

Balancing and Settlement Code

BSC Procedure

Unmetered Supplies Data Services

BSCP700

Version 0.2

Date: 6 February 2023

BSCP700 relating to the Unmetered Supplies Data Services

1. Reference is made to the Balancing and Settlement Code and, in particular, to the definition of “BSC Procedure” in Section X, Annex X-1 thereof.
2. This is BSC Procedure 700, Version 0.1 relating to the Unmetered Supplies Data Services.
3. This BSC Procedure is effective from **DD MM YYYY**.
4. This BSC Procedure has been approved by the BSC Panel or its relevant delegated Panel Committee(s).

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Amendment Record

| Version | Date | Description of Change | Changes Included | Mods/Panel/Committee Refs. |
|----------------|-------------|------------------------------|-------------------------|-----------------------------------|
| 0.1 | 09/01/2023 | First Draft | MHHS Programme | |
| 0.2 | 06/02/2023 | Following Initial Reviews | | |

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1 Introduction

1.1 Scope and Purpose of the Procedure

All energy transfers at points of connection and/or supply via circuits connected to the Licensed Distribution System shall be metered, except in a limited number of defined circumstances. These exceptions, are known as Unmetered Supplies (UMS), shall be at the discretion and approval of the Unmetered Supplies Operator (UMSO) acting on behalf of the Licensed Distribution System Operator (LDSO). The UMSO shall only consider providing an UMS at an exit point in accordance with Statutory Instrument (SI) 2001 No. 3263. The requirements to allow for a UMS are set out in the SI and be found in BSCP700X Unmetered Supplies Operations.

The SI also gives details to the Disputes process.

1.2 BSC Procedure

This BSC Procedure (BSCP) sets out the requirements for UMS Data Service (UMSDS) registered in Supplier Meter Registration Service (SMRS). This procedure also sets out the Unmetered Supplies Data Service (UMSDS) requirements for Equivalent Meter functionality. It sets out the approval process for an Equivalent Meter. It also sets out the processes for provision of data for Settlement.

1.3 Main Users of Procedure and their Responsibilities

This BSCP should be used by Suppliers, UMSDS, LDSOs and UMSOs.

1.4 BSCP Content

The following scenarios are covered in this procedure:

- Responsibilities of the UMSDS
- General Validation Requirements
- Interface and Timetable Information
- Approval of an Equivalent Meter
- Equivalent Meter calculations
- PECU Arrays
- Equivalent Meter Functionality
- UMSDS Validation of the UMS Inventory
- Load Shapes and Defaulting
- Publish and Data flags
- Equivalent Meter Audit Requirements.

1.5 Use of the Procedure

This BSCP shall be followed when it is agreed that the exit point qualifies to be energised without a Meter and is therefore an UMS.

1.6 Balancing and Settlement Code Provision

This BSCP has been produced in accordance with the provisions of the Balancing and Settlement Code (the Code), and in particular the provisions of Section S8 'Unmetered Supplies'.

1.7 Associated BSC Procedures

BSCP40 Change Management.

BSCP501 **Supplier Meter Registration Service.**

BSCP~~XXX~~ Changes to Industry Standing Data.

BSCP515 Licensed Distribution.

BSCP537 Qualification Process for SVA Parties, SVA Party Agents and CVA MOAs.

BSCP70~~X~~ Unmetered Supplies Operations

1.8 Acronyms and Definitions

1.8.1 Acronyms

The terms used in this BSCP are defined as follows:

| | |
|-------|---|
| BSC | Balancing and Settlement Code |
| BSCCo | Balancing and Settlement Code Company |
| BSCP | Balancing and Settlement Code Procedure |
| CMS | Central Management System |
| DIP | Data Integration Platform |
| EFD | Effective From Date |
| EM | Equivalent Meter |
| GSP | Grid Supply Point |
| HH | Half Hourly |
| Id | Identifier |
| ISD | Industry Standing Data |
| kWh | Kilowatt Hour |
| LDSO | Licensed Distribution System Operator |
| MDS | Market-wide Data Service |
| mCMS | Measured Central Management System |
| MSID | Metering System Identifier |
| OID | Operational Information Document |
| PECU | Photo Electric Control Unit |
| SMRA | Supplier Meter Registration Agent |
| SMRS | Supplier Meter Registration Service |
| SSD | Supply Start Date |
| SVA | Supplier Volume Allocation |
| UMS | Unmetered Supplies |
| UMSDS | Unmetered Supplies Data Service |

| | |
|-------|---|
| UMSO | Unmetered Supplies Operator of the LDSO |
| UMSUG | Unmetered Supplies User Group |
| UTC | Co-ordinated Universal Time |
| W | Watts |
| WD | Working Day |

1.8.2 Definitions

Full definitions of the above acronyms and other defined terms used in this BSCP are, where appropriate, included in the Code. For clarification, definitions are provided below for terms specifically associated with UMS:-

“Apparatus” means all equipment in which electrical conductors are used, supported or of which they may form part;

“Astronomical Almanac” means the Astronomical Almanac published annually by the Stationery Office or other suitable publication;

“Central Management System” means a system that is able to dynamically control and manage the electrical load used by Apparatus registered as an Unmetered Supply;

“CMS Manufacturer” means a person marketing a Central Management System;

“CMS Test Agent” means a Meter Administrator appointed to carry out testing of a CMS in accordance with the relevant test specification;

“Dawn” means 30 minutes before Sunrise;

“Detailed Inventory” means an inventory of Apparatus as specified in the Section titled Standard File Format for Detailed Inventories in the Operational Information Document;

“Dusk” means 30 minutes after Sunset;

“Equivalent Meter” means the hardware and software as defined in [Appendix 4.3](#);

“UMSDS System” means the software and hardware operated by the UMSDS and used to calculate half hourly consumption or export;

“Measured Central Management System” means a subset of Central Management System that is able to use feedback from an active measuring device to dynamically control and manage the electrical load used by UMS Apparatus;¹

“PECU Array” means the hardware described in [Appendix 4.5](#);

“Sub-Meter” means that within an Equivalent Meter there is more than one PECU Array or more than one UMS Inventory associated with an MSID;

“Sunrise” means the time when the sun’s apparent disc is below and tangential to the horizon at sea level and to the east of the observer;

“Sunset” means the time when the sun’s apparent disc is below and tangential to the horizon at sea level and to the west of the observer;

¹ Measured Central Management Systems (mCMS) shall not be used for controlling street lighting. Apparatus that controls street lighting can use active measurement but must follow the testing and approval process for CMS rather than mCMS. BSCCo may from time to time update the Operational Information Document (OID) to provide further guidance on the uses of mCMS.

“Switch Regime” means a 3 digit numeric code assigned to unmetered Apparatus that specifies the switching times and other technical information for the Apparatus; and

“UMS Inventory” means a summarised version of the Detailed Inventory provided to the UMSO by the Customer including the CMS controlled Apparatus where appropriate.

2 Responsibilities of the UMSDS

2.1 UMSDS activity

The UMSDS must be qualified to operate as a Data Service in line with the BSC Qualification Process. [MHHS-BR-DS-133]

UMSDS must operate an approved Equivalent Meter. [MHHS-BR-DS-070]

The UMSDS is responsible for the following:

- a) receiving a copy of the agreed UMS Inventory of the UMS Apparatus for an MSID, together with agreed updates, from the UMSO; [MHHS-BR-DS-061]
- b) on being appointed, obtain details of the Central Management System from the customer, UMSO and/or CMS provider; [MHHS-BR-DS-067]
- c) validating and processing the D0388 UMS Inventory information into the EM, generating a D0389 UMS Inventory Response flow to the UMSO. [MHHS-BR-DS-062]
- d) using the latitude and longitude information for the MSID appropriate to the installed Apparatus; [MHHS-BR-DS-017]
- e) validating all Charge Codes and Switch Regimes against the Operational Information Document (OID) and associated ISD; [MHHS-BR-DS-069]
- f) ensuring UTC Period Level Consumption from the EM is available to BSC Central Systems to meet the Volume Allocation Run timescales set out in the Master Settlement Timetable; and
- g) retaining Settlement data in accordance with PSL100 'Non-Functional Requirements for Licensed Distribution System Operators and Party Agents'.

Where the UMS customer requires the UMSDS to contact a PECU Array or access data from a Central Management System (CMS) or Measured Central Management System (mCMS) the UMSDS shall be required to have a direct relationship with the UMS Customer to facilitate collection of the data required for the UMSDS calculations.

2.2 Recording of Data

The UMSDS shall record sufficient details in respect of a MSID to enable the UMSDS to perform its functions as UMSDS and operate the Equivalent Meter permitted for use within the GSP Group by the LDSO. These details shall include:

- the Settlement Days for which the UMSDS is appointed by the Supplier;
- the relevant MSID;
- the UMSO appointed to the MSID;
- the geographical position defined by the UMSO for that MSID or, where these are defined by the UMSO, the geographical positions for related Sub-Meters of the inventory for that MSID;

- the indicator defined by the UMSO as to whether a PECU Array is required for that MSID or for related Sub-Meters of the UMS Inventory where these Sub-Meters are agreed with the UMSO;
- the energisation status associated with the MSID in Supplier Meter Registration Service;
- the indicator defined by the UMSO as to whether a Central Management System is required for that MSID or for related Sub-Meters as per the D0388 UMS Inventory where these Sub-Meters are agreed with the UMSO.

