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CUSC Modification Proposal Form

CMP460: Improving Transmission Connection Asset Charging

Overview: This modification proposes improvements to the framework for charging Transmission Connection Assets. The proposal seeks to socialise costs and cap customer contributions to create a more certain and fair charging methodology.

Modification process & timetable

1	Proposal Form 08 September 2025
2	Workgroup Consultation 28 January 2026 – 18 February 2026
3	Workgroup Report 14 May 2026
4	Code Administrator Consultation 22 May 2026 – 15 June 2026
5	Draft Final Modification Report 23 July 2026
6	Final Modification Report 10 August 2026
7	Implementation 01 April 2027

Status summary: The Proposer has raised a modification and is seeking a decision from the Panel on the governance route to be taken.

This modification is expected to have a: High impact

Transmission Owners, Distribution Network Owners, Generators, Demand Customers, Transmission System Operators

Proposer's recommendation of governance route	Standard Governance modification with assessment by a Workgroup	
Who can I talk to about the change?	Proposer: Joe Colebrook Joe@innova.co.uk 020 3523 9560	Code Administrator Contact: Cusc.team@neso.energy

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What is the issue?

The current transmission charging framework creates significant financial and procedural challenges for embedded distribution customers, particularly when Super Grid Transformer (SGT) reinforcement is triggered at Grid Supply Points (GSPs). These reinforcements are often classified as connection assets, meaning the full cost is passed directly to the Distribution Network Operator (DNO) – even when the reinforcement benefits multiple users or supports strategic grid development. However, DNOs currently lack a clear, regulated framework to pass these costs through to the initiating customer or to share them across future users. This results in:

Cost uncertainty for embedded generators and demand customers, who may face unpredictable and disproportionate charges.

Financial exposure for DNOs, who must absorb multi-million-pound liabilities without a recovery mechanism.

Inconsistent treatment across regions and voltage levels, depending on how assets are classified e.g. as Transmission Connection Assets or Infrastructure Assets.

Investment deterrence, especially for low-carbon and community energy projects that cannot absorb significant liabilities.

Misalignment with distribution charging principles, where second-comer rules and cost apportionment are standard practice.

Strategic grid development delays, as reinforcement decisions are deferred due to unclear funding pathways.

Where distribution customers trigger transmission reinforcement at ‘connection asset’ sites, the cost is passed on by NESO to the relevant DNO, and from the DNO to the customer, or group of customers, who trigger the works. The cost of these works identified at a wide number of GSPs currently ranges from £12m to £60m per GSP, usually too much for individual distribution connections to fund. Many DNOs have determined that if a group of customers triggers the transmission reinforcement, the cost is split proportionally between those customers, pro rata on their capacity. This means that if customers in the group terminate their offers, the remaining customers pick up a higher proportion of the cost, until theoretically one customer could be left to fund the full cost.

Some DNOs have sought funding through distribution price controls for transmission reinforcement. Most transmission reinforcement included in the distribution price

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controls is for gradual growth in demand, rather than by step changes in demand caused by individual connections.

At GSPs where there are two or more DNOs, or a DNO and another customer, the site is classified as an 'infrastructure site'. At these sites, the cost of transmission reinforcement is socialised and funded through TNOUS.

At some GSPs, instead of offering multiple individual SGT tertiary winding connections, TOs have amended offers to provide a single SGT solely for the connecting customers, i.e. a 'Grid Park', for a group of three tertiary winding customers. The grid park SGT is classified as an infrastructure asset (because it is supplying multiple customers) and so it is funded through Transmission Network Use of System (TNUoS) charges. However, if those customers had applied as three embedded connections, they would have been charged for the SGT reinforcement as a Transmission Connection Asset.

Ofgem has previously identified this as an issue in the June 2021 'Access and Forward-looking Charges Significant Code Review: consultation on minded positions' document, sections 3.27 to 3.34.

Ofgem again identified this issue in the Connections Action Plan (CAP) action 3.5c iv published in November 2023. The action defined in the CAP is;

'ESO and network companies to continue to identify, and take actions to resolve, areas where a lack of consistency or standardisation is leading to poor outcomes for customers and/or the wider electricity system.'

The Energy Networks Association (ENA) Strategic Connections Group (SCG) developed 6 possible solutions (A-F), which were presented to the Connections Delivery Board (CDB) in April 2024. The CAP, the work completed by the SCG, and the steer from the CDB clearly indicate there is an issue that industry needs to resolve. This Proposal aims to complete action 3.5c iv – ensuring consistency including the allocation of costs – from the CAP and conclude the work started by the SCG.

Why change?

In recent years, there has been a considerable increase in requirements for new or upgraded transmission assets, leading to an increase of attributable enabling transmission reinforcement works across Great Britain (GB). This increase can largely be attributed to the significant increase in connection applications across both the transmission and distribution systems.

