

PUBLIC

Design Working Group

Consultation on approach for transitioning to the MHHS Target Operating Model

ELEXON

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CONSULTATION ON TOM TRANSITION APPROACH

CONTENTS

OFGEM FOREWORD	4
EXECUTIVE SUMMARY	5
HOW TO RESPOND AND WHAT HAPPENS NEXT	8
THE CURRENT MARKET MODEL	9
CURRENT BSC AGENTS IMPACTED BY THE TRANSITION	11
Supplier Volume Allocation Agent (SVAA)	11
Teleswitch Data Services Agent (TSDA)	11
Profile Administrator Agent (PrA)	11
THE DWG'S PREFERRED TARGET OPERATING MODEL	12
The TOM services	13
THE DWG'S TRANSITIONAL PRINCIPLES AND PRE-REQUISITES	14
High-level transition principles	14
Transition pre-requisites	14
Transition end point	14
TRANSITION TERMINOLOGY	15
PROFILE CLASSES, MEASUREMENT CLASSES, METER TYPES AND THE MARKET SEGMENTS	16
Profile Classes	16
Measurement Classes	16
TOM Market Segments	17
Mapping of NHH MPANs to the TOM Market Segments	17
Mapping of HH MPANs to the TOM Market Segments	18
ELECTIVE HALF HOURLY SETTLEMENT	19
WHAT WILL THE PERFORMANCE ASSURANCE FRAMEWORK BE UNDER THE TOM?	20
DWG Performance Assurance Assumptions and Principles	20
TOM SERVICES TRANSITIONAL APPROACH	21
Code and Governance Changes	21
BSC Central System and Registration System Updates	21
HIGH LEVEL VIEW OF THE SVA MARKET AT VARIOUS STAGES OF TRANSITION	22
HIGH LEVEL SUMMARY OF TRANSITION APPROACH BY MARKET SEGMENT	25
Smart and Non-smart Market Segment	25
The Advanced Market Segment	26
The Unmetered Supplies Market Segment	27
TRANSITIONAL DIAGRAMS	29
CRITICAL PATH FOR TRANSITION	30
TRANSITION TO THE NEW SETTLEMENT TIMETABLE	31

CONSULTATION ON TOM TRANSITION APPROACH

DWG proposals on the timing for introducing the revised Settlement Timetable.....	31
DWG proposal for the timing of the Post Final Settlement Run (PFSR)	32
DWG proposal for the Disputes Materiality Threshold	34
SUMMARY OF CONSULTATION QUESTIONS.....	36
APPENDIX A - TRANSITIONAL DIAGRAMS	39
BSC Central Systems and Registration changes: Phase 1 Governance and Code Changes.....	40
BSC Central Systems and Registration changes - Interfacing and Go-Live.....	41
Smart and Non-Smart Segment Transition approach	42
Advanced Meter Segment Transition approach	46
Unmetered Supplies Segment Transition approach.....	51
APPENDIX B - THE CRITICAL PATH FOR TRANSITION	56
APPENDIX C PERFORMANCE ASSURANCE CONSIDERATIONS	57
Impact assessment of the implications of MHHS against all elements of the PAF Procedures	57
Impact assessment of the implications of MHHS against all PATs.....	59
APPENDIX D: GLOSSARY OF DEFINED TERMS	63
APPENDIX E: ACRONYMS	71

CONSULTATION ON TOM TRANSITION APPROACH



Making a positive difference
for energy consumers

OFGEM FOREWORD

Ofgem welcomes this consultation from the Design Working Group on the approach for transitioning to the preferred Target Operating Model (TOM) for Market-wide Settlement Reform.

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 Settlement Reform. 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 TOM design work has been developed for Ofgem by the ELEXON-chaired Design Working Group. The Group has met regularly since October 2017, and during the first stage of design work produced five high level 'skeleton' TOM options, which we approved in April 2018. Next, the DWG took forward the five skeleton TOMs, developed the more detailed service requirements, evaluated the different TOMs in light of Ofgem's Design Principles and policy steers, and chose a preferred TOM. Now the DWG has developed a recommended approach for transition to the preferred TOM. We would like to thank ELEXON and all the members of the Design Working Group and its supporting workgroups for providing their time, experience and expertise to work on this important product and for delivering this work in a timely manner.

This consultation document has been prepared by the Design Working Group to inform stakeholders about their proposed transition approach to the preferred TOM 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. The responses will help Ofgem make the final decision on the TOM and we will use the Full Business Case to make the decision on when and how to implement Market Wide Settlement Reform.

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 hearing from you on the TOM transitional work.

Yours sincerely,

Anna Stacey

Head of Settlement Reform

CONSULTATION ON TOM TRANSITION APPROACH

EXECUTIVE SUMMARY

Purpose of this consultation

This is the ELEXON-led Design Working Group's (DWG) consultation on its approach for transitioning from the current Settlement arrangements to its preferred Target Operating Model (TOM) for Market-wide Half Hourly Settlement (MHHS).

The DWG [reported to Ofgem in January 2019](#) on its TOM design and choice of TOM. It then [consulted](#) on this report in February and March. The [responses](#) validated the overall approach and coverage of its design and resulted in no fundamental changes to the preferred TOM.¹

The responses raised a variety of relevant points and suggestions relating to the transition to the preferred TOM. The DWG has taken these on board and now invites you to comment on its proposed transition approach.

Scope of this consultation in context of wider SCR

The DWG's outputs (TOM design and transition approach) form only one of several work streams in Ofgem's wider [Significant Code Review \(SCR\) on Electricity Settlement Reform](#). The DWG makes recommendations for the [Design Advisory Board's](#) review and Ofgem's decision. Ofgem will make the final decision on the TOM and transition approach.

Appendix 2 of [Ofgem's SCR Launch Statement](#) sets out its objectives and measures of success for the SCR, its Design Principles for the TOM and its Terms of Reference for the DWG.

Ofgem's other parallel SCR work streams are:

- Development of related policy, with decisions on:
 - [Access to Half Hourly \(HH\) data for Settlement purposes](#); and
 - [Supplier Agent functions](#);
- Consideration of consumer impacts; and
- Development of the Business Case for MHHS, including:
 - A forthcoming Request for Information (RFI) that will gather information on participants' impacts, costs and timescales to inform the economic case.

Ofgem will bring the outputs of all the SCR work streams together in its Full Business Case and use this to make a decision on how and when to proceed with MHHS. You can find links to more information about its SCR on the [Ofgem website](#) and in particular Ofgem's [Outline Business Case](#).

At the point that the DWG agreed the content of this transition approach consultation, Ofgem had yet to publish its policy decisions on access to HH data and on Supplier Agent functions. In the absence of the decisions, Ofgem instructed the DWG to continue working to the '[least-regrets' steer](#) it provided in November 2018. Ofgem has since published its [decision on Supplier Agent functions](#), which is consistent with the previous least-regrets steer.

The DWG's transition approach is high-level: an approach, not a plan. It focuses on the key transition milestones and the logical order in which they need to happen. This enables identification of the overall transition 'critical path'. It intentionally excludes consideration of costs and timescales, which will form part of Ofgem's separate RFI and Impact Assessment. Further industry work will be needed, after Ofgem's Full Business Case decision, to turn the approach into a more detailed implementation plan.

¹ You can find the DWG's discussion of the TOM consultation responses in the [DWG16 Headline Report](#). There is a minority view against the preferred TOM in the report to Ofgem, in which the minority favours an alternative TOM where Settlement aggregation of Meter data continues to be a competitively-provided service outside of central Settlement. This minority view is also reflected in the responses to the consultation on the preferred TOM. Ofgem will make the final decision on the TOM and the transition approach.

CONSULTATION ON TOM TRANSITION APPROACH

The DWG has designed the TOM to be neutral, and not dependent, on any particular systems architecture. In the absence of any decision on the target architecture, the transition approach also remains architecture-neutral. The DWG notes that during subsequent, more detailed, implementation planning, decisions on the architecture may determine the specific timing of activities.

Summary of transition approach

The existing Supplier Volume Allocation (SVA) arrangements separate Settlement processes and data according to whether a Metering System is settled HH or Non Half Hourly (NHH).

The DWG's TOM represents the target end state, when most Meters will be smart. It segments the market based on Meter type and data availability – into **smart Meters**, **Non-smart Meters**, **Advanced Meters**, and **Unmetered Supplies**.

Advanced Meters in the current NHH arrangements will either be replaced with a smart Meter or settled in the Advanced Meter segment. Unmetered Supplies can transition without disturbing the other segments.

The transition approach is incremental, using a series of phases under which different market segments (or Meters within a market segment) can transition at different times. These interim states can be summarised as:

- Governance and Code changes;
- Implementation of the Qualification process for providers of new TOM services;
- Initiation of the migration and/or adoption of Metering Point Administration Numbers (MPANs) by the new TOM services;
- A period of parallel running with new TOM services and existing agent functions; and
- Cutover to the TOM and new Settlement timetable once certain preconditions are met.

The DWG's aim is not a 'big bang' implementation of the TOM but rather a phased transition approach from the existing arrangements. This gives parties a window within which to transition to the TOM arrangements. Not all segments need to be in the same interim state at the same time.

For a large proportion of the market (specifically Advanced Meters), in consumption terms, this allows for 'evolution not revolution'. Participants could provide old-style NHH/HH services and new MHHS TOM services at the same time. This would enable migration between the two operating models more easily and without an unnecessary transfer of data. The Smart and Non-smart Market segment represents the biggest change from the current NHH arrangements, due to new roles and interface with the Data Communications Company (DCC).

The DWG's transition approach recognises that some parties will need to [Qualify/Re-Qualify](#) in order to undertake the TOM Services but will only need to adapt their existing systems to the new requirements.

While ideally the migration of a MPAN from NHH to HH would be a 'one-way gate' to prevent it subsequently moving back to NHH, the DWG recognises that in some segments this could be a barrier to customers changing Supplier. The DWG believes this can be addressed by ensuring that a sufficient number of Suppliers and TOM service providers are ready before migration begins at scale.

Ofgem is currently minded to use its powers under the Smart Meters Act 2018 (rather than its alternative SCR powers) to make required changes to Industry Codes and Licences. The DWG therefore assumes that this will be the primary mechanism for making the necessary governance changes, and that Ofgem will make these changes following its Full Business Case decision. However, this approach does not necessarily rule out other changes being progressed through the normal Code change processes, either before or after this point.

