

## **DCP328 – Legal Drafting**

### **Use of System charging for private networks with competition in supply**

#### **Solution B**

#### **Charging the boundary supplier for Difference Metering installations and embedded suppliers for fully settled installations**

##### **Add new definitions in Clause 1**

Difference Metering	means an arrangement defined in the BSC (BSCP514) for the purposes of Settlement, whereby the flows of electricity measured by metering equipment embedded within a Licence Exempt System are deducted from the flows of electricity measured by the metering equipment at the Entry Point or Exit Point by which electricity flows from or to that Licence Exempt System.
Licence Exempt System	means an electricity distribution system that is not owned or operated by a DNO/IDNO Party.
Non-Settlement MPAN	means a 13-digit reference number for a Metering Point at an Entry Point or Exit Point, in the same format as an MPAN, which reference number is only to be used for the purposes described in this Agreement.
Meter Timeswitch Code	has the meaning given to that term in Data Transfer Catalogue (J0220).

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**Add a new Clause 29.5A**

29.5A The following provisions shall apply in the case of an Entry Point or Exit Point on the Company's Distribution System that is subject to Difference Metering:

29.5A.1 the User shall ensure that the MPAN for the Metering Point at that Entry Point or Exit Point has Meter Timeswitch Code 996 applied to it by MPAS;

29.5A.2 the Supplier Party that is registered under the MRA in respect of an MPAN for metering equipment embedded within that Licence Exempt System shall ensure that such MPAN has Meter Timeswitch Code 997 applied to it by MPAS;

29.5A.3 the Company shall ensure that MPAS identifies the relevant Licence Exempt System for the data item 'Metering Point Address Line 1' (as described in the Data Transfer Catalogue) for each of the MPANs referred to in Clauses 29.5A.1 and 29.5A.2;

29.5A.4 the Company shall procure that the User is provided with a Non-Settlement MPAN for the Metering Point at that Entry Point or Exit Point;

29.5A.5 in addition to the Metering Data to be provided in respect of that Entry Point or Exit Point under Clause 29.4, the User shall (without charge) provide (or ensure that its BSC Party Agent provides) the Company with the metering data the User would have been obliged to procure the provision of in respect of that Entry Point or Exit Point under the BSC if Difference Metering did not apply, using the Data Transfer Catalogue D0036 or D0275 (as specified by the Company) and quoting the Non-Settlement MPAN (instead of the actual MPAN);

29.5A.6 the User shall ensure that the data referred to in Clause 29.5A.5 is provided to the Company in the same timescales as would have applied under the BSC if Difference Metering did not apply; and

29.5A.7 the Supplier Party referred to in Clause 29.5A.2 agrees that the User may receive and manipulate the Metering Data relating to consumption by the Supplier Party's Customers connected to the Licence Exempt System in

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order to comply with the User's obligations under Clause 29.5A.5 and for the purpose of matters provided for or envisaged by its Supply Licence.

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**Add a new Clause 29.5B**

29.5B Notwithstanding Clause 15.3, it is agreed that Clause 29.5A.2 creates binding obligations between the Company and the Supplier Party referred to in that Clause, and that Clause 29.5A.7 creates binding obligations between the User and the Supplier Party referred to in that Clause.

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## **SCHEDULE 16 – COMMON DISTRIBUTION CHARGING METHODOLOGY**

### **Introduction**

**This Schedule 16, version [TBC]<sup>1</sup>, is to be used for the calculation of Use of System Charges which will become effective from, 01 April 2022 and remain effective until superseded by a revised version.**

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 [and properties connected to Licence Exempt Systems at Low Voltage \(LV\), Low Voltage substation \(LVS\) and High Voltage \(HV\).](#)
2. This 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 the following CDCM model versions:
  - (a) for charges effective from 1 April 2020:
    - (i) where the Authority has given no direction under Clause 19.1B, CDCM model version 3 as issued by the Panel in accordance with Clause 14.5.3; or
    - (ii) where the Authority has given direction under Clause 19.1B that periods of notice described in Clause 19.1A need not apply, CDCM model version 3(332) as issued by the Panel in accordance with Clause 14.5.3;
  - (b) for charges effective from 1 April 2021:

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<sup>1</sup> **To be completed on implementation**

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- (i) where the Authority has given no direction under Clause 19.1B, CDCM model version 6 as issued by the Panel in accordance with Clause 14.5.3; or
    - (ii) where the Authority has given direction under Clause 19.1B that periods of notice described in Clause 19.1A need not apply, CDCM model version [TBC]<sup>2</sup> as issued by the Panel in accordance with Clause 14.5.3; or
  - (c) for charges effective from 1 April 2022 or later:
    - (i) where the Authority has given no direction under Clause 19.1B, CDCM model version 7 as issued by the Panel in accordance with Clause 14.5.3; or
    - (ii) where the Authority has given direction under Clause 19.1B that periods of notice described in Clause 19.1A need not apply, CDCM model version [TBC]<sup>3</sup> as issued by the Panel in accordance with Clause 14.5.3.
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

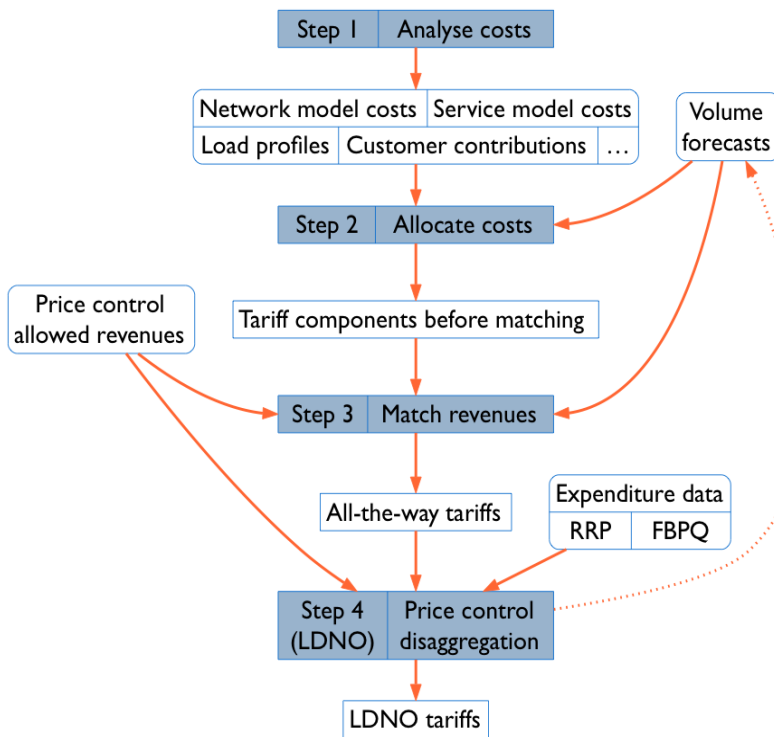
6. Figure 1 gives a general overview of how the four main steps in the methodology relate to each other.

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<sup>2</sup> To be completed on implementation of this DCP 379.

<sup>3</sup> To be completed on implementation of this DCP 379.

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 tariffs before revenue matching and tariffs in respect of Fully Settled and Shared Metering customers connected to Licence Exempt Systems, and do not apply to LDNO tariffs.
68. For demand tariffs before revenue matching, tariffs for demand customers in respect of Fully Settled and Shared Metering customers connected to Licence Exempt Systems and portfolio tariffs before revenue matching related to demand users, the contributions of each network level to the unit rate are calculated as follows:

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

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

### Derivation of tariffs before revenue matching and tariffs for Fully Settled and Shared Metering customers connected to Licence Exempt Systems

88A. Tariffs before revenue matching are determined by summing across all voltages:

- the contribution to each unit rate at each voltage calculated in accordance with paragraph 77 and 86 as applicable;
- the contribution to fixed charges at each voltage calculated in accordance with paragraph 85:
  - the contribution to capacity charges at each voltage calculated in accordance with paragraph 81; and
- the contribution to reactive power charges at each voltage calculated in accordance with paragraph 87.

88B. Tariffs for customers connected to Licence Exempt Systems are determined in accordance with paragraph 88A, save that lower voltage elements are excluded as follows:

- where the Licence Exempt System is connected to the LV network, the costs associated with the LV customer level are excluded;
- where the Licence Exempt System is connected at LV substation, the costs associated with the LV customer and LV network levels are excluded; and
- where the Licence Exempt System is connected at HV Network, the costs associated with the LV customer, LV network and LV substation levels are excluded.

88C. Capacity charge elements (p/kVA/day) for half-hourly site-specific settled customers connected to Licence Exempt Systems are allocated to the fixed charge (in p/day) by

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multiplying the capacity charge by the average kVA per customer for an equivalent customer, determined from the DNO Party's volume forecast for the equivalent half-hourly metered tariff at that voltage.

88D Reactive power charge elements (p/kVArh) for half-hourly site-specific settled customers connected to Licence Exempt Systems are allocated to the fixed charge (in p/day) by multiplying the reactive power charge by the average kVArh per customer for an equivalent customer, determined from the DNO Party's volume forecast for the equivalent half-hourly metered tariff at that voltage, and dividing by the number of days in the charging year.

