

# ELEXON

## CCDG TRANSITION DELIVERABLE

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Unmetered Supplies

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## Contents

<b>Contents</b>	<b>1</b>
<b>Background</b>	<b>2</b>
What are Unmetered Supplies?	2
Where can I find out more about Unmetered Supplies?	2
What are Charge Codes and Switch Regimes?	2
How will Unmetered Supplies be settled under the MHHS Target Operating Model?	2
How will the UMSDS calculate the SP Level data?	3
Equivalent Meter Functionality	3
Functions of a Passive Meter.	3
	<b>4</b>
<b>Transition and Migration of UMS MPANs</b>	<b>4</b>
The Unmetered Supplies Market Segment	4
The Unmetered Supplies Segment at a glance:	4
Tranches of UMS MPANs	5
What new Registration Data Items are required to move UMS MPANs to the Target End State?	5
Unmetered: Phase 1 – Governance, system and process changes	6
Unmetered: Phase 2 – Adoption of HH MPANs and migration of NHH MPANs	6
Phase 3 – Interfacing with Registration Services	6
Phase 4 – Transfer of data into BSC Central System	6

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## Background

This document set out the approach to Unmetered Supplies (UMS) under Market-wide HHS, the Transition Approach and the approach to migration of UMS MPANs into the Target Operating Model.

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### What are Unmetered Supplies?

An Unmetered Supply (UMS) means a supply of electricity to a particular inventory of equipment in respect of which a Licensed Distribution System Operator (LDSO) has issued an Unmetered Supply Certificate. For example, this equipment could be any electrical equipment that draws a current and is connected to the Distribution Network without a meter, i.e. there is no meter recording its energy consumption, e.g. street lights, traffic signs, zebra crossings, etc.

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### Where can I find out more about Unmetered Supplies?

The [Operational Information Document \(OID\)](#) provides guidance on the UMS processes. The BSC requirements for Unmetered Supplies are set out in [Section 8](#) of BSC Section S. The BSC processes are set out in BSCP520 '[Unmetered Supplies registered in SMRS](#)'.

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### What are Charge Codes and Switch Regimes?

[Charge Codes and Switch Regimes](#) are the standing data that allows the energy calculation for both HH and Non-Half Hourly unmetered Supplies to be calculated.

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### How will Unmetered Supplies be settled under the MHHS Target Operating Model?

The Settlement Period Level data will be calculated by the Unmetered Supplies Data Service (UMSDS). This service will be responsible for:

- receiving inventory data associated with unmetered Supplies from distribution businesses;
- validating the inventory data as appropriate;
- accessing other dynamic information relating to the operation of unmetered Supplies;
- accessing standing data relating to Unmetered Supplies;
- calculating Settlement Period level data for Unmetered Supplies according to a defined schedule; and
- providing access to calculated Settlement Period level data to the Market-wide Data Service (MDS).

The UMSDs will be an adapted version of the existing Settlement Market Role of Meter Administrator (MA).

### Why is HH Settlement more accurate than NHH Settlement for UMS?

The HH Settlement calculation for UMS is more accurate as it models the behaviour of each piece of inventory data provided by the customer. For example if a street light is switched off for a period during the night this behaviour will be modelled using the Charge Code which indicate the Circuit Watts for the street light and the Switch Regime which shows the pattern of behaviour. Likewise, if the street light dimmed to another light-out put the energy calculation will reflect the behaviour.

In the NHH calculation and Estimated Annual Consumptions (EACs) are calculated across the customer's inventory which is then applied to static profile. These profile are based on Profile Class 1 (the domestic profile) or Profile Class 8 (the flattest non-domestic profile) which do not reflect the pattern of actual UMS. The NHH calculation does not take account of the fact that days are longer in summer or shorter in winter. Whereas, the HH calculation uses actual sunrise and sunset times or derives them from the Astronomical Almanac.

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### How will the UMSDS calculate the SP Level data?

The UMSDS will calculate the SP Level data using software called an Equivalent Meter (EM). The pieces of software are currently operated by MAs.

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### Equivalent Meter Functionality

Equivalent meters are of two types:-

- a) **Passive meters** which allocate the Unmetered consumption across the half hourly periods by a mathematical relationship of annual burning hours to the daily time of sunrise and sunset; and
- b) **Dynamic meters** which allocate the Unmetered consumption across the half hourly periods by reference to the operation of a number of actual Photo Electric Control Units (PECUs), or by making use of actual switching times reported by a [Central Management System](#). In either case the equivalent meter defaults to a passive mode using calculated times of switch operation in the event of the actual switching times not being available.

The UMSDS will undertake both Passive and Dynamic calculations. Existing HH Mpans will retain the Dynamic Calculations currently undertaken. However, smaller UMS MPANs are likely to be calculated using a passive calculation. However, a reference to regional PECU information may also be used in the future to improve the accuracy of the calculations.

