would in our view be less cost reflective than the baseline as it would fail to reflect the need for costs to be expended by the TOs related to the provision of redundancy in the network. Indeed Article 18 itself specifically notes that charges shall "take into account the need for network security and flexibility". The removal of LSF would have the opposite effect.

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In terms of transparency and reflecting actual costs incurred, we note that neither the Baseline nor the Proposal would result in increased transparency of TNUoS charges or reflect the actual costs conferred to the TO by each specific generator / consumer. Instead, it is the case that the relevant price controls are designed to ensure that the costs that are to be incurred by the TOs (at an aggregate level) are recovered via the charges applied to generators and consumers and at the end of the price control period the values are 'trued up'. We note also that charges are based on the Expansion Constant (and Expansion Factors) which themselves are set by reference to actual historical costs incurred by TOs in expanding their network. TNUoS is, by design, cost reflective in a relative rather than absolute terms and so we agree that the current regime does not result, in any given year, in charges that reflect the exact costs conferred in that year by a particular user to the network. This is a function however of the entire long-run marginal cost approach to the derivation of the TNUoS charge and would not change on removal of the LSF.

Article 18 also requires that charges are levied on a non-discriminatory basis (i.e., that two similar persons should not face undue differences in charges, or that two different persons should not face undue similarities). Representations were made that the retention of the LSF results in discriminatory charging arrangements because i) it requires that all generators face the same average LSF; and ii) generators on the edges of the system pay a disproportionate share of security costs.

In respect of point i), the removal of the LSF would have the same practical effect as applying a LSF of 1 and so, to the extent that the application of an average LSF was considered to be discriminatory (which we do not agree), the proposal would not remedy this. On point ii) we do not agree that generators on the edges of the transmission system pay a disproportionate share of the costs of security. As explained in the assessment of ACO (e), the share of costs faced by each generator or consumer is a product of their choice to locate in a particular region: in general terms it is expected there to be a correlation between the size of the network required to facilitate flows between distant demand and generation and the costs incurred in ensuring that network is secure.

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The representations also observed that Article 18 (1) provides that charges shall not be distance related unless they comply with Article 18(3). Article 18(3) provides '*Where appropriate, the level of the tariffs applied to producers or final customers, or both shall provide locational signals, and take into account the amount of network losses and congestion caused, and investment costs for infrastructure'*. As set out above, the charging methodology (including the LSF) is designed specifically to send locational signals and take into account investment costs for infrastructure (i.e. the provision of a secured network). There is a further statement that the methodology results in charges being more than necessary to meet the SQSS requirements and that there is a misalignment between the methodology and the SQSS. As explained above, the actual charges recovered reflect actual costs incurred by the TOs to meet the security requirements of the SQSS. We do not agree that there is any misalignment between the charging methodology and the SQSS and as such, do not agree that there is any double counting. There is no other part of the charging methodology that deals with or reflects the additional costs of required security. As stated elsewhere in this decision, if parties felt that a single GB-wide LSF was insufficiently granular, it was open to the Workgroup, Proposer and broader industry to propose alternatives that might have reflected redundancy at a more locationally-granular level rather than in effect removing it altogether.

Our view is that the current methodology is compliant with the Electricity Regulation and the approval of the Proposal would not better facilitate this objective. Our assessment is that the Proposal would be neutral against this objective.

(h) promoting efficiency in the implementation and administration of the Use of System Charging methodology.

The Proposer states that the Proposal is positive against this ACO, as it removes the need for the NESO to separately operate the SECULF model to calculate the LSF, and then removes its use as a step within the charging methodology. This simplification to the tariff calculation process would, they believe, improve the efficiency of implementation and administration of charges.

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Two Panel members shared the Proposer's view on the impact of the Proposal on this ACO and agreed with the Proposer's reasoning. However, three Panel members believed the Proposal would be negative in terms of ACO (h). One Panel member expressed the view that the Proposal lacks necessary supporting analysis, and therefore its implementation could lead to an inefficient system charging methodology; and another believed that the removal of an established and appropriate part of the TNUoS methodology could create additional work for the industry.

Our view

We recognise that removing demonstrably unnecessary steps in the charging methodology would ordinarily simplify the calculation process and in that respect may be considered to improve efficiency. However, as we believe that network redundancy to provide security is an inherent part of network design and build, the removal of the LSF from the charging methodology would be inefficient such simplification would be detrimental to the effectiveness of the charging methodology. We therefore we conclude that the Proposal would have a negative impact on ACO (h).

