USE OF SYSTEM CHARGING STATEMENT

Notice of Charges

Effective from 1st April 2020

Version 1.0

THIS STATEMENT IS IN A FORM APPROVED BY THE GAS AND ELECTRICITY MARKETS AUTHORITY (OFGEM)

Version Control

Version	Date	Description of version and any changes made
1.0	January 2019	Published Finals

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

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1. Introduction

1.1. This statement tells you about our charges and the reasons behind them. It has been prepared consistent with Standard Licence Condition 14 of our Electricity Distribution Licence. The main purpose of this statement is to provide our schedule of charges[1] for the use of our Distribution System and to provide the schedule of adjustment factors[2] that should be applied in Settlement to account for losses from the Distribution System. We have also included guidance notes in Appendix 2 to help improve your understanding of the charges we apply.

1.2. Within this statement we use terms such as 'Users' and 'Customers' as well as other terms which are identified with initial capitalisation. These terms are defined in the glossary.

1.3. The charges in this statement are calculated using the Common Distribution Charging Methodology (CDCM) for Low Voltage and High Voltage (LV and HV) Designated Properties and the Extra-high Voltage (EHV) Distribution Charging Methodology (EDCM) for Designated EHV Properties.

1.4. Separate charges are calculated depending on the characteristics of the connection and whether the use of the Distribution System is for demand or generation purposes.

1.5. The application of charges to premises can usually be referenced using the Line Loss factor Class (LLFC) contained in the charge tables. Further information on how to identify and calculate the charge that will apply for your premise is provided in the guidance notes in Appendix 2.

1.6. All charges in this statement are shown exclusive of VAT. Invoices will include VAT at the applicable rate.

1.7. The annexes that form part of this statement are also available in spread sheet format. This spread sheet contains supplementary information used for charging purposes and a simple model to assist you to calculate charges. This spread sheet can be downloaded from www.harlaxtonenergynetworks.co.uk.

[1] Charges can be positive or negative.

[2] Also known as Loss Adjustment Factors or Line Loss Factors

Validity Period

1.8 This charging statement is valid for services provided between the effective from date and the effective to date stated on the front of the statement. The statement remains valid between those dates until updated by a revised version or superseded by a statement with a later effective from date.

1.9 When using this charging statement care should be taken to ensure that the statement or statements covering the period that is of interest are used.

1.10 Notice of any revision to the statement will be provided to Users of our Distribution System. The latest statements can be downloaded from www.harlaxtonenergynetworks.co.uk

Contact details

If you have any questions about this statement please contact us at this address:

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2. Charge application and definitions

2.1. The following section details how the charges in this statement are applied and billed to Users of our distribution System.

2.2. We utilise two billing approaches depending on the type of metering data received. The 'Supercustomer' approach is used for Non-Half-Hourly (NHH) metered; NHH unmetered or aggregated Half-Hourly (HH) metered premises. The 'Site-specific' approach is used for HH metered or pseudo HH unmetered premises.

2.3. Typically NHH metered or HH metered premises with whole current Metering Systems are domestic and small businesses, premises with non-domestic CT Metering Systems are generally larger businesses or industrial sites and unmetered premises are normally street lights.

Supercustomer billing and payment

2.4. Supercustomer billing and payment applied to meter point administration numbers (MPAN's) registered as NHH metered, NHH unmetered or aggregated HH metered. The Supercustomer approach makes use of aggregated data obtained from Suppliers using the 'Non-Half Hourly Distribution Use of System (Duos) Report' data flow.

2.5. Invoices are calculated on a periodic basis of the LLFC assigned to the Meter Point Administration Number (MPAN), and the units consumed within the time periods specified in this statement. These time periods may not necessarily be the same as those indicated by the Time Pattern Regimes (TPRs) assigned to the Standard Settlement Configuration (SSC). All LLFCs are assigned at our sole discretion, based on the tariff application rules set out in the appropriate charging methodology or elsewhere in this statement. Please refer to the section 'incorrectly allocated charges' on page 15 if you believe the allocated LLFC or tariff is incorrect.

2.6. The charges are applied on the basis of the LLFC assigned to the Meter Point Administration Number (MPAN), and the units consumed within the time periods specified in this statement. These time periods may not necessarily be the same as those indicated by the Time Pattern Regimes (TPRs) assigned to the Standard Settlement Configuration (SSC). All LLFCs are assigned at our sole discretion, based on the tariff application rules set out in the appropriate charging methodology or elsewhere in this statement. Please refer to the section 'Incorrectly allocated charges' on page 15 if you believe the allocated LLFC or tariff is incorrect.

Supercustomer charges

2.7. Supercustomer charges include the following components:

- A fixed charge – pence/MPAN/day; there will be only one fixed charge applied to each MPAN; and
- Unit charges, pence/kWh; more than one unit charge may apply depending on the type of tariff for which the MPAN is registered.

2.8. Users who supply electricity to a Customer whose metering system is Measurement

2.9. Measurement Class A charges apply to Exit/Entry Points where NHH metering is used for Settlement.

2.10. Measurement Class B charges apply to Exit Points deemed to be suitable as Unmetered Supplies as permitted in the Electricity (Unmetered Supply) Regulations 2001[3] and where operated in accordance with Balancing and Settlement Code (BSC) procedure 520[4].

2.11. Measurement Class F charges apply to Exit/Entry Points at domestic premises where HH metering is used for Settlement.

2.12. Measurement Class G charges apply to Exit/Entry Points at non-domestic premises with whole current metering systems where HH metering is used for Settlement.

2.13. Identification of the appropriate charge can be made by cross-reference to the LLFC

2.14. Valid Settlement PC/SSC/Meter Timeswitch Code (MTC) combinations for LLFCs where the Metering System is measurement Class A and B are detailed in Market Domain Data (MDD).

2.15. Where an MPAN has an invalid settlement combination, the 'Domestic Unrestricted' fixed and unit charges will be applied as default until the invalid combination is corrected. Where there are multiple SSC/TPR combinations, the default 'Domestic Unrestricted' fixed and charges will be applied for each individual TPR combination.

2.16. To determine the appropriate charge rate for each SSC/TPR a lookup table is provided in the spread sheet that accompanies this statement[5].

2.17. The time period for unit charges where the Metering System is Measurement Class F and G are set out in the table 'Time Bands for Half Hourly metering Properties' in Annex 1.

2.18. The 'Domestic Off-Peak' and 'Small Non-Domestic Off-Peak' charges are additional to either unrestricted or a two-rate charge.

[3] The Electricity (Unmetered Supply) Regulations 2001 available from http://www.legislation.gov.uk/uksi/2001/3263/made

[4] Balancing and Settlement Code Procedures on unmetered supplies are available from https://www.elexon.co.uk/bsc-related-documents/related-documents/bscps/

[5] HARL – Schedule of Charges and other tables – 2018.xlsx

Site-specific billing and payment

2.19. Site specific billing and payment applied to Measurement Class C,D and E Metering Systems. The site-specific billing and payment approach to Use of System (UoS) billing makes use of HH metering data at premises level received through settlement.