CONSULTATION ON TOM TRANSITION APPROACH

Interaction with elective Half Hourly Settlement (HHS)

The elective HHS arrangements allow Suppliers to voluntarily collect HH data from smart Meters (with customer consent) and pass it into Settlement via existing HH Agents. Ofgem asked the DWG to consider whether greater use can be made of the elective arrangements, as an interim step in obtaining the benefits of HHS, whilst awaiting full implementation of the TOM.

The DWG believes that the elective arrangements, in their current form, are sub-optimal as an enduring solution compared with the TOM, in which existing elective issues are 'designed out'. For example, elective HHS is currently unable to handle Meters from which only register reads are available for Settlement – as these would remain in or need to revert to NHH Settlement. The TOM enables HHS for these MPANs using load shapes.

Despite its limitations, the DWG considers that the elective HHS process could have a role to play as an interim step in the transition to the TOM. This consultation seeks your views on the feasibility of this approach.

Interaction with Performance Assurance Framework

In 2017 the BSC Panel initiated a review of the Performance Assurance Framework (PAF) to ensure that it remains fit for purpose in a changing industry. The revised PAF provides a high-level assurance framework and a set of principles, which the Performance Assurance Board (PAB) can apply flexibly, to assess any risks to Settlement associated with MHHS.

The PAB has advised the DWG that no further PAF changes are needed. As the industry moves towards the TOM, the PAB can deploy/adjust any PAF techniques as appropriate as part of the evolution not revolution transition approach. While performance targets will be set near the time, the DWG recommends a set of underpinning principles for these.

Transition to a shorter Settlement timetable

The DWG proposes reducing the timing of the Initial Settlement (SF) Run from its current 16 working days to **5-7 working days** and the timing of the Final Reconciliation (RF) Run from 14 months to **4 months**. This reduces the number of reconciliation runs required. To address concerns about recovery of material errors affecting Settlement, the DWG recommends a timing of **20 months**, from the Settlement Date, for the Dispute Final (DF) Run.

The DWG proposes transition to a new Settlement timetable and associated Trading Disputes criteria will occur once the full TOM is in place and would be based on an assessment of the data available, rather than on a hard target date. This will allow the move to earlier final Settlement without adversely impacting the accuracy of Settlement data.

The DWG believes that the qualifying materiality for Trading Disputes should be set significantly higher than today. In developing the new DF Run timing, the DWG recommends that this is paired with more stringent materiality criteria which increase with the age of the error. This means that lower-value errors will only qualify for correction if detected quickly after RF. The later part of the Trading Disputes window will be reserved for errors where significant misallocation of energy has occurred.

Glossary of terms and acronyms

You can find a glossary of defined terms in [Appendix D](#). [Appendix E](#) defines the acronyms used in this consultation.

CONSULTATION ON TOM TRANSITION APPROACH

HOW TO RESPOND AND WHAT HAPPENS NEXT

Please:

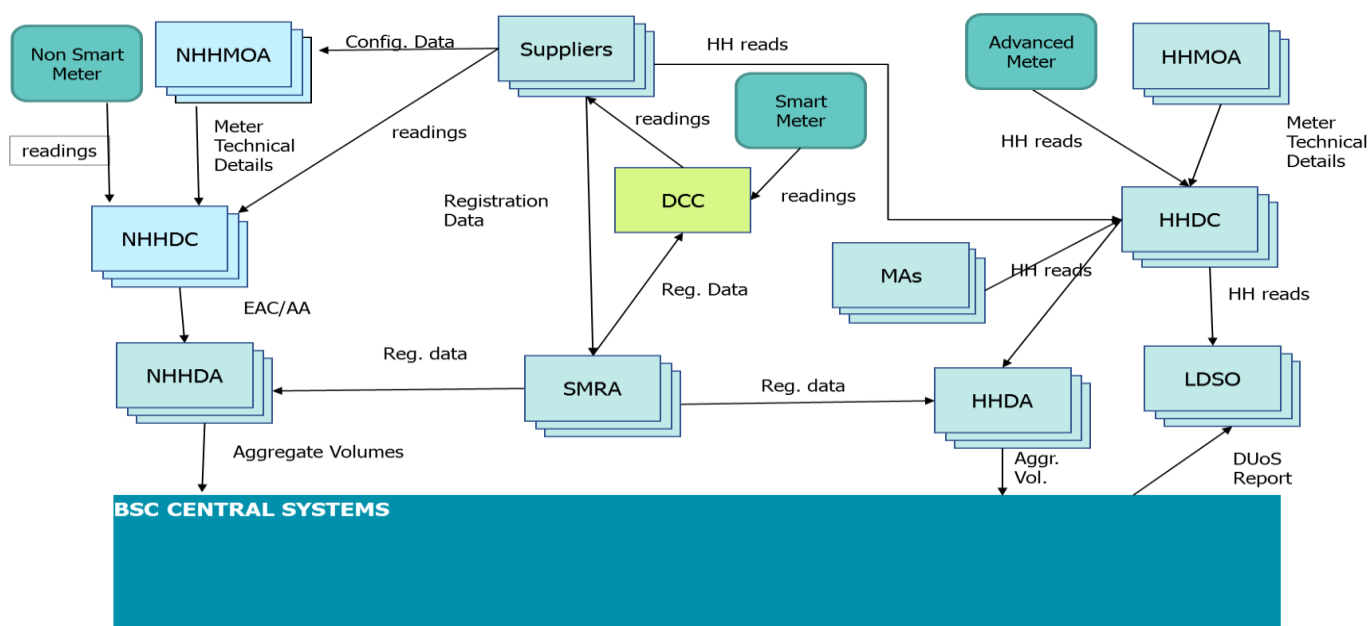
- Email your response to dwgsecretary@elexon.co.uk by **08:00 (8am)** on **8 July 2019**, using the subject line 'DWG transition consultation response'.
- Use the attached Word response form where possible to make it easier for the DWG to identify and summarise views.
- Provide supporting reasons for your answers to help the DWG 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 DWG. However, Ofgem will see all responses in full. We encourage you to provide non-confidential responses where possible, to inform the DWG's discussions.
- Email ELEXON's MHHS team at dwgsecretary@elexon.co.uk with any questions.

The DWG will consider your responses and deliver its final report to Ofgem during summer 2019. You can view the DWG's latest Gantt chart plan and its more detailed Forward Work Plan on the [Design Working Group](#) page of ELEXON's website.

CONSULTATION ON TOM TRANSITION APPROACH

THE CURRENT MARKET MODEL

The current market model was initially developed for the 1998 opening of competition in the supply market and is delivered using a number of [Supplier Volume Allocation Agent \(SVA\)](#) and [Party Agents](#) performing defined Market Roles as part of the Supplier Hub. It has changed little since then apart from the introduction of the Data and Communications Company (DCC) which manages command to, and data flows from, smart Meters and facilitates their interoperability. Elective Half Hourly Settlement for smart Meters was also introduced in 2017. This allows the Supplier to source and pass HH data for customers that have opted-in to HH Settlement via its existing HH Agents:



4

The Transition approach will look to adapt the existing Market Roles into the new TOM Services where possible. Some Market Roles will eventually disappear but will be maintained throughout the transition where viable. Metering Systems may need to be migrated from their current Agent to the new Services under the TOM.

Market Domain Data (MDD) and Market Roles

Market Domain Data (MDD) is the standing data used by Market Participants and Agents. Each Agent has a defined Market Participant Role Code under the BSC:

Market Participant Role Code	Market Participant Role Code	Market Participant Role Code
3	Unmetered Supplies Operator (UMSO)	An UMSO is responsible for establishing new Unmetered Supplies and establishing appropriate Connection Agreements with UMS customers, providing summary inventories to the Meter Administrator (Half Hourly) and issuing Unmetered Supplier Certificates (Non Half Hourly).

CONSULTATION ON TOM TRANSITION APPROACH

Market Participant Role Code	Market Participant Role Code	Market Participant Role Code
4	Meter Administrator (MA)	The Meter Administrator (MA) is responsible for receiving summary inventory and latitude/longitude information from the Unmetered Supplies Operator (UMSO) and where relevant inputting this information into the Equivalent Meter (EM). The MA also operates and maintains the EM hardware and software.
A	HH Data Aggregator (HHDA)	The Half Hourly Data Aggregator receives the metered data from the Data Collector and aggregates the data in accordance with the BSC rules (and timetable).
B	Non HH Data Aggregator (NHHDA)	The Non Half Data Aggregator receives the metered data from the Data Collector and aggregates the data in accordance with the BSC rules (and timetable).
C	HH Data Collector (HHDA)	The Half Hourly Data Collector is responsible for collecting, validating and estimating data from metering systems to determine the electricity consumption in accordance with the BSC rules.
D	Non HH Data Collector (NHHDC)	The Non Half Hourly Data Collector is responsible for collecting, validating and estimating data from metering systems to determine the electricity consumption in accordance with the BSC rules.
M	Meter Operator (MOA)	The Meter Operator is responsible for installing and maintaining electricity meters on behalf of Suppliers operating in the SVA market in accordance with the BSC rules.
P	Supplier Meter Registration Agent (SMRA).	An SMRA is a sub function of an LDSO and is the provider of a Supplier Meter Registration Service. The agent is responsible for recording Supplier registrations and hold key settlement data items.

CONSULTATION ON TOM TRANSITION APPROACH

Licenced Distribution System Operators (LDSOs) and Registration Services

The LDSOs are the BSC terminology for Distribution Businesses (Market Participant Role Code: 'R'). The LDSOs provide a registration service that satisfies the (OFGEM's) Distribution Business' license conditions for the provision of a Metering Point Administration Service (MPAS). Under the BSC the Supplier Meter Registration Service (SMRS) is part of MPAS. References to Registration in this consultation refer to SMRS.

CURRENT BSC AGENTS IMPACTED BY THE TRANSITION

Supplier Volume Allocation Agent (SVAA)

The SVAA manages Supplier Volume Allocation (the aggregation of profiled and actual data obtained from both Half Hourly and Non Half Hourly Metering Systems registered in the Supplier Meter Registration Service (SMRS)), Daily Profile Production and management of the Market Domain Data service.

All of these functions allow the SVAA to calculate half hourly consumption attributable to each Supplier in a GSP Group in respect of Metering Systems registered in SMRS.

Teleswitch Data Services Agent (TSDA)

This agent monitors the messages concerning contact switching times sent under the Radio Teleswitch Agreement to SVA Metering Systems equipped with a Teleswitch. The agent provides a daily service that prepares a data interface file of Teleswitch contact switching times reflecting actual messages broadcast for that day and transmitting the file to the SVAA on a daily basis.

