ELEXON

CODE CHANGE AND DEVELOPMENT GROUP CONSULTATION ON MARKET-WIDE HALF HOURLY SETTLEMENT

Detailed MHHS Target Operating Model Design, Data Items and Processes

Public

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Contents

Ofgem Foreword

Ofgem welcomes this consultation from the Code Change and Development Group (CCDG) on the detailed Target Operating Model (TOM) design for market-wide settlement reform and the matrices of the associated impacts on the industry code documents.

To maximise the opportunities provided by a smart, flexible energy system, we launched the Settlement Reform Significant Code Review in July 2017 with the objective of developing and then (subject to an Impact Assessment) implementing an enduring process to enable Market-wide half-hourly settlement. One of the key products of the Significant Code Review is the development of a TOM, outlining how settlement arrangements (including market participants, industry organisations, and code bodies) will need to change to deliver Market-wide Settlement Reform.

The first stage of the TOM design work was developed for Ofgem by the Elexon-chaired Design Working Group (DWG). The DWG delivered their final report to Ofgem in August 2019. In October of 2019 we provided a 'least regrets steer' that the further work on the TOM should continue on the basis of the DWG's preferred TOM, and proposed the creation of two new industry groups to carry on this work: the Architecture Working Group (AWG) and CCDG. The CCDG has met 12 times since December 2019. In that time they have developed proposals for the detailed design areas of the TOM, and provided input to representatives from the industry codes while they developed tabulations of how the TOM design is likely to impact the industry codes and subsidiary documents. Following on from this, the CCDG will develop the further details of the transition approach recommended by the DWG, followed by redlining of the industry codes and subsidiary documents. We would like to thank Elexon and all the members of the CCDG and it's supporting working groups for providing their time, experience and expertise to the development work on the TOM.

This consultation document has been prepared by the CCDG to inform stakeholders about their proposed approach to the design details required to further develop the DWG's TOM, as well as the potential impacts on the industry code documents and to seek your input. Market-wide Settlement Reform is a fundamental market reform, which will impact both existing and future participants in the energy market. It is important that stakeholders who have not been directly involved in the TOM design work are provided with the opportunity to review and give input at key stages. For this reason, I would encourage all stakeholders to take the opportunity to look at and respond to the consultation document. Further information on the Settlement Reform project and the Significant Code Review as a whole can be found at the Ofgem website.

Thank you for your interest in this important reform and we look forward to your responses to this consultation on the detailed TOM design and impacts on the industry codes.

Yours sincerely,

Anna Stacey

Head of Settlement Reform

EXECUTIVE SUMMARY

Summary of consultation and purpose

This consultation sets out how the CCDG has developed the lower level detail on specific design areas required to implement Market-wide Half Hourly Settlement (MHHS). It includes the essential data items and processes required to deliver the Target Operating Model (TOM) as developed by the Design Working Group (DWG) in the previous phase of the MHHS Significant Code Review (SCR) on Settlement Reform. The TOM sets out the service requirements and processes to deliver MHHS. It also contains an evaluation of the CCDG's design against Ofgem's Design and Development Principles. Outstanding areas and dependencies on other Industry change are also covered.

It is not a consultation on the DWG's preferred MHHS TOM design itself, on which Ofgem has given its provisional approval and will make the final decision on the Full Business Case (FBC) in 2021.

Following this consultation, the MHHS Architecture Working Group (AWG) will be providing and consulting on further detail of data exchanges and end to end processes in its reference architecture requirements during 2021. These have been developed based on the same data and processes set out in this CCDG consultation. The CCDG will also develop and consult on a separate set of Transition and Settlement Run-Off arrangements during 2021. After this, the CCDG will consult on the legal changes to all impacted Industry Codes in early 2022.

Essential Data Items for the MHHS TOM

The essential Data Items (all terms defined in Glossary) for the MHHS TOM have requirements for:

- Measurement Classes and Market Segments;
- Consumption Component Classes (CCCs);
- Industry Standing Data (ISD); and
- New Registration Data items.

The CCDG has made recommendations regarding the use of these data items for MHHS:

Measurement Classes

The MHHS TOM will segment the market by Meter Type rather than Measurement Class. Under the MHHS TOM, Measurement Classes will no longer be required. Non Half Hourly Measurement Classes will be discontinued and the 'Over 100 kW MD' definition for larger Half Hourly customers will no longer be relevant. MPANs will be classified by Market Segment rather than Measurement Class.

Measurement Classes will be retained until the last MPAN has been migrated and then discontinued for all newly registered MPANs. Historical Measurement Class data will be retained until the end of the Run-off for the existing Settlement arrangements. The Change of Measurement Class (CoMC) process will no longer be required. The CoMC process will be retained and used during the transition for Advanced Meters and Unmetered Supplies prior to the MHHS Tom Services going live. It will then be replaced by a 'Change of Market Segment' process.

Market Segments

Market Segment will be based on the Meter Type and Connection Type. All existing and new MPANs identified as Unmetered Supplies will be in the Unmetered (U) segment and use a single set of common processes for each MPAN.

- Where an MPAN is metered and the voltage level and connection type is set to anything other than whole current, it will be allocated to the Advanced segment (A).
- Where an MPAN is metered and whole current, the market segment will be determined from the type of Settlement meter held in the Registration Service (SMRS), which can be either Smart, non-Smart or Advanced.
- Where there is no meter connected, a Supplier can appoint services based on the expected Meter Type.

The Market Segment (and its effective date) can be determined entirely from information in the Registration Service (SMRS). This reduces the opportunity for inconsistent data and incorrect Service appointments.

MPANs will have a Market Segment indicator which will clearly identify an MPAN as Unmetered (U), Advanced (A) or Smart and non-Smart (S). The Market Segment will only change in a limited number of circumstances where the Meter Type changes. The CCDG has designed a Change of Market Segment process to support this, set out in Section B.

Consumption Component Classes (CCCs)

A new set of Consumption Component Classes (CCCs) will be used for MHHS, reflecting the following criteria:

- Market Segment
- Measurement Quantity (export or import)
- Consumption or Line Losses
- Connection Type
- Actual or Estimated consumption

Aggregations of consumption data for Performance Management reporting and non-Volume Allocation Run purposes will not require additional CCCs, or be dependent on the available CCCids. That will avoid having to create separate CCCids for e.g. domestic or non-domestic MPANs. The TOM will introduce an expanded set of categories of estimated consumption, but these will be grouped based on the quality of the estimation process undertaken by the Data Service.

Industry Standing Data (ISD)

Standing Data used in Settlement processes is currently held in Market Domain Data (MDD). Some tables and data items in MDD will not be required for the enduring TOM since they are only required for NHH Settlement. In this consultation, standing data has been referred to as Industry Standing Data (ISD) to differentiate it from today's MDD. New data items and tables have been defined for ISD. Appendix A sets out these new ISD items, along with which MDD Tables will be discontinued at the end of Transition.

New data items and processes are likely to be required for the provision of data for network charging. This will depend on the outcomes of the Access and Forward-Looking Charging Significant Code Review.

New registration data items

This consultation sets out an explanation, from a business process perspective, of the new registration data items that will be needed to support the TOM. The full set of MHHS registration data items with their architecture attributes will be defined in a MHHS Data Catalogue as part of the AWG's consultation in early 2021.

Detailed Processes for the MHHS TOM

The detailed **Processes** for the MHHS TOM include:

- The approach to Settling non-smart Meters with switched load
- Processing requirements for the Market-wide Data Service (MDS) and Volume Allocation Service (VAS)
- Exception Reporting
- GSP Group Correction and Scaling Weights
- Use of Registration Data Items and the Appointment Process
- Change of Market Segment and Change of Data Service
- Recommendations for Related MPANs, Demand Disconnection Events and Export MPANs

Approach to settling non-smart Meters with switched load

Special time limited arrangements will be put in place for non-smart customers with switched load. Existing Standard Settlement Configurations (SSCs) and Time Pattern Regimes (TPRs) will be frozen (i.e. no new SSCs can be created in Market Domain Data) and retained for at least five years following the end of transition for this process, after which they will be discontinued.

GSP Group Correction and Scaling Weights

There will be a new calculation for GSP Group Correction. New Consumption Component Classes have been defined with associated scaling weights to support the new calculations.

Use of Registration Data Items and the Appointment Process

The appointments process will change. The Registration Service (SMRS) will carry out the appointment of all Supplier procured Services. The D0155 and D0148 processes will be discontinued and new registration data items will be used.

Change of Market Segment and Change of Data Service

There will be a new process required for a Change of Market Segment. The existing CoMC process will be used during the transition but will not occur in the Target End State.

A key part of the appointments and the Change of Segment processes is the need to verify the Metering Service type against the Market Segment, which the CCDG recommends is facilitated by maintaining two separate lists of qualified market participants operating as an MSA or MSS. The CCDG is aware that Ofgem has proposed significant changes to Meter Operator governance under the Retail Energy Code (REC), and so any impacts would need to be understood.

Evaluation of CCDG Design against Ofgem's Design Principles

This consultation contains a CCDG evaluation of the detailed design against Ofgem's Design Principles. It should be noted that some of the Design Principles are set out for the AWG rather than the CCDG. We are asking for comments on the CCDG evaluation.

Code Change Matrices

The **Code Change Matrices** set out the sections of each impacted Industry Code that will need amending, the nature of the changes required and any dependencies on other industry change. The drafting of Code changes will start next year, for all impacted Industry Codes. The Code sections and nature of changes required have been identified.

The main codes impacted are the Balancing and Settlement Code (BSC), the Master Registration Agreement (MRA), the Distribution Connection and Use of System Agreement (DCUSA) and the Smart Energy Code (SEC).

BSC changes

The BSC changes include revisions to most BSC sections and new Sections for the TOM Service requirements and Transitional Arrangements. Changes to the Party Service Line (PSL) have been included. New BSCPs to be developed for the new TOM Services and edits identified for others. For consistency we have adopted the existing BSCP structure but are keen to understand if there are any drivers for changing the scope and structure of the BSCPs. We have assumed that industry's familiarity with the existing BSCPs means parties will have a preference for keeping the existing scope/structure. However, we want to test this assumption. The CCDG believe there are pros and cons of splitting BSCP scope by process or by role

MRA changes

The MRA matrix contains the changes required to obligations in the MRA at the time of this consultation. These have been provisionally mapped to the Code where the equivalent obligations are expected to sit once Ofgem's Retail Code Consolidation (RCC) and Switching Significant Code Reviews (SCRs) are implemented in 2021 and 2022 respectively. This is because the RCC and Switching SCRs will be implemented before MHHS, and there may be other areas where dependant changes may be required in accordance with the new baseline in Q3 2022.

DCUSA changes

The DCUSA changes relate to Unmetered Supplies, the removal of references to Non Half Hourly (NHH) and Measurement Classes, and clarifications to the National Terms of Connection. No requirements relating to the provision of data for network charging have been included in this consultation due to the dependency on the ongoing Access and Forward Looking Charging SCR.

SEC changes

The SEC matrix details the development of a new SEC User role to access the data from the smart Meter. It also sets out changes required to Target Response Times (TRTs) for Data and Communication Company (DCC) Service Requests scheduled by the new role to address potential future capacity issues. It should be noted that these are SEC design decisions on how to implement the MHHS TOM requirements and have not been specified by the CCDG.

Outstanding Areas and Dependencies on other industry change

Opt-out policy implications for domestic Advanced Meters

The DWG's original TOM design anticipated that the application of domestic load shapes to register reads would be a requirement for the Smart and non-Smart segment only and that all Advanced Meters would be settled Half Hourly.

However, further development of the TOM design has highlighted that Ofgem's policy decisions have not differentiated between customers with a Smart Meter and those with an Advanced Meter. This may require a slight change to the original Data Service requirements and could also impact the Change of Market Segment process.

The CCDG will consider this issue further when developing its code change drafting, as Ofgem is still finalising the detail of its policy in this area.

INTRODUCTION

This is the Code Change and Development Group's (CCDG) consultation on the detailed design areas for the Market-wide Half Hourly Settlement (MHHS) Target Operating Model (TOM). The CCDG is one of two industry working groups which Elexon is chairing and providing with technical leadership to support Ofgem's Significant Code Review on Electricity Settlement Reform.

The CCDG has built on the Target Operating Model (TOM) for Market-wide Half Hourly Settlement, as delivered by the Design Working Group (DWG) in August 2019, by:

- developing further detailed areas of the TOM design; and
- Identified, and overseeing drafting of, the changes needed to Industry Codes and subsidiary documents to enable the TOM.

The other industry group is the Architecture Working Group (AWG). The AWG is developing the reference architecture required to enable the DWG's TOM. This reference architecture will set the framework for subsequent IT system design.

Design Advisory Board

The work of the CCDG and AWG is overseen by the Design Advisory Board (DAB). The Design Advisory Board (DAB) is an industry steering group that provides strategic advice to Ofgem on the TOM to deliver MHHS. The DAB also provides expert advice on areas of the project outside the TOM including the business case and access to data for Settlement purposes. DAB members have expertise in the energy industry, energy regulation and policy (GB and international), consumer issues and innovation.

CCDG Areas of Design

This consultation sets out the further detail on the following areas of the TOM Design:

a) Detailed Data Items for the MHHS TOM, including:

- Measurement Classes and Market Segments
- Consumption Component Classes (CCCs)
- Industry Standing Data (ISD); and
- New Registration Service (SMRS) data items.

b) Detailed Processes for the MHHS TOM, including:

- The approach to Settling non-smart Meters with switched load
- Processing requirements for the Market-wide Data Service (MDS)
- Processing requirements for the Volume Allocation Service (VAS)
- Exception Reporting
- Change of Market Segment and Change of Data Service
- GSP Group Correction and Scaling Weights;
- Erroneous Transfers
- Export Metering Systems; and
- Registration use of Data Items and the Appointment Process.

The Detailed Transitional Requirements and the Settlement Run-off Approach will be developed in early 2021. This will set out the approach for migrating different Meter Types to the TOM Services and requirements around requirements around the maintenance and provision of NHH software (e.g. EAC/AA and NHHDA). The will be a further industry consultation on these areas once finalised.

The consultation also includes the CCDG's evaluation of the design against Ofgem's Design and Development Principles. Outstanding areas and dependencies on other Industry change are also covered.
Appendix A contains the further detail of changes agreed by the CCDG, together with their considerations on the requirements. Appendix B contains the CCDG discussions and thinking on the development of the detailed requirements. **Attachment 1** contains the Code Change Matrices which sets out the sections of each Code that needs amending, together with the nature of the changes required and dependencies on other areas of change. **Attachment 2** contains a diagram of the new appointments process,

We would like your view on the detailed design areas including any areas of concern that you can identify.

The consultation questions are set out at the end of each section and a consolidated list can be found in Appendix C.

CCDG and AWG Timeline

This CCDG consultation on the detailed design areas is the first step in the timeline. The findings of the consultation will allow the CCDG to finalise the MHHS TOM business requirements. These will then be fed into the AWG's reference architecture which be consulted on in Q2 2022.

The CCDG will hold separate consultations on detailed transition approach (in Q2 2021) and Industry Codes legal drafting (in Q1 2022) before providing a final report to Ofgem in Q2 2022

Ofgem will bring the outputs of all the SCR work streams together in its Full Business Case decision on how and when to proceed with MHHS. Ofgem will make the final decision on the TOM and transition approach. The CCDG and AWG can only make recommendations to Ofgem.

Ofgem intends to make the Industry Code changes using its SCR or Smart Meters Act powers and that they therefore won't go through the normal industry change processes:

HOW TO RESPOND TO THIS CONSULTATION

A Webinar on the consultation will be held in early 2021 if you wish to get an overview of the changes before responding.

Please:

- Email your response to CCDGsecretary@elexon.co.uk by **08:00 (8am) on 26 January 2021**, using the subject line 'CCDG consultation response'.
- Use the attached Word response form where possible to make it easier for the CCDG to identify and summarise views.
- Provide supporting reasons for your answers to help the CCDG understand your response.
- Identify clearly which, if any, aspects of your response are confidential. We will not publish any information marked as confidential, or share this with the CCDG. However, Ofgem will see all responses in full. We encourage you to provide non-confidential responses where possible, to inform the CCDG's discussions.

Email Elexon's MHHS team at CCDGsecretary@elexon.co.uk with any questions.

More information can be found on the CCDG webpage

GLOSSARY OF TERMS

This following a list of Defined Terms and Acronyms that have been used in this consultation.

A

Advanced Data Service

The Advanced Data Service is the 'Qualified' service that provides the Advanced Retrieval and Processing Service (ARP).

Advanced Meter

The electricity supply licence defines an Advanced Meter as electricity Meter that, either on its own or with an ancillary device, and in compliance with the requirements of any relevant Industry Code:

a) provides measured electricity consumption data for multiple time periods, and is able to provide such data for at least half-hourly time periods; and

b) is able to provide the licensee with remote access to such data.

Advanced Market Segment

The Advanced Market Segment is the Market Segment where Settlement Level Period data is collected for Settlement purposes from Advanced Meters. For the avoidance of doubt where the Advanced Meter communications are faulty, the Advanced Meter would remain in this Market Segment, processed by the Advanced Retrieval and Processing Service (ARP). The communications fault would be fixed by the Advanced Metering Service (MSA).

Advanced Retrieval and Processing Service (ARP)

The Advanced Retrieval and Processing Service (ARP) is the service that retrieves and processes Settlement Period Level data from Advanced Meters that are in the Advanced Market Segment.

B

Balancing and Settlement Code (BSC)

The BSC is the document that sets out the terms for electricity balancing and Settlement in Great Britain, including the governance process for modifications to the BSC.

Balancing and Settlement Code (BSC) Panel

The Balancing and Settlement Code (BSC) Panel is established and constituted pursuant to and in accordance with Section B of the BSC. It is responsible for ensuring that the provisions of the BSC are given effect fully, promptly, fairly, economically, efficiently, transparently and in such a manner as will promote effective competition in the generation, supply, sale and purchase of electricity.

Balancing and Settlement Code Procedures (BSCPs)

Balancing and Settlement Code Procedures (BSCPs) are a type of Code Subsidiary Documents (CSDs) used under the BSC that set out procedures relating to Settlement activities.

Balancing Mechanism Unit (BMU)

Balancing Mechanism Units (BMU) are used as units of trade within the Balancing Mechanism. Each BMU accounts for a collection of plant/apparatus and is considered the smallest grouping that can be independently controlled. It can relate to metering at a physical site or be a non-physical grouping of Metering Systems for a Balancing Responsible Party (BRP) (or other party such as flexibility aggregators) within a region. As a result most BMUs contain either a generating unit or a collection of consumption or generation Meters. Any energy produced or consumed by the contents of a BMU is accredited to that BMU.

Balancing Responsible Party (BRP)

The Balancing Responsible Party is used in these requirements to refer to the future party that provides the role currently undertaken by the Supplier. This could potentially be a bundled services company where the provision of electricity is only one of the services provided.

C

Categories

A set of categories defined for which Load Shapes are to be provided by the Load Shaping Service (LSS).

Categorisation

The process of mapping MPANs to categories for Load Shaping processes.

Central Data Collection Agent (CDCA)

The Central Data Collection Agent as the BSC Agent that collects Meter data from Central Volume Allocation (CVA) registered Metering Systems.

Code Subsidiary Document (CSD)

Code Subsidiary Documents (CSDs) sit under the BSC and set out more detail on the requirements of the BSC. They can be changed from time to time in accordance with BSCP40.

Consumption Component Class (CCC)

A classification of half hourly Consumption which comprises one element from each of a number of categories e.g. Measurement Quantity, Consumption or Losses

D

Daily Advance Estimate (DAE)

The Daily Advance Estimate (DAE) is the consumption or export value used by a smart Processing Service (PSS), in estimating SP level data, where a Meter Advance is not available. It is a value derived for each MPAN based on the latest available meter advance divided by the number of days in the Meter Advance. It could also be a default value where no Meter Advance is available for an MPAN.

Data Aggregator (DA)

As part of the current Settlement process, the agent appointed by an electricity supplier in accordance with Section S of the BSC to aggregate metered consumption data to meet the requirements set out in the BSC.

Data Access and Privacy framework

The government has developed a data access and privacy policy framework to determine the levels of access to energy consumption data from smart Meters which BRPs, network operators and third parties may obtain. It also establishes the purposes for which data can be collected and the choices available to consumers.

Data Collector (DC)

As part of the Settlement process, the agent appointed by an electricity supplier in accordance with Section S of the BSC to retrieve, validate and process Meter readings to meet the requirements set out in the BSC.

Data and Communications Company (DCC)

The DCC is the company that manages the data and communications to and from smart Meters.

Data Service

This is the generic reference to Data Services under the TOM and includes the ADS, SDS and UMSDS.

DCC User Interface Specification (DUIS)

DCC User Interface Specification (DUIS) is the specification the document that set out in the communications interface designed to allow the communications with smart Meters. The DUIS set out valid Service Request types and the data items returned for each request type.

Distribution Network Operator (DNO)

See definition for Licenced Distribution Network Operator

Dynamic time-of-use tariff

A dynamic time-of-use tariff is one that provides for price or pricing structures for consumers to vary at short notice their energy usage, in response to market events, (subject to contractual terms with the BRP).

E

Electricity Supplier

A company licensed by Ofgem to sell energy to and bill customers in Great Britain.

Elexon

Elexon (as BSCCo) is the organisation responsible for administering the BSC and provide and procure the services needed to implement it. The role, powers, functions and responsibilities of Elexon are set out in Section C of the BSC.

Electricity System Operator (ESO)

ESO is the System Operator for the electricity transmission system in Great Britain, with responsibility for making sure that electricity supply and demand stay in balance and the system remains within safe technical and operating limits.

F

Faster Switching Programme

The Faster Switching Programme is the Ofgem initiative to deliver next-day switching (of gas or electricity supplier) as a new industry standard. It also aims to improve reliability of the switching process through better management and oversight of industry data.

G

Globally Unique Identifier (GUID)

The GUID aka Device ID is the unique identifier associated with each smart Meter serviced by the DCC.

Great Britain Companion Specification (GBCS)

The Great Britain Companion Specification (GBCS) for smart metering describes the detailed requirements for communications between smart metering Devices in consumers' premises, and between these Devices and users of the smart metering system (such as Energy Suppliers and Network Operators) via the Data and Communications Company (DCC).

Grid Supply Point (GSP)

A Grid Supply Point (GSP) is a point at the boundary of Transmission and Distribution Networks, where Metering Systems measure import to, and export from, the Distribution Network.

Grid Supply Point Group (GSPG)

The GSP Groups consist of: (i) the Distribution System(s) which are connected to the Transmission System at (and only at) Grid Supply Point(s) which fall within one Group of GSPs, and (ii) any Distribution System which: (1) is connected to a Distribution System in paragraph (i), or to any other Distribution System under this paragraph (ii), (2) is not connected to the Transmission System at any Grid Supply Point and the total supply into which is determined by metering for each half hour.

GSP Group Take (GSPGT)

GSP Group Take is the data provided to the Volume Allocation Service (VAS), by the CDCA, giving the net volume of energy within a GSPG for each Settlement Period.

H

Half Hourly Settlement (HHS)

Half Hourly Settlement (HHS) is the process that covers the services and governance procedures from the electricity meter to the imbalance settlement function (meter-to-bank process). This describes the processes of using half-hourly usage (and longer time periods of energy usage) data collected from an electricity meter for use in Imbalance Settlement.

I

Imbalance Settlement

Imbalance Settlement is the process for determining if the total energy produced or consumed by a participant in the electricity market (mainly a generator or supplier) matches with energy they have purchased/sold in the forward market. Any mismatches incur 'imbalance' charges; therefore participants are incentivised to match their contracted and actual positions

Industry Standing Data (ISD)

Industry Standing Data (ISD) is the data used by the Services to interpret the information relating to each Metering System. This data will include some of the data in the current Market Domain Data (MDD) and will have new standing data included.

L

Load Shape

A Load Shape is a set of daily average consumption or export data for each Settlement Period in Coordinated Universal Time (UTC) for a Categorisation of Metering System in the population. It is derived and provided by the Load Shaping Service.

Load Shaping Service (LSS)

The Load Shaping Service (LSS) is the service that calculates load shapes from valid Settlement Period level data accessed from the Processing Services. The Load shape data will then be used by the Processing Services (PSS) to convert Register Readings (RRs) or Daily Consumption values into Settlement Period level data.

Licenced Distribution System Operators (LDSOs)

LDSOs are the companies that are licensed by Ofgem to maintain and manage the electricity distribution networks in Great Britain.

M

Market Participants Identifier (MPID)

Market Participants are any party that interact with Settlement or other industry process. Each valid participant has a Market Participant Identifier (MPID) defined in Market Domain Data (MDD). MDD will be replaced by revised or new standing data which is referred to as Industry Standing Data (ISD) in the TOM design.

Market Segments

The three Market Segments are:

- The Smart and Non-smart (S)
  - Smart Meters with Settlement Period level data available
  - Smart Meters with only Register Readings available
  - Non-smart Meters with Register Readings
- Advanced
  - Advanced Metering Systems with Settlement Period level data available
- Unmetered
  - Unmetered Supplies.