2.20. Invoices are calculated on a periodic basis and sent to each User for whom we transport electricity through our Distribution System. Where an account is based on estimated data, the account shall be subject to any adjustment that may be necessary following the receipt of actual data from User.

2.21. The charges are applied on the basis of the LLFCs assigned to the MPAN (or the metered System Identified (MSID) for Central Volume Allocation (CVA) sites, and the units consumed within the time periods specified in this statement.

2.22. All LLFCs are assigned at our sole discretion, based on the tariff application rules set out in the appropriate charging methodology or elsewhere in this statement. Please refer to the section 'Incorrectly allocated charges' on page 15 if you believe the allocated tariff is incorrect. Where an incorrectly applied LLFC is identified, we may at our sole discretion apply the correct LLFC and/or charges.

Site-specific billed charges

2.23. Site-specific billed charges may include the following components:

- a fixed charge pence/MPAN/day or pence/MSID/day;
- a capacity charge, pence/kVa/day, for Maximum Import Capacity (MIC) and/or Maximum Export Capacity (MEC);
- an excess capacity charge, pence/KVa/day, if a site exceeds its MIC and/or MEC;
- unit charges, pence/Kwh, more than one unit charge may be applied;
  and
- an excess reactive power charge, pence/kVArh, for each unit in excess of the reactive charge threshold.

2.24. Users who wish to supply electricity to customers whose metering system are Measurement Class C, D or E or are settled via CVA will be allocated the relevant charge structure dependent upon the voltage and location of the metering point.

2.25. Measurement Class C, E or CVA charges apply to Exit/Entry Points where HH Metering data is used for Settlement purposes for non-domestic sites that have CT Metering.

2.26. Measurement Class D charges apply to Exit points deemed to be suitable as Unmetered Supplies as permitted in the Electricity (Unmetered Supply) Regulations 2001[6] and where operated in accordance with BSC procedure 520[7].

2.27. Fixed charges are generally levied on a pence per MPAN/MSID basis. Where two or more HH MPANs/MSIDs are located at the same point of connection (as identified in the connection agreement), with the same LLFC, and registered to the same supplier, only one daily fixed charge will be applied.

2.28. LV and HV Designated Properties will be charged in accordance with the CDCM and allocated the relevant charge structure set out in Annex 1.

2.29. LV and HV Designated properties which utilise a combination of Intermittent or Non-Intermittent generation technologies metered through a single MPAN/MSID will be allocated the Non-Intermittent generation tariff unless the combination installed capacity, as evidenced in ratings contained in the Connection Agreement, for Intermittent Generation Technologies is higher than the combined installed capacity for Non-Intermittent Generation Technologies, in which case the Intermittent Generation tariff will be allocated.

2.30. Designated EHV Properties will be charged in accordance with the EDCM and allocated the relevant charge structure set out in Appendix 2.

2.31. Where LV and HV Designated Properties or Designated EHV Properties have more than one point of connection (as identified in the Connection Agreement) then separate charges will be applied to each point of connection.

[6] The Electricity (Unmetered Supply) Regulations 2001 available from http://www.legislation.gov.uk/uksi/2001/3263/made

[7] Balancing and Settlement Code Procedures on unmetered supplies and available from http://www.elexon.co.uk/pages/bscps.aspx

Unmetered Supplies

2.32. Due to the seasonal nature of charges for UMS, changes between measurement classes B and D (or vice versa), shall not be agreed except with effect from 1st April in any charging year.

Time periods for half-hourly metered properties

2.33. The time periods for the application of unit charges to LV and HV designated properties that are HH metered are detailed in Annex 1. We have not issued a notice to change the time bands.

2.34. The time periods for the application of unit charges to designated EHV properties are detailed in Annex 2. We have not issued a notice to change the time bands.

Time periods for pseudo half-hourly unmetered properties

2.35. The time periods for the application of unit charges to connections that are pseudo HH metered are detailed in Annex 1. We have not issued a noticed to change the time bands.

Application of capacity charges

2.36. The following sections explain the application of capacity charges and exceeded capacity charges.

Chargeable capacity

2.37. The chargeable capacity is, for each billing period, the MIC/MEC, as detailed below. Where an MPAN has been registered with a Supplier, a half hourly measurement class allocated and validated half hourly advances received capacity charges will be applied (as defined in Annex 1).

2.38. The MIC/MEC will be agreed with us at the time of connection or pursuant to a later change in requirements. Following such an agreement (be it at the time of connection or later) no reduction in MIC/MEC will be allowed for a 12 month period.

2.39. Reductions to the MIC/MEC may only be permitted once in a 12 month period. Where MIC/MEC is reduced the new lower level will be agreed with reference to the level of the customer's maximum demand. The new MIC/MEC will be applied from the start of the next billing period after the date that the request was received. It should be noted that, where a new lower level is agreed, the original capacity may not be available in the future without the need for network reinforcement and associated charges.

2.40. In the absence of an agreement, the chargeable capacity, save for error or omission, will be based on the last MIC and/or MEC previously agreed by the distributor for the relevant premise's connection. A customer can seek to agree or vary the MIC and/or MEC by contacting us using the contact details in section 1.

Exceeded capacity

2.41. Where a customer takes additional unauthorised capacity over and above the MIC/MEC, the excess will be classed as exceeded capacity. The exceeded portion of the capacity will be charged at the excess capacity charge p/kVA/day rate, based on the difference between the MIC/MEC and the actual capacity used. This will be charged for the full duration of the month in which the breach occurs.

Demand exceeded capacity

Demand exceeded capacity = $\max\left(2 \times \sqrt{AI^2 + \max(RI,RE)^2} - MIC, 0\right)$

Where:

AI = Active Import (kWh)

RI = Reactive import (kVArh)

RE = Reactive export (kVArh)

MIC = Maximum import capacity (kVA)

2.42. Only reactive import and reactive export values occurring at times of active import are used in the calculation. Where data for two or more MPAN's is aggregated for billing purposes the HH consumption values are summated prior to the calculation above.

2.43. The calculation is complete for every half hour and the maximum value from the billing period is applied.

Generation exceeded capacity

Generation exceeded capacity = $\max\left(2 \times \sqrt{AE^2 + \max(RI,RE)^2} - MEC, 0\right)$

Where:

AE = Active Export (kWh)

RI = Reactive import (kVArh)

RE = Reactive export (kVArh)

MEC = Maximum export capacity (kVA)

2.44. Only reactive import and reactive export values occurring at times of active export are used in the calculation. Where data for two or more MPANs is aggregated for billing purposes, the HH consumption values occurring at times of kWh export are summated prior to the calculation above.

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

Standby capacity for additional security on site

2.46. Where standby capacity charges are applied, the charge will be set at the same rate as that applied to normal MIC. Where, at the customer's request, for additional security of suppliers requiring sterilisation of capacity at two different sources of supply, we reserve the right to charge for the capacity held at each source.