It maintains a log archive recording the provision of details of Teleswitch messages and reports to the SVAA any known or suspected failures in the monitoring and provision of messages. The Teleswitch times are then used by the SVAA to calculate the half-hourly consumption values for Non Half Hourly Meters.

Profile Administrator Agent (PrA)

This agent currently produces the Profiling deliverables that are used by the SVAA, Suppliers and the Supplier Agents.

Transition Impacts on BSC Agents

The PRA's process will need to be maintained during the transition but will ultimately be discontinued.

Likewise, the TSDA will also disappear in the target end state. The Teleswitch functionality is expected to disappear before the end of transition since smart Meters cannot operate in conjunction with Teleswitches.

The SVAA role will need to be adapted in the new TOM. Likewise, the Market Domain Data will also need adapting in order to remove redundant standing data and introduce new data required to support the TOM.

CONSULTATION ON TOM TRANSITION APPROACH

THE DWG'S PREFERRED TARGET OPERATING MODEL

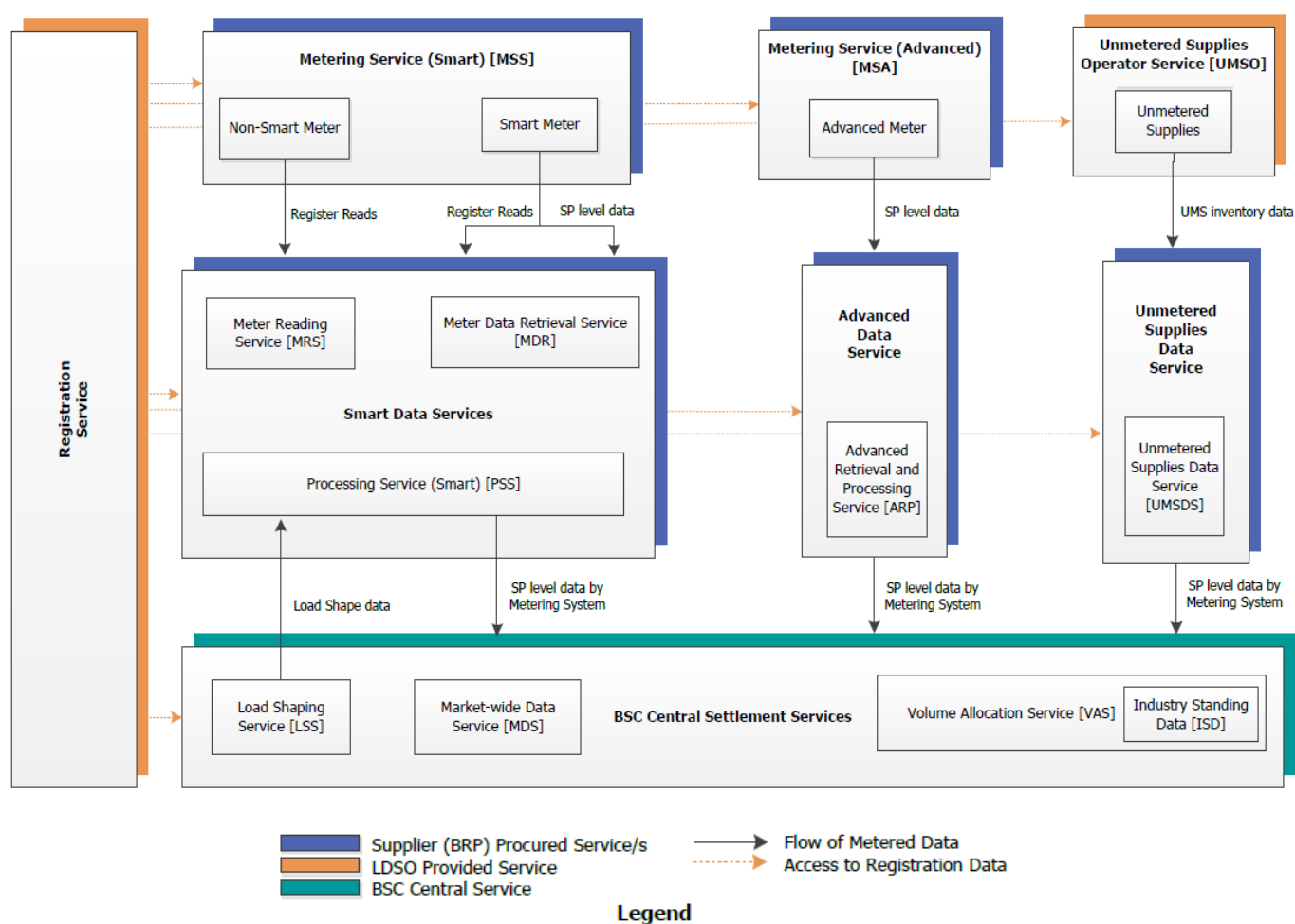
The key features of the DWG's preferred TOM are the three Data Services that collect data and supporting information, then output validated/estimated, disaggregated Settlement Period (SP) level data to BSC Central Settlement Services.

These are:

- The Smart Data Services;
- The Advanced Data Service; and
- The Unmetered Supplies Data Service.

The SP level data received by BSC Central Settlement Services will be used by the Load Shaping Service (LSS) to derive Load Shapes for use where SP level data is not available directly from smart or non-smart Metering Systems. The BSC Central Settlement Services will use the SP level data from Meters, or derived using the load shapes, in the Settlement calculations.

Two types of Metering Services have been defined - one for smart and non-smart Meters and one for the Advanced Meters.



CONSULTATION ON TOM TRANSITION APPROACH

The TOM services

The TOM Services and corresponding Service Ids are outlined below to aid navigation of the requirements.

Market Segment/Service	Service Id	Service Name
Advanced Market Segment and Advanced Data Service	MSA	Metering Service (Advanced)
	ARP	Advanced Retrieval and Processing Service
Smart and non-smart Market Segment and Smart Data Services (SDS)	MSS	Metering Service (smart)
	MDR	Meter Data Retrieval Service
	MRS	Meter Reading Service
	PSS	Processing Service (smart)
Unmetered Supplies Market Segment and Unmetered Data Service	UMSO	Unmetered Supplies Operator Service
	UMSDS	Unmetered Supplies Data Service
BSC Central Settlement Services	MDS	Market-wide Data Service
	LSS	Load Shaping Service
	VAS	Volume Allocation Service

More detail on the DWG's preferred TOM and the TOM Service requirements can be found in the [DWG's report to Ofgem](#), delivered in January 2019.

CONSULTATION ON TOM TRANSITION APPROACH

THE DWG'S TRANSITIONAL PRINCIPLES AND PRE-REQUISITES

High-level transition principles

The DWG set out nine high level principles for the development of the Transition approach. These principles were amended following feedback from the [Consultation on the DWG preferred TOM in February 2019](#). It was clarified that dual processes would not be used for any MPAN and that changes around the issue of customers reverting to NHH arrangements. The DWG considered the [Consultation responses](#) and concluded that no fundamental changes to the preferred TOM were required. The DWG has now developed its recommended transitional approach for Industry consultation.

The transition principles are:

- a) The transition approach shall not degrade the quality of Settlement data;
- b) Transition shall be phased in order to minimise impacts and risks;
- c) Different market segments can transition at different times or in parallel;
- d) If the Department for Business, Energy & Industrial Strategy (BEIS) decides that Export energy from small scale renewables must be registered for Settlement, then the transition approach for Export may be different to – and shall not slow down – the transition for Import energy;
- e) The transition to MHHS shall not prevent customers using the existing elective HH process;
- f) The transition approach needs to balance the efficiencies of making HH Settlement a 'one-way gate' (i.e. preventing HH customers switching back to NHH arrangements during the transition) with not creating undue barriers to customers switching BRP (Supplier);
- g) During transition, there shall not be dual Settlement processes operating at the same time for a single Metering Point Administration Number (MPAN) on the same Settlement Day (i.e. not settled both NHH and HH);
- h) The transition approach shall recognise when the existing arrangements are no longer viable; and
- i) There shall be appropriate monitoring, reporting and enforcement of participants' progress during transition.

Transition pre-requisites

The DWG discussed whether there are any external events, outside the Significant Code Review (SCR), that need to have occurred which will influence when transition to MHHS can begin.

The DWG concluded the following as a minimum would be required:

- Implementation of the Faster Switching arrangements;
- Enrolment of SMETS1 Meters by the Data and Communications Company (DCC);
- A reasonable percentage of smart Meters rolled out;
- Clarity on network charging requirements for Settlement data; and
- Version 2 of the Retail Energy Code (REC) will need to be implemented for Faster Switching before the MHHS transition can begin. However, it considered that some elements of transition could start before full implementation of Faster Switching arrangements.

Transition end point

The DWG agreed that the end point for transition, when the TOM is considered to be fully implemented, shall be the first Settlement Day that all Meters are settled using the TOM.

CONSULTATION ON TOM TRANSITION APPROACH

TRANSITION TERMINOLOGY

The DWG have agreed the following terminology when defining the transition approach:

- **Transition** - the end to end process of getting from the current state to the Target End State for the TOM;
- **Implementation** - Code Changes, System Changes, Settlement timetable and Qualification;
- **Migration** – Moving the servicing of MPANs from current Market Roles to servicing them under the TOM Services;
- **Adoption** – the process of Metering Systems, appointed to/ contracted with existing Market Roles, being undertaken by the new TOM Service with same party.
- **Parallel running** – the process of using both the current and new processes at the same time for different MPANs during the migration.
- **Settlement Date** - The transition will be on a 'Settlement Date' rather than a calendar date basis. For example, each MPAN will migrate on a Settlement Date and there will not be any 'big bang'/ calendar date implementation on which all MPANs will be settled under the new TOM at once.

CONSULTATION ON TOM TRANSITION APPROACH

PROFILE CLASSES, MEASUREMENT CLASSES, METER TYPES AND THE MARKET SEGMENTS

Profile Classes

The existing Profile Classes are defined as follows:

Code	Profile Class
01	Domestic Unrestricted
02	Domestic Economy 7
03	Non-Domestic Unrestricted
04	Non-Domestic Economy 7
05	Non-domestic, with Maximum Demand (MD) recorded and with Load Factor (LF) less than or equal to 20%
06	Non-domestic, with MD recorded and with LF less than or equal to 30% and greater than 20%
07	Non-domestic, with MD recorded and with LF less than or equal to 40% and greater than 30%
08	Non-domestic, with MD recorded and with LF greater than 40%

Note: Where an MPAN contains '00' against 'Profile Class' this means there is no Profile Class. This is used by parties to identify Half Hourly Metering Systems.