The UMSDS shall record and use such Industry Standing Data (ISD) as is considered appropriate by the BSC Panel (having regard to the UMSDS's functions) and shall, in particular, use only ISD for those items in relation to which there is a ISD entry or other information provided by the UMSO where such information does not conflict with ISD.

2.3 Equivalent Meter Audit Requirements

UMSDSs shall ensure that audit trails are maintained between:

- Equivalent Meter failure reports or energisation/de-energisation requests, and any subsequent actions taken; and
- data requested and data sent (or received) in relation to transfers of data between outgoing and incoming UMSDSs.

2.4 Resolution of Queries and Disputes

The UMSDS shall respond to queries raised by the Supplier, UMSO, the Market-wide Data Service, the BSC Auditor and the LDSO.

In the event of any dispute as to whether an item of ISD is appropriate or, as the case may be, affects the accuracy of Settlement, the decision of the Panel shall be final.

2.5 Recording Devices

The UMSDS shall ensure that the import or export of electrical energy by every MSID to which it is appointed is accurately recorded by the correct use of an Equivalent Meter.

2.6 Systems and Processes

The UMSDS shall use systems and processes so approved in accordance with BSCP537 in the operation of Equivalent Meters. These systems and processes must also comply with all other applicable requirements set out in the Code and other relevant CSDs.

2.7 Termination of Appointment of UMSDS

The UMSDS shall prepare and maintain plans that will enable its Supplier's obligations under the Code to continue to be met notwithstanding the expiry or termination of the UMSDS's appointment as the UMSDS. The plans, which the UMSDS undertakes to implement on any such expiry or termination, will include the immediate transfer of data and other information to an incoming UMSDS appointed by the Supplier or to the Panel.

Details of the processes to be followed when there is a Change of UMSDS are set out in [Section 3.3](#).

2.8 The UMS Inventory

The UMSDS shall record a history of the D0388 UMS Inventory and their effective from dates input to the Equivalent Meter.

Details of the processes to be followed for new and updated D0388 UMS Inventory are described in more detail in Sections 3.1 and 3.2 of this document.

Where the D0388 UMS Inventory is not provided by the UMSO the UMSDS shall request the UMSO to provide the correct information and inform the associated Supplier if it is not provided in time to allow data to be submitted for the Initial Settlement Run for any MSID to which the UMSDS has been appointed

2.9 General UMSDS Requirements

2.9.1 Flexible Settlement Period duration [\[MHHS-BR-DS-137\]](#)

The UMSDS should, where possible, build in the ability to configure the settlement period duration during their solution design, in order to support any future move to a different Settlement Period duration.

2.9.2 Publish data via the DIP in agreed ISO8601 date/time format [\[MHHS-BR-DS-138\]](#)

The UMSDS must publish data following ISO8601 format - YYYY-MM-DDTHH:MM:SS±TZH:TZM.

2.9.3 Message addressing [\[MHHS-BR-DS-139.2\]](#)

The UMSDS must derive and populate the DIP addressing (primary recipients) for all outbound interfaces in line with the rules described in the [\[interface specification: Document\]](#).

2.9.4 Process data in a timely manner [\[MHHS-BR-DS-142\]](#)

The UMSDS must process data and share outputs with other parties in line with timescales set as defined in the [\[Document\]](#)

2.9.5 Qualification for DIP access [\[MHHS-BR-DS-143.2\]](#)

The UMSDS must undergo Qualification in order to realise operational access to the DIP.

2.9.6 Manage Data Integration Platform error messages [\[MHHS-BR-DS-143\]](#)

The UMSDS must obtain DIP form error messages in line with the [\[End to End Solution Architecture: Document\]](#), review the impacted data and re-issue corrected messages/transactions as required.

2.9.7 Inbound DIP message validation [\[MHHS-BR-DS-143.1\]](#)

The UMSDS must return DIP error messages in line with the [End to End Solution Architecture: Document]. Unexpected and/or un-processable messages should be returned to the DIP/ originating party

2.9.8 Ensure responses received [MHHS-BR-DS-144]

The UMSDS, when transacting via the DIP, must ensure that they implement monitoring so as to identify where expected responses are not received within standard DIP SLA's, as outlined in the [Document], so that the appropriate investigative/ resolution activity can be undertaken.

2.9.9 DIP activity/ performance dashboard [MHHS-BR-DS-144.1]

The UMSDS must have familiarity with and actively monitor any DIP tools for tracking flows, as outlined in the [End to End Solution Architecture: Document], so that the necessary investigative action can be taken when required.

2.9.10 Reporting requirements [MHHS-BR-DS-145]

The UMSDS must provide and receive reports in line with agreed reporting requirements and delivery methods.

2.9.11 Ability to use existing Market Message flows [MHHS-BR-DS-149]

The UMSDS requires the continued use of Market Message flows, UMSDSs should ensure that if they plan to service customer types that utilise these processes then a mechanism will be required for transmitting/receiving Market flows.

2.9.12 Validate data [MHHS-BR-DS-152]

The UMSDS should implement data validation steps and techniques that they feel are appropriate to ensure the most accurate and efficient delivery of the service.

2.9.13 Electricity Enquiry Service [MHHS-BR-DS-156]

UMSDSs could choose to take advantage of the Electricity Enquiry Service (EES previously known as ECOES) in order to obtain the current data associated with an MSID in cases where a query arises around the accuracy of data held.

2.9.14 Manage data on receipt of interfaces [MHHS-BR-DS-157]

The UMSDS must maintain and update their records with any data received on interfaces to ensure the most accurate and efficient delivery of the service.

2.10 General Validation Requirements

2.10.1 The UMSDS must validate the following Information:

- The D0388 UMS Inventory data against the Operational Information Document (OID) and as defined in Appendix 4.8 below;
- The PECU Array data collected;

- The CMS Event data; and
- Against the Industry Standing Data (ISD).

3 Interface and Timetable Information

3.1 Appointment of the UMSDS and Establishment of a New UMS Inventory

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---|---|---|-------|-------|---|---------------|
| 3.1.1 [BP003 Step 220] [MHHS-BR-DS-002] | Receipt and validation of Initial Appointment Request | UMSDS receives and validates initial Appointment Request | SMRS | UMSDS | IF/PUB-033 SMRS Appointment Request | DIP Interface |
| 3.1.2 [BP-003 Step 221] | Within [1 hour] following receipt of Initial Appointment Request | Provide Response to Appointment Request. If accepted, proceed to 4.1.4, otherwise proceed to 4.1.3. | UMSDS | SMRS | IF/PUB-034 Response to Appointment Request | DIP Interface |
| 3.1.3 [BP-003 Step 221] | Within [1 hour] of receipt of the notification in 3.1.2 where Appointment is rejected | Reject Appointment. | UMSDS | SMRS | IF/PUB-034 Rejection Response to Appointment Request | DIP Interface |
| 3.1.4 [BP-003 Step 221] | Within [1 hour] of receipt of the notification in 3.1.2 where Appointment is accepted | Accept Appointment. | UMSDS | SMRS | IF/PUB-034 Acceptance Response to Appointment Request | DIP Interface |
| 3.1.5 [BP-003 Step 95] [BP-003 Step 231] [BP-003 Step 232] | Following 3.1.4 | Manage UMSDS Proposed Appointment Outcome Response. If outcome is lapsed delete associated data. | SMRS | UMSDS | IF/PUB-035 Registration Service Appointment Status Notification | DIP Interface |

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---|---|--|-------|--------|---|-----------------------------------|
| 3.1.6 [BP-003 Step 340] [MHHS- BR-DS- 029] | For the prospective Appointment, | UMSDS Notified Pending Appointment as Effective. The notification will also include details of any linked Associated Export MSIDs. | SMRS | UMSDS | IF/PUB-036 Service Provider Notification of Appointment & Supporting Info | DIP Interface |
| 3.1.7 [MHHS- BR-DS- 017] | Following 3.1.6 | Request from the UMISO the type of EM (Passive or Dynamic) and agree the location, if any, of the PECU Array(s) and other factors relevant to the PECU Array Siting Procedure in 4.5. | UMSDS | UMSO. | | Electronic or other agreed method |
| 3.1.8 [MHHS- BR-DS- 017] [MHHS- BR-DS- 064] | Following 3.1.7 | Agree the Sub-Meter ID(s), type of EM (Passive or Dynamic) and the location, if any, of the PECU Array(s) in accordance with the provision of the PECU Array Siting procedures in 4.5 Provide latitude and longitude information to UMSDS. In the absence of more specific information, the latitude and longitude for the geographic centre of the GSP Group should be used (see OID). | UMSO. | UMSDS | Type of EM and agreed latitude and longitude or geographic co-ordinates. | Electronic or other agreed method |
| 3.1.9 [BP- 010B Step 380] | If associated export MSID | UMSDS receives and manages notification of Export MSID. | SMRS | UMSDS | IF/PUB-020 Manage Meterpoint Relationships Response | DIP Interface |
| 3.1.10 [BP-004 Step124] [MHHS- BR-DS- 061] | Within 2 hours of Confirmation of UMISO Appointment | UMSDS receives UMS Inventory from UMISO following their Appointment Confirmation. | UMSO. | UMSDS. | D0388 – UMS Inventory | Electronic or other agreed method |

