









DCUSA Change Report		At what stage is this document in the process?
<h1>DCP 452:</h1> <h2>Correct application of Forward Cost Pricing EDCM charges to users connected directly to a Grid Supply Point</h2> <p>Date Raised: 28 February 2025</p> <p>Proposer Name: Andrew Enzor</p> <p>Company Name: Field Gaia Ltd</p> <p>Party Category: CVA Registrant</p>	01 – Change Proposal	
	02 – Consultation	
	03 – Change Report	
	04 – Change Declaration	
<p>Purpose of Change Proposal:</p> <p>To correct an oversight in DCUSA which results in customers connecting directly to Grid Supply Point incorrectly facing a locational FCP charge relating to assets downstream of their connection.</p>		
<div> </div>	<p>This document is issued in accordance with Clause 11.20 of the DCUSA, and details DCP 452 ‘Correct application of Forward Cost Pricing EDCM charges to users connected directly to a Grid Supply Point’.</p> <p>DCP 452 is considered to be a Part 1 Matter and therefore requires Authority approval prior to being implemented and thus, the result of the Party vote on this Change Report will act as a recommendation to the Authority.</p> <p>Parties are invited to consider the proposed amendment (Attachment 1) and submit their votes using the voting form (Attachment 2) to dcusa@electralink.co.uk or via the online voting form which can be found via the following link: https://www.dcusa.co.uk/change/correct-application-of-forward-cost-pricing-edcm-charges-to-users-connected-directly-to-a-grid-supply-point/</p> <p>Votes are to be submitted by close of play on TBC 2026.</p> <p>The voting process for the proposed variation and the timetable of the progression of the Change Proposal (CP) through the DCUSA Change Control Process is set out in this document.</p>	
<div></div>	Impacted Parties: DNOs, IDNOs, Suppliers, CVA Registrants	
<div></div>	Impacted Clauses: Paragraphs 2.7, 6.2 and 6.3 within Schedule 17 and Paragraph 6.3 of Annex 1 to Schedule 17.	

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Timetable		 DCUSA@electralink.co.uk
The timetable for the progression of the CP is as follows:		 02074323000
Change Proposal timetable:		Proposer: Andrew Enzor
Activity	Date	
Initial Assessment Report	19 March 2025	
Consultation Issued to Industry Participants	16 December 2025	
Change Report Approved by Panel	18 March 2026	
Change Report issued for Voting	19 March 2026	
Party Voting Closes	13 April 2026	
Change Declaration Issued	15 April 2026	
Authority Decision	TBC	
Implementation	01 April 2028	

1 Summary

What?

- 1.1 Under the Forward Cost Pricing (FCP) variant of the Extra High Voltage (EHV) Distribution Charging Methodology (EDCM), all Connectees which connect direct to a Grid Supply Point (GSP) are exposed to forward looking charges/credits in respect of future thermal reinforcement on the downstream FCP Network Group in that location. This Change Proposal seeks to remove the non-cost-reflective application of FCP charges/credits to GSP-connected customers at non-interconnected¹ GSPs.
- 1.2 There is no equivalent issue under the Long Run Incremental Cost (LRIC) variant of the EDCM. The LRIC approach derives a zero charge for all Connectees which are connected direct to a GSP.

Why?

- 1.3 Connectees at all voltages in the EDCM and CDCM should face forward looking charges/credits in respect of assets on which they are deemed to drive costs. For CDCM Connectees, this is applied by charging customers only for voltages upstream of their connection point, up to the GSP. Connectees directly connecting to a non-interconnected GSP under the FCP variant of the EDCM are exposed to charges/credits in respect of a downstream voltage on which they will never be deemed to drive cost in the power flow model underpinning the EDCM (which only considers thermal reinforcement). As a result, the inclusion of such customers in the power flow modelling introduces a cross-subsidy from GSP-connected customers to other customers downstream who do drive the need for thermal reinforcement.
- 1.4 For impacted Connectees, this can have a very material impact. For example, the Proposer is aware of a prospective battery storage site in one location which the DNO has indicated will face a non-cost-reflective forward-looking charge of ~£18/kVA/year in respect of network assets on which it does not drive cost.

How?

- 1.5 Customers directly connected to a non-interconnected GSP should be excluded from the FCP modelling for that GSP, and the FCP-related element of the EDCM charge/credit should be set to zero for such customers.

Who?

- 1.6 This change only impacts EDCM customers in DNOs using FCP. Based on current tariffs, only customers in four DNO areas would be impacted: SSE North Scotland, SP South Scotland, NGED East Midlands and NGED West Midlands. Customers in the other two FCP DNOs (SSE Southern and SP Manweb) are not impacted at present, as there are no 0000 customers at non-interconnected GSPs with non-zero Charge 1 in those areas.
- 1.7 EDCM customers have been divided into four groups to demonstrate the impact:
 1. **Forward-looking charge directly impacted:** 0000 and connected at a non-interconnected GSP with non-zero Charge 1, so directly impacted by DCP452

¹ Throughout this document the phrase interconnected and not interconnected GSPs are used to refer to substations within a given DNO region which have a direct connection between them at a lower voltage. In the DCUSA text, such interconnected substations are referred to as “operated in parallel” and non-interconnected substations as “not operated in parallel”.

2. **Forward-looking charge indirectly impacted:** not 0000 but downstream of a non-interconnected GSP whose forward-looking charge is impacted by the removal of 0000 customers
 3. **Residual charge indirectly impacted:** the change in total revenue from the above two groups moves into the demand residual; hence final demand customers which pay the demand residual are indirectly impacted by DCP452
 4. **Not impacted:** not at a GSP with 0000 customers and not final demand, so see no impact to their tariff. This will include all generation and storage not in group one or two
- 1.8 Most customers in group one will see a reduction in import capacity charges. Non-intermittent generators (e.g. gas peakers and storage) may also see the removal of super-red credits. In the case of storage, the removal of credits is typically more than offset by a reduction in import capacity charges. Intermittent generators see very little impact.
- 1.9 For the charging year 2026/27, the Working Group has estimated that a total of £1.3m would be transferred from group one (through removal of Charge 1) to group three (via the demand residual). This would result in increases varying from a small fraction of a percent to a maximum of ~14% for final demand customers.
- 1.10 The table below summarises the impact on each tariff element for customers in each group, along with the total customer count in each of the four impacted DNOs. A more detailed impacted analysis is presented in Section 10. Attachment 5 shows the estimated 'before and after' tariffs for charging year 2026/27 for each affected DNO area.

Group	Customer count in impacted DNOs	Import fixed charge	Import capacity charges	Import super-red charge	Export fixed charge	Export capacity charge	Export super-red credits
1: Forward-looking charge directly impacted	45	Increased if final demand	Reduced but not removed	Removed	No change	No change	Removed
2: Forward-looking charge indirectly impacted	3	Increased if final demand	Increased for a small subset	Increased for a small subset	No change	No change	No change
3: Residual charge indirectly impacted	199	Increased if final demand	No change	No change	No change	No change	No change
4: Not impacted	704	No change	No change	No change	No change	No change	No change

2 Governance

Justification for Part 1 Matter

- 2.1 DCP 452 is a Part 1 Matter. It will remove charges faced by some users which connect directly to a GSP in DNO regions using the FCP variant of the EDCM, in turn impacting on competition in the generation and supply of electricity.

Next Steps

- 2.2 Panel considered that the Working Group has carried out the level of analysis required to enable Parties to understand the impact of the proposed amendment and to vote on DCP 452.
- 2.3 The DCUSA Panel recommends that this CP be issued to Parties for Voting.

3 Why Change?

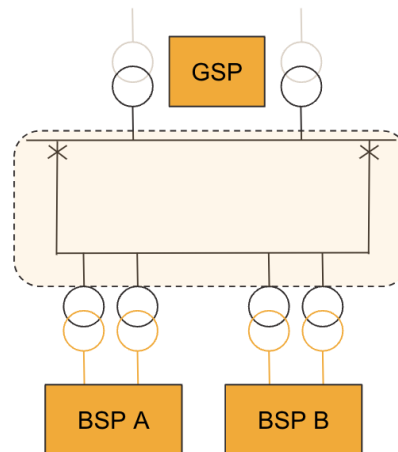
Background of DCP 452

- 3.1 The EDCM is intended to give Connectees a locationally-varying forward-looking cost signal related to each user's impact on the network. This is achieved differently in the LRIC and FCP variants of the EDCM.
- 3.2 The FCP method uses the concept of "Network Groups". All network assets at a given voltage level which are electrically connected under normal running conditions are assigned to the same Network Group. All Connectees connected to a given Network Group face the same FCP charge/credit.
- 3.3 The LRIC method does not use the concept of Network Groups. All network assets are treated individually, with each Connectee's impact on the network assessed based on the impact of incremental demand at their specific location. Connectees face an LRIC charge/credit only in respect of network assets which they directly influence.
- 3.4 Six DNO licensees use the FCP method (Scottish Hydro Electric Power Distribution plc; Southern Electric Power Distribution plc; SP Distribution Limited; SP Manweb plc; National Grid Electricity Distribution East Midlands plc; and National Grid Electricity Distribution West Midlands plc.). The remaining eight DNO licensees use the LRIC method.
- 3.5 Under both variants, Sole Use Assets (defined as "assets in which only the consumption or output associated with a single Connectee can directly alter the power flow in the asset") for each Connectee are separately identified.
- 3.6 All Connectees charged under both variants of the EDCM are assigned a Point of Common Coupling (PoCC), identifying where their Sole Use Assets connect to the shared network. The PoCC is converted into a Customer Category, encoding the voltages at which a Connectee is deemed to use shared assets.
- 3.7 Separate charges are calculated in respect of Sole Use Assets, reflecting that those assets are funded by the Connectee in their connection charge. The charge under the EDCM for Sole Use Assets only reflects the costs associated with operation and maintenance. The LRIC and FCP charges/credits only relate to a Connectee's use of shared networks assets upstream of the PoCC.

Worked Example of FCP Grouping

- 3.8 Figure 1 shows a small section of network, with a GSP and two downstream Bulk Supply Points (BSPs). This is assumed to be in England and Wales so would typically be a 132kV network (in Scotland it would typically be a 33kV network serving Primary substations in place of BSPs). This GSP is not interconnected, i.e. it has no circuits at 132kV connecting to another GSP which are used under normal operations.

Figure 1: Example of FCP Grouping

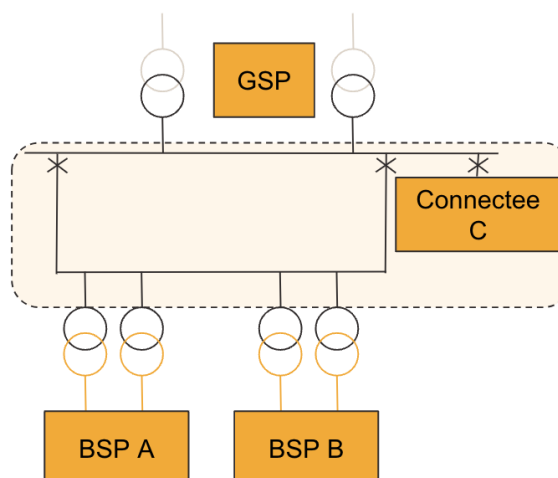


- 3.9 The FCP Network Group for the 132kV network at this GSP would include all assets within the dotted line. A Connectee connecting to any of the circuits within the dotted line would face the FCP charge/credit for the whole group.
- 3.10 Conversely under the LRIC approach, a Connectee connecting anywhere faces a charge/credit in respect of any assets on which incremental demand at their location causes change in powerflow. In Figure 1, a Connectee connecting to any of the circuits in the dotted line would impact all of those circuits, so both LRIC and FCP would give a similar, cost-reflective outcome.

Issues with of FCP Grouping for GSP-connected Users at non-interconnected GSPs

- 3.11 Figure 2 shows the same small section of network, with the addition of Connectee C. Connectee C's PoCC is at the GSP, so this Connectee would be assigned Customer Category 0000.