Measurement Classes

The existing Measurement Classes are defined as follows:

Measurement Class Id	Description
A	Non Half Hourly Metering Equipment
B	Non Half Hourly Unmetered Supplies
C	Half Hourly Metering Equipment at above 100kW 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

CONSULTATION ON TOM TRANSITION APPROACH

TOM Market Segments

The following are the defined Market Segments:

Market Segment Id	Definition
Smart and Non-smart	Smart Meters with Settlement Period level data available
	Smart Meters with only Register Readings or Daily Consumption values available
	Non-smart Meters with Register Readings
Advanced	Advanced Metering Systems with Settlement Period level data available
Unmetered	Unmetered Supplies.

Mapping of NHH MPANs to the TOM Market Segments

The following table map Profile Classes, Measurement Classes and Meter Types in the NHH Market to their destination Market Segment

Profile Class	Meter Type	Current MC	Destination MC	Destination Market Segment
01 and 02	Whole Current (Smart Meter)	A	F	Smart and Non-smart
	Non-smart (and not Advanced)	A	F	Smart and Non-smart
	Advanced (Whole Current)	A	F	Advanced
	Advanced (with Current Transformer)	A	F	Advanced
01 and 08	Unmetered Supply	B	D	Unmetered Supplies
03 and 04	Whole Current (Smart Meter)	A	G	Smart and Non-smart
	Non-smart (and not Advanced)	A	G	Smart and Non-smart
	Advanced (Whole Current)	A	G	Advanced
	Advanced (CT)	A	E	Advanced
05 to 08	Advanced (Whole Current)	A	G	Advanced
	Advanced (CT)	A	E	Advanced

Whole Current Advanced Meters could be replaced with smart Meters, if so the MPAN would be moved into the Smart and Non-smart Segment.

Over time it is anticipated that the Profile Classes will eventually be discontinued. In future all MPANs will have Categorisation that will be used for Load Shaping and estimation. The Categorisation will be an enduring property of the MPAN regardless of whether it provides Settlement Period level data or register reads for Settlement.

CONSULTATION ON TOM TRANSITION APPROACH

The Registration Service will need to hold a 'domestic/non-domestic' flag for use in Categorisation.

There will be a date at which any new MPAN will go directly into the appropriate Market Segment.

The DWG recommend a review and rationalisation of the current Measurement Classes and the associated Consumption Component Classes are undertaken as part of the implementation process. Measurement Classes are currently used to differentiate Performance measures and are used for DUoS purposes. Measurement Classes A and B will no longer be required in the Target End State.

The current Measurement Classes do not recognise the concept of 'opted out' MPANs that will be settled using HH data derived from register reads. However, the TOM design ensures that opted out MPANs do not need to undergo a Change of Measurement Class in the TOM.

MPANs within the Smart and Non-Smart segment will maintain their Measurement Class when switching between Settlement Period level data and register reads.

The DWG also recognise there may be 'fringe case' Meters that do not fit the above categorisation and will need to be considered during implementation.

Mapping of HH MPANs to the TOM Market Segments

The following show the mapping of existing HH MPANs to Market Segment:

Meter Type	MC	Destination Market Segment
Advanced HH (>100 kW)	C	Advanced
Advanced CT (<100 kW MD)	E	Advanced
Advanced Non-Domestic Whole Current (<100 kW MD)	G	Advanced
Domestic Elective smart Meters	F	Smart and Non-smart
Non-Domestic Elective smart Meters	G	Smart and Non-smart
Unmetered Supply	D	Unmetered

Question 1	Do you agree with the DWG's proposed mapping for Metering System types to Market Segments?
Please list any elements that should amended.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

CONSULTATION ON TOM TRANSITION APPROACH

ELECTIVE HALF HOURLY SETTLEMENT

The elective HH Settlement (HHS) smart Meter processes were implemented in 2017 to complement the existing arrangements. The elective HHS approach allows Suppliers to collect the HH data from smart Meters (with customer consent) and pass it into Settlement via existing Half Hourly Agents.

Elective HHS has enabled Suppliers who wish to settle their customers MPANs HH to do so cost effectively, which some Suppliers have now taken up. However, there have been a number of issues with the elective processes particularly where elective customers change to Suppliers who do not support elective CoMC process.

Ofgem asked the DWG to consider if full implementation of the TOM is dependent on the timescales needed to put any target architecture in place and, if so, whether greater use could be made of the elective HHS process as an interim step in obtaining the benefits of HHS.

The DWG noted that the target architecture is still to be agreed and therefore associated timescales are unknown. However, it discussed the idea and noted the following potential issues with this approach:

- The existing elective process was designed to cater for a limited number of customers wishing to avail of certain Time of Use (ToU) tariffs, and who have Suppliers offering these tariffs. It was designed to complement the existing NHH arrangements - not to replace them;
- The use of the existing elective processes is a commercial choice for the Supplier. The DWG's TOM transition approach does not create any barriers to using the elective process;
- The existing elective process is intended to allow for a Change of Measurement Class from HH back to NHH (e.g. where the customer subsequently wishes to change tariff or Supplier). If the elective process was used for mass migration of MPANs to HHS, this could not prevent MPANs 'flipping' between HH and NHH arrangements on a Change of Supplier. At scale this would be difficult for parties to manage and this issue could be exacerbated under Faster Switching;
- The DWG has 'designed out' the above issues to ensure that HHS can be maintained irrespective of the tariff, customer's opt-in/out preference or their chosen Supplier; and
- While improvements to the elective process could be considered, some of the impacts and costs incurred in using this as a 'stepping stone' to the TOM would be additional to the TOM implementation costs – and could therefore potentially divert effort from achieving the earliest implementation of the optimal (TOM) solution.

Elective HHS MPANs with smart Meters will eventually all be settled using the Smart and Non-smart Market Segment using the SDS. Smart Meters currently serviced by Smart Meter System Operators (SMSOs) will eventually be serviced by the DCC. The SP level data from these Meters would then be accessed directly by the Smart Data Service.

Question 2

Do you believe it is feasible to use the elective HHS process to migrate significant numbers of MPANs to HHS as an interim step in the transition process?

Please identify what changes you believe would need to be implemented to use Elective HH as an interim step and/or any issues you have noted with the current elective process which are a barrier to using it as an interim step.

Answer: Yes/No (delete as appropriate)

Please provide your reasons here

CONSULTATION ON TOM TRANSITION APPROACH

WHAT WILL THE PERFORMANCE ASSURANCE FRAMEWORK BE UNDER THE TOM?

The DWG sought clarity from the Performance Assurance Board (PAB) on three specific questions:

- What high-level assurance framework/principles will be needed to support MHHS?
- What elements of the PAF are no longer required, need to change, or be introduced under the TOM?
- What DF Run cut-off and Disputes materiality threshold (or principles to determine the threshold) are appropriate for MHHS?

[PAB Paper 219/05](#) set out the PAB response to the DWG. The PAB noted that the new Performance Assurance Framework (PAF), which has recently been implemented, can be flexed to address new risks identified in the transition to MHHS. The PAB would, during transition, identify risks, assess impact, determine its risk appetite and deploy Performance Assurance Techniques (PATs) accordingly. This is compatible with evolution not revolution of the transition. The paper also set out an impact assessment of the implications of MHHS against all elements of the PAF Procedures and the PATs. The impact assessments can be found in [Appendix C](#).

DWG Performance Assurance Assumptions and Principles

The DWG have set out the following Assumptions and Principles to be used by respondents to the consultation when considering the impacts of performance serials:

PAF Assumptions:

- Performance serials will not be the same as currently for either NHH or HH
- Performance serials could be configurable/adaptable and set by the PAB
- Performance serials will not be based on Actuals and Estimates as currently defined.

Smart Meter Data Estimation methods

Where SP level data cannot be retrieved (i.e. no smart meter is present, or where the consumer has opted out for data privacy reasons) then estimated SP level data will be created and may be based on 'Actual' Meter Readings.

PAF Principles:

- The performance serials should incentivise moving to HHS;
- The performance serials should maintain appropriate pressure on current Settlement performance;
- Parties should not be penalised for poor performance due to systemic events outside their control (for example, any Data and Communications Company service issues);
- Parties should not be penalised for customer choice (for example, a customer choosing not to have a smart Meter or to opt-out of sharing their smart Meter data); and
- Performance serials could be flexed by Market Segment, Measurement Class and/or Meter type.

Question 3	Do you agree with the PAF Assumptions and Principles and that all the potential impacts on the PAF have been identified?
Please identify any omissions.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

CONSULTATION ON TOM TRANSITION APPROACH

TOM SERVICES TRANSITIONAL APPROACH

The following sections set out the proposed transition approach developed by the DWG.

Code and Governance Changes

The DWG assumes that Ofgem will make the bulk of any required Code and Governance changes after the final decision on MHHS using their powers under the Smart Meters Act 2018. Changes are likely to be required to the:

- Balancing and Settlement Code (BSC);
- Smart Energy Code (SEC);
- Master Registration Agreement (MRA)/ Retail Energy Code (REC);
- Distribution Connection and Use of System Agreement (DCUSA); and
- The National Terms of Connection.

However, the DWG does not rule out other changes being progressed through the normal Code change processes before or after the final decision.

Other consequential changes may also be required that fall outside Ofgem's remit. For example, the Low Carbon Contracts Company (LCCC) may need changes for their timetable which aligns with the Settlement Timetable. In this case the Department of Business Energy and Industrial Strategy (BEIS) may need to amend secondary legislation.

BSC Central System and Registration System Updates

Changes to both the BSC Central System and Registration Systems will need to be implemented. These will follow the following approach:

Design → Build → Test → Deploy

Systems may be built and deployed in an 'Agile' way meaning not all services may be deployed at the same time. Once the changes are deployed the systems can undergo interface testing, with the new Data Services and Metering Services, before the systems 'Go-live'.

BSC Central Systems will need to implement the MDS, LSS and VAS. SP level data will be required to initiate the LSS (which may require a month of load shapes to be produced) before the BSC systems changes can 'Go-Live'.