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--|---|---|--------|-----------------|---|---|
| 3.1.11 | Within 5 WD validate UMS Inventory against OID and ISD. | UMSDS validates D0388 Inventory against the OID and ISD. See Sections 3.7 and 3.13. | UMSDS | | Internal Process | |
| 3.1.12 [BP-004 Step128] [MHHS-BR-DS-062] [MHHS-BR-DS-063] | If UMS Inventory fails validation. | Reject D0388 UMS Inventory. | UMSDS. | UMSO. | D0389 – UMS Response | Electronic or other agreed method. |
| 3.1.13 [BP-004 Step128] [MHHS-BR-DS-062] [MHHS-BR-DS-063] | If UMS Inventory passes validation. | Process using EM and send response to UMSO and where appropriate, send a copy of UMS extracted from the EM to the Customer. | UMSDS | UMSO, Customer. | D0389 – UMS Response Report of UMS Inventory content. | Electronic or other agreed method Paper, fax or electronic media, as agreed. |
| 3.1.14 | If unable to send HH data before SSD. | Inform the Supplier of an EM fault (as set out in Section 3.9). | UMSDS. | Supplier. | | Electronic or other agreed method. |
| 3.1.15 [MHHS-BR-DS-070] | Prior to SSD or Energisation Date whichever is later. | Initiate Data Collection Processes (as set out in 3.7) | UMSDS | | | |

3.2 Amendment to a UMS Inventory

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---|--|--|--------|------------------|--|--|
| 3.2.1 [BP-004 Step124] [MHHS-BR-DS-061] | When UMISO has agreed amendments to Detailed Inventory with Customer | Send revised UMS Inventory to UMSDS | UMISO. | UMSDS | D0388 – UMS Inventory | Electronic or other agreed method. |
| 3.2.2 [BP-004 Step128] [MHHS-BR-DS-063] | If items exist in the updated UMS Inventory for which no data on load and switching times have been defined. | Reject updated UMS Inventory, listing invalid Charge Codes and/or Switch Regimes to the UMISO and/or reasons as detailed in Section 4.8. | UMSDS. | UMISO. | D0389 – UMS Response | Electronic or other agreed method. |
| 3.2.3 [BP-004 Step128] [MHHS-BR-DS-063] | Within 5 WD of receipt or by the EFD [whichever is the later date]. | Process using EM and send response to UMISO and where appropriate, send a copy of UMS Inventory extracted from the EM to the Customer. | UMSDS. | UMISO, Customer. | D0389 – UMS Response Report of UMS Inventory content. | Electronic or other agreed method. Paper, fax or electronic media, as agreed. |
| 3.2.4 [MHHS-BR-DS-070] | Following 4.2.3 | Initiate Data Collection Processes (as set out in 3.7) | UMSDS | | | Electronic or other agreed method. |

3.3 Change of Supplier

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---|---|---|-------|-------|---|---------------|
| 3.3.1 [BP003B Step 220] | Receipt and validation of Initial Appointment Request | UMSDS receives and validates initial Appointment Request Response from new Supplier via SMRS. | SMRS | UMSDS | IF/PUB-033 SMRS Appointment Request | DIP Interface |
| 3.3.2 [BP-003 Step 221] | Within [1 hour] following receipt of Initial Appointment Request | Provide Response to Appointment Request. If accepted, proceed to 3.3.4, otherwise proceed to 3.3.3. | UMSDS | SMRS | IF/PUB-034 Response to Appointment Request | DIP Interface |
| 3.3.3 [BP-003 Step 221] | Within [1 hour] of receipt of the notification in 3.1.2 where Appointment is rejected | Reject Appointment. | UMSDS | SMRS | IF/PUB-034 Rejection Response to Appointment Request | DIP Interface |
| 3.3.4 [BP-003 Step 221] | Within [1 hour] of receipt of the notification in 3.3.1 where Appointment is accepted | Accept Appointment. | UMSDS | SMRS | IF/PUB-034 Acceptance Response to Appointment Request | DIP Interface |
| 3.3.5 [BP-003 Step 91] [BP-003 Step 231] [BP-003 Step 232] | Following 3.3.4 | Manage UMDS Proposed Appointment Outcome Response. If outcome lapsed delete associated data. | SMRS | UMSDS | IF/PUB-035 Registration Service Appointment Status Notification | DIP Interface |

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|-----------------------------------|--|--|-------|-------|---|-----------------------------------|
| 3.3.6 BP-003 Step 340] | For the prospective Appointment, | UMSDS Notified Pending Appointment as Effective. The notification will also include details of any linked Associated Export MSIDs. | SMRS | UMSDS | IF/PUB-036 Service Provider Notification of Appointment & Supporting Info | DIP Interface |
| 3.3.7 BP-003 Step 96] | Following 336 If existing UMDS | UMSDS Receives De-appointment from old Supplier via SMRS. | SMRS | UMSDS | IF/PUB-037 Notification of Service De-Appointment | DIP Interface |
| 3.3.8 [MHHS- BR-DS- 017] | If Change of Supplier concurrent with changes to EM or PECU Array siting | Request from the UMDSO the type of EM (Passive or Dynamic) and agree the location, if any, of the PECU Array(s) and other factors relevant to the PECU Array Siting Procedure in 4.1. | UMSDS | UMSO. | | Electronic or other agreed method |
| 3.3.9 [MHHS- BR-DS- 017] | Following 3.3.8 | Agree the Sub-Meter ID(s), type of EM (Passive or Dynamic) and the location, if any, of the PECU array(s) in accordance with the provision of the PECU Array Siting procedures in 4.1 Provide latitude and longitude information to UMDSO. In the absence of more specific information, the latitude and longitude for the geographic centre of the GSP Group should be used (see OID). | UMSO. | UMSDS | Type of EM and agreed latitude and longitude or geographic co-ordinates. | Electronic or other agreed method |
| 3.3.10 | If New UMDS | Go to Section 3.1.9 | | | | |

3.4 Change of UMSDS

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---|---|---|-----------|-----------|---|---------------|
| 3.4.1 [BP003 Step 60] | Receipt validation of Initial Appointment Request | UMSDS receives and validates initial Appointment Request Response | SMRS | New UMSDS | IF/PUB-033 SMRS Appointment Request | DIP Interface |
| 3.4.2 [BP-003 Step 221] | Within [1 hour] following receipt of Initial Appointment Request | Provide Response to Appointment Request. If accepted, proceed to 3.4.4, otherwise proceed to 3.4.3. | New UMSDS | SMRS | IF/PUB-034 Response to Appointment Request | DIP Interface |
| 3.4.3 [BP-003 Step 221] | Within [1 hour] of receipt of the notification in 3.1.2 where Appointment is rejected | Reject Appointment. | New UMSDS | SMRS | IF/PUB-034 Rejection Response to Appointment Request | DIP Interface |
| 3.4.4 [BP-003 Step 221] | Within [1 hour] of receipt of the notification in 3.1.2 where Appointment is accepted | Accept Appointment. | New UMSDS | SMRS | IF/PUB-034 Acceptance Response to Appointment Request | DIP Interface |
| 3.4.5 [BP-003 Step 91] [BP-003 Step 231] [BP-003 Step 232] | Following 3.4.4 | Manage UMSDS Proposed Appointment Outcome Response. If outcome is lapsed delete associated data. | SMRS | UMSDS | IF/PUB-035 Registration Service Appointment Status Notification | DIP Interface |
| 3.4.6 BP-003 Step 250] | For the prospective Appointment, | UMSDS Notified Pending Appointment as Effective | SMRS | UMSDS | IF/PUB-036 Service Provider Notification of Appointment & Supporting Info | DIP Interface |

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--|--|--|-----------|------------|--|-----------------------------------|
| 3.4.7 [BP-003 Step 96] | Following 3.4.6 | Old UMSDS Receives De-appointment from old Supplier | SMRS | Old UMSDS | IF/PUB-037 Notification of Service De-Appointment | DIP Interface |
| 3.4.8 [BP-003 Step 760] [MHHS- BR-DS- 030] | If linked Associated Export MSID | UMSDS receives Export MSID de-appointments and maintain records accordingly. UMSDS should note this message will be automatically triggered when a change of Data Service has successfully completed for the linked import MSID. | SMRS | Old UMSDS | IF/PUB-037 Notification of Service De-Appointment | DIP Interface |
| 3.4.9 [MHHS- BR-DS- 017] | Following 3.4.6 | Request from the UMSO the type of EM (Passive or Dynamic) and agree the location, if any, of the PECU Array(s) and other factors relevant to the PECU Array Siting Procedure in 4.1. | New UMSDS | UMSO. | | Electronic or other agreed method |
| 3.4.10 [MHHS- BR-DS- 017] [MHHS- BR-DS- 064] | Following 3.4.6 | Agree the Sub-Meter ID(s), type of EM (Passive or Dynamic) and the location, if any, of the PECU Array(s) in accordance with the provision of the PECU Array Siting procedures in 4.1 Provide latitude and longitude information to UMSDS. In the absence of more specific information, the latitude and longitude for the geographic centre of the GSP Group should be used (see OID). | UMSO. | New UMSDS. | Type of EM and agreed latitude and longitude or geographic co-ordinates. | Electronic or other agreed method |

