

EHV Distribution Charging Methodology (EDCM)

Report on the DG condition

November 2012

enda
energy**networks**
association



EDCM DG condition report

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Introduction

1. The electricity Distribution Network Operators (DNOs), through the Energy Networks Association (ENA), jointly developed proposals for a new use of system charging methodology for higher voltage network users (the EDCM). The EDCM for import charges was implemented on 1 April 2012.
2. The DNOs' proposals for the EDCM for export were submitted by the ENA to Ofgem on 1 June 2012. Documents relating to the submission and previous consultations are available to download from the website of the ENA.¹
3. On 16 November 2012, Ofgem published its decision to approve the proposals for export charges, subject to one condition.²
4. This report is submitted by the ENA on behalf of the 14 regional electricity distribution licensees (DNOs) in Great Britain to accompany revised proposals for the EDCM for export to meet this condition.
5. Subject to approval by Ofgem, EDCM export charges calculated using the revised EDCM methodologies set out in this submission will apply to all Designated EHV properties, as defined by Ofgem in Condition 50A.11 of the standard distribution licence conditions from 1 April 2013.
6. This report describes the changes that have been made to the methodology to meet Ofgem's condition.
7. This report is accompanied by the following appendices:
 - a) Appendix 1 contains illustrative versions of the Schedule 18 (long run incremental cost – LRIC methodology statement) and Schedule 17 (forward cost pricing – FCP methodology statement) of DCUSA methodology statements with “track changes” showing the changes that would need to be made to the current version of DCUSA in order to implement the proposed EDCM for export charges (including the Ofgem condition).
 - b) Appendix 2, attached as two Microsoft Excel workbooks, gives, for each of the 14 DNO licence areas in Great Britain, a comparison of the illustrative import and export charges that might have resulted in 2012/2013 from the application of the EDCM modified for Ofgem's condition, with those from the EDCM as submitted in June 2012. These are presented based on input data used for “scenario 1” of the June 2012 submission, i.e. on the assumption that all generators that are eligible for exemption from DUoS charges are exempt for the relevant charging year, unless they had opted in before the June 2012 submission was finalised. One workbook reports tariff rates and the other workbook reports forecast annual charges;

¹ <http://www.energynetworks.org/electricity/regulation/commercial-operations-group/charging-structure/use-of-system/development/structure-of-charges-edcm/edcm-file-storage.html>

² Ofgem (2012) Electricity distribution charging: Direction by the Authority to approve the charging methodology for higher voltage distributed generation; notice of intention to impose a condition on approval pursuant to Part D of the Electricity Distribution Licence

- c) Appendix 3, attached as two Microsoft Excel workbooks, provides functional blank combined EDCM models (for import and export) for both methodologies (FCP and LRIC). These models are capable of implementing both the proposed export methodology and the current import-only methodology, amended as necessary to satisfy Ofgem's condition.
- d) Appendix 4, attached as two Microsoft Excel workbooks, gives another set of fully functional blank combined EDCM models (for import and export). In addition to meeting Ofgem's condition for export, these models are also capable of implementing the DCUSA change proposal DCP130 - Remove the discrepancy between non-half hourly (NHH) and half hourly (HH) Un-metered Supplies (UMS) tariffs. This additional information is provided as an illustration of how this change would be incorporated into the EDCM models if it is to be approved by Ofgem in the coming days and does not form part of the formal submission to address the condition

Background

- 8. The EDCM has been developed by the DNOs to produce cost reflective use of system charges to encourage existing and new users of the electricity distribution networks in Great Britain to:
 - a) use existing network capacity more efficiently; and
 - b) avoid prompting inefficient network reinforcement.
- 9. Where the EDCM leads to lower investment in the distribution network, this will result in lower use of system charges for all customers over time.
- 10. Within the context of export charges, the EDCM for export proposed by the DNOs to Ofgem on 1 June 2012 (the "June 2012 proposals") tried to achieve this by including locational credits based on LRIC and FCP for distributed generation that are deemed to offset the need for demand-led network investment.
 - a) Credits (in p/kWh of active export during the super-red time band) based on the FCP and LRIC Charge 1 Remote element (relating to higher network levels) would have been available to all EDCM generators.
 - b) Credits based on the FCP and LRIC Charge 1 Local element (relating to the network level of connection) would have been available only to those generators that were assigned a non-zero F factor, i.e. it is deemed to make a non-zero contribution to security of supply in the power flow analysis. These credits would not have applied to intermittent generation.
- 11. The DNOs believed that this approach to generation credits was justified on the basis that whilst intermittent generators do not help offset demand-led reinforcement at the network level of connection, they could make a contribution to offsetting demand-led reinforcement at higher network levels.
- 12. At the same time, the DNOs recognised that the proposed approach to generation credits is not consistent with the current approach to system planning (Engineering Recommendation P2/6 in particular). The DNOs' report to Ofgem accompanying the June 2012 proposals stated that:

“The current approach to assessing generation contribution to security of supply (and ER P2/6) needs to evolve to take account of new developments, particularly in light of the forecast increase in renewable generation connected to distribution networks. This might, for instance, include taking account of local storage facilities in assessing contribution to security of supply. The DNOs will work with generators and other stakeholders to address these issues.”