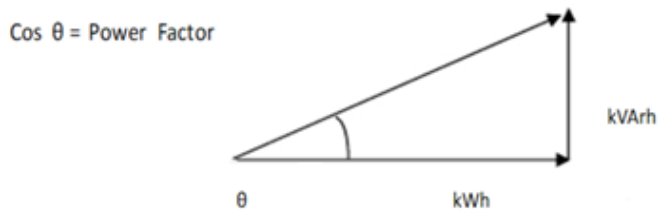
Minimum capacity levels

2.47. There is no minimum capacity threshold.

Application of charges for excess reactive power

2.48. When an individual HH metered MPAN's reactive power (measured in KVArh) at LV and HV designated properties exceeds 33% of total active power (measured in kWh), excess reactive power charges will apply. This threshold is equivalent to an average power factor of 0.95 during this period. Any reactive units in excess of the 33% threshold are charged at the rate appropriate to the particular charge.

2.49. Power Factor is calculated as follows:



2.50. The chargeable reactive power is calculated as follows:

Demand chargeable reactive power

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

Where:

AI = Active import (kWh)

RI = Reactive import (kVArh)

RE = Reactive export (kVArh)

2.51. Only reactive import and reactive export values occurring at times of active import are used in the calculation. Where date for two or more MPANs is aggregated for billing purposes, the HH consumption values are summated over the billing period.

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

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

Generation chargeable reactive power

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

Where:

AE = Active Export (kWh)

RI = Reactive Import (kVArh)

RE = Reactive Export (kVArh)

2.54. Only reactive import and reactive export values occurring at times of active export are used in the calculation. Where data for two or more MPANs is aggregated for billing purposes, the HH consumption values are summated prior to the calculation above.

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

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

Incorrectly allocated charges

2.57. It is our responsibility to apply the correct charges to each MPAN/MSID. The allocation of charges is based on the voltage of connection, import/export details, metering information and, for some tariffs, the metering location. Where an MPAN/MSID is used for export purposes, the type of generation (intermittent or non-intermittent) also determines the allocation of charges.

2.58. We are responsible for deciding the voltage of connection. Generally, this is determined where the metering is located and where responsibility for the electrical equipment transfers from us to the connected Customer.

2.59. The Supplier determines and provides us with metering information and data. This enables us to allocate charges where there is more than one charge per voltage level. The metering information and data is likely to change over time if, for example, a Supplier changes from a two rate meter to a single rate meter. When we are notified this has happened we will change the allocation of charges accordingly.

2.60. Where it has been identified that a charge may have been incorrectly allocated due to the wrong voltage of connection, incorrect import/export details, or an incorrectly noted metering location, or any other relevant factor, then a request to investigate the applicable charges should be made to us. A request from persons other than the current Supplier should be accompanied by a Letter of Authority from the customer; the current Supplier must also acknowledge that they are aware that a correction request has been made. Any request must be supported by an explanation of why it is believed that the current charge is wrongly applied along with supporting information including, where applicable, photographs of metering positions or system diagrams. Any request to correct the LLFC/charge that also includes a request to backdate the correction must include justification as to why it is considered appropriate to backdate the change.

2.61. If it has been identified that a charge has been incorrectly allocated due to the metering information and/or data then a correction request should be made to the Supplier.

2.62. Ad administration charge (covering our reasonable costs) may be made if a technical assessment or site visit is required, but we will not apply any charge where we agree to the change request.

2.63. Where we agree that the current LLFC/charge should be changed, then we will allocate the appropriate set of charges for the connection. Any adjustment will be applied from the date of the incorrect allocation or; up to the maximum period stated by the Limitations Act (1980) in England and Wales, which covers a six year period, whichever is shorter.

2.64. Any credit or additional charge will be issued to the Supplier/s who were effective during the period of change.

2.65. Should we reject the request a justification will be provided to the requesting party. We shall not unreasonably withhold or delay any decision on a request to change the charges applied and would expect to confirm our position on the request within three months from the date of request.

Generation charges for pre-2005 designated EHV Properties

2.66. Designated EHC Properties that were connected to the distribution system under a pre-2005 connection charging policy are eligible for exemption from UoS charges for generation unless one of the following criteria have been met:

- 25 years have passed since their first energisation/connection date (i/e/ Designated EHV Properties with connection agreements prior to 1st April 2005, and for which 25 years have passed since their first energisation/connection date will receive use of system charges for generation from the next charging year following the expiry of their 25 years exemption, (starting 1st April) or
- The person responsible for the Designated EHV Property has provided notice to us that they wish to opt in to UoS charges for generation.

2.67. Furthermore, if an exempt customer makes and alteration to its export requirement then the customer may be eligible to be charged for the additional capacity required or energy imported or exported. For example, where a generator increases its export capacity the incremental increase in export capacity will attract UoS charges as with other non-exempt generators.

Methodology to determine export tariffs for domestic and small-scale generation

2.68. For small-scale non half hourly metered or aggregated half hourly metered generation, we apply the same tariff as the Distribution Services Provider in the Host DNO Area. This usually includes use of system credits payable to the supplier.

Methodology to determine export tariffs with a maximum export capacity

2.69. For half hourly metered generation that is billed on a site-specific basis, our tariff has a single component, which is a p/kVA/day export capacity charge.

2.70. Our methodology to calculate the export capacity charge is based on the costs of operating an illustrative generation-led network based on the kind of networks we are developing to connect generators.

2.71. We estimate the annual cost associated with the illustrative generation-led network by aggregating

- The cost of routine inspections, maintenance and transformer oil testing;

- The expectation value of the cost of component repair and replacement, based on our experience of failure rates and typical repair/replacement costs.

2.72. The expected costs of scheduled or end-of-life equipment replacement are not included in this analysis.

2.73. We then estimate the export capacity likely to be serviced by the illustrative generation-led network. In doing so, we take account of the possibility of spare capacity arising from the commissioning of network capacity ahead of the completion of the construction of some generators served by the network, and/or the risk of early closure of some generators.

2.74. Dividing the annual cost associated with the illustrative generation-led network by the export capacity likely to be serviced by the illustrative generation-led network gives us a p/kVA/year charging rate.

2.75. Our export capacity charge is calculated by converting the £/kVA/year determined above to p/kVA/day, by dividing it by 3.6525 and rounding to two decimal places.

2.76. We do not pay any use of system credits to half hourly metered generation that is billed on a site-specific basis. This reflects the fact that, on our networks, larger-scale generation is normally connected to a generation-dominated section of network whose primary purpose is to collect power from generators, and therefore the logic underpinning CDCM generation credits is not applicable.

2.77. For half hourly metered generation that is billed on a site-specific basis, metered at less than 22kV, and not metered 1kV or more at a transformation substation with a primary voltage of 22kV or more, we do not charge any fixed charge, as the relevant operation and maintenance costs are covered by our capacity charge. In the context of setting generic tariffs for networks which are assumed to be generation-led, we consider that it is fairer and more cost-reflective to charge for these costs on the basis of export capacity than on the basis of individual MPANs or metering points.

2.78. In the case of generation metered at 22kV or more, or metered at 1kV or more at a transformation substation with a primary voltage of 22kV or more, we apply an element of export fixed charges based on the modern equivalent asset value of relevant sole use assets, allocated between import and export on the basis of maximum import and maximum export capacities. The charging rate used to calculate these fixed charges would be the charging rate for direct costs and network rates used by the host DNO under its EDCM charging methodology. The modern equivalent asset value of relevant sole use assets is the sum of the modern equivalent asset value of any of our assets which are for the sole use of the relevant connection, and the modern equivalent asset value of any assets which are included in fixed charges levied by the host DNO.