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The lack of transparency and predictability of Transmission Connection Asset Charging undermines investor confidence, creates regional disparities, and slows progress toward net-zero targets.

The current transmission charging framework for Super Grid Transformer (SGT) reinforcement at Grid Supply Points (GSPs) is structurally misaligned with the principles of fairness, efficiency, and strategic planning that underpin distribution charging. It places the full cost of transmission upgrades on the first distribution-connected customer—often a low-carbon generator or large-scale demand user—without any mechanism for cost recovery from future beneficiaries. This creates a high-risk, high-cost environment that actively deters investment and undermines the UK's decarbonisation goals.

Evidence from NGED's internal analysis shows that approximately 60% of their GSPs are classified as connection assets, meaning all associated transmission costs are passed directly to distribution customers. This classification results in a postcode lottery, where customers connecting to infrastructure sites benefit from socialised costs via TNUoS, while those at connection sites face multi-million-pound liabilities. The inconsistency is compounded by regional variations in transmission asset classification and DNO charging practices, leading to unpredictable outcomes and distorted locational signals.

The lack of second-comer rules at the transmission level further exacerbates the problem. Unlike distribution charging, where cost apportionment and recovery mechanisms are well established, transmission-connected customers bear the full cost of reinforcement even when future users will benefit. This not only penalises early movers but also delays strategic grid development, as DNOs defer reinforcement decisions due to unclear funding pathways.

This modification is not just a technical fix—it's a strategic enabler. It removes barriers to investment, supports coordinated grid planning, and ensures that the costs of enabling infrastructure are shared equitably across beneficiaries. It also complements wider reforms such as the End-to-End Connections Review and the development of Distribution System Operator (DSO) markets.

The Gate 2 to Whole Queue (G2TWQ) process implemented via CMP435 is likely to reduce the size of the connection queue and therefore, reduce the number of GSPs that need transmission connection assets to be built. Although the relative magnitude of the issue may be reduced the proposer still expects 10s of GSPs to be impacted and the value of Transmission Connection Asset works to be £100m's after the G2TWQ process has concluded. Projects which are still in the queue and impacted by this issue will likely be 'ready to connect' and therefore the issue may have a greater impact on their commercial decision making and on they will likely have near term connection dates.

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The proposer has requested data from National Grid Electricity Transmission (NGET) on the number of GSPs impacted before and after G2TWQ.

In short, reforming the transmission charging boundary is essential to unlock the full potential of the UK's energy transition. It will create a level playing field for all customers, accelerate low-carbon deployment, and ensure that grid development keeps pace with demand in a fair, efficient, and future-proofed way.

What is the Proposer's solution?

The proposer recommends establishing a dedicated Workgroup to develop a fairer, more transparent, and strategically aligned framework for charging transmission connection assets—particularly Super Grid Transformer (SGT) reinforcements triggered by embedded customers. The solution must address both the immediate cost burden on individual customers and the broader structural misalignment between transmission and distribution charging regimes.

The Workgroup should explore a suite of options already identified through industry engagement. These include:

- **Full socialisation via TNUoS:** Reclassify multi-user transmission assets as “Shared Connection Assets” and fund them through TNUoS, aligning their treatment with infrastructure assets regardless of GSP classification. This would require a CUSC change and economic assessment mechanisms to ensure efficient investment.
- **Full Socialisation via DUoS:** Enable DNOs to recover transmission reinforcement costs through DUoS, by increasing the New Transmission Capacity Charges (NTCC) allowance and Load-Related Expenditure (LRE) allowances or other uncertainty mechanisms. This approach allows DNOs to deploy flexibility markets and non-physical asset alternatives, and would be implemented via updates to DCUSA and DNO charging methodologies. This may require changes to the CUSC to reclassify multi-user transmission assets as “Shared Connection Assets”.
- **Capacity Allocation Factor (CAF) model:** Apportion costs among triggering customers based on MW capacity or fault level contribution, with any residual costs socialised via either TNUoS or DUoS. This hybrid model maintains locational signals while improving cost predictability. This may require changes to the CUSC to reclassify multi-user transmission assets as “Shared Connection Assets”.
- **Threshold-based charging:** Introduce a high-cost cap or MW-based threshold, below which costs are socialised, and above which customers pay a standard rate. This balances fairness with cost reflectivity and could be implemented via

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DUoS or TNUoS. This may require changes to the CUSC to reclassify multi-user transmission assets as “Shared Connection Assets”.

- **Improved guidance and standardisation:** Develop clearer, more consistent customer guidance across TO’s, DNOs and voltage levels, reducing confusion and enabling better investment decisions.

The solution must consider interaction with DCUSA modification [DCP461](#), and ensure the CUSC and DCUSA are aligned.