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--|--|---|------------|-----------------|---|---|
| 3.4.11 [BP-004 Step124] [MHHS-BR-DS-061] [MHHS-BR-DS-067] | Within 120 minutes of Confirmation of UMSO Appointment | UMSO sends UMS Inventory to UMSDS. | UMSO. | New UMSDS. | D0388 – UMS Inventory | Electronic or other agreed method |
| 3.4.12 [BP-004 Step128] [MHHS-BR-DS-062] [MHHS-BR-DS-063] | Within 5 WD validate UMS Inventory against OID. If inventory fails validation. | Reject UMS Inventory and await new UMS Inventory. | New UMSDS. | UMSO. | D0389 – UMS Response | Electronic or other agreed method. |
| 3.4.13 [BP-004 Step128] [MHHS-BR-DS-062] [MHHS-BR-DS-063] | If UMS Inventory passes validation. | Process using EM and send response to UMSO and where appropriate, send a copy of UMS Inventory extracted from the EM to the Customer. | New UMSDS | UMSO, Customer. | D0389 – UMS Response Report of UMS Inventory content. | Electronic or other agreed method Paper, fax or electronic media, as agreed. |
| 3.4.14 | | Request sufficient information to enable the incoming UMSDS to assume responsibility for the MSID. This data may exclude that data provided by the Supplier pursuant to paragraph 2.2. | New UMSDS. | Old UMSDS. | As agreed. | Electronic or other agreed method. |
| 3.4.15 | | Transfer information. | Old UMSDS. | New UMSDS. | As agreed. | Electronic or other agreed method. |

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--------|---------------------|--|--------------|----|-------------------------|--------|
| 3.4.16 | Following 3.4.14 | Initiate Data Collection Processes (as set out in 3.7) | New UMSDS | | | |

3.5 Change of Energisation Status of an MSID

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---------------------------------------|---------------------|---|-------|-------|--|---|
| 3.5.1 [BP-008 Step155] | | UMSDS receives notification of Change of Energisation Status | SMRS | UMSDS | IF/PUB-008 Registration Service Change of Energisation Status Notification | DIP Interface |
| 3.5.2 | If energised | Start Data Collection Activities see 3.7 | UMSDS | | | Internal Process. |
| 3.5.3 [METH004 Section 10.1] | If de- energised | UMSDS Receives a D0388 UMS Inventory with a zero Charge Code. | UMSO | UMSDS | D0388 – UMS Inventory | Electronic or other agreed method |

3.6 Disconnection of an MSID

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--|--|---|------|-------|---|------------------|
| 3.6.1 [BP-007 Step 140] | | UMSDS Receives De-appointment associated with Disconnection of an MSID. | SMRS | UMSDS | IF/PUB-037 Notification of Service De-Appointment | DIP Interface |
| 3.6.2 [BP-003 Steps 740 and 760] [MHHS- BR-DS- 030] | If linked Associated Export MSID | UMSDS receives Export MSID de-appointments associated with Disconnection of an MSID and maintains records accordingly. UMSDS should note this message will be automatically triggered when a change of Data Service has successfully completed for the linked import MSID. | SMRS | UMSDS | IF/PUB-037 Notification of Service De-Appointment | DIP Interface |

3.7 Data Collection and Processing Activities

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--|--------------------|--|-------|-------|--|------------------|
| 3.7.1 [BP004 Steps 133 and 130] [MHHS- BR-DS- 064] [MHHS- BR-DS- 066] | | Collect and validate PECU Array data | UMSDS | | Internal Process | |
| 3.7.2 [BP004 Steps 131 and 134] [MHHS- BR-DS- 068] | | Collect and validate CMS Event logs | UMSDS | | Internal Process | |
| 3.7.3 [BP004 Step 136] | | UMSDS Receive notification of ISD Update | ISD | UMSDS | IF/PUB-047 Notification of the Publication of a Downloadable Asset | DIP Interface |
| 3.7.4 [BP004 Step135] [MHHS- BR-DS- 069] | Following 3.7.3 | UMSDS Accesses ISD data using Distribution Delivery URI | UMSDS | ISD | Distribution Delivery URI defined in IF/PUB-047 Notification of the Publication of a Downloadable Asset | |
| 3.7.5 [BP004 Step132] | Following 3.7.4 | UMSDS Validates and Stores ISD Data See Section 3.13 | UMSDS | | Internal Process | |
| 3.7.6 [BP004 Step 129] [MHHS- BR-DS- 071] | | Load External Data into the EM | UMSDS | | Internal Process | |

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--|--------------------------------------|--|-------|------------------------|---|---------------|
| 3.7.7 [BP005 Step 10] [MHHS-BR-DS-085] [MHHS-BR-DS-090] | | Produce, validate or recalculate, consumption data from the EM for each MSID for each UTC Day. | UMSDS | | Internal Process | |
| 3.7.8 [BP005 Step 30] [MHHS-BR-DS-078] | If consumption is invalid | UMSDS Receives Load Shape Data From LSS ² | LSS | UMSDS | IF/PUB-022 Load Shape Period Data PUB-023 Load Shape Totals Data | DIP Interface |
| 3.7.9 [BP005 Step 20] [BP005 Step 40] | Following 3.7.8 | If no data available use appropriate Default Load Shape Data to estimate consumption | UMSDS | | Internal Process | |
| 3.7.10 [BP005 Step 50] [BP005 Step 60] | | Submit UTC Settlement Period Level Consumption Data and manage any Message failures | UMSDS | MDS Subscribed Parties | IF/PUB-021 UTC Settlement Period Consumption Data | DIP Interface |
| 3.7.11 [BP019 Step 85] | If MDS Exception Report is Published | UMSDS receives an Exception Report from MDS | MDS | UMSDS | IF/PUB-014 Rejected - UTC Settlement Period Consumption Data | DIP Interface |
| 3.7.12 | Following 3.7.11 | UMSDS resolves issues with rejected data based or Self Describing Error Code | UMSDS | | Internal Process | |

² UMDS must be able to, in exceptional circumstances reprocess previously submitted data when a new load shape is made available [MHHS-BR-DS-081]

| REF. | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---------------------------|----------------------|--|-------|------------------------|---|---------------|
| 3.7.13 | Following 3.7.12 | UMSDS re-submits UTC Settlement Period Level Consumption Data and manages any Message failures | UMSDS | MDS Subscribed Parties | IF/PUB-021 UTC Settlement Period Consumption Data | DIP Interface |
| 3.7.14 [BP019 Step 85] | Following an MDS Run | UMSDS receives details of Defaulted Data | MDS | UMSDS | IF/PUB-013 Notification of Defaulted UTC Settlement Period Consumption Data | DIP Interface |
| 3.7.14 [BP010 Step 70] | At any time | UMSDS receives Notification of Registration Data Item Changes | SMRS | UMSDS | IF/PUB-018 Notification of Registration Data Item Changes | DIP Interface |

3.8 Approval of an Equivalent Meter

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--------|----------------------------------|---|---------------|---------------|--|------------------|
| 3.8.1 | At any time | Submit request for EM approval. | Applicant | BSCCo | Details of EM type, including software and hardware versions. | Email, fax, post |
| 3.8.2 | Within 2 WD of 3.8.1 | Confirm receipt and request any further details as necessary. | BSCCo | Applicant | | Email, fax, post |
| 3.8.3 | Within 5 WD of 3.8.2 | Provide example of test schedule and details of EM Test Agents. | BSCCo | Applicant | EM test schedule, EM Test Agents. | Email, fax, post |
| 3.8.4 | Within 10 WD of receipt of 3.8.3 | Agree test schedule. | Applicant | BSCCo | Re-drafted schedule (if required). | As agreed |
| 3.8.5 | Within 10 WD of 3.8.4 | Agree EM Test Agent with BSCCo. | Applicant | BSCCo | Notification of EM Test Agent. | As agreed |
| 3.8.6 | Within 10 WD of 3.8.5. | Liaise with EM Test Agent to undertake EM testing. | Applicant | EM Test Agent | Notification of EM Test Agent. | As agreed |
| 3.8.7 | As agreed with Applicant. | Undertake testing and submit report to Applicant. | EM Test Agent | Applicant | EM Test Report. | Email or post |
| 3.8.8 | Following completion of testing | Submit EM approval request to BSCCo | Applicant | BSCCo | Approval request, EM Test Report and any other supporting information. | Email or post |
| 3.8.9 | At next opportune UMSUG meeting | Prepare and present report to UMSUG requesting recommendation for approval of EM. | BSCCo | UMSUG | UMSUG Paper. | Internal process |
| 3.8.10 | Within 5 WD of 3.8.9. | Notify Applicant of UMSUG recommendation. If EM approval is not recommended, liaise with Applicant and provide details of additional information or testing required. Return to 3.8.7 or 3.8.8 as necessary. If EM approval is recommended proceed to 3.8.11. | BSCCo | Applicant | UMSUG recommendation and any supporting information. | Email or post |
| 3.8.11 | At next opportune Panel meeting | Prepare and present report to Panel recommending EM for approval or rejection as appropriate. | BSCCo | Panel | Panel Paper. | Internal process |