### STEP 3: MATCH REVENUES

89. The DNO Party uses its volume forecasts to estimate the revenues that would be raised by applying the tariff before revenue matching 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.
- 90A. The DNO Party calculates an adjusted forecast of allowed revenues, which excludes any Eligible Bad Debt and Supplier of Last Resort pass-through costs. Such pass-through costs are taken into account in Step 5 after LDNO discounts have been applied in Step 4.
91. If the adjusted forecast of allowed revenue exceeds the estimate of relevant revenues, then the difference is a residual shortfall. If the estimate of relevant revenues exceeds the adjusted forecast of allowed revenue, then the difference is a residual surplus.
92. Revenue matching is achieved by:
  - (a) apportioning the total value of the residual surplus or residual shortfall to be returned or recovered respectively, via a fixed charge to (i) the domestic LV-connected charging band and (ii) the specific charging bands set out in paragraph 2.4 of Schedule 32 on the basis of (A) the aggregated consumption of all Final



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Demand Sites in that band (including the consumption of any Related MPANs and scaled consumption of any Fully Settled or Shared Metering MPANs associated with Licence Exempt Systems where applicable), relative to (B) the combined total net consumption for all Final Demand Sites (including the consumption of any Related MPANs and scaled consumption of any Fully Settled or Shared Metering MPANs associated with Licence Exempt Systems where applicable) plus the total consumption for unmetered customers. The consumption for Fully Settled or Shared Metering customers connected to Licence Exempt Systems will be scaled by multiplying by the ratio of the revenue before matching for a customer connected to a Licence Exempt System calculated using the tariffs in paragraph 88B-88D, to the revenue before matching for a customer connected to a Licence Exempt System calculated using the tariffs in paragraph 88A.

*[Consumption for Licence Exempt Systems customers for revenue scaling]*

$$= [Consumption for Licence Exempt Systems customers] \\ \times \frac{[Revenue before matching from License Exempt System tariffs]}{[Revenue before matching from all - the - way tariffs]}$$

~~(a)~~(b) The allocated proportion of the residual value to each charging band will then be divided equally among all Final Demand Sites within that charging band, resulting in the same level of residual fixed charge.

~~(b)~~(c) Residual charges for each Final Demand Site will be applied as a fixed charge adder (p/Final Demand Site/day) calculated as follows: the revenue surplus or shortfall (in pence) to be recovered for the band that the Final Demand Site is in; divided by the total number of Final Demand Sites in that band; divided by days in the charging year.

92A. In order to calculate all-the-way tariffs, residual charges are added to the tariffs before revenue matching as shown in the table below.

Tariff before revenue matching	All-the-way Tariff	Residual Charge
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<b>Domestic Aggregated</b>	Domestic Aggregated with Residual	Domestic LV-connected Charging Band
<b>Domestic Aggregated (Related MPAN)</b>	Domestic Aggregated (Related MPAN)	None
<b>Non-Domestic Aggregated</b>	Non-Domestic Aggregated No Residual	None
	Non-Domestic Aggregated Band 1	Non-domestic LV connected without a MIC as a basis for its current charge (Charging Band 1)
	Non-Domestic Aggregated Band 2	Non-domestic LV connected without a MIC as a basis for its current charge (Charging Band 2)
	Non-Domestic Aggregated Band 3	Non-domestic LV connected without a MIC as a basis for its current charge (Charging Band 3)
	Non-Domestic Aggregated Band 4	Non-domestic LV connected without a MIC as a basis for its current charge (Charging Band 4)
<b>Non-Domestic Aggregated (Related MPAN)</b>	Non-Domestic Aggregated (Related MPAN)	None
<b>LV Site Specific</b>	LV Site Specific No Residual	None
	LV Site Specific Band 1	Non-domestic LV connected with a MIC as a basis for its current charge (Charging Band 1)
	LV Site Specific Band 2	Non-domestic LV connected with a MIC as a basis for its current charge (Charging Band 2)
	LV Site Specific Band 3	Non-domestic LV connected with a MIC as a basis for its current charge (Charging Band 3)
	LV Site Specific Band 4	Non-domestic LV connected with a MIC as a basis for its current charge (Charging Band 4)
<b>LV Sub Site Specific</b>	LV Sub Site Specific No Residual	None
	LV Sub Site Specific Band 1	Non-domestic LV connected with a MIC as a basis for its current charge (Charging Band 1)

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	LV Sub Site Specific Band 2	Non-domestic LV connected with a MIC as a basis for its current charge (Charging Band 2)
	LV Sub Site Specific Band 3	Non-domestic LV connected with a MIC as a basis for its current charge (Charging Band 3)
	LV Sub Site Specific Band 4	Non-domestic LV connected with a MIC as a basis for its current charge (Charging Band 4)
<b>HV Site Specific</b>	HV Site Specific No Residual	None
	HV Site Specific Band 1	Non-domestic HV connected with a MIC as a basis for its current charge (Charging Band 1)
	HV Site Specific Band 2	Non-domestic HV connected with a MIC as a basis for its current charge (Charging Band 2)
	HV Site Specific Band 3	Non-domestic HV connected with a MIC as a basis for its current charge (Charging Band 3)
	HV Site Specific Band 4	Non-domestic HV connected with a MIC as a basis for its current charge (Charging Band 4)
<b>Unmetered Supplies</b>	Unmetered Supplies	Unmetered Supplies

Note 1: In all cases, the charges are added together by adding each individual component of the tariffs individually, whether it is a fixed or unit residual charge component.

Note 2: Where a charge is listed as ‘None’, or a value has not been set for a charge, the residual charge to be added in the case of that tariff component is zero.

92B. For any DNO Party, if the count of Final Demand Sites in any given metered non-domestic charging band is less than two in the charging year for which tariffs are being determined, the residual fixed charge for that band will be calculated as set out in accordance with Paragraph 92, but the total import consumption and total count of Final Demand Sites in that band will be combined with the equivalent information for the band above that band and at the same voltage level. If the band in question is the highest band, then it will be combined with the equivalent information for the band below that band and at the same voltage level. The residual fixed charge should therefore be the same for all the Final Demand Sites in the bands combined under this Paragraph 92B. There must be no single or combined band with less than two Final Demand Sites within that band.

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A Final Demand Site connected during the year will be counted as a fraction based on the proportion of the year for which the site was connected.

- 92C. There are eight possible combinations for grouping of non-domestic charging bands under Paragraph 92B. The grouping of bands under Paragraph 92B shall be applied in accordance with the preference order given in the table below.

Preference order for band grouping combinations	Band 1	Band 2	Band 3	Band 4
First	1	2	3	4
Second	1 + 2		3	4
Third	1	2 + 3		4
Fourth	1	2	3 + 4	
Fifth	1 + 2		3 + 4	
Sixth	1 + 2 + 3			4
Seventh	1	2 + 3 + 4		
Eighth	1 + 2 + 3 + 4			

- 92D. Revenue matching for unmetered customers is achieved by apportioning the total value of the residual surplus or residual shortfall to be returned or recovered respectively, on the basis of total consumption for unmetered customers, relative to the combined total net consumption for all Final Demand Sites (including the consumption of any Related MPANs where applicable) plus the total consumption for unmetered customers. The residual value for unmetered customers is then recovered by applying a unit charge adder (p/kWh) calculated as follows: the residual surplus or shortfall (in pence) to be recovered; divided by the total volume of all unmetered customers (in kWh).
93. The unit charges adder is positive if there is a shortfall and negative if there is a surplus.
94. Where a residual surplus exists, and it is not possible to apply the charge from any charging band, as it reduces the fixed components of the relevant all-the-way tariff to less than zero (post allocation of pass-through costs in step 5), then the total fixed charge element of that all-the-way tariff will be capped at zero. The remaining residual surplus

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will be returned to all Final Demand Sites within that charging band by applying a fixed charge adder (p/kWh) across all unit rates. 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.

94A. Where Paragraph 94 applies and the basis for that all-the-way tariff is derived from more than one tariff before revenue matching and shares the same residual charge as described in Paragraph 92A, then the amount of residual charge to be applied will be set equal to the amount that applies to whichever tariff before revenue matching would first require a cap to be applied in accordance with Paragraph 94 (i.e. the lesser of the two). Where applicable, this applies to the fixed charge element of the relevant all-the-way tariff and the fixed charge adder on unit rates of the relevant all-the-way tariff.

95. Tariffs for generation do not have any revenue matching element.

### PART 2 — TARIFF STRUCTURES AND APPLICATION

~~125-126.~~ The CDCM provides for a common tariff structure for all 14 DNO Parties and their Distribution Service Areas.

~~126-127.~~ This part details the common tariff structure for tariffs before revenue matching and associated tariff elements for demand and generation, for unmetered supplies, [Fully Settled or Shared Metering customers connected to Licence Exempt Systems](#) and for charges to LDNOs.

127A. Tariffs before revenue matching are used to calculate the all-the-way tariffs as described in Paragraph 92A.