Market-wide

Market-wide in the context of the Significant Code Review (SCR) means the Settlement of Settlement Period data where such data can be accessed subject to data privacy and data access policy. Market-wide in the context of Services means a service which would provide cross-segment aggregation.

Market-wide Data Service (MDS)

The Market-wide Data Service (MDS) is the service that provides integrity checks and calculations on Settlement Period level data ingested by BSC Central Settlement Services from the Processing Service(s) (Smart), the Advanced Retrieval and Processing Service and the Unmetered Supplies Data Service.

Meter Advance

The Meter Advance is the energy value (kWh) calculated by differencing the latest Register Reading from the previous Register Reading obtained from a Metering System.

Meter Point Administration Number (MPAN)

A Meter Point Administration Number, also known as MPAN, Metering System Identifier (MSID) under the BSC, Supply Number or S-Number, is a 21-digit reference used in Great Britain to uniquely identify electricity supply points.

Measurement Class

A classification of Metering Systems which indicates how Consumption is measured:

Measurement Class Id	Description
A	Non Half Hourly Metering Equipment
B	Non Half Hourly Unmetered Supplies
C	Half Hourly Metering Equipment at above 100 kW Maximum Demand Premises
D	Half Hourly Unmetered Supplies
E	Half Hourly Metering Equipment at below 100kW Premises with current transformer
F	Half Hourly Metering Equipment at below 100kW Premises with current transformer or whole current, and at Domestic Premises
G	Half Hourly Metering Equipment at below 100kW Premises with whole current and not at Domestic Premises

N

Non Half Hourly Settlement (NHH)

As part of the Settlement process, NHH Settlement is the arrangement for estimating how much energy a supplier's customer's use (or export) in each Settlement period (where their meter is not capable of recording energy usage for a Settlement Period). The arrangement uses Meter readings spanning longer intervals, e.g. days, weeks and months.

Non-smart Meter

A non-smart Meter is a Meter that is not compliant with the Smart Metering Equipment Technical Specifications (SMETS). These Meters include legacy non-smart Meters for customers refusing smart Meters, premises where smart Meters cannot be fitted,

O

Ofgem

The Office of Gas and Electricity Markets (Ofgem) is responsible for protecting gas and electricity consumers in Great Britain. It is governed by the Gas and Electricity Markets Authority (GEMA).

P

Profile Class (PC)

Consumers that are not settled using actual Meter readings for each Settlement period are grouped into one of eight Profile Classes. For each Profile Class, a load profile is created that estimates the consumption shape of the average consumer. This load profile (or variations of it) is used to determine the consumption in each half hour for all consumers assigned to the Profile Class. See also Non Half Hourly (NHH) Settlement.

Processing Service (Smart) [PSS]

The Processing Service (Smart) is responsible for obtaining and validating and estimating (where needed) raw meter readings (both Settlement Period and Register Reads) from smart and non-smart Meters.

Programme Implementation Plan

The Programme Implementation Plan is the detailed plan with timings that will need to be developed during the implementation phase for the TOM.

Q

Qualification

Qualification is the BSC process that assures that participant systems and processes which may interact with BSC Central Settlement Services/systems and other participant's systems will not introduce significant risks or issues to Settlement. This process currently applies to Supplier Agents. This process is part of the BSC Performance Assurance Framework to manage Settlement Risks.

R

Related MPANs

A Related MPAN is where two NHH Meters, registered with a single Suppliers, are at the same site. This typically occurs where one MPAN covers the heating load and the other MPAN is the rest of the load for the site.

Registration Service (SMRS)

The Registration Service (known as the Supplier Registration Service (SMRS) under the BSC. Note this is not the Central Switching Service) is the LDSO service that holds Meter point standing data information about each MPAN within its distribution Region. Data includes the BRP the processing and metering services appointed to the MPAN. It also includes information on the type of customer, the Measurement Class, Energisation Status and Line Loss Factor Class.

Register Readings (RRs)

Register Readings are the Meter readings obtained from a Settlement Meter's tariff registers. This could be the cumulative register, daily consumption log data or daily readings these readings may be taken remotely or read from the meter.

S

Settlement Period (SP)

The period over which contracted and metered volumes are reconciled. This is currently defined as a period of 30 minutes. See also Settlement process.

Settlement Period level data

Settlement Period level data is consumption or export meter data that is the granularity of the Settlement Period. This is either actual data (as recorded by the Meter), or data derived from Register Readings, or data derived from the Unmetered Supply (that is calculated for a Settlement Period).

Settlement Period Level Consumption data

Settlement Period Level Consumption data is consumption data that is the granularity of the Settlement Period. This could be actual data obtained directly from the Meter or data derived from Register Readings or Unmetered Supplies that is processed to Settlement Period granularity.

Settlement process

In the context of this report Settlement process refers to the Imbalance Settlement arrangements. Settlement places incentives on generators and Suppliers to contract efficiently to cover what they produce or their customers consume (or produce) respectively. For Suppliers, it operates by charging for any difference between the volumes of electricity that they buy and the volume that their customers consume.

Significant Code Review (SCR)

The SCR process is an Ofgem led process that is designed to facilitate complex and significant changes to a range of Industry Codes. It provides a role for Ofgem to undertake a review of a code-based issue and play a leading role in facilitating code changes through the review process.

Smart Data Services (SDS)

The Smart Data Services comprise the Meter Data Retrieval Service, Processing Service (Smart) and Meter Reading Service, which together enable settlement of the Smart and Non-smart Market Segments.

Smart Energy Code (SEC)

The Smart Energy Code (SEC) is a multi-Party agreement, coming into force under the DCC Licence, which defines the rights and obligations of energy suppliers, network operators and other relevant parties involved in the end to end management of smart metering in Great Britain.

Smart and Non-smart Market Segment

The Smart and non-Smart Market Segment is the Market Segment that covers smart Meters serviced by the DCC. This covers smart Meters with Settlement Period level data available and smart Meters where only Register Readings are available. It also covers non-smart Meters.

Smart Meter

A smart Meter is a Meter which is compliant with the Smart Metering Equipment Technical Specifications (SMETS). In addition to traditional metering functionality (measuring and registering the amount of energy that passes through it), a smart Meter is capable of providing additional functionality such as recording consumption/export in each half hour of the day and of being remotely read and configured.

Smart Meter Technical Specifications (SMETS)

Smart Meter Technical Specifications (SMETS) are the specifications that set out the minimum technical requirements for smart Meters. The SMETS are governed by the Smart Energy Code (SEC).

Supplier Volume Allocation (SVA) arrangements

Within the BSC, the SVA arrangements provide the mechanism for determining the allocation of energy volumes to Suppliers in each Settlement Period of the day.

T

Target End State

The Target End State is deemed to be when the majority of customers will have a Meter capable of delivering Settlement Period level meter data for Settlement purposes.

Target Operating Model (TOM)

The Target Operating Model is the set of services and settlement arrangements designed to deliver Market-wide Half Hourly Settlement.

Time-of-use (ToU) tariffs

Energy tariffs that charge different prices at different times of the day, week, month or year are known as time-of-use tariffs. See also dynamic time-of-use tariff and static time-of-use tariff.

Transition Approach

The Transition Approach sets out the key milestones and dependencies for moving to the TOM from the existing market services and Settlement arrangements.

U

Unmetered Supplies

Unmetered Supplies (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.

Unmetered Supplies Data Service (UMSDS)

The Unmetered Supplies Data Service (UMSDS) is the service that calculates Settlement Period Level consumption data for Unmetered Supplies.

Unmetered Supplies Market Segment

The Unmetered Supplies Market Segment is the Market Segment for Unmetered Supplies, e.g. street lights, traffic signs, zebra crossings, etc.

Unmetered Supplies Operator (UMSO)

The Unmetered Supplies Operator (UMSO) is the service that interfaces with the Unmetered Supplies (UMS) customer and other industry stakeholders. The UMSO Service is provided by the Distribution Business.

V

Volume Allocation Service (VAS)

The Volume Allocation Service (VAS) is the service that processes Settlement Period level data provided by the Market-wide Data Service (MDS). The processed data is allocated to Balancing Mechanism Units (BMUs).

Volume Allocation Run (VAR)

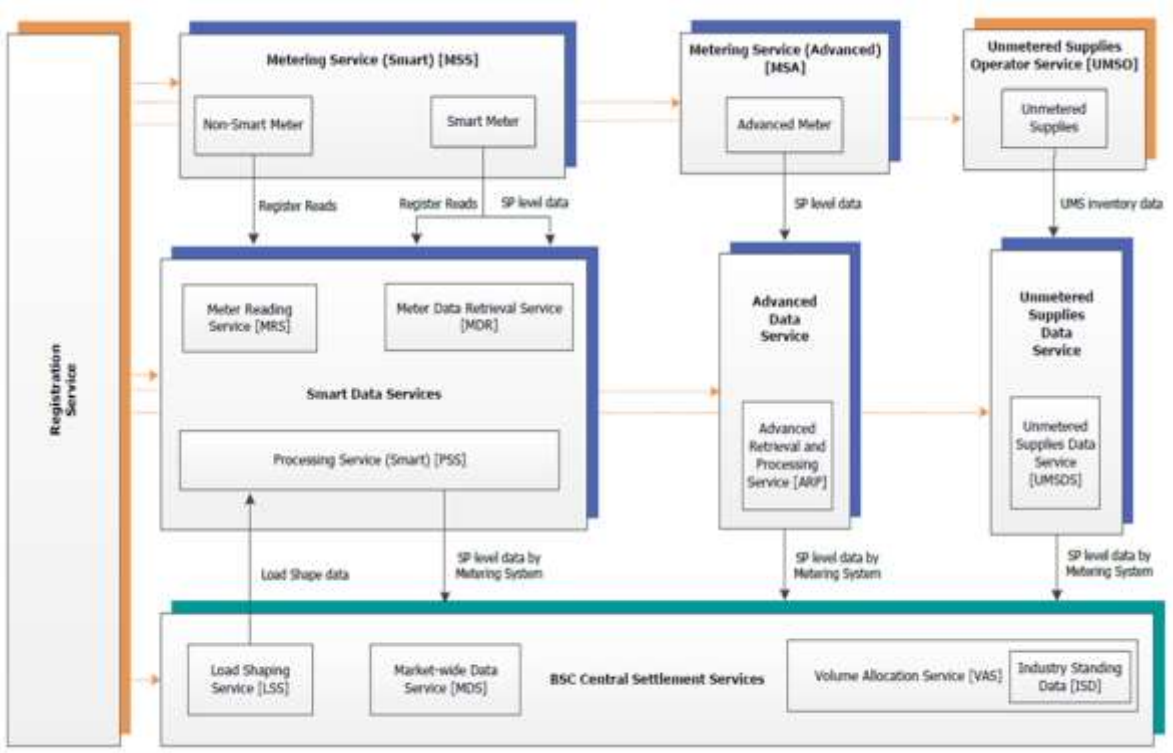
A Volume Allocation Run (VAR) is a scheduled Settlement run that allocated Supplier Metered volumes to BMUs for each GSP Group. The VAR ensures the BMU allocated energy is corrected such that the total volume matches the energy in the GSP Group Take for each Settlement Period.

OVERVIEW OF THE MHHS TARGET OPERATING MODEL

The DWG's preferred MHHS TOM, as provisionally approved by Ofgem, sets out the end-to-end ('Meter to bank') Settlement design for the target end state when the majority of Meters will be smart Meters. Advanced Meters in the NHH sector will be settled in the Advanced Market Segment. Over time some Advanced Meters are expected to be replaced with smart Meters.

The TOM's key features are the three Data Services that collect data, and supporting information, and submit Settlement Period (SP) level data to the BSC Central Settlement Services. These are the Smart Data Services, the Advanced Data Service and the Unmetered Supplies Data Service. Although these services are defined separately in the TOM design, this does not seek to restrict or prescribe any commercial arrangements that the responsible party may wish to use in delivering them.

TOM Diagram



NOTE: The Registration Service is the Supplier Registration Service (SMRS) under the BSC. This is not the Central Switching Service.

Details of the DWG preferred TOM and its high level requirements can be found on the Ofgem website.

Transition Approach

The DWG also delivered its recommended high level Transition Approach to Ofgem in August 2019.

Details of the Transition Approach can be found in Appendix 1B of the DWG Final Stage 2 report.

The CCDG will develop further detail on the Transition Approach in 20102 and hold a separate consultations in Q2 2021.

Once you have digested the detail in this consultation document we would like you to answer the following question. Further questions are set out in the body of the consultation and are consolidated in Appendix C.

Question 1. Do you agree that the detailed MHHS TOM design is consistent with the Design Working Group's preferred Target Operating Model?
Yes/ No
Rationale:

SECTION A - DETAILED DATA ITEMS FOR THE MHHS TOM

1. MEASUREMENT CLASSES AND MARKET SEGMENTS

Measurement Classes

The CCDG agreed that under the MHHS TOM many elements of the Measurement Classes were no longer required. For example Non Half Hourly Measurement Classes would be discontinued and the 'Over 100 kW MD' definition for larger HH customers was no longer appropriate so will be removed.

The CCDG decided that Measurement Classes are not needed under the MHHS TOM. They agreed to classify MPANs by Market Segment rather than Measurement Class.

Transition Requirements

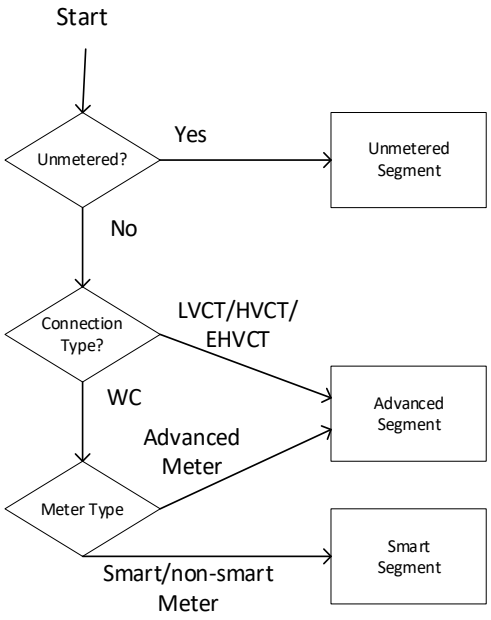
The Measurement Classes will be retained until the last MPAN has been migrated into the new MHHS TOM Services. The Measurement Class table in Industry Standing Data will be retained until the end of the run-off of the existing Settlement arrangements and then discontinued.

Market Segments

The CCDG agreed the following Connection Type Indicator would be useful for a number of purposes including identification of Market Segment and for the GCF Calculation.:

Connection Type	Indicator
Low Voltage Whole Current	W
Low Voltage with CT	L
High Voltage with CT	H
Extra High Voltage with CT	E

The CCDG have defined the Market Segment based on Meter Type and Connection Type.



No Meter – either Advanced or Smart Segment

If the Metering System is set to be an Unmetered Supply then it should be in the unmetered segment.

If metered and Connection Type (WC/LVCT/HVCT/EHVCT) is set to anything other than WC – it will be Advanced segment.

If metered, WC and no meter fitted – then as there is no Meter Type specified the Supplier must make a choice – Smart or Advanced. And while there is no meter fitted, the Supplier can change the [segment] type of Metering Service and Data Service without any constraint by the Registration Service (SMRS). Note that CT Metering will be in the Advanced Market Segment by definition. There is an assumption the CT site will be fitted with an Advanced Meters under the Supply Licence requirements. However, it is noted that the physical reality for some sites may not align. The requirements for these MPANs will need to be defined.

Based on the above rules the Market Segment (and EFD) can be determined from information in the Registration Service (SMRS). This reduces the opportunity for inconsistent data and incorrect Service appointments.

The CCDG agreed MPANs have a segment indicator rather than Measurement Class, and that this should be based on the following three segments:

Market Segment	Indicator
Unmetered	U
Smart & Non-Smart	S
Advanced	A

The CCDG agreed that this U/S/A indicator should form part of Registration Service (SMRS) data and be included in the Industry Standing Data.

The full CCDG considerations on Measurement Classes and Market Segments can be found in Appendix A.

The CCDG discussions on Measurement Classes and Market Segments can be found in Appendix B.

2. CONSUMPTION COMPONENT CLASSES

The CCDG have agreed the Consumption Component Classes to be used under the new MHHS TOM.
The CCDG noted the following considerations on CCCs:

- Existing CCCs will be required during transition for non-migrated Metering Systems;
- Migrated Metering Systems will need new CCCs ; and
- As HH/ NHH split no longer required there maybe another split that is useful (domestic/ non-domestic, CT meters, small/ large UMS, smart / non-smart, advanced meter) or Market Segment.

The CCDG agreed that aggregations of consumption for Performance Management reporting should not be limited to the new CCCs, which have been designed for settlement. For example, there is no need to introduce separate CCCids to differentiate between domestic and non-domestic sites because these are not treated differently for settlement purposes. If a performance measure required such differentiation, the Domestic Premises Indicator in the Registration Service could be used as a reporting parameter to aggregate consumption without requiring specific CCCids.

The CCDG agreed not to assign separate CCCids to all the different estimation types, and instead to group Estimation Flags according to the overall quality of the estimation process used by the Data Service. However, it would still be possible to report at the level of individual estimation types to support assurance or other detailed analysis.

The CCDG agreed to split the CCCids by the following Criteria:

CCC Criteria	Valid Set
Market Segment Indicator	U, S or A
Measurement Quantity	AE or AI
Consumption or Line Losses	C or L
Connection Type Indicator	W, L, H or E
Actual or Estimate	A or appropriate group of Estimation flags

The valid sets of Estimation flags are set out in Attachment A of the DWG's Report on the Preferred MHHS TOM.

The full set of new CCCids and CCDG considerations are set out in Appendix A. The CCDG discussion on CCCs can be found in Appendix B.

Transition Requirements

Both the new and existing CCCids will be used in for the Settlement calculations until the last MPAN has been migrated into the new MHHS TOM Services. The CCCid and GSP Scaling Weight table in Industry Standing Data for the existing CCCids will be retained until the end of the run-off of the existing Settlement arrangements and then discontinued.

3. INDUSTRY STANDING DATA

Standing Data for use in Settlement processes is currently held in Market Domain Data (MDD). Some tables and data items in MDD will not be required in the enduring TOM since they are only required for NHH Settlement. Some new tables and data items will be required. For the purposes of the TOM development the standing data has been referred to as Industry Standing Data (ISD) to recognise that this will be different to the current MDD. Appendix A contains the new Tables for each of these new ISD items together with which MDD Table will be discontinued at the end of Transition.

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	See Appendix A	A set of categories divided by GSP Group, Domestic/ Non-Domestic and Measurement Quantity
MHHS Consumption Component Classes	See Appendix A	See Section 2 above.
MHHS GSPG Scaling Weights	See Appendix A	See Section below on GSP Group Correction

Transition Requirements

Appendix A contains the new Tables for each of these new ISD items together with details of which MDD Table will be discontinued at the end of the run-off of the existing Settlement arrangements. Some items will be kept on a time limited basis after the end of Transition these are also identified in Appendix A.

4. REGISTRATION DATA ITEMS

New registration data items for inclusion in the Registration Service (SMRS)

Below is an overview of the new registration data items that will be needed to support the TOM. The full set of MHHS registration data items, with their architectural attributes, will be set out in a MHHS Data Catalogue as part of the AWG's separate consultation in Q2 2021.

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
Consent Granularity	Describes the granularity of energy settlement data that a customer has deemed to have consented to.	Supplier	String
Consent Granularity Effective From Date	The date from which the consent granularity was in effect.	Supplier	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
Customer Direct Contract Metering Service	An indicator to show if a direct customer contract exists between the customer at the metering service and the Metering Service provider.	Metering Service	String
Domestic Premises Indicator Effective From Date[1]	The date from which the metering point Domestic Premises Indicator is in effect.	Registration Service (from CSS)	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
Import Export Relationship MPAN	When this metering point is part of an import/export pair, this identifies the related import or export metering point.	Distributor	Integer
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
Metering Service ID	The market-wide unique reference for the current metering servicer of a metering point.	Supplier	String
Smart Device ID	The Smart Device ID for a smart meter. This is also known as the DCC GUID and is further defined within the DCC interface specifications.	Metering Service	String
Change of Segment Indicator	Indicates that a change of segment process is underway	Supplier	String
Change of Segment Indicator Effective From Date	The date-time on which the change of segment process was initiated by the supplier with the registration system	Registration Service	String

[1] Domestic Premises Indicator is an item that will be introduced by the Switching Programme, updated by Suppliers and mastered in the Central Switching Service (CSS).

5. METER TECHNICAL DETAILS

The CCDG has discussed the Meter Technical Detail (MTD) data flows between various roles:

- Metering Service and Data Service
- Metering Service (old) and Metering Service (new)
- Metering Service and Supplier
- Metering Service and Distributor

The CCDG agreed the following approach. The existing market uses the following flows and the MHHS arrangements the following MTD flows are as follows:

Current Segment	Data Flows	Future Market Segment	MHHS arrangement
Advanced Meters settling HH	D0268	Advanced	D0268
Advanced Meters settling NHH	D0149/D0150/D0313	Advanced	Migrate to settling HH using D0268
Non-smart meters settling NHH (CT)	D0149/D0150	Advanced	Migrate to settling HH using D0268
Non-smart meters settling NHH (whole current)	D0149/D0150	Smart	D0149/D0150
Smart meters settling NHH or HH	D0149/D0150/D0367	Smart	Data Items to be include in Registration Service (SMRS). The AWG may decide that another method or interface to deliver the data items within these D-flows.

New Registration Service (SMRS) Data Items for smart Meters

The CCDG agreed add the following data items to the Registration Service (SMRS) data set. Initially these would be added to the D0312 'Notification of Meter Information to MPAS' until a new method of exchanging information is established.

Some items will be optional. The Optional/Mandatory allows for smart, non-smart and Advanced Meters. There will need to be some further definition of how the optionality is operated.

Adding these into the Registration Service (SMRS) would be done in advance of migration so that the current Meter Operator/Meter Service could update the information.

Auxiliary Load Control Switch (ALCS) connected

Smart meters have an ALCS connection under the meter terminal cover which can be used to switch a 2amp load. Typically, this would control an external device (e.g. contactor) to turn on/off heating load in line with a tariff programmed into the meter. Whether something is connected or not to the terminals is only know to the installing (or subsequent visit) by the Metering Service. Capturing whether this connection is in use would seem to be essential knowledge to a Supplier to know how to programme the operation of the ALCS. So, this item is to identify whether something is physically wired to the ALCS connections under the terminal cover of an electricity meter. That is only known by the person at site either installing for the first time, or subsequently making/removing a connection.

Device GUID (aka Device ID)

This is the ID that DCC recognises the electricity meter. It is essential that the Device GUID and the Meter Serial number are accurately aligned. Misalignment leads to a new raft of crossed meters scenarios. The installing Meter Operator is key to getting this information correct at the time of installation. The GUID of any other device, gas meter, communications hub, etc. is not relevant as these can be found from DCC and may change over time making the data ownership by the Meter Operator impossible to assure.

Effective from Settlement Date {MSMTD}

Important to determine date (and time) of when the MTD are applicable from. This is a current failing of the D0312 as it is not included, making retrospective changes of MTD difficult.

Meter Equipment/Service Location

This is a CHAR(30) data item used to give textual information about meter equipment location. Currently used the in the HH market and can be used to provide information on meter location.

Meter Location

This is a CHAR(1) indicator of meter location using defined set of codes. It is not well populated, but there is opportunity to improve.

Number of Register Digits

The industry has defined a convention of setting this to 5 for single phase smart meters. However, it will be necessary to use 6 digits for three phase smart meters. By including the data item, it allows the number of digits to be reported. The number of digits should refer to the 'total advance' of the meter, this is non-volatile and should always increment and is not resettable.

The method of transfer of the proposed data will be set out by the AWG. The CCDG detail on MTDs is set out in Appendix A.

