Appendix to Eclipse Power Networks
USE OF SYSTEM CHARGING STATEMENT

Methodology Statement to derive Use of System charges for EHV sites

Effective from 1st April 2021 to 31st March 2022

Document Ref: EPN-REG-004 EHV Methodology Statement

Revision 2.0

Version Control

Version	Date	Description of version and any changes made
1.0	January 2019	Published Final
2.0	January 2020	Published Final

A change-marked version of this statement can be provided upon request.

Contents

1. 1. Background

This charging methodology implements the approved methodology set out within 2.84 (b) of the Eclipse Power Networks Use of System Charging Statement EPN-REG-004 Rev 3.0.

This methodology statement derives Use of System (UoS) prices for Extra High Voltage (EHV) customers connected to a distribution network owned by Eclipse Power Networks. Charges for customers that are not defined as EHV are not included within this statement.

2. EHV Definition

The definition of EHV used within this statement is consistent with that used within the standard licence conditions of the distribution licence as set out in Condition 13B.6. This is replicated below:
Designated EHV Properties are any of the following:

> *(a) Distribution Systems connected to the licensee's Distribution System at 22 kilovolts or more;*

> *(b) Premises connected to the licensee's Distribution System at 22 kilovolts or more;*

> *(c) Distribution Systems connected directly to substation assets that form part of the licensee's Distribution System at 1 kilovolt or more and less than 22 kilovolts where the primary voltage of the substation is 22 kilovolts or more and where the Metering Point is located at the same substation; and*

> *(d) Premises connected directly to substation assets that form part of the licensee's Distribution System at 1 kilovolt or more and less than 22 kilovolts where the primary voltage of the substation is 22 kilovolts or more and where the Metering Point is located at the same substation.*

3. Cost elements

The tariffs set under this methodology statement recover the costs associated with the network to distribute electricity to the designated EHV sites on behalf of Eclipse Power Networks. The cost elements recovered are:

- **Transmission connection charges**
- **Licensed DNO (LDNO) Boundary tariff**
- **Depreciation**
- **Return on assets**
- **Network rates**
- **Direct costs**
- **Allocated Indirect costs**

Where the network distributes electricity to a number of sites which are not all defined as designated EHV sites, the above costs will be recovered across all customers connected to the network. This will be achieved by determining the appropriate costs associated with non-EHV designated sites. These forecast costs will be deducted from costs set out above before they are allocated to the designated EHV sites.

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4. Spare Capacity

There may be occasions where excess capacity is deliberately built into a network. This may be due to design constraints, as a contingency against changes in future consumption patterns, or to allow additional connections to be made at a future date.

There are 2 cost recovery mechanisms defined against instances of network excess capacity:

- **Where excess capacity is built into the network design as part of a risk management process or due to Eclipse Power Networks' design considerations, the cost of any excess capacity will be recovered from all existing users as set out within this methodology.**

- **Where excess capacity is built into the network in preparation for future connections (ie a capacity ramping approach) the costs associated with this excess capacity will be separated out and not recovered from existing customers.**

5. LDNO Boundary Tariff

Where the Eclipse Power Networks network connects directly to a LDNO network, the LDNO will provide a boundary equivalent price for each designated EHV site connected to the Eclipse Power Networks network.

The LDNO boundary equivalent price will be passed directly through to the designated EHV site. Eclipse Power Networks will also charge any additional amounts required to recover any costs of providing the network between the LDNO owned network and the designated EHV customer's site.

6. Transmission connection charges

Where the Eclipse Power Networks network connects directly to the transmission network a connection charge may be levied which will be allocated across the end customers connected to the Eclipse Power Networks network in line with the methodology set out in section 7 below.

Where the Eclipse Power Networks network does not have a direct connection to the transmission networks any transmission charges will be levied on the DNO who will recover the charges via the boundary equivalent price for designated EHV sites or for via the IDNO tariffs for CDCM end customers.

7. Cost Allocation

7.1 Super-Red timeband charges

Eclipse Power Networks will not levy any charges or credits for its own network based on a super-red timeband. Eclipse Power Networks does not undertake a powerflow approach for charging purposes and is therefore unable to replicate the Charge 1 (remote) that DNOs use to derive the unit based super-red charge. Eclipse Power Networks will only levy charges for use of its own network based on fixed or capacity charges.