2.79. We charge for excess reactive power at the same rate as the Distribution Services Provider in the Host DNO Area for each type of generator.

Methodology to determine generic import tariffs

2.80. For demand customers supplied through our network at voltages below 22kV and which fall within the scope of a generic tariff published by the Distribution Services Provider in the Host DNO Area, our applicable use of system tariff is the same as the published tariff that would apply to an equivalent customer supplied by the Distribution Services Provider in the Host DNO Area.

2.81. At the time of preparing this statement, the method used by Distribution Services Providers to determine the relevant use of system tariffs is called the CDCM and it applied to all

customers supplied at voltages below 22kV except supplied at 1kV or more and metered at a transformation substation with a primary voltage of 22kV or more.

Methodology to determine site-specific import tariff

2.82. For non-domestic customers supplied through our network at 22kV or more, or where the supply is at 1kV or more at a substation with a primary voltage or 22kV or more, with the metering point (or asset boundary in the case of a customer which is a LDNO network) at the same substation, then our applicable use of system tariff will be determined on a site-specific basis.

2.83. To determine the site-specific tariff we will compute the following

- The tariff that would have applied to the site if the Host DNO owned the relevant section of our system and used it to supply the site.
- The charges (if any) applied to us by other networks (distribution or transmission) in respect of the supply to the site.

2.84. Where appropriate, we will set our site-specific tariff to be the notional tariff that would have applied to the site if the Hose DNO owned the relevant section of our system. This would be consistent with our methodology for setting generic demand tariffs.

2.85. However, this notional tariff approach might not be always appropriate, because:

- We might not always be able to estimate the tariff that would have applied to the site if the Hose DNO owned the relevant section of our system, because making such estimates is dependent on the provision of information by the Host DNO, which is out of our control.
- The design and implementation of the Host DNO's charging methodology is also out of our control, there is a risk that het notional tariff might not cover the charges applied to us by any other networks, or might give an inadequate margin over these charges.

2.86. If we determine that the notional tariff approach is not appropriate for a site, then we will set the tariff for the site as the sum of:

- The pass-through of the charges applied to us by any other networks.
- The costs associated with the fulfilment of our obligation to provide a safe and secure distribution system to supply the site. Where assets are used I the supply, we will set cost to reflect depreciation plus a return of 7.6 per cent a year on the modern equivalent value of these assets. Where costs or assets are used for supplies to more than one site, we will apportion the costs to determine the share to be borne by the use of system tariff for the site. We will review the 7.6 per cent rate of return as part of our annual review of this methodology. The current figure is based on the rate of return determined by Ofgem for independent gas transporters.

Provision of billing data

2.87. Where HH metering data is required for UoS charging and this is not provided in accordance with the BSC or the Distribution Connection and Use of System Agreement (DCUSA), such metering data shall be provided to us by the User of the system in respect of each calendar month within five working days of the end of that calendar month.

2.88. The metering data shall identify the amount of energy conveyed across the Metering System in each half hour of each day and shall separately identify active and reactive import and export. Metering data provided to us shall be consistent with that received through the metering equipment installed.

2.89. Metering data shall be provided in the electronic format specified by us from time to time and, in the absence of such specification, metering data shall be provided in a comma-

separated text file in the format of Master Registration Agreement (MRA) data flow D0036 (as agreed with us). The data must be transmitted via the industry standard Data Transfer Network (http://www.electralink.co.uk/DTS/overview).

2.90. We require details of reactive power imported or exported to be provided for all Measurement Class C and E sites. It is also required for CVA sites and Exempt Distribution Network boundaries with difference metering. We reserve the right to levy a charge on Users who fail to provide such reactive data.

Out of area use of system charges

2.91. HARL does not have a Distribution Service Area

Licensed distribution network operator charges

2.92. Licensed Distribution Network Operator (LDNO) charges are applied to LDNOs who operate Embedded Networks within our Distribution Service Area.

2.93. The charge structure for LV and HV Designated Properties embedded in networks operated by LDNOs will mirror the structure of the all-the-way Charge and is dependent upon the voltage of connection of each embedded network to the host DNO's network. The same charge elements will apply as those that match the LDNO's end customer charges. The relevant charge structures are set out in Annex 4.

2.94. The charge structure for Designated EHV Properties embedded in networks operated by LDNO's will be calculated individually using the EDCM. The relevant charge structures are set out in Annex 2.

2.95. For Nested Networks the relevant charging principles set out in DCUSA Schedule 21[8]will apply (http://www.dcusa.co.uk/SitePages/Documents/DUCSA-Documents.aspx).

Licence exempt distribution networks

2.96. The Electricity and Gas (Internal Market) Regulations 2011[9] introduced new obligations on owners of licence exempt distribution networks (sometimes called private networks) including a duty to facilitate access to electricity and gas suppliers for customers within those networks (http://www.legislation.gov.uk/uksi/2011/2704/contents/made).

2.97. When customers (both domestic and commercial) are located within a licence exempt distribution network and require the ability to choose their own supplier this is called 'third party access'. These embedded customers will require an MPSN so that they can have their electricity supplied by a Supplier of their choice.

2.98. Licence exempt distribution networks owners can provide third party access using either full settlement metering or the difference metering approach.

2.99. This is where a licence exempt distribution network is set up so that each embedded installation has an MPAN and Metering System and therefore all customers purchase electricity form their chosen Supplier. In this case there are no Settlement Metering Systems at the boundary between the licensed Distribution System and the exempt distribution network.

2.100. In this approach our UoS charges will be applied to each MPAN.

2.101. This is where one of more, but not all, customer's on a licence exempt distribution network choose their own Supplier for electricity supply to their premise. Under this approach the customers requiring third party access on the exempt distribution network will have their own MPAN and must have a HH Metering System.

2.102. Unless agreed otherwise, our UoS charges will be applied using gross or net settlement as applicable to the site.

Gross settlement

2.103. Where one of our MPAN (prefix 29) is embedded within a licence exempt distribution network connection to our Distribution System, and difference metering is in place for Settlement purposes and we receive gross measurement data for the boundary MPAN Supplier for use in our Distribution System. No charges will be levied by us directly to the Customer or Supplier or the embedded MPAN(s) connected within the licence exempt distribution network.

2.104. We require that gross metered data for the boundary of the connection is provided to us. Until a new industry data flow is introduced for the sending of such gross data, gross metered data shall:

- be provided in a text file in the format of the D0037 MRA data flow;
- the text file shall be emailed to info@harlaxtonenergynetworks.co.uk
- the title of the email should also contain the phrase "gross data for difference metered private network" and contain the metering reference specified by us in place of the Settlement MPAN; and
- the text filename shall be formed of the metering reference specified by us followed by a hyphen and followed by a timestamp in the format YYYYMMDDHHMMSS and followed by a ".txt"; and
- for the avoidance of doubt, the reduced difference metered measurement data for the boundary connection that is to enter Settlement should continue to be sent using the Settlement MPAN.