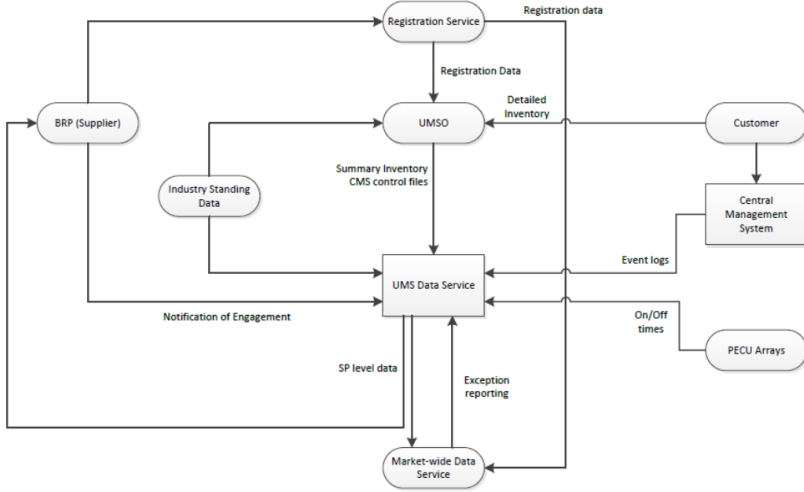
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### Functions of a Passive Meter.

- a) The EM shall be able to add, delete and modify all information required to define each MSID and to relate it to the Customer, LDSO, Supplier and Data Collector.
- b) The EM shall be able to add, delete and modify Summary Inventory data for each MSID electronically. Summarised inventory data shall comprise:
  - MSID;
  - Effective From Date;
  - Inventory title and/or reference;
  - Charge Code;
  - Switch Regime;
  - Total number of units of each Charge Code/Switch Regime combination.
- c) The EM shall be able to add, delete and modify Charge Code and their associated circuit watts and circuit Volt Amperes reactive (VAr) for both full load circuit loading and dimmed load ratings as appropriate.
- d) The EM shall be able to add, delete and modify Switch Regimes and their associated operating times. The system shall be populated using the offsets and fixed times defined in the OID associated spreadsheets for each Switch Regime.
- e) The EM shall use the average latitude and longitude information and a sunrise/sunset algorithm to calculate the time of sunrise and sunset for each day within two minutes of the sunrise and sunset times as derived from the Astronomical Almanac.
- f) The EM shall calculate the import or export kWh in each half hour period in UTC for each MSID.
- g) The EM shall provide an output file in a defined format.
- h) The EM shall provide an audit trail of changes to data held.

The following diagram show the Target End State for UMS:

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**Transition and Migration of UMS MPANs**

The Design Working Group set out the following high level approach to transitioning UMS to the new TOM

**The Unmetered Supplies Market Segment**

The Unmetered Supplies segment will occur progressively, allowing the evolution of the Meter Administrator (MA) role into the Unmetered Supplies Data Service (UMSDS) under the TOM. This will be enabled through governance changes, and will allow all currently NHH settled UMS energy to be settled HH via the UMSDS, HHDC and HHDA. Once the new BSC Central Settlement Services are able to accept disaggregated MPAN and SP level data, the UMSDS will provide this directly into Settlement and the HHDC and HHDA roles can be withdrawn following a period of parallel running.

The intention of the transition approach is to disturb this segment of the market as little as possible.

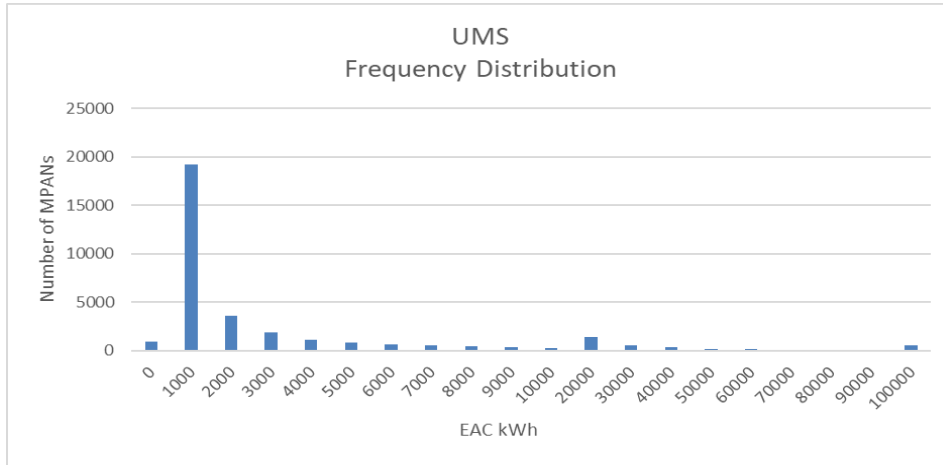
**The Unmetered Supplies Segment at a glance:**

- 80% of unmetered volume, ~350 MPANs already HH;
- Remaining 20% of unmetered volume, ~30k MPANs currently NHH;
- NHH profiling requires, on average 2 MPANs per inventory, so total MPANs will halve; and
- Most existing NHH are small energy volume with some exceptions.