Question 2. Do you have any specific comments on the proposed set of detailed data items or associated transition requirements, set out for the MHHS TOM? Comments can be in relation to any or all of the areas set out by the CCDG under Section A.
Yes/ No
Rationale:

SECTION B - DETAILED PROCESSES FOR THE MHHS TOM

6. NON-SMART METERS WITH SWITCHED LOAD

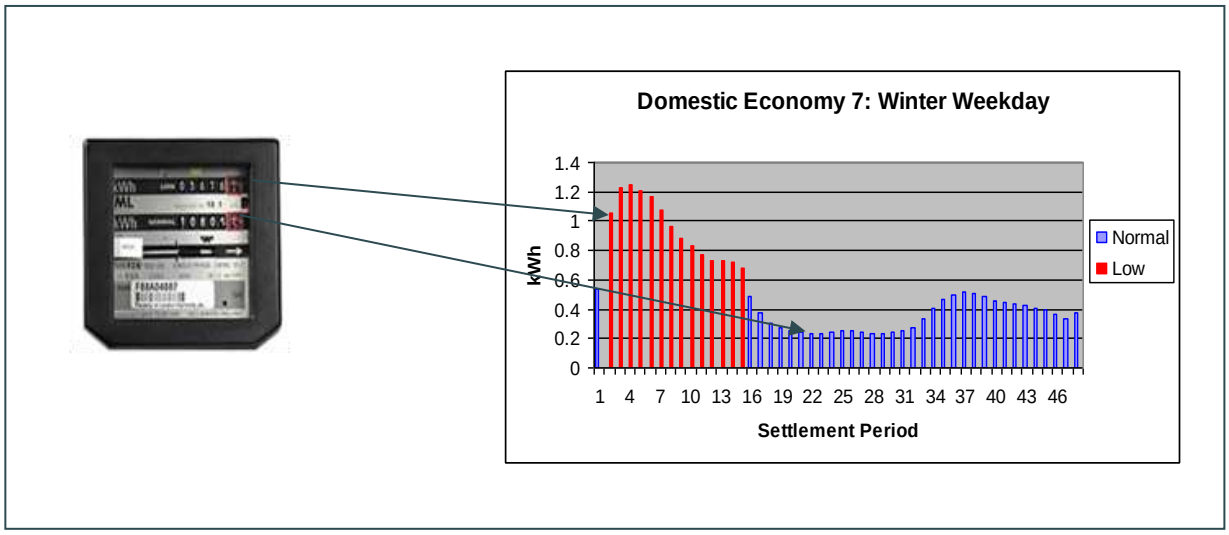
CCDG members discussed the issue of customers with switch load (typically Economy 7 customers) with non-smart meters at the end of the transition period. It was felt that customers with switched load who have not yet had the opportunity to have a smart Meter installed would be disadvantaged as they would be on a non-reflective single rate Load Shape and Suppliers were unlikely to support a two rate tariff for billing.

The CCDG agreed a time limited approach to where by these customers would retain their Profile Classes2 or 4on migration to the new MHHS TOM. They would be settled using the Load Shapes for Active Import for Domestic or Non-Domestic Metering Systems in each GSP Group. Their off-peak load would be allocated to the timing of the most common switching Regime in each GSP Group.

Using the standard load shape, associated with the MPAN, in UTC for the day to be settled, the consumption (Meter Advance) on the Low (off-peak) register will be allocated to the Settlement periods for most common switching regime (00:30 to 07:30 or 00:00 to 07:00) for the GSP Group. The Normal (peak) register consumption will be allocated to the remaining Settlement Periods.

The diagram below illustrates this for a meter in a GSP Group with a switching regime from 00:30 to 07:30.

Details of the agreed process and calculations and switch regime allocation can be found in Appendix A.



7. MARKET-WIDE DATA SERVICE DATA PROCESSING REQUIREMENTS

The Market-wide Data Service must process the latest available data for each MPAN at MDS Run Time. If a Settlement Run is re-run after the Final Settlement run then any data received after the Final Settlement run time will not be processed unless subject to the resolution of a. Trading Dispute. The MDS will calculate the losses associated with each MPAN using the appropriate Line Loss Factor (LLF) and allocate the losses to the appropriate Consumption Component Class Id (CCCid) for losses associated with the MPAN.

In processing the data for a Settlement Day the MDS will process data received each Settlement Period. The MDS can receive partial data for an MPAN meaning that the number of MPANs with data can vary by Settlement Period.

The MDS will aggregate the data for each Supplier/ CCCid combination within each GSP Groups and provide access to the aggregated data to the Volume Allocation Service (VAS) in Clock Time.

Defaulting Requirements

The CCDG agreed defaulting requirements for each Market Segment where data is not available at MDS Run Time. This involves identifying the load shape associated with the MPAN and using that data to default. Defaulting for export MPANs will require zero data to be used since there would be no evidence of any actual export volume. The CCDG also agreed that a missing data report would be made available to both the BRP (Supplier) and the appointed Data Services for the Settlement Date being processed.
The detailed MDS processing requirements can be found in Appendix A.

Transition Requirements

The MDS processes will run in parallel with the existing Settlement Timetable for Data Aggregators Settlement Runs. The MDS shall provide Data aggregated by the new CCCids to the Volume Allocation Service (VAS). Once all MPANs are being settled under the new TOM arrangements the MDS Run will form part of the Volume Allocation Run (VAR) since duel processes will no longer be needed.

8. VOLUME ALLOCATION SERVICE TRANSITIONAL DATA PROCESSING REQUIREMENTS

During transition and at the time of the Volume Allocation Run for a Settlement Date the Volume Allocation Service shall process both the data calculated by the Market-wide Data Service and the data files provided by Data Aggregators. The Volume Allocation Service will calculate and apply GSP Group Correction using all existing and new CCCid and their associated Scaling Weights. The data will then be aggregated across all corrected CCCid volumes to calculate the Supplier Deemed Take. The Supplier Deemed Take will then be notified for the Imbalance Settlement calculations.

Following the end of the Settlement Run-off the Profile Production Run, the processing of NHH Supplier Purchase Matrices and HHDA files will be discontinued as VAR processes.

9. DEMAND CONTROL EVENTS

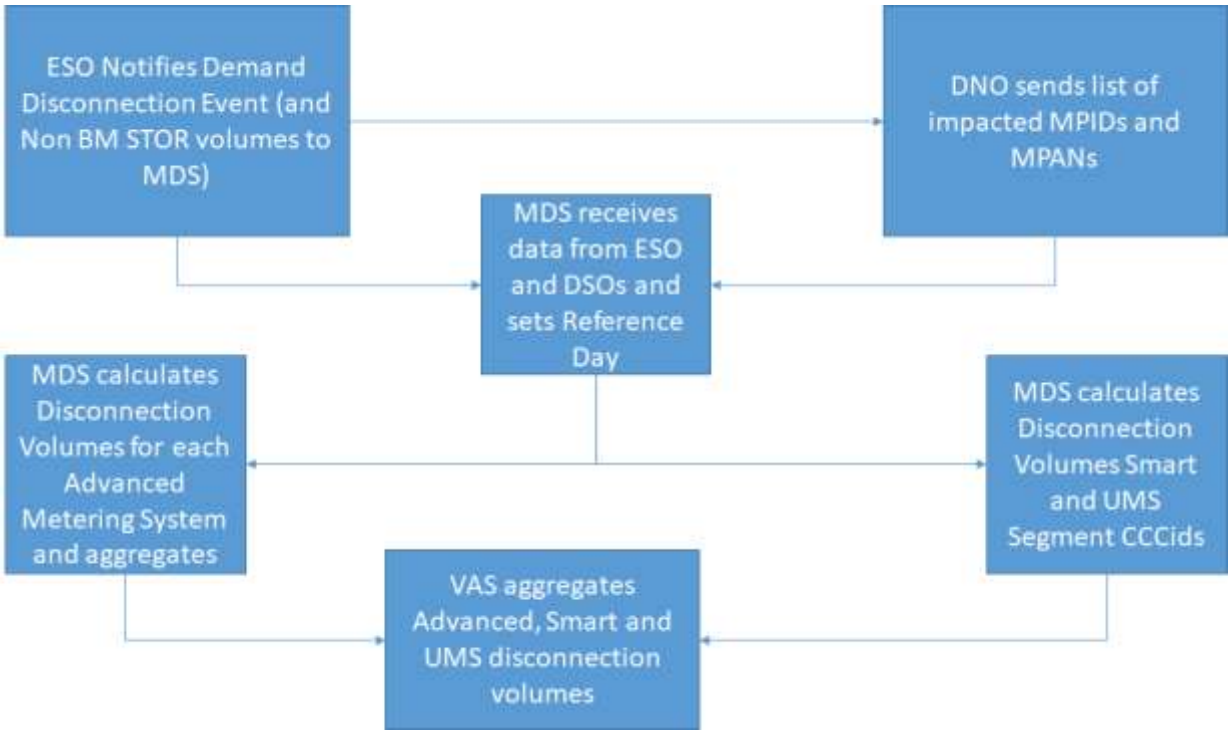
When a Demand Control Event occurs there is a requirement to calculate each Supplier's disconnected Settlement consumption within each GSP Group to ensure Settlement accuracy and that Suppliers do not receive 'windfall' payments from the long imbalance position created by the outage. Issue 89 'Ensuring Demand Control Event (DCE) procedures remain fit for purpose' concluded that no changes to the current process were required but the process would be refined. Hence, a new process will be required under the MHHS TOM.

Overview of the New Process

The new calculation of Supplier Disconnection Volumes will be made by the MDS relative to a reference day of consumption or export data where no disconnection event occurred. For Advanced meters the calculation is made at Metering System level due to the need to adjust for Non BM STOR volumes. For smart, non-smart and Unmetered Supplies the calculation is undertaken at aggregated Consumption Component Class (CCC) level.

The actual Half Hourly data for the day of the disconnection event will be reflective of the disconnected volume and can be differenced from the reference data to get an estimate of the disconnected volume for each Supplier in a GSP Group. Likewise, since the Load Shapes for the disconnection date will reflect the disconnected load customers settled on Register Reads can follow the same process.

High level diagram of the new process



The detailed Demand Control Event process can be found in Appendix A.

10. REGISTRATION: APPOINTMENTS AND CONFIRMATIONS

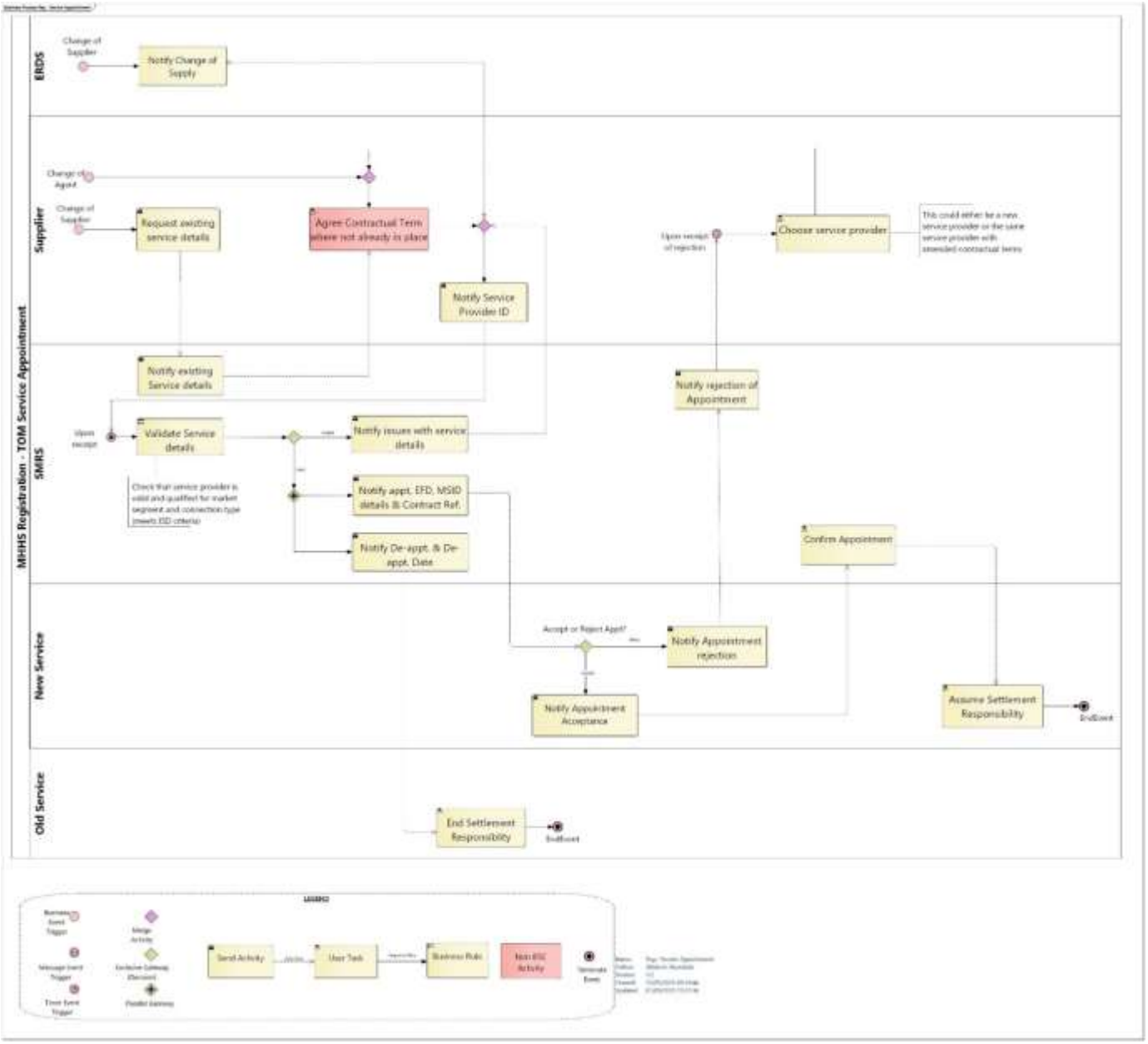
Use of new registration data items in process, approach to TOM service appointments and a recommended approach to dealing with Erroneous Transfers in Settlement.

Recommended new process for appointing TOM services

The diagram below sets out the CCDG's proposed new process for appointing services under the TOM. It will require new functionality to be introduced into the Registration Service (SMRS) to allow it to notify appointments and receive rejections from services where they wish to refuse an appointment. This process will allow the exchange of information that is currently passed via the D0155-D0011-D0148-D0261-D0205 process in a shorter timeframe. It will also ensure that the Registration Service (SMRS) view of appointments is always a true reflection of Settlement responsibility.

The basis of this process is that the Supplier will initiate the change of Service process by updating the Registration Service (SMRS) directly with the relevant identifier of their Metering Service or Data Service provider. The Registration Service will check that the service is a valid participant able to operate in the market segment for that Metering System, and notify the service of the Supplier's intention to appoint. The service will then have an opportunity to accept or reject the appointment, and the Registration Service will notify the Supplier of the confirmation. Where a service rejects an appointment, the Supplier will be required to amend the details of the appointment or appoint a different service. Where a service accepts an appointment, the Registration Service will notify the Supplier and any other appointed services.

Diagram showing the CCDG's recommended new process for appointing TOM services



Benefits of the new CCDG-developed process over current agent appointments

- Suppliers notify appointments directly to the Registration Service (SMRS), at which point it is visible to all participants servicing that MPAN.
- Radically simplifies the existing D0148 process where Suppliers need to advise other agents in the Supplier hub by removing delays and inconsistencies.
- Allows the Registration Service (SMRS) to perform checks instantly to verify whether a service is the correct type for an MPAN.
- Forms part of a wider process improvement where the correct data master updates the Registration Service (SMRS) for relevant items.
- Any mismatches between service type, meter/connection type and market segment are identified immediately.
- Mirrors the switching process, where the CSS synchronises the gaining Supplier back to the Registration Service (SMRS) instantly.
- Allows for prompt acceptance of appointments and shorter timescales better suited to rapid customer switching.

The new service appointments process has been optimised for MPANs switching within the same market segment, i.e. where there is no change to the type of meter installed, but it can be enhanced to facilitate a change of meter that leads to a change of segment, e.g. when an advanced whole current meter is replaced with a Smart meter. Such an event requires some additional process flexibility because the type of metering and data service responsible for the MPAN will have to change accordingly. To facilitate this, the CCDG has developed some additional rules for assigning MPANs to market segments and ensuring that the correct service type is appointed for that segment.

Changes to market segment should be infrequent (far less than a current Change of Measurement Class) because they can only be driven through a change to the physical meter and/or connection type. The next section sets out more detail on how the CCDG envisages the Change of Market Segment process to operate.

A key part of the appointments and the Change of Segment processes is the need to verify the Metering Service type against the Market Segment, which the CCDG recommends is facilitated by maintaining two separate lists of qualified market participants operating as an MSA or MSS. This would mean subdividing the existing Meter Operator market role ("M") into MSS and MSA variants. The CCDG is aware that Ofgem has proposed significant changes to Meter Operator governance under the Retail Energy Code (REC), and so any impacts would need to be understood.

A higher resolution version of the TOM services appointment diagram has been included as Attachment 2.

11. ERRONEOUS TRANSFERS

CCDG Approach to Erroneous Transfers (ETs)

After faster more reliable switching is implemented, the number of data quality related ETs is expected to dramatically reduce, and this is expected to contribute to an overall reduction in the number of ETs.

The CCDG discussed whether an approach to correcting Settlement Data following an ET was required and if so the appropriate process for doing so. The CCDG discussed two Options on this issue which can be found in Appendix B.

The CCDG believed that Suppliers are not routinely undertaking processes to correct their imbalance following a resolution of an ET. The CCDG would welcome any evidence that they are. If all Suppliers are equally affected by this ET over a period of time the most proportionate approach would be to not adjust Settlement volumes when ETs occur.

The CCDG are therefore intending to consult Suppliers on the proposal and are minded to recommend that no Settlement adjustment is made following an ET:

Question 3. Do you agree that the TOM should not include a process for correcting Settlement volumes associated with ETs?
Yes/ No
Rationale:

Question 4. What impact would the lack of a process to correct ET Settlement volumes have on your organisation?
Response:
Rationale:

12. CHANGE OF MARKET SEGMENT AND CHANGE OF DATA SERVICE

Background

Complexity can arise when there is a desire to change a Meter Type (e.g. from Advanced to Smart), because it is difficult to predict precisely when a meter will be physically changed. (There are many practical issues which may stop a meter change occurring, from customer refusing access, customer not present, vehicle breakdown, severe weather, insufficient space, dangerous situations, evidence of theft, etc.)

Typically only one Metering Service, the incoming Metering Service, needs to physically attend at a meter change. They remove the old metering equipment and return it to the Meter Asset Provider (MAP). As part of the meter change it is beneficial for the Data Service to extract as much HH data as possible from a meter before the physical change.

The CCDG supports restricting the update of MTDs to the appointed Metering Service to ensure the accuracy of the MTDs and that updates are clearly auditable. Facilitating a Change of Segment will require careful management once the single Meter Operator role that exists today is split into the MSS and MSA.

Proposed Approach

CCDG recommends that the Registration Service (SMRS) allows 'pending' registrations. This approach would follow the process that the:

- Supplier agrees in advance to a meter change that will require segment change
- Supplier submits registration update with a new 'change of segment indicator' (CoSI) together with the intended new Metering and Data Service
- On receipt the Registration Service will capture the 'notification date' of the CoSI. This will then be used as the commencement of the time that the CoSI is valid.
- As the CoSI is set, the Registration Service will not immediately reject the invalid combination of agent and meter type but retain the knowledge of the intended Metering and Data Service as 'pending'. It will hold them as pending for [30] calendar days, and at the end of that time they will be discarded.
- The old and new Metering and Data Services are alerted to the intended change of Segment activity by the Registration Service.
- If the old Metering or Data Service wish to object they can do so bi-laterally to the Supplier
- The new Metering Service can now formally progress with changing the metering equipment agreed with the supplier
- New Metering Service attend site and remove old meter and fit new meter
- New 'pending' Metering Service has the ability (for the [30] days) to update the Registration Service (SMRS) with new MTD showing the new Meter Type – this exception allows for the 30 days potentially two Metering Service to update the MTD
- When the Registration Service (SMRS) has received the new Meter Type then that triggers the EFD for the change of Segment and the 'pending' Meter and Data Service become the recognised Meter and Data Service
- The new Data Service can only perform their role once they are fully appointed (after MTD updated)
- The old Meter and Data Service are notified of their de-appointment
- Supplier can see progress in the Registration Service (SMRS)

Features of this approach:

- The Supplier will initiate the planned meter/segment change
- It is not dependent on old metering service doing anything which may delay the process
- It allows a window of [30] days for the meter change to actually occur
- If the meter change does not happen in the [30] day window then the Supplier can re-initiate or it will naturally cancel
- The current Metering Service may agree with Supplier that when a CoSI is set they will not attend to resolve a meter fault, which would be pointless as the meter is about to be changed.
- The current Data Service may agree with the Supplier that when a CoSI is set they will not schedule any further site visit meter reads.
- The CoSI would reset immediately on Change of Supplier – not doing so may mean old Supplier's services are appointed.

Additional rules required for Export MPANs

When the metering equipment changes for the import it will typically result in a change for the associated export MPAN. The CCDG is proposing the Registration Service (SMRS) maintains a relationship between the import and export MPANs for a single connection point. This together with the approach above would allow for advance notification to the Export Supplier that the metering equipment is scheduled to change. This can prompt the export Data Service to ensure data is collected regularly.

The BSC requires the same Metering Service to be appointed to the import and export MPAN. This ensures that only one party installs, maintains, configures, fault fixes, commissioning, etc. the metering equipment. Currently, the Export Supplier has to "find out" somehow who the import Meter Operator is, then appoint them. If the import Meter Operator changes there is no trigger to inform the export supplier except potentially the Meter Operator (old or new) although the new Meter Operator may not know there is an export MPAN. This defect should be improved.

The Registration Service (SMRS) could be required to simply force the appointment of the same Metering Service for the export MPAN if and when the import Metering Service is changed, with a default contract reference and advising the export Supplier of the change. This could be applied to all export metering**.** Or alternatively the export supplier could be advised of the pending change of segment and they then advise their pending appointments, who then become effective like the import ones once the Meter Type is updated. There is a BSC Issue group (issue 91) looking to resolve this issue in advance of the implementation of MHHS.

Market Segment Edge Cases

There will be some specific 'edge case' scenarios which the CCDG has recommended solutions for:

CT connection, but no Advanced meter fitted

At the time of migration there will be some CT connection types without an Advanced Meter fitted. The numbers are thought to be very low. This will be forced into Advanced segment. The risk can be mitigated by migrating all CT into existing HH activity early, so that any remaining can be addressed. Opted-out domestic Advanced meters may need to be migrated last once the Load Shaping processes are in place. There will be further discussion on the transition for these edge cases.

LDSO changes the connection type

If the Metering system moves from LV whole current to LV CT, then the metering system will need to change Segment to Advanced. This could lead to an inconsistency. Without any other check, the meter type could be set as Smart and the Metering and Data Service are not Advanced type.

As a change from whole current to CT metering requires engagement and co-ordination by the LDSO with a Metering Service to simultaneously change the meter then the pre-agreed change of segment process must be triggered by the Supplier, prior to the LDSO changing the connection type. This will allow for the connection type to be changed, the new Metering and Data Services appointments to become live and for the new Metering Service to update the MTD which will align the Registration data. A similar arrangement would operate for a LV CT to whole current connection change.

A change from a whole current to CT connection (or vice-versa) is not a frequent occurrence. It could be dealt with by creating a new MPAN and disconnecting the old MPAN. For a change of connection type from LV CT to HV CT there is no change of segment, but similar close co-ordination will be required by Supplier, LDSO, Metering and Data Service. This could also be dealt with more explicitly by creating a new MPAN and disconnecting the old MPAN.

Wrong meter is fitted

A Metering Service is distinguished as an MSS or MSA. Some companies may be operating in both roles. So, if the company is operating in both roles and an MSS has been tasked with fitting a Smart Meter to replace a non-smart meter then there is no change of segment and everything can be dealt with by the MSS.

If the Metering Service incorrectly fits an Advanced Meter then the change of Segment process would be required. The Metering Service could return and fit a smart Meter with estimation used to cover the hours/days where the incorrect Meter Type was installed, or there would need to be engagement with the Supplier to initiate a change of Segment to appoint the relevant MSA. Once the process has been triggered, the MSA can update the MTD as an Advanced Meter.

13. RELATED MPANS

Background

Related MPANs, as defined in BSC and MRA, were created in 1998 to allow NHH Settlement to operate where there are two NHH registers which can record consumption at the same time. This commonly occurs under the Radio Teleswitch arrangements where there are two meters and one is associated with the storage heating load. In order for the profiling calculations to work, two Related MPANs with separate SSCs are required such that the switched load element is recorded at the time when the heating load is active.

Related MPANs are identified in two ways currently either by the Meter Timeswitch Class (MTC) which is set in the '500' range to signal the fact that a site has more than one Meter/ MPAN or more recently as the result of the faster switching work using the Related MPAN data item (J2245) to set a flag within the SMRS.

Related MPANs and the transition to MHHS

The CCDG considered that Related MPANs are not retained for Settlement but may need to be maintained in the short term for the duration of the transition due to NHH processes. In particular Smart Meters replacing the current Radio Teleswitched Meters may require two Meters if the smart Meter variants are unavailable and where NHH arrangements are still in place. The CCDG accepted that parties may wish to retain the association for non-Settlement purposes.

The CCDG believe that there are no requirements for Related MPANs for Settlement purposes and that Suppliers should seek to install a single Meter at site wherever possible going forward.

The detailed CCDG discussion on related MPANs can be found in Appendix B.

