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Explanatory note providing further information on the priority issue relating to the Extra-High Voltage (EHV) Distribution Charging Methodology (EDCM) discussed during the Distribution Charging update at the March 2024 Charging Futures Forum

On 21 March 2024, at the Charging Futures Forum, we highlighted two issues that are being prioritised under our Distribution Use of System (DUoS) reform work. This explanatory note provides further information on the second of these issues (relating to the EDCM) for interested parties, and details how to get involved in this work.

Executive Summary

We[1] have recently been made aware of circumstances where the EDCM produces negative residual charges, which in some cases would result in Final Demand Sites being paid a credit for their use of the network.[2]

As we have set out in two recent derogations related to this issue, we consider that a negative residual charge for Final Demand Sites could have unintended and potentially harmful consequences, in particular regarding effective competition and the principle of cost-reflectivity.[3]

We plan to assess potential options which could mitigate the risk of the EDCM calculating a negative residual (leading to a negative fixed charge for some customers) arising in the future, with the further, secondary, aim to reduce year-on-year volatility in EHV charges.

[1] The terms "we", "us", "our", "Ofgem" and "the Authority" are used interchangeably in this document and refer to the Gas and Electricity Markets Authority.
[2] DCUSA Section 1A.1 'Definitions and Interpretation'. Final Demand Site means: (a) Domestic Premises; or (b) a Single Site (as defined in Schedule 32) at which there is Final Demand, as determined in accordance with Paragraphs 1.10 and 5 of Schedule 32.
[3] Derogation to National Grid Electricity Distribution pursuant to SLC 13B Part E of the Electricity Distribution Licence | Ofgem and Derogation to Scottish and Southern Electricity Networks Distribution pursuant to SLC 13B Part E of the Electricity Distribution Licence | Ofgem

Background

Distribution Network Operators (DNOs) recover their allowed revenue from customers through DUoS charges. DUoS charges can be divided into two elements: 'forward-looking' charges that are designed to ensure network users receive signals that are reflective of the costs of how and when they use the network, and 'residual' charges that are designed to recover the rest of the relevant network operator's allowed revenues once the forward-looking charges have been levied.

The EDCM is the methodology used to calculate DUoS charges for customers connected to the highest-voltage levels of the distribution network.[4] It is set out in the Distribution Connection and Use of System Agreement (DCUSA).[5] There are two versions of the EDCM methodology: the Forward Cost Pricing (FCP) and the Long Run Incremental Cost (LRIC) methodologies. Each of the DNO licensees selected one to adopt on an enduring basis when the EDCM was introduced. In 2024/2025, the revenue recovered via the EDCM accounted for an average of 3.4% of the total revenue recovered through DUoS charges.[6]

The potential for the EDCM to produce a negative fixed charge

In setting EHV charges for the 2025/2026 charging year (using the EDCM), two DNOs experienced issues which led to Ofgem providing derogations relieving them of their obligations to comply with the EDCM in the affected regions. In both instances, forward-looking charges produced by the EDCM were forecast to exceed the allowed revenue of the DNO. In order to limit revenue recovery to the allowed revenue under the price control, a negative residual was therefore required. In the EDCM, a negative residual is applied through the addition of a negative residual charge to the daily fixed charge for Final Demand Sites, which would have resulted in some Final Demand Sites being paid for being connected to the network.

As this output leads to number of undesirable outcomes, including potentially opening the EDCM up to gaming opportunities (i.e. it could incentivise larger connections to increase their capacity to get a higher fixed credit), Ofgem granted derogations, and issued associated Directions, to two DNOs for the 2025/2026 charging year:

[4] Users connected at (or above) 22kV, or to users connected into a substation where the primary infeed is at (or above) 22kV.
[5] DCUSA Document - DCUSA
[6] Ofgem analysis of revenue raised outside of the Common Distribution Charging Methodology (CDCM), using data from CDCM charging models.