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**Tranches of UMS MPANs**

Suppliers will need to identify tranches of UMS customers to move to HH Settlement. Most NHH MPANs have an annual consumption of <1000 kWhs:



Ideally the Supplier should look to move the larger NHH UMS customers first taking into account the fact that NHH UMS customers have up to 4 MPANs. The EACS for the NHH MPANs need to be combined to get a view of the size of the UMS customer overall.

**What new Registration Data Items are required to move UMS MPANs to the Target End State?**

The following Registration Data items will be required to move MPANs to the Target End State. However, this does not prevent Suppliers from using the Change of Measurement Class process to move MPANs under the existing arrangements:

Data Item	Definition	Data Master	Data Type
Connection Type Indicator	A code to indicate the type of connection at the metering point. The valid set will be (W, L, H and E).	Distributor	String
Connection Type Indicator Effective From Date	The date and time from which the metering point Connection Type is in effect.	Distributor	String
Customer Direct Contract Data Service	An indicator to show if a direct customer contract exists between the customer at the metering service and the Data Service provider.	Data Service	String
GSP Group Effective From Date	The date and time from which the GSP Group ID is in effect for the metering system.	Distributor	String
Market Segment Indicator	An enumeration of Smart/Advanced/Unmetered.	Registration Service	String
Market Segment Indicator Effective From Date	The date from which the metering point Market Segment is in effect.	Registration Service	String

**Commented [KS1]:** We appear to be missing the Data Service MPID and EFD in the consultation table.

**Commented [KS2]:** Will we need the direction of flow indicator to have a data items and be populated?

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### What new Industry Standing Data will be required to move UMS MPANs to the Target End State?

The following ISD data will be required to move UMS MPANs to the Target End State.

New ISD Data Tables	Detail	Comment
Market Segment	U, S OR A	For use in both Registration and in defining CCCids
Connection Type Indicator	W, L, H or E	For use in both Registration and in defining CCCids
Line Loss Factor Identifier	Format to be decided	This is to be used to identify Line Loss Factors to be used in Settlement Calculations
Valid Set of Load Shape Categories	UMS Load Shapes	UMS Load shapes included in the set of categories divided by GSP Group, Domestic/ Non-Domestic and Measurement Quantity
MHHS Consumption Component Classes	UMS CCCIDs	New UMS CCC IDs to be created.
MHHS GSPG Scaling Weights	UMS CCCID Scaling Weights	New UMS CCCID Scaling weights need to be created

#### Unmetered: Phase 1 – Governance, system and process changes

- Ofgem will direct/ make changes to governance and codes using their powers under the Smart Meters Act;
- The UMSO and BRP will review and cleanse their data to remove erroneous NHH unmetered customer MPANs and/or encourage inclusion with existing HH inventories;
- The UMSO and MA will adapt their systems to provide Summary Inventories and Control files in common defined formats;
- The UMSO and BRP will contact customers to notify of changes and timings;
- MAs will adapt their Equivalent Meters (EM) to output HH data for customer MPANs to the required granularity. Their systems may also need to be scaled to deal with an additional volume of data;
- The MA will undertake qualification as an UMSDS; and
- Some HHDCs and HHDA may need to adapt their systems to process HH data at Watt-hour granularity if the wish to provide UMS Services for smaller UMS customers (or if they wish to provide elective HH Services) during the transition.

#### Unmetered: Phase 2 – Adoption of HH MPANs and migration of NHH MPANs

- UMSO, SMRS and BRP will need to change registration of NHH UMS customers to HH Measurement Classes and will need to rationalise MPANs where a customer has more than one under the existing NHH Arrangements;
- The existing contracts for HH MPANs will be adopted by the UMSDS from the MA;
- The HH data for 'migrated' MPANs shall be notified to BRP via HHDC/HHDA systems; and
- A schedule of transition activity will be agreed between BRP, UMSO and UMSDS and monitored by BSCCo.

#### Unmetered: Phase 3 – Interfacing with Registration Services

- Registration Services will need to interface with the new UMSDS to provide appointment information; and
- The UMSDS will need to process and as appropriate respond to appointment information.

#### Unmetered: Phase 4 – Transfer of data into BSC Central System

- Once interface with BSC Central system is available to the UMSDS, the data shall be redirected directly from the UMSDS to BSC Central systems;

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- Changes will be required by the UMSDS to support the new architecture and to add appropriate identifiers to the HH output data made available to the BSC Central Systems; and
  - The HH data for 'migrated' MPANs shall be notified to BRP directly by the UMSDS.
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