#### Tariff structures for demand customers

##### Aggregated Metered Demand

~~127-128.~~ For MPANs that are to be charged on an aggregated basis (as further described in Paragraph 132C), Use of System Charges will be via the Supercustomer approach which

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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)

~~128.~~129. For NHH settled MPANs, the combination of LLFC/PC/SSC/TPR determines the associated profile and half-hourly data values. For HH metered MPANs, the half-hourly data is used. The PC for HH aggregated metered demand MPANs will always be zero.

~~129.~~130. DNO specific network time bands will be applied to the appropriate SSC/TPR combinations stated in Paragraph 129.

~~130.~~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 or reactive charges for aggregated metered demand MPANs.

~~131.~~132. Structure of aggregated metered demand charges will be as follows:

- (a) Fixed charge will be p/MPAN/day; and
- (b) Unit charges will be p/kWh.

132A. Domestic Aggregated (Related MPAN) and 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 charged on an aggregated basis. All aggregate charged customers will be assigned to the appropriate tariff before revenue

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matching based on the Measurement Class, type of metering equipment installed and the voltage of connection as specified in the table below:

Tariff before revenue matching	Voltage of Connection	Settlement Type (HH or NHH)	Metering	Measurement Class
Domestic Aggregated	LV	NHH	Whole Current or Current Transformer	A
Domestic Aggregated	LV	HH	Whole Current or Current Transformer	F
Domestic Aggregated (Related MPAN)	LV	NHH	Whole Current or Current Transformer	A
Domestic Aggregated (Related MPAN)	LV	HH	Whole Current or Current Transformer	F
Non-Domestic Aggregated	LV	NHH	Whole Current or Current Transformer	A
Non-Domestic Aggregated	LV	HH	Whole Current	G
Non-Domestic Aggregated (Related MPAN)	LV	NHH	Whole Current or Current Transformer	A
Non-Domestic Aggregated (Related MPAN)	LV	HH	Whole Current	G

132D. Where the Supplier transfers customers from NHH Settlement to HH Settlement the following Measurement Classes will apply:

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- 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).

### Site-Specific Metered Demand

~~132~~133. For HH metered demand not subject to aggregated charging, Use of System Charges will be settled on a site-specific basis using data from the D0275 or D0036 industry data flows based on half hourly metered data provided for the MPAN.

~~133~~134. Charges will consist of a fixed, unit, capacity and reactive power charge.

~~134~~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.

135A Those users in Measurement Class C or E will be HH settled on a site-specific basis, and assigned to the appropriate tariff before revenue matching based on the Measurement Class, type of metering equipment installed and the voltage of connection as specified in the table below:

Tariff before revenue matching	Voltage of Connection	Metering	Measurement Class
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LV Site Specific	LV	Current Transformer	C / E
LV Sub Site Specific	LV Sub	Current Transformer	C / E
HV Site Specific	HV	Current Transformer	C / E

~~135-136.~~ Structure of the HH demand charges:

- (a) Fixed charge p/MPAN/day;
- (b) Unit rate charge p/kWh;
- (c) Capacity charge p/kVA/day [\(with the exception of tariffs for customers connected to Licence Exempt Systems\);](#)
- (d) Exceeded capacity charge p/kVA/day [\(with the exception of tariffs for customers connected to Licence Exempt Systems\);](#); and
- (e) Reactive power charge p/kVarh [\(with the exception of tariffs for customers connected to Licence Exempt Systems\).](#)

~~136-137.~~ 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.

~~137-138.~~ Unit charges will be allocated by settlements HH data and DNO Party specific network time bands.

~~138-139.~~ There will be no charges applied to correctly de-energised HH MPANs/sites as determined by the de-energisation status in MPAS Registration System.

~~139-140.~~ 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.

### [Tariff structures for Licence Exempt Systems using Difference Metering](#)

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146A The tariffs charged in respect of Licence Exempt Systems using Difference Metering shall be charged to the Supplier at the DNO Party's boundary based on the units imported or exported at the boundary between the network and the Licence Exempt System. No charges will be applied by the DNO Party to the boundary settlements data received by the DNO Party, or to the settlements data received in respect of any settlement meters within the Licence Exempt System.

146B The tariffs charged in respect of Licensed Exempt Systems using Fully Settled or Shared Metering shall be charged to each Supplier within the Licence Exempt System based on the settlements data received in respect of the settlements meter at each Metering Point within the Licence Exempt System, and is dependent on the voltage of the Point of Connection of the Licence Exempt System to the Distribution System, being either LV network (see Table 146B.1), LV substation (see Table 146B.2) or HV (see Table 146B.3).

**Table 146B.1: Licence Exempt System Tariffs - LV connection\***

<u>Tariff Name</u>	<u>Unit rate 1</u> <u>p/kWh</u>	<u>Unit rate 2</u> <u>p/kWh</u>	<u>Unit rate 3</u> <u>p/kWh</u>	<u>Fixed charge</u> <u>p/MPAN</u> <u>/day</u>	<u>Capacity charge</u> <u>p/kVA/</u> <u>day</u>	<u>Exceeded Capacity</u> <u>charge</u> <u>p/kVA/day</u>	<u>Reactive power</u> <u>charge</u> <u>p/kVArh</u>
<u>LV Domestic Aggregated</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>Domestic Aggregated (Related MPAN)</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>				
<u>Non-Domestic Aggregated</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>Non-Domestic Aggregated (Related</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>				

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<a href="#">MPAN)</a>							
<a href="#">LV Site Specific</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>	<a href="#">✓</a>			
<a href="#">Unmetered Supplies**</a>	<a href="#">Black</a>	<a href="#">Yellow</a>	<a href="#">Green</a>				
<a href="#">LV Generation Aggregated</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>				
<a href="#">LV Generation Site Specific</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>				

\* Where the boundary between the Licence Exempt System and the Distribution System is at LV but not at an HV/LV substation.

**Table 146B.2 Licence Exempt System Tariffs - LV Substation connection\***

<a href="#">Tariff Name</a>	<a href="#">Unit rate 1 p/kWh</a>	<a href="#">Unit rate 2 p/kWh</a>	<a href="#">Unit rate 3 p/kWh</a>	<a href="#">Fixed charge p/MPAN /day</a>	<a href="#">Capacity charge p/kVA/day</a>	<a href="#">Exceeded Capacity charge p/kVA/day</a>	<a href="#">Reactive power charge p/kVArh</a>
<a href="#">LV Domestic Aggregated</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>	<a href="#">✓</a>			
<a href="#">Domestic Aggregated (Related MPAN)</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>				
<a href="#">Non-Domestic Aggregated</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>	<a href="#">✓</a>			
<a href="#">Non-Domestic Aggregated (Related</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>				

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<a href="#">MPAN)</a>							
<a href="#">LV Site Specific</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>	<a href="#">✓</a>			
<a href="#">Unmetered Supplies**</a>	<a href="#">Black</a>	<a href="#">Yellow</a>	<a href="#">Green</a>				
<a href="#">LV Generation Aggregated</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>				
<a href="#">LV Generation Site Specific</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>				

\* Where the boundary between the Licence Exempt System and the Distribution System is at an HV/LV substation.

**Table 146B.3: Licence Exempt System Tariffs - HV connection\***

<a href="#">Tariff Name</a>	<a href="#">Unit rate 1 p/kWh</a>	<a href="#">Unit rate 2 p/kWh</a>	<a href="#">Unit rate 3 p/kWh</a>	<a href="#">Fixed charge p/MPA N/day</a>	<a href="#">Capacity charge p/kVA/day</a>	<a href="#">Exceeded Capacity charge p/kVA/day</a>	<a href="#">Reactive power charge p/kVArh</a>
<a href="#">LV Domestic Aggregated</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>	<a href="#">✓</a>			
<a href="#">LV Domestic Aggregated (Related MPAN)</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>				
<a href="#">LV Non-Domestic Aggregated</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>	<a href="#">✓</a>			
<a href="#">LV Non-Domestic Aggregated (Related</a>	<a href="#">Red</a>	<a href="#">Amber</a>	<a href="#">Green</a>				

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<u>MPAN)</u>							
<u>LV Site Specific</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>Unmetered Supplies</u>	<u>Black</u>	<u>Yellow</u>	<u>Green</u>				
<u>LV Sub Site Specific</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>HV Site Specific</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>LV Generation Aggregated</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>LV Sub Generation Aggregated</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>LV Generation Site Specific</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>LV Sub Generation Site Specific</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			
<u>HV Generation Site Specific</u>	<u>Red</u>	<u>Amber</u>	<u>Green</u>	<u>✓</u>			

\* Where the boundary between the Licence Exempt System and the Distribution System is at HV.

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

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<i>Term</i>	<i>Meaning</i>
<b>CT</b>	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).
<b>distribution time bands</b>	the time bands described in paragraphs 40, 41 and 135.
<b>diversity allowance</b>	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.
<b>DRM</b>	distribution reinforcement model. This may refer either to a 500 MW network model or to a cost allocation method based on such a model.
<b>EDCM</b>	means the EHV distribution charging methodology as described in Schedule 17 or Schedule 18 (as applicable to each DNO Party).
<b>EHV</b>	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.
<b>Eligible Bad Debt</b>	means any bad debts with respect to Use of System Charges that the DNO Party can recover in accordance with the DNO Party's Distribution Licence. For the avoidance of doubt, this definition includes the DNO Party's bad debt and bad debt which the DNO Party is recovering on behalf of LDNOs.
<b>embedded network</b>	an electricity distribution system operated by an LDNO and embedded within the DNO Party's network.
<b>end user</b>	is a user, but excluding LDNOs.