1. In the case of Scottish & Southern Electricity Networks (SSEN), the derogation allowed SSEN to carry over locational components and network use factors of the 2024/2025 charge setting process to the 2025/2026 charging year.

2. In the case of National Grid Electricity Distribution (NGED), the derogation allowed NGED to reapportion negative fixed charges for final demand consumers within a residual band to the capacity charge for the same group of consumers.[7]

These derogations were required as, unlike the Common Distribution Charging Methodology (CDCM), the EDCM does not have a mechanism for accommodating negative residual charges through discounting.[8] Thus far, as far as we are aware, a negative fixed charge has only arisen from the FCP model.

Based on experience to date, negative residual charges appear to be driven partly by material year-on-year reductions in the allowed revenue of the DNO, which directly affects the amount of revenue to be collected through the EDCM. In some areas, we understand that this has been compounded by an increase in the load growth assumption towards the end of the ten-year forecast period.[9]

Volatility in EHV charges

Owing to how the EDCM derives tariffs, users connected to the EHV network may face a higher degree of year-on-year change in their DUoS charges than High Voltage (HV) or Low Voltage (LV) connected customers. Given the issues that this degree of volatility can have on users of the system, including a lack of predictability, we have previously indicated a desire to address this issue.[10] Volatility is seen in both the LRIC and FCP models.

It has been suggested that reforms to residual recovery from implementation of the Targeted Charging Review have brought the underlying year-on-year volatility into focus in a way that was obscured by the previous approaches to scaling residual charges.[11]

[7] NGED's proposal allocated the negative residual charges in a given residual band across all customers in that band. It does this by reducing the capacity charge for each band by the total residual credit for that band divided by the total capacity for that band. In this way all customers in a given band see a uniform capacity charge reduction.
[8] The methodology used to calculate DUoS network charges for low and high-voltage connected users is called the CDCM. See the accompanying explanatory note, published alongside this one, for details of how the CDCM accommodates a negative residual charge through discounting.
[9] The FCP takes, as an input, actual load growth projections, rather than a fixed load growth assumption (as the LRIC does). These actual load growth projections are based on ten-year ahead demand projections and network development plans.
[10] See slide 38: https://www.nationalgrideso.com/document/301221/download
[11] For more information on the Targeted Charging Review, see: Targeted Charging Review: Decision and Impact Assessment | Ofgem

Our current understanding is that by solving the issue related to the negative residual, it may be possible to reduce the level of volatility seen in EHV charges.

What have we done so far?

Since this issue has been highlighted to us, we have been working with the DNOs and the Energy Networks Association (ENA) to understand the problem, the risk of it occurring in the future, and potential solutions.

We held a workshop with DNO representatives on 14 March 2024 to discuss this issue. It was agreed by stakeholders that this issue has the potential to occur in the future, and that it could arise in both the FCP and the LRIC models. A discussion was held to establish whether the drivers of EHV charge volatility were the same as those that result in a negative residual. Some common drivers were identified, though it was noted that the drivers of a negative residual were more so related to systemic issues (such as a reduction in the allowed revenue), whereas there are a large number of inputs to, and aspects of, the methodologies which can drive year-on-year volatility.

Several initial solutions were proposed, ranging from large changes which are out of scope of this work (such as extending the CDCM to cover EHV sites), to smaller amendments (such as those used by SSEN and NGED to resolve the issue for 2025/2026).

Our next steps

As set out at the Charging Futures Forum on 21 March 2024, our current plan is to bring forward a consultation on options to resolve this issue. This will include consideration of potential routes by which any solutions could be implemented. We aim to publish this in Q2 2024.

Ahead of this, we invite interested stakeholders to share any initial feedback that they may have on the issue raised in this note, and in particular, views on potential solutions to the problem.

We invite stakeholders to contribute to this work by contacting us at DUoS@ofgem.gov.uk with the subject line "EDCM Workstream" by 19 April 2024.