

DCP 266 ‘The calculation and application of IDNO discounts’

Proposed Legal Text

Amend the following wording at the beginning of Schedule 16:

Implementation Date

This Schedule 16, version ~~×~~[TBC], is to be used for the calculation of Use of System Charges which will become effective from, ~~dd-mm-yyyy~~[TBC] and remain effective until superseded by a revised version¹.

Amend paragraph 3 of Schedule 16 as follows:

3. In order to comply with this methodology statement when setting distribution Use of System Charges the DNO Party will populate and publish the CDCM model version ~~×××~~[TBC] when issued by the Panel in accordance with Clause 14.5.3.

Amend paragraph 52 of Schedule 16 as follows:

52. The DNO Party forecasts the volume chargeable to each tariff component under each tariff for the charging year. In doing so, the DNO Party will assume a minimum of one customer will exist in the charging year for each tariff.

Amend the following wording at the beginning of Schedule [X²]:

Implementation Date

This Schedule XX, version ~~×~~[TBC], is to be used for the calculation of Use of System Charges which will become effective from, ~~dd-mm-yyyy~~[TBC] and remain effective until superseded by a later revised version³.

Amend paragraphs 1A and 3(c) of Schedule [X] as follows:

1. This Schedule forms part of the CDCM and the EDCMs. It describes the methodology

¹ To be completed on implementation of this CP by reference to the application of the then current CM. (This text is introduced by DCP 293 which is due to be implemented on 01 April 2018).

² Schedule [X] is to be inserted by the implementation of DCP 234 on 01 April 2018

³ To be completed on implementation of this CP by reference to the application of the then current CM. (This text is introduced by DCP 293 which is due to be implemented on 01 April 2018).

for the calculation of discount percentages for the purpose of determining certain LDNO use of system charges under Schedules 16, 17 and 18.

- 1A. In order to comply with this methodology statement when setting distribution Use of System Charges the DNO Parties will populate the PCDM model version ~~“xxx”~~[TBC] when issued by the Panel in accordance with Clause 14.5.3.
2. For the purposes of calculating discount percentages, the DNO Party’s network is split into five levels: (i) LV services, (ii) LV mains, (iii) HV/LV, (iv) HV and (v) a single level covering EHV and 132kV (including EHV/HV).
3. The calculation of discount percentages used in Schedule 16 involves the following steps:
 - a) Breakdown of price control allowed revenue between operating expenditure, depreciation and return on regulatory asset value.
 - b) Allocation of each of these components of price control allowed revenue to network levels.
 - c) Determination of ~~an percentage~~-allocation of total revenue per unit to network levels.
 - d) Determination of the proportion of the LV mains deemed to be used by LV-connected embedded networks.
 - e) Determination of the proportion of the HV network deemed to be provided by HV-connected embedded networks.
 - f) Calculation of the discount percentage for each combination of boundary network level and end user network level.

The heading above paragraph 20 and paragraphs 21 to 28 of Schedule [X] are to be amended as follows:

Determination of ~~an percentage~~-allocation of total revenue per unit to network levels

20. The DNO Party determines a breakdown of price control allowed revenue over the period from 2005/2006 to 2009/2010 between (1) operating expenditure, (2)

depreciation and (3) return on regulatory asset value. Operating expenditure is then allocated to each network level according to the [Expensed proportions] for each network level (see paragraph 11 above). The depreciation and return on regulatory asset value elements of price control allowed revenue are allocated to each network level in the proportions calculated as described in paragraphs 13-19 of this Schedule. Different allocations are obtained for the purpose of Schedule 16 and for the purposes of Schedules 17 and 18. Again, separately for the purposes of Schedule 16 and for Schedules 17 and 18, the allocations of each of the three components of price control allowed revenue are aggregated by network level to obtain a percentage per network level of total price control allowed revenue.

