

.SCHEDULE 15 – COST INFORMATION TABLE

1. DEFINITIONS

1.1 In this Schedule 15, except where the context otherwise requires, the following terms shall have the meanings set opposite them:

CDCM	means the Common Distribution Charging Methodology as set out in Schedule 16.
CDCM Revenue	means the revenue to be recovered from tariffs calculated under the CDCM.
Demand Use of System Charges	has the meaning given to that term in special condition CRC2 of the Company's Distribution Licence.
EDCM & Certain Interconnector Revenue	means, at any time and in respect of a Regulatory Year, the Company's reasonable estimate (at that time) of: (a) the revenue to be recovered from tariffs calculated under the Charging Methodology set out in Schedule 17 or 18 (as applicable to the Company); plus (b) to the extent relevant, the revenue to be recovered from the DNO Party-to-DNO Party interconnector charges referred to in paragraph 20.4 of the methodology set out in schedule 17.

Final Collected Revenue Forecast	means, at any time and in respect of a Regulatory Year, the Company's reasonable estimate (at that time) of the final Regulated Combined Distribution Network Revenue for that Regulatory Year.
Generation Use of System Charges	has the meaning given to that term in special condition CRC2 of the Company's Distribution Licence.
Regulated Combined Distribution Network Revenue	has the meaning given to that term in special conditions CRC2 of Company's Distribution Licence.
Regulatory Year	has the meaning given to that term in special condition CRC2 of the Company's Distribution Licence.
Regulatory Year t	means, in respect of any estimate, the then current Regulatory Year at the time the estimate is made. Regulatory Year t-1 shall be the previous Regulatory year, and Regulatory Year t+1 shall be the following Regulatory Year and so on.
Use of System Charges	means Demand Use Of System Charges and Generation Use Of System Charges.

- 1.2 The estimates made by the Company in completing the table set out in this Schedule (including the illustrative tariffs) shall be based on such information as is reasonably available to the Company at the time of such estimate (it being acknowledged that such estimates may be subject to revision from time to time).
- 1.3 The terms used in the second column of table 1 below are to have the meanings ascribed to them in the special conditions (CRCs) of the Company's Distribution Licence. The Company is to complete the subsequent columns with the corresponding value for such term and each Regulatory Year, as provided by the Company's Licence (or, where no such value is provided, with the Company's best estimate of such value on the basis of stated assumptions to be outlined in the final column of that table).
- 1.4 Words and expressions not otherwise defined in this Agreement or this Schedule shall have the meanings given to them in the special conditions (CRCs) of the Company's Distribution Licence.
- 1.5 The illustrative tariffs to be included by the Company in completing table 3 below shall be determined using the latest Total Allowed Revenue (ARt in table 1) and an updated estimate of Transmission Exit Charges (TBt in table 1) and any other inputs (if appropriate).

TABLE 1

The table referred to in Clause 35A.2 is set out below:

Company Name: [PLEASE ENTER COMPANY NAME]
Date: [MMMM YYYY]
Title: DCUSA Schedule 15 - Table 1
information

Description	Licence Term	CRC							Assumptions
Regulatory Year			t-1	t	t+1	t+2	t+3	t+4	
			[YYYY/ YY]	[YYYY/ YY]	[YYYY/ YY]	[YYYY/ YY]	[YYYY/ YY]	[YYYY/ YY]	
Base Demand Revenue before inflation (A1)	PU	CRC2A							
Annual Iteration adjustment before inflation (A2)	MOD	CRC2A							
RPI True-up before inflation (A3)	TRU	CRC2A							
Price index adjustment (A4)	RPIF	CRC2A							
Base demand revenue (A): [A = (A1 + A2 + A3) * A4]	BR	CRC2A	-	-	-	-	-	-	A = (A1 + A2 + A3) * A4
Pass-Through Licence Fees (B1)	LF	CRC2B							
Pass-Through Business Rates (B2)	RB	CRC2B							
Pass-Through Transmission Connection Point Charges (B3)	TB	CRC2B							

Pass-through Smart Meter Communication Licence Costs (B4)	SMC	CRC2B							
Pass-through Smart Meter IT Costs (B5)	SMIT	CRC2B							
Pass-through Ring Fence Costs (B6)	RF	CRC2B							
Pass-Through Others (B7)	HB, SEC, UNC	CRC2B							
Allowed Pass-Through Items (B): [B = B1 + B2 + B3 + B4 + B5 + B6 + B7]	PT	CRC2B	-	-	-	-	-	-	B = B1 + B2 + B3 + B4 + B5 + B6 + B7
Broad Measure of Customer Service incentive (C1)	BM	CRC2C							
Quality of Service incentive (C2)	IQ	CRC2D							
Connections Engagement incentive (C3)	ICE	CRC2E							
Time to Connect incentive (C4)	TTC	CRC2F							
Losses Discretionary Reward incentive (C5)	LDR	CRC2G							
Network Innovation Allowance (C6)	NIA	CRC2H							
Low Carbon Networks Fund (C7)	LCN1	CRC2J							
	LCN2	CRC2J							
Connection Guaranteed Standards Systems & Processes penalty (C8)	AUM, CGSRA	CRC2K-L							
Residual Losses and Growth incentive (C9)	PPL	CRC2M							
	GTA	CRC2M							
Incentive Revenue and Other Adjustments (C):			-	-	-	-	-	-	C = C1 + C2 + C3 + C4 + C5 + C6 +

[C = C1 + C2 + C3 + C4 + C5 + C6 + C7 + C8 + C9]									C7 + C8 + C9
Correction Factor (D)	-K	CRC2A							
Total allowed Revenue (E): [E = A + B + C + D]	AR	CRC2A	-	-	-	-	-	-	E = A + B + C + D
Other 1. Excluded services - Top-up, standby, and enhanced system security (F1) (see note 1)	DRS4	CRC5C							
Other 2. Excluded services - Revenue protection services (F2) (see note 1)	DRS5	CRC5C							
Other 3. Excluded services - Miscellaneous (F3) (see note 1)	DRS9	CRC5C							
<i>Other 4. blank or if required please provide description (F4)</i>									
<i>Other 5. blank or if required please provide description (F5)</i>									
Total other revenue recovered by Use of System Charges (F): [F = F1 + F2 + F3 + F4 + F5]			-	-	-	-	-	-	F = F1 + F2 + F3 + F4 + F5
Total Revenue for Use of System Charges (G): [G = E + F]			-	-	-	-	-	-	G = E + F
1. Revenue raised outside CDCM - EDCM and Certain Interconnector Revenue (H1)									
2. Revenue raised outside CDCM - Voluntary under-recovery (H2)									
3. Revenue raised outside CDCM - blank or if required please provide description (H3)									

4. Revenue raised outside CDCM - blank or if required please provide description (H4)									
Total Revenue to be raised outside the CDCM (H): [H = H1 + H2 + H3 + H4]			-	-	-	-	-	-	H = H1 + H2 + H3 + H4
Latest forecast of CDCM Revenue (I): [I = G - H]			-	-	-	-	-	-	I = G - H
CDCM Revenue Used in Charging Model				-	-	-	-	-	
Final Collected Revenue Forecast (J)									
Forecast Over / (Under) Recovery [being (J - F - E + H2)]			-	-	-	-	-	-	J - F - E + H2
Forecast overall percentage change to Allowed Revenue (K)				-	-	-	-	-	
Overall % change to Use of System Charges effective 1st April of Regulatory Year to balance (L)									

Note 1: Cost categories associated with excluded services should only be populated if the Company recovers the costs of providing these services from Use of System Charges.

TABLE 2

The table referred to in Clause 35A.3 is set out below:

Company Name: [PLEASE ENTER COMPANY NAME]
Date: [MMMM YYYY]
Title: DCUSA Schedule 15 - Table 2 information

Description	[YYYY/YY]			[YYYY/YY]			[YYYY/YY]		
Regulatory Year	Regulatory Year t			Regulatory Year t+1			Regulatory Year t+2		
£m	Low	Central	High	Low	Central	High	Low	Central	High
Under/over recovery									
RPI True-up									
Annual Iteration									
Broad Measure of Customer Service									
Quality of Service									
Incentive on Connections Engagement									
Time to Connect									
Low Carbon Network Fund									
Significant others (please specify)									
Final Collected Revenue Forecast									

Commentary

1. All £ figures are in money of the day.
2. Information provided to the nearest £m.

Assumptions

1. It is assumed that there will be one set of price changes per year effective on 1st April.

TABLE 3

The table referred to in Clause 35A.4 is set out below:

Company Name: [PLEASE ENTER COMPANY NAME]
Date: [MMMM YYYY]
Title: DCUSA Schedule 15 - Table 3 information
Illustrative Charging Year: [YYYY/YY] (t+2)

PLEASE NOTE THAT THESE ARE ILLUSTRATIVE TARIFFS ONLY AND ARE NOT TO BE CONSIDERED TO REPRESENT THE FINAL TARIFFS WHICH WILL BE APPLIED BY THIS COMPANY

	PCs	Unit rate 1 p/kWh	Unit rate 2 p/kWh	Unit rate 3 p/kWh	Fixed charge p/MPAN/day	Capacity charge p/kVA/day	Exceeded capacity charge p/kVA/day	Reactive power charge p/kVArh
Domestic Unrestricted	1							
Domestic Two Rate	2							
Domestic Off Peak (related MPAN)	2							
Small Non Domestic Unrestricted	3							
Small Non Domestic Two Rate	4							
Small Non Domestic Off Peak (related MPAN)	4							
LV Medium Non Domestic	5-8							
LV Sub Medium Non Domestic	5-8							
HV Medium Non Domestic	5-8							
LV Network Domestic <u>Aggregated</u>								

LV Domestic (Related MPAN)								
LV Network Non-Domestic Non-CT Aggregated								
LV Non Domestic (Related MPAN)								
LV <u>Site Specific</u> HH Metered								
LV Sub <u>Site Specific</u> HH Metered								
HV <u>Site Specific</u> HH Metered								
NHH UMS category A	8							
NHH UMS category B	4							
NHH UMS category C	4							
NHH UMS category D	4							
LV UMS (Pseudo HH Metered)								
LV Generation NHH or Aggregated HH	8&0							
LV Sub Generation Aggregated NHH	8							
LV Generation Intermittent LV Generation Site Specific								
LV Generation <u>Site Specific</u> Non-Intermittent <u>no RP charge</u>								
LV Sub Generation Intermittent LV Sub Generation Site Specific								
LV Sub Generation <u>Site Specific</u> Non-Intermittent <u>no RP charge</u>								
HV Generation Intermittent HV Generation Site Specific								
HV Generation <u>Site Specific</u> Non-Intermittent <u>no RP charge</u>								

Commentary

1. All illustrative tariffs as shown above are based on the latest Total Allowed Revenue (ARt in table 1) and the updated forecast Transmission Exit Charges (TBt in table) and any other inputs (if appropriate).

SCHEDULE 16 – COMMON DISTRIBUTION CHARGING METHODOLOGY

Introduction

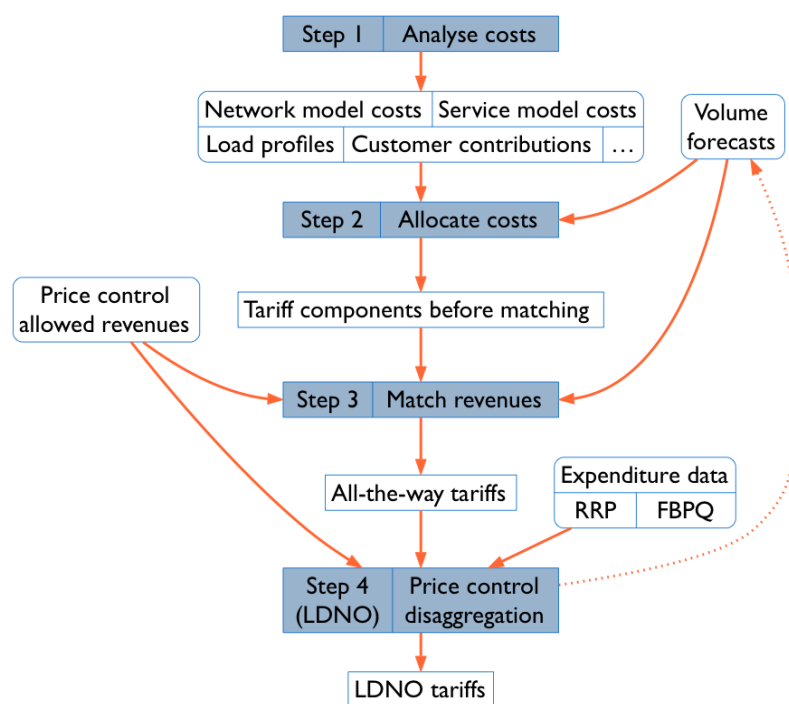
1. This Schedule 16 sets out the Common Distribution Charging Methodology (CDCM), which gives the methods, principles, and assumptions underpinning the calculation of Use of System Charges by each DNO Party (except where the DNO Party is acting as an LDNO).
- 1A. The CDCM is applicable to “Designated Properties”, as defined in Standard Condition 13A (Common Distribution Charging Methodology) of the DNO Party’s Distribution Licences.
2. The Schedule 16 comprises two main parts. Part 1 describes the cost allocation rules. Part 2 describes the tariff structures and their application.
3. In order to comply with this methodology statement when setting distribution Use of System Charges the DNO Party will populate and publish:
 - (a) the CDCM model version ~~105xxx~~ as issued by the Panel on 1 April ~~2018~~xxx;
 - and
 - (b) the CDCM “Price Control Disaggregation” model version 4.0 as issued by the Panel on 1 April 2018.
4. The glossary at the end of this Schedule 16 contains definitions of terms and acronyms used in this Schedule 16. In the case of any conflict between the defined terms and acronyms set out in this Schedule 16 (on the one hand) and the definitions and rules of interpretation set out in Clause 1 of this Agreement (on the other), the defined terms and acronyms set out in this Schedule 16 shall prevail.
5. Algebraic formulae in this Schedule 16 use square brackets to clarify the calculations. For the avoidance of doubt, these square bracketed terms form an effective part of this Schedule 16.