Figure 2: FCP Grouping with a GSP-connected Connectee at a non-interconnected GSP

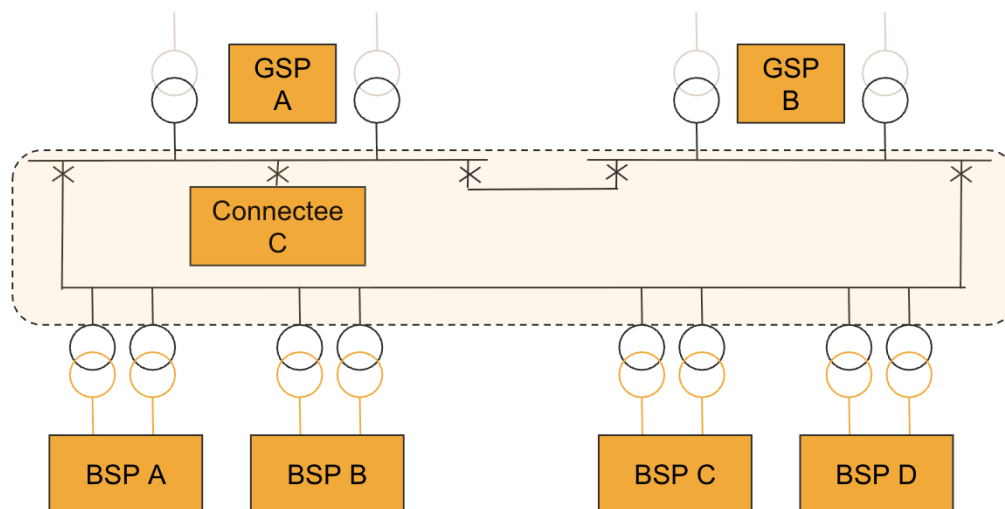


- 3.12 Under the FCP approach, Connectee C is included within the 132kV Network Group. The FCP (and LRIC) approaches both only consider thermal reinforcement. In the example shown, Connectee C cannot drive thermal reinforcement on the 132kV circuits to which the FCP charge relates. But it is (non-cost-reflectively) exposed to the locational charge/credit for the whole Network Group. Further, the capacity of Connectee C will be added to the denominator of the calculation of the FCP charge, so it will artificially reduce the FCP charge for the Network Group (on a £/kW basis), distorting charges for all other customers connecting within the Network Group.
- 3.13 Connectee C is facing a forward-looking locational charge/credit in respect of thermal reinforcement which it cannot impact.
- 3.14 Conversely under the LRIC approach, incremental demand at Connectee C's location is assessed for its impact on network assets. It does not impact powerflow on any of the 132kV circuits, so it correctly sees no locational charge/credit.

FCP Grouping for GSP-connected Users at interconnected GSPs

- 3.15 Figure 3 shows a similar section of network, but with interconnection between two GSPs. In this instance, the two GSPs are considered as a combined Network Group in the FCP method, and would be modelled as a combined network in the LRIC method.

Figure 3: FCP Grouping with a GSP-connected Connectee at an interconnected GSP



- 3.16 In this example, Connectee C despite being connected directly at GSP A, can take power via 132kV circuits from GSP B under normal running arrangements, and so could drive thermal reinforcement on any of those 132kV circuits. In the LRIC variant of the EDCM, the impact of incremental powerflow at Connectee C's location would be assessed, which could include an impact on the 132kV circuits, in which case it could see a non-zero LRIC Charge 1. In the FCP variant, it is cost-reflective for it to face the full charge associated with the Network Group as its demand could be driving thermal reinforcement on any of the 132kV circuits.

The Defect this Change Proposal seeks to address

- 3.17 Under the FCP variant of the EDCM, Connectees connected directly to a non-interconnected GSP, are incorrectly and non-cost-reflectively exposed to the forward-looking locational charge/credit relating to thermal reinforcement on circuits in the Network Group associated with the network voltage downstream of the relevant GSP.

4 Working Group Assessment

DCP 452 Working Group Assessment

- 4.1 The DCUSA Panel established a Working Group to assess and develop DCP 452: *Correct application of Forward Cost Pricing EDCM charges to users connected directly to a Grid Supply Point*. The Working Group was convened following the DCUSA Panel's initial assessment, which concluded that the proposal could proceed on an "at risk" basis pending confirmation from Ofgem regarding any potential interaction with the ongoing Distribution Use of System (DUoS) Significant Code Review (SCR). This approval was subsequently received.
- 4.2 In total, the Working Group has **11 active members** representing a cross-section of **DNO, IDNO and Generator** categories, supported by the Code Administrator and Technical Secretariat.
- 4.3 Prior to issuing the consultation, the Working Group held **nine formal meetings** between April and August 2025 and developed a consultation document to gather information and feedback from market participants on this CP. During its development of DCP 452, it was agreed by the Working Group that the following items should be addressed in the consultation:
- An assessment of the historical reasons for the two EHV Charging Methodologies and also the differences between FCP and LRIC versions of the EDCMs.
 - An assessment of the interaction with the DUoS Charges SCR.
 - The provision of updated EDCM models and the inclusion of an overview of the updates that were required to the EDCM models.
 - An assessment of the impacts of the change by way of DNOs carrying out power flow modelling, and then using the output of that process as inputs into an updated version of the EDCM, which incorporates the changes for DCP 452 and then using the data from the fully populated EDCM within an impact assessment template.
 - To set out a counter argument to that of the Proposer relating to the design of the FCP methodology and potential impacts of the original solution proposed
 - An assessment of [DCP-139 Non-Application of FCP charge for Category 0000 Customers](#) and Ofgem's decision to reject it. <https://www.dcusa.co.uk/change/non-application-of-fcp-charge-for-category-0000-customers/>

Historical reasons and differences of the two EDCM Charging Methodologies

Reasons for Two Methodologies

- 4.4 When the EDCM was initially developed (around 2010/11), it was believed that LRIC would be universally adopted. However, at that time, some Network companies expressed discomfort with the LRIC approach, preferring an alternative solution, being that of the FCP. It was understood that due to strong views from all involved parties, a single methodology was not taken forward.

Overview of Marginal Charges from FCP and LRIC

- 4.5 Both FCP and LRIC methods segment the distribution network into various locations to determine marginal charges.

- **LRIC locations:** A location is typically a node on the EHV network, such as a primary substation or an EHV customer (demand or generator).
- **FCP locations:** A location is defined as a Network Group, which can exist at three possible levels:
 - **Level 1:** Contains 132kV and similar circuits.
 - **Level 2:** Contains 132kV/33kV and similar substations, and 33kV and similar circuits.
 - **Level 3:** Contains primary substations, e.g., 132kV/11kV or 33kV/11kV.

- 4.6 Each tariff within the EDCM model is associated with either an LRIC or FCP location.

Commonality and Differences in Outputs

- 4.7 Both methodologies provide similar information for each location:

- **Charge 1 (£/kVA/year):** Relates to future demand-led thermal reinforcement costs. In LRIC, this is broken down into 'Charge 1 Local' (voltage level of connection) and 'Charge 1 Remote' (voltages above the level of connection). In FCP, this is broken down into the Network Charge 1 (voltage level of connection), Parent Charge 1 (voltage level above the level of connection, if applicable) and Grandparent Charge 1 (voltage level two above the level of connection, if applicable). For both variants, it is expected to drive charges to demand where demand drives the need for thermal reinforcement and credits to generation where generation can defer the need for thermal reinforcement.
- **Active (kW) and reactive (kVAr) flows:** Provided for generators and demand in maximum and minimum demand scenarios.

- 4.8 Key differences include:

- In FCP, both generation and demand can exist within the same Network Group, whereas LRIC requires a node to be modelled as either generation or demand. Consequently, the FCP dataset provides four kW and four kVAr values per location (demand and generation, two scenarios), while LRIC provides two kW and two kVAr values.
- FCP includes a link to a "parent location" (higher-level Network Group) for each location, establishing a hierarchy of up to three levels. All Charge 1 values throughout this hierarchy are applied to each tariff. Some FCP entries can represent notional "hybrid Network Groups" for customers supplied from two different Network Groups.
- LRIC includes links to other nodes supplying the same customer.

- In both methods, Charge 1 is only ever a positive charge in respect of demand and credit (i.e. negative charge) in respect of generation, never a charge in respect of generation or a credit in respect to demand). In other words, both the demand charge and the generation credit are bounded at zero.

Application of FCP/LRIC Charge 1 to Demand Tariffs

4.9 Two components of Charge 1 are applied to demand:

- **Super-red rate (p/kWh):**
 - **For LRIC:** The remote Charge 1 (related to voltages above and not including that of the customer's points of common coupling) is applied to consumption during a DNO-defined super-red time band. This reflects that network capacity and reinforcement costs are driven by consumption at the network's most loaded times, not individual customer capacity or maximum consumption.
 - **For FCP:** The parent and grandparent Network Group Charge 1 is applied during the super-red time band.
- **Capacity charge (p/kVA/day):**
 - **For LRIC:** The local Charge 1 (related to the voltage of the customer's point of common coupling) is applied to the maximum import capacity. This is based on the premise that there is little diversity within a voltage level, so customer capacity serves as a proxy for required network capacity.
 - **For FCP:** The Network Group Charge 1 is applied to the maximum import capacity.

Application of FCP/LRIC Charge 1 to Generation Tariffs

4.10 One component of Charge 1 is applied to controllable generation only (i.e. excluding intermittent generation such as wind and solar):

- **Super-red rate (p/kWh):**
 - **For LRIC:** The remote Charge 1 (related to voltages above and not including that of the customer's points of common coupling) is applied as a credit to generation during a DNO-defined super-red time band only. This reflects that upstream network capacity and reinforcement costs can be offset by generation at the network's most loaded times, not individual generator capacity or maximum export.
 - **For FCP:** The parent and grandparent Network Group Charge 1 is applied as a credit during the super-red time band.

Interaction with the DUoS Charges SCR

- 4.11 What is now known as the DUoS Charges SCR was initially launched as the Electricity Network Access and Forward-Looking Charging Review - Significant Code Review on 18 December 2018. Work progressed over the first few years on both parts of the initial 'Access and Forward-Looking Charges' SCR but then, following consultation in November 2021, on 25 February 2022 Ofgem decided to descope the wide-ranging review of DUoS charges from the 'Access and Forward-Looking Charges' SCR and take it forward under a dedicated DUoS SCR with a revised timescale. Since then, there have been a number of updates (available via: <https://www.ofgem.gov.uk/publications/distribution-use-system-charges-significant-code-review-launch>). These updates show that progress on the DUoS SCR has, in the main, and for a variety of reasons, been paused. It should also be noted that the scope has shifted over time and at this moment in time, the scope is largely unknown.
- 4.12 The Working Group noted that the DCUSA Panel, as part of their Initial Assessment of DCP 452, sought direction from Ofgem as to whether the DCP 452 falls within the scope of the Significant Code Review and therefore, whether it could be progressed at this moment in time. This was in line with the requirements of Clause 10.23 in Section 1C of the DCUSA, which required the Panel to provide their own assessment.
- 4.13 With respect to their assessment of whether the proposal falls within the scope of the DUoS Charges SCR, the Panel assessed that to their knowledge, DCP 452 doesn't fall within the known scope of the DUoS SCR and believed it could proceed on this basis.
- 4.14 As part of the Panel's assessment of whether the proposal falls within the scope of the Significant Code Review, the Panel noted the representations put forward in section 7 'Impacts & Other Considerations' of the CP form by the Proposer with respect to their CP and the relevance of the DUoS SCR and other ongoing workstreams.
- 4.15 On 16 April 2025, Ofgem confirmed the following:

As communicated today at DCUSA Panel and following Panel Chair's request, I am re-iterating our position in response to DCUSA assessment of impacts on the DUoS SCR in relation to DCP452.

Although we consider DCP452 to be in scope of the DUoS SCR because it relates to the forward looking charges, we are content for DCP452 to proceed in the DCUSA change process.

Due to the niche and discrete nature of the DCP452 issue at this time, it does not feel unreasonable to let industry progress with this CP.

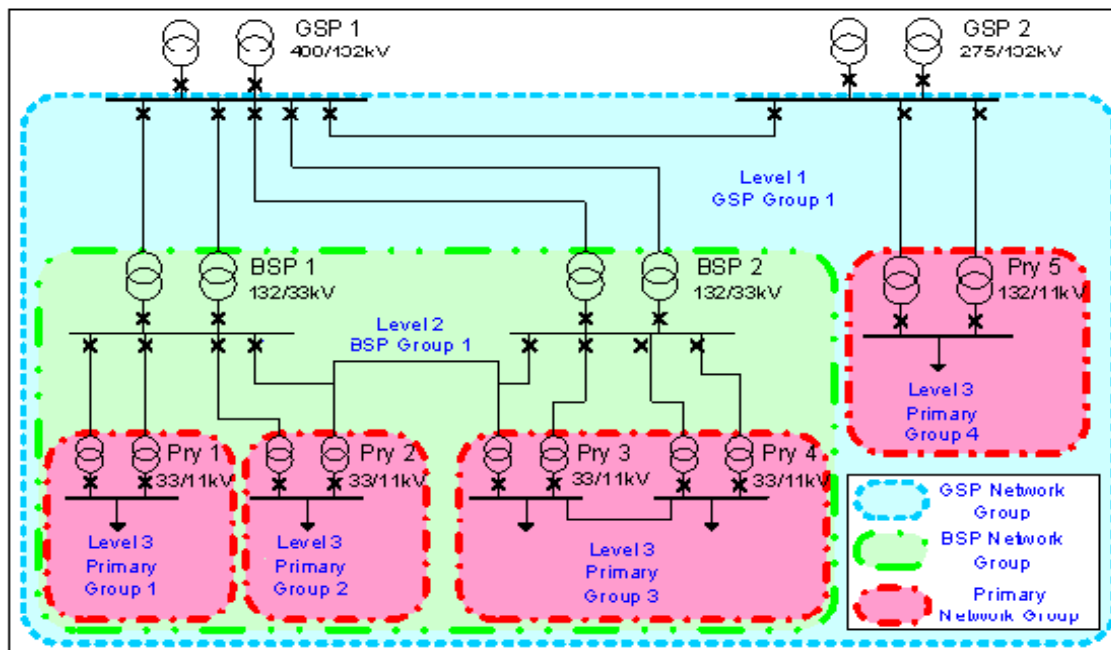
However we would like to caveat this by saying that our upcoming work on the DUoS SCR may lead us to later subsume the CP should we discover that the DCP452 is contrary to the direction of travel of SCR. The proposer, DCUSA Panel and stakeholders should understand this and be content to proceed on this basis.