Net Settlement

2.105. Where one of our MPANs (prefix 29) is embedded within a licence exempt distribution network connected to one of our distribution systems, and difference metering is in place for Settlement purposes, and we do **not** receive gross measurement data for the boundary MPAN, we will charge the boundary MPAN Supplier based on the net measurement for use of our Distribution System. Charges will also be levied directly to the Supplier of the embedded MPAN(s) connected within the licence exempt distribution network based on the actual data received.

2.106. The charges applicable for an embedded MPAN are unit charges only. These will be the same values as those at the voltage of connection to the licence exempt distribution network and are shown in Annex 1. The fixed charge and capacity charge, at the agreed MIC/MEC of the boundary MPAN, will be charged to the boundary MPAN supplier.

3. Schedule of charged for use of the distribution system

3.1. Tables listing the charges for the distribution of electricity for UoS are published in the annexes to this document.

3.2. These charges are also listed in a spread sheet which is published with this statement and can be downloaded from www.harlaxtonenergynetworks.co.uk

3.3. Annex 1 contains charges applied to LV and HV Designated Properties.

3.4. Annex 2 contains the charges applied to our Designated EHV Properties and charges applied to LDNOs for Designated EHV Properties connected within their embedded Distribution System.

3.5. Annex 3 contains details of any preserved and additional charges that are valid at this time. Preserved charges are mapped to an appropriate charge and are closed to new customers.

3.6. Annex 4 contains the charges applied to LDNOs in respect of LV and HV Designated Properties connected in their embedded Distribution System.

4. Schedule of line loss factors

Role of line loss factors in the supply of electricity

4.1. Electricity entering or exiting our Distribution System is adjusted to take account of energy that is lost[10] as it is distributed through the network. This adjustment does not affect distribution charges but is used in energy settlement to take metered consumption to a notional grid supply point so that suppliers' purchases take account of the energy lost on the Distribution System.

4.2. We are responsible for calculating the Line Loss Factors[11] (LLFs) and providing these to Elexon. Elexon is the company that manages the BSC. This code covers the governance and rules for balancing and settlement arrangements.

4.3. LLFs are used to adjust the metering system volume to take account of losses on the distribution network.

[10] Energy can be lost for technical and non-technical reasons and losses normally occur by heat dissipation through power flowing in conductors and transformers. Losses can also reduce if a customer's action reduces power flowing in the distribution network. This might happen when a customer generates electricity and the produced energy is consumed locally.

[11] Also referred to as Loss Adjustment Factors.

Calculation of Line Loss Factors

4.4. LLFs are calculated in accordance with BSC procedure 128. BSCP 128 sets out the procedures and principles by which our LLF methodology must comply. It also defined the procedure and timetable by which LLFs are reviewed and submitted.

4.5. LLFs are calculated for a set number of time periods during the year using either a generic method or a site-specific method. The generic method is used for sites connected at LV or HV and the site-specific method is used for sites connected at EHV or where a request for site-specific method is used for sites connected at EHV or where a request for site-specific LLFs has been agreed. Generic LLFs will be applied as a default to all new EHV sites until sufficient data is available for a site-specific calculation.

4.6. The definition of EHV use for LLF purposes differ from the definition used for defining Designated EHV Properties using in the EDCM. The definition used for LLF purposes can be found in our LLF methodology.

4.7. The Elexon website (http://www.elexon.co.uk/reference/technical-operations/losses/) contains more information on LLFs. This page also has links to BSCP 128 and to our LLF methodology.

Publication of Line Loss Factor

4.8. The LLFs used in Settlement are published on the Elexon portal website, www.elexonportal.co.uk. The website contains the LLFs in standard industry data formats and in a summary form. A user guide with details on registering and using the portal is also available.

4.9. The BSCP128 sets out the timetable by which LLFs are submitted and audited. The submission and audit occurs between September and December in the year prior to the LLFs becoming effective. Only after the completion of the audit at the end of December and the BSC approval are the final LLFs published.

4.10. Illustrative LLFs based on the latest LLFs are provided in Annex 5 of this statement. These illustrative LLFs are provided with reference to the metered voltage or associated LLFC for generic LLFs and by reference to the LLFCs for site specific LLFs. Each LLF is applicable to a defined time period.

4.11. When using the tables in Annex 5, reference should be made to the LLFC allocated to the MPAN to find the appropriate values.

5. Notes for Designated EHV Properties

5.1. HARL does not currently have any designated EHV properties.

5.2. These are illustrative of the modelled costs at the time that this statement was published. A new connection will result in changes to current network utilisations, which will then form the basis of future prices. The charge determined in this statement will not necessarily be the charge in subsequent years because of the interaction between new and existing network connections and any other changes made to our Distribution System which may affect changes.

Charges for new Designated EHV properties

5.3. Charges for any new Designated EHV properties calculated after publication of the current statement will be published in an addendum to that statement as and when necessary. The addendum will include charge information of the type found in Annex 2 and LLFs as found in Annex 5.

5.4. The form of the addendum is detailed in Annex 6 to this statement.

5.5. The addendum will be sent to relevant DCUSA parties and published as a revised 'Schedule of Charges and Other Tables' spread sheet on our website. The addendum will include charge information that under enduring circumstances would be found in Annex 2 and Line Loss Factors that would normally be found in Annex 5.

5.6. The new Designated EHV Properties charges will be added to Annex 2 in the next full statement released.

Charges for amended Designated EHV Properties

5.7. Where an existing Designated EHV Property is modified and energised in the charging year, we may revise the EDCM charges for the modified Designated EHV Property. If revised charges are appropriate, an addendum will be sent to relevant DCUSA parties and published as a revised 'Schedule of Charges and Other Tables' spread sheet on our website. The modified Designated EHV Property charges will be added to Annex 2 in the next full statement release.

Demand side management

5.8. HARL does not offer 'demand side management'.

6. Electricity distribution rebates

6.1. We have neither given nor announced any DUoS rebates to Users in the 12 months preceding the date of publication of this revision of the statement.

7. Accounting and administration services

7.1. We reserve the right to impose payment default remedies. The remedies are as set out in DCUSA where applicable or else as detailed in the following paragraph

7.2. If any invoices that are not subject to a valid dispute remain unpaid on the due date, lay payment interest (calculated at a base rate plus 8%) and administration charges may be imposed.

7.3. Our administration charges are detailed in the following table. These charges are set at a level which is in line with the Late Payment of Commercial Debts Act;

Size of Unpaid Debt	**Late Payment Fee**
Up to £999.99	£40.00
£1,000 to £9,999.99	£70.00
£10,000 or more	£100.00

8. Charges for electrical plant provided ancillary to the grant of use of system

8.1. None

Appendix 1 – Glossary

1.1 The following definitions, which can extend to grammatical variations and cognate expressions, are included to aid understanding:

<table>
<tr><th>Term</th><th>Definition</th></tr>
<tr><td>All-the-way Charge</td><td>A charge that is applicable to an end user rather than an LDNO. An end user in this context is a Supplier/User who has a registered MPAN or MSID and is using the Distribution System to transport energy on behalf of a Customer.</td></tr>
<tr><td>Balancing and Settlement Code (BSC)</td><td>The BSC contains the governance arrangements for electricity balancing and settlement in Great Britain. An overview document is available from www.elexon.co.uk/ELEXONDocuments/trading_arrangements.pdf</td></tr>
<tr><td>Common Distribution Charing Methodology (CDCM)</td><td>The CDCM used for calculating charges to Designated Properties as required by standard licence condition 12A of the electricity distribution licence.</td></tr>
<tr><td>Central Volume Allocation (CVA)</td><td>As defined in the BSC.</td></tr>
<tr><td>Customer</td><td>A person to whom a User proposes to supply, or for the time being supplies, electricity through an exit point, or from who, a user or any relevant exempt supplier, is entitled to recover charges, compensation or an account of profits in respect of electricity supplied through an exit point.