Part 1 — Cost allocation

Main steps in the allocation

6. Figure 1 gives a general overview of how the four main steps in the methodology relate to each other.

Figure 1 Overview of the main steps in the methodology



7. Step 1 involves the gathering of information about the network, the costs of assets and operations, the users of the network, and the forecast level of use and level of allowed revenue in the charging year.
8. Step 2 is the application of the cost allocation rules set out below. These rules are only for all-the-way tariffs and do not apply to LDNO tariffs.
9. Step 3 involves adjustments to the tariff components calculated in step 2 in order to match revenue recovered from the CDCM to the amount of revenue allowed under the price control conditions.
10. Step 4 uses price control condition calculations, actual expenditure data and forecast expenditure data in order to determine discount percentages, which are then applied to all-the-way tariffs in order to produce LDNO tariffs.
11. Step 4 is independent from Steps 1 to 3. In practical terms, Step 4 must be performed first, as the discount percentages are used within Step 1 to combine volume forecasts for all-the-way and portfolio tariffs into a single composite dataset for each type of end user.

Overview of the tariff components

12. Each tariff comprises some or all of the tariff components listed in table 1.

Table 1 List of tariff components

Tariff component	Unit
Three unit rates One, two or three unit rates	p/kWh
Fixed charge	p/day
Capacity charge	p/kVA/day
Exceeded capacity charge	p/kVA/day
Reactive power charge	p/kVArh

13. For users that are acting as LDNOs, tariffs are portfolio tariffs with the same tariff components as the corresponding all-the-way end user tariff, excluding reactive power charges (but prices for some tariff components may be calculated as zero).
14. Each component of each tariff is rounded to the nearest value with no more than three decimal places in the case of unit rates expressed in p/kWh and reactive power unit charges expressed in p/kVArh, and with no more than two decimal places in the case of fixed and capacity charges (including exceeded capacity charges) expressed in p/MPAN/day and p/kVA/day respectively.

Step 1: Analyse costs

15. The first step of the methodology involves the determination of costs or revenue allowances for various parts of the network, and the collection of information about the relevant characteristics of network users.

Network model asset values

16. The DNO Party specifies a network model, also known as a distribution reinforcement model (DRM) or a 500 MW model, in line with the requirements of this section.
17. The network model determines the £/kW/year figure (based on simultaneous maximum load at each network level) corresponding to amortisation and return on capital for assets at the LV circuits, HV/LV, HV, EHV/HV and EHV network levels, and, in England and Wales, at the 132kV/EHV, 132kV/HV and 132kV network levels.
18. Not Used.
19. The network model consists of a costed design for an increment to the DNO Party's network.
20. At each network level, the model is sized to provide secure capacity to meet demand that, aggregated up to individual grid supply point (GSP) level, amounts to 500 MW of simultaneous maximum demand.
21. The model's design assumes a power factor of 0.95 and no embedded generation.

22. The assets included in the network model are modern equivalent assets of the kind that the DNO Party would normally install on new networks.
23. The nature, quantity and size of assets in the model is such as to meet demand and security to the DNO Party's design and planning standards, allowing for the use of standard size equipment and typical utilisation factors.
24. The proportion of assets of different types at each network level, e.g. overhead and underground circuits, reflects the mix of users and the topography in the DNO Party's Distribution Services Area.
25. The cost assumed for each asset type reflect total purchase and installation cost in the charging year, using the DNO Party's normal procurement methods.

Diversity allowances

26. For each of the 132kV (except in Scotland), EHV and HV voltage levels, the DNO Party determines a diversity allowance between the transformation level above circuits at that voltage and the transformation level below circuits at that voltage.
27. Each diversity allowance represents the extent, expressed as a percentage, to which the sum of the maximum load across all substations below would exceed the corresponding sum for substations above.
28. The DNO Party also determines a diversity allowance between the GSP Group as a whole and the individual grid supply points.

Customer contributions under current connection charging policy

29. The DNO Party estimates the extent to which the assets at each network level used by each category of users would have been expected to be covered by customer contributions if they had been constructed under the charging year's connection charging policy.
30. The DNO Party groups users into categories, by network level of supply, for the purpose of making these estimates.
31. In the case of generators, the proportions relate to the notional assets whose construction or expansion might be avoided due to the generator's offsetting of demand on the network, and takes the same values as for a demand user at the same network level of supply.

Service model asset values

32. The DNO Party specifies a set of service models covering the range of typical dedicated assets operated for the benefit of individual HV and LV users of the network.
33. For each service model, the DNO Party estimates the number and types of connections that the model covers, and a total construction cost for the assets in the model.
34. For each tariff, the DNO Party identifies the extent to which each of the service models represents the relevant assets for an average user in that tariff.
35. A weighted average of service models is used if several service models apply to the same tariff.
36. In the case of unmetered supplies, service model assets are modelled on the basis of units delivered.
37. In the case of generation service models, the service models should reflect the additional costs of protection equipment for a typical generator in each category, for example the difference in cost between a fuse and a circuit breaker, or the cost of additional telecommunications equipment used for control purposes.

Transmission exit expenditure

38. The DNO Party prepares a forecast of expenditure on transmission exit charges in the charging year.

Other expenditure

39. The DNO Party prepares a forecast of other expenditure for the charging year, where other expenditure is defined as the sum of:
- (a) 100 per cent of direct operating costs.
 - (b) 60 per cent of indirect costs (as defined in RRP guidance).
 - (c) 100 per cent of network rates.

Distribution time bands

40. The DNO Party determines five distribution time bands, labelled black, red, yellow, amber and green. The 'red', 'amber' and 'green' time bands will apply to ~~all half hourly settled~~ tariffs that are metered. The 'black', 'yellow' and 'green' time bands will apply to ~~the unmetered supplies half hourly~~ tariffs which are unmetered.
41. Distribution time bands are defined separately for Monday-Friday and for Saturday/Sunday. In each case, time bands are defined by reference to UK clock time only, and always begin and end on the hour or half hour. There will be no constraint on either the number of hours that can be covered by each time band or whether the time band applies to all or only part of a day. The red, amber and green times bands will apply throughout the year. The black and yellow time bands can be set to apply to only part of the year, where so specified by the DNO Party.
- 41A. The DNO Party may only change distribution time bands with effect from 1 April and must provide a minimum of 15 months prior notice of such changes. However, where a change to distribution time bands is caused by the implementation of a change to this methodology, the requirement to provide a minimum of 15 months notice prior notice will not apply.
- 41B. Notice of changes to the distribution time bands should be given in the relevant charging statement, and such notice should appear in the same paragraph of the statement as the time bands that are being changed.

Load characteristics

42. The DNO Party estimates the following load characteristics for each category of demand users:

- a) A load factor, defined as the average load of a user group over the year, relative to the maximum load level of that user group. Load factors are numbers between 0 and 1: ~~and-~~
- b) A coincidence factor, defined as the expectation value of the load of a user group at the time of system simultaneous maximum load, relative to the maximum load level of that user group. Coincidence factors are numbers between 0 and 1.
- c) ~~In the case of multi-rate tariffs and non-half hourly unmetered supplies tariffs that are applied to non-half hourly meter data or to fixed time bands that differ from the distribution time bands (if any), the estimated proportion of units recorded in each relevant time pattern regime that fall within each distribution time band.~~

42A. ~~Not Used~~ ~~The load characteristics for non-half hourly unmetered supplies are not determined from settlement data. For each non-half hourly unmetered supplies tariff the load characteristics are calculated using profile data derived for each GSP Group.~~

43. In determining the load characteristics of each category of demand user the DNO Party will use reasonable endeavours to analyse meter and profiling data received for the most recent 3 year period (at the time of setting charges for the relevant charging year) for which data are available in time for use in the calculation of charges. ~~The three elements of load characteristics—Load Factors and, Coincidence Factors, and the estimated proportion of units recorded in each relevant time pattern regime that fall within each distribution time band—~~ will be calculated individually for each of the 3 years and a simple arithmetic average will be calculated to be used in tariff setting.
44. For load factors and coincidence factors in the case of non half hourly settled customer classes (except the non half hourly unmetered supplies tariffs), data adjusted for GSP Group correction factor are used.
45. ~~Not used For the estimated proportion of units recorded in each relevant time pattern regime that fall within each distribution time band, data are not adjusted for GSP Group correction factors.~~
46. Not used.

Loss adjustment factors to transmission

47. For each network level, the DNO Party determines a single loss adjustment factor to transmission relating to Exit Points from its network at that level. These loss adjustment factors should be representative of average losses at the time of system simultaneous maximum load.

Peaking probabilities

48. The DNO Party determines a peaking probability in respect of each network level and each of the distribution time bands.
49. The peaking probability represents the probability that an asset at that network level would experience maximum load during that distribution time band. In deriving peaking probabilities the DNO Party will use reasonable endeavours to use the most recent 3 year period (at the time of setting charges for the relevant charging year) for which information is available in time for use in the calculation of charges. Peaking probabilities will be derived individually for each of the 3 years and a simple arithmetic average will be calculated to be used in tariff setting.

Power factor data

50. The DNO Party determines or estimates, for each network level, the average of the ratio of reactive power flows (kVAr) to network capacity (kVA), weighted by reactive power flow.
51. If data are not available for any network level, the DNO Party uses data for the nearest network level at which they are available.

Volume forecasts

52. The DNO Party forecasts the volume chargeable to each tariff component under each tariff for the charging year.

52.A For the purposes of the calculations described in Step 2 below, forecast volumes for the LV Domestic (Related MPAN) and LV Non-Domestic (Related MPAN) tariffs are added to the volumes for LV Domestic Aggregated and LV Non-Domestic Aggregated tariffs as follows:

LV Domestic (Related MPAN) volumes are added to LV Domestic Aggregated volumes.

LDNO LV:LV Domestic (Related MPAN) volumes are added to LDNO LV:LV Domestic Aggregated volumes.

LDNO HV:LV Domestic (Related MPAN) volumes are added to LDNO HV:LV Domestic Aggregated volumes.

LV Non-Domestic (Related MPAN) volumes are added to LV Non-Domestic Aggregated volumes.

LDNO LV:LV Non-Domestic (Related MPAN) volumes are added to LDNO LV:LV Non-Domestic Aggregated volumes.

LDNO HV:LV Non-Domestic (Related MPAN) volumes are added to LDNO HV:LV Non-Domestic Aggregated volumes.

53. The volume forecasts for portfolio tariffs are multiplied by the LDNO discount percentages determined in Step 4, and combined with the all-the-way volume forecasts for each end user type. These combined volume forecasts are used throughout Steps 2 and 3 of the methodology.

Forecast of price control allowed revenues

54. The DNO Party prepares a forecast of allowed revenue for the charging year in accordance with the requirements of the price control conditions and in a manner which is consistent with its volume forecasts and in a format consistent with table 1 of Schedule 15.