The BSC Central Service will need to undertake parallel running of the current Settlement arrangements and the new arrangements until migration is complete. Then Settlement Runs for dates prior to the completion of the migration can be 'run-off' before the NHH arrangements are discontinued.

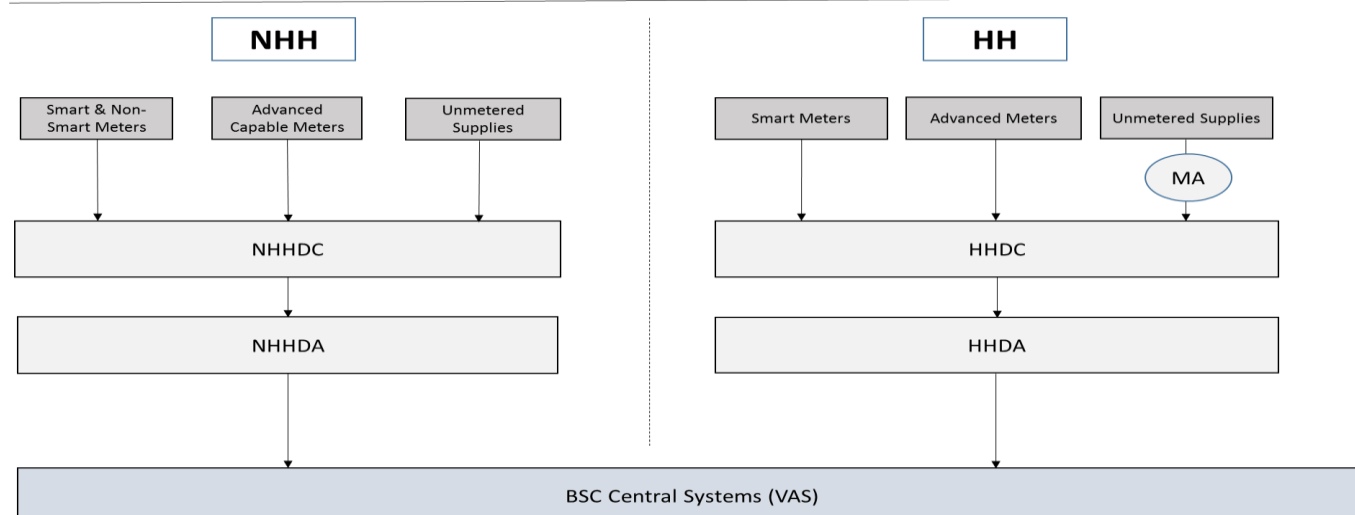
Likewise, the Registration Services will need to hold the Market Participant identity (MPID) and appoint the new TOM Data Services. Additional data items are also likely to be required to identify MPAN categorisations for load shaping and potentially to identify customer preference (subject to the detail of Ofgem policy decisions on Data Access and Data Privacy).

Question 4	Do you agree with the phased approaches proposed for BSC and Registration Systems?
Please identify any issues and dependencies with the proposed approaches.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

CONSULTATION ON TOM TRANSITION APPROACH

HIGH LEVEL VIEW OF THE SVA MARKET AT VARIOUS STAGES OF TRANSITION

0. Current SVA market arrangements

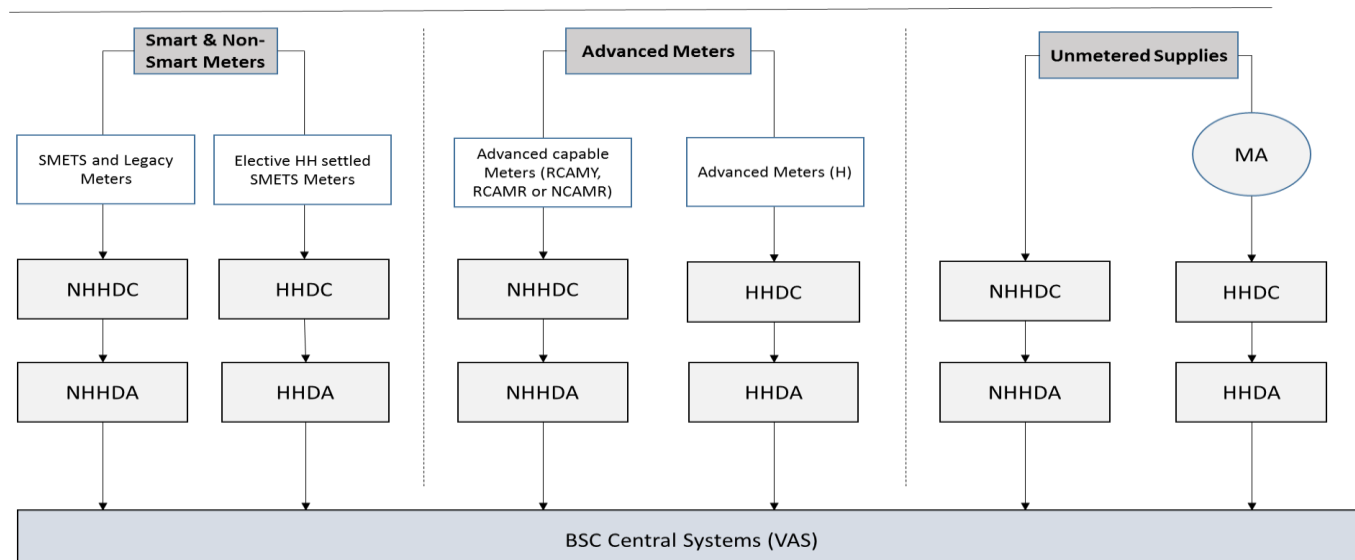


The above diagram* is a representation of the existing SVA market, where both the NHH and HH markets contain different types of metering. The NHH market is primarily made up of non-smart (legacy) meters, a rising proportion of Smart Meters, and Advanced HH capable (AMR) meters with remote communications and Unmetered Supplies**.

*Some market roles such as the Meter Operator (MOA) and UMSO have been omitted in the interests of simplicity.

** Market Segments are likely to be transitioned at different timescales.

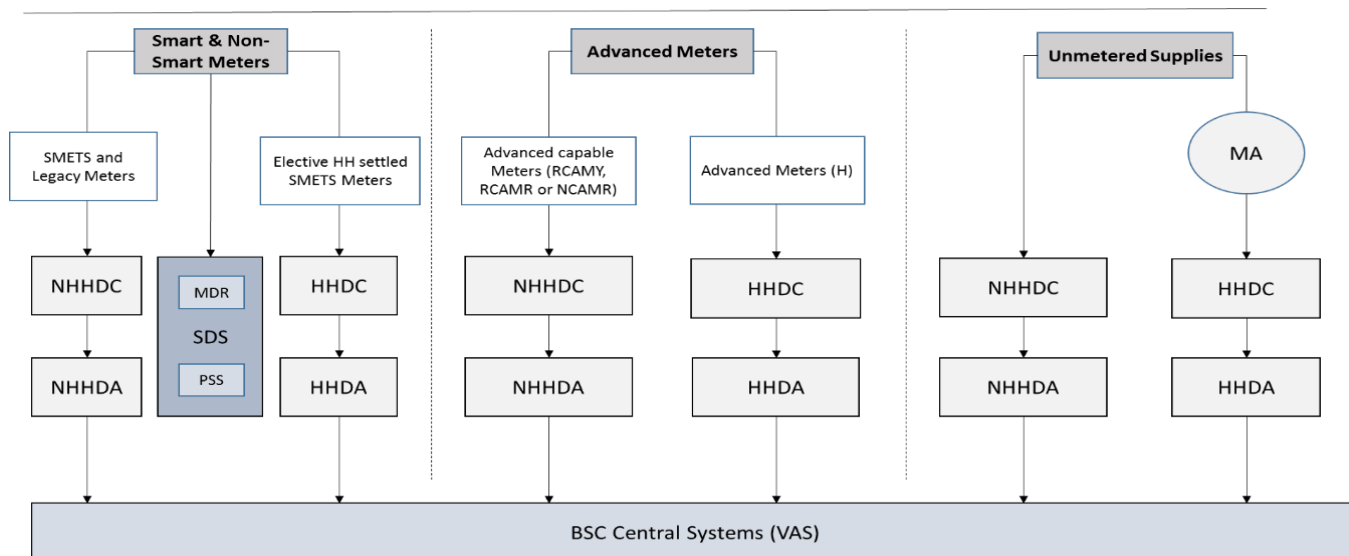
1. Pre-transition - SVA market separated by Meter type



The 'pre-transition' stage will formalise this new organisation of the SVA market by Meter Type. Before migration activities are carried out, enabling governance changes can be made to ensure that each Metering System has a clearly identified destination Market Segment under the TOM. This is necessary to allow different segments to transition independently and at different times, noting that the Advanced and Unmetered segments are able to move quicker in the earlier phases of transition because their change is more 'evolutionary' in nature.

CONSULTATION ON TOM TRANSITION APPROACH

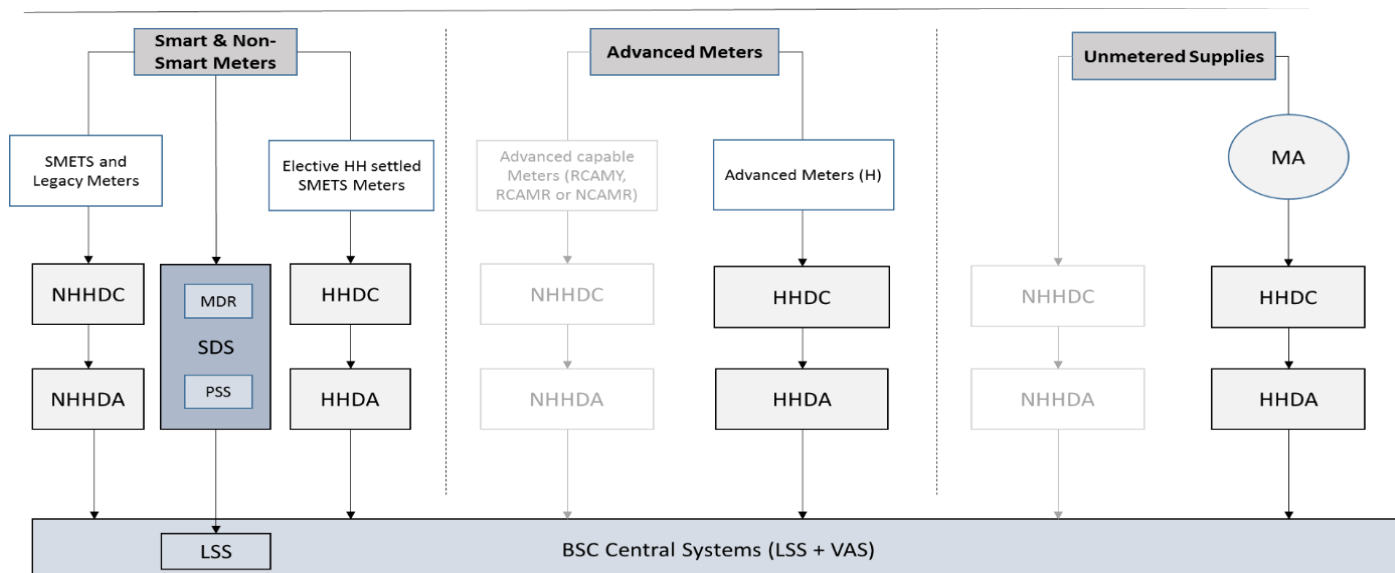
2. Qualification of first providers of new TOM services starts



Although the Smart and non-Smart segment is likely to complete transition later than the Advanced or Unmetered segments. This is due to the large Number of MPANs to be migrated and the requirement for a new or adapted DCC User Role. The Smart Data Services will need to be introduced early on to allow for the DCC user role for the MDR to be created and its obligations under the SEC to be met. In parallel with this, participants operating in the Advanced and Unmetered segments can carry out the necessary pre-migration checks along with the BRP.