Counter Argument of Proposer's view of issue and solution as presented in the consultation

Argument 1: Consistency with Network Group Definition in the FCP Approach

Initial Counterargument

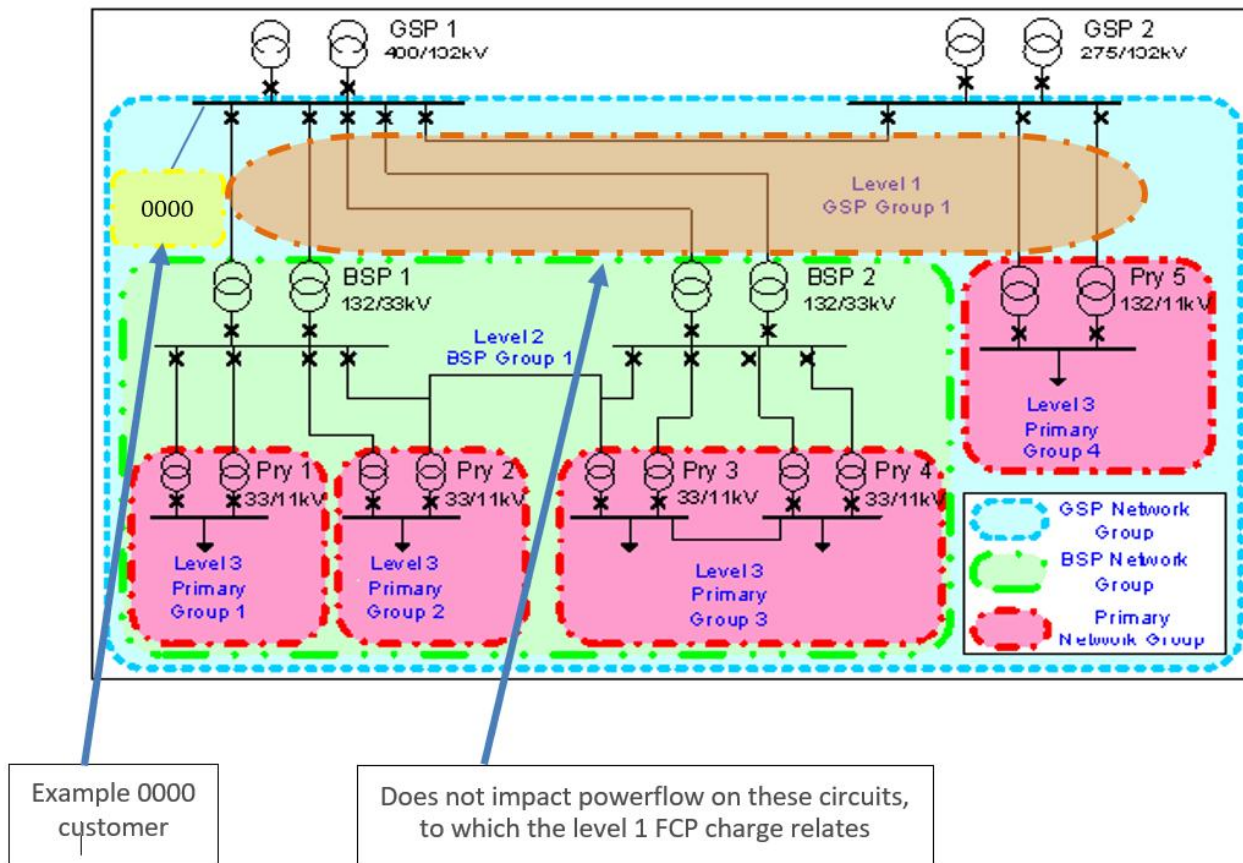
4.16 A counter view to what has been set out in the Change Proposal is that the methodology for calculating FCP charges for demand customers, as described in Annex 1 of Schedule 17 (Paragraph 6.5 and Figure 8 added below for ease of reference), defines the GSP busbar (on the distribution side) as part of the Level 1 Network Group.



4.17 It is interpreted that customers whose point of common coupling is at the GSP busbar (Category 0000) are thus within a Level 1 Network Group. Consequently, the FCP charges applicable to this Network Group should apply to these customers to maintain consistency with the established FCP EDCM methodology. Exempting Category 0000 customers from FCP locational charges could introduce inconsistency compared to other customers within the Level 1 Network Group and those in Level 2/3 Network Groups.

Proposer's Perspective

4.18 The Proposer suggests that while a 0000 customer may be within the Network Group, their connection does not drive reinforcement within that Network Group. Building on the example diagram, a new 0000 customer connecting within a Level 1 Network Group would not impact power flows on other Level 1 circuits. Therefore, it is considered inappropriate for such a customer to face forward-looking FCP charges related to those circuits.



4.19 The solution (as presented here, and updated from the original proposal form) explicitly excludes demand associated with 0000 customers at non-interconnected GSPs from the Level 1 Network Group. Paragraph 2.16 of Schedule 17 calculates the net present value of reinforcement within the Network Group and divides it by total capacity; hence removing demand associated with 0000 customers at non-interconnected GSPs will avoid the potential inconsistency identified.

Counter Response

4.20 It is acknowledged that there might be limited power flow impact from a Category 0000 customer on the rest of the network, however, additional factors that should be considered:

- Network Stability & Security of Supply:** Distribution networks are designed to meet specific security of supply standards. If a 0000 customer's connection necessitates network upgrades or reinforcement to maintain compliance with these standards, there is a belief that these customers should contribute to the costs alongside others. High demand from a direct connection could strain the DNO's existing infrastructure, potentially requiring upgrades or modifications. A large 0000 customer could contribute to network congestion, potentially driving the need to upgrade DNO's GSP assets (e.g., switchboards, circuit breakers), which could lead to future reinforcement needs if new demand arises in the area. Reference is made to Ofgem's DCP 139's decision letter, which cited scenarios with "meshed" networks where 0000 customers might draw power from multiple GSPs, making it difficult to assert they use no particular assets.
- Thermal Issue:** Thermal issues following a new 0000 connection could lead to board upgrade or replacement costs. This is identified as an increasingly common issue due to the frequency of new direct GSP connections.

- 4.21 The proposer initially asserted that 0000 customers were the only group of customers across EDCM and CDCM exposed to forward-looking signals in respect of downstream voltages. A workgroup member noted that this was not correct, citing customers connected directly to a BSP (with category 1100). Those customers are included in a Network Group which include both the BSP transformers (typically 132/33kV) and the downstream 33kV circuits. The proposer accepted this, but noted that the forward-looking signal for 0000 customers relates entirely to assets downstream of their connection (typically the 132kV circuits) while for 1100 customers the FCP charge relates to a mixture of upstream assets (typically the 132kV/33kV transformers) and downstream assets (typically the 33kV circuits).

Argument 2: FCP Charge 1 Capacity Calculation Process

Initial Counterargument

- 4.22 A counter view to what has been set out in the Change Proposal is that a fundamental principle of the FCP methodology is its "zonal" nature, aiming to reflect predicted reinforcement costs within a network "group" rather than for individual assets. This is based on the premise that reinforcement within a zone could be triggered by any customer connected to that group, and all connected customers potentially benefit. Costs are shared across all customers in the group. According to the FCP methodology, GSP busbar assets are assigned to Level 1 Network Groups, and any customers connected to the busbar are also assigned to a Level 1 Network Group.

Proposer's Perspective

- 4.23 The Proposer challenges the statement that reinforcement actions by any customer connected to a Network Group could trigger reinforcement and benefit all customers. It is argued that for 0000 customers, their actions cannot trigger thermal reinforcement on downstream Level 1 circuits (e.g., 132kV in E&W; 33kV in Scotland), nor can they benefit from such reinforcement.

Counter Response

- 4.24 In response, refers back to its earlier arguments regarding network stability, security of supply and thermal issues. It emphasises that it cannot be definitively stated that the wider network would not be impacted by the connection of 0000 customers, as not all 0000 connections are similar and their impact on wider networks can vary.

Argument 3: Network Use Factor Calculation Process

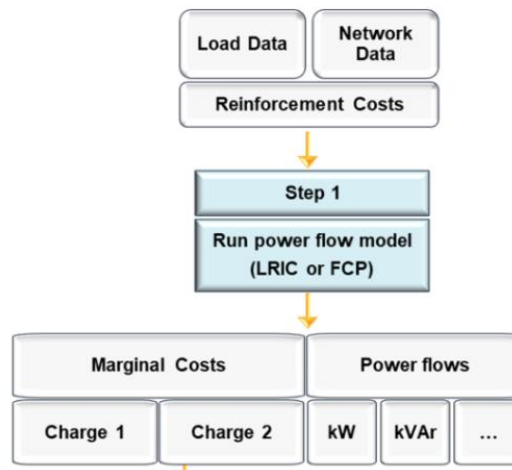
Initial Counterargument

- 4.25 The proposer initially asserted that the statement in DCUSA that "*Category 0000 Connectee are deemed not to use any network assets other than sole use assets*" supports the rationale for the proposer. A workgroup member noted that this statement only applies to the calculation Network Use Factors (NUFs), not the calculation of FCP or LRIC Charge 1. The proposer accepted this, and noted that, in their view, other arguments for the change, such as the impact of 0000 customers on thermal reinforcement stand regardless of this point. The proposer also noted a clarificatory DCUSA change could be worthwhile.

Argument 4: Load Data and Reinforcement Cost Allocation

Initial Counterargument

- 4.26 A counter view to what has been set out in the Change Proposal is that **Load Data** is a critical component in assessing future reinforcement costs for a Network Group (as shown in the Figure 1 of Schedule 17 – which provides a diagrammatic overview of the steps involved for import charges). Therefore, any demand growth contribution from connectees within a Network Group would contribute to the forecast of reinforcement costs for that group.



- 4.27 An example is where a 0000 customer with significant demand capacity, if exempted from the 'Charge 1 capacity charge' (meaning exempted from the reinforcement costs attributable to their large demand capacity), would unfairly expose other customers at same Level 1 and also downstream customers at Level 2 and Level 3, who have much smaller demand capacities, to the full reinforcement cost.

Proposer's Perspective

- 4.28 The Proposer disagrees with the view above, asserting that, under current arrangements, downstream customers are being subsidised by 0000 customers, and DCP 452 aims to remove this subsidy. It is argued that a 0000 customer's demand capacity does not contribute to the reinforcement of the 132kV circuits within the Network Group.
- 4.29 The Proposer suggests that currently, a 0000 customer with a large capacity, artificially reduces the charge paid by downstream customers by picking up a portion of a reinforcement cost they do not drive. Using the example of £100k projected reinforcement cost and 100MW connected customers (charge of £1,000/MW), a new 50MW 0000 customer connecting would not increase the reinforcement cost but would increase total connected customers to 150MW, reducing the charge to £667/MW. This illustrates that the unchanged reinforcement cost is inappropriately socialised across more customers, despite the 0000 customer not driving that cost. To address this, changes to the definition of CI and D in Paragraph 2.16 are proposed to exclude the capacity of 0000 customers from the denominator in the £/MW charge calculation.

Counter Response

- 4.30 There is a view that the Proposer's statement that "currently, a 0000 customer with a large capacity artificially reduces the charge paid by downstream customers by picking up a portion of a reinforcement cost they do not drive.", is based on an assumption that connecting a 0000 customer has no impact on the wider network, which may not be the reality.
- 4.31 It could be argued that if connecting a large demand 0000 customer burdens the network's remaining infrastructure, necessitating upgrades to comply with security of supply and network stability standards, it would increase the reinforcement cost of the entire network. This, in turn, would result in other customers at Level 1 and downstream customers at Levels 2 and 3 paying a higher Charge 1. Another scenario considered is that connecting a large demand customer could increase the chance of the network becoming congested, requiring DNO reinforcement to facilitate new connections in that area.
- 4.32 There is an additional challenge made with respect to the Proposer's example, stating it is based on the assumption that the "*£100k of projected reinforcement cost*" remains unchanged following a new 0000 connection. It is argued that there are some scenarios where the new connection could lead to additional costs for the DNO's network, being:
- If a new 50MW 0000 customer connects to a 100MW network (resulting in a new total of 150MW load) and the DNO incurs an additional £50k cost to upgrade the network for the new large load, the Charge 1 would remain £1,000/MW. In this case, the forecasted additional reinforcement cost rise aligns with the total network's demand growth, keeping Charge 1 unchanged.
 - If the additional cost is greater than £50k, the Charge 1 would be greater than £1,000/MW. This higher rate would then apply to all customers within that network, even if their individual loads are unchanged.