The solution must also consider coordination with NESO and TOs to revise construction agreements, alignment with the End-to-End Connections Review, and wider regulatory reforms to network charging.

The workgroup must consider the interaction with distribution and transmission business plans and the ability for DNOs and TOs to secure investment for any works.

The Proposer does not advocate blanket strategic investment at all GSPs. Instead, reinforcement should be triggered based on credible evidence of future demand or generation, supported by DFES forecasts, connection queues, and stakeholder engagement. This ensures that investment is targeted, efficient, and aligned with net-zero objectives. Ultimately, the solution aims to remove barriers to low-carbon connections, reduce regional disparities, and create a level playing field for all customers, while maintaining the lowest whole system cost to electricity consumers.

The ENA SCG proposed Option A – Fully socialise transmission connection works through the distribution price control, DUoS – as their preferred solution. Option D – Transmission connections costs will be passed to connecting customers based on a Capacity (MW) Cap and then at a standard cost per MW above the CAP. Socialised below the threshold through DUoS – was noted as having merit as an alternative long-term solution.

Draft legal text

The draft legal text is to be developed by the working group. The proposed solution will require amendments to Section 14, mainly Part 1. The solution may require the creation of new definitions for Connection Asset and Infrastructure assets or other types of assets in Section 11 of the CUSC.

The definition of Transmission Connection Asset and Infrastructure Asset is defined in sections 14.2.5 to 14.2.8.

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What is the impact of this change?

Improving the transmission connection asset charging framework will impact many parties across the energy sector. While the proposal introduces a shift in cost allocation, it is designed to deliver long-term benefits by removing investment barriers, improving regional equity, and aligning transmission charging with distribution charging.

Embedded Generators

Embedded generators—particularly low-carbon and community-led projects—stand to benefit significantly. Under current arrangements, they face unpredictable and often prohibitive costs when triggering transmission reinforcement at Grid Supply Points (GSPs). By introducing socialised or apportioned cost mechanisms, the proposal reduces financial risk, improves transparency, and enables more equitable access to the grid. This will accelerate the deployment of renewables and support the UK's net-zero targets.

Embedded Demand Customers

Large-scale demand customers connected via distribution networks face uncertainty when their load growth triggers transmission upgrades. With no clear framework for cost recovery or apportionment, they may be exposed to full reinforcement costs, despite benefiting from shared infrastructure. The proposed changes will introduce predictability and fairness, allowing demand customers to only pay for what they use, and plan growth with greater confidence.

Distribution Network Owners (DNOs)

DNOs absorb the full cost of transmission reinforcement classified as connection assets, without a well-defined regulated mechanism to pass these costs through to customers. This creates financial exposure and operational uncertainty, particularly when reinforcement is strategic or benefits multiple users. The proposal offers DNOs a clearer framework for cost recovery—whether via DUoS, TNUoS, or a hybrid model—and enables better coordination with TOs and NESO. It also supports the development of flexibility markets and non-physical alternatives.

Transmission Owners (TOs) For TOs, the proposal introduces a more strategic and coordinated approach to reinforcement planning. TOs can invest in shared assets with greater certainty and reduced administrative complexity. The proposal also encourages earlier engagement with DNOs and embedded customers

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Socialisation may shift some cost recovery to the wider consumer base; it also ensures that reinforcement decisions are made based on system need. The final solution should consider how networks will be incentivised to minimise the whole system cost and ensure appropriate utilisation of new transmission reinforcements.

Proposer's assessment against CUSC Charging Objectives	
Relevant Objective	Identified impact
(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;	Positive The proposal reduces financial risk, improves transparency, and enables more equitable access to the grid. More customers can connect to the electricity network, and connection costs will be fairer, increasing competition.
(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 accordance with the STC) incurred by transmission licensees in their transmission businesses and which are compatible with standard licence condition C11 requirements of a connect and manage connection);	Neutral Transmission Owners can recover the full cost of owning and operating Connection Assets and Infrastructure Assets, and this proposal does not seek to change that.
(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*;	Positive This proposal provides a long-term solution for transmission owners to pass on costs that are triggered by connecting customers. The proposal

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	helps reduce the risk of inefficient investment by TOs.
(g) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency **; and	Neutral The proposal does not have an impact or dependency on the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.
(h) Promoting efficiency in the implementation and administration of the system charging methodology.	Positive The proposal provides clarity on the framework for transmission reinforcement cost recovery and ensures all customers are treated fairly. Reduced ambiguity should reduce administrative complexity and improve the efficiency of the CUSC.