*Changes to the Registration Service (not shown) are implemented to recognise the new TOM services.

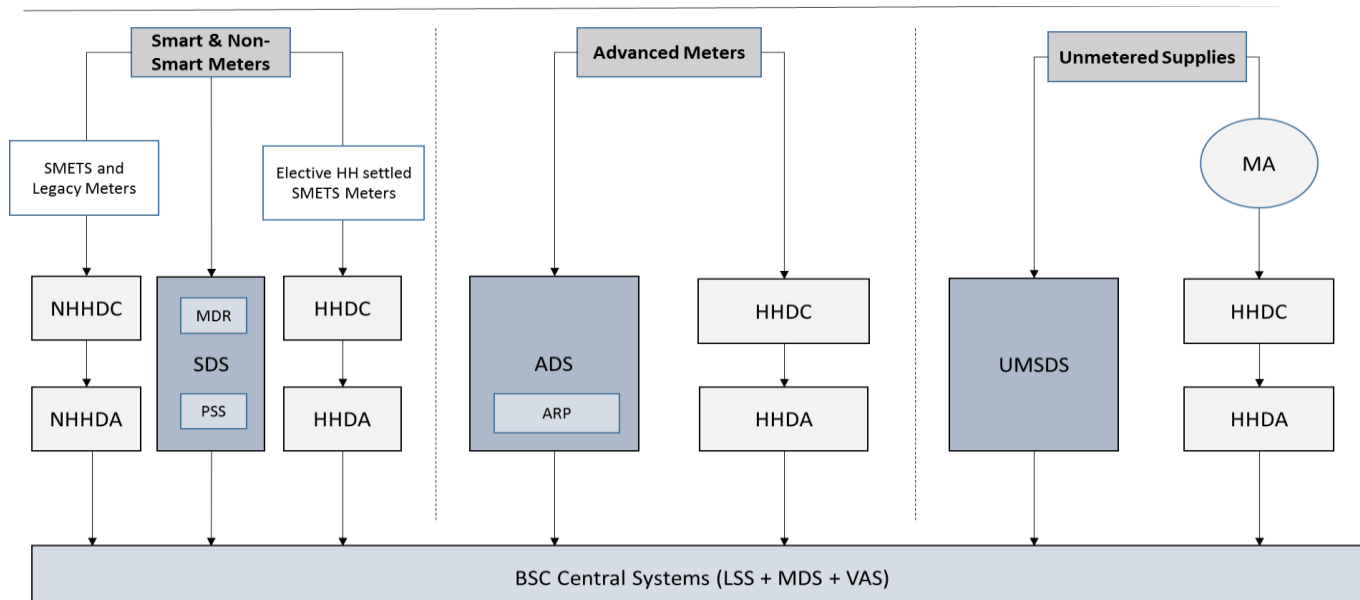
3. Migration/adoption of metering systems



The newly qualified Smart Data Services begin to access and process SP level data from Smart Metering Systems. The data is passed to the LSS to allow load shapes to be produced, although those Metering Systems are still settled using existing NHH and HH supplier agents. In parallel with this, the Advanced and Unmetered segments move all outstanding NHH settled Metering Systems over to HH once any necessary changes have been made. Although the above only shows a single HHDC and HHDA, this process needs to occur for all HHDCs and HHDA.

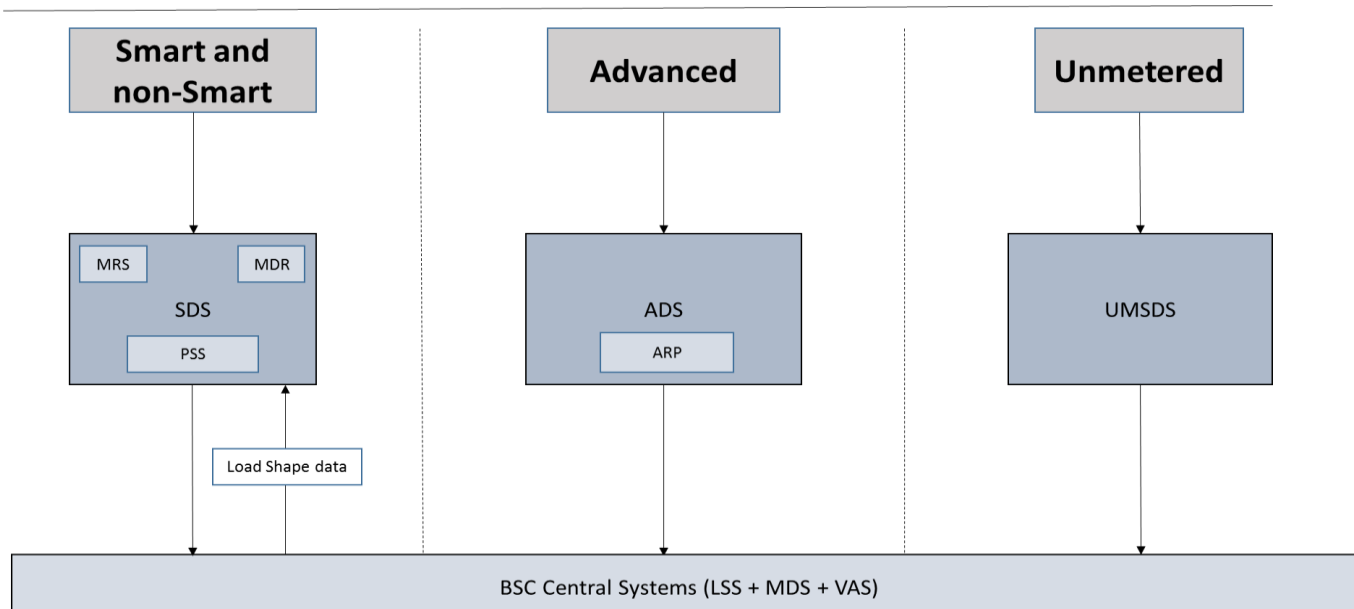
CONSULTATION ON TOM TRANSITION APPROACH

4. Parallel running with new TOM services and existing agent functions



Once the enhanced BSC Central Systems are ready, the first metering systems can be settled using disaggregated data provided by the new TOM services. This cutover can happen gradually for each provider of data services, where those Metering Systems for which disaggregated data is being provided are no longer included in the Supplier Purchase Matrix files produced by existing NHH or HH Data Aggregators.

5. Cutover to full TOM with new settlement timetable



The transition concludes once all Metering Systems are settled under the new TOM and no NHH arrangements are required. Cutover will occur on a Settlement Date basis such that all metering systems will use the TOM processes on and after that date. The runoff for earlier Settlement Dates will use a mix of old and new arrangements, and this may be accelerated by reducing reconciliation timescales if the assessed settlement risk is low. The Smart and non-Smart segment is likely to require the longest to run off due to the highest proportion of NHH settled MPANs.

CONSULTATION ON TOM TRANSITION APPROACH

HIGH LEVEL SUMMARY OF TRANSITION APPROACH BY MARKET SEGMENT

The DWG have set out a number of transition phases for each Market Segment. The phases are specific to the Market Segments or to MPANS within each segment and are unlikely to align across Market Segments:

Smart and Non-smart Market Segment

The Smart and Non-smart Market segment represents the biggest change from the current NHH arrangements. These are reflected in the qualification requirements for the new Smart Data Services (SDS).

The DWG considered that a new or adapted DCC role is required for the Meter Data Retrieval Service (MDR) to retrieve data from Smart Meters via the DCC, except where the service is being provided by the BRP. This segment also requires the new Load Shaping Service (LSS) within the BSC Central Settlement Services to be up and running to allow the Smart Processing Service (PSS) to convert register reads from 'opted out' Smart and Non-Smart meters into SP level data.

Once a sufficient number of new SDS providers have qualified to enter the market, migration of NHH and elective HH MPANS can commence between existing agents and new TOM service providers.

The Smart and Non-smart Segment at a glance²:

- Circa 9m NHH MPANS are already fitted with a smart Meter;
- Circa 24m NHH MPANS still have a non-smart Meter installed; and
- Circa 64k MPANS with a Smart Meter are being settled using the Elective HH process.

Smart and Non-smart: Phase 1 – Governance and Code changes, Qualification and Deployment

- Ofgem will direct changes to governance and code documentation using their Smart Meters Act powers;
- MSS qualifies and agrees contract with BRP (Supplier);
- SDS qualifies under the BSC; and
- MDR function (within SDS) accedes to SEC, becomes a DCC User, qualifies under the BSC and agrees contract with BRP.

Smart and Non-smart: Phase 2 – Interfacing

- BRP (Supplier) starts interfacing with the MSS and SDS;
- SDS interfaces with the MSS;
- MSS and SDS interfaces with Registration Services;
- SDS interfaces with BSC Central Systems to access Industry Standing Data and load shaping data; and
- SDS starts obtaining meter reads via the MDR and MRS.