Consideration of DCP 139 and Ofgem's Decision to Reject

- 4.33 In reviewing DCP 452, the Working Group considered the relevance of **DCP 139: Non-Application of FCP charge for Category 0000 Customers** which was raised in 2012 and ultimately rejected by Ofgem. While DCP 139 and DCP 452 share a similar objective, namely the removal of FCP locational charges for customers connected directly to a GSP, the Working Group noted several important distinctions in context, rationale, and supporting evidence.

Overview of DCP 139

- 4.34 DCP 139 was raised by British Gas and proposed that Category 0000 customers should be exempt from the FCP locational charge on the grounds that they do not use shared network assets and are therefore not cost drivers for reinforcement. The proposal argued that the application of the FCP charge to these customers was inconsistent with the treatment of network usage under the Network Use Factor (NUF) methodology, which assumes that 0000 customers use only sole-use assets.

Ofgem's Decision and Rationale

- 4.35 In its decision letter, Ofgem concluded that DCP 139 should not be implemented. The key reasons cited included:
- Ofgem noted that simply removing the FCP charge for 0000 customers did not guarantee a more cost-reflective outcome. In particular, it was unclear whether such customers might still contribute to

reinforcement needs under certain network conditions (e.g. meshed networks or contingency scenarios).

- Ofgem emphasised that the FCP and NUF methodologies are based on different principles. Aligning them without broader consideration could risk undermining the internal consistency of the FCP approach.
- Ofgem suggested that 0000 customers might not be the only category of customer that could be deemed to not use any shared assets at a given network level and so consideration should have been given to those of customer categories.

Relevance to DCP 452

4.36 The Working Group acknowledged the similarities between DCP 139 and DCP 452 but also identified several key differences that may support a different outcome in this case:

- DCP 452 is supported by detailed RFI data from DNOs and updated modelling undertaken by CEPA/TNEI, providing a clearer picture of the scale and distribution of the issue.
- The policy landscape surrounding the electricity industry has changed significantly since 2012, with greater emphasis meeting net zero and Clean Power 2030.
- The Working Group has identified that Ofgem's statements on removing the FCP charge for **all** 0000 customers does not deliver a more cost-reflective outcome, namely for those customers at interconnected GSPs who can drive thermal reinforcement on downstream circuits and so should be exposed to a forward-looking charge in respect of those circuits. However, 0000 customers at non-interconnected GSPs can never drive thermal reinforcement on downstream 132kV circuits, hence DCP452 is expected to be more cost-reflective in all scenarios.

Proposed Solution

4.37 At the time when DCP 452 was raised, the objective of the modification was to ensure that under the FCP variant of the EDCM Connectees connected directly to a GSP, identified by allocation of Customer Category 0000, are not incorrectly and non-cost-reflectively exposed to the locational charge/credit for the shared network in the Network Group associated with the network voltage downstream of the relevant GSP, as the Proposer asserts that such Connectees are deemed not to use any network assets other than Sole Use Assets.

4.38 It should be noted that the proposed solution was refined as compared to the initial solution proposed within the original Change Proposal prior to the consultation. No further changes have been made to the solution following the consultation.

4.39 The intent is to remove Connectees with Customer Category 0000 which are connected to non-interconnected GSPs from the Network Group for that GSP, on the basis that they do not drive thermal reinforcement on the downstream circuits in that Network Group. It is believed that this can be achieved via amendments to Paragraph 2.7 and Paragraphs 6.2 and 6.3 in the main body of Schedule 17 and Paragraph 6.3 in Annex 1 of Schedule 17.

- 4.40 The revised solution impacts GSP-connected customers in the 0000 customer category who have a non-zero FCP charge and then only those that are connected to a GSP that does not operate in parallel with another GSP. In this context it should be noted that the new solution has the effect of removing the demand associated with the applicable connectees from the power flow modelling process and also directs that such connectees are not charged the FCP locational charge components. Its effects are also likely to cascade to other EHV levels as it is the FCP charge itself that is impacted, which flows into all EHV customers charges. The workgroup has quantified these impacts in Section 10.

5 DCP 452 Consultation

Summary of responses to the DCP 452 Consultation

- 5.1 The DCP 452 Working Group issued a consultation on 16 December 2025 which sought views from industry on the proposed solution and legal text for DCP 452.
- 5.2 There were 6 respondents to the consultation comprising of DNOs and Generators. Set out below are the questions that the Working Group sought views on, and a summary of the responses received. A copy of the consultation document alongside the Party responses and Working Group conclusions can be found in Attachment 3.

Question 1- Do you understand the intent of DCP 452?

- 5.3 Overall, the majority of respondents (five of six) understood of the CP, recognising that the targeted subgroup of EHV users should not incur charges for thermal reinforcement below the GSP level, as they do not contribute to these costs. However, some concerns were raised by the remaining respondent, regarding a perceived lack of sufficient impact analysis.
- 5.4 The Workgroup Group has considered the impact assessment in more detail following evaluation of responses; see notes in relation to question 8 and Section 10 below for details.

Question 2: Are you supportive of the principles that support this CP, as set above?

- 5.5 Overall, the majority of respondents (four of six) expressed support for the principles underpinning the CP, recognising that the targeted subgroup of EHV users should not incur charges for thermal reinforcement below the GSP level, as they do not contribute to these costs. Those that expressed support indicated clear or strong support, with several highlighting that the proposal would address current inconsistencies between methodologies (FCP and LRIC) and remove unfair, non-cost-reflective charges that disproportionately affect certain customers. Respondents also noted that the CP does not exempt affected users from making a fair contribution to other DNO costs.
- 5.6 However, some concerns were raised by the remaining two respondents, with one regarding the potential for significant increases in residual charges for the wider EHV charging base, as detailed in the consultation, and the perceived lack of sufficient justification for these impacts. Whilst the other indicated partial support, suggesting that while the underlying principle is sound, there are reservations about the broader implications and the need for a more detailed impact assessment.
- 5.7 In response, the Working Group has developed a more detailed impact assessment for inclusion in the change report (see question 8 and Section 10 for detail).

Question 3: Do you have any views on the counterarguments put forward with respect to the concepts of the FCP methodology and how they interact with the proposed approach of DCP 452?

- 5.8 Two respondents had no (or no substantive) comments on the counterarguments, with one of those providing their support for DCP 452 based on the views of the Proposer set out within the consultation document. One respondent confirmed that, having considered the counterarguments set out within the consultation document, they were comfortable with the proposed approach. Another acknowledged the concerns raised but maintained these were outside the scope of the FCP methodology as it applies to DCP 452. One respondent raised detailed concerns about the potential consequences of the proposal, though ultimately agreed with the Working Group's interpretation of the FCP methodology's focus on thermal reinforcement. One respondent provided a comprehensive technical rebuttal, arguing that DCP 452 is consistent with the underlying cost drivers in FCP and that it appropriately removes cross-subsidy. Overall, there was broad support or neutrality among respondents, with technical debate centring on the boundaries of the FCP methodology and the appropriateness of including 0000 customers at non-interconnected GSPs in the Network Group for charging purposes.
- 5.9 The detailed comments on each counterargument from each respondent and the subsequent Working Group discussions are detailed in Attachment 3.

Question 4: Do you have any views on the relevance of DCP 139 and Ofgem's decision to reject it? Please provide your rationale for any views you do have.

- 5.10 There were a mix of responses across the five respondents who provided a response to this question, as set out below:
- One respondent expressed concerns that DCP452 may not be sufficiently different from DCP139, suggesting it might not meet Ofgem's requirements for approval.
 - One respondent suggesting (as per Ofgem's decision on DCP 139), that their view is for consideration to be given to whether similar exemptions from FCP locational charges for various customer categories that use minimal 132kV assets before changes are made for just one category
 - One respondent believed that Ofgem's decision DCP 139 is irrelevant given the time period between it and DCP 452 and the context within which they were raised.
 - One respondent believed that Ofgem's decision DCP 139 provides a guide, but that DCP 452 is materially different and has addressed Ofgem's previous concerns.
 - One respondent explained that DCP 452 differs from DCP 139 in scope and application and argued that DCP 452 addresses previous cost-reflectivity concerns and that in the current energy policy context DCP 452 is much more relevant and is particularly important for users looking to connect in Scotland as the issue is more prevalent in Scotland. The respondent also noted that the impact of not implementing DCP 452 could discourage electrification and distort market behaviour.
- 5.11 The Working Group summarise these comments and further considerations under paragraph 6.9 in this Change Report.

Question 5: Do you agree with the proposed solution for DCP 452?

- 5.12 The majority of respondents (four of six) agreed with the proposed solution of this CP. Two respondents raised concerns, with one respondent stated that they have reservations as they did not believe the impacts of DCP 452 had been set out sufficiently clearly, especially for storage/battery assets. The other respondent stated that they had concerns regarding the knock-on effect to other Customers. The Working Group noted this but mentioned that all changes to the charging methodology that amend charges for one cohort of customers will have a knock-on impact on other customers and that this will ultimately be down to Ofgem to make a decision on whether these impacts are appropriate or not.
- 5.13 Having considered these responses, the Working Group and the Proposer concluded that no amendments were required to the proposed solution.

Question 6: Do you have any comments on the proposed legal text for DCP 452? If so, then please provide examples or supporting rationale.

- 5.14 None of the respondents provided comments that needed to be addressed by the Working Group in terms of the legal drafting itself.

Question 7: Which of the DCUSA Charging Objectives does DCP 452 better facilitate? Please provide supporting comments.

- 5.15 Most respondents (four of six) agree that DCP 452 better facilitates DCUSA Charging Objectives two and three, particularly by improving cost-reflectivity and promoting fairer competition among electricity users connected at different voltage levels. Those respondents highlighted benefits such as removing unjust charges and aligning costs with network usage, while also noting the importance of avoiding inefficiencies in network design. However, two respondents expressed reservations, with one considering that they were unable to provide a definitive view due to perceived insufficient impact analysis, and the other raising concerns about the potential redistribution of costs that may not be wholly cost-reflective. One respondent additionally points to potential benefits in facilitating efficient connections for new large loads, potentially supporting Charging Objective 4.
- 5.16 The Working Group's assessment of the proposal against the relevant objectives, taking into account this feedback, is included in Section 9 of this Change Report.

Question 8: Do you consider that the workgroup has accurately captured the impact of DCP452? If not, what has been missed?

- 5.17 The majority of respondents (five of six) were broadly satisfied that the workgroup has captured the impacts of DCP452, either fully or to the extent possible given current data transparency limitations. However, one respondent, expressed significant concerns about the clarity and adequacy of the impact analysis, calling for more explicit and illustrative examples, and questioning the justification for substantial residual charge increases for EHV customers. One respondent supported the general approach but urges greater transparency and recommends further guidance from Ofgem. Overall, while most respondents are content with the analysis, there was a call for clearer presentation, greater detail regarding direct and indirect impacts, and attention to the justification of large charge increases for certain customer groups.

- 5.18 To address these concerns, the Working Group has provided significantly more narrative and analysis on the impact on typical customers of different types in Section 10 of this Change Report and corrected minor errors with the analysis presented in the consultation.

Question 9: Are you aware of any wider industry developments that may impact upon or be impacted by DCP 452?

- 5.19 Three of the six respondents stated that they weren't aware of any wider industry developments that may impact upon or be impacted by DCP 452. One respondent set out that they expected Ofgem's DUoS SCR to consider the issue raised by DCP 452. One respondent supported progressing the change now, given that Ofgem directed that development of the change could proceed and because it deals with a distinct defect while staying aligned with future DUoS reforms. The final respondent shared their views that the existence of many complex industry developments should not be used as an excuse not to make specific, targeted, common-sense corrections to the existing methodology.
- 5.20 The Proposer noted that no new interactions had been identified beyond those in the consultation. The Proposer also confirmed that they wish to continue to pursue DCP 452 despite the potential overlap with the DUoS SCR, noting that the DCUSA Panel had sought confirmation from Ofgem that the change could proceed.

Question 10: The proposed implementation date for DCP 452 is 01 April 2028. Do you agree with the proposed implementation date? If not, then please provide your rationale.

- 5.21 Four of the six respondents explicitly agreed with the proposed implementation date for DCP 452 being 01 April 2028. Of the remaining two respondents, one confirmed that the proposed implementation date is aligned to the point in time when a charging methodology change could be implemented (as long as a decision is made by the Authority no later than the end of September 2026) and the other had no comment.
- 5.22 The Working Group will retain 1 April 2028 as the proposed implementation date.

Question 11: Do you have any other comments on DCP 452?

- 5.23 Four of the six respondents had no further comments. Of the remaining two respondents, one reiterated their position that the impact assessment needed further work to ensure the impacts are clearer to understand and the other confirmed their support of the change and added a recommendation that clear stakeholder communications are needed related to residual adjustments and on the distinction between interconnected and non-interconnected GSPs. With respect to the latter, the Working Group believe that the suggested communication could be dealt with by the three impacted DNOs themselves.
- 5.24 The Working Group has addressed the majority of these comments in the additional analysis of the impact of the change included in Section 10 of this Change Report.