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<i>Term</i>	<i>Meaning</i>
<b>excluded revenue</b>	revenue from “Excluded Services” (as defined in the price control conditions).
<b>Forecast Business Plan Questionnaire or FBPQ</b>	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.
<b><u>Fully Settled</u></b>	<u>Where every customer on a Licence Exempt System is to have or has a Supplier, its own MPAN and metering equipment and there is no metering equipment at the boundary between the Distribution System and the Licence Exempt System. The BSC refers to these circumstances as an ‘Associated Distribution System’.</u>
<b>GSP</b>	grid supply point: where the network is connected to a transmission network.
<b>HV</b>	nominal voltages of at least 1kV and less than 22kV.
<b>kV</b>	Kilovolt (1,000 Volts): a unit of voltage.
<b>kVAr</b>	Kilo Volt Ampere reactive: a unit of reactive power flow.
<b>kVArh</b>	Kilo Volt Ampere reactive hour: a unit of total reactive power flow over a period of time.
<b>kW</b>	Kilowatt (1,000 Watts): a unit of power flow.
<b>kWh</b>	Kilowatt hour: a unit of energy.
<b>LDNO</b>	a licensed distribution network operator, meaning an IDNO Party or DNO Party operating an electricity distribution system outside of its Distribution Services Area.
<b>load factor</b>	for a user category, average load divided by maximum aggregate load.



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<i>Term</i>	<i>Meaning</i>
<b>LV</b>	nominal voltages of less than 1kV.
<b>LV Mains</b>	LV distributing mains where: <ul style="list-style-type: none"> <li>(a) the upper boundary is at the secondary side (LV) of a distributor transformer; and</li> <li>(b) the lower boundary is the point of connection associated with the LV service.</li> </ul>
<b>LV Services</b>	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.
<b>Measurement Class</b>	has the meaning given to that expression in the BSC.
<b>modern equivalent asset and modern equivalent asset value</b>	is a reference to the cost of replacing an asset at the time of the calculation.
<b>MPAN</b>	the unique number identifying a particular Metering Point or Metering System.
<b>MVA</b>	Mega Volt Ampere (1,000 kVA): a unit of network capacity.
<b>MW</b>	Megawatt (1,000 kW): a unit of power flow.
<b>MWh</b>	Megawatt hour (1,000 kWh): a unit of energy.
<b>network</b>	the DNO Party's Distribution System within the DNO Party's Distribution Services Area.

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<i>Term</i>	<i>Meaning</i>
<b>network level</b>	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.
<b>network model</b>	a costed design for a 500 MW extension to the DNO Party's network, as described in paragraph 16.
<b>peaking probability</b>	is the peaking probability described in paragraph 49.
<b>power factor</b>	the ratio of energy transported (kW) to network capacity used (kVA).
<b>portfolio tariff</b>	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.
<b>price control conditions</b>	the charge restriction conditions contained as special conditions within the DNO Party's Distribution Licence.
<b>profile class</b>	has the meaning given to that expression in the Balancing and Settlement Code.
<b>regulatory asset value</b>	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.
<b>Related MPAN</b>	has the meaning given to the expression "Related Metering Points" in the Master Registration Agreement.
<b>RRP</b>	regulatory reporting pack, a dataset produced each year by each DNO Party for the Authority.
<b>service model</b>	a costed design for the typical dedicated assets of a category of network users.

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<i>Term</i>	<i>Meaning</i>
<b><u>Shared Metering</u></b>	<u>Where meter readings recorded by Settlement metering equipment at the boundary between the Distribution System and the Licence Exempt System are apportioned between Suppliers based on readings from non-Settlement meters on a Licence Exempt System.</u>
<b>standing charge</b>	any fixed or capacity charge that does not depend on actual use of the network.
<b>Supercustomer</b>	in relation to billing, is billing by Settlement Class.
<b>Supplier of Last Resort</b>	a supply licensee to which a Last Resort Supply Direction applies, where Last Resort Supply Direction has the meaning given to that expression in the Supply Licence.
<b>system simultaneous maximum load</b>	the maximum load for the GSP Group as a whole.
<b>time pattern regime or TPR</b>	means a code that is used to identify the switching times of a meter register.
<b>unit</b>	where the context permits, the word unit refers to kWh.
<b>unit rate</b>	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.
<b>user</b>	refers to customers (whether demand customers or generators) and (where relevant) LDNOs.

## SCHEDULE 17 – EHV CHARGING METHODOLOGY (FCP MODEL)

### 1. INTRODUCTION

This Schedule 17, version [TBC]<sup>4</sup>, is to be used for the calculation of Use of System Charges which will become effective from, 01 April 2022 and remain effective until superseded by a revised version.

#### 28. DNO PARTY TO LICENCE EXEMPT SYSTEMS UNLICENSED NETWORKS

28.1 ~~Not used. Unlicensed networks have a choice. If they are part of the Total System under the Balancing and Settlement Code with the network open to supply competition, and if they are party to the DCUSA, and have accepted the obligations to provide the necessary data, they can, if they wish, be treated as LDNOs.~~

28.2 ~~Otherwise, the DNO Party applies the EDCM to calculate an import and export charge based on capacity and power flow data metered at the boundary and the agreed capacity at the boundary. Prior to paragraph 28.3 and 28.4, for Final Demand Sites the residual charge will be calculated in accordance with Paragraph 18.18 and for Non-Final Demand Sites will be calculated in accordance to Paragraph 18.21A. Any sole use assets specific to the unlicensed network are charged as a p/day sole use asset charge calculated as applicable to a normal EDCM Connectee.~~

28.3 ~~The tariffs charged in respect of Licence Exempt Systems using Difference Metering shall be charged to the Supplier at the DNO Party's boundary based on the units imported or exported at the boundary between the network and the Licence Exempt System. No charges will be applied by the DNO Party to the boundary settlements data received by the DNO Party, or to the settlements data received in respect of the settlements meter within the Licence Exempt System.~~

<sup>4</sup> To be completed on implementation

<sup>5</sup> To be completed on implementation of this DCP 379.

<sup>6</sup> To be completed on implementation of this DCP 379.

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28.4 The tariffs charged in respect of Licence Exempt Systems using Fully Settled and Shared Metering shall be charged to the Supplier of each customer within the Licence Exempt System. To derive the charges there will be a two-step approach as follows:

- The first step will be to use the settlement metering data of each embedded customer within the relevant Licence Exempt System to determine the power flow data at the boundary for both import and export charges. No losses are assumed between the boundary and each embedded customers' premises on the relevant Licence Exempt System.
- The second step will be the allocation of the fixed charge and capacity charge derived under paragraph 28.2 to each embedded customer for both import and export charges for the relevant Licence Exempt System. These will be calculated as follows:

[embedded customer fixed charge in p/day] = [fixed charge at the boundary] x [installed capacity of the embedded customer's Import MPAN or Export MPAN] / [total installed capacity of all embedded customers' Import MPANs and Export MPANs];

[embedded customer Import capacity charge in p/kVA/Day] = [Import capacity charge at the boundary] x ([the Import agreed capacity at the boundary] / [total installed capacity of all embedded customers]); and

[embedded customer Export capacity charge in p/kVA/Day] = [Export capacity charge at the boundary] x ([the Export agreed capacity at the boundary] / [total installed Export capacity of all embedded customers]).

28.5 CDCM Tariffs for customers connected to Licence Exempt Systems are determined in accordance with paragraph 88A of schedule 16, save that lower voltage elements are excluded as follows:

- where the Licence Exempt System is connected at an EHV/HV substation, the costs associated with the LV customer, LV network, LV substation and HV network levels are excluded;

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- where the Licence Exempt System is connected to the EHV network, the costs associated with the LV customer, LV network, LV substation, HV network and EHV/HV levels are excluded;
- where the Licence Exempt System is connected at a 132kV/EHV substation, the costs associated with the LV customer, LV network, LV substation, HV network, EHV/HV and EHV network levels are excluded;
- where the Licence Exempt System is connected to the 132kV network, the costs associated with the LV customer, LV network, LV substation, HV network, EHV/HV, EHV network and 132kV/EHV levels are excluded;
- where the Licence Exempt System is connected direct to a GSP, the costs associated with the LV customer, LV network, LV substation, HV network, EHV/HV, EHV network, 132kV/EHV and 132kV network levels are excluded.

28.5A Capacity charge elements (p/kVA/day) for half-hourly site-specific settled customers connected to Licence Exempt Systems are allocated to the fixed charge (in p/day) by multiplying the capacity charge by the average kVA per customer for an equivalent customer, determined from the DNO Party's volume forecast for the equivalent half-hourly metered tariff at that voltage as determined under schedule 16.

28.5B Reactive power charge elements (p/kVArh) for half-hourly site-specific settled customers connected to Licence Exempt Systems are allocated to the fixed charge (in p/day) by multiplying the reactive power charge by the average kVArh per customer for an equivalent customer, determined from the DNO Party's volume forecast for the equivalent half-hourly metered tariff at that voltage as determined under schedule 16, and dividing by the number of days in the charging year.