Where the DNO boundary charges for a designated EHV site includes a unit charge for either the

import and/ or export from the site, Eclipse Power Networks will pass through the charge/ credit to the end customer. For the avoidance of doubt, the super-red time used for the unit-based charge will replicate the timeband used by the host DNO.
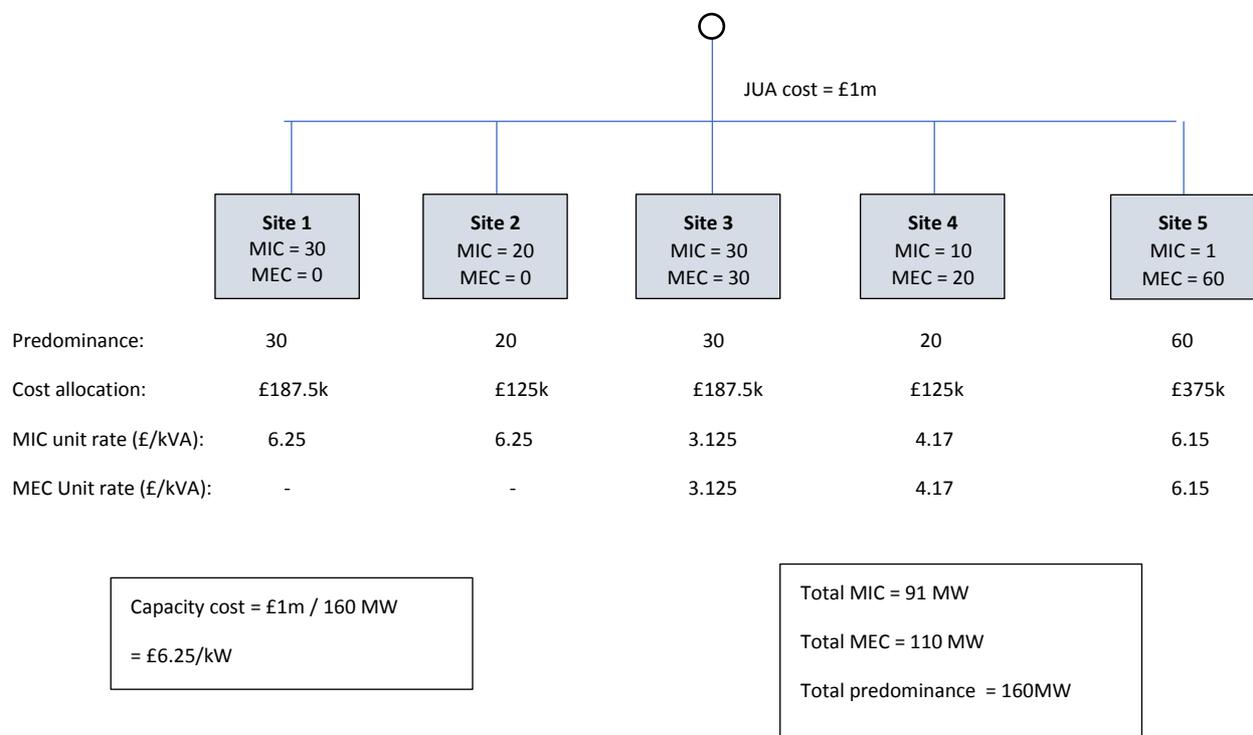
7.2 Allocation of Costs

Costs are allocated based on the assets a customer is deemed to use. As all designated EHV sites have an agreed capacity for their import and export (where relevant), the import and export capacities are deemed to be the key driver of asset usage and therefore the allocation of cost. [This is because the Maximum Import Capacity (MIC) and Maximum Export Capacity (MEC) for a site reserves the amount of capacity required from the network, regardless of when it is required.]

For each site and for each voltage level used by a site, the predominance of the site is determined based on the higher of the MIC or MEC (either generation or demand). Where the MIC and MEC are equal, the MIC will be assumed to be the predominance.

The total asset costs for a voltage level is divided by the sum of the predominant capacity (being the higher of the MIC or MEC) across all the sites using that voltage level to determine a £/kW value. This value will then be multiplied by the MIC or MEC (whichever is higher) of a site to determine the asset costs assigned to that customer. The total asset costs will then be recovered across the MIC and MEC for that site.