6 Working Group Conclusions & Final Solution

- 6.1 After consideration of the consultation responses, the Working Group identified that no further work was required with respect to the solution set out within the consultation (see paragraphs 4.37 to 4.40 above).
- 6.2 In response to comments made regarding the impact assessment provided for in the consultation, the Working Group has developed a more detailed impact assessment which is set out in Section 10 below.

6.3 The Working Group agreed to address three particular points raised by respondents that were not directly linked to the solution itself but that would assist in readers understanding of the change. These were as follows:

- The relative magnitude of charges which relate to Charge 1 vs other cost drivers included in tariffs for 0000 category customers, and therefore, the impact of DCP 452
- The impact of future network re-configuration on 0000 customers, whereby a non-interconnected GSP is connected to a different GSP and so becoming interconnected.
- The applicability of the DCP452 logic to customers connected at other voltages.

Other cost drivers beyond Charge 1

6.4 Consultation responses included discussion of cost drivers and components which make up EDCM tariffs. One respondent noted that Charge 1 is only one cost driver of several which make up EDCM tariffs, and noted that DCP 452 will have no impact on the contribution 0000 customers makes to other costs not considered in the load-flow aspect of the FCP. All customers would continue to make the same contribution to the DNO's Direct Costs, Indirect Costs and Transmission Exit Charges (determined by a combination of Network Use Factors and fixed multipliers specified in the EDCM) and to the DNO's general cost base through the Demand Residual. DCP 452 has no impact on 0000 customers' contribution to other costs not considered directly in the load-flow-based aspect of the FCP methodology.

6.5 To provide additional context on the relative significant of Charge 1 compared to other cost drivers, one DNO provided a snapshot analysis of the proportion of total customer charges which relate to Charge 1. In that area, 21 EDCM customers out of a total of 288 (~7%) have a non-zero Charge 1 component. For those 21 customers, Charge 1 can make up as low as 12% of the total charge and as high as 86% of the total charge faced by individual customers.

Future network re-configuration

6.6 During the review of consultation responses, the Working Group determined that it would be beneficial to clarify that, for 0000 customers at non-interconnected GSPs, there remains a possibility that future network reconfiguration could result in the GSP they are connected to being connected to a different GSP and so becoming interconnected. In such cases, these customers would then be seen as being connected to an interconnected GSP, and consequently would no longer be captured under the DCP 452 solution, meaning that the customer would be reintroduced into the new FCP Group for the newly interconnected GSPs and have the Charge 1 component reintroduced into their charges. GSPs changing from non-interconnected to interconnected could drive step changes in customer charges if 0000 customers are moved into a Network Group with non-zero Charge 1.

6.7 The Proposer noted that this is an intended and cost-reflective outcome – when a GSP is non-interconnected, a 0000 customer cannot drive thermal reinforcement on the downstream network so should not pay Charge 1; if the GSP becomes interconnected, a 0000 customer may drive thermal reinforcement on the downstream network so should pay Charge 1. However, such network reconfigurations are typically undertaken to alleviate the need for network reinforcement, so it is also relatively likely that the newly formed interconnected group of GSPs would have zero Charge 1.

6.8 The Proposer also noted that step changes driven by network reconfiguration are an artefact of the underlying approach to the EDCM load flow model, which is updated annually to reflect the actual configuration of the network under normal operating conditions. That configuration does change over time as DNOs reinforce and extend their networks. For example, independent of DCP 452, a GSP changing from non-interconnected to interconnected could have a significant impact on charges for all EDCM customers connected downstream of both GSPs. They would move from being in separate Network Group for only their individual, non-interconnected GSP into a new, larger Network Group for both interconnected GSPs. Likewise, new circuits and/or substations being added to the network can drive step changes in Charge 1 – for example when network reinforcement is carried out, Charge 1 can immediately jump from being relatively high (because reinforcement was close to being required) to zero (because reinforcement has been carried out so is no longer close to being required). Hence, in the Proposer's view, the impact on 0000 customers of GSPs changing from interconnected to non-interconnected is no different to typical year-on-year changes in the EDCM driven by changes to the network.

The applicability of the DCP452 logic to customers connected at other voltages.

6.9 The Working Group discussed a document prepared by the Proposer with respect to responses from the consultation question on Ofgem's decision to reject DCP 139. It was noted that the document provided an assessment of the applicability of the DCP452 logic to customers connected at other voltages, which is included Attachment 6. The Working Group concluded that fixes for categories other than 0000 customers would be complex, requiring Level 1 and Level 2 groups split into sub-groups based on interconnection, challenging the network group philosophy of the FCP methodology. The Proposer also noted that the logic of DCP452 is much less clear cut for other voltages, where users face Charge 1 which partially reflects downstream or non-interconnected assets on which they do not drive thermal reinforcement, unlike 0000 customers whose entire Charge 1 exposure relates to downstream assets on which those customers can never drive thermal reinforcement.

7 Legal Text

DCP 452 Proposed Legal Text

7.1 The legal text for this CP has been developed and refined by the Working Group and has been reviewed by the DCUSA legal advisors and which the Proposer has confirmed as satisfying the intent of the CP. The legal text for this CP is provided as Attachment 1 to this Change Report. The legal text is also provided below for ease of reference; and proposes to amend the following areas in Schedule 17:

- Paragraph 2.7 in Schedule 17, includes an additional sentence at the end of the current Paragraph which proposes to exclude any Connectees with Customer Category 0000 that are directly connected to a GSP substation that does not operate in parallel with another GSP substation, from the relevant Network Group for that GSP substation.
- Aside from the original changes which amended the formulae for the import capacity charge, super-red import rate charge and super-red export rate credit (as set out in Paragraphs 6.2 and 6.3 in Schedule 17) such that those charges are set to zero for Connectees with Customer Category 0000 at non-interconnected GSPs, some additional context has also been added. The additional context includes a reference to Paragraph 2.7, to pick up that those Connectees also need to be connected to a GSP substation that does not operate in parallel with another GSP substation.

7.2 DCP 452 proposes to modify Paragraph 2.7 of Schedule 17 as set out below:

Definition of Network Groups

- 2.7 The Authorised Network Model is split into Network Groups, thereby reflecting the zonal nature of the FCP model. A Network Group is a contained portion of the Authorised Network Model defined by physical, operational and technical boundaries that is not electrically connected to another part of the network at the same voltage level under normal operating conditions. A Network Group is defined as the network normally supplied from a Grid Supply Point (GSP) substation, a Bulk Supply Point (BSP) substation, or a Primary Substation. In situations where GSP substations, BSP substations or Primary Substations are operated in parallel, the network associated with such parallel GSP substations, BSP substations or Primary Substations is considered as one Network Group. In situations where GSP substations are not operated in parallel, Connectees which connect directly to those GSP substations (those which are assigned Customer Category 0000 according to Paragraph 15.6) shall be excluded from the relevant Network Group for that GSP substation.
- 2.8 Guidance relating to the definition of Network Groups is presented in section 6 (Network Groups) of Annex 1.

7.3 DCP 452 proposes to modify Paragraph 6.2 and 6.3 of Schedule 17 as set out below:

- 6.1 Each tariff in the model is linked to one FCP location or Network Group. Each FCP Network Group may be linked to a parent FCP Network Group and a grandparent FCP Network Group. Each FCP Network Group may have a Charge 1 in £/kVA/year associated with it.
- 6.2 The import charges for the application of Charge 1 is given by the formulas:

For Connectees with Customer Category 0000 at GSP substations which are not operated in parallel (those excluded from the relevant Network Group as per Paragraph 2.7):

[p/kWh super-red rate] = 0

[p/kVA/day capacity charge] = 0

For other Connectees with zero average kW/kVA:

$[p/kWh \text{ super-red rate}] = ([\text{parent Charge 1 } \text{£/kVA/yr}] * (\text{abs}[A1] / (\text{SQRT}(A1^2 + R1^2))) / [\text{Super-red hours}] * 100) + ([\text{grandparent Charge 1 } \text{£/kVA/yr}] * (\text{abs}[A2] / (\text{SQRT}(A2^2 + R2^2))) / [\text{Super-red hours}] * 100)$

$[p/kVA/day \text{ capacity charge}] = ([\text{network Charge 1 } \text{£/kVA/year}] / [\text{days in Charging Year}] * 100) + ([\text{parent Charge 1 } \text{£/kVA/yr}] * (-R1 * \text{Average kVar/kVA}) / (\text{SQRT}(A1^2 + R1^2)) / [\text{days in Charging Year}] * 100) + ([\text{grandparent Charge 1 } \text{£/kVA/yr}] * (-R2 * [\text{Average kVar/kVA}]) / (\text{SQRT}(A2^2 + R2^2)) / [\text{days in Charging Year}] * 100)$

For all other Connectees:

$[p/kWh \text{ super-red rate}] = [\text{parent Charge 1 } \text{£/kVA/yr}] * (\text{abs}[A1] - (R1 * ([\text{Average kVar/kVA}] / [\text{Average kW/kVA}])) / (\text{SQRT}(A1^2 + R1^2)) / [\text{Super-red hours}] * 100 + ([\text{grandparent Charge 1 } \text{£/kVA/yr}] * (\text{abs}[A2] - (R2 * ([\text{Average kVar/kVA}] / [\text{Average kW/kVA}])) / (\text{SQRT}(A2^2 + R2^2)) / [\text{Super-red hours}] * 100)$

$[p/kVA/day \text{ capacity charge}] = [\text{Network Group Charge 1 } \text{£/kVA/year}] / [\text{days in Charging Year}] * 100$

Where:

A1 and R1 are the values of the active power flow and reactive power flow modelled through the parent Network Group in the maximum demand scenario.

A2 and R2 are the values of the active power flow and reactive power flow modelled through the grandparent Network Group in the maximum demand scenario.

If both A1 and R1 are equal to zero, in respect of that network level in the formulas above, the term $(\text{abs}[A1] / (\text{SQRT}(A1^2 + R1^2)))$ is set equal to 1, $(-R1 * \text{Average kVar/kVA}) / (\text{SQRT}(A1^2 + R1^2))$

$R1^2$) is set equal to zero, and $([Average\ kVar/kVA] / [Average\ kW/kVA]) / (\sqrt{A1^2 + R1^2})$ is also set to zero.

If both $A2$ and $R2$ are equal to zero, in respect of that network level in the formulas above, the term $(abs[A2] / (\sqrt{A2^2 + R2^2}))$ is set equal to 1, $(-R2 * Average\ kVar/kVA) / (\sqrt{A2^2 + R2^2})$ is set equal to zero, and $([Average\ kVar/kVA] / [Average\ kW/kVA]) / (\sqrt{A2^2 + R2^2})$ is also set to zero.

Any negative contributions to the [p/kVA/day capacity charge] or the [p/kWh super-red rate] from the parent or the grandparent Network Groups are set to zero.

Super red hours are the number of hours in the DNO Party's super-red time band.

The average kW/kVA and average kVar/kVA figures are forecasts for the Charging Year, based on data from the most recent regulatory year for which data were available in time for setting charges for the Charging Year. Specifically, active and reactive power consumptions are averaged over a super-red time band, which is a seasonal time of day period determined by the DNO Party to reflect the time of peak, and then divided by the Maximum Import Capacity (averaged over the same financial year). If the DNO Party considers that the reactive consumption data relates to export rather than import (e.g. the average kVar figure exceeds half of the Maximum Import Capacity) then the Maximum Import Capacity in the denominator should be replaced by the Maximum Export Capacity of the same Connectee. The average kVar divided by kVA is restricted to be such that the combined active and reactive power flows cannot exceed the Maximum Import Capacity.

- 6.3 Charge 1 is applied to export charges as a credit. The credit is expressed as a negative charge rate in p/kWh and is applied in respect of active power units exported during the DNO Party's super-red time band. The credit rate is set to zero for Connectees who are assigned an F Factor of zero. The credit rate is calculated as follows:

For Connectees with Customer Category 0000 at GSP substations which are not operated in parallel (those excluded from the relevant Network Group as per Paragraph 2.7):

[p/kWh super-red export rate] = 0

For all other Connectees:

$[p/kWh\ super-red\ export\ rate] = -100 * [Proportion\ eligible\ for\ Charge\ 1\ credits] * ([network\ Charge\ 1\ £/kVA/year] + [parent\ Charge\ 1\ £/kVA/year] + [grandparent\ Charge\ 1\ £/kVA/year]) * ([Chargeable\ export\ capacity] / [Maximum\ export\ capacity]) / [number\ of\ hours\ in\ the\ super-red\ time\ band]$

Where:

The proportion eligible for Charge 1 credits is zero if the F factor that is assigned to the Connectee as described in the FCP methodology is equal to zero, and 1 otherwise.

The super-red generation rate is not applied to Connectees with zero Chargeable Export Capacity.