Question 5. Are there any non-Settlement reasons why your organisation would require new Related MPANs to be created in the Target End State?
Yes/ No
Rationale:

14. EXCEPTION REPORTING

Exception reporting, here, is the functionality allowing Suppliers and Data Services to become aware of missing, or potentially erroneous data, required by BSC Central Settlement Services. Historically, a major source of erroneous data was Data Collectors and SMRS holding different views of Registration Data. The CCDG's proposal for the operation of the Registration Service (SMRS) is intended to mitigate this source of error and hence the exception reporting can be greatly simplified.

Furthermore, technology implementations can ensure data integrity by executing validation and business rules, so this will negate the need for exception reporting due to, for example, erroneously high consumption figures or future-dated consumption. Technology implementations should also facilitate timely provision/failure notifications for all communications.

CCDG's Proposal

Data Services should have an accurate view of the data they have provided to BSC Central Settlement Services and also any remaining data they are required to provide. Technology implementation and business rules should ensure the accuracy of incoming data from Data Services and ensure that only the appointed Data Service can provide data for each particular MPAN for the settlement date they are appointed. For these reasons, the CCDG proposes that explicit validation and exception reporting is no longer required.

The CCDG proposes that the only reports which should be produced here are MDS-runtime reports. These detail which MPANs have been defaulted for each Settlement Day and Settlement Period (Data Services are not required to provide Meter data to BSC Central Settlement Services in complete days). Such reports should be made available to Data Service and Supplier.

15. GSP GROUP CORRECTION

GSP Group Correction is the process that corrects Suppliers' allocated energy volumes (including calculated losses) to the net amount of energy entering a GSP Group (GSP Group Take). GSP Group Take is the net energy measured going from/to a particular Distribution System region (i.e. a GSP Group) in a Settlement Period. Theoretically, if we were to add up all the estimated and actual Meter readings in a single GSP Group and adjust for losses in a particular Settlement Period, then the total volume should equal the GSP Group Take. That is, if there were no registration errors, electricity theft and all the estimates (including profiling process) accurately reflected the true Meter readings.

The GSP Group Correction mechanism adjusts Suppliers' Metered Volumes (plus calculated losses) in each GSP Group in order to address the under or over accounting of energy. This is done by applying a correction factor to Suppliers' allocated energy so that the aggregate energy allocated to Suppliers is equal to the GSP Group Take in each Settlement Period.

The GSP Group Correction Factor (GSPCF) calculation refers to a Scaling Weight for each Consumption Component Class (CCC), which defines how much GSP Group Correction should be applied to that CCC.

The CCDG have agreed a new GSPGCF calculation that avoids the issue of competing corrections when applying GSPGCFs to Import and Export Volumes.

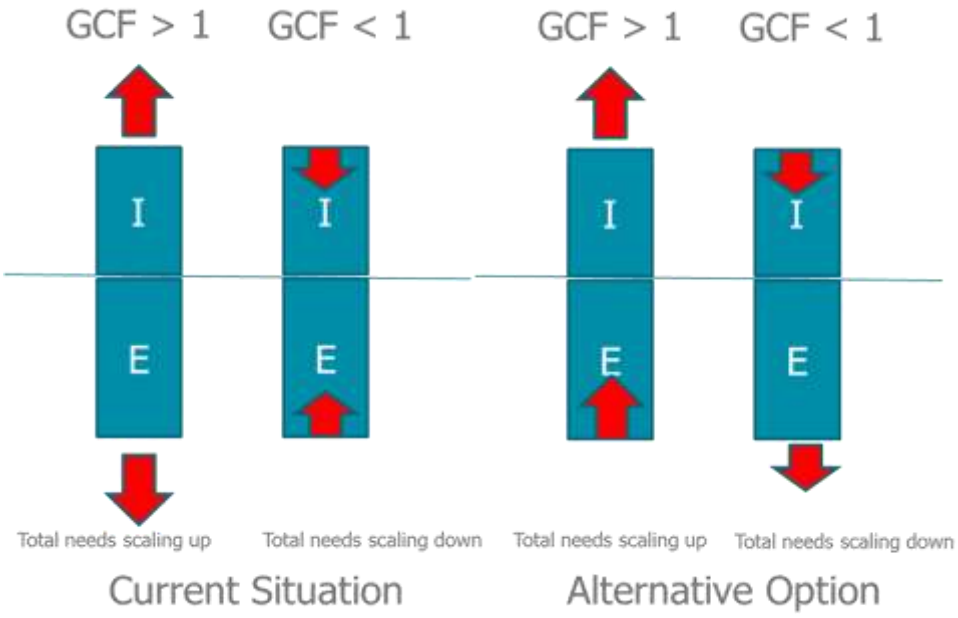
Solving the problem of 'competing corrections'

What is the problem?

The issue of 'competing corrections' has already occurred in the NHH Market, during a brief period where non-zero scaling weights were applied to export volumes. The settled NHH Export volumes are currently small compared to the NHH Import volumes (meaning the impact was minimal). Due to the higher volume of HH Export, applying a revised Scaling Weight to HH Metered Volumes would increase this 'competing correction' effect such that there is the potential for perverse outcomes.

Currently, Annex S-2 of the BSC applies the same GSP Group Correction Factor to both Imports and Exports. This means the correction applied to Exports is pulling in the opposite direction to that applied to Imports (increasing the overall size of the Correction Factor required). In an extreme case (where the volume of Export in a GSP Group approaches the volume of Import) the required Correction Factor (and hence the disruption to Parties' Imbalance Charges) will tend to infinity.

The following diagram shows the current situation whereby corrections to Import and Export volumes are affected in opposite directions. This has the effect of cross cancelling the volume corrections. For example, an increase of 1 MWh of Import may be cancelled out by an increase of 1 MWh of Export. This means that neither correction addresses the volume of energy to be corrected by the process.



Current Equation for Calculating Correction Factors

The current equation for calculating Correction Factors (in Annex S-2 paragraph 9.2) is equivalent to:

CFj = 1 + Unallocated Demand / (Weighted Import– Weighted Export)

where:

- Unallocated Demand is GSPGTHj - ∑N GCHNj i.e. the total 'error' to be allocated through GSP Group Correction;
- Weighted Import is the sum (over Active Import CCCs) of GCHNj * WTn
- Weighted Export is the sum (over Active Export CCCs) of GCHNj * WTn

For example, suppose that the Unallocated Demand was 100 MWh, the Weighted Import was 300 MWh, and the Weighted Export was 200 MWh. The current equation would calculate a Correction Factor of 2.0, so after correction the Weighted Import would be 600 MWh and the Weighted Export 400 MWh. The corrections made were much larger than they needed to be, because the corrections to Import and Export were having opposite effects on the net position of the GSP Group.

The CCDG considered two Options for resolving competing connections set out in Appendix A. The CCDG agreed the following as their preferred Option:

Option 1 – Calculate Separate Correction Factors for Import and Export

In this option, the total Unallocated Demand would be split between Import and Export in proportion to the total Weighted volume of each. A separate Correction Factor would then be calculated for each, to allocate their share of the Unallocated Demand.

In the example above, the Unallocated Demand would be split between Imports and Exports in proportion to their Weighted Volume e.g. 60% to Import and 40% to Export. The Correction Factor equation would then be applied separately to each:

- Import CFj = 1 + 60 / 300 = 1.2
- Export CFj = 1 + 40 / (-200) = 0.8

An attractive feature of this option is that the resultant Correction Factors (1.2 and 0.8) are symmetrical about 1.0 (so Import is scaled up by 20%, and Export scaled down by 20%). See Appendix A for an explanation of why this is always the case. As a result, it is not necessary have to report two different Correction Factors, as a single Correction Factor can be reported for Import on the basis that the Correction Factor for Export can easily be derived from it.

The details of the new GCPGCF calculations are set out in Appendix A.

16. GSP GROUP CORRECTION SCALING WEIGHTS

Background

The GSP Group Correction Factor calculation refers to a Scaling Weight for each Consumption Component Class (CCC), which defines how much GSP Group Correction should be applied to that CCC. It is envisaged that the correctable volume will reduce under MHHS. However, when the gas market moved to more granular settlement they discovered issues with 'Unidentified Gas'. Hence, we are keen to hear on any lesson that could be learned from the gas market when allocation Settlement errors to Suppliers.

Scaling Weight Principles

The CCDG agreed the following principles to be applied in determining the GSPGCF scaling weights:

- Scaling weights should reflect the estimated volume error in each CCC;
- If volume error cannot be estimated the scaling weight should be based on that of similar CCCids;
- Scaling weights should be higher for estimated volumes such as estimates and losses;
- Scaling weights should not disincentive transition to the new MHHS TOM; and
- Scaling weights should not unduly impact 'late movers' to the new arrangements.

CCDG Recommendations on Group Correction Scaling Weights

The CCDG agreed to an initial set the Scaling Weight relative to data quality (actuals and estimates) and network quality based on the level of connection as follows. The weight can be refined once more evidence is available on the likely error within each CCCid:

Quality Rating (Actuals and estimates)	Scaling Weight
Actual	0
Estimate using Meter Advance/ UMS as Actual	0.2
Estimates where Meter Advance Unavailable and losses	0.4
Default estimated values	0.6

Connection Type Rating	Scaling Weight
EHV CT	0
HV CT	0.4
LV CT	0.8
Whole current	1

The values in the above table were allocated to each CCCid then summated to get a single Scaling Weight for each CCCid. The CCDG also agreed a new set of Scaling Weights to be used for existing CCCids during the transition to avoid barriers to migration. The mapping of new and existing Scaling Weights to CCCids can be found in Appendix A.

GSP Group Correction Transition Approach

An approach to introducing the new GSPGCF calculation and new and revised Scaling Weights is required. The CCDG agreed an approach which seeks to incentivise the migration of Metering Systems into the new TOM. The agreed approach is as follows:

- The new calculation, CCC ID table and new Scaling Weights table in ISD are implemented on deployment of the BSC Central Settlement Services; and
- Both the new and existing CCC IDs Scaling Weights will be revised at the same time.

The Volume Allocation Run (VAR) will use the consumption and scaling weights associated with both existing and new CCC IDs to determine and apply the GSPGCFs to create corrected volumes for each Balancing Responsible Party (BRP). At the end of Settlement Run off the existing CCC IDs and associated GSPGCF Scaling weights will be removed from the ISD data.

The CCDG discussion on GSPG Scaling Weights can be found in Appendix B.

17. EXPORT METERING SYSTEM AND THE MHHS TOM

The DWG's preferred TOM was designed to process data for export Metering Systems in the same way as those for import where such Metering Systems are registered for Settlement. It is also worth noting the smart Meters have the ability to store up to [3] months of half-hourly export data and have a single export register.

With the introduction of the Smart Export Guarantee suppliers are obligated to offer export tariffs to customers. Under the scheme there is a requirement on Suppliers to register the export MPAN for Settlement purposes. The Ofgem Full Business Case on Settlement Reform is also intending to make a determination on the registration of export MPANs for Settlement. There are significant numbers of small scale generation sites still receiving deemed export payments under the FiTs scheme.

Where Export MPANs are registered for Settlement the customer's chosen export Supplier will be able to collect the half-hourly export data for Settlement purposes. Ofgem has said that the customer would not be able to opt-out of provision of the half-hourly export data under the MHHS data access framework.

The half-hourly export data will be processed in by the Data Services in a similar way to the import data. Where half-hourly data is unavailable the smart Data Service can still use a Meter Advance calculated from the export Register and the appropriate Load Shape. The Data Service shall estimate zero data for export MPANs where the half-hourly data or Register Reading data is unavailable.

The validated half-hourly data will be provided to the Market-wide Data Service. The data will be aggregated according to the appropriate CCC set out above and the export data will be subject to the GSP Group Correction calculations. This will mitigate some of the export spill for small scale renewables currently seen in Settlement. However, where Export MPANs are not registered for Settlement purposes export spill will still occur.

Small Scale Third Party Generation Plant Limit (SSTPGPL)

The CCDG agreed that since the NHH arrangements will be discontinued under MHHS the ability to for a NHH Meter to record exports will no longer be an option. The current arrangements where small scale renewables with a capacity of less than the SSTPGPL are settled using Profile Class 8 and deemed export clock intervals will no longer be possible due to the removal of the NHH processes.

Question 6. Do you have any specific comments on the proposed detailed processes, or associated transition requirements, set out in Section B for the MHHS TOM?
Yes/ No
Rationale:

SECTION C - EVALUATION OF CCDG DESIGN AGAINST OFGEM DESIGN AND DEVELOPMENT PRINCIPLES

The CCDG has been required to undertake an initial assessment of the detailed TOM design against the Design Principles set by Ofgem, which the DWG had previously used to assess potential TOMs. The CCDG noted that it is part of the CCDG's Terms of Reference to assess its work against both the Design and Development Principles.

The Development Principles were set by Ofgem for both the CCDG and AWG phase of work and therefore not all of these principles are applicable to CCDG since some are AWG considerations.

Approach to the evaluation

The following descriptors are used to show the relative merits:

Strongly supports – ☑☑ assessed to completely deliver against the principle
Supports – ☑ delivers mostly what is required by the principle

CCDG Assessment against the Design Principles

Design Principle	Detail	Evaluation	Comment
Settlement timetable	The TOM design work provides an opportunity to consider how to reduce the settlement timetable to maximise the opportunities provided by smart metering and to achieve the strategic goals of HHS. In particular, consideration should be given to the extent to which a reduced settlement timetable would reduce credit cover costs for existing suppliers and new entrants. Full consideration is to be given to how reduced timings (including post reconciliation dispute runs if needed) of each settlement run and a reduced number of runs will create a settlement system which benefits all parties and maintains robust performance assurance.	☑☑	The DWG's preferred TOM has set an ambition to reduce the Settlement Timetable to 4 months. Under the DWG's TOM, the initial Settlement Run will be within 5 to 7 Working Days of the Settlement date. This will allow a reduction in credit cover by about 50%. The Post Final Run will be at 20 Months The CCDG's detailed design work has not changed this ambition.
Data retrieval and processing	The TOM design work will seek to maximise efficiency and realise consumer benefits to deliver the best achievable balance between speed, accuracy and minimisation of data errors within reduced settlement timescales. To achieve this, the TOM design work will consider:	☑☑	The DWG's preferred TOM design has simplified the Settlement model as the party retrieving the data will also process it and submit it directly to Settlement. The speed of collection processing of data in the smart and non-smart Market Segments is dependent on

	• which enduring roles and responsibilities for data retrieval and processing • promote a relatively simple model whilst avoiding the potential to stifle innovation and competition in delivering these benefits; and; • how best to build upon the changes to data validation and processing introduced under elective HHS.		access to the data via the DCC. The ambition is set at Settlement Day +2. The CCDG's detailed TOM design work has not impacted the retrieval and data processing requirements directly but will address the required data outputs from the process.
Data estimation	To maximise the opportunities provided by smart metering and arrangements for accurate settlement, the TOM should only provide for estimation where necessary. In particular: • The decision on profiling and estimation should balance reducing costs with retaining adequate accuracy for robust performance assurance; • Where applied, the process of estimation should be as simple and cost effective as possible, lowering barriers to entry for new entrants; • It should limit manual intervention in the estimation process for smart meters; and • Contingency for a catastrophic failure of settlement arrangements will also need to be in place.	☑☑	Under the DWG's preferred TOM, the Load Shaping Service is a greatly simplified process compared to profiling. Profiling requires standing samples of customers, large amounts of standing data and complex calculations that are all removed under the MHHS TOM. Estimation processes have been developed to provide greater detail on the types of estimation undertaken when data is deemed to be invalid. The CCDG's detailed design work is looking to recommend a GSP Group Correction process that uses the new estimation flags to more accurately allocate error to estimated values. The estimation processes set out for smart Meters should be capable of being automated. The CCDG notes that it is the AWG's remit to ensure that the reference architecture design identifies how recovery is enabled following any system failures.
Treatment of non half-hourly settled customers	A number of customers may not have transitioned to HHS. The TOM design work will need to consider how to settle these consumers in the most cost-effective manner whilst limiting impacts on the accuracy of settlement. Full consideration should be given to how	☑☑	The DWG's TOM design allows customers with legacy Non Half Hourly Meters to be settled on register reads and Load Shapes and sets out a Meter Reading Service as a

	to apply reformed HHS arrangements to any remaining non half-hourly sites, to examine the impacts and to ensure appropriate treatment.		component of the Smart Data Service. The CCDG's detailed design work has not impacted the TOM design in relation to the treatment of NHH customers. The CCDG has developed new processes for non-smart customers with switched load to ensure these customers are not unduly impacted where smart Meters cannot be fitted.
Change of Measurement Class (CoMC)	The TOM design work will need to address the transition period involving the mass migration of sites to HHS. It should consider how best to develop an effective and efficient CoMC process (or other method for migration to HHS) in light of any experience gained from the expected increased migration to HHS arising from changes introduced by elective HHS. This includes who should hold Meter Technical Details for installed smart meters, any necessary changes to relevant industry codes and, if required, how to accommodate change of supplier and/or metering system alongside the CoMC. This will require robust processes for CoMC (or other method for migration to HHS) to be in place. Solutions should aim to realise significant efficiency and consumer benefits.	☑	The DWG's TOM design will remove the need for any enduring CoMC process. Within each Market Segment customers can switch between register reads and half-hourly data for use in Settlement. The design also removes the requirement for data to be passed between agents on Change of Supplier. The CCDG's detailed design will implement an improved appointments process using the Registration Service (SMRS) as the single source of truth. When implemented this should help with the mass migration of Metering Systems into the MHHS TOM. Changes to the Registration Service will allow for the discontinuation of Measurement Classes as all the detail for each MSID would be derived from registration data items rather than the Measurement Class.
Settlement of export	The TOM design work should consider the potential benefits of including export in mandatory HHS. Specifically: ● At a minimum, improvements to the process for settlement of export should provide solutions for elective take-up; ● Any settlement arrangements including export should facilitate accurate measurement and allocation of electricity volumes;	☑☑	The DWG's TOM design allows for the Settlement of export on the same basis as for import using HH data or register reads. The Ofgem policy decision on data access allows Half Hourly data to be collected from smart Meters. The BEIS Smart Export Guarantee will

	• The solutions to the settlement of import and export should align in the long term to realise the full benefits of settlement reform. This will improve the accuracy of balancing at distribution network level into the mid-2020s to support increased uptake of micro-generation; and • The enduring settlement arrangements for export should facilitate the implementation of future policy on small-scale low-carbon generation.		also incentivise the collection of export consumption as it provides tariffs for export that can be accessed by customers. Load shapes for export will be based on actual export data for the actual Settlement day and be reflective of the weather, illumination on the day. The existing export profiles for export are derived from Profile Class 8 adjusted using estimates of when small scale renewables would be exporting. The CCDG's new GSP Group correction process will allow export volumes to be subject to correction for the first time.
Unmetered supplies	The TOM design work should consider HHS of unmetered supplies (both for non half-hourly and existing half-hourly unmetered supplies).The potential to reduce the amount of inaccurate data processed at each settlement run should be considered to provide improvements to settlement performance whilst limiting the burden of change where potential benefits are limited.	☑☑	The DWG's TOM Design uses the existing HH UMS processes with little change. The key change is that the Supplier will need to contract with the Unmetered Supplies Data Service as it would do for other Data Services. The HH UMS Settlement calculations provide a more accurate allocation of UMS consumption to Settlement Periods than is achieved under the existing Profiling process.
Network Charging	The TOM should facilitate changes aimed at improving the accuracy of data used for the billing of, and determining charges for, distribution networks. These changes should be appropriate for delivering benefits for domestic and small nondomestic consumers settling on a half-hourly basis. The TOM design work should also take account of and accommodate any changes to the network charging regime which have an impact on HHS.	☑	The DWG's TOM will allow HH data for network billing where such data can be collected. This will be more accurate per Settlement than the allocation provided be the current NHH arrangements. This is also true for customers settled on register reads where daily advances can be obtained. The CCDG are still awaiting the detailed requirements from the SCR on Access and Forward Looking Charging.

Transition	As part of the Business Case, Ofgem will develop an approach for the transition to HHS with the aim of providing certainty to industry on the timeframe for change and expectations on them. This will consider the costs and benefits of different implementation timeframes based on the commercial decisions that affect organisations in the transition, including the resources required to manage concurrent industry changes. The work on the transitional approach will need to be informed by the design of the TOM as it develops.	☑☑	The timescales for transition/ implementation of MHHS will be set out by Ofgem in their Full Business Case decision for MHHS. The DWG developed a high-level Transition Approach. The CCDG will develop a more detailed transition and Settlement run-off approach for consultation in 2021. This will be a logical ordering of transition milestones rather than a Programme Implementation Plan with specific timings (which the CCDG expects to be developed by the implementation programme manager).

CCDG Assessment against the Development Principles

Development Principle	Detail	Assessment	Comment
Potential central data store of Half-hourly data	The preferred TOM includes non-aggregated Half-hourly data from all Meter Point Administration Numbers entering central Balancing and Settlement Code (BSC) systems. Consideration should be given to the potential future uses for this data, and ensure that the system design does not act as a barrier. As an example this may include facilitating third party access to the data, in compliance with General Data Protection Regulation, other relevant rules regarding access to data, including the Data Access and Privacy Framework, and the appropriate governance procedures. An example of the type of access could be for public policy uses. Full consideration must also be given to the security requirements of such a database and the security standards any third parties accessing the data must abide by.	☑	The CCDG agreed this principle to be within the AWG's remit including defining requirements around data storage, data and communications, and standards and security principles. On data storage, it was noted that the CCDG and AWG are not specifically required to deliver third-party access arrangements to data for non-Settlement purposes, but that it was about not closing down avenues for third-party access.
Data and communication standards	The data storage, transfer and communication specifications should be standardised across the new systems and interfaces, and these standards will	☑	The CCDG agreed this principle to be within the AWG's remit including defining requirements

	be published. The design should consider whether the changes create barriers to innovation by new entrants or existing business models when providing the data services as described by the preferred TOM. The standards should be specified with potential future system changes in mind and should be flexible to adapt to potential future requirements of the system (e.g. use of data for calculation of network charges). Market-wide Half-Hourly Settlement is an enabler to many future electricity system changes and full consideration to the potential future requirements should be given to the development. The recommendations set out by the Energy Data Taskforce should also be considered, as appropriate.		around data storage, data and communications, and standards and security principles. The CCDG agreed that its business requirements did not contain any barriers and that it was for the AWG to ensure the same for the solution architecture. On standardisation, the CCDG agreed that this does not mean that all interfaces have to be the same.
Security standards	The system architecture and interface development should be carried out in accordance with Ofgem's Data & Security Principles and guidance for following NCSC Security Design principles.	☑	The CCDG agreed this principle to be within the AWG's remit including around data storage, data and communications, and standards and security principles.
Use of data by the Load Shaping Service and other BSC services	The data in central systems should be stored and formatted as to not create a barrier to the data being utilised by the Load Shaping Service as described by the preferred TOM. The Load Shaping Service offers an opportunity for estimates of half hourly import and export to become significantly more accurate. The system architecture design should not be a barrier to many more accurate load shapes categories being created and used for settlement. The data may also be utilised by other BSC services as appropriate. This may include Trading Disputes, Group Correction or Balancing Service Volume Allocation. The system design should consider whether the development is a barrier to these potential uses of the data.	☑☑	The CCDG agreed there were no barriers to the use of data for the Load Shaping Service. It was noted that data is being stored at MPAN level in order that new load shapes could be developed, and that this would involve those MPANs being removed from their existing category. It was also noted that creation of new load shapes would also require appropriate identifiers.
Transition	Taking into account the DWG's transition approach and input from Ofgem's Impact Assessment, the TOM development recommendations will consider potential transition plans. This should consider the appropriate order of system changes and the appropriate time for integration testing. The	To be further developed in 2021	The CCDG noted it will undertake further work on the transition approach in 2021. However, this will consider the logical ordering of transition milestones and will not be a detailed Programme

	interaction with, and timings of, other significant industry changes should be considered when considering potential transition plans and IT system changes.		Implementation Plan with specific timings (which the CCDG expects to be developed by the implementation programme manager).
Data Service Qualification	The TOM describes new data services that will retrieve, validate, process and submit data to central systems. Some of these will be performed outside of central settlement by third parties. The requirements placed on parties as part of the process of qualifying with the BSC to be able to provide these data services should be considered, especially in relation to secure handling of customer data.	To be further developed in 2021	The CCDG noted that the requirements for Data Service Qualification will be developed under the Transition Approach further detail to be developed in 2021. There is also a dependency on the Service Requirements being documented under the Code change development to be undertaken in 2021 which will set out the processes for the Service Qualification to be assessed against.

Question 7. Do you agree that the detailed MHHS TOM design meets Ofgem's Design and Development Principles?
Yes/ No
Rationale:

SECTION D - CODE CHANGE MATRICES

The CCDG are responsible for overseeing the development of the Code changes to introduce MHHS. Some BSC configurable items set out below are in scope but others will be developed and implemented at a later date. The relevant Code bodies have been working together to identify the sections of each Code that will require amending and new sections where required. **Attachment 1** to this consultation contains the Code Change Matrices. These documents set out the sections of each Code, the nature of the changes required and any dependencies on other work areas or industry changes. The Matrices identify where sunset clauses are required to the code obligations where edits are required and where new clauses are required. We are seeking comments on the Matrices now before the Code Bodies start the actual legal drafting, as it will be difficult to change approach later on.