### 3. DEFINITIONS

In this Schedule 17, unless the context otherwise requires, the expressions below shall have the meanings set out below.

Term	Definition
<b>Active Power</b>	The product of the voltage, current and cosine of the phase angle between them, measured in watts.
<b>Allowed Revenue</b>	The amount of revenue that the DNO Party can earn on its regulated business in accordance the special conditions within the DNO Party's Distribution Licence.
<b>Authorised Network Model</b>	The model that represents the DNO Party's entire EHV network (from the GSP level down to and including the HV busbar at the EHV/HV transformation level), as described in Paragraph 2.3 and section 4 of this Annex 1.
<b>Branch</b>	<p>A representation of an asset, collection of assets or part of an asset of the DNO Party's EHV network through which Active Power flows as a consequence of supply to or export from a Connectee or busbar on the DNO Party's HV or EHV networks. A Branch must only be connected between two Nodes. A Branch should conform to the following:</p> <ul style="list-style-type: none"> <li>• there can be more than one Branch between the same two Nodes;</li> <li>• a three winding transformer may be represented by three Branches (one Branch for each of the windings) configured in a star formation;</li> <li>• the Active Power flowing out of one end of a Branch should equal the Active Power flowing into the other end of the Branch less any losses within the Branch;</li> <li>• shunt reactors and capacitors are not Branches;</li> </ul>

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	<ul style="list-style-type: none"> <li>• earthing transformers, resistors and reactors are not Branches; and</li> <li>• a Branch may constitute a collection of assets e.g. a circuit constituting overhead lines and cables. When combining assets into a Branch, there is a need to consider the reinforcement solution for the Branch in the next stages for the Use of System Charging calculation.</li> </ul>
<b>Branch Rating</b>	The Branch Ratings selected for the Authorised Network Model should be derived by appropriate consideration of the time of day / season / general nature of load profile (i.e. continuous, cyclic, etc.) represented within the model.
<b>Bulk Supply Point (BSP)</b>	A supply point on the DNO Party's Distribution System representing an EHV/EHV transformation level e.g. 132/33kV.
<b>Charging Year</b>	The financial year (12 month period ending on a 31st March) for which charges and credits are being calculated.
<b>Circuit</b>	The part of a Distribution System between two or more circuit breakers, switches and/or fuses inclusive. For the avoidance of doubt a circuit can contain a number of Branches and Nodes. A Circuit may include transformers, reactors, cables and overhead lines. Busbars are not considered as Circuits.
<b>Circuit Branch</b>	A categorisation used in the derivation of Branch reinforcement costs for Branches that represent an interconnection (or part of an interconnection) between substations and which operate at a single voltage level.
<b>Connection Node</b>	<p>A Node which is a point of connection to one of the following:</p> <ul style="list-style-type: none"> <li>• an Entry Point or the Sole Use Assets connecting the Entry Point; or</li> <li>• an Exit Point or the Sole Use Assets connecting the Exit Point; or</li> </ul>

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	<ul style="list-style-type: none"> <li>the DNO Party's HV network; or</li> <li>a Distribution System of another DNO Party or IDNO Party.</li> </ul>
<b>Contingency Analysis</b>	The analysis to determine the effect on power flows for the Authorised Network Model under N-1 and where necessary, N-2 contingencies.
<b>Diversity Allowance</b>	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.
<b>Diversity Factor</b>	A scaling factor calculated as the ratio of the maximum demand observed at a given location on the network and the aggregate of the individual maximum demands observed at multiple locations connected downstream (i.e. further from source) of the given location, taking account of losses. Such factors provide a means of recognising that the maximum demands observed at individual locations (e.g. substations at a given voltage level) on a section of network may not be coincident. Details of the calculation of Diversity Factors are set out in section 5.9 (Diversity Factors) of Annex 1.
<b>EDCM</b>	has the meaning given to that expression in Paragraph 1
<b>EDCM Connectee</b>	means a Connectee whose Connected Installation is a Designated EHV Property as defined in Standard Conditions 50A.11 and 13B.6 of the DNO Party's Distribution Licence.
<b>EDCM Customer</b>	means a Customer whose Customer Installation is a Designated EHV Property as defined in Standard Conditions 50A.11 and 13B.6 of the DNO Party's Distribution Licence.

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<b>EDCM Generation</b>	means a Generator Installation that is a Designated EHV Property as defined in Standard Conditions 50A.11 and 13B.6 of the DNO Party's Distribution Licence.
<b>EHV</b>	Extra High Voltage.
<b>Eligible Bad Debt</b>	means any bad debts with respect to Use of System Charges that the DNO Party can recover in accordance with the DNO Party's Distribution Licence. For the avoidance of doubt, this definition includes the DNO Party's bad debt and bad debt which the DNO Party is recovering on behalf of LDNOs.
<b>Embedded</b>	means connected to a LDNO's Distribution System.
<b>ER P2/6</b>	Energy Network Association's Engineering Recommendation P2/6 which is the planning standard for security of supply to be used by the DNO Parties.
<b>ETR 130</b>	Energy Network Association's Engineering Technical Report 130 which is the Application Guide for assessing the capacity of Distribution Systems to which Generation Installations are connected.
<b>Extra High Voltage (EHV)</b>	Refers to voltages operating on the Authorised Network Model at 22kV or higher.
<b>Forecast Business Plan Questionnaire or FB PQ</b>	means 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.
<b>FCP</b>	Has the meaning given to that expression in Paragraph 2.1
<b><u>Fully Settled</u></b>	<u>where every customer on a Licence Exempt System is to have or has a Supplier, its own MPAN and metering equipment and there is no metering equipment at the boundary between the Distribution</u>

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[System and the Licence Exempt System. The BSC refers to these circumstances as an 'Associated Distribution System'.](#)

<b>Grid Supply Point (GSP)</b>	A point of supply from the National Electricity Transmission System to the DNO Party's Distribution System.
<b>High Voltage (HV)</b>	Refers to voltages operating on the Authorised Network Model above 1000 volts but lower than 22kV.
<b>kV</b>	Kilovolt (1,000 Volts): a unit of voltage.
<b>kVA</b>	Kilo Volt Ampere: a unit of network capacity.
<b>kVAr</b>	Kilo Volt Ampere reactive: a unit of reactive power flow.  The network capacity used by a flow of A kW and B kVAr is $\text{SQRT}(A^2+B^2)$ kVA.
<b>kVArh</b>	kVA reactive hour: a unit of total reactive power flow over a period of time. Reactive power meters usually register kVArh.
<b>kW</b>	Kilowatt (1,000 Watts): a unit of power flow.
<b>kWh</b>	Kilowatt hour: a unit of energy. Meters usually register kWh.
<b>LDNO</b>	refers to a licensed distribution network operator, meaning an IDNO Party or a DNO Party operating an electricity distribution system outside of its Distribution Services Area.
<b>Long Term Development Statement (LTDS)</b>	The Long Term Development Statement as detailed by Licence Condition 25 of the Distribution Licences.
<b>LV</b>	Nominal voltages of less than 1kV.
<b>Maximum Demand Data</b>	The Network Demand Data that is applied to the demand (load) analysis for N-1 contingency testing. The construction of Maximum

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	Demand Data is described in section 5.35 (Maximum Demand Data for Demand (Load) Analysis) of Annex 1.
<b>Maintenance Demand Data</b>	The Network Demand Data that is applied to the demand (load) analysis for N-2 contingency testing (by supposition, this would consider N-1 contingencies). The construction of Maintenance Demand Data is described in section 5.41 (Maintenance Demand Data for Demand (Load) Analysis) of Annex 1.
<b>MVA</b>	Mega Volt Ampere (1,000 kVA): a unit of network capacity.
<b>MW</b>	Megawatt (1,000 kW): a unit of power flow.
<b>MWh</b>	Megawatt hour (1,000 kWh): a unit of energy. Energy trading is usually conducted in MWh.
<b>N-1 Contingency</b>	An N-1 Contingency considers an N-1 Event occurring on the Authorised Network Model and models the consequential network actions and where appropriate constraints on customer demands. This is used to ensure that the resultant flows in Branches that remain in service are within rated capacity.
<b>N-1 Event</b>	An N-1 Event is a First Circuit Outage (FCO) as explained in ER P2/6. It signifies a fault or arranged outage on the network which would result in a section of the network defined by the relevant protection scheme to sectionalise and isolate the faulty section, or isolates the section to be worked on for maintenance, resulting in zero power flow in the affected network. N-1 Events should consider an outage of a complete Circuit and only consider faults or arranged outages occurring with the network initially running under Normal Running Arrangements.
<b>N-2 Contingency</b>	An N-2 Contingency considers an N-2 Event occurring on the Authorised Network Model and models the consequential network actions and where appropriate constraints on customer demands.