- 7.4 DCP 452 proposes to modify Paragraph 6.3 of Annex 1 to Schedule 17 as set out below:

- 6.1 For the purpose of forecasting future reinforcement the network is broken down into a number of Network Groups. The use of Network Groups for analysis is an important stage in assessing security of supply requirements given in ER P2/6. Network Groups are defined at hierarchical levels, each level being defined by the operating voltage of the source substations, such that separate Network Groups are defined for Primary Substation, BSP and GSP levels.
- 6.2 Each Network Group is a part of the Distribution System that consists of:
- (a) the transformation assets at a source substation; and
 - (b) the network that:
 - (i) operates at the same voltage as the lower voltage of these transformation assets; and

- (ii) *is electrically connected to these transformation assets, under Normal Running Arrangements, excluding electrical connection through assets operating at voltages other than the lower voltage of the transformation assets.*

6.3 *The following exceptions apply:*

- (a) *where a source substation operates, under Normal Running Arrangements, with open point(s) on the lower voltage busbar such that there are separate sections of the busbar that are not electrically connected at the same voltage as the busbar, then these separate sections of busbar, and their associated network, shall be considered as separate Network Groups; and*
- (b) *where multiple source substations, with the same lower voltage of transformation assets, operate in parallel, under Normal Running Arrangements, through network operating at the same voltage as the lower voltage of the transformation assets, then these substations and their associated network shall be considered as a single Network Group; and*
- (c) *where GSP substations do not operate in parallel under Normal Running Arrangements, Connectees connected directly to those GSP substations (those which are assigned Customer Category 0000 according to Paragraph 15.6 of Schedule 17) shall be excluded from the relevant Network Group for that GSP substation.*

6.4 *Where a Network Group has, under Normal Running Arrangements:*

- (a) *no demand(load) or demand (generation) connected either within the Network Group, or any lower voltage Network Group associated with it; and*
- (b) *the Network Group exists solely for the purposes of providing security of supply support to an adjacent Network Group, through closure of open point(s) between such Network Groups,*
- (c) *then such Network Groups shall be considered as part of the adjacent Network Group to which they provide security of supply support (an example of such instances would be Network Groups that would otherwise be associated with transformers that operate on 'hot standby' under Normal Running Arrangements).*

Text Commentary

7.5 The proposed legal text changes include:

- (a) the addition of an exception (as set out in the modified Paragraph 2.7 'Definition of Network Groups' in Schedule 17) to exclude Connectees from the Level 1 Network Group if they are deemed to be in the Customer Category of 0000 and are connected to a GSP that does not operate in parallel under Normal Running Arrangements;
- (b) modifying the calculation of the FCP-element of the import capacity charge, super-red import rate charge and super-red export rate credit (as set out in Paragraphs 6.2 and 6.3 in Schedule 17) which results in those charges being set to zero for Connectees which meet the new exception above; and
- (c) the addition of an exception (as set out in the modified Paragraph 6.3 of Annex 1 to Schedule 17) to remove Connectees from the Level 1 Network Group if they are deemed to be in the Customer Category of 0000 and are connected to a GSP that does not operate in parallel under Normal Running Arrangements.

7.6 With regard to changes to Paragraph 6.2 of Schedule 17, it should be noted that this calculation only deals with the FCP element of tariffs i.e., the other tariff elements are in the following paragraphs, with Paragraph 19.5 including the formula for the total.

8 Code Specific Matters

Reference Documents

- 8.1 This issue was discussed at the Distribution Charging Methodologies Development Group (DCMDG), the presentation slides and discussion output of which can be found in the [post meeting pack for meeting 84](#).

9 Relevant Objectives

Proposer's Assessment Against the DCUSA Objectives

- 9.1 For a DCUSA Change Proposal to be approved it must be demonstrated that it better meets the DCUSA Objectives. The Proposer of DCP 452 believes that the proposed solution will better facilitate DCUSA Charging Objectives two and three. The rationale for these decisions can be found in the paragraphs that follow the table of DCUSA Charging Objectives below.

DCUSA Charging Objectives	Identified impact
<input type="checkbox"/> 1 That compliance by each DNO Party with the Charging Methodologies facilitates the discharge by the DNO Party of the obligations imposed on it under the Act and by its Distribution Licence	None
<input checked="" type="checkbox"/> 2 That compliance by each DNO Party with the Charging Methodologies facilitates competition in the generation and supply of electricity and will not restrict, distort, or prevent competition in the transmission or distribution of electricity or in participation in the operation of an Interconnector (as defined in the Distribution Licences)	Positive
<input checked="" type="checkbox"/> 3 That compliance by each DNO Party with the Charging Methodologies results in charges which, so far as is reasonably practicable after taking account of implementation costs, reflect the costs incurred, or reasonably expected to be incurred, by the DNO Party in its Distribution Business	Positive
<input type="checkbox"/> 4 That, so far as is consistent with Clauses 3.2.1 to 3.2.3, the Charging Methodologies, so far as is reasonably practicable, properly take account of developments in each DNO Party's Distribution Business	None
<input type="checkbox"/> 5 That compliance by each DNO Party with the Charging Methodologies facilitates compliance with the Regulation on Cross-Border Exchange in Electricity and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.	None
<input type="checkbox"/> 6 That compliance with the Charging Methodologies promoted efficiency in its own implementation and administration	None

- 9.2 The Proposer's rationale with respect to their position on the applicable DCUSA Charging Objectives is set out below:

- **Charging Objective 2:** this Change Proposal will ensure that customers directly connected to non-interconnected GSPs do not face forward-looking DUoS charges in respect of thermal reinforcement

on downstream network assets which they can never drive. As a result, it will better facilitate competition in the generation of electricity between users connected at different voltage levels.

- **Charging Objective 3:** this Change Proposal will remove the application of forward-looking charges in respect of thermal reinforcement to customers directly connected to non-interconnected GSPs in respect of network assets on which they will never drive thermal reinforcement. The charges those users face will be more cost-reflective as a result. Furthermore, it will result in more cost-reflective charges for other customers connected to such networks, who are currently face a weakened forward-looking cost signal in respect of thermal reinforcement they are deemed to drive due to that cost currently being shared with 0000 customers.

Working Group Assessment Against the DCUSA Objectives

9.3 The majority of the Working Group were of the belief that DCP 452 better facilitates the following DCUSA Charging Objectives for the reasons set out below:

- **Charging Objective 2:** ensuring that customers directly connected to non-interconnected GSPs do not face forward-looking DUoS charges in respect of thermal reinforcement on downstream network assets which they can never drive will positively impact competition by ensuring cost reflective charges for customers across voltage levels.
- **Charging Objective 3:** removing the application of forward-looking charges in respect of thermal reinforcement to customers directly connected to non-interconnected GSPs in respect of network assets on which they will never drive thermal reinforcement will result in more cost-reflective charges for other customers connected to such networks, who are currently face a weakened forward-looking cost signal in respect of thermal reinforcement they are deemed to drive due to that cost currently being shared with 0000 customers.

9.4 The minority of the Working Group were of the belief that DCP 452 does not better facilitate the applicable DCUSA Charging Objectives, specifically that it would negatively impact Charging Objective 3 as it aims to give more cost reflective charges to one specific group of customers but will introduce additional costs to other customers.:

10 Impacts & Other Considerations

Model Amendments (EDCMs)

WORKING GROUP REQUEST FOR THE PRODUCTION OF AMENDED MODELS:

10.1 The drafting amendments suggested by the Proposer were provided to the appointed modelling consultants for the purposes of implementing the proposed solution for DCP 452 and were requested to make updates to the versions of the most recent EDCM models used by the DNOs to set charges for the 2026/27 charging year.

CHANGES MADE TO THE MODELS TO ACCOMMODATE DCP 452:

10.2 The appointed DCUSA modelling consultants created modified versions of the EDCM models (both the FCP and LRIC versions) in line with the draft legal text and with the aid of the model specification document provided by the Working Group. The updated models and a document that outlines the structural changes made to the models and other relevant information are located within Attachment 4 to this consultation.

- 10.3 Section 3 within the Model documentation PDF file outlines the modifications to the models that were necessary to implement DCP 452.
- 10.4 As per the request of the Working Group a new row named “0000 customer connected to non-parallel GSP: FCP only”. has been added to the ‘Tariff inputs’ sheet of the EDCM in the section labelled “Input 305-A: Customer Info”. The row contains TRUE/FALSE drop-down cells to indicate whether the description applies to a given customer. The row can be left blank in the LRIC version of the EDCM. Another new row has been added to the “Checks” section named “Customer connected to non-parallel GSP without a 0000 label?”, which flags if the new row contains the value “TRUE” to indicate that a 0000 customer is connected to a non-parallel GSP but the customer category entered for that customer is not 0000.
- 10.5 In the calculation sheet named ‘Charge 1 (FCP)’ the following has been updated:
- In the section labelled “Tariff information” a row has been added, with the name “0000 customer connected to non-parallel GSP: FCP only”.
 - In the section labelled “Section 304-A: Identification of FCP parent and grandparent group” a row has been added, with the name “Override FCP Charge 1 if connected directly to non-parallel GSP”.
 - In rows labelled “Section 304-D: Super-red charge”, “Section 304-E: Capacity charge” and “Section 304-G: Export Charge 1” the calculations were changed for the ‘Super-red rate’, ‘Capacity charge’ and ‘Super-red export rate’ for all tariffs.
- 10.6 DNOs, who are also Working Group members have successfully populated the DCP 452 EDCM (FCP) models and have confirmed that they have been able to replicate the expected outputs from the modified models. The impact analysis presented below is based on comparing outputs from the baseline models (pre DCP 452) with that of the DCP 452 models.

Impact Analysis

- 10.7 The Working Group have conducted various types of analysis on the DCP 452 solution which are described in more detail below. Customers in four DNO areas are impacted by DCP452.
- 10.8 Customers in all DNO regions which use LRIC **are not, and will never be, impacted**:
- Northern Powergrid (Northeast)
 - Northern Powergrid (Yorkshire)
 - SP Electricity Northwest
 - UKPN South East
 - UKPN Eastern
 - UKPN London
 - NGED South Wales
 - NGED South West
- 10.9 In two regions which use FCP, there are no 0000 customers at non-interconnected GSPs, so there is **no impact currently but could be in the future**:

- SSE Southern
- SP Manweb

10.10 Customers in the remaining four regions would be impacted if DCP452 were implemented immediately:

- SSE North Scotland (HYDE)
- SP South Scotland (SPOW)
- NGED East Midlands (EMEB)
- NGED West Midlands (MIDE)

10.11 In these four regions, DCP452 impacts both forward-looking and residual charges. For forward-looking charges:

- Import capacity charges could reduce but not be removed entirely for some users, and could increase for some users
- Super-red import charges could be removed for some users, and increase for some users
- Super-red export credits could be removed for some users, and increase for some users

10.12 Residual charges, which are part of the import fixed charge, will increase for final demand users only. The number and scale of each of these impacts is summarised below.

10.13 EDCM customers in the four impacted regions include final demand, generation and storage. Customers can be grouped into four:

5. **Forward-looking charge directly impacted:** those which are 0000 connected at a non-interconnected GSP, so directly impacted by DCP452. These users will see an impact on both their forward-looking charge and, if applicable, their residual charge.
6. **Forward-looking charge indirectly impacted:** those which are not 0000 but connect downstream of a non-interconnected GSP, whose forward-looking charge is impacted by the removal of 0000 customers from the calculation of the FCP charge. These users will see an impact on both their forward-looking charge and, if applicable, their residual charge.
7. **Residual charge indirectly impacted:** the change in total revenue from the above two groups moves into the demand residual; hence final demand customers which pay the demand residual are indirectly impacted by DCP452
8. **Not impacted:** not at a GSP with 0000 customers and not final demand, so see no impact to their tariff. This will include all generation and storage not in group one or two

10.14 The impacted tariff elements are shown in the table below:

Group	Import fixed charge	Import capacity charges	Import super-red charge	Export fixed charge	Export capacity charge	Export super-red credits
1: Forward-looking charge directly impacted	Increased if final demand	Reduced but not removed	Removed	<i>No change</i>	<i>No change</i>	Removed*
2: Forward-looking charge indirectly impacted	Increased if final demand	Increased for a small subset	Increased for a small subset	<i>No change</i>	<i>No change</i>	<i>No change</i>
3: Residual charge indirectly impacted	Increased if final demand	<i>No change</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>
4: Not impacted	<i>No change</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>

* Note super-red export credits are only applied to some controllable (i.e. non-intermittent) generation connected in an area with a non-zero FCP charge. Intermittent generators do not receive super-red credits in the baseline, so there is no impact on this tariff element for intermittent generators.

10.15 The Working Group issued a Request for Information to DNOs to quantify the impact on customers in each of the impacted groups. Each of the DNOs using FCP produced a full set of EDCM tariffs based on their most recent published charges (at the time of the analysis) with DCP452 applied. The output of that analysis was tariffs only, not total charge impacts nor groupings, as DNO representatives on the Working Group considered that information to be commercially sensitive. The Working Group have analysed the full set of tariffs for all impacted DNOs, based on the non-confidential information provided by the DNOs combined with existing published charging statements. Hence the groupings above have been derived logically from the impact (rather than tariff-by-tariff by the DNOs) and the total charge impacts shown are based on applying tariffs to capacity and usage for a generic “typical” customer, not those of actual customers. The full set of tariffs was published with the consultation and is republished with the change report; hence individual EDCM customers can identify the impact on their tariff by finding their own tariff in the full dataset – see Attachment 5.