Code Change Matrices are provided for:

- The Balancing and Settlement Code (BSC)
- The Balancing and Settlement Code Procedures (BSCPs)
- The BSC Service Descriptions
- The BSC Party Service Line (PSL)
- The Master Registration Agreement (MRA)
- The Distribution Connection and Use of System Agreement (DCUSA)
- The Smart Energy Code (SEC)

BSC changes

The BSC changes include revisions to most BSC sections and new Sections for the TOM Service requirements and Transitional Arrangements. Changes to the Party Service Line (PSL) have been included. New BSCPs to be developed for the new TOM Services and edits identified for others. For consistency we have adopted the existing BSCP structure but are keen to understand if there are any drivers for changing the scope and structure of the BSCPs. We have assumed that industry's familiarity with the existing BSCPs means parties will have a preference for keeping the existing scope/structure. However, we want to test this assumption. The CCDG believe there are pros and cons of splitting BSCP scope by process or by role

MRA changes

The MRA matrix contains the changes required to obligations in the MRA at the time of this consultation. These have been provisionally mapped to the Code where the equivalent obligations are expected to sit once Ofgem's Retail Code Consolidation (RCC) and Switching Significant Code Reviews (SCRs) are implemented in 2021 and 2022 respectively. This is because the RCC and Switching SCRs will be implemented before MHHS, and there may be other areas where dependant changes may be required in accordance with the new baseline in Q3 2022.

DCUSA changes

The DCUSA changes relate to Unmetered Supplies, the removal of references to Non Half Hourly (NHH) and Measurement Classes, and clarifications to the National Terms of Connection. No requirements relating to the provision of data for network charging have been included in this consultation due to the dependency on the ongoing Access and Forward Looking Charging SCR.

SEC changes

The SEC matrix details the development of a new SEC User role to access the data from the smart Meter. It also sets out changes required to Target Response Times (TRTs) for Data and Communication Company (DCC) Service Requests scheduled by the new role to address potential future capacity issues. It should be noted that these are SEC design decisions on how to implement the MHHS TOM requirements and have not been specified by the CCDG.

CUSC changes

Changes relating to the CUSC have not been included due to the dependency on understanding the requirements following the Access and Forward Looking Charges Significant Code Review. New registration identifiers may be required. The requirements may also entail changes to the existing P210 TUoS data flow and timing changes may impact the SAAI014 data flow. The mechanism for provision of the data is also being considered and may be implemented prior to the MHHS TOM.

Network Charging

No requirements for changes relating to the provision of data for network charging have been included in this consultation due to the dependency on understanding the requirements following the Access and Forward Looking Charging SCR. New identifiers in registration may be required under the AFLC SCR to allow the required aggregations to be undertaken by BSC Central Settlement Services prior to the implementation of the MHHS TOM. Likewise, meter level data will be required for tariff and banding setting under the changes agreed as part of the TCR SCR. The P222 flow 'Provision of EAC and AA data to Distributors' will need to be replaced since the data is NHH and will not exist under the MHHS TOM.

Question 8. Do you believe that all the major changes to the Industry Code documents required to deliver the MHHS TOM have been identified?
Yes/ No
Rationale:

Question 9. Do you think there are any drivers for changing the scope and/or structure of the BSCPs impacted by MHHS?
Yes/ No
Rationale:

SECTION E - OUTSTANDING AREAS AND DEPENDENCIES ON OTHER AREAS OF INDUSTRY CHANGE

Below is a list of items identified that affect, or are affected by, the current proposals for MHHS.

Supply Number

The issue with the Supply Number is that some components (i.e. Profile Class ID, Meter Timeswitch Code) are going to be discontinued following migration to the MHHS TOM or soon thereafter.

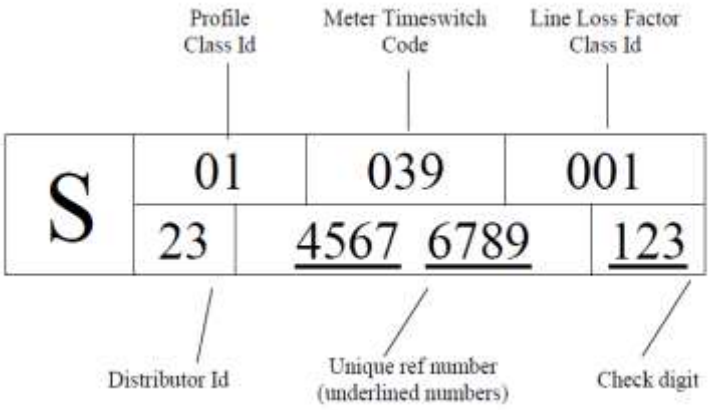
The Supply Number is defined in the Supply Licence as *"a number relevant to the registration of a Customer that is prescribed by the Master Registration Agreement";*

SLC 20.4 states in respect of the Supply Number:

20.4. The licensee must inform each of its Non-Domestic Customers of their Supply Number:
(a) on each Bill or statement of account sent to a Non-Domestic Customer in relation to Charges; or
(b) annually if the licensee has not sent such a Bill or statement of account to them.

The format of the Supply Number is defined in Schedule 5 of the MRA, but will move to the Retail Energy Code (REC) in September 2021.

The data items comprising the Supply Number in MRA Schedule 5 reference Schedule 2, which will move to BSC501 in July 2022. The 'top line' can be removed, amended or replaced by making a change to the REC Registrations Schedule under the REC change process. Changes to Supply Licence Condition 20 should not be required.



Opt-out policy implications for domestic Advanced Meters

The original TOM design assumed that whilst smart and non-smart meters could be processed using register reads, all Advanced Meters would be read half hourly. As a result, only the SDS was designed with the functionality to calculate daily advances and apply load shapes. However, the data access policy decisions Ofgem have made have not differentiated between customers with Advanced Meters and those with Smart Meters. This allowed for two options for processing these opted-out Advanced Meters:

1. Process opted-out Advanced Meters as non-smart Meters.
2. Require the ADS have the functionality to calculate daily advances and apply load shapes.

Processing these Meters as non-smart was considered to pose a number of issues:

1. The Metering Service would need to be MSA and any Export would also need to be processed by the ADS, creating a hybrid market segment.
2. The customer changing their data privacy preference would trigger a change of segment for the metering system.

For these reasons, the CCDG are proposing that opted-out Advanced Meters are processed in the Advanced Segment by the ADS, and that the appropriate extra functionality must be required of the ADS.

The CCDG will consider this issue further when developing its code change drafting.

Faster Switching

CCDG's proposed operation of the Registration Service depends involves the Central Switching Service (and the linked Energy Retail Data Service). Implementation of the CSS is currently expected June-August 2022.

Network Charging Requirements

The MHHS TOM is designed to accommodate provision of data for network charging purposes however aspects of detailed design require knowledge of the specific data items required and the volumes of the data flows. Ofgem have been provided with the proposals for MHHS registration data items, the proposed new consumption component classes and the target settlement timetable. Decision on the Access and Forward Looking Charges SCR is now awaited to refine the mechanism for providing the required data.

DCC Re-procurement of new Data Services Provider (DSP)

The SDS is responsible for scheduling reads for each smart Meter it is responsible for. This scheduling is configured by the DCC on the DSP. It is therefore more efficient to implement this scheduling once the DSP has been re-procured.

Interface requirements from the AWG

The AWG are reviewing and optimising data exchange between TOM Services. In some instances this requires the CCDG to re-evaluate sources for different data and the validation processes.

REC version 2

REC version 2 is expected in September 2021. This change moves content between industry codes and hence will affect the legal drafting for MHHS however it would not affect any aspect of TOM design.

Question 10. Do you have any other comments?
Yes/ No
Rationale:

SECTION F - SUMMARY AND NEXT STEPS

Following this consultation the responses will be reviewed by the CCDG. Any issues or changes to the detailed design will be agreed by the CCDG. The non-confidential responses to the consultation will be published in the CCDG webpages. The CCDG will then progress the development of the transitional arrangements with a view to a consultation in mid-2021.

The Code bodies will start to develop the Code changes and develop any new Code subsidiary documents. The CCDG will be used to review the code changes developed and a consultation on the Code changes will then be developed,

The AWG will continue the development of the reference architecture required to develop the MHHS TOM and a consultation will be held during 2021.

APPENDIX A - DETAILED DESIGN INFORMATION

This Appendix contains the detail of the CCDG considerations when developing the detailed design of the MHHS TOM.

Measurement Classes and Market Segments

The CCDG looked to rationalise and define Measurement Classes for use in the Target Operating Model. For each Measurement Class a set of associated Consumption Component Classes is required. Standing Data for use in Settlement processes is currently held in Market Domain Data (MDD). The DWG preferred TOM set out an initial proposal of which data items will be required in the future.

CCDG considerations on Measurement Classes

The CCDG noted the following consideration when discussing Measurement Classes:

- Need to limit CoMC activity on migration;
- Any need to align with Performance Serials;
- Impacts on data for network changing; and
- Need to identify Transition Approach as MPANs will need to remain on existing MCs until migrated.

CCDG Recommendations on Measurement Classes

Following the discussions the CCDG decided that Measurement Classes are not needed under the MHHS TOM. They agreed that the registration data relating to Measurement Classes be set to NULL when MPANs transition to the TOM. They agreed we would now classify MPANs by Market Segment rather than Measurement Class.

The CCDG agreed that CCCs should have a segment indicator rather than a Market Segment Indicator, and that this should be based on the following three segments:

- Unmetered (U)
- Smart & Non-Smart (S)
- Advanced (A)

The CCDG agreed that this U/S/A indicator should form part of registration data.

Consumption Component Classes

The existing CCCs are set out in Table X-8 of Section X Annex X-2 of the Balancing and Settlement Code (BSC).

CCCs are currently used to aggregate data for use in GSPGCF calculations, Performance Serials (actual and Estimates) and Transmission charging. They are split as follows:

- Measurement Quantity: Active Import (AI) or Active Export (AE)
- Data Aggregation Type; HH or NHH
- Metered Unmetered Indicator: Metered (M) or Unmetered (U)
- Component Indicator: Consumption (or Generation) (C) , Metering Specific Line Losses (M) or generic line Losses (L)
- Actual/ Estimate Indicator: Actuals (A) or Estimates (E) or Null
- AA/ EAC indicator: Annualised Advance (A) or Estimated Annual Consumption (EAC)
- Consumption Level Indicator: Metering Systems which are not 100kW Metering Systems (equivalent to Measurement Class "E", "F" and "G") (A)/ Metering Systems which are 100kW Metering Systems (equivalent to Measurement Class "C") (B) or Null

CCDG considerations on Consumption Component Classes

The CCDG noted the following considerations on CCCs:

- Existing CCCs will be required during transition for non-migrated Metering Systems;
- Migrated Metering Systems likely to need new CCCs mapped to the revised/ new Measurement Classes; and
- As HH/ NHH split no longer required there maybe another split that is useful (domestic/ non-domestic, CT meters, small/ large UMS, smart / non-smart, advanced meter) or Market Segment.

The CCDG agreed the following Connection Type Indicator would be useful for a number of purposes including identification of Market Segment and for the GCF Calculation.:

Connection Type	Identifier
Low Voltage Whole Current	W
Low Voltage with CT	L
High Voltage with CT	H
Extra High Voltage with CT	E

The CCDG agreed that Performance Management reporting should be split out and not be dependent on the available CCCids. Hence, the Domestic/ Non-domestic flag would not be required for CCCids. Likewise, the CCDG agreed not to scale all the different estimation types the Estimation Flags and grouped them according to the quality of the estimation process.

CCDG Recommendations on Consumption Component Classes

After discussion, the CCDG agreed the following set of indicators for CCCs and that these should form a new table of CCCs. It had agreed that Measurement Classes will no longer be required under the TOM. It noted that, during transition, non-transitioned Meters will continue to use the existing Measurement Classes and existing CCCs. Once transitioned, they will use the new CCCs. Measurement Classes and the old CCCs can then be retired at the end of the transition period.

CCC ID	Segment Indicator	Measurement Quantity	Consumption/ line loss	Connection Type Indicator	Estimate/ Actual
100	U	AI	C	W	A
101	U	AI	L	W	A
102	U	AE	C	W	A
103	U	AE	L	W	A
104	U	AI	C	W	E
105	U	AI	L	W	E
106	U	AE	C	W	E
107	U	AE	L	W	E
108	S	AI	C	W	A
109	S	AI	L	W	A
110	S	AE	C	W	A
111	S	AE	L	W	A
112	S	AI	C	W	E1, E2, E3 and E6
113	S	AI	C	W	E4, E5 and E7
114	S	AI	C	W	E8
115	S	AI	L	W	E1, E2, E3 and E6
116	S	AI	L	W	E4, E5 and E7

117	S	AI	L	W	E8
118	S	AE	C	W	E1, E2, E3, E6 and ZE1
119	S	AE	L	W	E1, E2, E3, E6 and ZE1
120	A	AI	C	W	A
121	A	AI	L	W	A
122	A	AE	C	W	A
123	A	AE	L	W	A
124	A	AI	C	L	A
125	A	AI	L	L	A
126	A	AE	C	L	A
127	A	AE	L	L	A
128	A	AI	C	H	A
129	A	AI	L	H	A
130	A	AE	C	H	A
131	A	AE	L	H	A
132	A	AI	C	E	A
133	A	AI	L	E	A
134	A	AE	C	E	A
135	A	AE	L	E	A
136	A	AI	C	W	EA1, EA2, EA3, EA4 and EA5
137	A	AI	C	W	EA7, EA8 and EA9
138	A	AI	C	W	EA6, EA10, EA11 and EA12
139	A	AI	L	W	EA1, EA2, EA3, EA4 and EA5
140	A	AI	L	W	EA7, EA8 and EA9
141	A	AI	L	W	EA6, EA10, EA11 and EA12
142	A	AE	C	W	AAE1, AAE2
143	A	AE	C	W	AAE3
144	A	AE	C	W	EAE1, EAE2 and EAE3
145	A	AE	L	W	AAE1, AAE2
146	A	AE	L	W	AAE3
147	A	AE	L	W	EAE1, EAE2 and EAE3
148	A	AI	C	L	EA1, EA2, EA3, EA4 and EA5
149	A	AI	C	L	EA7, EA8 and EA9
150	A	AI	C	L	EA6, EA10, EA11 and EA12
151	A	AI	L	L	EA1, EA2, EA3, EA4 and EA5
152	A	AI	L	L	EA7, EA8 and EA9

153	A	AI	L	L	EA6, EA10, EA11 and EA12
154	A	AE	C	L	AAE1, AAE2
155	A	AE	C	L	AAE3
156	A	AE	C	L	EAE1, EAE2 and EAE3
157	A	AE	L	L	AAE1, AAE2
158	A	AE	L	L	AAE3
159	A	AE	L	L	EAE1, EAE2 and EAE3
160	A	AI	C	H	EA1, EA2, EA3, EA4 and EA5
161	A	AI	C	H	EA7, EA8 and EA9
162	A	AI	C	H	EA6, EA10, EA11 and EA12
163	A	AI	L	H	EA1, EA2, EA3, EA4 and EA5
164	A	AI	L	H	EA7, EA8 and EA9
165	A	AI	L	H	EA6, EA10, EA11 and EA12
166	A	AE	C	H	AAE1, AAE2
167	A	AE	C	H	AAE3
168	A	AE	C	H	EAE1, EAE2 and EAE3
169	A	AE	L	H	AAE1, AAE2
170	A	AE	L	H	AAE3
171	A	AE	L	H	EAE1, EAE2 and EAE3
172	A	AI	C	E	EA1, EA2, EA3, EA4 and EA5
173	A	AI	C	E	EA7, EA8 and EA9
174	A	AI	C	E	EA6, EA10, EA11 and EA12
175	A	AI	L	E	EA1, EA2, EA3, EA4 and EA5
176	A	AI	L	E	EA7, EA8 and EA9
177	A	AI	L	E	EA6, EA10, EA11 and EA12
178	A	AE	C	E	AAE1, AAE2
179	A	AE	C	E	AAE3
180	A	AE	C	E	EAE1, EAE2 and EAE3
181	A	AE	L	E	AAE1, AAE2
182	A	AE	L	E	AAE3

Industry Standing Data

CCDG Recommendations on Industry Standing Data

The CCDG agreed the following requirements and changes for ISD:

ISD Table	Current MDD TABLES	MoSCoW	Comments
ISD1.1	Average Fraction of Yearly Consumption	Won't have	Kept until end of Transition
ISD1.2	Average Fraction of Yearly Consumption Set	Won't have	Kept until end of Transition
ISD1.3	BM Unit for Supplier in GSP Group	Must have	Suppliers can raise new BMUs if required
ISD1.4	Clock Interval	Won't have	Kept until end of Transition
ISD1.5	Clock Time Change	Must have	Conversion to Clock Time to occur at MDS.
ISD1.6	Consumption Component Class	Must have	New CCCs/new data items.
ISD1.7	Day of the Week	Could have	Reviewed at end of transition
ISD1.8	Day Type	Could have	Reviewed at end of transition
ISD1.9	Default Period Profile Class Coefficient	Won't have	Advanced Sector Load Shapes to be provided instead.
ISD1.10	Energisation Status	Must have	
ISD1.11	GSP Group Average EAC	Won't have	Kept until end of Transition
ISD1.12	GSP Group Correction Scaling Factor	Won't have	Kept until end of Transition
ISD1.13	GSP Group Distributor	Must have	Needed for VAS
ISD1.14	GSP Group Profile Class Average EAC	Won't have	Kept until end of Transition
ISD1.15	GSP Group	Must have	Needed for VAS
ISD1.16	ISR Agent Appointment	Could have	Will need renaming.
ISD1.17	Line Loss Factor Class	Must have	May need revision due to TCR proposals.
ISD1.18	MDD Version Number	Must have	Will need renaming.
ISD1.19	Measurement Class	Won't have	No longer required
ISD1.20	Measurement Quantity	Must have	Needed for VAS
ISD1.21	Measurement Requirement	Must have	Frozen and kept until at least 5 years after the end of transition.
ISD1.22	Meter Timeswitch Class	Could have	Reviewed at end of transition
ISD1.23	Market Participant Role	Must have	Needed for VAS
ISD1.24	Market Participant	Must have	Needed for VAS

ISD1.25	Market Role	Must have	New Data Service roles to be added
ISD1.26	MTC in PES Area	Could have	Reviewed at end of transition
ISD1.27	MTC Meter Type	Could have	Reviewed at end of transition
ISD1.28	MTC Payment Type	Could have	Reviewed at end of transition
ISD1.29	Off Tolerance	Won't have	No longer used anymore
ISD1.30	Profile Class	Won't have	New Load Shape Category table?
ISD1.31	Profile	Won't have	Kept until end of Transition
ISD1.32	Profile Set	Won't have	Kept until end of Transition
ISD1.33	PRS Agent Appointment	Must have	Will need renaming.
ISD1.34	Regression Coefficient Type	Won't have	Kept until end of Transition
ISD1.35	Season	Could have	Reviewed at end of transition
ISD1.36	Settlement Day	Could have	Reviewed at end of transition
ISD1.37	Settlement Period	Must have	Needed for VAS
ISD1.38	Settlement	Must have	Needed for VAS
ISD1.39	Settlement Type	Must have	Run type revised for new Settlement timetable
ISD1.40	SMETS Version	Could Have	Needed for smart market segment
ISD1.41	Smoothing Parameter	Won't have	Kept until end of Transition
ISD1.42	Standard Settlement Configuration	Must have	Frozen and kept until at least 5 years after the end of transition.
ISD1.43	Teleswitch Contact Rule	Won't have	Kept until end of Transition
ISD1.44	Teleswitch Group	Won't have	Kept until end of Transition
ISD1.45	Teleswitch Register Rule	Won't have	Kept until end of Transition
ISD1.46	Tele-switch Time Pattern Regime	Won't have	Kept until end of Transition
ISD1.47	Threshold Parameter	Won't have	Kept until end of Transition
ISD1.48	Time Pattern Regime	Must have	Frozen and kept until at least 5 years after the end of transition.
ISD1.49	Valid Measurement Requirement Profile Class	Must have	Frozen and kept until at least 5 years after the end of transition.
ISD1.50	Valid MTC LLFC Combination	Could have	Kept until end of Transition
ISD1.51	Valid MTC LLFC SSC Combination	Won't have	Kept until end of Transition
ISD1.52	Valid MTC LLFC SSC PC Combination	Won't have	Kept until end of Transition
ISD1.53	Valid MTC SSC Combination	Won't have	Kept until end of Transition
ISD1.54	Valid Settlement Configuration Profile Class	Won't have	Kept until end of Transition

ISD1.55	Yearly Season Detail	Could have	Reviewed at end of transition
ISD1.56	Year	Could have	Reviewed at end of transition
Potential new ISD tables			
ISD1.57	ToU GCF Scaling Weights	Won't have	
ISD1.58	ToU Clock Intervals	Won't have	
ISD1.59	Market Segment (U/S/A)	Must Have	Part of agreed CCCids
ISD1.60	Connection Type Indicator	Must Have	
ISD1.61	Line Loss Factor Identifier	Must Have	To replace LLFCid for identification of LLFs
ISD1.62	Advanced Market Segment Default Load Shapes	Won't Have	ADS Load shapes to be calculated for defaulting
ISD1.63	Valid Set of Load Shape Categories	Must Have	See list of LSS categories set out below
ISD1.64	MHHS Consumption Component Classes	Must Have	As set out below
ISD1.64	MHHS GSPG Scaling Weights	Must Have	As set out below
ISD Requirement Id	**Unmetered Supplies**	**MoSCoW**	**Comments**
ISD2.1	Charge Codes	Must have	Needed for UMS HHS
ISD2.2	Switch Regimes	Must have	Needed for UMS HHS
ISD2.3	Manufacturer Equipment LED Range Spreadsheet	Must have	Needed for UMS HHS
ISD2.4	Variable Power Switch Regimes	Must have	Needed for UMS HHS
ISD2.5	Motorway Sign Charge Codes	Won't Have	No Longer used
ISD2.6	Non-standard conversion Charge Codes	Won't Have	No Longer used
ISD2.7	UMS Motorway hours	Must Have	Needed for UMS HHS

Non-smart Meters with Switched Load

CCDG members discussed the issue of customers with switch load (typically Economy 7 customers) with non-smart meters at the end of the transition period. It was felt that customers with switched load who have not yet had the opportunity to have a smart Meter installed would be disadvantaged as they would be on a non-reflective single rate Load Shape and Suppliers were unlikely to support a two rate tariff for billing.

The CCDG agreed a time limited approach to where by these customers would retain their Profile Classes 2 or 4 on migration to the new MHHS TOM. They would be settled using the Load Shapes for Active Import for Domestic or Non-Domestic Metering Systems in each GSP Group. Their off-peak load would be allocated to the timing of the most common switching Regime in each GSP Group.

Using the standard load shape, associated with the MPAN, in UTC for the day to be settled, the consumption (Meter Advance) on the Low (off-peak) register will be allocated to the Settlement periods for most common switching regime (00:30 to 07:30 or 00:00 to 07:00) for the GSP Group. The Normal (peak) register consumption will be allocated to the remaining Settlement Periods.

The CCDG considered the following issues:

- In order to create an Economy 7 load shape the registration data would require a field to identify that customers are on an Economy 7 tariff (whether they are being settled using HH data or not);
- The Supplier would have to populate the field in the registration data for each MPAN indicating that it is E7 (Possibly with a switched load indicator in ISD. N.B. a lot of existing E7 customers do not have switched load);
- The registration data would be used by the Load Shaping Service to create a Load Shape using data for MPANs where valid HH data had been collected;
- The Smart Data Service would then summate the meter advances for each ToU register and apply it to the E7 Load shape
- There are many types of E7 regimes which differ in timing and some are split regimes. Consideration of which types of E7 require a Load Shape
- Other types of MPANs currently in Profile Class 2 would still be included in the 'Domestic' load shape (e.g. Economy 10, 8.5 WM and other many switching lengths)
- The E7 Load shape will still smear the Off peak and daytime load across the Settlement Day
- The Super customer Domestic Load shape would not be different than currently proposed (i.e. it is within the Supplier's gift to address the issue without having this data split out)
- Settlement does not split out customers with other specific loads e.g. Electric Cookers as the impact is reflected in the Super Customer

Using the standard load shape, associated with the MPAN, in UTC for the day to be settled, the consumption (Meter Advance) on the Low (off-peak) register will be allocated to the Settlement periods for most common switching regime (00:30 to 07:30 or 00:00 to 07:00) for the GSP Group. The Normal (peak) register consumption will be allocated to the remaining Settlement Periods.