An illustration of this principle is shown below:

JUA cost = £1m

	Site 1	Site 2	Site 3	Site 4	Site 5
	MIC = 30	MIC = 20	MIC = 30	MIC = 10	MIC = 1
	MEC = 0	MEC = 0	MEC = 30	MEC = 20	MEC = 60
Predominance:	30	20	30	20	60
Cost allocation:	£187.5k	£125k	£187.5k	£125k	£375k
MIC unit rate (£/kVA):	6.25	6.25	3.125	4.17	6.15
MEC Unit rate (£/kVA):	-	-	3.125	4.17	6.15

Capacity cost = £1m / 160 MW

= £6.25/kW

Total MIC = 91 MW

Total MEC = 110 MW

Total predominance = 160MW

7.3 Sole Use Assets

The methodology differentiates between 'Sole Use Assets' (SUA) and 'Joint Use Assets' (JUA) as this replicates the national EHV charging methodologies approach (the EDCM). SUA represents the assets that are used by one site only.

The allocation of costs to SUA is based on the same methodology used for joint use assets as set out in section 7.5. Where customer contributions are made for a site, they will be allocated to the SUA first and then to the JUA.

SUA costs are recovered via a fixed charge per site (expressed in pence/day). Where a site has both an import and export capacity, the fixed charge will be pro-rated across the import and export UoS charge based on the MIC and MEC.

7.4 Customer Contributions

Where a customer contribution is made, the value of the assets (sole and/ or joint) is reduced and the depreciation and return is calculated based on this reduced value. Where the customer contributions are higher than the asset costs allocated to that site, any excess customer contribution will be shared equally across all other sites based on their capacity.

7.5 Allocation of Joint Use Assets (JUA)

Joint Use Assets are separated out by voltage level. These costs are then allocated between the customers based on the higher of the MIC or MEC as detailed in 7.2.

The charge levied for the JUA allocated to each customer will consist of the annual deprecation plus the return on the undepreciated asset after any customer contributions have been accounted for. These are determined as shown below. In each case, if the value goes negative, then a zero value will be used:

Return (£) = [(Initial JUA – contribution) – (JUA depreciation * Years depreciated)] * Return

Where

Initial JUA = the total capex cost to install the JUA

Contribution = any customer contribution towards the JUA

JUA depreciation = annual depreciation charge

Years depreciated = number of years the JUA have already been depreciated

Return = Rate of Return

Depreciation (£) = (Initial JUA – contribution) / depreciation period

Where

Initial JUA = the total capex cost to install the JUA

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Contribution = any customer contribution towards the JUA

Depreciation period = number of years the JUA is depreciated over

7.6 Operations and Maintenance (O&M)

The methodology recovers O&M by applying a percentage charging rate to the Modern Equivalent Asset Value (MEAV) of the assets each customer is deemed to use. This cost element recovers three elements; direct costs, indirect costs and network rates. The percentage O&M charge rate will be determined using one of the two methods set out below, depending on the information available to Eclipse Power Networks:

- **Default approach** - A default value is used to determine charging rates for the O&M components derived from the host DNO's CDCM model. This value is calculated as the direct costs, indirect costs and network rates and divided through by the MEAV of the total network assets

- **Derived value -** The charging rates are derived based on the direct costs, indirect cost and network rates that Eclipse Power Networks allocate to this network and entered manually into the spreadsheet. These values are divided by the MEAV of the network to determine the charging rates.

The O&M rate is applied to the MEAV of the sole and joint assets. No customer contributions or depreciation is taken into account in this calculation.

7.7 Transmission charges

Where the Eclipse Power Networks network connects directly to the transmission network and a connection charge is levied this will be recovered based on the MIC and MEC of each site using the methodology set out in 7.2.

7.8 Tariff Structure

The tariff structure for both import and export (where relevant) is as follows:

- **Fixed charge (p/day) –**
    - o Recovers costs associated with sole use assets
    - o Pro-rated across import and export

- **Super-red unit rate (p/kWh) -**
    - o Pass through of the host DNO unit rate
    - o Timeband is consistent with host DNO
    - o A charge for import and a credit for export

- **Capacity charges (p/kVA/day) –**
    - o Recovers costs associated with joint use assets
    - o The costs element include depreciation, return, O&M and National Grid connection charges

- **Excess Capacity charges (p/kVA/day) –**
  - Set at the same rate as the capacity rate
  - Applies for the duration of the month in which the capacity is breached.

For consistency with the CDCM and EDCM, the excess capacity charges are levied based on the excess capacity rates for the duration of the month in which the breach occurs.

8. Methodology Review

The methodology will be reviewed on an annual basis to ensure the tariffs determined are cost reflective and recover an appropriate level of income for Eclipse Power Networks. The review will take account of developments with the electricity sector and changes to DNOs charging methodologies, new technologies and innovations, and any issues raised with Eclipse Power Networks by its customers.

End of Document

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