21. The price control allowed revenue for ~~2007/2008~~the charging year (denoted as the "**Total allowed revenue**") is adjusted by deducting from it the [Revenue not to share] (denoted as the "**Adjusted total revenue to share**"). The "**Revenue not to share**" comprises the aggregate of:
 - a) the net amount earned by the DNO Party under price control financial incentive schemes for ~~2007/2008~~the charging year (this may be a negative number); and
 - b) Transmission exit charges for ~~2007/2008~~the charging year.
22. The [Adjusted total revenue to share] for the calculation of discount percentages used in Schedule 16 (and the [Total revenue to share] for the calculation of discount percentages used in Schedule 17 and 18) are then allocated to each network level using the appropriate weighted average percentage allocations calculated as described in paragraph 20 of this Schedule.
23. A further two revenue elements are allocated to each network level using the [Expensed proportions] for each network level:
 - a. "Customer contributions indirects" (from worksheet LR1 of the FBPQ) aggregated over the period 2005/2006 to 2014/2015, and divided by ten.
 - b. The absolute value of the aggregate across all network levels and over the period 2005/2006 to 2014/2015 of any negative numbers obtained when "New connections & customer specific reinforcement" less "Customer contributions

(directs) for connections” for connections at each network level in the FBPQ (worksheet LR1) is calculated, divided by 10.

24. The revenues allocated to each network level are then rescaled by the estimated number of units flowing through each network level in the charging year, loss adjusted to LV. The result is denoted by "**Revenue to share per unit**", for each network level. The Revenue not to share is re-scaled by all units flowing into the DNO Party's EHV network, loss adjusted to LV; the result is denoted as "**Revenue not to share per unit**".
25. The DNO Party calculates the number of units flowing through each network level in the charging year, loss-adjusted to LV, in two steps.
26. The first step is to calculate adjustment factors for units distributed at LV, at HV and at EHV and 132kV in respect of each of the LV, HV and EHV and 132kV levels.
 - a) For units distributed at LV, the adjustment factor is 1 (one).
 - b) For units distributed at HV, the adjustment factor is 0 (zero) in respect of the LV level, and $(U + 0.5 * \text{Losses}) / (U + \text{Losses})$ in respect of the other levels, where U is the number of units distributed at LV plus half of the number of units distributed at HV plus a quarter of the number of units distributed at EHV and 132kV.
 - c) For units distributed at EHV, the adjustment factor is 0 (zero) in respect of the LV and HV levels, and $(U + 0.25 * \text{Losses}) / (U + \text{Losses})$ in respect of the EHV and 132kV level, where U is defined as above.
27. The second step is to calculate, for each of the LV, HV, and EHV and 132kV networks, the sum of the product of the three adjustment factors and the units distributed at each of LV, HV, and EHV and 132kV. This gives the number of units, (loss adjusted to LV) flowing through each of the LV, HV, and EHV and 132kV networks. The number of units (loss adjusted to LV) flowing through the LV services, the LV mains and the HV/LV network levels are the same as the number flowing through the LV network.
28. For each network level, the DNO Party calculates the p/kWh allocation of costs percentage—that the [Revenue to share per unit] represents—~~of the sum of the [Revenue to share per unit] across all network levels and the [Revenue not to share per unit]~~. The results are denoted as "**LV mains p/kWh allocations**", "**LV services p/kWh**

allocation", "HV/LV p/kWh allocation", "HV p/kWh allocation" and "EHV and 132kV p/kWh allocation".