The CCDG agreed approach

The CCDG agreed that:

- The solution will use the Load Shapes for Active Import for Domestic or Non-Domestic Metering Systems in each GSP Group;
- The off-peak calculation of the 7 Day rolling total will be either Midnight to 7 or 00:30 to 07:30 depending on the most prevalent regime for each GSP Group;
- In addition the daily total and rolling 7 day total for the load shape the Load Shaping Service will calculate four new values:
  - Daily total for off-peak (Low)
  - Daily total for peak (Normal)
  - 7 day rolling total for off-peak (Low)
  - 7 day rolling total for peak (Normal)

  This approach would be utilised only for at least five years following the end of Transition to allow for customers to move to a smart meter who are currently unable, or choose not to, have a smart meter

Estimation Methodology

The Smart Processing Service (PSS) of the Smart Data service will allocate consumption using either PSS estimation Method 6 where an actual Meter Advance is available, or Method 7 where only a Daily Advance Estimate is available:

PSS Estimation Method 6:

$SP_{Low} = LSS(SP_{LOW})/ LSS_{LOW(}Daily\ Total_{LOW}) * (Meter\ Advance_{LOW}/ Days\ in\ Meter\ Advance\ period_{LOW})$

OR

$SP_{Normal}= LSS(SP_{Normal)}/ LSS_{Normal}(Daily\ Total_{Normal}) * (Meter\ Advance_{Normal}/ Days\ in\ Meter\ Advance\ period_{Normal})$

PSS Estimation Method 7:

$SP_{Low} = LSS(SP_{LOW})/ LSS_{LOW}(7\ day\ total_{LOW}) * (DAE_{LOW}*7)$

OR

$SP_{Normal}= LSS(SP_{Normal)/}\ LSS_{Normal}\ (7\ day\ total_{Normal}) * (DAE_{Normal}*7)$

Where:
$LSS(SP_{LOW})$ are the Load Shape values during the off-peak period;
$LSS(SP_{Normal})$ are the Load Shape values during the peak period;
DAE_{LOW} is the Daily Advance Estimate during the off-peak period; and
DAE_{Normal} is the Daily Advance Estimate during the peak period.

The Smart Data Service will be provided Meter Technical Details in the current format of the D0149/ D0150 data flows to identify the low and normal registers. The method of transfer between the Metering Service and the SDS will be set out by the AWG.

Allocation of Switch Regimes to GSP Groups

The CCDG analysed counts of MPANs in each GSP group to assess which Regime was most appropriate in each Group. The CCDG noted that in the two Scottish GSP Groups the traditional Economy 7 Regimes did not exist and that the prevalence of RTS Regimes not supported under the MHHS Tom meant that no equivalent Regime could be allocated. The CCDG identified for simplicity these groups would be allocated to the mid-night to 7 Regime. The following tables shows the mapping of Regimes to GSP Group:

GSP Group	Domestic Premises Indicator	Measurement Quantity	Non-Smart Switched Load Profile Class	Off-Peak Period	Connection type Indicator
_A	T	AI	02	00:00-07:00	W
_A	F	AI	04	00:00-07:00	W
_B	T	AI	02	00:30-07:30	W
_B	F	AI	04	00:30-07:30	W
_C	T	AI	02	00:30-07:30	W
_C	F	AI	04	00:00-07:00	W
_D	T	AI	02	00:30-07:30	W
_D	F	AI	04	00:30-07:30	W
_E	T	AI	02	00:30-07:30	W
_E	F	AI	04	00:30-07:30	W
_F	T	AI	02	00:00-07:00	W
_F	F	AI	04	00:00-07:00	W
_G	T	AI	02	00:30-07:30	W
_G	F	AI	04	00:30-07:30	W
_H	T	AI	02	00:30-07:30	W
_H	F	AI	04	00:30-07:30	W
_J	T	AI	02	00:30-07:30	W
_J	F	AI	04	00:30-07:30	W
_K	T	AI	02	00:30-07:30	W
_K	F	AI	04	00:30-07:30	W
_L	T	AI	02	00:00-07:00	W
_L	F	AI	04	00:00-07:00	W
_M	T	AI	02	00:30-07:30	W

_M	F	AI	04	00:30-07:30	W
_N	T	AI	02	00:00-07:00	W
_N	F	AI	04	00:00-07:00	W
_P	T	AI	02	00:00-07:00	W
_P	F	AI	04	00:00-07:00	W

Load Shape Categories

Following the discussion on non-Smart allocation of Regimes to GSP Groups the CCDG agreed the following initial set of Load Shape Categories (ISD Table 1.63), Further Load Shape Categories may be created in the future but will need appropriate Registration Data items defined to allow for their calculation:

Market Segment	GSP Group	Domestic Premises Indicator	Measurement Quantity	Non-Smart Switched Load Profile Class	Off-Peak Period	Vd Connection Type Indicator
S	_A	T	AI	02	00:00-07:00	W
S	_A	F	AI	04	00:00-07:00	W
S	_A	T	AE	NULL	NULL	W
S	_A	F	AE	NULL	NULL	W
S	_B	T	AI	02	00:30-07:30	W
S	_B	F	AI	04	00:30-07:30	W
S	_B	T	AE	NULL	NULL	W
S	_B	F	AE	NULL	NULL	W
S	_C	T	AI	02	00:30-07:30	W
S	_C	F	AI	04	00:00-07:00	W
S	_C	T	AE	NULL	NULL	W
S	_C	F	AE	NULL	NULL	W
S	_D	T	AI	02	00:30-07:30	W
S	_D	F	AI	04	00:30-07:30	W
S	_D	T	AE	NULL	NULL	W
S	_D	F	AE	NULL	NULL	W
S	_E	T	AI	02	00:30-07:30	W
S	_E	F	AI	04	00:30-07:30	W
S	_E	T	AE	NULL	NULL	W
S	_E	F	AE	NULL	NULL	W
S	_F	T	AI	02	00:00-07:00	W
S	_F	F	AI	04	00:00-07:00	W
S	_F	T	AE	NULL	NULL	W
S	_F	F	AE	NULL	NULL	W
S	_G	T	AI	02	00:30-07:30	W
S	_G	F	AI	04	00:30-07:30	W
S	_G	T	AE	NULL	NULL	W
S	_G	F	AE	NULL	NULL	W
S	_H	T	AI	02	00:30-07:30	W
S	_H	F	AI	04	00:30-07:30	W
S	_H	T	AE	NULL	NULL	W
S	_H	F	AE	NULL	NULL	W
S	_J	T	AI	02	00:30-07:30	W
S	_J	F	AI	04	00:30-07:30	W

S	_J	T	AE	NULL	NULL	W
S	_J	F	AE	NULL	NULL	W
S	_K	T	AI	02	00:30-07:30	W
S	_K	F	AI	04	00:30-07:30	W
S	_K	T	AE	NULL	NULL	W
S	_K	F	AE	NULL	NULL	W
S	_L	T	AI	02	00:00-07:00	W
S	_L	F	AI	04	00:00-07:00	W
S	_L	T	AE	NULL	NULL	W
S	_L	F	AE	NULL	NULL	W
S	_M	T	AI	02	00:30-07:30	W
S	_M	F	AI	04	00:30-07:30	W
S	_M	T	AE	NULL	NULL	W
S	_M	F	AE	NULL	NULL	W
S	_N	T	AI	02	00:00-07:00	W
S	_N	F	AI	04	00:00-07:00	W
S	_N	T	AE	NULL	NULL	W
S	_N	F	AE	NULL	NULL	W
S	_P	T	AI	02	00:00-07:00	W
S	_P	F	AI	04	00:00-07:00	W
S	_P	T	AE	NULL	NULL	W
S	_P	F	AE	NULL	NULL	W
A	ALL	ALL	AI	NULL	NULL	W
A	ALL	ALL	AE	NULL	NULL	W
A	ALL	ALL	AI	NULL	NULL	L
A	ALL	ALL	AE	NULL	NULL	L
A	ALL	ALL	AI	NULL	NULL	H
A	ALL	ALL	AE	NULL	NULL	H
A	ALL	ALL	AI	NULL	NULL	E
A	ALL	ALL	AE	NULL	NULL	E
U	ALL	N	AI	NULL	NULL	W
U	ALL	N	AE	NULL	NULL	W

Market-wide Data Service Processing Requirements

The Market-wide Data Service must process the latest available data for each MPAN at MDS Run Time. If a Settlement Run is re-run after the Final Settlement run then any data received after the Final Settlement run time will not be processed unless subject to the resolution of a. The Market-wide Data Service must process the latest available data for each MPAN at MDS Run Time. If a Settlement Run is re-run then any data received after the Final Settlement Run time will not be processed unless subject to the resolution of a Trading Dispute. The MDS will calculate the losses associated with each MPAN using the appropriate Line Loss Factor (LLF) and allocate the losses to the appropriate Consumption Component Class Id (CCCid) for losses associated with the MPAN.

In processing the data for a Settlement Day the MDS will process data received each Settlement Period. The MDS can receive partial data for an MPAN meaning that the number of MPANs with data can vary by Settlement Period.

Processing of data at Clock Change and British Summer Time

Data Service Requirements

The following Requirements apply to Data Services when processing and notifying data to BSC Central Settlement Services:

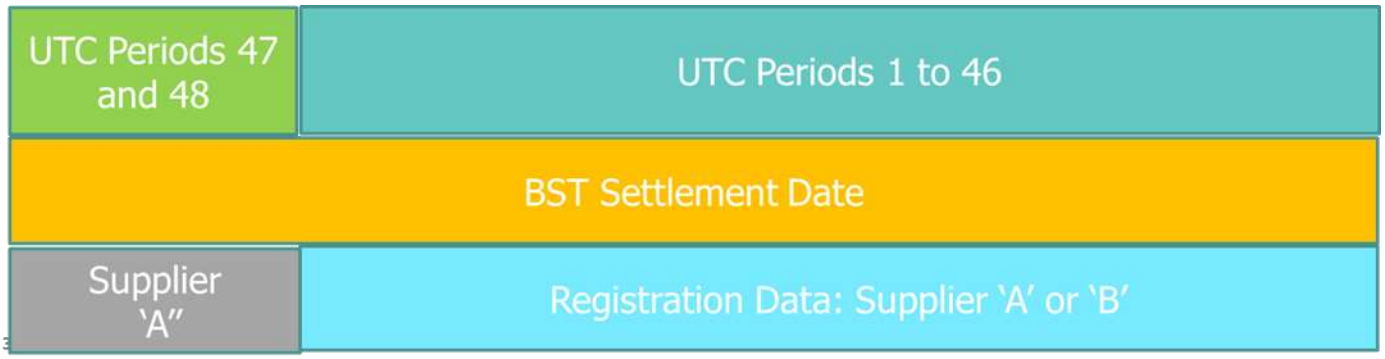
- Each The Data Service shall be appointed on a UTC day basis according the 'effective from' date for the Data Service set in the Registration Service;
- The Data Service shall collect data for each UTC day that it is appointed regardless of any change of Supplier event;
- In processing de-energised MPANs the Data Service shall submit zero estimates for each UTC period and flag as de-energised.
- If actual HH data or estimates based on actual readings is retrieved for de-energised MPANs the data shall be flagged in accordance with the appropriate flag dependent on actual or estimation method.
- The Data Service shall process and submit make available data for all period in full UTC day (48 periods) in time for the MDS Run even if some periods need to be estimated.
- The data can be made available to incrementally or for full UTC days each Settlement Period will be date-time stamped.

Market-wide Data Service Requirements

The MDS will process the latest timestamped data for each UTC Period regardless of the actual or estimation flag. The MDS will only process data for energised UTC periods and non-zero de-energised UTC periods.

When processing data for a Settlement Day that is in the British Summer Time Period:

- For days not associated with a clock change event the MDS shall process UTC Period 1 to UTC Period 46 and allocate the SP level consumption data to the Supplier identified in the Registration Service (SMRS) data using the 'effective from' date for the Supplier.
- The MDS shall process the data for UTC period 47 and UTC period 48 for the previous UTC day and allocate the SP level consumption data to the Supplier identified in the Registration Service (SMRS) data using the 'effective from' date for the Supplier.

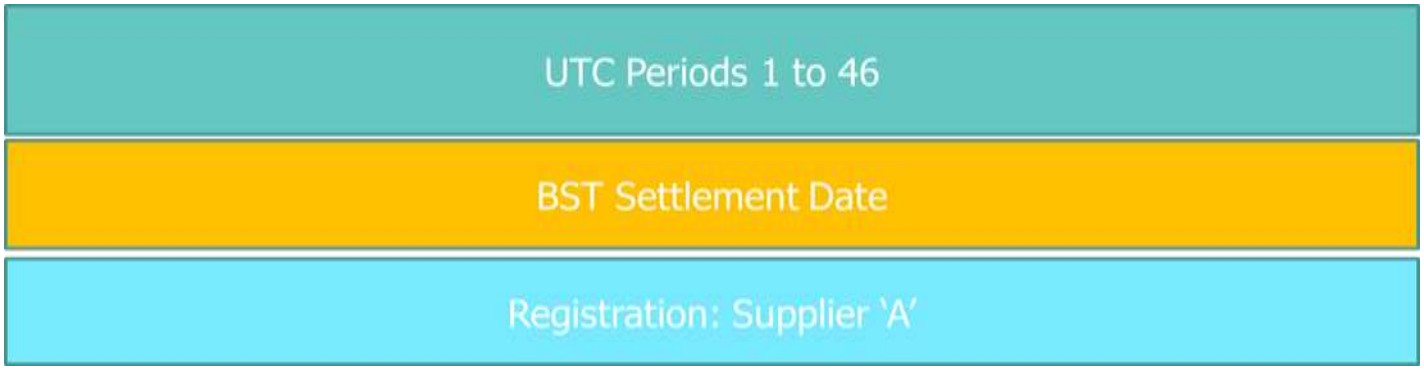


Autumn Clock Change Day Processing

On the Autumn Clock change day the MDS shall process UTC periods 1 to 48 and allocate to the Supplier identified in the Registration Service (SMRS) with the 'effective from' date associated with the UTC day and the MDS shall process the data for UTC period 47 and UTC period 48 for the previous UTC day and allocate to the Supplier identified in the Registration Service (SMRS) data using the 'effective from' date associated with the UTC day being processed.

Spring Clock Change Day Processing

When processing data for the Spring Clock change date the MDS shall process and allocate data for UTC Period 1 to UTC Period 46 to the Supplier identified in the Registration Service (SMRS) data using the 'effective from' date for the Supplier associated with the UTC day being processed.



Defaulting Requirements for the Market-wide Data Service

The CCDG agreed the following rules for defaulting rules for each Settlement Period at MDS Run time where data is partial or missing for a MPAN that is identified as energised in the Registration data:

Smart Market Segment

If MPAN is for Active Import:

- The MDS shall default the data to the Load Shape Category associated with the MPAN.

If MPAN is for Active Export:

- Default to zero for each missing Settlement Period
- Exception Report made available to SDS and Supplier highlighting missing data.

Advanced Market Segment

If MPAN for Active Import:

- The MDS shall default the data to the Load Shape Category associated with the Voltage Level for the MPAN.

If MPAN is for Active Export:

- Default to zero for each missing Settlement Period
- Exception Report made available to ADS and Supplier highlighting missing data.

Unmetered Market Segment

If MPAN for Active Import:

- The MDS shall default the data to the Load Shape Category for Unmetered Supplies.

If MPAN for Active Export:

- Default to zero for each missing Settlement Period
- Exception Report made available to UMSDS and Supplier highlighting missing data.

UMS Load Shapes

There is a requirement to calculate default load shapes for Unmetered Supplies for the sole purpose of defaulting where UMS data is missing at MDS Run Time. The UMS default data does not need to be provided to the UMSDS for any purpose. The Load Shaping Service (LSS) will create the default UMS Load Shapes by averaging all the UMS data within each GSP Group for each Settlement Date for both Active Import (AI) and Active Export (AE).

It is not expected that UMS defaulting will be a common occurrence since the UMSDS should always be able to provide calculated data from the Equivalent Meter for each Settlement Date and provide updated data as it becomes available. The UMS defaults are unlikely to be representative of the actual UMS load for the MPANs that are defaulted but the approach follows that for the other Data Services. UMS inventories can be very large or very small and the Supplier need to ensure no adverse billing impact is placed on customers where defaulting occurs (i.e. the customer should not be billed on the default data). Defaulting for UMS may be required where there have been issues with UMS appointments and inventory data. The Supplier will be responsible for ensuring the UMSDS can provide the appropriate data for Settlement.

Demand Control Events

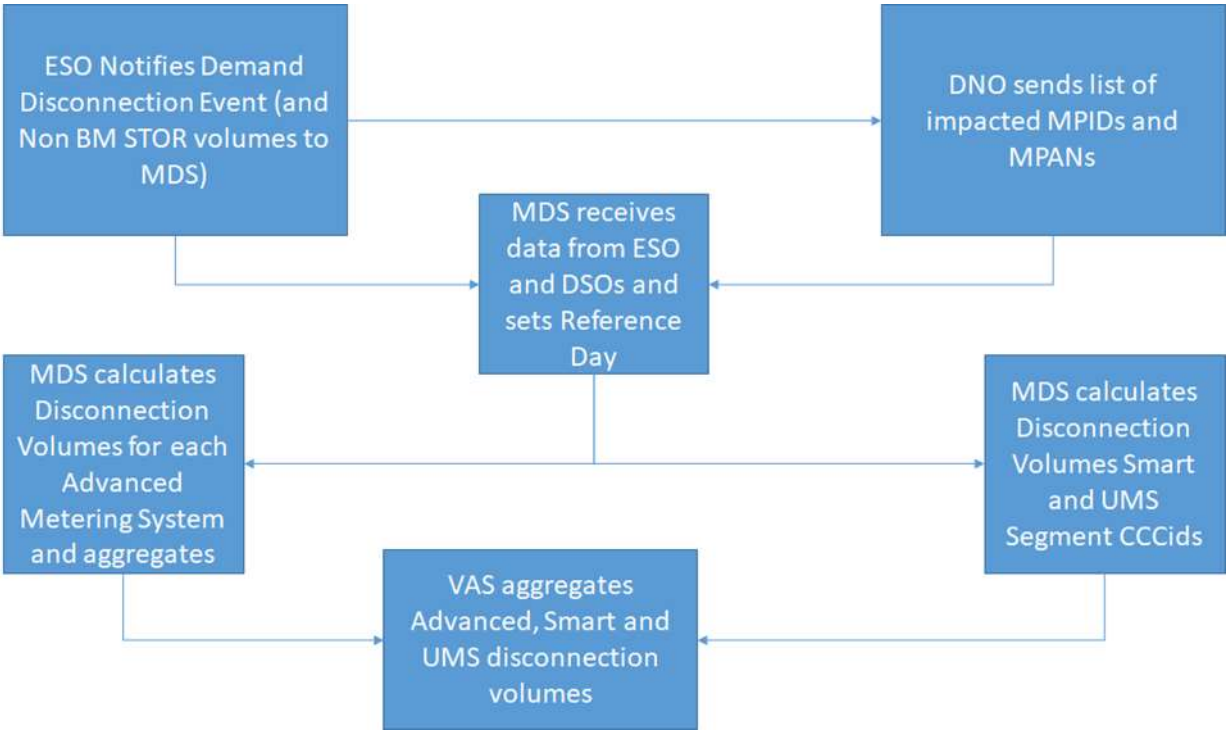
When a Demand Control Event occurs there is a requirement to calculate each Supplier's disconnected Settlement consumption within each Grid Supply Point (GSP) Group to ensure that Suppliers do not receive 'windfall' payments from the long imbalance position created by the outage. Issue 89 'Ensuring Demand Control Event (DCE) procedures remain fit for purpose' concluded that no changes to the current process were required but the process would be refined. Hence, a new process will be required under the Market-wide Half-Hourly Settlement Target Operating Model.

Overview of the New Process

The new calculation of Supplier Disconnection Volumes will be made relative to a reference day of consumption or export data where no disconnection event occurred. For Advanced meters the calculation is made at Metering System level due to the need to adjust for Non BM STOR volumes. For smart, non-smart and Unmetered Supplies the calculation is undertaken at aggregated Consumption Component Class (CCC) level.

The actual Half Hourly data for the day of the disconnection event will be reflective of the disconnected volume and can be differenced from the reference data to get an estimate of the disconnected volume for each Supplier in a GSP Group. Likewise, since the Load Shapes for the disconnection date will reflect the disconnected load customers settled on Register Reads can follow the same process.

High level diagram of the new process



Duties of the ESO

Within the period of [25] Business Days commencing on the Business Day after the cessation of a Demand Control Event or as soon as reasonably practicable thereafter, for each Metering System that has been subject to a Non-BM STOR Instruction the NETSO shall send to the Market- wide Data Service:

- the MSID;
- the estimated Non-BM STOR Instruction Volume anticipated to have been delivered by the MSID, during each Demand Control Impacted Settlement Period.
- Each Party that is a provider of Non-BM STOR shall co-operate with the NETSO and provide such information as the NETSO may require for the purposes of complying with this requirement.

Duties of Distribution System Operator

As regards an Embedded Distribution System that is connected to a Distribution System operated by a Host DSO, that Host DSO shall notify the Embedded DSO as soon as reasonably practicable where it becomes aware of any Demand Control Events affecting that Embedded Distribution System.

Following the cessation of a Demand Control Event, for each Advanced Metering System impacted by a Demand Control Event a Demand Disconnection Impacted DSO shall, using the relevant Registration Service (SMRS), identify each MSID that is connected to its Distribution System (either directly or through any private distribution system) but not including any Advance Metering Systems that:

a) are de-energised;

b) have been de-registered; or

c) have voluntarily reduced consumption at the request of the Demand Disconnection Impacted DSO.

Each Demand Disconnection Impacted DSO shall, in respect of each Impacted Advance Metering System identified notify the Market-wide Data Service of the MSID for each disconnected Metering System:

a) the MPIDs of all impacted Balancing Responsible Suppliers; and

b) the start and end date and time in Co-ordinated Universal Time (UTC)at which the Metering System was subject to Demand Disconnection.

Any notification given shall be given within the period of [5] Business Days commencing on the Business Day after cessation of Demand Control Event.

Each Demand Disconnection Impacted DSO shall update any notice as soon as reasonably practical after becoming aware of any necessary amendments to this information.

Duties of Market-wide Data Service

The Market-wide Data service shall identify a 'Reference Day' for use in the calculations that is of the same day-type and similar temperature profile as the day on which the disconnection event occurred.

Advanced Market Segment

For each Advanced Metering System registered as connected at the time of the Demand Control Event the MDS shall estimate the Advanced Demand Disconnection Volume for each Settlement Period in accordance with the following formula:

Advanced Demand Disconnection Volume = max (0, RefDay – AdvCon – NonBM)

where:

RefDay is the metered consumption or export data during the Demand Control Impacted Settlement Period in normal conditions on the Reference Day identified by the MDS;

AdvCon is the Advanced Metering System Metered consumption or export during the Demand Control Impacted Settlement Period;

NonBM is the estimated Non-BM STOR Instruction Volume anticipated to have been delivered during the Demand Control Impacted Settlement Period.

The MDS shall calculate the Supplier's Advanced Demand Disconnection Volume above for each Advanced MSID/ MPID combination within each GSP Group notified by the DSO using the following formula:

SADDV = Sum of the Advanced Demand Disconnection Volume / 1000

The MDS shall calculate Supplier's Advanced Demand Disconnection Volume Losses for each Advanced MSID/ MPID combination within each GSP Group notified by the DSO using the following formula:

ASADDVL = Sum of ((Line Loss Factor – 1) * Advanced Demand Disconnection Volume)/ 1000

For each Supplier MPID the MDS shall provide the Volume Allocation Service (VAS) with the ASADDV and ASADDVL volumes for each of the Settlement Periods impacted by the Demand Control Event.

Smart and Non-Smart and Unmetered Market Segments

For each Metering System registered as connected at the time of the Demand Control Event the MDS shall estimate the BM Unit Demand Disconnection Volume for each Smart and Unmetered Consumption Component Class within each GSP Group for the impacted Settlement Periods in accordance with the following formula:

BMDDV = max(0, sum of RefDayCCC – sum of ActDayCCC) /1000

where:

RefDayCCC Is the total consumption/ export or losses for all Consumption Component Class in the Smart and non-smart or unmetered Market Segments for each Supplier MPID notified by the Distribution System Operator for each impacted Settlement Period for each GSP Group on the Reference Day, during the Demand Control Event

ActDayCCC is the total consumption/ export or losses for all Consumption Component Class in the Smart and non-smart or unmetered Market Segments for each Supplier MPID notified by the Distribution System Operator for each impacted Settlement Period for each GSP Group on the actual day, during the Demand Control Event

For each Supplier the MDS shall provide the Volume Allocation Service (VAS) with the BMDDV volumes, for each GSP Group, for the Settlement Periods impacted by the Demand Control Event.