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	This is used to ensure that the resultant flows in Branches that remain in service are within rated capacity.
<b>N-2 Event</b>	An N-2 Event is a Second Circuit Outage (SCO) as explained in ER P2/6. It signifies the occurrence of a fault on the network at the same time as a planned outage which would result in a section of the network defined by the relevant protection scheme to sectionalise and isolate the faulty section. As N-2 Events are considered to have occurred at the same time as a planned outage, they are confined to the maintenance period, as designated by the DNO Party. Maintenance Demand Data is used when considering N-2 Events.
<b>National Electricity Transmission System</b>	Has the meaning given to that expression in the CUSC
<b>Negative Load Injection</b>	A Negative Load Injection is a negative value of load calculated and applied to a source substation within the network model to represent the effects of diversity between associated downstream demands upon the actual demand observed at the source substation.
<b>Net Diversity Factor</b>	A scaling factor that represents the diversity between the maximum demands observed at substations at different levels of a network, which may be derived by multiplying Diversity Factors representing the diversity between interim levels.
<b>Network</b>	This is a reference to the DNO Party's Distribution System, or to a particular part of that Distribution System.
<b>Network Demand Data</b>	This is the load and generation which is used to populate the Authorised Network Model. Network Demand Data is constructed of Network Demand Data (Load) and Network Demand Data (Generation).

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<b>Network Demand Data (Generation)</b>	Generation export applied within the Authorised Network Model at Nodes representing the Entry Point for each EHV connected customer with an agreed Maximum Export Capacity factored according to ER P2/6, where appropriate.
<b>Network Demand Data (Load)</b>	The load applied within the Authorised Network Model at Nodes representing the Exit Point for each EHV customer and the lower voltage busbars at substations representing transformation points between Network Groups or EHV/HV substations.
<b>Network Group</b>	This is one of the parts of the Authorised Network Model described in Paragraph 2.7 and section 6 (Network Groups) of Annex 1.
<b>Network level</b>	The network is modelled as a stack of circuit and transformation levels between supplies at LV and the National Electricity Transmission System. A network level is any circuit or transformation level in that stack. An additional network level is used for transmission exit.
<b>Node</b>	<p>A representation of a point on the DNO Party's EHV network that is a point of connection between a Branch and one or more of the following:</p> <ul style="list-style-type: none"><li>• another Branch; or</li><li>• an Entry Point or the Sole Use Assets connecting the Entry Point; or</li><li>• an Exit Point or the Sole Use Assets connecting the Exit Point; or</li><li>• the DNO Party's HV network; or</li><li>• the Distribution System of another DNO Party or IDNO Party; or</li><li>• the National Electricity Transmission System.</li></ul>
<b>Non-Final Demand Site</b>	as defined in Schedule 32

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<b>Normal Running Arrangements</b>	The DNO Party's EHV network with no system outages i.e. with no planned outages (e.g. for maintenance) and no unplanned outages (e.g. subsequent to a fault).
<b>Point of Common Coupling</b>	The point on the network where the power flow associated with the single Connectee under consideration, may under some (or all) possible arrangements interact with the power flows associated with other Connectees, taking into account all possible credible running arrangements
<b>Power factor</b>	The ratio of energy transported (kW) to network capacity used (kVA).
<b>Portfolio tariff</b>	A tariff for use of the network by another DNO/IDNO Party where charges are linked to flows out of/into the other DNO/IDNO Party's network from its Connectees or further nested networks.
<b>Primary Substation</b>	A substation on the DNO Party's Distribution System transforming the voltage from EHV to HV, e.g. 33/11kV
<b>Reactive Power</b>	The product of the voltage and current and the sine of the phase angle between them, measured in units of voltamperes reactive.
<b>Regulatory Year</b>	has the meaning given to that expression in the DNO Party's Distribution Licence.
<b>RRP</b>	Regulatory reporting pack, a dataset produced each year by each DNO Party for the Authority.
<b><u>Shared Metering</u></b>	<u>Where meter readings recorded by Settlement metering equipment at the boundary between the Distribution System and the Licence Exempt System are apportioned between Suppliers based on readings from non-Settlement meters on a Licence Exempt System.</u>
<b>Sole Use Assets</b>	Assets in which only the consumption or output associated with a single Connectee can directly alter the power flow in the asset, taking into consideration all possible credible running

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	arrangements, i.e. all assets between the Connectee's Entry/Exit Point(s) and the Point(s) of Common Coupling with the general network.
<b>Source Substation</b>	Any substation which connects, via transformers and under Normal Running Arrangements, a particular Network Group to its "upstream" source. For example, for a 33kV group, the Source Substation is taken as the interconnecting 132/33kV grid transformers. A single Network Group may have more than one Source Substation.
<b>Supplier of Last Resort</b>	a supply licensee to which a Last Resort Supply Direction applies, where Last Resort Supply Direction has the meaning given to that expression in the Supply Licence.
<b>System simultaneous maximum load</b>	The maximum load for the GSP Group as a whole.
<b>Transformer Branch</b>	A categorisation used in the derivation of Branch reinforcement costs, for Branches that represent transformation between different voltage levels.
<b>Unit</b>	Where the context permits, the word unit refers to kWh.
<b>Unit rate</b>	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.

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<sup>8</sup> Network security is a licence condition embodied in ER P 2/6

<sup>9</sup> ER P2/6 specifies the normal level of system security for distribution networks, classified in ranges of group demand. ER P2/6 Class E specifies the security of supply requirements where the group demand is classified as over 300MW and up to 1500MW

## SCHEDULE 18 – EHV CHARGING METHODOLOGY (LRIC MODEL)

This Schedule 18, version [TBC]<sup>13</sup>, is to be used for the calculation of Use of System Charges which will become effective from, 01 April 2022 and remain effective until superseded by a revised version.

### 28. DNO PARTY TO LICENCE EXEMPT SYSTEMS UNLICENSED NETWORKS

28.1 Not used. Unlicensed networks have a choice. If they are part of the Total System under the Balancing and Settlement Code with the network open to supply competition, and if they are party to the DCUSA, and have accepted the obligations to provide the necessary data, they can, if they wish, be treated as LDNOs.

28.2 Otherwise, the DNO Party applies the EDCM to calculate an import charge and an export charge based on capacity and power flow data metered at the boundary and agreed capacity at the boundary. Prior to paragraph 28.3 and 28.4, for Final Demand Sites the residual charge will be calculated in accordance with Paragraph 18.18 and for Non-Final Demand Sites will be calculated in accordance to Paragraph 18.21A. Any sole use assets specific to the unlicensed network are charged as a p/day sole use asset charge calculated as applicable to a normal EDCM Connectee.

28.3 The tariffs charged in respect of Licence Exempt Systems using Difference Metering shall be charged to the Supplier at the DNO Party's boundary based on the units imported or exported at the boundary between the network and the Licence Exempt System. No charges will be applied by the DNO Party to the boundary settlements data

<sup>13</sup> To be completed on implementation

<sup>14</sup> To be completed on implementation of this DCP 379.

<sup>15</sup> To be completed on implementation of this DCP 379.

<sup>16</sup> Guidance on creation of a suitable network model is provided in section 4 Authorised Network Model of Annex 1.

<sup>17</sup> Guidance on the power-flow analysis required to consider these conditions is provided in sections 6.3 and 6.10 of Annex 1.

<sup>18</sup> Guidance on the demand data required to represent the maximum demand period is provided in section 5.31 of Annex 1.

<sup>19</sup> Guidance on the application of diversity to demand data is provided in section 5.11 of Annex 1.

<sup>20</sup> Guidance on the demand data required to represent the minimum demand period is provided in section 5.37 of Annex 1.

<sup>21</sup> Guidance on the generation data required to represent the maximum demand period is provided in section 5.31 of Annex 1.

<sup>22</sup> Guidance on the generation data required to represent the minimum demand period is provided in section 5.37 (of Annex 1

<sup>23</sup> Guidance on suitable cleansed demand data is provided in section 5.2 of Annex 1

<sup>24</sup> Guidance on the derivation of Security Factors is provided in section 6.6 of Annex 1.

<sup>25</sup> Guidance on the Contingency Analysis used in the derivation of Security Factors is provided in section 6.4 of Annex 1.

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received by the DNO Party, or to the settlements data received in respect of the settlements meter within the Licence Exempt System.

28.4 The tariffs charged in respect of Licence Exempt Systems using **Fully Settled and Shared Metering** shall be charged to the Supplier of each customer within the Licence Exempt System. To derive the charges there will be a two-step approach as follows:

- The first step will be to use the settlement metering data of each embedded customer within the relevant Licence Exempt System to determine the power flow data at the boundary for both import and export charges. No losses are assumed between the boundary and each embedded customers' premises on the relevant Licence Exempt System.
- The second step will be the allocation of the fixed charge and capacity charge derived under paragraph 28.2 to each embedded customer for both import and export charges for the relevant Licence Exempt System. These will be calculated as follows:

[embedded customer fixed charge in p/day] = [fixed charge at the boundary] x [installed capacity of the embedded customer's Import MPAN or Export MPAN] / [total installed capacity of all embedded customers' Import MPANs and Export MPANs]; and

[embedded customer Import capacity charge in p/kVA/Day] = [Import capacity charge at the boundary] x ([the Import agreed capacity at the boundary] / [total installed capacity of all embedded customers])

[embedded customer Export capacity charge in p/kVA/Day] = [Export capacity charge at the boundary] x ([the Export agreed capacity at the boundary] / [total installed Export capacity of all embedded customers])

28.5 CDCM Tariffs for customers connected to Licence Exempt Systems are determined in accordance with paragraph 88A~~8~~ of schedule 16, save that lower voltage elements are excluded as follows:

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- where the Licence Exempt System is connected at an EHV/HV substation, the costs associated with the LV customer, LV network, LV substation and HV network levels are excluded;
- where the Licence Exempt System is connected to the EHV network, the costs associated with the LV customer, LV network, LV substation, HV network and EHV/HV levels are excluded;
- where the Licence Exempt System is connected at a 132kV/EHV substation, the costs associated with the LV customer, LV network, LV substation, HV network, EHV/HV and EHV network levels are excluded;
- where the Licence Exempt System is connected to the 132kV network, the costs associated with the LV customer, LV network, LV substation, HV network, EHV/HV, EHV network and 132kV/EHV levels are excluded;
- where the Licence Exempt System is connected direct to a GSP, the costs associated with the LV customer, LV network, LV substation, HV network, EHV/HV, EHV network, 132kV/EHV and 132kV network levels are excluded.