Step 2: Allocate costs

Categories of costs

55. The cost and revenue allocation is driven by a representation of the different voltage and transformation levels in the network and by a distinction between the elements of cost related to assets and those related to operations.
56. Table 2 shows the network levels and categories of costs used in the model. In this Schedule 16, the acronym EHV refers to voltages of 22 kV and above, up to and excluding 132 kV. In the case of the Scottish Distribution Services Areas, the entries for the 132kV and 132kV/EHV network levels are zero as these voltages are part of the transmission network. LV refers to voltages below 1 kV, and HV refers to voltages of at least 1kV and less than 22kV.

Table 2 Categories of unit costs in the model

Category	Description	Unit	Levels
Network assets	Amortisation and return on capital for networks or substations at each level, excluding assets that are deemed to be covered by customer contributions.	£/kW/year	132kV
			132kV/EHV
			EHV
			EHV/HV
			132kV/HV
			HV
	This is expressed per kW of system simultaneous maximum load.		HV/LV LV circuits
Transmission exit	Expressed per kW of system simultaneous maximum load	£/kW/year	Transmission exit
Other expenditure	Other expenditure is attributed to levels and assets in the network following the rules set out below.	£/kW/year	132kV
			132kV/EHV
			EHV
			EHV/HV
	The part allocated to network levels is expressed per kW of system simultaneous maximum load.		132kV/HV
			HV
			HV/LV LV circuits

Table 2 Categories of unit costs in the model

Category	Description	Unit	Levels
	The part of other expenditure allocated to assets dedicated to one customer is expressed per user for each user type.	£/year	For each type of user

Annuity rate of return and annuity period

57. Capital costs that are not covered by customer contributions are converted to annual costs using a level annuity with the annuity period and rate of return set out in table 3.

Table 3 Annuity rate of return and annuity period

Parameter	Value
Annuity period	40
Annuity rate of return	<p>Set to equal the latest pre-tax real weighted average cost of capital (CC below) for each DNO Party calculated using the following formula:</p> $CC = (\text{Gearing Assumption} \times \text{Pre-Tax Cost of Debt}) + (1 - \text{Gearing Assumption}) \times (\text{Post Tax Cost of Equity} / (1 - \text{Corporation Tax Rate}))$ <p>where:</p> <p>Gearing Assumption is set to the ‘notional Gearing’ value referred to in the ED1 Price Control Financial Handbook;</p> <p>Pre-Tax Cost of Debt is set to the ‘cost of corporate debt’ value specified in or calculated in accordance with the most recent Annual Iteration Process</p>

Table 3 Annuity rate of return and annuity period

Parameter	Value
	applicable when setting distribution Use of System Charges;
	Post Tax Cost of Equity is set to the ‘cost of equity’ value referred to in the ED1 Price Control Financial Handbook; and
	Corporation Tax Rate is the rate of corporation tax which is, when setting distribution Use of System Charges, expected to be applicable in respect of the regulatory year (as defined in the Distribution Licence) in which those Charges will take effect.
	The CC value is calculated as a percentage, and rounded to two decimal places.

Determination of unit costs from network model

58. For each network level, the DNO Party determines the flow at time of system simultaneous maximum load, measured at Exit Points from the network level, that could be accommodated by the network model on the basis of a normal mix and diversity of loads for its network.
59. The asset value and unit cost for that network level are obtained by dividing the annuitised cost of purchasing and installing the assets in the network model by this exit flow at time of system simultaneous maximum load.
- $$[\text{network level assets } \text{£/kW}] = [\text{assets } \text{£}]/[\text{modelled exit flow at time of system simultaneous maximum load kW}]$$
- $$[\text{network level } \text{£/kW/year}] = [\text{network level assets } \text{£/kW}] * [\text{annuity factor}]$$

60. The modelled exit flow at peak time is obtained by combining the 500 MW at GSP sizing assumption, the diversity allowance between GSP and GSP Group, and the loss adjustment factor for the relevant network level.

Allocation of other expenditure

61. Estimated load at each network level is calculated from:
- a) volume forecasts for each tariff;
 - b) the loss adjustment factors representative of the time of system simultaneous maximum load;
 - c) the load characteristics for users on each tariff, used to estimate the contribution of each user category to load at the time of system simultaneous maximum load.
62. For the purposes of this calculation, a generation user is taken to make a zero contribution to load at the network level corresponding to circuits at its Entry Point, and a full negative contribution to load at all network levels above its Entry Point. For demand users, account is taken of differences between the diversity allowance in the network model and the diversity of each customer group in order to ensure that the estimated load matches the volumes subject to charges in respect of each network level.
63. For each network level covered by the network model, a notional asset value is calculated by multiplying the unit asset cost by the estimated load:
- $$[\text{notional asset value } \pounds] = [\text{network level assets } \pounds/\text{kW}] * [\text{estimated load kW}]$$
64. For each service model, a notional asset value is calculated by multiplying the unit asset value of that service model by the extent to which each user requires that model.
65. Other expenditure (excluding transmission exit charges) is allocated between network levels in the proportion given by these notional assets.
66. The result is combined with forecast transmission exit charges to give an annual expenditure figure for each network level and for each service model. These figures are converted into unit cost using the same rules as for costs and revenues from network assets and customer assets.

Allocation of costs on the basis of contribution to system simultaneous maximum load

67. All £/kW/year unit costs and revenue are used in the calculation of yardstick charges for each tariff.

68. For demand tariffs and portfolio tariffs related to demand users ~~with a single unit rate or several unit rates and non half hourly unmetered supplies tariffs~~, the contributions of each network level to the unit rate are calculated as follows:

$$[p/kWh \text{ from network model assets}] = 100 * [\text{network level } £/kW/\text{year}] * [\text{user loss factor}] / [\text{network level loss factor}] * [\text{pseudo load coefficient}] * (1 - [\text{contribution proportion}]) / [\text{days in charging year}] / 24$$

$$[p/kWh \text{ from operations}] = 100 * [\text{transmission exit or other expenditure } £/kW/\text{year}] * [\text{user loss factor}] / [\text{network level loss factor}] * [\text{pseudo load coefficient}] / [\text{days in charging year}] / 24$$

69. These calculations are repeated for each network level.

70. In the paragraph 68 equation:

(a) the user loss factor is the loss adjustment factor to transmission for the network level at which the user is supplied;

(b) the network level loss factor is the loss adjustment factor to transmission for the network level for which costs are being attributed; and

(c) the pseudo load coefficient is calculated as follows:

- i) calculate the ratio of coincidence factor to load factor that would apply if units were uniformly spread within each time band, based on the estimated proportion of units recorded in each relevant time pattern regime that fall within each distribution time band and the assumption that the time of system simultaneous maximum load is certain to be in the red or black (as appropriate) distribution time band;
- ii) calculate a correction factor for each user type as the ratio of the coincidence factor to load factor, divided by the result of the calculation above;
- iii) for each network level and each unit rate, derive the ratio of coincidence factor (to network asset peak) to load factor that would apply given peaking

probabilities at that network level if units were uniformly spread within each time band, multiplied by the correction factor; and

- iv) the result of (iii) above is the pseudo load coefficient for the network level and unit rate, save that the coefficients calculated for the non-half hourly and half hourly unmetered supplies are then aggregated to produce one value per network level.

71. For generation users and portfolio tariffs for generation users, no contribution to the unit rate is calculated in respect of the network level corresponding to circuits at the Entry Point, and a negative contribution to the unit rate (i.e. a credit) comes from each network level above the Entry Point. That contribution is calculated as follows:

$$[\text{p/kWh from network model assets}] = -100 * [\text{network level } \text{£/kW/year}] * [\text{user loss factor}] / [\text{network level loss factor}] * (1 - [\text{contribution proportion}]) / [\text{days in year}] / 24$$

$$[\text{p/kWh from operations}] = -100 * [\text{transmission exit or other expenditure } \text{£/kW/year}] * [\text{user loss factor}] / [\text{network level loss factor}] / [\text{days in year}] / 24$$

72. Not used.

- 72A. ~~Not Used. An additional set of correction factors is applied to the LV Network Domestic and LV Network Non-Domestic Non-CT tariffs and the non-half hourly settled tariffs for profile classes 1 to 4, so as to ensure that the average charges produced by the LV Network Domestic tariff are equivalent to a volume-weighted average of the non-half hourly settled tariffs for profile classes 1 and 2, and the average charges produced by the LV Network Non-Domestic Non-CT tariff are equivalent to a volume-weighted average of the non-half hourly settled tariffs for profile classes 3 and 4.~~

Allocation of network costs to standing charges (fixed and capacity)

73. For demand users, other than unmetered users, standing charge factors are used to reduce unit charges and to attribute these costs or revenues to capacity charges (p/kVA/day) or fixed charges (p/day) instead.

74. The standing charge factors for demand tariffs are shown in the table below:

Tariff	EHV	EHV/HV	HV	HV/LV	LV circuits
Domestic Unrestricted					100%
Domestic Two Rate					100%
Domestic Off Peak (related MPAN)					100%
Small Non-Domestic Unrestricted					100%
Small Non-Domestic Two Rate					100%
Small Non-Domestic Off Peak (related MPAN)					100%
LV Medium Non-Domestic					100%
LV Sub Medium Non-Domestic				100%	
HV Medium Non-Domestic	20%	100%	100%		
LV Network Domestic Aggregated					100%
LV Network Non-Domestic Non-CT Aggregated					100%
LV Non-Domestic (Related MPAN)					100%
LV Site Specific HH Metered			20%	100%	100%
LV Sub HH Site Specific Metered			100%	100%	
HV Site Specific HH Metered	20%	100%	100%		
NNH UMS Category A					0%
NNH UMS Category B					0%
NNH UMS Category C					0%
NNH UMS Category D					0%
LV UMS (Pseudo HH Metered)					0%

Formatted Table

Formatted Table

75. Where a standing charge factor is specified for the EHV/HV network level, the same standing charge factor applies to the 132kV/HV network level.
76. Where a standing charge factor is specified for the EHV network level, and where the 500 MW model includes 132kV/HV transformation, the 132kV standing charge factor is set to the EHV standing charge factor multiplied by the proportion of load going through 132kV/HV transformation.
77. For each tariff, the unit rates are reduced to take account of the allocation of costs to capacity or fixed charges. This is achieved by multiplying the cost element for each relevant network level by $(1 - [\text{standing charge factor}])$.
78. For each demand user type, and for each network level, the unit cost to be attributed to capacity charges or fixed charges in respect of that network level is:
- $$[\text{p/kVA/day from network model assets}] = 100 * [\text{standing charge factor}] * [\text{network level } \text{£/kW/year}] * [\text{user loss factor}] / [\text{network level loss factor}] * (1 - [\text{contribution proportion}]) / [\text{days in year}] / (1 + [\text{diversity allowance}]) * [\text{power factor in network model}]$$
- $$[\text{p/kVA/day from transmission exit or other expenditure}] = 100 * [\text{standing charge factor}] * [\text{transmission exit or other expenditure } \text{£/kW/year}] * [\text{user loss factor}] / [\text{network level loss factor}] / [\text{days in year}] / (1 + [\text{diversity allowance}]) * [\text{power factor in network model}]$$
79. The power factor in network model parameter is set to 0.95.
80. The diversity allowance for the LV circuit level is defined as the amount by which the aggregate maximum demand load determined for that network level exceeds the estimated demand at the time of system simultaneous maximum load. The aggregate maximum demand is calculated by aggregating agreed import capacities for ~~half hourly settled users~~ and estimated capacities for non-half hourly settled user groups in Measurement Class C or E and estimated capacities for users in Measurement Class A, F or G.

81. For the tariffs listed below, the unit costs calculated by the formula above are allocated to the capacity charge:

- LV ~~HH Site Specific~~ Metered
- LV Sub Site Specific ~~HH Metered~~
- HV Site Specific ~~HH Metered~~.

The exceeded capacity charge for half hourly settled demand users, except unmetered users, is calculated using the same formula, but with the customer proportion set to zero.

82. Otherwise, the unit costs calculated by the formula above are allocated to the fixed charge.

83. For the tariffs listed below, LV costs are allocated to the fixed charge by estimating the proportion of LV network capacity used by these categories of users, and dividing the corresponding proportion of LV costs by the number of domestic and non-domestic MPANs:

- ~~Domestic Unrestricted~~
- ~~Domestic Two Rate~~
- ~~Small Non Domestic Unrestricted~~
- ~~Small Non Domestic Two Rate~~
- LV ~~Network~~ Domestic Aggregated
- LV ~~Network~~ Non-Domestic ~~Non-CT~~ Aggregated.