Amend paragraphs 38 to 46 of Schedule [X] as follows:

38. For the calculation of discount percentages used in Schedule 17 and 18 only, the p/kWh allocation of costs percentage allocated to the EHV and 132kV network level, [EHV and 132kV p/kWh allocation], is split into separate percentages-p/kWh values for the following asset levels:
- a) 132kV circuits (England and Wales only);
 - b) 132kV/EHV substations (England and Wales only);
 - c) EHV circuits; and
 - d) EHV/HV substations
39. The DNO Party splits [EHV and 132kV p/kWh allocation] into separate p/kWh values percentages for the above assets levels on the basis of the share of the MEAV of the EHV and 132kV network level accounted for by the MEAV of the assets associated with each of the four asset levels. The DNO Party does this on the basis of the MEAV of the assets and of the mapping in the table below. The results of the allocation of [EHV and 132kV p/kWh allocation] into percentage-p/kWh allocations for the different EHV and 132kV asset levels are denoted as "132kV p/kWh allocation", "132kV/EHV p/kWh allocation", "EHV p/kWh allocation" and "EHV/HV p/kWh allocation".

Table: MEAV EDCM mapping

Asset	Asset level
6.6/11 kV circuit breaker pole-mounted	EHV/HV
6.6/11 kV circuit breaker ground-mounted	EHV/HV
20 kV circuit breaker, pole-mounted	EHV/HV
20 kV circuit breaker, ground-mounted	EHV/HV
33kV overhead pole line	EHV
33kV overhead tower line	EHV
66kV overhead pole line	EHV

66kV overhead tower line	EHV
33kV pole	EHV
33kV tower	EHV
66kV pole	EHV
66kV tower	EHV
33kV underground cable, non-pressurised	EHV
33kV underground cable, oil	EHV
33kV underground cable, gas	EHV
66kV underground cable, non Pressurised	EHV
66kV underground cable, oil	EHV
66kV underground cable, gas	EHV
EHV submarine cable	EHV
33 kV circuit breaker, indoors	132kV/EHV
33 kV circuit breaker, outdoors	132kV/EHV
33 kV switch, ground-mounted	132kV/EHV
33 kV switch, pole-mounted	132kV/EHV
33 kV ring-main-unit	132kV/EHV
33 kV other switchgear	EHV/HV
66 kV circuit breaker, indoors and outdoors	132kV/EHV
66 kV other switchgear	EHV/HV
33 kV transformer, pole-mounted	EHV/HV
33 kV transformer, ground mounted	EHV/HV
33 kV auxiliary transformer	EHV/HV
66 kV transformer	EHV/HV
66 kV auxiliary transformer	EHV/HV
132kV overhead line pole conductor	132kV
132kV overhead line tower conductor	132kV
132kV pole	132kV
132kV tower	132kV
132kV tower fittings	132kV
132kV underground cable, non-pressurised	132kV

132kV underground cable, oil	132kV
132kV underground cable, gas	132kV
132kV submarine cable	132kV
132kV circuit breaker, indoors and outdoors	132kV
132kV other switchgear	132kV
132kV transformer	132kV/EHV
132kV auxiliary transformer	132kV/EHV
132kV/EHV remote terminal unit, pole mounted	EHV/HV
132kV/EHV remote terminal unit, ground mounted	EHV/HV

Calculation of discount ~~percentages~~ p/kWh

40. The discount p/kWh percentage used in Schedule 16 to calculate tariffs applicable to embedded networks with an LV boundary is:

$$[LV: LV discount] = [LV services \text{ p/kWh allocation}] + ([LV mains \text{ p/kWh allocation}] * (1 - [LV mains split] * [LV direct proportion])).$$

41. For embedded networks with an HV boundary, three p/kWh percentage discount figures are used in Schedule 16.

42. The discount ~~percentage~~ used in Schedule 16 to calculate tariffs applicable to embedded networks with an HV boundary in respect of LV network end users is:

$$[HV: LV discount] = [LV services \text{ p/kWh allocation}] + [LV mains \text{ p/kWh allocation}] + [HV/LV \text{ p/kWh allocation}] + [HV \text{ p/kWh allocation}] * (1 - [HV split] * [HV direct proportion]).$$