The condition

13. In its letter to conditionally approve the DNOs’ proposed EDCM for export, Ofgem did not agree with the DNOs proposed treatment of intermittent generators in relation to generation credits. The letter announced Ofgem’s intention to place a condition upon the DNOs to submit with amended proposals for the EDCM for export that does not include locational credits to intermittent generation.

14. Ofgem’s decision letter of 16 November 2012 says:

“Having regard to the Relevant Objectives and its principal objective and duties under the Electricity Act, the Authority hereby directs that the EDCM for export be approved pursuant to Part D of the electricity distribution licence. This is subject to the condition that the provision of “super-red” credits for intermittent generators is removed from the methodology as soon as reasonably practicable and by 19 December 2012 at the latest.”

How the condition is met

15. The methodology statements submitted alongside this report meets this condition by amending the calculation of the location “super-red” unit rate credit for export.

16. In the June 2012 proposals, these credits were calculated as follows:

For FCP:

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:

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

Where:

The proportion eligible for local 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.

For LRIC:

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

$$[\text{p/kWh super-red export rate}] = -100 * ([\text{Proportion eligible for local charge 1 credits}] * [\text{local charge 1 } \text{£/kVA/year}] + [\text{remote charge 1 } \text{£/kVA/year}]) * ([\text{Chargeable export capacity}] / [\text{Maximum export capacity}]) / [\text{number of hours in the super-red time band}]$$

Where:

The proportion eligible for local charge 1 credits is zero if the F factor that is assigned to the Connectee as described in the LRIC methodology is equal to zero; and 1 otherwise.

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

17. In the accompanying proposals, the DNOs propose that these credits are calculated as follows:

For FCP:

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:

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

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.

For LRIC

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:

$$[\text{p/kWh super-red export rate}] = -100 * [\text{Proportion eligible for charge 1 credits}] * ([\text{local charge 1 } \text{£/kVA/year}] + [\text{remote charge 1 } \text{£/kVA/year}]) * ([\text{Chargeable export capacity}] / [\text{Maximum export capacity}]) / [\text{number of hours in the super-red time band}]$$

Where:

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

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

18. There are no other changes proposed to the methodology statements. The DNOs believe that this is sufficient to meet the requirements of Ofgem's condition.
19. The Excel models that implement the proposed EDCM have also been modified to take account of this change.
20. The main change to the Excel model (compared to the version sent to Ofgem on 10 July 2012) is to the formulae in;
 - a) "table 4351 – Generation credit (before exempt adjustment) p/kWh" of the FCP model; and
 - b) "table 4368 – Generation credit (before exempt adjustment) p/kWh" of the LRIC model.
21. In both cases, the formula has been modified to reflect the proposed change to the methodology as described earlier.
22. The only other change is to the title of column V of table 935. This has changed from "Proportion eligible for local charge 1 credits" to "Proportion eligible for charge 1 credits".

Impact of changes on EDCM customers

23. Appendix 2 of this submission presents the results of the analysis and the expected tariff impact of this change on EDCM import and export charges. This analysis is based on the input data Scenario 1 that was used in our June 2012 (and July 2012) submissions.
24. The direct effect of the change proposed in this submission is to remove any locational credits to generators deemed as intermittent according to the FCP and LRIC methodologies. This means that intermittent generators who, based on our June 2012 proposals would have expected to receive credits under the EDCM would now not do so.
25. There are no changes to the EDCM charges that non-intermittent generators may expect to pay under the EDCM.
26. The cost of paying locational credits to generation is met through charges to demand customers (both EDCM and CDCM). The removal of credits for intermittent generators mean that the net cost of these credits is expected to be lower, and this would, in turn, lead to lower expected import charges. In practice, because the magnitude of generation credits under the EDCM is small relative to overall import charges, the change in import charges is likely to be small. The effect of rounded tariffs means that in most cases, this small change is likely to be masked by rounding.

27. Our analysis confirms that, in the vast majority of cases, there is no change to the forecast annual import charge. In the small number of cases that have changed, the result is a small reduction of lower than 1 per cent of the June 2012 charge.