10.16 Based on the workgroup's analysis, the count of customers in each group is shown in the table below:

Customer Count	SPOW	HYDE	EMEB	MIDE	Total across impacted DNOs
1: Forward-looking charge directly impacted	36	6	2	1	45
2: Forward-looking charge indirectly impacted	3	0	0	0	3
3: Residual charge indirectly impacted	30	60	69	40	199
4: Not impacted	99	222	266	117	704
Total	168	288	337	158	951

Directly impacted (category one)

10.17 **45** customers are directly impacted. These include:

- **Nine** final demand customers
- **28** generators (excluding storage)
- **Eight** storage operators

Final demand customers

10.18 All nine of these customers see:

- A reduction in their capacity charge of between 0.01p/kVA/day and 1.58p/kVA/day
- An increase in their import fixed charge as a result of an increase to the demand residual, varying by region and the residual band to which the customer is allocated

10.19 Depending on the balance between the reduction in the import capacity charge and increase in fixed charge, some of these customers will see a net increase in annual charge and some a net decrease. In aggregate, the reduction in forward-looking import capacity charges likely offsets the increase in residual fixed charges. This is summarised in the table below, which shows the average of all tariffs in this group before and after DCP452, applied to typical parameters for a user in this group of 10MW import capacity. Note – this does not reflect the tariff and annual charge for any individual customer, but is simply an illustrative example.

Illustrative tariff impact on directly impacted final demand	Import fixed charge (p/day)	Import super-red unit rate (p/kWh)	Import capacity charge (p/kVA/ day)	Export fixed charge (p/day)	Super-red export rate (p/kWh)	Export capacity charge (p/kVA/ day)
Pre DCP452	11,358.79	0.000	1.986	0.000	0.000	0.000
Post DCP452	14,927.14	0.000	1.270	0.000	0.000	0.000
Change	3,568.35	0.000	-0.716	0.000	0.000	0.000
% Change	31.4%	0.0%	-36.0%	0.0%	0.0%	0.0%

Illustrative Annual charge impact on directly impacted final demand	Import fixed charge (£/Year)	Import super-red unit rate (£/Year)	Import capacity charge (£/Year)	Export fixed charge (£/Year)	Super-red export rate (£/Year)	Export capacity charge (£/Year)	Total (£/Year)
Pre DCP452	41,460	0	144,946	0	0	0	186,405
Post DCP452	54,484	0	92,710	0	0	0	147,194
Change	13,024	0	-52,236	0	0	0	-39,211
% Change	31.4%	0.0%	-36.0%	0.0%	0.0%	0.0%	-21.0%

Generators (excluding storage)

10.20 The impact on these customers varies depending on whether or not they have a super-red credit under the baseline. Only controllable generators are eligible for super-red credits. All intermittent generators (e.g. wind and solar) do not have a super-red credit while controllable generators in a location with a positive FCP charge may receive a credit.

Intermittent generators

10.21 23 of the 28 generators have zero super-red export credit. These are likely intermittent renewable generators such as wind and solar. All of these see a reduction in their import capacity charge. Generators will typically have a relatively small import capacity, so this is likely to result in a relatively modest reduction in import capacity charge. The remainder of tariff elements are not impacted. This is summarised in the table below, which shows the average of all tariffs in this group before and after DCP452, applied to typical parameters for a user in this group of 200kW import capacity and 20MW export capacity. Note – this does not reflect the tariff and annual charge for any individual customer, but is simply an illustrative example.

Illustrative tariff impact on directly impacted intermittent generation	Import fixed charge (p/day)	Import super-red unit rate (p/kWh)	Import capacity charge (p/kVA/day)	Export fixed charge (p/day)	Super-red export rate (p/kWh)	Export capacity charge (p/kVA/day)
Pre DCP452	407.536	0.000	2.176	15,686.597	0.000	0.039
Post DCP452	407.536	0.000	0.807	15,686.597	0.000	0.039
Change	0.000	0.000	-1.369	0.000	0.000	0.000
% Change	0.0%	0.0%	-62.9%	0.0%	0.0%	0.0%

Illustrative annual charge impact on directly impacted intermittent generation	Import fixed charge (£/Year)	Import super-red unit rate (£/Year)	Import capacity charge (£/Year)	Export fixed charge (£/Year)	Super-red export rate (£/Year)	Export capacity charge (£/Year)	Total (£/Year)
Pre DCP452	1,488	0	1,589	57,256	0	2,857	63,189
Post DCP452	1,488	0	589	57,256	0	2,857	62,189
Change	0	0	-999	0	0	0	-999
% Change	0.0%	0.0%	-62.9%	0.0%	0.0%	0.0%	-1.6%

Controllable generators

10.22 The remaining five generators have non-zero super-red export credit under the baseline, ranging from 0.774p/kWh to 5.214p/kWh. These customers are controllable generators such as gas peakers. They see both a reduction in their import capacity charge **and** the removal of their super-red credit. They are likely to have small import capacity, so will see a modest reduction in charge from the import capacity charge reduction and potentially a significant loss of credits. For example, a 20MW generator with 20% load factor in the DNOs super-red period would see a reduction in credits ranging from £10k/year to £60k/year. This is summarised in the table below, which shows the average of all tariffs in this group before and after DCP452, applied to typical parameters for a user in this group of 200kW import capacity and 20MW export capacity and 20% load factor in the super-red period. Note – this does not reflect the tariff and annual charge for any individual customer, but is simply an illustrative example.

Illustrative tariff impact on directly impacted controllable generation	Import fixed charge (p/day)	Import super-red unit rate (p/kWh)	Import capacity charge (p/kVA/day)	Export fixed charge (p/day)	Super-red export rate (p/kWh)	Export capacity charge (p/kVA/day)
Pre DCP452	360.573	0.000	2.018	4,716.185	-1.306	0.050
Post DCP452	360.573	0.000	1.105	4,716.185	0.000	0.050
Change	0.000	0.000	-0.913	0.000	1.306	0.000
% Change	0.0%	0.0%	-45.2%	0.0%	-100.0%	0.0%

Illustrative Annual charge impact on directly impacted controllable generation	Import fixed charge (£/Year)	Import super-red unit rate (£/Year)	Import capacity charge (£/Year)	Export fixed charge (£/Year)	Super-red export rate (£/Year)	Export capacity charge (£/Year)	Total (£/Year)
Pre DCP452	1,316	0	1,473	17,214	-15,675	3,650	7,978
Post DCP452	1,316	0	807	17,214	0	3,650	22,987
Change	0	0	-666	0	15,675	0	15,009
% Change	0.0%	0.0%	-45.2%	0.0%	-100.0%	0.0%	188.1%

Storage

10.23 Storage is treated as non-final demand. So the **tariff** impact on storage is similar to generators, i.e. a reduction in import capacity charge and, in some cases, a loss of super-red credits. But storage have high import capacity (typically equal to export capacity), so the **total charge** impact is different, with the reduction in import capacity charge being more heavily weighted than for generation.

10.24 Three storage operators do not have a super-red credit in the baseline so only see a reduction in import capacity charges; the remaining five do see the removal of a super-red credit.

10.25 All of these users are likely to see an overall reduction in charge, even when the super-red credit is removed. This is because the import capacity charge dominates the overall charge. Only with a very high load factor (~85%) in the super-red period does the reduction in super-red credit offset the reduction in the import capacity charge. That load factor is not realistic for duration-constrained storage assets, given super-red periods typically last 3-3.5 hours.

10.26 This is summarised in the table below, which shows the average of all tariffs in this group before and after DCP452, applied to typical parameters for a user in this group of 20MW import and export capacity and a 20% export load factor in the DNO super-red period. Note – this does not reflect the tariff and annual charge for any individual customer but is simply an illustrative example.

Illustrative tariff impact on directly impacted storage	Import fixed charge (p/day)	Import super-red unit rate (p/kWh)	Import capacity charge (p/kVA/day)	Export fixed charge (p/day)	Super-red export rate (p/kWh)	Export capacity charge (p/kVA/day)
Pre DCP452	3,041.125	0.000	1.614	3,058.340	-0.856	0.050
Post DCP452	3,041.125	0.000	0.811	3,058.340	0.000	0.050
Change	0.000	0.000	-0.803	0.000	0.856	0.000
% Change	0.0%	0.0%	-49.7%	0.0%	-100.0%	0.0%

Illustrative Annual charge impact on directly impacted storage	Import fixed charge (£/Year)	Import super-red unit rate (£/Year)	Import capacity charge (£/Year)	Export fixed charge (£/Year)	Super-red export rate (£/Year)	Export capacity charge (£/Year)	Total (£/Year)
Pre DCP452	11,100	0	117,804	11,163	-43,669	3,650	100,048
Post DCP452	11,100	0	59,221	11,163	0	3,650	85,134
Change	0	0	-58,583	0	43,669	0	-14,914
% Change	0.0%	0.0%	-49.7%	0.0%	-100.0%	0.0%	-14.9%

Indirect impact to forward-looking charges (category two)

10.27 Three customers are indirectly impacted. These are customers which are:

- Connected downstream of a non-interconnected GSPs which:
 - Has non-zero FCP Charge 1
 - Has 0000 customers connected
- Are not themselves 0000 customers

10.28 Their FCP charge will vary as a result of the removal of 0000 customers from the FCP charge calculation for their network group.

10.29 Two of these users are generators. One sees an increase in its import capacity charge and the other an increase in its super-red import charge (with the impact varying depending on voltage of connection). Generators typically have low import capacity and low super-red import, so this is likely a very minor impact.

10.30 The third is a final demand customer which sees an increase in its super-red import charge alongside an increase in the residual element of its import fixed charge. The import capacity charge (which is not impacted) is typically the largest charge element for demand users, so this is likely a relatively small aggregate impact on the overall charge, estimated at a ~10% increase.

Indirect impact on residual charges (category three)

10.31 Most directly impacted customers in categories one and two would see an overall charge reduction. A minority would see an overall charge increase. But the net impact on revenue from forward-looking charges from these customers would be negative in all impacted DNO areas, totalling an estimated £1.3m for the charging year 2026/27 across all four impacted DNO regions. This would result in an increase in the demand residual, recovered from final demand customers.

10.32 The overall impact on forward-looking charges in each impacted DNO region is shown below, which is recovered from final demand customers via the demand residual:

Revenue impact (£k)	SPOW	HYDE	EMEB	MIDE	Total across impacted DNOs
Revenue transferred from directly impacted customers to demand residual	696.1	183.1	420.3	1.4	1,301.0

10.33 This is applied to each demand residual charging band in each DNO, with the following changes to residual charges:

Impact of DCP 452 on residual fixed charges for EDCM customers whose charges are set by DNOs who use the FCP variant of the EDCM only and then only those that had impacted customers.

DNO NAME	TCR BAND	CUSTOMER COUNT	RESIDUAL CHARGE PRE-DCP452 (£/year)	RESIDUAL CHARGE POST-DCP452 (£/year)	CHANGE IN RESIDUAL CHARGE FROM DCP452 (£/year)	% CHANGE IN RESIDUAL CHARGE FROM DCP452
SP Distribution (SPOW)	NFD	130	0	-	-	0.0%
SP Distribution (SPOW)	Band 1	14	5,147.44	7,725.09	2,577.65	50.1%
SP Distribution (SPOW)	Band 2	16	38,268.67	57,432.19	19,163.52	50.1%
SP Distribution (SPOW)	Band 3	5	80,308.77	120,524.41	40,215.64	50.1%
SP Distribution (SPOW)	Band 4	3	101,405.45	152,185.50	50,780.05	50.1%
Scottish Hydro Electric Power Distribution (HYDE)	NFD	226	0	-	-	0.0%
Scottish Hydro Electric Power Distribution (HYDE)	Band 1	46	2,288.05	2,896.42	608.37	26.6%
Scottish Hydro Electric Power Distribution (HYDE)	Band 2	13	32,031.87	40,548.82	8,516.95	26.6%
Scottish Hydro Electric Power Distribution (HYDE)	Band 3	1	32,031.87	40,548.82	8,516.95	26.6%
Scottish Hydro Electric Power Distribution (HYDE)	Band 4	2	67,558.27	85,521.30	17,963.04	26.6%
National Grid Electricity Distribution (EMEB)	NFD	270	0	-	-	0.0%
National Grid Electricity Distribution (EMEB)	Band 1	24	891.01	1,508.19	617.18	69.3%
National Grid Electricity Distribution (EMEB)	Band 2	23	6,661.53	11,275.79	4,614.26	69.3%
National Grid Electricity Distribution (EMEB)	Band 3	9	9,891.48	16,590.79	6,699.31	67.7%
National Grid Electricity Distribution (EMEB)	Band 4	14	25,540.25	43,104.90	17,564.65	68.8%
National Grid Electricity Distribution (MIDE)	NFD	119	0	-	-	0.0%
National Grid Electricity Distribution (MIDE)	Band 1	12	949.07	950.84	1.77	0.2%
National Grid Electricity Distribution (MIDE)	Band 2	12	8,074.27	8,089.32	15.05	0.2%
National Grid Electricity Distribution (MIDE)	Band 3	11	19,887.53	19,924.61	37.08	0.2%
National Grid Electricity Distribution (MIDE)	Band 4	5	85,393.34	85,552.52	159.18	0.2%

10.34 There is a:

- 50% increase in residual charges for SPOW
- 27% increase in residual charges for HYDE
- 69% increase in residual charges for EMEB
- 0.2% increase in residual charges for MIDE

10.35 The proportional impact on customer charges varies across regions, depending on the relative magnitude of residual charges compared to forward-looking charges. The following table shows a "typical" forward-looking charge for a final demand customer in each band, based on the average of forward-looking tariffs in that band applied to import capacity around the mid-point of the range of capacities within the band. Note – these do not reflect the tariff or annual charge for any individual customer but are simply illustrative examples.