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--------|-----------------------|--|-------|-------------------------|--|------------------|
| 3.8.12 | Within 5 WD of 3.8.11 | Notify Applicant of Panel decision. If EM not approved, liaise with Applicant and recommend next steps. If EM approved, proceed to 3.8.13. | BSCCo | Applicant | Panel decision and any supporting information. | Email or post |
| 3.8.13 | Within 5 WD of 3.8.11 | Update Approved EM list on BSC Website with details of approved EM | BSCCo | | EM Approval Details. | Internal Process |
| 3.8.14 | Within 5 WD of 3.8.11 | Communicate update to Parties and Party Agents | BSCCo | Parties Party Agents | EM Approval Details. | Email or post |

3.9 Equivalent Meter Fault Reporting³ - Investigating Inconsistencies [MHHS-BR-DS-147.2]

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|-------|--|--|------------------|---------------------|--|------------------------------------|
| 3.9.1 | When a potential fault or inconsistency is identified for which the UMSDS is responsible, which means that data may be or is missing and/or incorrect. | Advise of the potential for a fault or inconsistency. | Any Participant. | Supplier. UMSDS. | Details of the potential fault. | Electronic or other agreed method. |
| 3.9.2 | Within 5 WD of identification of a potential fault. | Investigate the potential fault and rectify it as required. | UMSDS. | | | Internal Process. |
| 3.9.3 | As soon as reasonably practical following 3.9.2. | Report the fault and the dates covered by the fault and the date and time of rectification. | UMSDS. | Supplier, UMSO. | Details of the fault, including the dates covered by the fault and the date and time of rectification. | Electronic or other agreed method. |
| 3.9.4 | Following 3.9.3, where it is possible to re-run the EM system to rectify the error. | UMSDS re-submits UTC Settlement Period Level Consumption Data and manages any Message failures | UMSDS | MDS | IF/PUB-021 UTC Settlement Period Consumption Data | UMSDS |

³ Failures related to PECU Arrays are covered in 4.6.5.

3.10 Approval of Central Management System

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--------|--|--|------------------|------------------|--|------------------|
| 3.10.1 | At any time | Notify BSCCo of intention to apply for CMS approval. | CMS Manufacturer | BSCCo | Details of CMS type, including software and hardware versions. | Email, fax, post |
| 3.10.2 | Within 2 WD | Confirm receipt and request any further details as necessary. | BSCCo | CMS Manufacturer | Acknowledgement of notification. | Email, fax, post |
| 3.10.3 | Within 5 WD | Provide relevant CMS test specification and details of CMS Test Agents. | BSCCo | CMS Manufacturer | CMS test specification, CMS Test Agents. | Email, fax, post |
| 3.10.4 | | Appoint CMS Test Agent. | CMS Manufacturer | CMS Test Agent | Details of CMS type, including software and hardware versions. | Email, fax, post |
| 3.10.5 | Within 5 WD | Notify BSCCo of appointed CMS Test Agent. | CMS Manufacturer | BSCCo | Notification of CMS Test Agent. | Email, fax, post |
| 3.10.6 | | Liaise with CMS Test Agent to prepare a CMS test evidence report, including testing of the CMS by the CMS Test Agent, as detailed in the CMS test specification. | CMS Manufacturer | CMS Test Agent | CMS test evidence report. | Email, fax, post |
| 3.10.7 | | Verify CMS test evidence report and provide confirmation of test results. | CMS Test Agent | CMS Manufacturer | Verification of CMS test evidence report and confirmation of successful testing. | Email, fax, post |
| 3.10.8 | Following completion of successful testing by CMS Test Agent | Submit CMS approval request to BSCCo. | CMS Manufacturer | BSCCo | CMS test evidence report, CMS Test Agent testing results and any other supporting information. | Email, fax, post |

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---------|---------------------------------|--|-------|-------------------------------------|---|------------------|
| 3.10.9 | Within 10 WD | <p>Check CMS test evidence report for compliance with CMS test specification and determine if further witness testing required to be carried out by BSCCo.</p> <p>If witness testing required, liaise with CMS Manufacturer and/or CMS Test Agent to arrange testing</p> <p>If CMS test evidence report confirms compliance without witness testing proceed to 3.16.11</p> | BSCCo | CMS Manufacturer, CMS Test Agent | Details of areas requiring further witness testing to confirm compliance with CMS test specification. | Email, fax, post |
| 3.10.10 | | <p>BSCCo to carry out witness testing in liaison with CMS Manufacturer and CMS Test Agent.</p> <p>If witness testing reveals non-compliance with CMS test specification revert to 3.16.6.</p> <p>If testing confirms compliance with CMS test specification proceed to 3.16.11.</p> | BSCCo | CMS Manufacturer, CMS Test Agent | Details of non-compliance with CMS test specification. | Email, fax, post |
| 3.10.11 | At next opportune UMSUG meeting | Prepare and present report to UMSUG requesting recommendation for approval of EM. | BSCCo | UMSUG | UMSUG Paper. | Internal process |

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---------|---------------------------------|---|-------|----------------------------------|--|------------------|
| 3.10.12 | Within 5 WD of 3.10.11 . | <p>Notify CMS Manufacturer of UMSUG recommendation.</p> <p>If CMS approval is not recommended, liaise with CMS Manufacturer and provide details of additional information or testing required. Return to 3.10.6, 3.10.7 or 3.10.8 as necessary.</p> <p>If CMS approval is recommended proceed to 3.10.13.</p> | BSCCo | CMS Manufacturer, CMS Test Agent | UMSUG recommendation and any supporting information. | Email, fax, post |
| 3.10.13 | At next opportune SVG meeting | Prepare and present report to SVG recommending CMS for approval or rejection as appropriate. | BSCCo | SVG | SVG Paper. | Internal process |
| 3.10.14 | Within 2 WD | <p>Notify CMS Manufacturer of SVG decision.</p> <p>If CMS not approved, liaise with CMS Manufacturer and recommend next steps.</p> <p>If CMS approved, proceed to 3.10.15.</p> | BSCCo | CMS Manufacturer | SVG decision and any supporting information. | Email, fax, post |
| 3.10.15 | Within 2 WD | Update Approved CMS list on BSC Website with details of approved EM | BSCCo | | CMS Approval Details. ⁴ | Internal Process |

⁴ Approval shall only be given to the software and hardware versions tested. Any subsequent changes to software and/or hardware shall be reported to BSCCo with details of the changes. These shall be referred to UMSUG to consider whether approval can be extended or re-approval is required.

3.11 Central Management System - Fault Reporting

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--------|---|---|------------------|------------------|---|------------------------------------|
| 3.11.1 | When a potential fault or inconsistency with the CMS data being used by the UMSDS for the energy calculations is identified | Advise of the potential for a fault or inconsistency. | Any Participant. | UMSDS. | Details of the potential fault. | Electronic or other agreed method. |
| 3.11.2 | Within 5 WD of identification of a potential fault. | Investigate the potential fault and rectify it as required. If investigations show that fault is with Equivalent Meter data for which the UMSDS is responsible, proceed to 3.11.4 If investigations show that fault is with CMS data being provided to the UMSDS, proceed to 3.17.3 | UMSDS. | | | Internal Process. |
| 3.11.3 | Following 4.12.2 where fault is with CMS data being provided to the UMSDS. | If fault is with Customer's control files If fault is with data received in CMS event logs, proceed to 3.11.7 | UMSDS. | Customer, UMISO, | Details of the potential fault or inconsistency. e.g. mismatched CMS Unit References, invalid control files, etc. | Email, fax, post |
| 3.11.4 | Within 20 WD | Investigate fault and rectify it as required. If fault not rectified within 20 WD proceed to 3.11.6. | Customer, UMISO | UMSDS | Corrected data including updated control files as appropriate. | Electronic or other agreed method. |

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--------|--|--|---------------------|---|---|---|
| 3.11.5 | Following 3.11.4, where it is possible to re-run the EM system to rectify the error. | UMSDS sends corrected data. | UMSDS | MDS Subscribed Parties | IF/PUB-021 UTC Settlement Period Consumption Data | DIP Interface |
| 3.11.6 | Following 3.11.4 where fault has not been rectified within 20 WD. | If fault is with Customer's inventory or with the inventory details in the CMS, UMSO shall take action to ensure the UMSO and Customer comply with the UMS Connection Agreement and National Terms of Connection | UMSO | Customer, UMSDS | Details of fault and actions required by Customer to rectify fault. | Email, fax, post. |
| 3.11.7 | Following 3.11.3 where fault is with event logs | If fault is with single Customer's CMS data e.g. missing/invalid event logs, time discrepancies, erroneous switching patterns, etc. If fault is with multiple customer instances of CMS proceed to 3.11.10. | UMSDS | CMS Manufacturer, Customer, UMSO | Details of the CMS fault causing errors in the energy calculations. | Email, fax, post. |
| 3.11.8 | Within 20 WD | CMS Manufacturer to liaise with UMSDS, Customer and UMSO (as necessary) to send corrected event logs that rectify fault. | CMS Manufacturer | UMSDS | Corrected event logs. | Electronic or other agreed method. |
| 3.11.9 | Following 3.11.8, where it is possible to re-run the EM system to rectify the error. | UMSDS sends corrected data. | UMSDS | MDS Subscribed Parties | IF/PUB-021 UTC Settlement Period Consumption Data | DIP Interface |