Or

A person from whom a User purchases, or proposes to purchase electricity at an entry point (who may from time to time be supplied with electricity as a Customer of that User (or another electricity supplier) through an exit point).</td></tr>
<tr><td>Designated EHC Properties</td><td>As defined in standard condition 13B of the electricity distribution licence.</td></tr>
<tr><td>Designated Properties</td><td>As defined in standard condition 13A of the electricity distribution licence.</td></tr>
<tr><td>Distributor IDs</td><td>These are unique IDs that can be used, with reference to the MPAN, to identify your LDNO. The charges for other network operators can be found on their website.

<table>
<tr><th>ID</th><th>Distribution Service Area</th><th>Company</th></tr>
<tr><td>10</td><td>East of England</td><td>UK Power Networks</td></tr>
<tr><td>11</td><td>East Midlands</td><td>Western Power Distribution</td></tr>
<tr><td>12</td><td>London</td><td>UK Power Networks</td></tr>
<tr><td>13</td><td>Merseyside and North Wales</td><td>Scottish Power</td></tr>
<tr><td>14</td><td>Midlands</td><td>Western Power Distribution</td></tr>
<tr><td>15</td><td>Northern</td><td>Northern Powergird</td></tr>
<tr><td>16</td><td>North Western</td><td>Electricity North West</td></tr>
<tr><td>17</td><td>Scottish-Hydro Electric (and embedded networks in other areas)</td><td>Scottish-Hydro Electric Power Distribution PLC</td></tr>
<tr><td>18</td><td>South Scotland</td><td>Scottish Power</td></tr>
<tr><td>19</td><td>South East England</td><td>UK Power Networks</td></tr>
<tr><td>20</td><td>Southern Electric (and embedded networks in other areas)</td><td>Southern Electric Power Distribution PLC</td></tr>
<tr><td>21</td><td>South Wales</td><td>Western Power Distribution</td></tr>
<tr><td>22</td><td>South Western</td><td>Western Power Distribution</td></tr>
<tr><td>23</td><td>Yorkshire</td><td>Northern Powergrid</td></tr>
<tr><td>24</td><td>All</td><td>Independent Power Networks</td></tr>
<tr><td>25</td><td>All</td><td>ESP Electricity</td></tr>
<tr><td>26</td><td>All</td><td>Energetics Electricity Ltd</td></tr>
<tr><td>27</td><td>All</td><td>The Electricity Network Company Ltd</td></tr>
<tr><td>28</td><td>All</td><td>UK Power Networks (IDNO) Ltd</td></tr>
<tr><td>29</td><td>All</td><td>Harlaxton Energy Network Ltd</td></tr>
<tr><td>30</td><td>All</td><td>Peel Electricity</td></tr>
<tr><td>31</td><td>All</td><td>UK Power Distribution Ltd</td></tr>
<tr><td>32</td><td>All</td><td>Utility Distribution Networks Ltd</td></tr>
</table>
</td></tr>
</table>

Term	Definitions
Distribution Connection and Use of System Agreement (DCUSA)	The DCUSA is a multi-party contract between the licensed electricity distributors, suppliers, generators and Offshore Transmission Owners of Great Britain. It is a requirement that all licensed electricity distributors and suppliers become parties to the DCUSA.
Distribution Network Operator (DNO)	An electricity distributor that operates one of the 14 distribution service areas and in whose electricity distribution licence the requirements of Section B of the standard conditions of that licence have effect.
Distribution Services Area	The area specified by the Gas and Electricity Markets Authority within which each DNO must provide specified distribution services.
Distribution System	The system consisting (wholly or mainly) of electric lines owned or operated by an authorised distributor that is used for the distribution of electricity from: • Grid Supply Points of generation sets or other entry points To the points of delivery to: • Customers or Users or any transmission licensee in its capacity as operator of that licensee's transmission system or the Great Britain (GB) transmission system and includes any remote transmission assets (owned by a transmission licensee within England and Wales) That are operated by that authorised distributor and any electrical plant, electricity meters, and metering equipment owned or operated by it in connection with the distribution of electricity, but does not include any part of the GB transmission system.
EHV Distribution Charging Methodology (EDCM)	The EDCM used for calculating charges to Designated EHV Properties as required by the standard licence condition 13B of the Electricity Distribution Licence.
Electricity Distribution Licence	The Electricity Distribution Licence granted or treated as granted pursuant to section 6(1) of the Electricity Act 1989.
Electricity Distributor	Any person who is authorised by an Electricity Distribution Licence to distribute electricity.
Embedded LDNO	This refers to an LDNO operating a distribution network which is embedded within another distribution network.
Embedded Network	An electricity Distribution System operated by an LDNO and embedded within another distribution network
Entry Point	A boundary point at which electricity is exported onto a Distribution System from a connected installation or from another Distribution System, not forming part of the total system (boundary point and total system having the meaning given to those terms in the BSC).
Exit Point	A point of connection at which a supply of electricity may flow from the Distribution System to the customer's installation or User's Installation or Distribution System of another person.
Extra-High Voltage (EHV)	Nominal voltages of 22kV and above
Gas and Electricity Markets (GEMA)	As established by the Utilities Act 2000
Grid Supply Point (GSP)	A metered connection between the National Grid Electricity Transmission System and the licensee's Distribution System of which electricity flows to or from the Distribution System.
GSP Group	A distinct electrical system that is supplied from one or more GSPs for which total supply into the GSP Group can be determined for each half hour
High Voltage (HV)	Nominal voltages of at least 1kV and less than 22kV
Invalid Settlement Combination	A Settlement Combination that is not recognised as a valid combination in market domain data – see https://www.elexonportal.co.uk/MDDVIEWER
kVA	Kilovolt amperes
kVArh	Kilovolt ampere reactive hour
kW	Kilowatt
kWh	Kilowatt hour (equivalent to one "unit" of electricity)
Licensed Distribution Network Operator (LDNO)	The holder of a licence in respect of distribution activities in Great Britain.