Smart and Non-smart: Phase 3 – Adoption/Migration

- All BRPs (Suppliers) are required to be operating with SDS and MSS;
- MSS is appointed to all new metering systems;
- SDS is appointed to all new metering systems;
- BRP (Supplier) agrees migration schedule with SDS and MSS; and

² Metering System numbers are sourced from a number of BSC and Non-BSC sources and may have changed during development of this consultation.

CONSULTATION ON TOM TRANSITION APPROACH

- A schedule of migration activity will be agreed between BRP, SDS and MSS and monitored by ELEXON.

DWG discussion on Smart and non-Smart market segment

- Noted that creation of a new user under the SEC role for the MDR is a key dependency in this segment's transition approach;
- Discussed the concept of 'deployment', where the SDS interfaces become operational, after which there would be a period of parallel running before 'go live';
- Identified that there would need a number of SDS providers to be in place before go live, in order to initiate the Load Shaping Service;
- Agreed that the first MPANs to be migrated should be those for whom SP level data can be obtained, with those on register reads to follow; and

Discussed the risk that this approach could cause a drop in NHH performance, and agreed that any performance targets during the transition period should not penalise or be a disincentive to moving MPANs early (see also Item 5 below).

Question 5	Do you agree with the phased approach proposed for the Smart and Non-smart Market Segment?
Please identify any issues and dependencies with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

The Advanced Market Segment

The transition approach for the Advanced Market Segment will require the identification and gradual adoption of all HH capable Advanced Meters with remote communications currently settled in the NHH market. These can then be moved to settle alongside existing HH Advanced Meters where data is collected by the HHDC.

Once the new BSC Central Settlement Services are able to accept disaggregated MPAN and SP level data, the HHDC role can transition into an Advanced Data Service under the TOM and the HHDA role can be retired following a period of parallel running.

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

The Advanced Market Segment at a glance:

- Circa 370k MPANs (350k import and 20k export) already HH settled;
- Circa 900k MPANs currently settling NHH have a meter with Advanced capability already connected; and
- CT metering systems are the largest consuming metered sites remaining NHH settled, and therefore will provide the greatest settlement improvement benefit by moving them to HH. The DWG consider these MPANs are a good candidate for early migration.

Advanced: Phase 1 – Governance, system and process changes

- Ofgem will direct changes to governance and code documentation using their Smart Meters Act powers; and
- Parties will qualify as ADS and MSA for all Advanced Meters.

CONSULTATION ON TOM TRANSITION APPROACH

Advanced: Phase 2 – Adoption of HH MPANs and migration of NHH MPANs

- A schedule of transition activity will be agreed between BRP, ARP and MSA and monitored by ELEXON.

Advanced: Phase 3 – Interfacing with revised registration system

- ARP and MSA can interface with the revised Registration Service.

Advanced: Phase 4 – Transfer of data into to BSC Central System

- ARP sends disaggregated data directly to BSC Central systems instead of via an aggregator; and
- The HH data for 'migrated' MPANs can be notified to BRP directly by the ARP.

DWG Discussion on the Advanced Market Segment

Noted the need to identify Advanced-capable Meters that are currently in the Non Half Hourly (NHH) market;

- Considered that the transition approach for this segment has a dependency on the cutover between the current and TOM data aggregation arrangements;
- Proposed the approach of 'adopting' all existing Advanced Half Hourly (HH) Meters and then 'migrating' all existing Advanced NHH Meters;
- Discussed the risk of customer MPANs moving back to NHH but agreed that making HH Settlement (HHS) a 'one-way gate' might be a barrier to switching;
- Agreed that, while the transition approach is based on adopting/migrating all existing Advanced Meters, the expectation is that in the target end state only current transformer (CT)-metered sites will have an Advanced Meter on an enduring basis; and
- Agreed that over time if an Advanced Meter on a whole current (WC) site is replaced with a smart Meter, then this moves to the Smart and non-Smart segment.

Question 6	Do you agree with the phased approach proposed for the Advanced Market Segment?
Please identify any issues and dependencies with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

The Unmetered Supplies Market Segment

The Unmetered Supplies segment will occur progressively, allowing the evolution of the Meter Administrator (MA) role into the Unmetered Supplies Data Service (UMSDS) under the TOM. This will be enabled through governance changes, and will allow all currently NHH settled UMS energy to be settled HH via the MA, HHDC and HHDA.

Once the new BSC Central Settlement Services are able to accept disaggregated MPAN and SP level data, the UMSDS will provide this directly into Settlement and the HHDC and HHDA roles can be withdrawn following a period of parallel running.

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

The Unmetered Supplies Segment at a glance:

- 80% of unmetered volume, ~350 MPANs already HH;
- Remaining 20% of volume, ~30k MPANs;
- NHH profiling requires, on average 2 MPANs per inventory, so total MPANs will halve; and

CONSULTATION ON TOM TRANSITION APPROACH

- Most existing NHH are small energy volume with some exceptions.

Unmetered: Phase 1 – Governance, system and process changes

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

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

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

Phase 3 – Interfacing with revised registration system

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

Phase 4 – Transfer of data into BSC Central System

- Once interface with BSC Central system is available to the UMSDS, the data shall be redirected directly from the UMSDS to BSC Central systems;
- Changes will be required by the UMSDS to support the new architecture and to add appropriate identifiers to the HH output data made available to the BSC Central Systems); and
- The HH data for 'migrated' MPANs shall be notified to BRP directly by the UMSDS.

DWG discussion on the Unmetered Supplies Market Segment

- Noted that the implementation of Distribution Connection and Use of System Agreement (DCUSA) Change Proposal (CP) 268 in April 2021 will remove the UMS Distribution Use of System (DUoS) tariff and move customer MPANs to HH tariffs – removing the need for the tariff milestones shown in the transition plan;
- Noted that, as with the Advanced segment, agents will be operating a mix of old and new processes at the same time during the transition period (and potentially for the same Balancing Responsible Party); and
- Identified that, while this adds complexity, a period of parallel running is inevitable.

CONSULTATION ON TOM TRANSITION APPROACH

Question 7	Do you agree with the phased approach proposed for the Unmetered Market Segment?
Please identify any issues and dependencies with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

TRANSITIONAL DIAGRAMS

Transitional diagrams for each of the Market Segments and for BSC Central Systems can be found in [Appendix A](#). The diagrams use the following colour coding to identify the type of milestone:

Transition General
System Developments
Governance and Codes Changes
Commercial
Interfaces
Migration

CONSULTATION ON TOM TRANSITION APPROACH

CRITICAL PATH FOR TRANSITION

A high level diagram of critical path for transition identified by the DWG is set out in [Appendix B](#). The high level description of the critical path is as follows:

The critical path for transition across all Market Segments is going to be determined by the readiness of the BSC Central Settlement Services and Registration Services to support the TOM. Once those are in place, the window for transition can start, and it is then a question of how long that window needs to be to complete transition.

Once the changes to BSC Central Settlement Services and the Registration Services have been deployed, the qualified Data Services and Metering Services will interface with the revised systems. Once interface testing has been completed the qualified SDS services will collect and feed SP level data into the Central Systems. This data will be from existing smart Meters where the data can be accessed but will not be used for imbalance Settlement. Once sufficient data has been received by BSC Central Systems to initiate the Load Shaping Service (LSS) the load shapes will be provided back to the SDS. It is likely that a few weeks of load shape data will be required for SDS testing before the BSC Central Systems can 'Go-live' under the new TOM. BSC central systems will need to parallel run the existing HH and NHH arrangements during the period when NHH Metering systems are migrated to the new arrangements.

Once BSC Central System changes have gone live the qualified Advanced Data Services and the Unmetered Supplies Data Services can redirect their SP Level data directly into BSC Central systems.

Removal of old HH Agent and NHH data and processes

Once all MPANs have been migrated to the TOM then:

- Potential rationalisation of Measurement Classes C, E, F and G to align with the TOM segments;
- The NHH Settlement Runs will be run-off and the NHH arrangements will be discontinued;
- The Half Hourly Data Aggregator role will also be discontinued;
- End dating of LLFC ids relating to DUoS tariffs in MDD;
- End dating of Measurement Classes A (NHH Metered) and B (NHH Unmetered Supplies) in MDD; and
- Removal of interaction with the NHHDC/NHHDA and HHDC/DA roles from UMS segment.

Question 8	Do you agree that the critical path captures all the key activities and dependencies?
Please identify any omissions, issues and dependencies with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

CONSULTATION ON TOM TRANSITION APPROACH

TRANSITION TO THE NEW SETTLEMENT TIMETABLE

DWG proposals on the timing for introducing the revised Settlement Timetable

The DWG have discussed the timing of the transition to the new Settlement Timetable. The DWG identified that one consideration for the timing would be the penetration of smart Meters.

The DWG agreed that transition to the reduced Settlement timetable would ideally occur after changes to the BSC Central Settlement Services have gone live. They agreed that there should be trigger points monitored to advise the optimum time to move to the new Settlement Timetable. The DWG identified the penetration of smart Meters as one trigger point for transition to the new Settlement Timetable. Another trigger point would be when sufficient numbers of currently NHH MPANs had been migrated to TOM Services. The DWG noted the different trigger points could be set for each Settlement Run.

DWG Discussion on the Settlement Timetable

The DWG considered the TOM consultation responses that seemed to favour 'back loading' the cutover to the new timetable (i.e. making this one of the last activities for transition):

Arguments for:

- Allows maximum time for the MDS, LSS and TOM data services to be ready;
- Ensures the new Settlement Calendar will only impact BSC Central Systems;
- Allows the PAF to monitor performance while new serials are developed;
- Allows for a stepped reduction of key reconciliation runs (e.g. SF, RF and DF); and
- Data Aggregators don't have to manage multiple submission calendars.

Arguments against:

- Extends NHH runoff later in absolute time (although this could be sped up);
- Requires HH Aggregators to be in place for longer before MDS takes over; and
- Delays realisation of benefits related to faster reconciliation.