DNO	Band	Illustrative FLC (£k/Year)	Residual (£k/Year)		Illustrative total charge (£k/Year)		Illustrative impact of DCP452	
			Pre DCP452	Post DCP452	Pre DCP452	Post DCP452	£k/Year	%
SPOW	1	47.6	5.1	7.7	52.7	55.3	2.6	5%
SPOW	2	137.0	38.3	57.4	175.2	194.4	19.2	11%
SPOW	3	212.1	80.3	120.5	292.4	332.6	40.2	14%
SPOW	4	298.2	101.4	152.2	399.6	450.4	50.8	13%
HYDE	1	61.6	2.3	2.9	63.9	64.5	0.6	1%
HYDE	2	111.7	32.0	40.5	143.7	152.2	8.5	6%
HYDE	3	174.0	32.0	40.5	206.0	214.5	8.5	4%
HYDE	4	224.2	67.6	85.5	291.8	309.7	18.0	6%
EMEB	1	43.2	0.9	1.5	44.0	44.7	0.6	1%
EMEB	2	136.3	6.7	11.3	143.0	147.6	4.6	3%
EMEB	3	208.9	9.9	16.6	218.8	225.5	6.7	3%
EMEB	4	420.5	25.5	43.1	446.1	463.6	17.6	4%
MIDE	1	55.1	0.9	1.0	56.0	56.0	0.0	0%
MIDE	2	112.7	8.1	8.1	120.8	120.8	0.0	0%
MIDE	3	212.0	19.9	19.9	231.9	232.0	0.0	0%
MIDE	4	581.6	85.4	85.6	667.0	667.1	0.2	0%

10.36 Despite EMEB customers seeing the biggest impact on residual charges alone at 69%, EMEB customers see a much lower overall impact on total charges of 3-4% as the EMEB residual is relatively small compared to forward-looking charges.

Not impacted (category four)

10.37 Non-final demand customers (generation and storage) whose forward-looking charges are not impacted see no impact from DCP452. This represents the majority of EDCM customers in all four impacted regions.

Notes related to impacts for SSEN

10.38 It should be noted that with respect to SSEN's two licence areas, the impacts above are based on the data that was used for the purpose of setting the 2025/26 charging year tariffs (which themselves had carried over certain elements from the setting of 2024/25 charging year tariffs). The reasons for this are described in more detail below.

10.39 The methodology for calculating EDCM charges involves four main steps and it is step 1 that DCP 452 is focused on. Step 1 applies load flow analysis and the FCP model to determine an EDCM tariff element, "Charge 1", which represents the costs of demand-led reinforcement in a maximum demand scenario. This locational element is a core component of the final tariffs. The FCP model's power flow analyses identify reinforcements that are expected over a 10-year period. The FCP load incremental charge, known as "Charge 1", is derived from the costs of all expected reinforcements identified within a specific "Network Group" during this 10-year horizon. This charge is calculated using a complex formula that, amongst other things, accounts for the reinforcement cost, a load growth rate, and a discount rate. The locational charges, specifically Charge 1 from a Network Group and its associated parent and grandparent Network Groups, are directly used in the formulas that determine a customer's final import capacity charge and super-red unit rate.

10.40 The EDCM methodology, as designed, requires total revenue recovery to align with a predetermined target. When the model's forward-looking component over-recovers revenue, a true-up mechanism is triggered via the residual element of the EDCM charges. In circumstances where the forward-looking charge under-recovers the allowed revenue, then the residual acts as a top up mechanism. In SSEN's case, due to over-recovery of revenue from the forward-looking elements, the result was that the residual acted as mechanism to reduce the amount of revenue being recovered. If the amount was relatively small, this wouldn't be an issue, however, due to the size of the over-recovery, the residual was so large that the output from the modelling process would have resulted in significant credits being paid to demand users.

10.41 To prevent the publication of these volatile and perverse charges, SSEN requested and received a derogation from Ofgem for both the 2025/26² and 2026/27³ charging years for both their Licence areas. The specific provision of this derogation was a direct instruction to SSEN to "carry over the FCP locational components (i.e., the Charge 1 values) and Network Use Factors from the 2024/25 charge setting process".

² <https://www.ofgem.gov.uk/decision/derogation-scottish-and-southern-electricity-networks-distribution-pursuant-slc-13b-part-e-electricity-distribution-licence>

³ https://www.ofgem.gov.uk/sites/default/files/2025-02/SSEN_Direction_to%20Derogate_CDCM_and_EDCM-20250204181506.pdf

10.42 This means that the values for FCP Charge 1 locational elements used for the set of most recently published tariffs were the same ones that were used when charges were being set at the end of 2022, for the 2024/25 charging year. Therefore, it was agreed, in order to not distort the results of the impact assessment, that it would be best to utilise the values from that same year when including those elements as inputs into the EDCM models.

Potential future impacts

10.43 The commentary above details the hypothetical impact on existing customers if DCP452 were implemented immediately. The impact of DCP452 on tariffs in any given year will evolve over time as new customers connect and the network is reconfigured.

10.44 DCP452 only has an impact when 0000 customers are connected at non-interconnected GSPs with non-zero FCP Charge 1. 388 GSPs (~85%) have zero FCP Charge 1 in 2026-27 tariffs, with only 59 (~15%) having non-zero FCP Charge 1. Hence DCP452 will only have an impact in future if 0000 customers connect at a relatively small subset of GSPs.

10.45 DCP452 has no impact on tariffs if new 0000 customers connect at any GSP with zero Charge 1. Likewise DCP452 has no impact on tariffs when new customers of any other category (i.e. not directly connected to a GSP) connect.

Impact on FCP Charge 1 if a new customer connects at a non-interconnected GSP with non-zero FCP Charge 1

10.46 Without DCP452, demand associated with the new customer may be added to demand for the relevant network group, potentially impacting Charge 1. The new customer will not be deemed to drive thermal reinforcement in the FCP model, so reinforcement cost will remain the same. If the new customer is treated as generation dominated (typically if import capacity is less than or equal to export capacity), there would be no impact on the FCP Charge 1 in that location, because the customer is modelled as a generator in FCP. If the new customer is treated as demand dominated (typically if import capacity is greater than export capacity), the FCP Charge 1 for the relevant network group would reduce, as the same reinforcement cost would be spread over a larger demand base.

10.47 With DCP452, demand associated with the new customer would not be added to demand for the relevant network group and FCP Charge 1 would remain constant.

Impact on other tariffs if a new customer connects at a non-interconnected GSP with non-zero FCP Charge 1

10.48 Without DCP452, a new 0000 customer connecting will pay FCP Charge 1.

- If the new customer is demand dominant, the FCP Charge 1 rate will reduce (when the new customer is added), but it will be applied to a greater demand base, so revenue associated with Charge 1 in that location will remain constant, and there will be no impact on the demand residual.
- If the new customer is generation dominant and intermittent (e.g. wind or solar), the FCP Charge 1 rate will stay the same, but it will be applied to a greater demand base, so revenue associated with Charge 1 in that location will increase. In turn, this will drive a small reduction in the demand residual for all other customers.
- If the new customer is generation dominant and controllable (e.g. gas), the FCP Charge 1 rate will stay the same, but the new generator will receive super-red credits, so revenue associated with

Charge 1 in that location will decrease. In turn, this will drive a small increase in the demand residual for all other customers.

10.49 With DCP452, revenue associated with Charge 1 in the relevant location will remain unchanged – the same rate will be applied to the same demand base with and without the new customer. In turn, the demand residual will be unchanged.

10.50 The impact of DCP452 should a new 0000 customer connect at a non-interconnected GSP with non-zero Charge 1 is summarized below.

Impact of a new customer at a non-interconnected GSP with non-zero Charge 1		FCP Charge 1 for other customers in new customer's location	Demand residual
New customer is demand dominated	Baseline	FCP Charge 1 reduction	None – FCP Charge 1 tariff reduces but applied to more demand, so no impact on revenue collection from FCP Charge 1
	With DCP 452	None	None
	DCP 452 Impact	Increase in FCP Charge 1	None
New customer is generation dominated and intermittent	Baseline	None	Small reduction – FCP Charge 1 tariff unchanged but applied to more demand, so increase in revenue collection from FCP Charge 1
	With DCP 452	None	None
	DCP 452 Impact	None	Increase in demand residual
New customer is generation dominated and controllable	Baseline	None	Small increase – FCP Charge 1 tariff unchanged but applied to new customer as a credit, so decrease in revenue collection from FCP Charge 1
	With DCP 452	None	None
	DCP 452 Impact	None	Decrease in demand residual

10.51 The proposer considers that the tariffs derived for a new customer when DCP452 is applied are more cost reflective. When a new demand dominant customer connects, the reduction which pre-existing customers see in FCP Charge 1 is a cross-subsidy – the new customer is contributing to reinforcement costs which those pre-existing customers drive, and the new customer does not. The knock-on impact on demand residual is appropriate and reflects new customers paying cost-reflective forward-looking charges with any shortfall to DNO allowed revenues continuing to be recovered through the demand residual. Likewise, credits to controllable generators should relate to network reinforcement which they can offset. 0000 generators at non-interconnected GSPs cannot offset thermal reinforcement, so should not receive credits. DCP452 corrects this, and demand customers benefit from a lower demand residual as a result.

Impacts on other Significant Code Reviews (SCRs) or other significant industry change projects

10.52 The potential interaction of DCP 452 with Ofgem's DUoS SCR is detailed in paragraphs [4.11](#) to [4.15](#) of this Change Report. It is not believed that this CP will impact on any other existing SCR but the Proposer noted the below industry projects.

REMA

10.53 REMA may fundamentally change the context of locational signals. At the point in time when DCP 452 was raised, it was unknown whether Connectees may face locational operational signals under a zonal wholesale market, or face sharper locational signals through network charges (primarily TNUoS) under a reformed national market. Whilst the latter has now been decided as the approach to be taken forward, there is very little detail on how this will impact DUoS. Hence, the Proposer's view is that corrections such as this Change Proposal should continue to be made in the meantime.

Clean Power 2030

10.54 The Clean Power 2030 Action Plan⁴ sets out the mix of technologies needed to achieve a decarbonised power system by 2030. Incorrectly applied locational signals could be a barrier to developing projects which are Clean Power 2030 aligned, so should be corrected.

Impacts on other Industry Codes

10.55 The Working Group does not believe that DCP 452 has any impact on any other industry codes.

Environmental Impacts

10.56 In accordance with DCUSA Clause 11.14.6, the Working Group assessed whether there would be a material impact on greenhouse gas emissions if DCP 452 were implemented. The Working Group did not identify any material impact on greenhouse gas emissions from the implementation of this CP.

Engagement with the Authority

10.57 The Authority have been engaged with the development of this CP as an observer of the Working Group.

11 Implementation

11.1 The proposed implementation date is 1 April 2028, in line with the next publication of DUoS charges by DNOs. This would require an Authority decision by 01 October 2026 (at the very latest) to enable DNOs to incorporate the change in charge setting in late 2026. The Proposer considers that there is a strong case for derogations to apply this Change Proposal sooner in respect of heavily impacted new Connectees, which will be pursued outside of the DCUSA Change process.

⁴ <https://www.gov.uk/government/publications/clean-power-2030-action-plan>

11.2 The Proposer was originally targeting implementation from 1 April 2027, which has slipped following additional time needed for the Working Group to develop the solution. For heavily impacted projects, an early Authority decision is as important as early implementation, to enable projects to proceed through FID. Hence while an Authority decision by October 2026 is needed to facilitate 1 April 2028 implementation, the Proposer is seeking a decision as early as possible, which should be well before October 2026.

12 Recommendations

Panel's Recommendation

- 12.1 The Panel approved this Change Report on 18 March 2026. The Panel considered that the Working Group has carried out the level of analysis required to enable Parties to understand the impact of the proposed amendment and to vote on DCP 452.
- 12.2 The Panel have recommended this report be issued for voting for a period of 15 Working Days and DCUSA Parties should consider whether they wish to submit views regarding this CP. The Voting Form can be found in Attachment 2.

13 Attachments

- Attachment 1 – DCP 452 Legal Text
- Attachment 2 – DCP 452 Voting Response Form
- Attachment 3 – DCP 452 Consultation and Responses
- Attachment 4 – DCP 452 EDCM Model Documentation
- Attachment 5 – Before and After Tariff Impact Assessment
- Attachment 6 – DCP 452 principle applied to other voltages