84. ~~Not Used. For the tariffs listed below, the relevant unit costs in p/kVA/day are converted to a fixed charge by multiplying them by the estimated maximum load per user of the user category (obtained from the volume forecast and load factor data) divided by the power factor in the network model:~~

- ~~LV Medium Non Domestic~~
- ~~LV Sub Medium Non Domestic~~
- ~~HV Medium Non Domestic.~~

Costs associated with LV customer and HV customer levels

85. Other expenditure allocated to the LV customer and HV customer network levels are included in the fixed charge for each tariff where there is such a tariff component.

86. In the case of unmetered supplies, these charges are spread across all units.

Costs associated with reactive power flows

87. For each tariff and each network level, the contribution to reactive power unit charges is obtained as follows:

- (a) Calculate what the contribution to a single unrestricted unit rate in p/kWh from each network level would be.
- (b) Take the absolute value.
- (c) Adjust for standing charge factors at the relevant network levels (for demand users only).
- (d) Multiply by the assumed power factor in the network model.
- (e) Multiply by the DNO Party's estimate of the average ratio of the reactive power flow (kVAr) to network load (kVA) at the relevant network level.

88. For the purpose of the calculation of reactive power unit charges, generation users are taken to make a full contribution to the reactive power flows in the network at their Entry Point and at each network level above their Entry Point.

Step 3: Match revenues

89. The DNO Party uses its volume forecasts to estimate the revenues that would be raised by applying the tariff components derived from step 2, excluding any revenues treated as excluded revenue under the price control conditions.

90. If any separate charging methodology is used alongside the CDCM, e.g. for EHV users, then the forecast revenues from these charges, excluding any revenues treated as excluded revenue under the price control conditions, are added to the total.

91. If the forecast of allowed revenue exceeds the estimate of relevant revenues, then the difference is a shortfall. If the estimate of relevant revenues exceeds the forecast of allowed revenue, then the difference is a surplus.

92. Revenue matching is achieved by applying a unit charge adder (p/kWh) calculated as follows: the revenue surplus or shortfall (in pence) to be recovered; divided by the total volume of all demand customers (in kWh). The unit charge adder is applied to demand tariffs only.
93. The unit charge adder is positive if there is a shortfall and negative if there is a surplus.
94. If this procedure would result in negative value for any tariff component, then that tariff component is set to zero, and the unit charge adder figure is modified to the extent necessary to match forecast and target revenue.
95. Tariffs for generation do not have any revenue matching element.

Step 4: Price control disaggregation

96. Step 4 involves calculations based on price control and expenditure data which produce a series of discount percentages to be used to determine portfolio tariffs for LDNOs.
97. The discount percentages are determined in accordance with Schedule **X**, which schedule is deemed to form part of this CDCM (as if it were set out herein).
98. For demand users, the discount percentages are applied to all tariff components in all-the-way tariffs in order to determine embedded network portfolio tariffs.
99. For generation users, the unit rate element (p/kWh) is not discounted, reflecting the modelling assumption that generation benefits are seen at the voltage level above the Exit Point, and therefore the embedded LDNO simply “passes on” the benefits seen at the DNO Party level. The fixed charge element (p/day) is discounted at 100 per cent, as this tariff component in the all-the-way tariff recovers costs associated with the allocation of other expenditure to service assets, which are not provided by the DNO Party.
100. Not used.

Allocation of operating expenditure to network levels

101. Not used.

102. Not used.

102A. Not used.

102B. Not used.

103. Not used.

104. Not used.

105. Not used.

106. Not used.

107. Not used.

108. Not used.

108A. Not used.

109. Not used.

110. Not used.

111. Not used.

112. Not used.

112A Not used.

113. Not used.

113A. Not used.

113B. Not used.

113C. Not used.

113D. Not used.

113E. Not used.

114. Not used.

115. Not used.

116. Not used.

117. Not used.

118. Not used.

119. Not used.

120. Not used.

121. Not used.

122. Not used.

123. Not used.

124. Not used.

125. Not used.

Part 2 — Tariff structures and application

126. The ~~development introduction~~ of the CDCM has involved the creation of a common tariff structure for all 14 DNO Parties and their Distribution Service Areas.
127. This part details the common tariff structure and associated tariff elements for ~~Non-Half Hourly (NHH), Half Hourly (HH) site specific and HH aggregated metered supplies~~ for demand and generation, for unmetered supplies and for charges to LDNOs.

Tariff structures for demand customers

~~NHH Aggregated~~ Metered Demand

128. Use of System Charges for ~~NHH aggregated settled~~ Metering Point Administration Numbers (MPANs) will be via the Supercustomer approach which uses data from the D0030 industry data flow and is based on Settlements Classes comprising:
- (a) Line Loss Factor Class (LLFC);
 - (b) Profile Class (PC);
 - (c) Standard Settlement Configuration (SSC); and
 - (d) Time Pattern Regime (TPR)
129. The combination of LLFC/PC/SSC/TPR determines the associated profile and half-hourly data values.

~~129A. — For HH settled MPANs the combination of LLFC/PC/SSC/TPR determines the associated profile and half hourly data values. These will be determined by the DNO Party and provided to the Supplier Volume Allocation Agent. The PC for HH aggregated metered demand MPANs will always be zero.~~

130. ~~DNO specific network~~~~NHH metered~~ time bands will ~~follow either, be applied to~~ the appropriate SSC/TPR combinations ~~stated in paragraph 129 with the allocation of the TPR to the unit rate set by the DNO Party, or the time bands set by DNO Parties where that DNO Party already utilises a form of 'de-linking'.~~

131. Charges will be applied on a fixed charge and unit rate basis. The latter allocated to DNO specific network time bands. There will be no capacity, exceeded capacity, ~~maximum demand~~ or reactive charges for ~~NHH aggregated~~ metered ~~demand~~ MPANs.

132. Structure of ~~NHH aggregated metered~~ demand charges will be as follows:

(a) Fixed charge will be p/MPAN/day.

(b) Unit charges will be p/kWh.

~~(c) — Unmetered supplies will be charged on a p/kWh basis only.~~

132A LV Domestic Aggregated (Related MPAN) and LV Non-Domestic Aggregated (Related MPAN) and Unmetered supplies will be charged on a p/kWh basis only.

132B As described in Paragraph 40, there will be three unit rate time bands on a time of day basis for all aggregated customers with the exception of the unmetered supplies tariff, to reflect the requirements of the cost drivers of their individual networks. These three time bands will be called 'red', 'amber' and 'green' to represent three differing cost signals.

132C Those users in Measurement Class A, F or G will be settled on an aggregated basis. All aggregated settled customers will be assigned to the appropriate tariff based on the Measurement Class, type of metering equipment installed and the voltage of connection as specified in the table below:

<u>Tariff</u>	<u>Voltage of Connection</u>	<u>Metering</u>	<u>Measurement Class</u>
<u>LV Aggregated Domestic</u>	<u>LV</u>	<u>Whole Current or Current Transformer</u>	<u>A / F</u>
<u>LV Domestic (Related MPAN)</u>	<u>LV</u>	<u>Whole Current or Current Transformer</u>	<u>A / F</u>
<u>LV Non-Domestic</u>	<u>LV</u>	<u>Whole Current</u>	<u>A / G</u>

<u>Aggregated</u>			
<u>LV Non-Domestic</u> <u>(Related MPAN)</u>	<u>LV</u>	<u>Whole Current</u>	<u>A / G</u>

Changes from NHH to HH Settlement for Metered Demand

~~132A—Prior to Measurement Classes F and G being available under the BSC, where the Supplier transfers customers from NHH Settlement to HH Settlement, Measurement Class C (100kW or more) and Measurement Class E (less than 100kW) will apply.~~

~~132B—Once Measurement Classes F and G are available under the BSC, where the Supplier transfers customers from NHH Settlement to HH Settlement the following Measurement Classes will apply:~~

- ~~• Domestic users connected at LV with non-CT metering installed will transfer from Measurement Class A to Measurement Class F.~~
- ~~• Domestic users connected to LV with CT metering can (at supplier option in discussion with user) move to Measurement Class C (must be more than 100kW), Measurement Class E (must be 100kW or less) or Measurement Class F (must be 100kW or less).~~
- ~~• Non-Domestic users connected at LV with non-CT metering installed will transfer from Measurement Class A to Measurement Class G.~~
- ~~• Non-Domestic users connected at LV with CT metering installed will transfer from Measurement Class A to Measurement Class C (more than 100kW) or Measurement Class E (100kW or less).~~

~~HH~~ Site-Specific Metered Demand

133. Use of System Charges for HH settled site-specific demand customers will use data from the D0275 or D0036 industry data flows based on half hourly metered data provided by MPAN.
134. Charges will consist of a fixed, unit, capacity and reactive power charge.

135. As described in Paragraph 40, there will be three unit rate time bands on a time of day basis for all half hourly settled customers with the exception of the half hourly unmetered supplies tariff, to reflect the requirements of the cost drivers of their individual networks. These three time bands will be called 'red', 'amber' and 'green' to represent three differing cost signals. ~~As described in Paragraph 40, there will be three unit rate time bands for the half hourly unmetered supplies tariff, to reflect the requirements of the cost drivers of their individual networks. The three time bands will be called 'black', 'yellow' and 'green' to represent three differing cost signals.~~

135A ~~Prior to Measurement Classes F and G being available under the BSC,~~ Those users in Measurement Class C or E will be HH settled on a site-specific basis, and assigned to the appropriate tariff based on the Measurement Class, type of metering equipment installed and the voltage of connection as specified in the table below:

Tariff	Voltage of Connection	Metering	Measurement Class
LV HH—Site Specific Metered	LV	Whole—current /Current Transformer	C / E
LV Sub Site Specific HH Metered	LV Sub	Whole—current /Current Transformer	C / E
HV Site Specific HH Metered	HV	Current Transformer	C / E

~~135B. This paragraph only applies once Measurement Classes F and G are available under the BSC. Where this paragraph applies, those users who remain in Measurement Class C or E will be HH settled on a site specific basis, while those users in Measurement Class F or G will be settled on an aggregate basis. HH settled customers will be assigned to the appropriate tariff based on the Measurement Class, type of metering equipment installed and the voltage of connection as specified in the table below:~~

Tariff	Voltage of Connection	Metering	Measurement Class
--------	-----------------------	----------	-------------------

Formatted Table

LV Network Domestic	LV	Whole Current or Current Transformer	F
LV Network Non-Domestic Non-CT	LV	Whole Current	G
LV HH Metered	LV	Current Transformer	C/E
LV Sub HH Metered	LV Sub	Current Transformer	C/E
HV HH Metered	HV	Current Transformer	C/E

136. Structure of the HH demand charges:

- (a) Fixed charge p/MPAN/day;
- (b) Unit rate charge p/kWh;
- ~~(c) Unmetered supplies will be charged on a p/kWh basis only;~~
- ~~(d)~~(c) Capacity charge p/kVA/day;
- ~~(e)~~(d) Exceeded capacity charge p/kVA/day; and
- ~~(f)~~(e) Reactive power charge p/kVArh.

137. Generally the p/MPAN/day charge relates to one MPAN. However, where a site is a group of MPANs as identified in the connection agreement, billing systems should be able to group the MPANs where appropriate for charging purposes.

138. Unit charges will be allocated by settlements HH data and DNO Party specific network time bands.

139. There will be no charges applied to correctly de-energised HH MPANs/sites as determined by the de-energisation status in MPAS Registration System.

140. Where a site is incorrectly de-energised, i.e. when actual metering advances are received the DNO Parties should contact suppliers to ensure the status is corrected. If a site is found to be energised charges will be back dated to the date of energisation.