28.5A Capacity charge elements (p/kVA/day) for half-hourly site-specific settled customers connected to Licence Exempt Systems are allocated to the fixed charge (in p/day) by multiplying the capacity charge by the average kVA per customer for an equivalent customer, determined from the DNO Party's volume forecast for the equivalent half-hourly metered tariff at that voltage as determined under schedule 16.

28.5B Reactive power charge elements (p/kVAh) for half-hourly site-specific settled customers connected to Licence Exempt Systems are allocated to the fixed charge (in p/day) by multiplying the reactive power charge by the average kVAh per customer for an equivalent customer, determined from the DNO Party's volume forecast for the equivalent half-hourly metered tariff at that voltage as determined under schedule 16, and dividing by the number of days in the charging year.

### 3. DEFINITIONS

- 3.1 In this Schedule 18, unless the context otherwise requires, the expressions below shall have the meanings set out below.

<b>Term</b>	<b>Definition</b>
<b>Active Power</b>	The product of the voltage, current and cosine of the phase angle between them, measured in watts.
<b>Allowed Revenue</b>	The amount of revenue that the DNO Party can earn on its regulated business in accordance the special conditions within the DNO Party's Distribution Licence.
<b>Authorised Network Model</b>	The model that represents the DNO Party's entire EHV network (from the GSP level down to and including the HV busbar at the EHV/HV transformation level), as described in Paragraph 2.7(a)and section 4 of this Annex 1.
<b>Base Case Analysis</b>	The analysis to determine the utilisation of the Authorised Network Model under Normal Running Arrangements. Note the Base Case Analysis is performed for each demand scenario (the Maximum Demand Scenario and the Minimum Demand Scenario).
<b>Base Case Flows</b>	The power flows in each Branch as determined under Base Case Analysis. Base Case Flow <sub>b</sub> is the power flow in Branch b. Note a separate set of Base Case Flows is determined for each demand scenario (the Maximum Demand Scenario and the Minimum Demand Scenario).
<b>Branch</b>	A representation of an asset, collection of assets or part of an asset of the DNO Party's EHV network through which Active Power flows as a consequence of supply to or export from a Connectee or busbar on the DNO Party's HV or EHV networks. A Branch must only be connected

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between two Nodes. A Branch should conform to the following:

- there can be more than one Branch between the same two Nodes;
- a three winding transformer may be represented by three Branches (one Branch for each of the windings) configured in a star formation;
- the Active Power flowing out of one end of a Branch should equal the Active Power flowing into the other end of the Branch less any losses within the Branch;
- shunt reactors and capacitors are not Branches;
- earthing transformers, resistors and reactors are not Branches; and
- a Branch may constitute a collection of assets e.g. a circuit constituting overhead lines and cables. When combining assets into a Branch, there is a need to consider the reinforcement solution for the Branch in the next stages for the incremental costing calculation.

<b>Branch Rating</b>	The branch ratings selected for the Authorised Network Model should be derived by appropriate consideration of the time of day/ season/ general nature of load profile (i.e. continuous, cyclic etc.) represented within the model.
<b>Bulk Supply Point (BSP)</b>	A supply point on the DNO Party's Distribution System representing an EHV/EHV transformation level e.g. 132/33kV.
<b>Charging Year</b>	The financial year (12 month period ending on a 31st March) for which charges and credits are being calculated.
<b>Circuit</b>	The part of a Distribution System between two or more circuit breakers, switches and/or fuses inclusive. For the

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avoidance of doubt a circuit can contain a number of Branches and Nodes. A Circuit may include transformers, reactors, cables and overhead lines. Busbars are not considered as Circuits.

<b>Circuit Branch</b>	A categorisation, used in the derivation of Branch reinforcement costs, for Branches that represent an interconnection (or part of an interconnection) between substations and which operate at a single voltage level.
<b>Connection Node</b>	<p>A Node which is a point of connection to one of the following:</p> <ul style="list-style-type: none"><li>• an Entry Point or the Sole Use Assets connecting the Entry Point; or</li><li>• an Exit Point or the Sole Use Assets connecting the Exit Point; or</li><li>• the DNO Party's HV network; or</li><li>• a Distribution System of another DNO Party or IDNO Party.</li></ul>
<b>Contingency Analysis</b>	The analysis to determine the effect on power flow on the Authorised Network Model under N-1 Contingencies. Note that Contingency Analysis is performed for each demand scenario (the Maximum Demand Scenario and the Minimum Demand Scenario).
<b>Diversity Allowance</b>	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.
<b>Diversity Factor</b>	A scaling factor calculated as the ratio of the maximum demand observed at a given location on the network and the aggregate of the individual maximum demands observed at

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	multiple locations connected downstream (i.e. further from source) of the given location, taking account of losses. Such factors provide a means of recognising that the maximum demands observed at individual locations (e.g. substations at a given voltage level) on a section of network may not be coincident. Details of the calculation of Diversity Factors are set out in section 5.11 (Diversity Factors) of Annex 1.
<b>EDCM</b>	has the meaning given to that expression in Paragraph 1.
<b>EDCM Connectee</b>	means a Connectee whose Connected Installation is a Designated EHV Property as defined in Standard Conditions 50A.11 and 13B.6 of the DNO Party's Distribution Licence.
<b>EHV</b>	Extra High Voltage.
<b>Eligible Bad Debt</b>	means any bad debts with respect to Use of System Charges that the DNO Party can recover in accordance with the DNO Party's Distribution Licence. For the avoidance of doubt, this definition includes the DNO Party's bad debt and bad debt which the DNO Party is recovering on behalf of LDNOs.
<b>Embedded</b>	means connected to a LDNO's Distribution System.
<b>ER P2/6</b>	Energy Network Association's Engineering Recommendation P2/6 which is the planning standard for security of supply to be used by the DNO Parties.
<b>ETR 130</b>	Energy Network Association's Engineering Technical Report 130 which is the Application Guide for assessing the capacity of Distribution Systems to which Generation Installations are connected.
<b>Extra High Voltage (EHV)</b>	Refers to voltages operating at 22kV or higher.



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<b>Forecast Business Plan Questionnaire or FB PQ</b>	means 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.
<b>Fully Settled</b>	<u>Where every customer on a Licence Exempt System is to have or has a Supplier, its own MPAN and metering equipment and there is no metering equipment at the boundary between the Distribution System and the Licence Exempt System. The BSC refers to these circumstances as an 'Associated Distribution System'.</u>
<b>Generation Coincidence Factor</b>	A factor which is calculated for each Grid Supply Point (or group of normally interconnected Grid Supply Points) and applied to Network Demand Data (Generation) in the Minimum Demand Scenario, to reflect the coincidence of generation export.
<b>Grid Supply Point (GSP)</b>	A point of supply from the National Electricity Transmission System to the DNO Party's Distribution System.
<b>High Voltage (HV)</b>	Refers to voltages operating above 1000 volts but lower than 22kV.
<b>Incremented Flow Analysis</b>	The analysis to determine the effects of a demand increment or decrement at a Node on each Branch of the Authorised Network Model under Normal Running Arrangements. Note the Incremented Flow Analysis is performed for each demand scenario (the Maximum Demand Scenario and the Minimum Demand Scenario).
<b>Incremented Flows</b>	The new power flows in each Branch as a consequence of the effect of a specified increment of demand at each Node. A separate set of Incremented Flows is produced for each

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	<p>demand scenario. The specified increment of demand at each Node may be different for each demand scenario.</p> <p>Incremented Flow<sub>nb</sub> is the new power flow in Branch b as a result of a change of demand at Node n.</p>
<b>Iterative Approach</b>	A numerical approach for the calculation of Incremented Flows. The approach is described in section 6.21 (Iterative Approach) of Annex 1.
<b>kV</b>	Kilovolt (1,000 Volts): a unit of voltage.
<b>kVA</b>	Kilo Volt Ampere: a unit of network capacity.
<b>kVAr</b>	<p>Kilo Volt Ampere reactive: a unit of reactive power flow.</p> <p>The network capacity used by a flow of A kW and B kVAr is <math>\text{SQRT}(A^2+B^2)</math> kVA.</p>
<b>kVArh</b>	kVA reactive hour: a unit of total reactive power flow over a period of time. Reactive power meters usually register kVArh.
<b>kW</b>	Kilowatt (1,000 Watts): a unit of power flow.
<b>kWh</b>	Kilowatt hour: a unit of energy. Meters usually register kWh.
<b>LDNO</b>	refers to a licensed distribution network operator, meaning an IDNO Party or a DNO Party operating an electricity distribution system outside of its Distribution Services Area.
<b>Long Term Development Statement (LTDS)</b>	The Long Term Development Statement as detailed by Licence Condition 25 of the Distribution Licences.
<b>LRIC</b>	Has the meaning given to that expression in Paragraph 2.1.
<b>LV</b>	Nominal voltages of less than 1kV.