Term	Definitions
Line Loss Factor (LLF)	The factor that is used in Settlement to adjust the metering systems to take account of losses on the Distribution System.
Line Loss Factor Class (LLFC)	An identifier assigned to an SVA metering system which is used to assign the LFF and use of system charges
Load Factor	*Annual consumption (kWh)* *Maximum demand(kW) x hours in year*
Low voltage (LV)	Nominal voltages below 1kV
Market Domain Data (MDD)	MDD is a central repository of reference data available to all users involved in settlement. It is essential to the operation of SVA trading arrangements.
Maximum Export Capacity (MEC)	The MEC of apparent power expressed in kVA that has been agreed can flow through the entry point to the distribution System from the customer's installation as specified in the connection agreement.
Maximum Import Capacity (MIC)	The MIC of apparent power expressed in kVA that has been agreed can flow through the exit point form the Distribution System to the customer's installation as specified in the connection agreement.
Measurement Class	A classificat6ion of metering systems used in the BSC which indicates how consumption is measured, i.e: • Measurement Class A – non half-hourly metering equipment • Measurement Class B – non half-hourly unmetered supplies • Measurement Class C – half-hourly metering equipment at or above 100kW premises • Measurement Class D – half-hourly unmetered supplies • Measurement Class E – half-hourly metering equipment below 100kW premises, and from 5 November 2015 with current transformer • Measurement Class F – half-hourly metering equipment at or below 100kW premises with current transformer or whole current, and at domestic premises • Measurement Class G – half-hourly metering equipment at below 100kW premises with whole current and not at domestic premises
Meter Timeswitch Code (MTC)	MTCs are three digit codes allowing suppliers to identify the metering installed in customers' premises. They indicate whether the meter is single or multi-rate, pre-payment or credit, or whether it is 'related' to another meter. Further information can be found in MDD.
Metering Point	The point at which electricity that is exported to or imported from the licensee's Distribution Supplier is measured, is deemed to be measured or is intended to be measured and which is registered pursuant to the provisions of the MRA. For the purposes of this statement, GSPs are not 'metering points'.
Metering Point Administration Number (MPAN)	A number relating to a Metering Point under the MRA
Metering System	Particular commissioned metering equipment installed for the purposes of measuring the quantities of exports and/or imports at the exit point or entry point
Metering System Identifier (MSID)	MSID is a term used through the BSC and its subsidiary documents and has the same meaning as M~PAN as used under the MRA
Master Registration Agreement (MRA)	The MRA is an Agreement that sets out terms for the provision of Metering Point Administration Services (MPAS) Registrations, and procedures in relation to the change of supplier to any premise/metering point
Nested Networks	This refers to a situation where there is more than one level of Embedded Network and therefore nested Distribution Systems between LDNOs (e.g. host DNO primary nested DNO secondary nested DNO customer)
Ofgem	Office of Gas and Electricity Markets – Ofgem is governed by GEMA and is responsible for the regulation of distribution companies
Profile Class (PC)	A categorisation applied to NHH MPANs and used in settlement to group customers with similar consumption patterns to enable the calculation of consumption profiles
Settlement	The determination and settlement of amounts payable in respect of charges (including reconciling charges) in accordance with the BSC

Term	Definitions
Settlement Class (SC)	The combination of Profile Class, Line Loss Factor Class, Time Pattern Regime and Standard Settlement configuration, by Supplier within a GSP group and used for Settlement
Standard Settlement Configuration (SSC)	A standard metering configuration relating to a specific combination of Time Pattern Regimes
Supercustomer	The method of billing users for use of system on an aggregated basis, grouping together consumption and standing charges for all similar NHH metered customers or aggregated HH metered customers
Supercustomer DUoS Report	A report of profiled data by Settlement Class providing counts of MPANs and units consumed
Supplier	An organisation with a supply licence responsible for electricity supplied to and/or exported from a metering point
Supplier Volume Allocation (SVA)	As defined in the BSC
Time Pattern Regime (TPR)	The pattern of switching behaviour through time that one of more meter registers follow
Unmetered Supplies	Exit points deemed to be suitable as unmetered supplies as permitted in the Electricity (Unmetered Supply) Regulations 2001 and where operated in accordance with BSC procedure 520[12]
Use of System Charges	Charges which are applicable to these parties which use the Distribution System
User	Someone that has a use of system agreement with the DNO e.g. a supplier, generator or another DNO

[12]Balancing and Settlement Code Procedures are available from http://www.elexon.co.uk/pages/bscps.aspx

Appendix 2 – Guidance notes [13]

Background

1.1 The electricity bill from your supplier contains an element of charge to cover electricity distribution costs. This distribution charge covers the cost of operating and maintaining a safe and reliable Distribution System that forms the 'wires' that transport electricity between the national transmission system and end users such as homes and businesses. Our distribution System includes overhead lines, underground cables, as well as substations and transformers.

1.2 In most cases, your supplier is invoiced for the distribution charge and this is normally part of your total bill. In some cases, for example business users, the supplier may pass through the distribution charge as an identifiable line item on the electricity bill.

1.3 Where electricity is generated at a property your supplier may receive a credit for energy that is exported on to the Distribution System. These credits are intended to reflect that the exported generation may reduce the need for traditional demand led reinforcement of the Distribution System.

1.4 Understanding your distribution charges could help you reduce your costs and increase your credits. This is achieved by understanding the components of the charge to help you identify whether there may be opportunities to change the way you use the Distribution System.

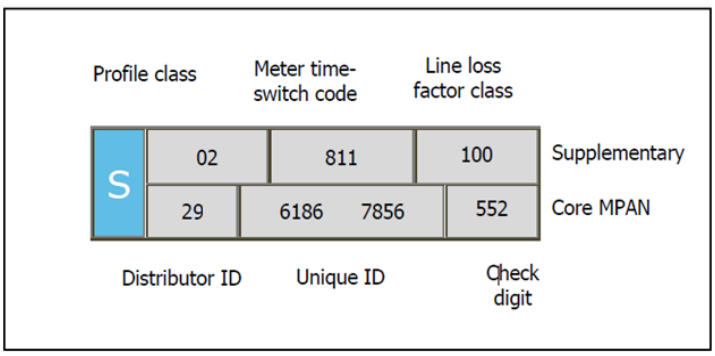
Meter point administration

1.5 We are responsible for managing the electricity supply points that are connected to our Distribution System. Typically every supply point is identified by a Meter Point Administration Number (MPAN). A few supply points may have more than one MPAN depending on the metering configurations (e.g. a school which may have an MPAN for the main supply and a MPAN for catering).

1.6 The full MPAN is a 21 digit number, preceded by an 'S'. The MPAN applicable to a supply point is found on the electricity bill from your supplier. This number enables you to establish who your electricity distributor is, details of the characteristics of the supply and importantly the distribution charges that are applicable to your premises.

1.7 The 21-digit number is normally presented in two sections as shown in the following diagram. The top section is supplementary data which gives information about the characteristics of supply, while the bottom 'core' is the unique identifier.

Full MPAN Diagram



[13] These guidance notes are provided for additional information and do not form part of the application of charges.

1.8 Generally, you will only need to know the Distributor ID and Line Loss Factor Class to identify the distribution charges for your premises. However, there are some premises where charges are specific to that site. In these instances the charges are identified by the core MPAN. The distributor ID for Harlaxton Energy Networks Limited is 29. Other distributors IDs can be referenced in the glossary.