Unmetered Supplies

140A. Use of System Charges for ~~HHH~~Aggregated ~~Settled~~ unmetered MPANs will be via the Supercustomer approach which uses data from the D0030 industry data flow and is based on Settlement Classes. As described in Paragraph 40, there will be three unit rate time bands for the unmetered supplies tariff, to reflect the requirements of the cost drivers of their individual networks. The three time bands will be called ‘black’, ‘yellow’ and ‘green’ to represent three differing cost signals.~~Use of System Charges for HH aggregated metered demand MPANs (as determined under paragraph 135B above) will be via the Supercustomer approach which uses data from the D0030 industry data flow and is based on Settlement Classes comprising:~~

- ~~a) — Line Loss Factor Class (LLFC);~~
- ~~b) — Profile Class (PC);~~
- ~~c) — Standard Settlement Configuration (SSC); and~~
- ~~d) Time Pattern Regime (TPR)~~

140B. Use of System Charges for ~~HH site specific~~ (pseudo HH) customers will use data from the D0275 or D0036 industry data flows based on half hourly data provided by MPAN.~~The combination of LLFC/PC/SSC/TPR determines the associated profile and half hourly data values. These will be determined by the DNO Party and provided to the Supplier Volume Allocation Agent. The PC for HH aggregated metered demand MPANs will always be zero.~~

140C. ~~DNO specific network time bands will be applied to the appropriate SSC/TPR combinations stated in paragraph 140B. Charges will consist of a unit rates only.~~

<u>Tariff</u>	<u>Voltage of Connection</u>	<u>Measurement Class</u>
<u>LV UMS</u>	<u>LV</u>	<u>B / D</u>

~~140D. Charges will be applied on a fixed charge and unit rate basis, the latter allocated to DNO specific network timebands. There will be no capacity, exceeded capacity or reactive power charges for HH aggregated metered demand MPANs.~~

~~140E. Structure of HH aggregated metered demand charges shall be as follows:~~

Formatted: Indent: Left: 1.25 cm, Hanging: 1.25 cm, Space After: 12 pt, Line spacing: 1.5 lines, No bullets or numbering

a) ~~Fixed charge will be p/MPAN/day~~

b) ~~Unit charges will be p/kWh.~~

Demand Tariff Structures

141. Table 4 below shows the structure for ~~NHH-aggregated~~ metered demand tariffs, and Table 5 below shows the structure for ~~HHSite specific~~ metered demand tariffs ~~(both site-specific and aggregated).~~

Table 4: Non-half-hourly Aggregated metered demand T tariffs					
Point of Connection	Tariff Name	Profile Class Unit 1 (p/kWh)	Unit rate 1*Unit 2 (p/kWh)	Unit rate 2*Unit 3 (p/kWh)	Fixed charge p/MPAN/day
LV	Domestic Unrestricted	1	✓		✓
LV	Domestic Two Rate	2	✓	✓	✓
LV	Domestic Off Peak (related MPAN)	2	✓		
LV	Small Non-Domestic Unrestricted	3	✓		✓
LV	Small Non-Domestic Two Rate	4	✓	✓	✓
LV	Small Non-Domestic Off Peak (related MPAN)	4	✓		
LV	LV Medium Non-Domestic	5 to 8	✓	✓	✓
LV	NHH UMS (Category A)	8	✓		
LV	NHH UMS (Category B)	1	✓		
LV	NHH UMS (Category C) LV Domestic Aggregated	Red 1	Amber ✓	Green	✓
LV	NHH UMS (Category D) LV Domestic (Related MPAN)	Red 1	Amber ✓	Green	
LVS	LV Sub-Medium Non-Domestic LV Non-Domestic Aggregated	Red 5 to 8	Amber ✓	Green ✓	✓
HV	HV Medium Non-Domestic LV Non-Domestic (Related MPAN)	Red 5 to 8	Amber ✓	Green ✓	✓
	LV UMS Aggregated	Black	Yellow	Green	

* Unit rates 1 and 2 for NHH customers are either unrestricted or based upon the TPR or the DNO-specific combinations.

Formatted Table

Table 5: ~~Half-hourly Site Specific metered demand~~ Tariffs

Tariff	Unit rate 1 p/kWh	Unit rate 2 p/kWh	Unit rate 3 p/kWh	Fixed charge p/MPAN/day	Capacity charge p/kVA/day	Exceeded Capacity charge p/kVA/day	Reactive power charge p/kVArh
LV Network Domestic	Red	Amber	Green	✓			
LV Network Non-Domestic Non-CT	Red	Amber	Green	✓			
LV Site Specific HH Metered	Red	Amber	Green	✓	✓	✓	✓
LV Sub Site Specific HH Metered	Red	Amber	Green	✓	✓	✓	✓
HV Site Specific HH Metered	Red	Amber	Green	✓	✓	✓	✓
LV UMS Site Specific (Pseudo HH Metered)	Black	Yellow	Green				

Formatted Table

Note 1: The LV Domestic (Related MPAN) and LV Non-Domestic (Related MPAN) ~~Domestic and Non-Domestic off-peak (related MPAN)~~ tariffs are supplementary to a standard published tariff and therefore only available under these conditions. These will be charged the same red, amber and green unit rates but will have a zero fixed charge.

Note 2: Where DNO Parties use a default tariff for invalid settlement combinations these will be charged at the LV Domestic ~~Aggregated Unrestricted~~ rates.

Note 3: LV Sub applies to customers connected to the DNO Party's network at a voltage of less than 1 kV at a substation with a primary voltage (the highest operating voltage present at the substation) of at least 1 kV and less than 22 kV, where the current transformer (CT) used for the customer's settlement metering is located at the substation. For these purposes, 'at the substation' means:

- an HV/LV substation with the metering CT in the same chamber as the substation transformer; or
- an HV/LV substation with the metering CT in a chamber immediately adjacent to the substation transformer chamber.

Note 4: not used.

Note 5: Where a customer or its supplier requests a DNO Party to confirm if a connection may be eligible for an LV Sub tariff, the DNO Party will investigate and reach a decision, taking account of any supporting information provided by the customer or supplier and any additional information that is available to it. Administration charges (to cover reasonable costs) may apply if a technical assessment or site visit is required, but shall not be applied where the DNO Party agrees to the change of tariff request. In all circumstances where a DNO Party decides or agrees that a customer should be moved to an LV Sub tariff, the new tariff charges will be applied in the next calendar month following the DNO Party's decision or agreement. Where a customer is already registered on an LV Sub tariff they will remain so.

Note 6: ~~HV Medium Non Domestic~~ This tariff will be closed to new customers and all new HV connections will be required to be half hourly metered Not Used.

Note 7: Fixed charges are generally levied on a pence per MPAN basis. However, there are some instances ~~in the half hourly site specific market~~ where more than one MPAN exists on a customer's connection and only one fixed charge is appropriate. Where a group of MPANs is classed as a site as identified in the connection agreement, billing systems should be able to group the MPANs, where appropriate, for charging purposes.

Tariff structures for generation

~~NNH and~~ Aggregated HH Metered Generation

142. Use of System Charges for ~~NNH Low Voltage (LV and LVS) generation tariffs and~~ a Aggregated ~~HH~~ LV generation will be billed via Supercustomer. The billing systems will be required to apply fixed charges plus negative unit charges with the process being managed through the DNO Party's invoicing of the supplier.

143. Structure of ~~NNH and a~~ Aggregated HH generation charges:

(a) Fixed charge will be p/MPAN/day; and

(b) Unit rate charge p/kWh.

(c) ~~Reactive Charges will not apply.~~

Site Specific ~~HH Metered Generation (other than Aggregated)~~

144. Use of System Charges for HH Site Specific ~~Low Voltage (LV) and High Voltage (HV)~~ generation tariffs (~~excluding aggregated HH LV generation~~) will be via the HH billing systems. The billing systems will be required to apply fixed charges plus reactive power unit charges, negative unit charges and manage the process through the DNO Party's invoicing of the supplier
145. Structure of Site Specific HH generation charges:
- Fixed charge will be p/MPAN/day;
 - Unit rate charge p/kWh; and
 - Reactive power charge p/kVArh.
146. The following tables and notes show the structure for generation tariffs.

Table 6: ~~Non-half-hourly-Aggregated-metered~~ Ggeneration ~~£~~Tariffs

<u>Tariff</u> <u>Name</u> <u>Point-of</u> <u>Connection</u>	<u>Unit rate 1</u> <u>(p/kWh)</u> <u>Tariff</u> <u>Name</u>	<u>Unit rate 2</u> <u>(p/kWh)</u> <u>Profile</u> <u>Class</u>	<u>Unit rate 3</u> <u>(p/kWh)</u> <u>Unit</u> <u>rate 1</u> <u>p/kWh</u>	Fixed charge p/MPAN/day
<u>LV</u> <u>Generation</u> <u>Aggregated</u> <u>LV</u>	<u>LV Generation</u> <u>NNH or</u> <u>Aggregate</u> <u>HH</u> <u>Red</u>	<u>8 or 0</u> <u>Amber</u>	<u>✓</u> <u>Green</u>	✓
<u>LV Sub</u> <u>Generation</u> <u>Aggregated</u> <u>LVS</u>	<u>LV Sub</u> <u>Generation</u> <u>NNH</u> <u>Red</u>	<u>8</u> <u>Amber</u>	<u>✓</u> <u>Green</u>	✓

* This tariff can be settled NHH or aggregated HH

Table 7: Site Specific ~~Half-hourly-Aggregated-metered-g~~ Ggeneration Tariffs

Tariff	Unit rate 1 p/kWh	Unit rate 2 p/kWh	Unit rate 3 p/kWh	Fixed charge p/MPAN/day	Reactive power charge p/kVArh
LV Generation Intermittent	✓			✓	✓
LV Sub-Generation Intermittent	✓			✓	✓
HV Generation Intermittent	✓			✓	✓
LV Generation Intermittent no RP charge	✓			✓	
LV Sub-Generation Intermittent no RP charge	✓			✓	
HV Generation Intermittent no RP charge	✓			✓	
LV <u>Site Specific</u> Generation Non-	Red	Amber	Green	✓	✓

Formatted Table

Intermittent					
LV Sub <u>Site Specific</u> Generation Non-Intermittent	Red	Amber	Green	✓	✓
HV <u>Site Specific</u> Generation- Non-Intermittent	Red	Amber	Green	✓	✓
LV Generation-Non-Intermittent <u>Site Specific</u> <u>Generation</u> no RP charge	Red	Amber	Green	✓	
LV Sub Generation Non-Intermittent <u>Site Specific</u> <u>Generation</u> no RP charge	Red	Amber	Green	✓	
HV Generation Non-Intermittent <u>Site Specific</u> <u>Generation</u> no RP charge	Red	Amber	Green	✓	

Note 1: ~~A single rate tariff is applied to NHH settled generation, as there is no readily available and accurate information about the time at which units are delivered~~Not Used.

Note 2: ~~Intermittent generation is defined as a generation plant where the energy source of the prime mover cannot be made available on demand, in accordance to the definitions in Engineering Recommendation P2/6. These include wind, tidal, wave, photovoltaic and small hydro. The operator has little control over operating times therefore, a single rate tariff (based on a uniform probability of operations across the year) will be applied to intermittent generation~~Not Used.

Note 3: ~~Non intermittent generation is defined as a generation plant where the energy source of the prime mover can be made available on demand, in accordance to the definitions in Engineering Recommendation P2/6. The generator can choose when to operate, and bring more benefits to the network if it runs at times of high load. These include combined cycle gas turbine (CCGT), gas generators, landfill, sewage, biomass, biogas, energy crop, waste incineration and combined heat and power (CHP). A three rate tariff will be applied to generation credits for half hourly settled non intermittent generation~~Not Used.

Note 4: LV Sub Generation applies to customers connected to the DNO Party's network at a voltage of less than 1 kV at a substation with a primary voltage (the highest operating voltage present at the substation) of at least 1 kV and less than 22 kV, where the current transformer used for the customer's settlement metering is located at the substation.

Note 5: not used.

Note 6: Note 4 above for LV generation substation tariffs will be applied for new customers from 1 April 2010.

Note 7: Where a DNO Party has requested (and still requires) a generator to operate with a power factor of less than 0.95, excess reactive power charges will not apply (these instances are identified in the table as 'no RP charge').

Tariff structures for LDNOs

147. The tariff structure for LDNOs will mirror the structure of the all-the-way-tariff, and is dependant on the voltage of the Point of Connection being either LV (see Table 8) or HV (see Table 9); except for the LDNO UMS tariffs (marked with ** in Tables 8 and 9 below), which are charged by reference to the voltage of the Points of Connection that provide the majority of the energised domestic connections for the LDNO in the GSP Group (or, where there is no such majority, on such other reasonable basis as the DNO Party determines). In all cases, the same tariff elements will apply.