* See Electricity System Operator Licence

**The Electricity Regulation referred to in objective (d) 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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Proposer's assessment of the impact of the modification on the stakeholder / consumer benefit categories	
Stakeholder / consumer benefit categories	Identified impact
Improved safety and reliability of the system	Neutral There will be no change to the safety and reliability of the transmission system due to this proposal.
Lower bills than would otherwise be the case	Positive This modification will improve competition in the electricity supply by providing a consistent and equitable framework for embedded customers and customers connecting directly to the transmission network. The modification should also improve strategic network planning at the transmission and distribution interface, leading to optimised network investment and lower bills for consumers.
Benefits for society as a whole	Neutral This modification focuses on how costs are apportioned, and therefore, the impact on society as a whole will not change.
Reduced environmental damage	Positive This proposal will reduce barriers to entry for low-carbon connections. The increased number of low-carbon generators will reduce greenhouse gas emissions and reduce the impact of climate change.
Improved quality of service	Positive The proposal provides clarity on the framework for transmission reinforcement cost recovery and ensures all customers are treated fairly. Reduced ambiguity and financial certainty should support all customers, particularly community energy and small and medium-sized businesses.

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When will this change take place?

Implementation date:

01 April 2027

Date decision required by

30 September 2026. Please note that this proposal will need to be considered by the Authority together with DCUSA modification DCP461.

Gate 2 offers are expected to be issued from October 2025 onwards with all Gate 2 offers being issued by the end of Q1 2026. A decision date of 30 September 2026 is likely to mean there is a period of uncertainty for customers that have accepted Gate 2 offers. The uncertainty on Transmission Connection Assets Charging is likely to delay Financial Investment Decisions (FID), which will delay procurement, and therefore delay energisation of embedded projects. The delay caused by the prolonged uncertainty will put the delivery of Clean Power 2030 targets at risk. It is important that this proposed modification is progressed as quickly as possible to minimise the time between Gate 2 offers being accepted and a decision being made.

Implementation approach

Implementation may require updates to Bilateral Connection Agreements between NESO and customers, particularly Distribution Network Owners.

Proposer's justification for the governance route

Governance route: Standard Governance modification with assessment by a Workgroup

This issue has been presented at the Transmission Charging Methodology Forum (TCMF) and at the Distribution Charging Methodologies Development Group (DCMDG). Industry Engagement has been completed by Roadnight Taylor with the recording and publishing of a podcast on this issue.

It is clear from industry engagement that further work is required to understand the impact of the potential options presented in this proposal and to agree on a solution that can work for all parties. Therefore, the Proposer is requesting a standard governance route with assessment via a Workgroup.

Interactions

<input checked="" type="checkbox"/> CUSC	<input type="checkbox"/> BSC	<input type="checkbox"/> STC	<input type="checkbox"/> SQSS
<input type="checkbox"/> European Network Codes	<input type="checkbox"/> EBR Article 18 T&Cs ¹	<input checked="" type="checkbox"/> Other modifications	<input type="checkbox"/> Other

The proposal interacts with DCUSA modification DCP461.

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Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
CUSC	Connection and Use of System Code
EBR	Electricity Balancing Regulation
GC	Grid Code
SQSS	Security and Quality of Supply Standards
STC	System Operator Transmission Owner Code
T&Cs	Terms and Conditions
GSP	Grid Supply Point
DCUSA	Distribution Connections and Use of Systems Code
CAP	Connections Action Plan
CDB	Connections Delivery Board
ENA	Energy Networks Association
NGED	National Grid Electricity Distribution
SCG	Strategic Connections Group
DUoS	Distribution Use of System
TNUoS	Transmission Network Use of System
CAF	Capacity Allocation Factor
NTCC	New Transmission Capacity Charges
LRE	Load-Related Expenditure
NESO	National Energy System Operator
TO	Transmission Owner

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SGT	Super Grid Transformer
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Reference material

- DCP461 - <https://www.dcusa.co.uk/group/dcp-461-working-group/>
- Roadnight Taylor Podcast on Super Grid Transformer Charging - <https://roadnighttaylor.co.uk/connectology/podcasts/podcast-super-grid-transformer-charging-full-2/>
- Connections Action Plan published November 2023 - <https://assets.publishing.service.gov.uk/media/6581730523b70a000d234bb0/connections-action-plan-desnz-ofgem.pdf>
- Ofgem Access and Forward-looking Charges Significant Code Review: consultation on minded positions June 2021 <https://www.ofgem.gov.uk/consultation/access-and-forward-looking-charges-significant-code-review-consultation-minded-positions>
- Connections Delivery Board (CDB) April 2024 Minutes - <https://www.energynetworks.org/assets/images/Publications/2024/240520-april-connections-delivery-board-meeting-minutes.pdf?1757327112>
- Roadnight Taylor Open Letter on Reforming Super Grid Transformer Charging September 2023 - <https://roadnighttaylor.co.uk/wp-content/uploads/2023/09/Open-letter-to-Ofgem-regarding-distortion-in-charging-for-supergrid-transformer-reinforcement.pdf>