1.9 Additionally it can be useful to understand the profile class provided in the supplementary data. The profile class will be a number between 00 and 08. The following list provides details of the allocation of profile classes to types of customers

- 01 – Domestic customers with unrestricted supply
- 02 – Domestic customers with restricted load, for example off-peak heating
- 03 – Non-domestic customers with unrestricted supply
- 04 – Non-domestic customers with restricted load, for example off-peak heating
- 05 – Non-domestic maximum demand customers with a load factor of less than 20%
- 06 – Non domestic maximum demand customers with a load factor between 20% and 30%
- 07 – Non-domestic maximum demand customers with a load factor between 30% and 40%
- 08 – Non-domestic maximum demand customers with a load factor over 40% or non-half-hourly metered generation customers
- 00 – Half-hourly metered demand and generation customers

1.10 Unmetered Supplies will be allocated to profile class 01, 08 and 00 depending on the type of load or the measurement method of the load.

1.11 The allocation of the profile class will affect your charges. If you feel that you have been allocated the wrong profile class, please contact your supplier as they are responsible for this.

Your charges

1.12 All distribution charges that related to our Distributor ID 29 are provided in this statement (please refer to attached Annexes).

1.13 You can identify your charges by referencing your Line Loss Factor Class, from Annex 1. If the MPAN is for a Designated EHV Property then the charges will be found in Annex 2. In a few instances, the charges may be contained in Annex 3. When identifying charges in Annex 2, please note that some Line Loss Factor Classes have more than one charge. In this instance you will need to select the correct charge by cross referencing with the core MPAN provided in the table.

1.14 Once you have identified which charge structure applies to your MPAN then you will be able to calculate an estimate of your distribution charge using the calculator provided in this spread sheet, 'Schedule of charges and other tables' found in the sheet called 'Charge Calculator'. This spread sheet can be downloaded from www.harlaxtonenergynetworks.co.uk

Reducing your charges

1.15 The most effective way to reduce your energy charges is to reduce your consumption by switching off or using more energy efficient appliances. However, there are also other potential opportunities to reduce your distribution charges; for example, it may be beneficial to shift demand or generation to a better time period. Demand use is likely to be cheaper outside the peak periods and generation credits more beneficial, although the ability to directly benefit will be linked to the structure of your supply charges.

1.16 The calculator mentioned above provides the opportunity to establish a forecast of the change in distribution charges that could be achieved if you are able to change any of the consumption related inputs.

Reactive power and reactive power charges

1.17 Reactive power is a separately charged component of connections that are half-hourly metered. Reactive power charges are generally avoidable if 'best practice' design of the properties' electrical installation has been provided in order to maintain a power factor between 0.95 and unity at the Metering Point.

1.18 Reactive Power (kVArh) is the difference between working power (active power measured in kW) and total power consumed (apparent power measured in kVA). Essential it is a measure of how efficiently electrical power is transported through an electrical installation or a distribution system.

1.19 Power floating with a power factor of unity results in the most efficient loading of the Distribution System. Power floating with a power factor of less than 0.95 results in much higher losses in the Distribution System, a need to potentially provide higher capacity electrical equipment and consequently a higher bill for you, the consumer. A comparatively small improvement in power factor can bring about a significant reduction in losses since losses are proportional to the square of the current.

1.20 Different types of electrical equipment require some 'reactive power' in addition to 'active power' in order to work effectively. Electric motors, transformers and fluorescent lighting, for example, may produce poor power factors due to the nature of their inductive load. However, if good design practice is applied then the poor power factor of appliances can be corrected as near as possible to source. Alternatively poor power factor can be corrected centrally near to the meter.

1.21 There are many advantages that can be achieved by correcting poor power factor. These include: reduced energy bills through lower reactive charges, lower capacity charges and reduced power consumption and reduced voltage drop in long cable runs.

Site-specific EDCM charges

1.22 A site classified as a Designated EHV Property is subject to a locational based charging methodology (referred to as EDCM) for higher voltage network users. Distributors use two approved approaches: Long Run Incremental cost Pricing (LRIC) and Forward Cost Pricing (FCP) and we mirror whichever approach is used by the incumbent distributor in the distributing service area. The EDCM will apply to customers connected at Extra High Voltage or connected at High Voltage and metered at a high voltage substation.

1.23 EDCM charges and credits are site-specific, reflecting the degree to which the local and higher voltage networks have the capacity to serve more demand or generation without the need to upgrade the electricity infrastructure. The charges also reflect the networks specifically used to deliver the electricity to the site as well as the usage at the site. Generators with non-intermittent output and deemed to be providing beneficial support to our networks may qualify to receive payment.

1.24 The charges under the EDCM comprise of the following individual components:

- **Fixed charge** – This charge recovers operational costs associated with those connection assets that are provided for the 'sole' use of the customer. The value of these assets is used as a basis to derive the charge.
- **Capacity Charge (pence/kVA/day)** – This charge comprises the relevant FCP/LRIC components, the National Grid Electricity Transmission cost and other regulated costs.

  Capacity charges are levied on the MIC, MEC and any exceeded capacity. You may wish to review your MIC or MEC periodically to ensure it remains appropriate for your needs as you may be paying for more capacity than you require. If you wish to make changes contact us via the details in paragraph 1.12

  The FCP/LRIC cost is locational and reflects our assessment of future network reinforcement necessary at voltage of connection (local) and beyond at all higher voltages (remote) relevant to the customer's connection. This results in the allocation of higher costs in less congested parts of the network. The local FCP/LRIC cost is included in the capacity charge.

  Our regulated costs include direct and indirect operational costs and a residual amount to ensure recovery of our regulated allowed revenue. The capacity charge recovers these costs using the customer usage profile and the relevant assets being used to transport electricity between the source substation and customer's Metering Point.

- **Super-red unit charge (pence/kWh)** – This charge recovers the removes the remote FCP/LRIC component. The charge is positive for import and negative for export which means you can either reduce your charges by minimising consumption or increasing export at those times. The charge is applied on consumption during the Super-red time period as detailed in Annex 2.

1.25 Future charge rates may be affected by consumption during the Super-red period. Therefore reducing consumption in the Super-red time period may be beneficial.

1.26 Reactive Power **–** The EDCM does not include a separate charge for any reactive power flows (kVAr) for either demand or generation. However, the EDCM charges do reflect the effect on the network of the customers' power factor, for example unit charges can increase if your site power factor is poor (lower than 0.95). Improving your site's power factor will also reduce the maximum demand (kVA) fir the same power consumed in kW thus providing scope to reduce your agreed capacity requirements.

Annex 1 – Schedule of changes for use of the distribution system by LV and HV Designated Properties

Annex 2 – Schedule of charges for use of the distribution system by Designated EHV Properties (including LDNOs with Designated EHV Properties/End-Users)

Annex 3 – Schedule of charges for use of the distribution system by preserved/additional LLF Classes

Annex 4 – Charges applied to LDNOs with LV and HV end-users

Annex 5 – Schedule of Line Loss Factors

Annex 6 – Addendum to charging statement detailing charges for new Designated EHV Properties

As HARL operates across all DNO areas, spread sheets for the Annexes detailed about have been created for each DNO area, and are available to download from www.harlaxtonenergynetworks.co.uk or can be requested by emailing info@harlaxtonenergynetworks.co.uk