Table 8: LDNO LV connection*

Profile Class	Tariff Name	Unit rate 1 p/kWh	Unit rate 2 p/kWh	Unit rate 3 p/kWh	Fixed charge p/MAN/day	Capacity charge p/kVA/day	Exceeded Capacity charge p/kVA/day	Reactive power charge p/kVArh
1	Domestic Unrestricted	✓			✓			
2	Domestic Two Rate	✓	✓		✓			
2	Domestic Off Peak (related MPAN)	✓						
3	Small Non-Domestic Unrestricted	✓			✓			
4	Small Non-Domestic Two Rate	✓	✓		✓			
4	Small Non-Domestic Off-Peak (related MPAN)	✓						
5 to 8	LV Medium Non-Domestic	✓	✓		✓			
8	NHH UMS (Category A) **	✓						
1	NHH UMS (Category B) **	✓						
1	NHH UMS (Category C) **	✓						

Formatted Table

1	NHH UMS (Category D) **	✓						
0	LV Network Domestic Aggregated	Red	Amber	Green	✓			
	LV Domestic (Related MPAN)	Red	Amber	Green				
0	LV Network Non-Domestic Non-CT Aggregated	Red	Amber	Green	✓			
	LV Non-Domestic (Related MPAN)	Red	Amber	Green				
0	LV Site Specific HH Metered	Red	Amber	Green	✓	✓	✓	✓
0	LV UMS ** (Pseudo HH Metered) **	Black	Yellow	Green				
0 or 8	LV Generation NHH or Aggregate HH	✓			✓			
0	LV Generation Intermittent	✓			✓			✓
0	LV Generation Aggregated Non-Intermittent	Red	Amber	Green	✓			✓/✓
	LV Site Specific Generation	Red	Amber	Green	✓			✓

* Where the boundary between the LDNO and DNO network is at LV

Table 9: LDNO HV connection*

Profile Class	Tariff Name	Unit rate 1 p/kWh	Unit rate 2 p/kWh	Unit rate 3 p/kWh	Fixed charge p/MPAN/day	Capacity charge p/kVA/day	Exceeded Capacity charge p/kVA/day	Reactive power charge p/kVAr/h
1	Domestic Unrestricted	✓			✓			
2	Domestic Two Rate	✓	✓		✓			
2	Domestic Off Peak (related MPAN)	✓						
3	Small Non-Domestic Unrestricted	✓			✓			
4	Small Non-Domestic Two Rate	✓	✓		✓			
4	Small Non-Domestic Off-Peak (related MPAN)	✓						
5 to 8	LV Medium Non-Domestic	✓	✓		✓			
8	NHH UMS (Category A) **	✓						
1	NHH UMS (Category B) **	✓						
1	NHH UMS (Category C) **	✓						
1	NHH UMS (Category D) **	✓						

Formatted Table

Table 9: LDNO HV connection*

0	LV Network Domestic Aggregated	Red	Amber	Green	✓			
	LV Domestic (Related MPAN)	Red	Amber	Green				
0	LV Network Non-Domestic Non-CT Aggregated	Red	Amber	Green	✓			
0	LV Non-Domestic (Related MPAN)	Red	Amber	Green				
0	LV Site Specific HH Metered	Red	Amber	Green	✓	✓	✓	✓
0	LV UMS (Pseudo HH Metered) **	Black	Yellow	Green				
0	LV Sub Site Specific HH Metered	Red	Amber	Green	✓	✓	✓	✓
0	HV Site Specific HH Metered	Red	Amber	Green	✓	✓	✓	✓
0 or 8	LV Generation HHH or Aggregated HH	Red✓	Amber	Green	✓			
0	LV Generation Intermittent LV Sub Generation Aggregated	Red✓	Amber	Green	✓			✓✓
0	LV Site Specific Generation Aggregated Non-Intermittent	Red	Amber	Green	✓			✓
0	LV Sub Generation Intermittent	✓			✓			✓
0	LV Sub Site Specific Generation Non-Intermittent	Red	Amber	Green	✓			✓
0	HV Generation Intermittent	✓			✓			✓
0	HV Site Specific Generation Non-Intermittent	Red	Amber	Green	✓			✓

Capacity charges

Maximum Import Capacity

148. The Maximum Import Capacity (MIC) will be charged on a site basis (p/kVA/day).
149. The level of MIC will be agreed at the time of connection and when an increase has been approved. Following such an agreement (be it at the time of connection or an increase) no reduction in MIC will be allowed for a period of one year (subject to Part 4 below).

150. Subject to Part 4 below, reductions to the MIC may only be permitted once in a 12 month period and no retrospective changes will be allowed. Where MIC is reduced the new lower level will be agreed with reference to the level of the customers' maximum demand. It should be noted that where a new lower level is agreed the original capacity may not be available in the future without the need for network reinforcement and associated cost.
151. For LDNO connections, if capacity ramping has been agreed with the DNO Party, in accordance with the DNO Party's connection charging methodology, the phasing profile will apply instead of the above rules. Where an LDNO has agreed a phasing of capacity this will be captured in the Bilateral Connection Agreement with the DNO Party.

Standby Capacity for Additional Security on Site

152. Where standby capacity charges are applied, the charge will be set at the same rate as that applied to normal MIC.

Exceeded Capacity

153. Where a customer takes additional capacity over and above the MIC without authorisation, the excess will be classed as exceeded capacity. The exceeded portion of the capacity will be charged at the exceeded capacity rate (p/kVA/day). The exceeded capacity will be charged for the duration of the month in which the breach occurs and derived as follows:

$$\text{Exceeded capacity (kVA)} = \max(0, \text{Chargeable capacity} - \text{MIC})$$

Where:

$$\begin{aligned} \text{Chargeable capacity} &= \text{actual capacity utilised as set out in paragraph 155 below MIC} \\ &= \text{Maximum Import Capacity} \end{aligned}$$

Minimum Capacity Levels

154. There is no minimum capacity threshold.
- Capacity Value Calculations – Import
155. The actual capacity utilised will be calculated by the following formula:

$$\text{Import Demand} = 2 \times \sqrt{\text{AI}^2 + \max(\text{RI}, \text{RE})^2}$$

Where:

AI = Import consumption in kWh
RI = Reactive import in kVArh

RE = Reactive export in kVArh

Import Demand = kVA

156. This calculation is completed for every half hour and the maximum value from the billing period is captured.

157. Not used.

158. Only kVArh Import and kVArh Export values occurring at times of kWh Import are used.

Capacity Value Calculations – Export

159. The actual capacity utilised will be calculated by the following formula:

$$\text{Export Demand} = 2 \times \sqrt{AE^2 + \max(RI, RE)^2}$$

Where:

AE = Export production in kWh

RI = Reactive import in kVArh

RE = Reactive export in kVArh

Export Demand = kVA

160. This calculation is completed for every half hour and the maximum value from the billing period is captured.

161. The export demand value is calculated to record the highest export value and used for information only.

162. Only kVArh Import and kVArh Export values occurring at times of kWh Export are used.

Reactive power charges

163. Reactive power charges will be applied based on chargeable reactive power. The charge will be p/kVArh for units in excess of a set amount.

164. The chargeable reactive power units will be calculated by the following formulae.

Chargeable Reactive Power Unit Calculations - Import

$$\text{Chargeable kVArh} = \max \left(\max(\text{RI}, \text{RE}) - \left(\sqrt{\left(\frac{1}{0.95^2} - 1 \right)} \times \text{AI} \right), 0 \right)$$

Where:

AI = Import consumption in kWh

RI = Reactive Import in kVArh

RE = Reactive export in kVArh

165. The 0.95 constant refers to the reactive charging threshold and the design power factor of the network model within the CDCM.

166. This calculation is completed for every half hour and the values summated over the billing period.

167. Only kVArh Import and kVArh Export values occurring at kWh Import are used.

168. The square root calculation will be to two decimal places.

Chargeable Reactive Power Unit Calculations - Export

$$\text{Chargeable kVArh} = \max \left(\max(\text{RI}, \text{RE}) - \left(\sqrt{\left(\frac{1}{0.95^2} - 1 \right)} \times \text{AE} \right), 0 \right)$$

Where:

AE = Export production in kWh

RI = Reactive import in kVArh

RE = Reactive export in kVArh

169. The 0.95 constant refers to the reactive charging threshold and the design power factor of the network model within the CDCM.
170. This calculation is completed for every half hour and the values summated over the billing period.
171. Only kVArh Import and kVArh Export values occurring at kWh Export are used.
172. The square root calculation will be to two decimal places.

Charging decimal places

173. DNO Parties will set unit charges (kWh) and reactive power charges (kVArh) to three decimal places. The rates for fixed charges, capacity charges and exceeded capacity charges will be set to two decimal places.

Part 3 — Network Unavailability Rebate Payments

174. A compensation payment may be payable to customers for network outages under two schemes.
175. The majority of customers are compensated under the Guaranteed Standards arrangements set out in The Electricity (Standards of Performance) Regulations 2015.
176. Customers who are off supply for greater than defined periods of time are entitled to a payment. This scheme applies to all demand customers and to all generators not included in the scheme described below.
177. For customers with generation connected at more than 1,000 volts and who have agreed a standard connection the following scheme will apply. This scheme is known as Distributed Generation Network Unavailability Rebate and payments will be calculated for each generator on the following basis:

$$\text{Payment} = A * B * (C - D)$$

Where:

A = the network unavailability price of £2 per MW per hour.

B = incentivised generator capacity; the highest active electrical power that can be generated (or the relevant incremental change of this amount in cases of the expansion of existing generation plant) by the generator for the year, according to the connection and/or use of system agreement(s).

C = network interruption duration; the total duration of all occurrences (in minutes) on the network each of which involves a physical break in the circuit between itself and the rest of the system or due to any other open circuit condition, which prevents the generator from exporting power. It excludes:

- 50 per cent of the total duration of cases where the DNO Party takes pre-arranged outages of its equipment for which the statutory notification has been issued to the generator;
- the cases where the generator has specific exemption agreements with the DNO Party in the connection and/or use of system agreement(s); and

- the cases which are part of exempted events in the quality of service incentive or the Guaranteed Standard Statutory Instrument (such exemptions include interruptions of less than three minutes duration and industrial action).

D = the baseline network interruption duration for the relevant year which either has a default value of zero or some other value agreed between the customer and the DNO Party and recorded within either; the connection offer, connection agreement and/or use of system agreement(s).

178. Distributed Generation Network Unavailability Rebate scheme payments will be calculated by the DNO Party on an annual basis (1st April - 31st March) and payments made shortly after the end of each year. This payment is automatic and does not need to be claimed by the generation customer. The de minimis level of rebate is £5 (and below that amount no payment will be made).

Part 4 – Transitional Protection for Customers affected by BSC Modification P272

1. This Part 4 sets out the transitional protection for Customers who may be affected by BSC Modification P272, being demand Customers in Profile Class (PC) 5-8 which are required to become half-hourly settled (where capable metering has been installed).
2. This Part 4 forms part of the CDCM, but also applies to IDNO Parties and to DNO Parties acting outside of their distribution services area.
3. Subject to paragraph 5 below, where:
 - (a) a Customer takes a supply of electricity at a Premises where the electricity conveyed to the Premises is recorded through a CT meter; and
 - (b) the Metering Point for such Premises has, on or before 31 March 2017, been migrated to Measurement Class C or E, as a result of BSC Modification P272,then, for a period of twelve months immediately following the date of the migration to Measurement Class C or E, a lower Maximum Import Capacity (**MIC**) may be agreed between the Customer and the DNO/IDNO Party. In such circumstances, the revised MIC will be applied retrospectively from the date of the migration to Measurement Class C or E.
4. In respect of any change in MIC under paragraph 3 above:
 - (a) such revised MIC will be agreed with reference to the level of the Customer's maximum demand;
 - (b) no further changes in MIC shall be permitted under paragraph 3 above; and
 - (c) paragraphs 149 and 150 of the CDCM (or any equivalent or similar statements in the applicable charging methodology if the CDCM does not apply) shall apply to the revised MIC from the date the retrospective change is agreed.
5. Paragraph 3 above shall not apply:
 - (a) where a Connection Agreement has been entered into for the Premises within the twelve months immediately prior to the date of the change in Measurement Class, in which case the terms of that Connection Agreement shall stand; or

- (b) where the Customer was neither the owner nor the occupier of the Premises at the time of the migration to Measurement Class C or E.

7. In this Part 4, the following definitions shall apply:

BSC Modification P272 means the modification to the BSC referred to as modification 'P272, Mandatory Half Hourly Settlement for Profile Classes 5-8', which was approved by the Authority on 29 October 2014.

Measurement Class has the meaning given to that expression in the BSC.

Profile Class has the meaning given to that expression in the BSC.

Glossary of Terms used in this Schedule 16

In this Schedule 16, except where the context otherwise requires, the expressions in the left-hand column below shall have the meaning given to them in the right-hand column below:

<i>Term</i>	<i>Meaning</i>
allowed revenue	the DNO Party's "Combined Allowed Distribution Network Revenue" (as defined in the DNO Party's price control conditions).
all-the-way tariff	a tariff applicable to an end user rather than an LDNO.
boundary tariff	a tariff for use of the DNO Party's network by an LDNO where charges are based on boundary flows.
CDCM	the Common Distribution Charging Methodology.
charging year	the 12-month period ending on a 31st March for which charges and credits are being calculated.
coincidence factor	for a user category, aggregate load at the time of the DNO Party's system simultaneous maximum load divided by maximum aggregate load.
Common Distribution Charging Methodology	the methodology of that name with which the DNO Party is obliged to comply under its Distribution Licence.
contribution proportion	the proportion of asset annuities which are deemed covered by customer contributions. This is defined for each combination of a tariff and a network level.
customer contribution	capital charges payable by customers under the DNO Party's connection charging policy.