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---------|---|---|--------------------|---|---|--|
| 3.11.10 | Following 3.11.8 where fault has not been rectified within 20 WD or same fault occurring in multiple instances of CMS | UMSDS to send details of fault and discussions with CMS Manufacturer to rectify fault. | UMSDS. | BSCCo, CMS Manufacturer | Report details of the CMS fault causing errors in the energy calculations being provided to Settlement including list of Customers using the faulty CMS and affected UMSOs. | Email, fax, post. |
| 3.11.11 | Within 20 WD | BSCCo to liaise with CMS Manufacturer and UMSDS to agree action plan to resolve fault. | BSCCo | CMS Manufacturer, UMSDS. | Agreed action plan. | Email, fax, post |
| 3.11.12 | If fault not rectified in accordance with action plan. | BSCCo to advise CMS Manufacturer of failure to meet action plan requirements | BSCCo | CMS Manufacturer, UMSDS. | Notification of failure and intention to refer to UMSUG. | Email, fax, post |
| 3.11.13 | At next opportune UMSUG meeting | Prepare and present report to UMSUG to consider removal of CMS approval. | BSCCo | UMSUG | UMSUG Paper. | Internal process |
| 3.11.14 | Within 5 WD following 3.12.13 | If the UMSUG recommendation is to remove approval, notify CMS Manufacturer, affected Customers, UMSOs and UMSDSs. Proceed to 3.11.15. If recommendation of UMSUG is to retain approval of CMS, subject to fault rectification and/or repeat of CMS approval process. | BSCCo BSCCo | CMS Manufacturer Customers, UMSOs UMSDSs. CMS Manufacturer Customers, UMSOs UMSDSs | UMSUG recommendation and any supporting information. UMSUG recommendation and any supporting information. | Email, fax, post. Email, fax, post. |
| 3.11.15 | At next opportune SVG meeting | Prepare and present report to SVG recommending removal of CMS approval. | BSCCo | SVG | SVG Paper. | Internal process |

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---------|---------------------------------------|--|-------|---|--|-------------------|
| 3.11.16 | Within 5 WD of 3.11.15 | <p>Notify CMS Manufacturer of SVG decision.</p> <p>If CMS approval removed, proceed to 3.11.17.</p> <p>If decision of SVG is to retain approval of CMS, subject to fault rectification and/or repeat of CMS approval process.</p> | BSCCo | CMS Manufacturer Customers, UMSOs UMSDSs | SVG decision and any supporting information. | Email, fax, post |
| 3.11.17 | Within 5 WD of 3.11.16 | Update Approved CMS list on BSC Website with details of approved EM | BSCCo | | CMS Approval Details. | Internal Process |
| 3.11.18 | Where CMS approval has been withdrawn | UMSO shall take action to ensure the UMSO and Customer comply with the UMS Connection Agreement and National Terms of Connection and notify the UMSDS | UMSO | Customer UMSDSs. | Details of CMS approval removal and actions required by Customer to rectify fault. | Email, fax, post. |

3.12 UMSDS accesses Industry Standing Data

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|---|---|--|-------|-------|--|--|
| 312.1 [BP004 Step 136] [MHHS-BR-DS-139] | | UMDS Receives notification of ISD Update | ISD | UMSDS | IF/PUB-047 Notification of the Publication of a Downloadable Asset | DIP Interface |
| 3.12.2 [BP004 Step135] [MHHS-BR-DS-069] | Following 3.12.1 | UMSDS Accesses ISD data using Distribution Delivery URI | UMSDS | ISD | Distribution Delivery URI | |
| 3.12.3 [BP004 Step132] | Following 3.12.2 | UMSDS Validates and Stores ISD Data | UMSDS | | Internal Process | |
| 3.12.4 | If data not readable and / or incomplete. | Send notification and await receipt of ISD data flows. | UMSDS | ISDM. | P0035 Invalid Data. | Electronic or other method, as agreed. |
| 3.12.5 | Following 3.12.3 | Ensure all ISD affecting the accuracy of Settlement is accurately entered and used in performing its functions. ⁵ | UMSDS | | | Internal Process. |
| 3.12.6 [BP004 Step 136] | After re-publish of ISD. | UMSDS Receives notification of ISD Update | ISD | UMSDS | IF/PUB-047 Notification of the Publication of a Downloadable Asset | DIP Interface |
| 312.7 | | UMSDS accesses revised ISD data. | ISDM. | UMSDS | Distribution Delivery URI | Electronic or other method, as agreed. |

⁵ The UMSDS must utilise Industry Standing Data to identify the relevant DIP ID/Role or Market Message Market Participant ID/Role, as appropriate, to be used when communicating over the DIP/DTN. [MHHS-BR-DS-139.1]

| REF | WHEN | ACTION | FROM | TO | INFORMATION REQUIRED | METHOD |
|--------|---|------------------|-------|----|-------------------------|-------------------|
| 3.12.8 | As soon as possible after data in correct format. | Update database. | UMSDS | | | Internal Process. |

3.13 Change of Connection type or Change of Segment

On change of connection type from unmetered the UMSDS will be de-appointed and the MSID will be disconnected as per [Section 3.6](#). If the connection type and Market Segment has changed to unmetered the new connection process set out in Section 4.1 will be followed.

4 Appendices

4.1 Categories of Unmetered Apparatus

The categories of Unmetered Apparatus can be found in the OID and associated Charge Codes obtained in the Industry Standing Data:

- UMS Charge Codes (Entity M9)
- UMS Manufacturer Equipment LED Range Charge Codes (Entity M10)

4.2 Switch Regimes

The Switch Regime is described in the OID and a complete list may be found in the Industry Standing Data:

- UMS Switch Regimes (Entity M11)
- UMS Variable Power Switch Regimes (Entity M12)

4.3 Equivalent Meter and Central Management System Specification

The specification below is insufficient for a Code of Practice but describes the required functionality of Equivalent Meters used to provide Settlement consumption data for Unmetered Supplies.

New hardware and software systems complying with the EM Specification may be developed and submitted to the UMSUG and the BSC Panel for approval in accordance with **Section 3.8 Approval of New Equivalent Meter**. Once approved, a system may be used in conjunction with any other hardware and software so long as there is no material impact on the Equivalent Meter's original approval. Where such impact is believed to be material, further approval should be sought.

Equivalent Meter Calculations

4.4 Equivalent Meter – Calculation

EMs undertake the calculation as defined below:

For the UMS Inventory effective on the relevant day for that Sub-Meter, for either:

- each CMS controlled item, or
- each Charge Code & Switch Regime combination

Multiply the number of items by the circuit watts (full or dimmed as appropriate) for the relevant Charge Code by the seconds attributable (full or dimmed as appropriate) to the Switch Regime and divide by 1,000 to determine the kWh in each half hour.

For each Sub-Meter, the seconds attributable to the Switch Regime in each half hour are derived, in order, from:

- (1) For CMS controlled items, the switching times and power level information in the event file received from the CMS System (or where events have not been received at the time of the calculation use defaulting arrangements defined);
- (2) For PECU Array determined items, the switching events recorded by the PECUs representing the Switch Regime in the Primary PECU Array (or the Secondary PECU Array where data from the Primary Array is not available and where a Secondary Array is defined) which passes validation. Where data is not available from the Primary or Secondary PECU Array, switching times from the default Switch Regime shall be used in accordance with 3 & 4 below;
- (3) For items with a Switch Regime not determined by a PECU Array but linked to the sunset/sunrise times, then the times as defined by the Switch Regime in conjunction with the Astronomical Almanac; or
- (4) For items with fixed switching times, then those times defined by the Switch Regime.

For each MSID, sum the kWh for each combination described above for each Sub-Meter, rounding the calculation for each HH period per Sub Meter to three decimal places. Repeat for each half hour of the UTC Day.

PECU Arrays [MHHS-BR-DS-065]

4.5 PECU Array Siting Procedure

4.5.1 Overview

The UMSDS shall maintain and operate the PECU Array or, as the case maybe, PECU Arrays used for a particular MSID. The siting of the PECU Arrays will be agreed between

the UMSO and the UMSDS and be located in an area with a high density of apparatus unless otherwise agreed between the UMSO and the UMSDS.

4.5.2 Siting Factors

The factors to be considered when determining the location and number of PECU Arrays are:

- a) Centres of population and hence concentrations of load;
- b) Distance from another PECU Array;
- c) Topography;
- d) Customer boundaries;
- e) GSP Group boundaries;
- f) Total load controlled; and
- g) Access

4.5.3 Sharing PECU Arrays

One PECU Array may provide data for more than one EM. Also, more than one PECU Array may provide data for the same EM. There will be instances when one PECU Array will service the requirements of part of, or more than, one Customer.

The EM will log all switching actions to at least the nearest second.

Where a shared PECU Array is being used by two or more different UMSDSs, then one should take the lead and ensure that the others are informed of any changes to PECUs or other details, in a timely manner, in advance of the changes being implemented.

4.5.4 Determining the Use of Multiple or Single PECU Arrays

The number of PECU Arrays may be subject to decisions on the number of PECU types that can be populated in the PECU Array. More than one PECU Array may be required if the population of PECUs for a customer cannot be reasonably represented on a single PECU Array of 30 PECUs. Furthermore, the size of the customer's area might require more than one PECU Array to facilitate accurate calculation of Burn Hours. It is possible for the UMSDS to calculate the Annual Burn Hours for any latitude and longitude. If the differences between the proposed Array sites are very small (i.e. less than +/- 2%) then this would suggest that one Array should be sufficient. If actual Burn Hours are available for existing Arrays this data could also be used.