Duties of Volume Allocation Service

For each Demand Control Impacted Settlement Period the VAS shall determine the Total BM Disconnection Volume for each Supplier MPID and GSP Group identified by the DSO using the following formula:

Total BM Disconnection Volume = Sum of (ASADDV, ASADDVL and BMDDV)

Transitional Requirements for Demand Control Events

During the transition period the VAS shall supply both the Demand Disconnection Volumes calculated using the existing processes together with the Total BM Disconnection Volume per GSP Group for the correction of the impacted Supplier MPID imbalance positions for the impacted Settlement Periods.

GSP Group Correction

Current Equation for Calculating Correction Factors

The current equation for calculating Correction Factors (in Annex S-2 paragraph 9.2) is equivalent to:

CFj = 1 + Unallocated Demand / (Weighted Import– Weighted Export)
where:

- Unallocated Demand is GSPGTHj - ∑N GCHNj i.e. the total ‘error’ to be allocated through GSP Group Correction;
- Weighted Import is the sum (over Active Import CCCs) of GCHNj * WTn
- Weighted Export is the sum (over Active Export CCCs) of GCHNj * WTn

For example, suppose that the Unallocated Demand was 100 MWh, the Weighted Import was 300 MWh, and the Weighted Export was 200 MWh. The current equation would calculate a Correction Factor of 2.0, so after correction the Weighted Import would be 600 MWh and the Weighted Export 400 MWh. The corrections made were much larger than they needed to be, because the corrections to Import and Export were having opposite effects on the net position of the GSP Group.

Options considered by the CCDG

Option 1 – Calculate Separate Correction Factors for Import and Export

In this option, the total Unallocated Demand would be split between Import and Export in proportion to the total Weighted volume of each. A separate Correction Factor would then be calculated for each, to allocate their share of the Unallocated Demand.

In the example above, the Unallocated Demand would be split between Imports and Exports in proportion to their Weighted Volume i.e. 60% to Import and 40% to Export. The Correction Factor equation would then be applied separately to each:

- Import CFj = 1 + 60 / 300 = 1.2
- Export CFj = 1 + 40 / (-200) = 0.8

An attractive feature of this option is that the resultant Correction Factors (1.2 and 0.8) are symmetrical about 1.0 (so Import is scaled up by 20%, and Export scaled down by 20%). See the Appendix for an explanation of why this is always the case. As a result, we would not necessarily have to report two different Correction Factors. We could – it it's easier – continue to report a single Correction Factor for Import (with an understanding that the Correction Factor for Export can easily be derived from it).

Option 2 – Reciprocal Correction Factors

At the time of Issue 55 Elexon suggested another solution in which the Export CF was the reciprocal of the Import CF

- Export CFj = 1 / Import CFj

In practice there is very little difference from option 1, but it's harder to understand, it's harder to calculate the Correction Factors, and it doesn't really have any advantages over option 1. See worked Examples.

Calculations

More detail on the equations for Options 1 and 2. For the purposes of these equations:

- H is the GSP Group
- j is the Settlement Period
- N is all the CCC
- WTn is the scaling weight for each CCC
- U is the unallocated demand (GSPGTHj - ∑N GCHNj)
- WI is the Weighted Import, ∑(AI GCHNj * WTn
- WE is the Weighted Export, ∑(AIE GCHNj * WTn

Why are the Option 1 Correction Factors symmetrical around 1.0?

Under Option 1, the Correction Factors are calculated as follows:

- Import CF=1+(Import Share of U)/WI=1+(U·WI)/((WI+WE)·WI)=1+U/(WI+WE)
- Export CF=1+(Export Share of U)/(-WE)=1+(U·WE)/((WI+WE)·(-WE))=1-U/(WI+WE)

How is the Option 2 Correction Factor calculated?

Under Option 2 the correction factor CF is applied to the Weighted Import, increasing it by:

- Additional Import=WI·(CF-1)

And the reciprocal of the Correction Factor is applied to the Weighted Export. Increasing it by:

- Additional Export=WE·(1/CF-1)

We must therefore calculate the CF to ensure that:

Additional Import-Additional Export=Unallocated Demand

- WI·(CF-1)-WE·(1/CF-1)=U
- WI·〖CF〗^2+(WE-WI-U)CF-WE=0

The required Correction Factor CF is therefore the positive root of this equation:

- CF=(-b+√(b^2+4·WI.WE))/(2·WI)
- where b = WE – WI – U.

CCDG Recommendations on Group Correction

The CCDG agreed that, since both options achieve the same outcome, Option 1 is preferable on the basis that its calculation is simpler and easier to understand. This option calculates separate GSP Group Correction Factors for Import and Export, by splitting the total correctable volume of unallocated demand in proportion to the total weighted volumes of Import and Export in the particular Settlement Period. The CCDG noted that setting the Scaling Weights for each CCC will then determine the relative proportions of error allocated to specific CCCs within that overall Import/Export split. It noted that the calculation therefore works with any Scaling Weight values.

CCDG Recommendation on GSP Group Correction Scaling Weights

The CCDG agreed the following Scaling Weight for each new CCC ids based on the methodology agreed. The valid set of Estimation flags are set out in the estimation requirements in Attachment A of the DWG's Report on the Preferred MHHS TOM:

CCC ID	Segment Indicator	Measurement Quantity	Consumption/ line loss	Connection Type Indicator	Estimate/ Actual	Scaling Weight
100	U	AI	C	W	A	1.2
101	U	AI	L	W	A	1.4
102	U	AE	C	W	A	1.2
103	U	AE	L	W	A	1.4
104	U	AI	C	W	E	1.4
105	U	AI	L	W	E	1.4
106	U	AE	C	W	E	1.4
107	U	AE	L	W	E	1.4
108	S	AI	C	W	A	1
109	S	AI	L	W	A	1.4
110	S	AE	C	W	A	1
111	S	AE	L	W	A	1.4
112	S	AI	C	W	E1, E2, E3 and E6	1.2
113	S	AI	C	W	E4, E5 and E7	1.4
114	S	AI	C	W	E8	1.6
115	S	AI	L	W	E1, E2, E3 and E6	1.4
116	S	AI	L	W	E4, E5 and E7	1.4
117	S	AI	L	W	E8	1.4
118	S	AE	C	W	E1, E2, E3, E6 and ZE1	1.2
119	S	AE	L	W	E1, E2, E3, E6 and ZE1	1.4
120	A	AI	C	W	A	1
121	A	AI	L	W	A	1.4
122	A	AE	C	W	A	1
123	A	AE	L	W	A	1.4
124	A	AI	C	C	A	0.8
125	A	AI	L	C	A	1.2
126	A	AE	C	C	A	0.8
127	A	AE	L	C	A	1.2
128	A	AI	C	H	A	0.4
129	A	AI	L	H	A	0.8
130	A	AE	C	H	A	0.4

CCC ID	Segment Indicator	Measurement Quantity	Consumption/ line loss	Connection Type Indicator	Estimate/ Actual	Scaling Weight
131	A	AE	L	H	A	0.8
132	A	AI	C	E	A	0
133	A	AI	L	E	A	0.4
134	A	AE	C	E	A	0
135	A	AE	L	E	A	0.4
136	A	AI	C	W	EA1, EA2, EA3, EA4 and EA5	1.2
137	A	AI	C	W	EA7, EA8 and EA9	1.4
138	A	AI	C	W	EA6, EA10, EA11 and EA12	1.6
139	A	AI	L	W	EA1, EA2, EA3, EA4 and EA5	1.4
140	A	AI	L	W	EA7, EA8 and EA9	1.4
141	A	AI	L	W	EA6, EA10, EA11 and EA12	1.4
142	A	AE	C	W	AAE1, AAE2	1.2
143	A	AE	C	W	AAE3	1.4
144	A	AE	C	W	EAE1, EAE2 and EAE3	1.6
145	A	AE	L	W	AAE1, AAE2	1.4
146	A	AE	L	W	AAE3	1.4
147	A	AE	L	W	EAE1, EAE2 and EAE3	1.4
148	A	AI	C	C	EA1, EA2, EA3, EA4 and EA5	1
149	A	AI	C	C	EA7, EA8 and EA9	1.2
150	A	AI	C	C	EA6, EA10, EA11 and EA12	1.4
151	A	AI	L	C	EA1, EA2, EA3, EA4 and EA5	1.2
152	A	AI	L	C	EA7, EA8 and EA9	1.2
153	A	AI	L	C	EA6, EA10, EA11 and EA12	1.2
154	A	AE	C	C	AAE1, AAE2	1
155	A	AE	C	C	AAE3	1.2
156	A	AE	C	C	EAE1, EAE2 and EAE3	1.4
157	A	AE	L	C	AAE1, AAE2	1.2
158	A	AE	L	C	AAE3	1.2
159	A	AE	L	C	EAE1, EAE2 and EAE3	1.2
160	A	AI	C	H	EA1, EA2, EA3, EA4 and EA5	0.6
161	A	AI	C	H	EA7, EA8 and EA9	0.8
162	A	AI	C	H	EA6, EA10, EA11 and EA12	1
163	A	AI	L	H	EA1, EA2, EA3, EA4 and EA5	0.8
164	A	AI	L	H	EA7, EA8 and EA9	0.8

CCC ID	Segment Indicator	Measurement Quantity	Consumption/ line loss	Connection Type Indicator	Estimate/ Actual	Scaling Weight
165	A	AI	L	H	EA6, EA10, EA11 and EA12	0.8
166	A	AE	C	H	AAE1, AAE2	0.6
167	A	AE	C	H	AAE3	0.8
168	A	AE	C	H	EAE1, EAE2 and EAE3	1
169	A	AE	L	H	AAE1, AAE2	0.8
170	A	AE	L	H	AAE3	0.8
171	A	AE	L	H	EAE1, EAE2 and EAE3	0.8
172	A	AI	C	E	EA1, EA2, EA3, EA4 and EA5	0.2
173	A	AI	C	E	EA7, EA8 and EA9	0.4
174	A	AI	C	E	EA6, EA10, EA11 and EA12	0.6
175	A	AI	L	E	EA1, EA2, EA3, EA4 and EA5	0.4
176	A	AI	L	E	EA7, EA8 and EA9	0.4
177	A	AI	L	E	EA6, EA10, EA11 and EA12	0.4
178	A	AE	C	E	AAE1, AAE2	0.2
179	A	AE	C	E	AAE3	0.4
180	A	AE	C	E	EAE1, EAE2 and EAE3	0.6
181	A	AE	L	E	AAE1, AAE2	0.4
182	A	AE	L	E	AAE3	0.4
183	A	AE	L	E	EAE1, EAE2 and EAE3	0.4

SCALING WEIGHTS FOR EXISTING CCC IDS TO BE USED DURING TRANSITION

The CCDG agreed that the existing CCC Ids should be mapped as closely as possible to the new CCC Ids and have their Scaling Weights set to the average of the mapped CCC Ids.

CCC ID	Measurement Quantity	Data Aggregation Type	Metered/ Unmetered Indicator	Consumption Component Indicator	Actual/ Estimated Indicator	AA/EAC Indicator	Measurement Class	Revised Scaling Weights
1	AI	H	M	C	A		C	0.55
2	AI	H	U	C	A		D	1.2
3	AI	H	M	M	A		C	0.95
4	AI	H	M	L	A		C	0.8
5	AI	H	U	L	A		D	1.4
6	AE	H	M	C	A		C	0.55
7	AE	H	M	M	A		C	0.95
8	AE	H	M	L	A		C	0.8
9	AI	H	M	C	E		C	0.95
10	AI	H	U	C	E		D	1.4
11	AI	H	M	M	E		C	0.95

CCC ID	Measurement Quantity	Data Aggregation Type	Metered/ Unmetered Indicator	Consumption Component Indicator	Actual/ Estimated Indicator	AA/EAC Indicator	Measurement Class	Revised Scaling Weights
12	AI	H	M	L	E		C	0.8
13	AI	H	U	L	E		D	1.4
14	AE	H	M	C	E		C	0.95
15	AE	H	M	M	E		C	0.95
16	AE	H	M	L	E		C	0.8
17	AI	N	M	C		E	A	1.4
18	AI	N	M	C		A	A	1
19	AI	N	U	C		E	B	1.4
20	AI	N	M	L		E	A	1.4
21	AI	N	M	L		A	A	1.4
22	AI	N	U	L		E	B	1.4
23	AI	H	M	C	A		E	0.8
25	AI	H	M	M	A		E	1.2
26	AI	H	M	L	A		E	1.4
28	AI	H	M	C	E		E	1.2
30	AI	H	M	M	E		E	1.2
31	AI	H	M	L	E		E	1.4
32	AE	N	M	C		E	A	1.4
33	AE	N	M	C		A	A	1
34	AE	N	M	L		E	A	1.4
35	AE	N	M	L		A	A	1.4
36	AE	H	M	C	A		E	0.8
37	AE	H	M	M	A		E	1.2
38	AE	H	M	L	A		E	1.4
39	AE	H	M	C	E		E	1.2
40	AE	H	M	M	E		E	1.2
41	AE	H	M	L	E		E	1.4
42	AI	H	M	C	A		F	1
43	AI	H	M	M	A		F	1.35
44	AI	H	M	L	A		F	1.4
45	AI	H	M	C	E		F	1.35
46	AI	H	M	M	E		F	1.35
47	AI	H	M	L	E		F	1.4
48	AE	H	M	C	A		F	1
49	AE	H	M	M	A		F	1.35
50	AE	H	M	L	A		F	1.4
51	AE	H	M	C	E		F	1.35
52	AE	H	M	M	E		F	1.35
53	AE	H	M	L	E		F	1.4
54	AI	H	M	C	A		G	1
55	AI	H	M	M	A		G	1.35
56	AI	H	M	L	A		G	1.4
57	AI	H	M	C	E		G	1.25
58	AI	H	M	M	E		G	1.35
59	AI	H	M	L	E		G	1.4
60	AE	H	M	C	A		G	1
61	AE	H	M	M	A		G	1.35

CCC ID	Measurement Quantity	Data Aggregation Type	Metered/ Unmetered Indicator	Consumption Component Indicator	Actual/ Estimated Indicator	AA/EAC Indicator	Measurement Class	Revised Scaling Weights
62	AE	H	M	L	A		G	1.4
63	AE	H	M	C	E		G	1.25
64	AE	H	M	M	E		G	1.35
65	AE	H	M	L	E		G	1.4

Meter Technical Details

The CCDG have discussed the Meter Technical Detail (MTD) data flows between various roles:

- Metering Service and Data Service
- Metering Service (old) and Metering Service (new)
- Metering Service and Supplier
- Metering Service and Distributor

The CCDG agreed the following approach. The existing market uses the following MTD flows and the MHHS arrangements:

Current Segment	Data Flows	Future Market Segment	MHHS arrangement
Advanced Meters settling HH	D0268	Advanced	D0268
Advanced Meters settling NHH	D0149/D0150/D0313	Advanced	Migrate to settling HH using D0268
Non-smart meters settling NHH (CT)	D0149/D0150	Advanced	Migrate to settling HH using D0268
Non-smart meters settling NHH (whole current)	D0149/D0150	Smart	D0149/D0150
Smart meters settling NHH or HH	D0149/D0150/D0367	Smart	Data Items to be include in Registration Service (SMRS). The AWG may decide that another method or interface to deliver the data items within these D-flows

MHHS – data recipients

The Supplier currently receives certain data associated with the Metering System. In the MHHS arrangements it is proposed that they continue to receive copies of the data flows above.

The Distributor currently receives certain data associated with the Metering System. In the MHHS arrangements it is proposed that they cease to receive copies of the data items above. There does not appear to be any reason to continue to pass MTD to the Distributor. The Distributor has access to the MTD (incl. meter serial number), the energisation status and the resulting consumption data for each MPAN and have no need to receive MTD which may historically have been used to translate NHH meter reads.

MHHS – SSC/TPR/Estimation

Advanced Meters

SSC and TPR are already not relevant to existing Advanced HH Metering Systems.

Non-Smart Meters

Under the MHHS arrangements for non-Smart meters the use of SSC/TPR continue to be a mechanism to communicate to Data Service and Supplier the relevant MTD to determine the day/night registers which are relevant for customer billing. For settlement purposes they will have a transitional use for allocation of energy to day/night registers.

The requirement for SSC/TPRs endures as on change of Supplier, Change of Data Service or Change of Meter Operator there remains the requirement to pass MTD using the D0149/D0150.

On change of Data Service, the old and new Data Service will need to pass a change of Data Service meter reading. This reading will need to be based on each register.

In the same way on a change of Supplier the reads being used by the old & new Supplier will be for each register.

Smart Meters

Under the MHHS arrangements for smart meters the use of SSC/TPR cease to be relevant for Settlement purposes. Where actual smart meter data is not available, for any reason, then the estimation is performed using the single total register value for that meter over the period. This current register read value is used compared with a register read from a prior day to calculate the energy used between the two dates (and times) and this is then scaled by the relevant profile for the customer type, GSP Group and import/export indicator. There is no use of any supplier set registers within the smart meter. Customer own reads provided to the Data Service would also be the total register values.

As a result, there is no need for the Metering Service or the Data Service to have any knowledge of how the Supplier has programmed the registers within a smart meter. There is no value in sending the D0367 or the associated D0149/D0150 where most of the information is redundant. The use of the D0268 was also considered, but this would also include many redundant data items.

MHHS – Smart meter MTD

The realisation of the significantly changed requirements for smart meter MTD has led to a fundamental review of the relevant data items and their business purpose.

The purpose of this information flow is to pass attributes of the smart meter which will not change over time. There is no value in passing data attributes that may change over time by stakeholders other than the Metering Service as the Metering Service has not control or probably no knowledge of the changes. So, this flow of information is really seeking to capture the physical attributes of the metering equipment. These attributes are relevant when attending site, particularly when DCC communications have failed, but it is essential to have some information about the metering equipment that is being visited.

CCDG proposed approach to smart MTDs

The CCDG propose that no new data flow is created specifically for smart meters MTD, but to include the following additional data items in the Registration Service. The data items below are already populated using the D0312, so these items would need to be added to the data exchange:

Reference	Item Name	Optional/Mandatory
Jnew1	Auxiliary Load Control Switch (ALCS) connected	Optional
Jnew2	Device GUID (aka Device ID)	Optional
J1254 ,	Effective from Settlement Date {MSMTD}	Mandatory
J1025 (in D0268) ,	Meter Equipment/Service Location	Optional
J0419	Meter Location	Mandatory
J0478	Number of Register Digits	Mandatory

New Registration Service Dara Items for smart Meters

The CCDG agreed add the following data items to the Registration Service data set. Initially these would be added to the D0312 ‘Notification of Meter Information to MPAS’ until a new method of exchanging information is established:
Some items will be optional. The Optional/Mandatory allows for smart, non-smart and Advanced meters. There will need to be some further definition of how the optionality operated.
Adding these into the Registration Service (SMRS) would be done in advance of migration so that the current Meter Operator/Meter Service could update the information.

Auxiliary Load Control Switch (ALCS) connected

Smart meters have an ALCS connection under the meter terminal cover which can be used to switch a 2amp load. Typically, this would control an external device (e.g. contactor) to turn on/off heating load in line with a tariff programmed into the meter. Whether something is connected or not to the terminals is only know to the installing (or subsequent visit) by the Metering Service. Capturing whether this connection is in use would seem to be essential knowledge to a Supplier to know how to programme the operation of the ALCS. So, this item is to identify whether something is physically wired to the ALCS connections under the terminal cover of an electricity meter. That is only known by the person at site either installing for the first time, or subsequently making/removing a connection.

Device GUID (aka Device ID)

This is the ID that DCC recognises the electricity meter. It is essential that the Device GUID and the Meter Serial number are accurately aligned. Misalignment leads to a new raft of crossed meters scenarios. The installing Meter Operator is key to getting this information correct at the time of installation. The GUID of any other device, gas meter, communications hub, etc. is not relevant as these can be found from DCC and may change over time making the data ownership by the Meter Operator Agent impossible to assure.

Effective from Settlement Date {MSMTD}

Important to determine date (and time) of when the MTD are applicable from. This is a current failing of the D0312 as it is not included, making retrospective changes of MTD difficult.

Meter Equipment/Service Location

This is a CHAR(30) data item used to give textual information about meter equipment location. Currently used the in the HH market and can be used to provide information on meter location.

Meter Location

This is a CHAR(1) indicator of meter location using defined set of codes. It is not well populated, but there is opportunity to improve.

Number of Register Digits

The industry has defined a convention of setting this to 5 for single phase smart meters. However, it will be necessary to use 6 digits for three phase smart meters. By including the data item, it allows the number of digits to be reported. The number of digits should refer to the ‘total advance’ of the meter, this is non-volatile and should always increment and is not resettable.

APPENDIX B – CCDG DISCUSSION AND RATIONALES

This section sets out the CCDG Discussion on the detailed design Areas for the MHHS TOM.

Measurement Classes and Market Segments

CCDG Discussion on Measurement Classes

Elexon suggested various options for amending Measurement Classes, including:

- Retaining existing Measurement Classes with minimal re-labelling changes (e.g. to their descriptions);
- Re-aligning or merging existing Measurement Classes;
- Introducing new Measurement Classes; and
- A combination of any of the above.

CCDG members expressed a lack of clarity about the purpose of Measurement Classes and what changes are required. The Chairman asked whether Measurement Classes are still needed under the TOM and, if so, what purpose they fulfil and what principles should be applied when assessing different options for retaining or changing them.

Elexon clarified that Measurement Classes are groupings of Consumption Component Classes (CCCs), which are in turn groupings of registration data. They are used to define the attributes of different 'pots' of meter data, which the BSC Central Settlement Services then use to aggregate metered data into those pots. Different performance management (e.g. Performance Serials) and Scaling Weights can also be applied to the different aggregated pots. The CCDG agreed that Performance Management does not have to be dependent on the available CCCids.

The CCDG agreed that, if Measurement Classes are retained, they should be redefined in a way that avoids Metering Systems having to undergo a Change of Measurement Class (CoMC) from Smart to Non-Smart (or vice versa) when the Meter itself hasn't changed physically – e.g. in the event of a Smart Meter losing communications and temporarily going 'dumb'. The CCDG agreed that it was desirable to have stable Measurement Classes in order to avoid unnecessary CoMCs.

The CCDG also agreed to apply the principle of aiming for a 'single source of truth'. It agreed that BSC data items should not duplicate, or be used as a proxy for:

- Data items that are already held, or should more appropriately be held, by the Registration Service – especially if they are not needed for Settlement and non-Settlement processes can take the data from elsewhere (e.g. if the Meter Point Administration Service (MPAS) already indicates whether the meter is at a domestic or non-domestic premises);
-
- Attributes of metered data that are already stored with that data (e.g. recording what estimation method has been used to produce the data, as this is already recorded in the estimation codes)

Elexon clarified that the new TOM Load Shaping Service will not need to use Measurement Classes.

The CCDG agreed that potential drivers for defining Measurement Classes could be:

- Settlement aggregation activity
- Performance management
- Network charging
- Application of Scaling Weights
- Other reporting (e.g. on what Meters are in which Market Segments).

The CCDG considerations and recommendations on Measurement Classes can be found in Appendix A.

Consumption Component Classes

CCDG Discussion on Consumption Component Classes

Elexon presented the ways in which CCCs are split currently and suggested which existing CCC indicators it believed are (or may be) needed under the TOM and which could be removed. It advised that CCCs are currently used to aggregate data for use in Group Correction Factor calculations, Performance Serials (actual and Estimates) and transmission charging.

The CCDG discussed whether the Measurement Quantity (Active Import / Active Export) needs to be retained. Some CCDG members suggested that it could be removed from CCCs on the basis that it is already a characteristic of the Metering Point Administration Number (MPAN) in MPAS. Other members believed that it needed to be retained, but not necessarily as part of CCCs. The CCDG noted that the Data and Communications Company (DCC) currently derives the AI/AE indicator for its access regime using LLF Classes (LLFCs). The CCDG considered that this is not the most robust approach and that it would be better to use a registration data item.

The CCDG agreed with Elexon that it would be inefficient to apply GSP Group Correction to ~30 million Meters and that correction should be applied after adding up the data.

The CCDG had agreed that it would be useful to have a TOM market segment indicator although, as above, it agreed that it was unnecessary to distinguish independently between Smart and Non-Smart for Settlement because of the risk of spurious CoMCs. It also noted that this information could be derived from the metered data estimation codes.

The CCDG agreed that CCCs should use the segment indicator rather than a ‘meter type’ indicator.

The CCDG considered that having the Market Segment indicator could facilitate the application of different Scaling Weights to different market segments, if needed/appropriate. It noted that it has still to determine how to draw the exact dividing lines between the different TOM market segments.

The CCDG agreed with Elexon that, for GSP Group Correction purposes, there needs to be a way to split out consumption from losses (e.g. a C or L Component Indicator). The CCDG also agreed with Elexon that the categorisation of Metering Systems into above or below 100kW is no longer required and that the Settlement aggregation process does not need to know whether a Meter is a Whole Current (WC) or Current Transformer (CT) Meter.