<i>Term</i>	<i>Meaning</i>
CT	Current Transformer, indicating metering which uses current transformers to induce a reference current which is then passes through the meter (as compared to non-CT or whole current metering, where the full electrical current passes through the meter).
distribution time bands	the time bands described in paragraphs 40, 41 and 135.
diversity allowance	the extent, expressed as a percentage, to which the sum of the maximum load across all assets in the modelled network level is expected to exceed the simultaneous maximum load for the network level as a whole, as per paragraph 27.
DRM	distribution reinforcement model. This may refer either to a 500 MW network model or to a cost allocation method based on such a model.
EDCM	means the EHV distribution charging methodology as described in Schedule 17 or Schedule 18 (as applicable to each DNO Party).
EHV	EHV refers to nominal voltages of at least 22kV and less than 132kV; network elements with a nominal voltage of 132kV are excluded from EHV for the purpose of this Schedule 16.

<i>Term</i>	<i>Meaning</i>
	<p>where:</p> <p>EHV and 132 kV assets in the CDCM model = the sum of the notional values in £ of the EHV assets described in paragraph 100(e) of this schedule, namely 132kV, 132kV/EHV, EHV, EHV/HV, and 132kV/HV assets; and</p> <p>all notional assets in the EDCM model = the total notional value in £ of the assets described in paragraph 100(d) of this schedule.</p>
embedded network	an electricity distribution system operated by an LDNO and embedded within the DNO Party's network.
end user	is a user, but excluding LDNOs.
Engineering Recommendation	one of the engineering recommendations referred to in the Distribution Code.
excluded revenue	revenue from "Excluded Services" (as defined in the price control conditions).
Forecast Business Plan Questionnaire or FBPQ	the questionnaire that the DNO Party is required to submit under the Regulatory Instructions and Guidance issued by the Authority under the DNO Party's Distribution Licence.
GSP	grid supply point: where the network is connected to a transmission network.
HV	nominal voltages of at least 1kV and less than 22kV.
kV	Kilovolt (1,000 Volts): a unit of voltage.
kVAr	Kilo Volt Ampere reactive: a unit of reactive power flow.

Formatted Table

<i>Term</i>	<i>Meaning</i>
kVArh	Kilo Volt Ampere reactive hour: a unit of total reactive power flow over a period of time.
kW	Kilowatt (1,000 Watts): a unit of power flow.
kWh	Kilowatt hour: a unit of energy.
LDNO	a licensed distribution network operator, meaning an IDNO Party or DNO Party operating an electricity distribution system outside of its Distribution Services Area.
load factor	for a user category, average load divided by maximum aggregate load.
LV	nominal voltages of less than 1kV.
LV Mains	LV distributing mains where: <ul style="list-style-type: none"> a) the upper boundary is at the secondary side (LV) of a distributor transformer; and b) the lower boundary is the point of connection associated with the LV service.
LV Services	the service line from the LV main to the DNO's protection device situated upon the customer's premises, including the joint and associated components connecting the service line to the distributing main.
Maximum Import Capacity (MIC)	MIC = Maximum Import Capacity
Measurement Class	has the meaning given to that expression in the BSC.

<i>Term</i>	<i>Meaning</i>
modern equivalent asset and modern equivalent asset value	is a reference to the cost of replacing an asset at the time of the calculation.
MPAN	the unique number identifying a particular Metering Point or Metering System.
MVA	Mega Volt Ampere (1,000 kVA): a unit of network capacity.
MW	Megawatt (1,000 kW): a unit of power flow.
MWh	Megawatt hour (1,000 kWh): a unit of energy.
network	the DNO Party's Distribution System within the DNO Party's Distribution Services Area.
network level	the network is modelled as a stack of circuit and transformation levels between supplies at LV and the transmission network. A network level is any circuit or transformation level in that stack. Additional network levels are used for transmission exit and for LV and HV customer assets.
network model	a costed design for a 500 MW extension to the DNO Party's network, as described in paragraph 16.
peaking probability	is the peaking probability described in paragraph 49.
power factor	the ratio of energy transported (kW) to network capacity used (kVA).
portfolio tariff	a tariff for use of the DNO Party's network by an LDNO where charges are based on flows out of/into the LDNO's electricity distribution system from its end users or further nested networks.
price control conditions	the charge restriction conditions contained as special conditions within the DNO Party's Distribution Licence.

<i>Term</i>	<i>Meaning</i>
profile class	has the meaning given to that expression in the Balancing and Settlement Code.
regulatory asset value	is the DNO Party's regulatory asset value as described in the Regulatory Instructions and Guidance issued by the Authority under the DNO Party's Distribution Licence.
related MPAN	has the meaning given to the expression "Related Metering Points" in the Master Registration Agreement.
Revenue not to share	means the amount described as such in paragraph 111.
RRP	regulatory reporting pack, a dataset produced each year by each DNO Party for the Authority.
service model	a costed design for the typical dedicated assets of a category of network users.
standing charge	any fixed or capacity charge that does not depend on actual use of the network.
Supercustomer	in relation to billing, is billing by Settlement Class.
system simultaneous maximum load	the maximum load for the GSP Group as a whole.
time pattern regime or TPR	means a code that is used to identify the switching times of a meter register.
unit	where the context permits, the word unit refers to kWh.

<i>Term</i>	<i>Meaning</i>
unit rate	a charging or payment rate based on units distributed or units generated. Unit rates are expressed in p/kWh. Tariffs applied to multi-rate meters and/or using several time bands for charging have several unit rates.
user	refers to customers (whether demand customers or generators) and (where relevant) LDNOs.

SCHEDULE 19 – PORTFOLIO BILLING

1. APPLICATION OF THIS SCHEDULE

- 1.1 Notwithstanding Clause 36.3, this Schedule applies to, and is binding between, each DNO Party (for the one part) and each EDNO (for the second part).
- 1.2 This Schedule sets out the process for determining the data by reference to which the Use of System Charges payable by the EDNO to the DNO Party are to be calculated.
- 1.3 In this Schedule, an “**Embedded Distribution Network Operator**” or “**EDNO**” is, in respect of each DNO Party:
- (a) any IDNO Party; or
 - (b) any DNO Party acting outside of that DNO Party’s Distribution Services Area,
 - (c) which (in each case) has a Distribution System within a GSP Group associated with that DNO Party.
- 1.4 In this Schedule, a reference to the EDNO’s “**Connectees**” shall only be a reference to those Connectees to the Distribution Systems referred to in Paragraph 1.3 (and shall not include any Connectees to other Distribution Systems of the EDNO).
- 1.5 The Use of System Charges calculated in accordance with this Schedule shall be payable by the EDNO in accordance with Clause 44, and shall be subject to Clause 43.7 and paragraph 2 of Schedule 4 (as if the references to the User in those Clauses and that Schedule were to the EDNO).

2. ~~NHH AND HH~~ AGGREGATED DEMAND DATA

- 2.1 In order to calculate the Use of System Charges attributable to the EDNO’s non-half-hourly-settled and half-hourly aggregated settled demand Connectees, the DNO Party

will use the data provided to it by the SVAA pursuant to section S and BSCP508 of the BSC.

- 2.2 Where a subsequent Settlement Run indicates that, as a result of such Settlement Run, the Use of System Charges are different from those previously billed, the DNO Party shall calculate such difference and the interest thereon, and shall submit an invoice for such difference and interest as soon as is reasonably practicable after such Settlement Run. Such interest shall be calculated in accordance with the provisions of Schedule 3 (as if the invoice under Paragraph 2.1 was an Initial Account, and as if the invoice under this Paragraph 2.2 was a Reconciliation Account under Clause 20.4).
- 2.3 The DNO Party shall identify to the EDNO the amount of each such invoice which relates to each Settlement Run, broken down by Settlement Code.

3. HH SITE SPECIFIC DATA

- 3.1 In order to calculate the Use of System Charges attributable to the EDNO's site specific half-hourly-settled Connectees, the DNO Party will use data contained in the report provided by the EDNO pursuant to Paragraph 3.2 (subject to any revisions to reflect errors in such reports identified by the DNO Party pursuant to Paragraph 5).
- 3.2 The EDNO shall provide a report to the DNO Party, on or before the 15th day of each month, based on the amounts invoiced to Supplier/DG Parties by the EDNO pursuant to Clause 21 in respect of its Connectees, including all relevant data not previously reported to the DNO Party (and any adjustments to data previously reported).
- 3.3 The report shall contain the following data items in the following sequence for each invoice raised in respect of a half-hourly-settled Connectee:
 - (a) the Market Domain I.D. of the EDNO;
 - (b) the GSP Group code of the DNO Party;
 - (c) the invoice reference number;
 - (d) the name or other reference identifying the EDNO Distribution System;
 - (e) a list of the MPANs covered by the invoice;

- (f) the month(s) of consumption covered by the invoice;
- (g) the Line Loss Factor Class Id (as defined in the MRA) for each MPAN covered by the invoice;
- (h) the fixed charge units (in days) for each MPAN covered by the invoice;
- (i) the DNO Party's unit rate 1 (red) units (in kWh) for each MPAN covered by the invoice;
- (j) the DNO Party's unit rate 2 (amber) units (in kWh) for each MPAN covered by the invoice;
- (k) the DNO Party's unit rate 1 (black) units (in kWh) for each MPAN covered by the invoice;
- (l) the DNO Party's unit rate 2 (yellow) units (in kWh) for each MPAN covered by the invoice;
- (m) the DNO Party's unit rate 3 (green) units (in kWh) for each MPAN covered by the invoice;
- (n) the chargeable agreed capacity (in kVA) for each MPAN covered by the invoice;
- (o) the chargeable excess capacity (in kVA) for each MPAN covered by the invoice; and
- (p) the chargeable reactive power units (in kVArh) for each MPAN covered by the invoice.

3.4 The report referred to in Paragraph 3.3 shall be provided in Excel 2003 format with each data item in a separate column. Where there are no half-hourly-settled Connectees, the EDNO shall submit a nil return.

4. MPAN REPORT

4.1 On or before the 15th day of each month, the EDNO shall send to the DNO Party a list of the EDNO's MPANs for site specific half-hourly settled Connectees (including

pseudo half-hourly metered UMS), together with the following information (in separate columns) for each such MPAN (as at the start of that month):

- (a) its trading status;
- (b) the date from which such trading status has been effective;
- (c) its energisation status; and
- (d) the date from which such energisation status has been effective.

5. AUDIT

- 5.1 Upon not less than 15 Working Days' prior written notice, the DNO Party shall have the right to inspect and audit the consumption data and billing records of the EDNO relating to invoices referred to in Paragraph 3 or to check the accuracy of the LLFC Id determination under Paragraph 6.5. The EDNO shall ensure that all such data and billing records are maintained in accordance with customary recordkeeping and accounting standards.
- 5.2 The DNO Party shall only be entitled to exercise such right for the purposes of verifying the accuracy and completeness of the reports provided under Paragraph 3 or to check the LLFC Id determination under Paragraph 6.5, and shall only use the data obtained for those purposes.
- 5.3 The EDNO will allow the duly authorised representatives and auditors of the DNO Party who are to undertake any inspection or audit in accordance with this Paragraph 5 all reasonable assistance and adequate facilities for the proper exercise of such inspection or audit.

6. LINE LOSS FACTOR CLASS

- 6.1 Subject to paragraph 6.5, the DNO Party shall use the EDNO's LLFC Id description contained in the Market Domain Data (as defined in the BSC) to enable the DNO Party to identify the voltage of connection of the EDNO's Connectee and the voltage of connection of the EDNO's Distribution System, and shall notify the EDNO which of the DNO Party's charges will be applied by the DNO Party in respect of each

Connectee for the purposes of the Use of System Charges the DNO Party levies on the EDNO.