4.5.5 Research

The following research may be carried out to determine the siting of PECU Arrays.

If there is latitude and longitude information contained in the customer's Detailed Inventory for each item of Equipment, then it should be possible for the UMSO (and/or

UMSDS) to perform a load weighted longitude/latitude calculation to determine the ideal location of a single PECU Array.

Where detailed Equipment location is not known, then it is possible to perform the calculation described above using published population numbers for the major towns in the customer's area.

4.5.6 PECU Array Variations

In considering any variation of the number of PECU Arrays as stated in the overview paragraph above, the parties shall have due regard to the need:

- a) to reasonably minimise costs;
- b) to achieve the required accuracy in each half hour.

If a variation in the number and location of PECU Arrays is proposed by the UMSDS but is not agreed by the UMSO research may be carried as stated above. While such research is carried out and during any period of discussions, a supply may be commenced on the basis of the lesser of the number of PECU Arrays proposed.

Failing any agreement after research and discussion the matter may be referred to the BSC Panel for resolution.

4.6 PECU Array Operating Procedure

4.6.1 Types of PECUs

There are different types of PECUs, with different operating characteristics. Therefore, so that the operation of the PECU Arrays reflect reality:

- a) PECUs used in the PECU Array are to be representative of type, manufacturer and age of the population they are representing.
- b) The PECUs in the PECU Array are to be proportional to the various types in the area covered by the PECU Array.
- c) The number and types of PECUs will be determined by the UMSDS in accordance with this section.

4.6.2 PECU Representation in Equivalent Meter

The operation of each PECU is deemed to be proportional to the population on the PECU Array of that type of cell, e.g. if there are 8 cells of one type, then the operation of each one will represent the operation of one eighth i.e. 12.5% of the load controlled by that type of cell.

Where the calculation indicates that the load controlled requires less than one PECU in the PECU Array, it may be omitted from the PECU Array (and default arrangements should then apply). Where the calculation indicates that the load controlled requires more than one PECU in the PECU Array, it shall be populated with at least three PECUs.

4.6.3 Multiple PECU Arrays

If more than one PECU Array is used per UMS Inventory, then the operation of a PECU cell is deemed to be proportional to the population of that type of PECU controlled load within the area covered by that PECU Array. Therefore, where more than one PECU Array is used per UMS Inventory, the UMS Inventory must identify which PECU Array is controlling each item.

4.6.4 PECU Array Maintenance and Upkeep

Each PECU Array shall be installed, maintained and operated in accordance with Good Industry Practice. When contacting the PECU Array, the UMSDS shall ensure that any difference between the PECU Array second counter and the EM clock time equivalent does not exceed 20 seconds in any 24 hour period. When the difference does exceed 20 seconds, the PECU Array switching data should not be retrieved and the EM should be reset such that time on PECU Array and the EM are synchronised.

The UMSDS shall monitor the performance of the PECU Arrays. Where the monitoring of the PECU Arrays indicates that a single PECU is out of line with other PECUs of identical type in the same PECU Array to such an extent that the PECU is no longer representative then such PECUs shall be removed from the calculation and a retrospective calculation will be made using the remaining cells. Failed or unrepresentative PECUs should be replaced at the next available opportunity.

Where the UMSDS has identified failed or unrepresentative PECUs, and set about arranging the replacement of those PECUs, the UMSDS will determine if there are enough remaining PECUs of the same type (following the rules on representation), and if not exclude all PECUs of that type from its calculations, and use either results from a Secondary PECU Array, or apply default arrangements for that cell type.

At least annually, or in the event of a significant change to the UMS Inventory, the UMSDS shall ensure that the PECU Arrays are populated with PECUs in accordance with this section.

4.6.5 PECU Array Failure

If PECU data is not available then data from an appropriate PECU Array or default data shall be used.

In the event of data recovery the UMSDS will rerun EM calculations for the UTC Period day affected, and submit the corrected UTC Settlement Period Consumption data via the DIP.

4.6.7 Minimum Specification PECU Arrays

| PECU Array characteristic | Requirement |
|---|---|
| Minimum Specification for PECU Arrays Number of Photocells per PECU Array | 30 |
| Arrangement of Cells | Any arrangement which ensures no over shadow of one cell on another. |
| Mounting Platform | Flat platform which can be fitted on a flat roof or supported on a single upright for wall mounting. |
| Mounting for Photocells | NEMA photocell sockets and 6 blanking plates to cater for miniature cells where required, in a waterproof housing. |
| Waterproof Housing | All equipment externally located must be protected by a weatherproof enclosure. |
| Data Collection | To capture the switching on and off times of each cell at time of operation for a minimum of 7 days and 28 events per cell. Rolling Barrel (data overwrites once the logger is full). |
| Clock or time counter | The PECU Array must have a clock or time counter that can be synchronised with the EM. |
| Operating Temperature -20 to +50 degree Celsius. | -20 to +50 degree Celsius. |
| Communication | Protocol Determined by the EM to permit interrogation for remote data collection. |

4.7 Equivalent Meter Functionality

Equivalent meters have two types of operation either as:-

- 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 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.

4.7.1 Functions of an EM in Passive Mode.

- a) The UMSDS shall be able to add, delete and modify all information required to define each MSID and to relate it to the Customer, LDSO and .Supplier.
- b) The system shall be able to load and validate a file in the format of the D0388 – UMS Inventory. After processing the system shall generate a file in the format of the D0389 – UMS Response to send to the UMSO.
- c) The UMSDS shall be able to add, delete and modify Charge Code and their associated circuit watts for both full load circuit loading and dimmed load ratings as appropriate.
- d) The UMSDS 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 and associated ISD for each Switch Regime.
- e) The system 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 system shall calculate, as defined above the import kWh in each half hour period in UTC for each MSID.
- g) The system shall publish the UTC Period Level Consumption data.

4.7.2 Functions of an EM in Dynamic Mode using PECU Data

In addition to the functions of a passive meter listed above, the following are required for a EM using PECU data:-

- a) The system shall be able to use any one PECU Array for the calculations of more than one MSID.
- b) The system shall be able to use more than one PECU Array for the calculations of one MSID.
- c) In the event that a PECU in a PECU Array fails to operate, the system shall compensate in its calculations by dividing that portion of load allocated to the faulty cell between the functioning cells of the same type as the failed cell.
- d) If PECU Array data is not available for any day then a data from an alternative specified PECU Array shall be used for the calculations. If that data is not (h) the system shall provide an audit trail of changes to data held available then default PECU Switch Regime shall be used. The appropriate default Switch Regimes are defined in the OID associated ISD.
- e) The system shall maintain details for each PECU in a PECU Array relating to location, type, manufacturer, date of manufacture and model number.

- f) The system shall be able to download data from the PECU Array.
- g) The system shall monitor PECUs on the PECU Array and advise the UMSDS of any failed units.
- h) The system shall monitor the PECU Array second counter for time keeping and advise the UMSDS when the deviation exceeds the warning level as determined by the UMSDS.
- i) The UMSDS shall be able to produce switching times from a decoded PECU Array file.
- j) The system may provide a facility to apply time switch operations in accordance with a normal distribution about the nominal switching times. The standard deviation of the normal distribution shall be set by the UMSDS.
- k) The system shall provide facilities to retrospectively recalculate data for resubmission to the BSC Central Systems.
- l) The system shall be synchronised to UTC.

4.7.3 Functions of an EM in Dynamic Mode using CMS Data

Where a Customer wishes to use a CMS such customer must interact and engage the UMSDS for the purposes of providing the CMS data for the dynamic calculations.

An EM may use the detailed switching and load information recorded and reported by a Central Management System to allocate Half Hourly consumption data. In this case the CMS itself may be operated by the UMSDS or the Customer, however the UMSDS system (the system that is used to calculate the consumption), must be operated by a UMSDS Qualified in accordance with BSCP537, who retains the overall Settlement responsibility for the quality of the data submitted by the Customer via the CMS.

In addition to the functions of a passive meter listed above, the following requirements apply. Each requirement may relate to the CMS, the UMSDS system or both.

The UMSDS system shall allow the UMSDS to add, delete and modify control information for each MSID electronically - in the case of Inventory changes these will be provided by the UMISO using the D0388 UMS Inventory. The following rules shall be followed when processing the D0388 UMS Inventory:

The Number of Items associated with each CMS Unit Reference is the same as that contained in the Detailed Inventory and shall identify the number of items (e.g. lamps) associated with each CMS Unit Reference.

The Charge Code associated with each CMS Unit Reference shall be the normal code for the lamp running at full load. The Switch Regime shall be set to one of the ISD approved codes specified for use with CMS.