The CCDG discussed whether it was useful for the CCC to record the data estimation method, noting that this is not necessarily needed for Settlement could be useful for performance management and reporting/monitoring. A CCDG member suggested that this, and potentially a domestic / non-domestic indicator, could also be needed to apply Scaling Weights.

The CCDG discussed having a new LLF Identifier such that the LLFCid can be rebadged and used solely for DUoS Tariff and subdivisions such as Load Managed Area LMA identification. The CCDG agreed this approach.

CCDG Recommendations on Consumption Component Classes

After discussion, the CCDG agreed the following initial set of indicators for CCCs and that these should form a new table of CCCs. It agreed that Measurement Classes will no longer be required under the TOM. It noted that, during transition, non-transitioned Meters will continue to use the existing Measurement Classes and CCCs. Once transitioned, they will use the new CCCs. Measurement Classes and the old CCCs can then be retired at the end of the transition period.

Segment ID	Active Export / Active Import	Domestic [/ non-Domestic	Consumption / Losses	Estimated / Actual
Unmetered	Registration-derived		Data-derived	
Smart & Non-Smart				
Advanced				

Further Meeting Discussion

Post meeting CCDG members discussed if we should split out CCCs as required from Imbalance Settlement and Group correction from Aggregations required for Performance Management and Network Charging. Furthermore, it was suggested that inclusion of the following Whole Current/ CT Identifiers would be useful in the GCF Calculation:

Connection type	Indicator
Low Voltage Whole Current	W
Low Voltage with CT	L
High Voltage with CT	H
Extra High Voltage with CT	E

The CCDG agreed that Performance Management reporting should be split out. Hence, the Domestic/ Non-domestic flag would not be required for CCCids. Likewise, the CCDG agreed not to scale all the different estimation types the Estimation Flags and grouped them according to the quality of the estimation process. The CCDG agreed the set of new CCCids as set out in Appendix A.

CCDG recommendations on the Data Granularity Indicator for domestic consumer opt-out.

The CCDG agreed that the EFD and lowest granularity of data that can be collected from a customer should be added to the list of registration data items, and that they should be mastered by the Supplier. This should be part of the CoS process so that the gaining Supplier must update this information at that time once agreed with the customer.

This was felt to be the best option because under the TOM there is no direct communication between Supplier and Data Service as part of the appointment process, so rather than create another interface between them it is simpler for the data to form part of the appointment.

In the event of a Supplier of Last Resort (SoLR) event where there is no CoS event visible in the Registration Service, a gaining SoLR Supplier could take a month to contact the customer and so they and the SDS need an interim opt-out basis to work on. A subgroup of CCDG members considered it reasonable to use the previous opt-out preference which would be stored in Registration and apply the same restrictions until such time as it is updated.

Industry Standing Data

CCDG Discussion on Industry Standing Data

The CCDG reviewed the ISD table and agreed that:

- The new Market Segment ID (‘U-S-A’) should be added as a new table, linked to the new CCC table
- Measurement Class should now be categorised as a ‘Won’t have’
- At the end of Transition Standard Settlement Configurations should be moved out of the BSC and maintained under REC governance for billing purposes, along with the Change of Supplier (CoS) read process (see the CCDG’s Registration and appointments discussion below) and any other data items

that need to be retained for billing but not Settlement. Note that it was eventually decided to retain SSCs for a time limited period.

Line Loss Factors and LLFC Identifiers

The CCDG agreed that it would be desirable to split the DUoS LLFC ID from the LLF, so that they are two separate data items.

The CCDG agreed that new 'Market Participant Roles' will need defining to reflect the new TOM services.

Service Appointments

CCDG Discussion on Service Appointments

In developing the TOM services interactions, the CCDG further developed an initial recommendation by the DWG to use the Registration Service as the "single source of truth" for appointments. This was partly in response to the removal of Data Aggregators from the meter-to-bank process under the TOM. Currently DAs act as the 'last line of defence' for central settlement by synchronising with the Supplier Meter Registration Service (SMRS), and apply the appropriate aggregation rules. Under MHHS, Data Services will submit disaggregated data directly into settlement, and so the CCDG recommend that the Data Service does the required checks of registration data against SMRS before submitting half hourly consumption data, which can reduce the degree of validation checks required.

Another reason for developing a new appointment process is in anticipation of the Central Switching Service (CSS) that will be introduced by Ofgem's Switching Programme. When operating in an environment where customers can switch Suppliers more rapidly, the need to execute appointments promptly and get them right at the first attempt will be critical. The CCDG does not believe that the existing D0155/D0148 process is robust enough to support the appointment of services, and recommends a more efficient process where appointments are routed through SMRS.

GSP Group Correction

CCDG Discussion on Group Correction

Elexon presented the two different options above for the GSP Group Correction Factor calculation. It noted that both options would address the existing 'competing corrections' issue, which was considered under Issue 55 and currently prevents correction from being applied to Export volumes.

CCDG Recommendations on Group Correction

The CCDG agreed that, since both options achieve the same outcome, Option 1 is preferable on the basis that its calculation is simpler and easier to understand. This option calculates separate GSP Group Correction Factors for Import and Export, by splitting the total correctable volume of unallocated demand in proportion to the total weighted volumes of Import and Export in the particular Settlement Period. The CCDG noted that setting the Scaling Weights for each CCC will then determine the relative proportions of error allocated to specific CCCs within that overall Import/Export split. It noted that the calculation therefore works with any Scaling Weight values.

The CCDG note that Settlement will need to run both old and new Scaling Weights / CCCs during transition to the TOM, and that the proposed calculation works with either.

CCDG Discussion on GSP Group Correction Scaling Weights

CCDG Discussion on Issue 55 formula

The GSP Group Correction Factor calculation refers to a Scaling Weight for each Consumption Component Class (CCC), which defines how much GSP Group Correction should be applied to that CCC. The CCDG discussed Issue 55 which identified an optimal calculation for scaling weights:

Formula for setting Optimal Scaling Weights

$GSPGCW_i$ is proportional to ($volume_i * std\%_i^2 + correlation_{ik} * std\%_i * std\%_k * volume_k$)

Where: subscripts i and k indicate correlated CCCs (e.g. consumption and losses)

- $Std\%_i$ is the percentage standard deviation derived for a CCCid
- $Volume_i$ is an average MWh level
- $Correlation_{ik}$ is the percentage correlation of between the errors before Group Correction in the related CCC groups i and k

The problem with using this formula is that you need knowledge of the error associated with each CCC. The CCDG agreed that we will not know this when setting the new scaling weights and may not be able to estimate it either in the future. So, the CCDG agreed some principles to apply when setting scaling weights.

Scaling Weight Principles

The CCDG agreed the following principles to be applied in determining the GSPGCF scaling weights:

- Scaling weights should reflect the estimated volume error in each CCC;
- If volume error cannot be estimated the scaling weight should be based on that of similar CCCids;
- Scaling weights should be higher for estimated volumes such as estimates and losses;
- Scaling weights should not disincentive transition to the new MHHS TOM; and
- Scaling weights should not unduly impact ‘late movers’ to the new arrangements.

Elexon presented its proposed Scaling Weights for the ~80 new TOM CCCs. Elexon reiterated the difficulties at this stage in calculating the potential error associated with any of the new CCCs, and that its proposed Scaling Weights can be reviewed and changed in the future (e.g. at the end of the transition to the TOM) once data becomes available for analysis.

The CCDG discussed the proposed values and agreed that all losses are by definition inaccurate since they are estimates. It agreed that all losses should have the Scaling Weights associated with them at a relatively higher level, regardless of whether the consumption data is based on actuals or estimates.

CCDG Discussion on Time of Use Scaling Weights

Background

The Design Working Group were provided a paper on ToU Scaling Weights summarised below.

The Ofgem policy decision on data access for domestic customers allows domestic customers to 'opt-out' of allowing access to their import consumption data for Settlement purposes which potentially provides an opportunity for 'gaming' by suppliers. Elexon's response to question three of their consultation highlighted this issue and suggested that a potential mitigation:

'We are also concerned that such consumers could opt-out and the potential the option provides for gaming. There is potential for customers with peakier load to be moved to opt-out tariffs, which then are not reflective of the customer's true consumption. In the TOM design, these customers would be settled using data from the Load Shaping Service (LSS) that will use HH data from non-opted out consumers. This may not be reflective of such consumer's peak usage. This would cause an increase in GSP Group Correction at peak that would be smeared across customers groups not contributing to the issue, there by affecting cost reflectivity or reintroducing cross-subsidies across customer groups.

This may be mitigated by applying an appropriate weighting in the calculations (to reflect the error certain customer groupings are causing) to ensure the corrected volume at peak is in the most part allocated to the opted out grouping'

What was the mitigation being proposed?

The CCDG proposed that the scaling weights can be varied by Settlement Period. For example, these could be similar to the red, amber and green time band approach that are used for network charging. In this example, they could be set up as follows:

Consumption Component Class ID	Measurement Quantity ID	Green weight	Amber weight	Red weight
A	AI	0	1	2
B	AI	0	0	0
C	AI	1	1	1

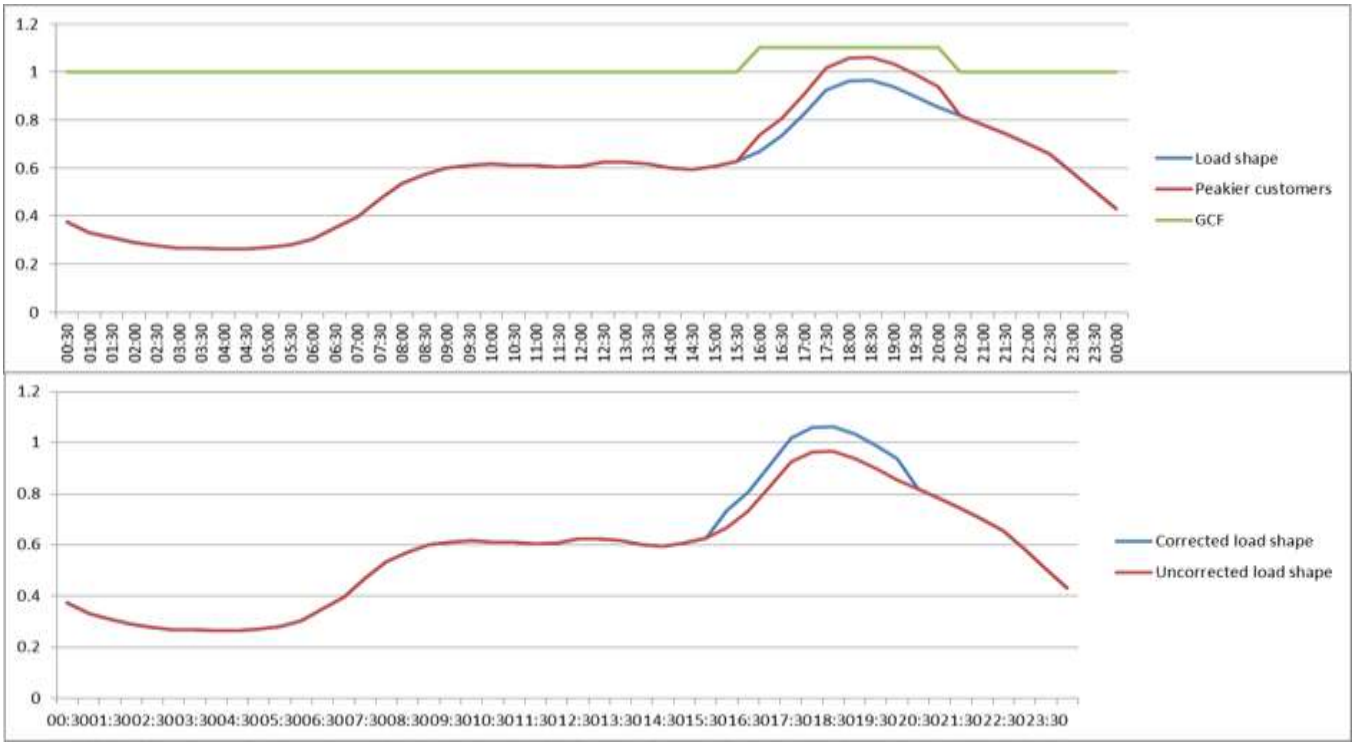
The times for each Time Band can be defined similar to Clock Intervals in the current Market Domain Data (MDD). The three time bands would ideally fixed across all GSP Groups and time of year to avoid additional complexity:

Weight type	Day of the Week ID	Start Day	Start Month	End Day	End Month	Start Time	End Time
Green	1	1	1	31	12	00:00	07:00
Red	1	1	1	31	12	16:00	20:00
Amber	1	1	1	31	12	07:00	16:00
Amber	1	1	1	31	12	20:00	24:00

The opted out customers would be provided their own set of CCC Ids and have their peak time (red) weight set to a relatively bigger weight at peak than non-opted out customers. The day-time weight could also be set relative to other CCC ids to control the amount of Group Correction allocated for times when Photo-Voltaic (PV) energy is spilled onto the system to not incentivise moving customers to opt-out status.

How did the proposed process mitigate the risk of gaming?

If opted-out customers are peakier they will cause an allocation error at Peak times which will manifest itself in the amount to be corrected and hence in the GSPGCFs. Allocating a relatively higher weight at peak times to those customers would mitigate the impact of gaming as it would undo the benefits of not migrating peakier customers to HH Settlement.



What other things need consideration?

Dis-engaged customers are unlikely to actively opt-out. However, consideration may be required for vulnerable or fuel poor customers remaining on non-smart meters. Customers without smart meters could be provided with separate CCC ids which differentiate them from 'opted-out' smart Meters.

CCDG Discussion on ToU Group Correction Scaling Weights

The CCDG discussed whether to progress Time of Use (ToU) Scaling Weights. It noted that the DWG had debated this idea and had suggested that it should be considered further. However, the DWG had not reached consensus on whether it should be introduced as part of the TOM.

Elexon explained that, because Ofgem's policy decision is that domestic customers can opt out of sharing their HH Meter data for Settlement, there is a risk that Suppliers could encourage customers with 'peaky' load to opt out of MHHS in order to benefit from the load shapes applied to opted-out customers. Elexon had originally proposed addressing this through ToU Scaling Weights.

The CCDG did not identify any other benefits of ToU Scaling Weights and was, on balance, unconvinced that any potential financial benefit of gaming would outweigh the reputational risk to Suppliers if this came to light. Members also considered that any potential abuse of the opt-out arrangements is better governed and addressed outside of the BSC. However, the CCDG agreed that this does not rule out implementing ToU Scaling Weights at a future point if it becomes necessary. It noted that Ofgem already plans to review the effects of the opt-out arrangements at a future point, including the number of customers who have opted out, and that Ofgem intends to set a date for this review as part of its Full Business Case decision on MHHS

Erroneous Transfers

CCDG Discussion on Erroneous Transfers (ETs)

The CCDG discussed whether an approach to correcting Settlement Data following an ET was required and if so the appropriate process for doing so. There is an MRA Agreed Procedure 10 (MAP10) that covers the processes that have been used in the NHH arrangements.

The REC contains a resolution process for ETs, which referred to as Erroneous Switches. Under this process the ET is identified and the customer is re-registered to the original Losing Supplier. The REC requires that a customer is only billed once for the ET period. The Losing Supplier has the right to bill the customer for that period as if the ET had never happened (known as continuous billing) but it is up to the Losing Supplier whether they actually bill the customer in practice. The erroneously-Gaining Supplier must refund the customer if it has billed them during the ET period.

The Central Switching Service (CSS) has been intentionally designed not to allow a retrospective Change of Supplier (CoS), the incorrect (erroneously-Gaining) Supplier will remain registered in the Supplier Meter Registration Service (SMRS) for the period of the ET and will have the associated Settlement responsibility under MHHS if not updated.

If Settlement is not corrected to re-assign the customer's energy volumes to the correct (erroneously-Losing) Supplier, the erroneously-Gaining Supplier may incur Settlement charges for energy that they can't recoup by billing the customer.

Under the existing BSC/MRA ETs process, ETs are also corrected on a prospective not retrospective basis. For NHH customers, the BSC currently 'unwinds' the ET in Settlement by adjusting Register Reads to:

- Zero the consumption for the ET period (with CoS reads either side), such that the incorrectly-appointed Supplier has no Settlement liability for that period; and
- Reallocate the volume to Settlement Periods after the ET period, so that the Settlement liability falls on the 'correct' Supplier albeit in the wrong Settlement Periods.

It is not possible to implement a similar process for re-allocating volume to different Settlement Periods under the TOM. This is due to the fact that NHH data (EACs and AAs) will not exist under MHHS. Data Services will be providing data on a Half Hourly basis (actual or estimated) for each Settlement date that they are appointed. This data cannot be collected during the period when the Data Service is not appointed to the MPAN.

BSCP504 sets out NHH requirements for ETs:

Where, for the purposes of minimising the costs of rectifying erroneous registrations, Suppliers agree to a meter reading for Supply Start Date (SSD) that results in a 1kWh advance this shall be processed by the NHHDC as a "customer own read" type in the manner set out in 3.2.6.9 above so long as: a. the earlier of the meter reading dates resulting in 1kWh advance is within 3 calendar months of the new Supply Start Date; and b. the Associated Supplier confirms to the incoming NHHDC that the old Supplier with whom he has reached an agreement for a 1kWh advance is not seeking a similar agreement in respect of more than one hundred SVA Metering systems erroneously registered on one Settlement Day (For the avoidance of doubt, a concurrent change of Supplier and change of Agent does not preclude Suppliers from using a 1kWh advance to make a correction if no further change to the Profile class, NHHDC, Associated NHHDA, Measurement class or Standard Settlement Configuration has taken place)

The CCDG noted that the above NHH requirement would be removed by the MHHS TOM processes.

The CCDG discussed the following options for re-assigning ET Settlement volumes to the 'correct' (erroneously-Losing) Supplier:

Option 1:

Providing pseudo-registration data to BSC Central Settlement Services, to 'over-write' the SMRS view of the appointed Supplier for the ET period and instead assign the Settlement volumes to the correct Supplier – this pseudo-registration data could be submitted by:

- The erroneously-Losing Supplier (who may not have an incentive to do so)
- The erroneously-Gaining Supplier (who would have an incentive to reassign the volumes)
- The CSS, if it is aware of the ET

- The Registration Service (SMRS), if notified by either Supplier – however, this would be a pass-through of information as SMRS cannot change the appointed Supplier retrospectively for the ET period

Option 2:

Not correcting Settlement data at all, on the assumption that:

- The volume of energy and number of MPANs concerned are likely to be small, noting that the one of the intended benefits of the new switching arrangements is a reduction in ETs
- The complexity of any Settlement solution (with associated new interfaces) is therefore likely to be disproportionate.

CCDG members did not believe that Option 1 would be a proportionate solution and also argued that it would undermine the CSS design principles (which does not allow retrospective CoS) as well as the TOM principle of the Registration Service (SMRS) being the 'single source of truth'. There other following potential issues with Option 1:

- The REC's ET resolution process can take 24 months to complete, while final Settlement reconciliation will be completed in four months under the TOM
- ETs are unlikely to be eligible for correction through a Trading Dispute, as they are unlikely to meet the BSC's definition of Settlement Error or the materiality thresholds for raising a Trading Dispute
- Extra-Settlement Determinations (ESDs) could be considered as a way of correcting ET Settlement volumes, since these are financial adjustments outside of the Settlement Reconciliation Run process – however:

  - ESDs are currently only used to correct Trading Disputes, and a new process would therefore need to be defined to use them for ETs
  - ESDs are complex to calculate, which is why they are little-used – this complexity may outweigh the materiality of the ET
  - ESDs do not feed through into corresponding adjustments to network charges (for example, DUoS charges) in the way that Reconciliation Runs do.

Under Option 2 it could be left to Suppliers to reallocate Settlement costs bilaterally, potentially under the REC. However, it would be difficult for the Suppliers to work out the Settlement cost of a single MPAN for a short period. Therefore, an option for the BSC to notify the Suppliers of what the Settlement charges had been allocated to the erroneously-Gaining Supplier in the ET period was considered. However, this would also require the BSC to be notified of the ET and parties involved following the REC process which would be disproportionate as identified for Option 1.

It is also believed that Suppliers are not routinely undertaking processes to correct their imbalance following a resolution of an ET. The CCDG would welcome any evidence that they are.

The CCDG are therefore intending to consult Suppliers on the proposal and are minded to recommend that no Settlement adjustment is made following an ET for the reasons given above.

Related MPANS

The CCDG Discussion on Related MPANs

Related MPANs, as defined in BSC, and MRA, were invented created in 1998 to allow NHH Settlement to operate where there are two NHH registers which can record consumption at the same time. This commonly occurs under the Radio Teleswitch arrangements where there are two meters and one is associated with the storage heating load. In order for the profiling calculations to work, two Related MPANs with separate SSCs are required such that the switched load element is recorded at the time when the heating load is active.

Related MPANs were also used for NHH unmetered Suppliers to identify inventories of Unmetered Supplies equipment for the same customer that operated in a different way e.g. continuously or from dusk to dawn. These inventories were split on up to four MPANs so that different SSC & TPR can apply different settlement profiles.

Related MPANs are identified in two ways currently either by the Meter Timeswitch Class (MTC) which is set in the '500' range to signal the fact that a site has more than one Meter/ MPAN or more recently as the result of the faster switching work using the Related MPAN data item (J2245) to set a flag within the Supplier Meter Registration Service (SMRS).

It is assumed that the Radio Teleswitch arrangements will be discontinued before Market-wide Half Hourly Settlement (MHHS) is implemented. Under the smart Metering arrangements MTCs do not work well since smart Meters can be either credit or prepayments and can be configured to have single or multiple registers. As such discussions are being undertaken on discontinuing MTCs.

Related MPANs and Market-wide Half Hourly Settlement

Under MHHS there is no need to retain the Related MPAN association provided a single set of Half Hourly (HH) data can be provided for all the active import energy consumed at a site. Meter variants to provide this data are becoming available and should eventually allow discontinuation of the Related MPAN requirements. This is also true for Unmetered Supplies as the Unmetered Supplies Data Service can combine all the estimated HH consumption data under a single MPAN.

It is also undesirable to retain Related MPANs where HH data is unavailable and needs to be estimated. This is because the Load Shaping Service will calculated Load Shapes covering 48 Settlement Periods. So, when the HH data for a storage heating MPAN is calculated it would be spread over the whole day rather than when the storage system was active.

Removal of the use of Related MPANs reduces the complexity of multiple appointments, DUoS charging (identifying related meter and set standing charge to zero) and the estimation and load shaping issue.

Furthermore, the CCDG identified new arrangements, for example to meter Electric Vehicles (EVs), may result in the need for more than one meter at a given site. However, these MPANs could have different Suppliers and would not meet the definition of Related MPANs. Likewise, the CCDG noted that two meters can be contacted by the DCC using a single GUID. In such scenarios the HH data would need to be summated for Settlement. Likewise, it was noted that where two Meters were with a single Supplier the data granularity requirements for both meters would need to be the same.

Related MPANs and the transition to MHHS

The CCDG considered that Related MPANs are not retained for Settlement but may need to be maintained in the short term for the duration of the transition due to NHH processes. In particular Smart Meters replacing the current Radio Teleswitched Meters may require two Meters if the smart Meter variants are unavailable and where NHH arrangements are still in place. The CCDG accepted that parties may wish to retain the association for non-Settlement purposes.

The CCDG believe that there are no requirements for Related MPANs for Settlement purposes and that Suppliers should seek to install a single Meter at site wherever possible going forward.

APPENDIX C - CONSOLIDATED LIST OF CONSULTATION QUESTIONS

Question 1. Do you agree that the detailed MHHS TOM design is consistent with the Design Working Group's preferred Target Operating Model?
Yes/ No
Rationale:

Question 2. Do you have any specific comments on the proposed set of detailed data items or associated transition requirements, set out for the MHHS TOM? **Comments can be in relation to any or all of the areas set out by the CCDG under Section A.**
Yes/ No
Rationale:

Question 3. Do you agree that the TOM should not include a process for correcting Settlement volumes associated with ETs?
Yes/ No
Rationale:

Question 4. What impact would the lack of a process to correct ET Settlement volumes have on your organisation?
Response:
Rationale:

Question 5. Are there any non-Settlement reasons why your organisation would require new Related MPANs to be created in the target end state?
Yes/ No
Rationale:

Question 6. Do you have any specific comments on the proposed detailed processes, or associated transition requirements, set out in Section B for the MHHS TOM?
Yes/ No
Rationale:

Question 7. Do you agree that the detailed MHHS TOM design meets Ofgem's Design and Development Principles?
Yes/ No
Rationale:

Question 8. Do you believe that all the major changes to the Industry Code documents required to deliver the MHHS TOM have been identified?
Yes/ No
Rationale:

Question 9. Do you think there are any drivers for changing the scope and/ or structure of the BSCPs impacted by MHHS?
Yes/ No
Rationale:

Question 10. Do you have any other comments?
Yes/ No
Rationale:

See Attachment 1 for the Code Change Matrices

See Attachment 2 for the TOM Services Appointments Process