- 6.2 Where the EDNO introduces new LLFC Ids or changes the use of existing LLFC Ids, it shall (within 15 Working Days of the same being published in the Market Domain Data) notify the DNO Party of the new or changed LLFC Id.
- 6.3 Where the EDNO has introduced new or changed LLFC Ids, the EDNO shall notify the DNO Party which of the DNO Party's charges the EDNO believes should apply in respect of the affected Connectees. The DNO Party shall nevertheless apply the charges as it considers appropriate, but any dispute regarding invoices shall be determined in accordance with Schedule 4.
- 6.4 Where the DNO Party alters the way in which it translates the EDNO's LLFC Ids into the DNO Party's charges, the DNO Party shall advise the EDNO of the change within 15 Working Days after such change.
- 6.5 Where an EDNO has UMS Connectees, the EDNO shall apply a LLFC Id that reflects the voltage of the Points of Connection on the EDNO's Distribution System (as referred to in Paragraph 1.3) that provide the majority (i.e. more than 50%) of energised domestic connections on that Distribution System. Where no Points of Connection provide the majority of energised domestic connections, the EDNO and DNO Party shall negotiate in good faith to determine the LLFC Id that should most reasonably apply.
- 6.6 The LLFC Id applying pursuant to Paragraph 6.5 will be applied to the entire portfolio of UMS Connectees on the EDNOs Distribution System that are registered under the same Standard Settlement Configuration.
- 6.7 The DNO Party shall have the right to review the data provided to it by the SVAA pursuant to Paragraph 2.1 for the purpose of verifying the accuracy of the LLFC Id applied by the EDNO to its UMS Connectees.

7. NOTICES

- 7.1 The EDNO shall provide all reports and other information that it is required to provide to the DNO Party in accordance with this Schedule by email to an address specified to the EDNO by the DNO Party, as varied from time to time.

SCHEDULE 20 – PRODUCTION OF THE ANNUAL REVIEW PACK

1. INTRODUCTION

- 1.1 The “Annual Review Pack” or “ARP” is a document to be completed by each DNO Party giving indicative (when first published in accordance with Clause 35B) and final (when updated in accordance with Clause 35B) Use of System Charges to apply pursuant to the Charging Methodology set out in Schedule 16 (the “CDCM”). The pack shall contain detail of historical and forecast CDCM inputs, and a forecast of use of system tariffs for the next 5 years, in accordance with Paragraph 2. The template to be used for the pack shall be ARP model version 104xxx as issued by the Panel on 01 April 20189.

Formatted: Highlight

2. CONTENT OF THE ARP

- 2.1 The Annual Review Pack issued by each DNO Party will contain the following:
- (a) historical CDCM input information for a minimum period of 3 years, and a 5-year forecast of the CDCM inputs, which will (in each case) be provided in a spreadsheet format and contain the CDCM input sheets in a format that can be directly copied into the CDCM model;
 - (b) CDCM tariffs and typical bills for each tariff in each year of the 5-year period covered by the Annual Review Pack;
 - (c) functionality to allow users the ability to update the forecast CDCM inputs and view the resultant impact on Use of System Charges and typical bills;
 - (d) a 5-year forecast of the retail prices index (RPI), and a link between that forecast and any of the CDCM inputs which the DNO Party believes relate to RPI, so that users are able to update the RPI forecast in such a way that it automatically updates the relevant CDCM inputs;
 - (e) a commentary on the forecast for each CDCM input via individual comments;

- (f) details of the expected time bands (as referred to in the CDCM model) that will be used in each of the 5 years covered by the Annual Review Pack; and
- (g) details of the historic data over the previous 3 years used in calculating the average values for load characteristics (load factors, coincidence factors, and the estimated proportion of units recorded in each relevant time pattern regime that fall within each distribution time band) and peaking probabilities.

3. GENERAL

- 3.1 The forecast CDCM input data will be provided by DNO Parties based on their own perception of how the CDCM input data may change over the 5-year period covered by the Annual Review Pack. The format of the annual review pack will be common, but the actual forecast will be specific to each DNO Party to allow that DNO Party flexibility to express its own views and to provide a realistic forecast.
- 3.2 It is acknowledged that:
 - (a) in populating the Annual Review Pack, each DNO Party will make a number of assumptions;
 - (b) the information set out in each Annual Review Pack is illustrative in nature, and is only intended as an indication of an expectation at a point in time; and
 - (c) actual Use of System Charges may differ significantly from the indicative tariffs set out in the Annual Review Packs, including where there are material changes in the data and assumptions underlying the forecasts,

and, accordingly, although each DNO Party shall endeavour to ensure the accuracy of the information provided in the Annual Review Pack, no DNO Party (or its officers, employees or agents) will be liable for the accuracy of the information contained in the Annual Review Packs.

SCHEDULE 21-PORTFOLIO BILLING FOR NESTED NETWORKS

1. APPLICATION OF THIS SCHEDULE

- 1.1 Notwithstanding Clause 36.3, unless the Primary NDNO notifies the Secondary NDNO otherwise, this Schedule applies to, and is binding between, each Primary NDNO (for the one part) and each Secondary NDNO (for the second part).
- 1.2 This Schedule sets out the process for determining the data by reference to which the Use of System Charges payable by the Secondary NDNO to the Primary NDNO are to be calculated in respect of Nested Networks.
- 1.3 In this Schedule, unless the context otherwise requires:
- “**Embedded Network**” means the Distribution System of an EDNO (as defined in Schedule 19 (Portfolio Billing)).
- (a) “**NDNO**” means any DNO/IDNO Party whose Distribution System forms part of a Nested Network.
- (b) “**Nested Network**” means, where there are one or more Distribution Systems connected downstream of an Embedded Network, the Embedded Network and each of those Distribution Systems.
- (c) “**Primary NDNO**” means any NDNO that has installed assets that change the network level (as defined in Schedule 16 (Common Distribution Charging Methodology)).
- (d) “**Secondary NDNO**” means any NDNO whose Distribution System forms part of a Nested Network connected downstream from the Primary NDNO.
- 1.4 In this Schedule, a reference to the Secondary NDNO’s “Connectees” shall only be a reference to those Connectees to the Distribution Systems referred to in Paragraph 1.3 (e) (and shall not include any Connectees to other Distribution Systems of the Secondary NDNO).

- 1.5 The Use of System Charges calculated in accordance with this Schedule shall be payable by the Secondary NDNO in accordance with Clause 44, and shall be subject to Clause 43.7 and paragraph 2 of Schedule 4 (as if the references to the User in those Clauses and that Schedule were to the Secondary NDNO and references to the Company in those Clauses and that Schedule were to the Primary NDNO).

2. ~~NHH~~ AGGREGATED DATA

- 2.1 In order to calculate the Use of System Charges attributable to a Secondary NDNO's non half-hourly-settled Connectees, the Primary NDNO will use data contained in the report provided by the Secondary NDNO pursuant to Paragraph 2.3 (subject to any revisions to reflect errors in such reports identified by the Primary NDNO pursuant to Paragraph 5).
- 2.2 The Secondary NDNO shall provide a report to each Primary NDNO, within 5 Working Days of receiving relevant consumption data for the non-half-hourly Connectees on the Secondary NDNO's Distribution System that are connected (either directly or indirectly via another NDNO's Distribution System) to the Primary NDNO's Distribution System, including all relevant data not previously reported to the Primary NDNO (and any adjustments to data previously reported).
- 2.3 The report shall be derived from the Use of System Charge received from the DNO Party as a consequence of the data provided to the DNO Party under paragraph 2 of Schedule 19 and shall contain the following data items in the following sequence in respect of non-half-hourly Connectees:

- (a) the Market Domain I.D. of the Secondary NDNO;
 - (b) the GSP Group code of the DNO Party;
 - (c) the name or other reference identifying the Secondary NDNO Distribution System;
 - (d) the month of consumption covered by the report;
 - (e) the voltage at which the Secondary NDNO's Distribution System is connected to the Primary NDNO's Distribution System (or any other Distribution System forming part of the same Nested Network); and
 - (f) for each Settlement Run the:
 - (i) Settlement Class (comprising Line Loss Factor Class Id, Profile Class, Standard Settlement Configuration Id and the Time Pattern Regime);
 - (ii) Settlement Class MSiD Count (for each Primary NDNO); and
 - (iii) Settlement Class Unit Count (this being the average number of units for that Settlement Class multiplied by the Settlement Class MSiD Count for each Primary NDNO);
- and where there are no billable non-half-hourly Connectees a nil return shall be provided.

2.4 The report referred to in Paragraph 2.3 shall be provided in Excel 2003 format with each data item in a separate column.

3. HH DATA

- 3.1 In order to calculate the Use of System Charges attributable to a Secondary NDNO's half-hourly-settled Connectees, the Primary NDNO will use data contained in the report provided by the Secondary NDNO pursuant to Paragraph 3.2 (subject to any revisions to reflect errors in such reports identified by the Primary NDNO pursuant to Paragraph 5).
- 3.2 The Secondary NDNO shall provide a report, in the same data format as that referred to in paragraph 3.3 of Schedule 19, to each Primary NDNO, on or before the 15th day of each month, based on the amounts invoiced to Supplier/DG Parties by the Secondary NDNO pursuant to Clause 21 in respect of its Connectees on the Secondary NDNO's Distribution System that are connected (either directly or

indirectly via another NDNO's Distribution System) to the Primary NDNO's Distribution System, including all relevant data not previously reported to the Primary NDNO (and any adjustments to data previously reported).

- 3.3 The report referred to in Paragraph 3.2 shall be provided in Excel 2003 format with each data item in a separate column.

4. MPAN REPORT

- 4.1 On or before the 15th day of each month, the Secondary NDNO shall send to the Primary EDNO a list of the Secondary NDNO's MPANs for half-hourly settled Connectees (including pseudo half-hourly metered UMS) , together with (in a separate column) the trading status, energisation status and their effective from dates for each MPAN as at the start of that month.

5. AUDIT

- 5.1 Upon not less than 15 Working Days' prior written notice, the Primary NDNO shall have the right to inspect and audit the consumption data and billing records of the Secondary NDNO relating to the invoices referred to in Paragraph 2 and Paragraph 3 or to check the accuracy of the LLFC Id determination under Paragraph 6.4. The Secondary NDNO shall ensure that all such data and billing records are maintained in accordance with customary record keeping and accounting standards.
- 5.2 The Primary NDNO shall only be entitled to exercise such right for the sole purpose of verifying the accuracy and completeness of the reports provided under Paragraph 2 and Paragraph 3 or to check the LLFC Id determination under Paragraph 6.4 and shall only use the data obtained for those purposes.
- 5.3 The Secondary NDNO will allow the duly authorised representatives and auditors of the Primary NDNO who are to undertake any inspection or audit in accordance with this Paragraph 5, all reasonable assistance and adequate facilities for the proper exercise of such inspection or audit.

6. LINE LOSS FACTOR CLASS

- 6.1 Subject to paragraph 6.4, the Primary EDNO shall use the Secondary NDNO's LLFC Id description contained in Market Domain Data (as defined in the BSC) to enable the Primary NDNO to identify the voltage of connection of the Secondary NDNO's Connectees and shall use the report outlined in Paragraph 2.3 to identify the voltage of the connection of the Secondary NDNO's Distribution System to the Primary NDNO's Distribution System, and shall notify the Secondary NDNO which of the Primary NDNO's charges will be applied by the Primary NDNO in respect of each Connectee for the purposes of the Use of System Charges the Primary NDNO levies on the Secondary NDNO.
- 6.2 Where the Secondary NDNO introduces new LLFC Ids or changes the use of existing LLFC Ids, it shall (within 15 Working Days of the same being published in the Market Domain Data) notify the Primary NDNO of the new or changed LLFC Id.
- 6.3 Where the Secondary NDNO has introduced new or changed LLFC Ids, the Secondary NDNO shall notify the Primary NDNO which of the Primary NDNO's charges the Secondary NDNO believes should apply in respect of the affected Connectees. The Primary NDNO shall nevertheless apply the charges as it considers appropriate, but any dispute regarding invoices shall be determined in accordance with Schedule 4.
- 6.4 Where a Secondary NDNO has UMS Connectees, the Secondary NDNO shall apply a LLFC Id that reflects the voltage of the Points of Connection on the Secondary NDNO's Distribution System (as referred to in Paragraph 1.3) that provide the majority (i.e. more than 50%) of energised domestic connections on that Distribution System. Where no Points of Connection provide the majority of energised domestic connections, the Secondary NDNO and Primary NDNO shall negotiate in good faith to determine the LLFC Id that should most reasonably apply.
- 6.5 The LLFC Id agreed pursuant to Paragraph 6.4 will be applied to the entire portfolio of UMS Connectees to the Secondary NDNOs Distribution System that are registered under the same Standard Settlement Configuration.

- 6.6 The Primary NDNO shall have the right to review the data provided to it by the Secondary DNO pursuant to Paragraph 2.1 for the purpose of verifying the accuracy of the LLFC Id applied by the Secondary NDNO to its UMS Connectees.

7. NOTICES

- 7.1 The Secondary NDNO shall provide all reports and other information that it is required to provide to the Primary NDNO in accordance with this Schedule by email to an address specified to the Secondary NDNO by the Primary NDNO, as varied from time to time.