Principal Objective and other Statutory Duties

Paragraph 8.23.7 of the CUSC states: "Subject to Paragraphs 8.23.9 to 8.23.13, in accordance with the NESO Licence, the Authority may approve the CUSC Modification Proposal or a Workgroup Alternative CUSC Modification(s) contained in the CUSC Modification Report. If the Authority believes that neither the CUSC Modification Proposal (nor any Workgroup Alternative CUSC Modification(s)) would better facilitate achievement of the Applicable CUSC Objectives, then there will be no approval." Accordingly: (i) if Ofgem concludes that a proposal would better facilitate achievement of the ACOs, Ofgem has a discretion as to whether to approve the proposal (and must exercise that discretion in accordance with its principal objective and wider statutory duties); but (ii) Ofgem cannot approve a proposal which it concludes would not better facilitate achievement of the ACOs. Which, in any event we do not consider that it has been established that approval of the Proposal would be consistent with our principal objective, or required by any of our wider statutory duties.

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Primarily, the approval of the Proposal would have undermined cost reflectivity. As a result, the relative cost of using the network in different regions would have not been appropriately reflected, leading to less efficient investment decisions which would in the long-term result in higher network and system costs – ultimately to the detriment of consumers. Additionally, the approval of the Proposal could have led to an unreflective cost reduction in credits which could in principle alter or hasten repowering/closure decisions which may then affect liquidity in Capacity Market auctions, the purpose of which is to support security of supply at lowest cost. It therefore our view that the Proposal is likely to be inconsistent with our principal objective and our statutory duties.

Reformed National Pricing and next steps

Following the REMA decision for 'Reformed National Pricing'[29], the Government has announced reforms to market arrangements, which will include changes to TNUoS charges. In our July Open Letter[30], we recognised there are some challenges with the existing charging methodology, in particular on the need to enhance investability by making charges more predictable and aligning charging methodologies with strategic planning. We will be working closely with the Department for Energy Security & Net Zero (DESNZ) and the wider industry on the design and delivery of reformed network charges and appropriate transitional arrangements. As part of this, we will be feeding into the Government autumn delivery plan and are in the process of setting up structured stakeholder engagement fora to explore network charging reform options and seek views.

[29] DESNZ: Chapter 2, The Reformed National Pricing package
[30] Ofgem Open Letter: Reforming network charging signals to align with the Government's decision on the future of Great Britain's electricity system

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Decision notice

In accordance with Standard Condition E2 of the Electricity System Operator Licence, the Authority has decided that modification proposal *CMP432: Improve "Locational Onshore Security Factor" for Wider TNUoS tariffs* should not be made.

Shai Hassid
Deputy Director - Electricity Charging and Market Design
Signed on behalf of the Authority and authorised for that purpose

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Appendix: Technical analysis by the Proposer and the Proposer's consultant

The Proposer undertook technical analysis exploring perceived issues with the current LSF used within the charging methodology and the modelling of the need for redundancy; they also engaged consultancy Trident Economics (TE) to undertake further analysis on the same themes. Both sets of analysis used simple theoretical network circuits aiming to show that adding new network build to a network that is already secure would not usually require additional redundant capacity to provide security, which was considered to be generally representative of the effect of new network build in GB. The analysis also identified circumstances in which new network build would require additional redundancy beyond an LSF of 1, although this was believed to be an exception.

Examples of past network build projects (actual or proposed), and the amount of additional network for security that those specific projects potentially required was also analysed. In their selected project, the Proposer found that no additional network was needed to provide redundancy (corresponding to a project-specific LSF of 1); TE, however, found the need for network redundancy varied greatly between individual network projects, and was often greater than 1.

In a separate piece of analysis, TE considered the expansion of wind generation in Scotland. It was found that the transmission network capacity linking Scotland with the network to the south (across the B6 transmission boundary[31]) is not projected to increase at a rate commensurate with the increase in Scottish wind generation capacity. TE suggests that a much lower "LSF for wind" would better describe actual and projected network build connecting Scotland to England and Wales. However, TE did not provide any analysis regarding network capacity, generation or demand in other parts of the GB network.

Further details on the analysis are set out in Annexes 5, 16 and 16a of the FMR.
Our view on the Technical Analysis is presented under ACO (e).

[31] The 'B6' transmission boundary delimits the transmission network in Scotland from the network further south. Illustrations of B6 and other transmission boundaries are available in NESO's Electricity Ten Year Statements (ETYS), for example ETYS 2024: https://www.neso.energy/document/352001/download

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