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<b>Maximum Contingency Flows</b>	The maximum power flows in each Branch as determined under Contingency Analysis. Maximum Contingency Flow <sub>b</sub> is the maximum power flow in Branch b under all N-1 Contingencies for the demand scenario. Note a separate set of Maximum Contingency Flows is determined for each demand scenario (the Maximum Demand Scenario and the Minimum Demand Scenario).
<b>Maximum Demand Data</b>	The Network Demand Data that is applied to the Maximum Demand Scenario. The construction of Maximum Demand Data is described in section 5.31 (Maximum Demand Data for the Authorised Network Model) of Annex 1.
<b>Maximum Demand Scenario</b>	The analysis scenario of the Authorised Network Model populated with demands that reflect maximum loading conditions.
<b>Minimum Demand Data</b>	The Network Demand Data that is applied to the Minimum Demand Scenario. The construction of Minimum Demand Data is described in section 5.37 (Minimum Demand Data for the Authorised Network Model) of Annex 1.
<b>Minimum Demand Scenario</b>	The analysis scenario of the Authorised Network Model populated with demands that reflect minimum loading conditions.
<b>MVA</b>	Mega Volt Ampere (1,000 kVA): a unit of network capacity.
<b>MW</b>	Megawatt (1,000 kW): a unit of power flow.
<b>MWh</b>	Megawatt hour (1,000 kWh): a unit of energy. Energy trading is usually conducted in MWh.
<b>N-1 Contingency</b>	An N-1 Contingency considers an N-1 Event occurring on the Authorised Network Model and models the

	<p>consequential network actions and where appropriate constraints on Connectee demands to ensure that the flow on each Branch is within its rated capacity and so is ER P2/6 compliant.</p>
<b>N-1 Event</b>	<p>An N-1 Event is a First Circuit Outage (FCO) as explained in ER P2/6. It signifies a fault or arranged outage on the network which would result in a section of the network defined by the relevant protection scheme to sectionalise and isolate the faulty section, or isolate the section to be worked on for maintenance, resulting in zero power flow in the affected network. N-1 Events should consider an outage of a complete Circuit and only consider faults or arranged outages occurring with the network initially running under Normal Running Arrangements.</p>
<b>National Electricity Transmission System</b>	<p>Has the meaning given to that expression in the CUSC</p>
<b>Negative Load Injection</b>	<p>Negative Load Injection is a negative value of load calculated and applied to a source substation within the network model to represent the effects of diversity between associated downstream demands upon the actual demand observed at the source substation.</p>
<b>Net Diversity Factor</b>	<p>A scaling factor that represents the diversity between the maximum demands observed at substations at different levels of a network, which may be derived by multiplying Diversity Factors representing the diversity between interim levels.</p>
<b>network</b>	<p>This is a reference to the DNO Party's Distribution System, or to a particular part of that Distribution System.</p>

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<b>Network Demand Data</b>	This is the load and generation which is used to populate the Authorised Network Model. Network Demand Data is constructed of Network Demand Data (Load) and Network Demand Data (Generation). A description of Network Demand Data is given in section 5 of (Network Demand Data) of Annex 1.
<b>Network Demand Data (Generation)</b>	Generation export applied within the Authorised Network Model at Nodes representing the Entry Point for each EDCM Connectee with an agreed Maximum Export Capacity, factored according to ER P2/6 or coincidence with other generation export, where appropriate.
<b>Network Demand Data (Load)</b>	The load applied within the Authorised Network Model at Nodes representing the Exit Point for each EDCM Connectee and/or the lower voltage busbars at each EHV/HV substation.
<b>network level</b>	The network is modelled as a stack of circuit and transformation levels between supplies at LV and the National Electricity Transmission System. A network level is any circuit or transformation level in that stack. An additional network level is used for transmission exit.
<b>Node</b>	<p>A representation of a point on the DNO Party's EHV network that is a point of connection between a Branch and one or more of the following:</p> <ul style="list-style-type: none"><li>• another Branch; or</li><li>• an Entry Point or the Sole Use Assets connecting the Entry Point; or</li><li>• an Exit Point or the Sole Use Assets connecting the Exit Point; or</li><li>• the DNO Party's HV network; or</li></ul>

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- the Distribution System of another DNO Party or IDNO Party; or
- the National Electricity Transmission System,
- and “Nodal” shall be construed accordingly.

<b>Non-Final Demand Site</b>	as defined in Schedule 32
<b>Normal Running Arrangements</b>	The DNO Party’s network with no system outages i.e. with no planned outages (e.g. for maintenance) and no unplanned outages (e.g. subsequent to a fault).
<b>Off-Peak Charge</b>	The Nodal marginal charge (£/kVA/annum) calculated for the Minimum Demand Scenario. The calculation of this Nodal marginal charge is discussed in section 8 (Output results) of Annex 1.
<b>Peak Charge</b>	The Nodal marginal charge (£/kVA/annum) calculated for the Maximum Demand Scenario. The calculation of this Nodal marginal charge is discussed in section 8 (Output results) of Annex 1.
<b>Point of Common Coupling</b>	The Point of Common Coupling for a particular single Connectee is the point on the network where the power flow associated with the single Connectee under consideration, may under some (or all) possible arrangements interact with the power flows associated with other Connectees, taking into account all possible credible running arrangements.
<b>Power factor</b>	The ratio of energy transported (kW) to network capacity used (kVA).
<b>Portfolio tariff</b>	A tariff for use of the network by another DNO/IDNO Party where charges are linked to flows out of/into the

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	other DNO/IDNO Party's network from its Connectees or further nested networks.
<b>Reactive Power</b>	The product of the voltage and current and the sine of the phase angle between them, measured in units of voltamperes reactive.
<b>Recovery Factor</b>	A factor which is applied to the Branch incremental costs to limit the level of Branch cost recovery to being no greater than the actual reinforcement cost of the Branch.
<b>Regulatory Year</b>	Has the meaning given to that expression in the DNO Party's Distribution Licence.
<b>RRP</b>	Regulatory reporting pack, a dataset produced each year by each DNO Party for the Authority.
<b>Scaling Factor</b>	A factor which is calculated for each Grid Supply Point (or group of normally interconnected Grid Supply Points) to calculate the Network Demand Data (Load) element of the Minimum Demand Data.
<b>Security Factor</b>	These describe the change in utilisation of Branches between the Maximum Contingency Flows determined by Contingency Analysis and the Base Case Flows determined by Base Case Analysis. Section 6.6 (Security Factor Calculation) of Annex 1 describes how Security Factors are calculated.
<b>Sensitivity Coefficients Approach</b>	An analytical approach for the calculation of Incremented Flows, which approach is described in section 6.23 (Sensitivity Coefficients Approach) of Annex 1.
<b>Seven Year Statement</b>	This is the statement of that name required to be produced by the National Electricity Transmission System Operator under its Licence in respect of the whole of Great Britain.

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The statement includes information on demand, generation, plant margins, the characteristics of the existing and planned National Electricity Transmission System, its expected performance and capability now and in the future.

### **Shared Metering**

Where meter readings recorded by Settlement metering equipment at the boundary between the Distribution System and the Licence Exempt System are apportioned between Suppliers based on readings from non-Settlement meters on a Licence Exempt System.

### **Sole Use Assets**

Sole Use Assets are assets in which only the consumption or output associated with a single Connectee can directly alter the power flow in the asset, taking into consideration all possible credible running arrangements, i.e. all assets between the Connectee's Entry/Exit Point(s) and the Point(s) of Common Coupling with the general network.

### **Supplier of Last Resort**

a supply licensee to which a Last Resort Supply Direction applies, where Last Resort Supply Direction has the meaning given to that expression in the Supply Licence.

### **System simultaneous maximum load**

The maximum load for the GSP Group as a whole.

### **Transformer Branch**

A categorisation used in the derivation of Branch reinforcement costs, for Branches that represent transformation between different voltage levels.

### **unit**

Where the context permits, the word unit refers to kWh.

### **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.



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<sup>27</sup> Distributors should use the specifications and costs of similar, past reinforcement projects as a means for determining the requirements and costs of a particular future reinforcement project.

**Amend Paragraph 4.1 of Schedule 19**

**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 half-hourly settled Connectees, 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;
- (d) the date from which such energisation status has been effective;

(e) its Meter Timeswitch Code; and

(f) the date from which such Meter Timeswitch Code has been effective.

4.2. Where there are no half-hourly-settled Connectees, the EDNO shall submit a nil return.