- a) The CMS controller devices operating each item of equipment should be summed and included as a single row in the D0388 UMS Inventory. Each different type of CMS controller shall have its own Charge Code and will be assigned a continuous

Switch Regime of 998 and a CMS Unit Reference of 'ControllerXX' where XX is the used to differentiate the entries, so the first entry would be 01, followed by 02, etc. The CMS shall record the operational switching times and power levels set for each unit and shall make this data available to the UMSDS in the form of an operational event log on a daily basis. The log shall include the CMS Unit Reference, the time and date at which the load was switched and the power level expressed as a percentage of the circuit watts defined in the ISD for the relevant Charge Code;

- b) Where the CMS and UMSDS system are operated as separate applications, the switching time and load information shall be provided to the UMSDS in the following standard format text file. Where the CMS and UMSDS system are integrated, the application must be able to produce the file on request for testing and audit purposes, however other methods may be used for transferring data between the two applications on a routine basis:

Filename: mmmmmmmmyyyymmddvvv.log

where:

mmmmmmm = Sub-Meter ID (alphanumeric)

yyymmdd = date to which the events pertain

vvv = version number

log = file extension

with all characters in lower case

File header: HMMMMMMYYYYMMDDVVV

where:

H = header identifier, capital H

MMMMMMM = Sub-Meter ID (lower case alphanumeric)

YYYYMMDD = date to which the events pertain

VVV = version number

File body: UUUUUUUUUUUUHHMMSSPPP.PPI

where:

UUUUUUUUUUUU = CMS Unit Reference (alphanumeric)

HHMMSS = time in hours, minutes and seconds, in UTC throughout the year

PPP.PP = percentage of base power i.e. undimmed power level applied to the lamp, to 2 decimal places

I = information flag (alphanumeric)

File trailer: TNNNNNNN

where:

T = trailer identifier, capital T

NNNNNNN = total number of lines including header and trailer

All lines must be the correct length and terminated with a carriage return, including all tail lines.

The information flag 'I' in the file body may be used to provide any further information relating to the data contained within the operational event log, e.g. if there are omissions, errors, etc. An alphanumeric value must be provided, although the value used for this information flag and how it is used by the CMS or the UMSDS are currently not prescribed under the BSC, so the CMS manufacturer can specify its use/structure (and agree any such functionality with the relevant UMSDS if agreed by the UMSDS).

For each CMS Unit Reference which is reported in a log file the time (HHMMSS) for each entry must differ. Any revisions to previously-reported data for events of one or more CMS Unit Reference (e.g. after repair of a fault or re-establishment of communications) shall all be provided in an incremental contiguous file version number for the date to which the events pertain. Typically, subsequent file versions are incremental updates containing only that data for CMS Unit References for which data has changed or was not previously reported. On occasions it may be necessary for a subsequent file version to be a complete refresh of the previously reported CMS Unit Reference event data for that date. The approach to be used, and the way in which updated information should be identified, shall be as agreed between the CMS operator and the UMSDS.

- d) The UMSDS system shall calculate, by an approved method, the import kWh consumption in each half hour period in UTC for each MSID using the switching times and power level information reported in the operational event log.
- e) The UMSDS system shall generate an exception list detailing any CMS Unit References reported in the D388 UMS but which are not contained in the operational event log. The exception list shall be produced for each day of the report for which any CMS Unit References are missing, and shall be provided to the contracted Customer on a monthly basis as a matter of routine, and additionally upon request from the UMSO and/or Customer.
- f) In the event that all or part of the operational event log is not available for any reason, the UMSDS system shall apply data representative of the Switch Regime indicated in the D0388 UMS Inventory provided by the UMSO (i.e. 999 or 998). This regime shall be applied for each of the affected Settlement Days affected.
- g) The UMSDS system shall recalculate the half hourly consumption once data from previous days becomes available and shall submit this revised data to the BSC Central Systems. Recalculation of consumption data will be required from time to time as more accurate data becomes available such as revised D0388 UMS

Inventory, PECU Array data, CMS Event logs (limited to 28 days) and correction of standing data errors.

- h) The UMSDS system shall provide an audit trail of changes to data held.
- i) The hardware and software associated with any Central Management System shall be installed, maintained and operated in accordance with Good Industry Practice, with clocks synchronised to UTC and accurate to within ± 20 seconds.
- j) The UMSDS shall provide ad-hoc extracts of the CMS operational event data received from such system to the UMISO on request.

4.8 UMSDS Validation of the UMS Inventory

UMSDS shall use the following sequence to validate the information provided in the D0388 UMS Inventory which will then be used to create a subsequent D0389 UMS Response.

Using any received D0388 UMS Inventory, select an MSID from the process queue and the record with the lowest Inventory Sequence Number for that MSID, then process in the following order:

4.8.1 Initial checks

Perform initial checks which negate any further detailed validation, once failure of a check occurs, then the set of data for that MSID and that Inventory Sequence Number is rejected. So, in order the checks are:

- a) File received from incorrect UMISO or invalid MSID

If received from the incorrect UMISO, identified from MSID initial two digits and UMISO MPID; or if the MSID is invalid (e.g. wrong length or check digit does not validate) then the Inventory is rejected. If it fails these tests then it is rejected with Response Reason Code = B

- b) Inventory Sequence Number error.

If the Inventory Sequence Number is equal to, or lower, than the Inventory Sequence Number currently recorded as processed (accepted or rejected) by the EM for that MSID then the Inventory is rejected; or there are two identical Inventory Sequence Numbers for a MSID in the process queue, it is therefore uncertain which set of data is correct, both will be rejected. If it fails these tests then it is rejected with Response Reason Code = C

- c) Invalid Effective From Date.

If the effective from date is outside the valid range, then it will be rejected. If it fails these tests then it is rejected with Response Reason Code = D

- d) No appointment

If the UMSDS is not appointed to the MSID for the effective from date of the inventory, then it is rejected. If it fails this test then it is rejected with Response Reason Code = E

e) Invalid Sub-Meter

If the Sub-Meter is not valid for the MSID, then it is rejected. If it fails these tests then it is rejected with Response Reason Code = F

If any of the initial checks fail, then the Inventory Sequence Number will be marked for rejection, see Section 4.8.3. The information provided will not be applied to the EM.

If all the initial checks are all passed then detailed checks of the inventory content should commence.

4.8.2 Detailed Checks

When validating the content all the following checks should be performed for all of the inventory data provided for the Inventory Sequence Number so that a complete list of rejections is reported to the UMSO. The following sequence is a hierarchy of checking and reporting:

a) Invalid Switch Regime

A single entry of any invalid Switch Regime identified in any of the Sub-Meters, identified with UMS Error Code = A.

b) Invalid Charge Code

A single entry of any invalid Charge Code identified in any of the Sub-Meters, identified with UMS Error Code = B.

c) Invalid combination of a valid Charge Code associated with a valid Switch Regime

Where the combination of a valid Charge Code (including controllers) or a valid Switch Regime are identified as an invalid combination as defined in current OID and MDD, then a single entry of the invalid combination is identified with UMS Error Code = C.

Invalid Switch Regime and invalid Charge Codes will have been reported against Error Code A & B respectively and will not be reported again in this group.

d) Invalid CMS Unit Reference

CMS Unit Reference which are duplicated, have the incorrect number of characters, or commence with an H or T are deemed to be invalid and identified with UMS Error Code = D.

If all the detailed checks are passed, then the Inventory Sequence Number will be Response Reason Code = A, for accepted. The information provided will be applied to the EM.

If any of the detailed checks fail, then the Inventory Sequence Number will be Response Reason Code = G, for Errors with Charge Code, Switch regime or CMS Unit Reference. The information provided will not be applied to the EM.

The EM will record the last processed Inventory Sequence Number for each MSID processed. The sequence will repeat, with the next Inventory Sequence Number.

4.8.3 Festive Lighting

Festive lightning shall treated as energised, but only de-energised if it is disconnected. In the scenario where festive lighting is not active, a zero Watt Charge Code should be submitted to the UMSDS on the D0388 UMS Inventory, and it will be up to the appointed UMSO to manage.

4.8.4 Creation of D0389 - UMS Response

The D0389 UMS Response is sent by the UMSDS to the UMSO and may contain acceptance and rejection entries for multiple MSIDs but not necessarily in the order received from the UMSO.

4.8.5 Processing of the D0389 by the UMSO

The UMSO should review the D0389 responses.

If the Inventory Sequence Number is shown as Accepted, then the submission has been accepted and no further action is required.

If the Inventory Sequence Number is shown as Rejected, then the reasons for rejection should be considered and resolved. Where necessary a revised submission should be prepared.

4.9 Load Shapes and Defaulting

The UMSDS shall access Load Shape Data the following Load Shape Categories (LSCs) for UMS.

The Unmetered Supplies Load Shapes can be identified using the Load Shape Category table contained within ISD.

Where no inventory data is available the UMSDS shall default the data for the MSID to the Load Shape:

Method 1: UMSDS defaults UMS data for a UTC Date

Where a default is required the UMSDS shall set the half hourly data for each UTC Period to be equal to the equivalent Load Shape Period Value ($LSPV_D$) as follows:

$$UTCP_{Dj} = LSPV_{Dj}$$

Where D is the UTC Date for which the default is being calculated and j is a UTC Period for the UTC Date.

4.10 Publish and Data Flags

The UMSDS must add the following flags to the output UTC Period Level Consumption data prior to publishing the EM output:

- a) Data calculated as actual using the D0388 UMS Inventory where MSID is energised: “A” flag
- b) Data based on Load Shape: “E” flag
- c) Data where the MSID is identified as de-energised the UMSO shall provide a D0388 UMS Inventory with a zero Charge Code. The UMSDS shall submit the calculated data with the following flag: “ZE” Flag