43. The discount ~~percentage~~ used in Schedule 16 to calculate tariffs applicable to embedded networks with an HV boundary in respect of LV substation end users is:

$$[HV: LV Sub discount] = ([HV/LV \text{ p/kWh allocation}] + [HV \text{ p/kWh allocation}] * (1 - [HV split] * [HV direct proportion])) / (1 - [LV mains allocation] - [LV services allocation]).$$

44. The discount ~~percentage~~ used in Schedule 16 to calculate tariffs applicable to embedded networks with an HV boundary in respect of HV end users is:

$$[HV: HV discount] = [HV \text{ p/kWh allocation}] * (1 - [HV split] * [HV direct proportion]) / (1 - [LV services allocation] - [LV mains allocation] - [HV/LV allocation]).$$

45. For the calculation of discount percentages used in Schedules 17 and 18, the 15 boundary categories between the DNO Party and the embedded network described in Schedules 17 and 18 are grouped into five discount categories in England and Wales and three in Scotland:

- a) Discount category 0000 - This applies to boundary category 0000.
- b) Discount category 132kV (in England and Wales only) - This applies to boundary category 1000.
- c) Discount category 132kV/EHV (in England and Wales only) - This applies to boundary categories 1100 and 0100.
- d) Discount category EHV - This applies to boundary categories 1110, 0110 and 0010.
- e) Discount category HVplus - This applies to boundary categories 1111, 0001, 1001, 0002, 0011, 0111, 1101, 0101.

46. Discount ~~percentages~~ p/kWh for Schedules 17 and 18 are determined as follows:

For discount categories 0000, 132kV/EHV and HVplus

$$\text{Discount } \text{p/kWh percentage} = \text{the lowest of 100 per cent and } P / (S + U)$$

For discount category 132kV

$$\text{Discount } \text{p/kWh percentage} = \text{the lowest of 100 per cent and } (P + ([132kV \text{ p/kWh allocation}] * (1 - ([Network length split for 132kV] * [EHV and 132kV direct cost proportion])))) / (S + U)$$

For discount category EHV

Discount ~~p/kWh percentage~~ = ~~the lowest of 100 per cent and~~ $(P + ([EHV \text{ p/kWh allocation}] * (1 - ([Network length split for EHV] * [EHV and 132kV direct cost proportion])))) / (S + U)$

Where:

Discount ~~p/kWh percentage~~ is the discount applicable for each combination of discount category and end user type.

P is the sum of the ~~p/kWh allocations percentages~~ for all network levels below the network level of the DNO Party-embedded network boundary up to and including the network level of the end user in the case of demand, and up to and excluding the network level of the end user in the case of generation.

S is the sum of the ~~p/kWh allocations percentages~~ for all network levels in the distribution network above and including the network level of the end user in the case of demand, and up to and excluding the network level of the end user in the case of generation, expressed as a percentage of the total p/kWh allocation for all network levels in the distribution network.

U is the ratio of the sum of the DNO Party's total incentive revenue and the transmission exit charge, and the DNO Party's total Allowed Revenue including any incentive revenue and transmission exit charge.

[*Network length split for 132kV*] and [*Network length split for EHV*] are currently set to 100 per cent.

[*EHV and 132kV direct cost proportion*] is as calculated in paragraph 32.

Insert the following heading and paragraphs 46A and 46B to Schedule [X] as follows:

Application of discounts percentages to determine portfolio tariffs

46A. For each all-the-way CDCM tariff an average p/kWh is calculated by dividing the total revenue collected from all tariff components of that all-the-way tariff by the total all-the-way volume associated with that tariff. For this purposed the Domestic Two Rate and Domestic Restricted tariffs will be aggregated and the Small Non-Domestic Two Rate and Small Non-Domestic Restricted tariffs will be aggregated.

46B. For each all-the-way CDCM tariff a discount percentage is calculated as the lowest of: 100% and the appropriate LDNO p/kWh discount (which is dependent on the LDNO level of connection and the voltage of connection of the end user) divided by the appropriate all-the-way CDCM tariff p/kWh calculated in 46A above.