The DWG:

- Agreed that the simplest approach to implementing the revised Settlement timetable is to wait until all MPANs are being settled under the TOM;
- Agreed that the TOM needs to be in place (i.e. all NHH MPANs moved to the TOM) before reducing the timing of the Initial Settlement (SF) Run, as this is reliant on the Load Shaping Service;
- Discussed the potential to reduce the timings of different Settlement Runs at different times – for example, reducing the RF Run timing before the SF Run timing;
- Discussed the potential to 'cut off' different segments at the current Second Reconciliation (R2) Run at different times, with Settlement no longer processing data for the given segment after R2;
- Considered that the above approach could deliver forecasting benefits for Parties;
- Agreed that the DF Run timing cannot be shortened until all Meter data is being received by the BSC Central Settlement Services, due to the impact on Data Aggregators;
- Discussed an approach of gradually reducing the gaps between Settlement Runs and thought this was not appropriate;
- Discussed the potential to reduce the Settlement timetable gradually, though did not identify any benefits of changing it more than once;

CONSULTATION ON TOM TRANSITION APPROACH

- After discussing all of the complexities above, that transition to the reduced Settlement timetable would ideally occur after changes to the BSC Central Settlement Services have gone live; and
- Agreed that the decision on how and when to reduce the Settlement timetable could be taken nearer the time, based on market monitoring against trigger points.

Question 9	Do you agree with the DWG's proposed approach for transitioning to the revised Settlement Timetable?
Please identify any issues with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

DWG proposal for the timing of the Post Final Settlement Run (PFSR)

The PAB or Trading Disputes Committee (TDC) did not make a firm proposal on the timing of the PFSR otherwise known as the Dispute Run. DWG have considered the options and made the following proposals for use in this consultation.

The DWG had previously discussed the difficulties in predicting performance under a reduced Settlement timetable, and thus deciding on the appropriate DF Run timing.

The DWG acknowledged that the Design Principles set by Ofgem say that:

*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.*

Hence, the DWG considered that the dispute run should be less than the current 28 months.

The DWG discussed the tension between incentivising fast correction of metering issues and potentially material errors in the Central Volume Allocation (CVA) arrangements. The latter had the potential to impact all Suppliers through GSP Group Correction. Implementing these changes are not dependent on implementing the TOM and could be implemented by TDC irrespective of the progression of the MHHS. The following points were identified as key considerations by the DWG.

Shortening the RF run will mean that the window for identifying errors will be less than a third of the time as today. That means that the majority of errors currently identified between 4 and 14 months after the Settlement Date will either have to be recovered via a Trading Dispute or left unresolved. Therefore, the DWG recommends that any shortening of the DF Run timings is approached gradually or implemented late enough during transition to have time to carry out analysis on the types of errors occurring under the new TOM processes.

Another factor in today's Trading Disputes that tends to encourage longer impacting disputes is the role of the NHH market. NHH disputes usually involve correcting Annualised Advances (AAs), which are derived from the differences between two meter readings up to a year apart. Where a Trading Dispute is raised against a NHH MPAN, it is fairly common for the length of the affected Settlement Period to increase the assessed materiality, even if on a majority of Settlement Dates there has been no adverse Settlement impact. If upheld, that then requires DF Runs being performed for a range of dates, where the daily corrected volume is comparatively small.

CONSULTATION ON TOM TRANSITION APPROACH

The MHHS TOM allows for more flexible materiality criteria. BSC Central Services will allow data to be resubmitted for individual Settlement Dates, giving control over which dates are subject to a Dispute Run. A materiality threshold could be applied **to each Settlement Date** and **consider the impact on all parties** rather than just the raising party. This would prioritise high severity errors on any given date (such as when the imbalance price is high) rather than long running small errors that are largely accounted for by GSP Group Correction.

The DWG analysed the main causes of recent Disputes, their materiality and time to detect issues:

Root causes

Number of Disputes	Root Cause	Average Materiality	Approximate Total Materiality
1	Aggregation Rule not updated with new generation plant unit resulting in export data not accounted for in Settlement.	£7K	£7K
8	Current Transformer (CT) ratio mismatch between physical CT and CT ratio programmed in Meter resulting in Meter over or under recording.	£14k	£115K
3	Data Aggregation issue – file not submitted or files submitted with erroneous data resulting in incorrect volumes in Settlement Runs.	£18K	£55K
3	Data estimation issue – Data Collectors estimating zeros where there was consumption on site resulting in incorrect volumes in Settlement Runs.	£70K	£210K
1	Disconnection Issue – Metering Systems registered as disconnected in error resulting in missing energy volumes in Settlement.	£1K	£1K
2	Energisation system issue – incorrect Energisation status recorded for Metering System resulting in missing energy volumes in Settlement.	£23.5K	£47K
4	Faulty Meter – fault with a meter resulting in consumption being over or under recorded.	£6,750K	£2.7M
1	Incorrect Meter Technical Details (MTDs)	£42K	£42K
30	Erroneously Large Estimates of Annual Consumptions (EACs) or Annualised Advances (AAs) uncorrected before Final Reconciliation (RF) run.	£8K	£228K
5	National Grid Data Issue – Incorrect Non-Balancing Mechanism (BM) Short Term Operating Reserve (STOR) Balancing Services Adjustment Costs were included in some Balancing Services Adjustment Data (BSAD)	£50K	£250K

CONSULTATION ON TOM TRANSITION APPROACH

Number of Disputes	Root Cause	Average Materiality	Approximate Total Materiality
2	Phase Failure caused Meter to under-record consumption on site.	£192	£384
1	Unregistered Metering System resulting in missing energy Volumes in Settlement.	£87K	£87K
2	Voltage Transformer (VT) mismatch between physical VT and VT ratio programmed in the Meter resulting in under or over recording of energy volumes.	£1.75K	£3.5K
2	Data Collection system issues upon system upgrade and MTDs being transposed, resulting in erroneously high consumption being recorded in Settlement.	£2.25M	£4.5M
Total			£8M

[Responses to the TOM consultation](#) were uneasy about having the Dispute window cut-off at 12 months due to the issues identified and the unknown impact of the shorter RF window. The DWG considered it sensible from a scheduling perspective if the dispute window was set to a multiple of the Reconciliation Final (RF) window which is proposed at 4 months. This left the following options for the Dispute timings from the Settlement date:

- 16 Months;
- 20 Months; and
- 24 Months

Based on the analysis the DWG are proposing **20 months** from the Settlement Date as the best balance between the desire to shorten the timetable and the impact of material disputes. The DWG also agreed that keeping 20 months of Settlement data in case of disputes would not be an issue under the TOM.

The DWG noted that one of the issues with the current DF Run process is that participants can submit revised reads into that run even if these are not part of an authorised Trading Dispute. The DWG considered that this diminishes the value of the RF Run. It agreed that the TOM presents an opportunity to prevent this occurring, since all Meter data will be stored centrally. It agreed that the TOM should include a requirement that the BSC Central Settlement Services should not process any data received after RF unless it forms part of an authorised Trading Dispute. ELEXON noted that this could be similar to the process for profiling data, which is time stamped. This would mean that participants could still submit data after RF (potentially useful if subsequently needed), but it would not be processed in Settlement.

DWG proposal for the Disputes Materiality Threshold

The DWG recommends that the qualifying materiality for Trading Disputes should be set significantly higher than today. The PAB had suggested that the Dispute window could have 'ratcheted' Materiality as time progresses for raising disputes. The DWG agreed and proposed that an approach could be to incrementally increase the materiality every 4 Months following the RF window:

CONSULTATION ON TOM TRANSITION APPROACH

Months since Settlement date	Materiality Threshold (example figures only)
4 - 8	£20K
8 - 12	£100K
12 - 16	£500K
16 – 20	£1M

The DWG recommended that PAB or TDC could set the materiality and flex as appropriate based on the experience under the new TOM. The appropriate 'Trading Dispute Deadlines', allowing appropriate time for dispute analysis, for each materiality band above would need to be considered for implementation. Currently, the SVA deadline is set at 70 working days after RF.

In developing the new DF Run timing, the DWG recommends that this is paired with more stringent materiality criteria which increase with the age of the error. This means that lower-value errors will only qualify for correction if detected quickly after RF. The later part of the Trading Disputes window will be reserved for extreme, systemic errors of the type where significant misallocation of energy has occurred.

The DWG agreed that Extra Settlement Determinations (ESDs) could be carried out after the 20 Months but these would be financial calculations rather than a re-run of the Settlement process.

Question 10	Do you agree that the DWG's proposed Dispute Timetable and approach to materiality strikes an appropriate balance between shortening timescales and correcting material Settlement errors?
Please identify any issues or risks with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 11	Do you agree that the DWG's proposed transition approach aligns with the nine High Level Transition Principles set out for the transition approach?
Please identify any areas of the approach that do not align with the principles.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 12	Do you have any other comments?
Answer: Yes/No (delete as appropriate)	
<i>Please provide your comments here</i>	

CONSULTATION ON TOM TRANSITION APPROACH

SUMMARY OF CONSULTATION QUESTIONS

Question 1	Do you agree with the DWG's proposed mapping for Metering System types to Market Segments?
Please list any elements that should amended.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 2	Do you believe it is feasible to use the elective HHS process to migrate significant numbers of MPANs to HHS as an interim step in the transition process?
Please identify what changes you believe would need to be implemented to use Elective HH as an interim step and/or any issues you have noted with the current elective process which are a barrier to using it as an interim step.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 3	Do you agree with the PAF Assumptions and Principles and that all the potential impacts on the PAF have been identified?
Please identify any omissions.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 4	Do you agree with the phased approaches proposed for BSC and Registration Systems?
Please identify any issues and dependencies with the proposed approaches.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

CONSULTATION ON TOM TRANSITION APPROACH

Question 5	Do you agree with the phased approach proposed for the Smart and Non-smart Market Segment?
Please identify any issues and dependencies with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 6	Do you agree with the phased approach proposed for the Advanced Market Segment?
Please identify any issues and dependencies with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 7	Do you agree with the phased approach proposed for the Unmetered Market Segment?
Please identify any issues and dependencies with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 8	Do you agree that the critical path captures all the key activities and dependencies?
Please identify any omissions, issues and dependencies with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 9	Do you agree with the DWG's proposed approach for transitioning to the revised Settlement Timetable?
Please identify any issues with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

CONSULTATION ON TOM TRANSITION APPROACH

Question 10	Do you agree that the DWG's proposed Dispute Timetable and approach to materiality strikes an appropriate balance between shortening timescales and correcting material Settlement errors?
Please identify any issues or risks with the proposed approach.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 11	Do you agree that the DWG's proposed transition approach aligns with the nine High Level Transition Principles set out for the transition approach?
Please identify any areas of the approach that do not align with the principles.	
Answer: Yes/No (delete as appropriate)	
<i>Please provide your reasons here</i>	

Question 12	Do you have any other comments?
Answer: Yes/No (delete as appropriate)	
<i>Please provide your comments here</i>	

CONSULTATION ON TOM TRANSITION APPROACH

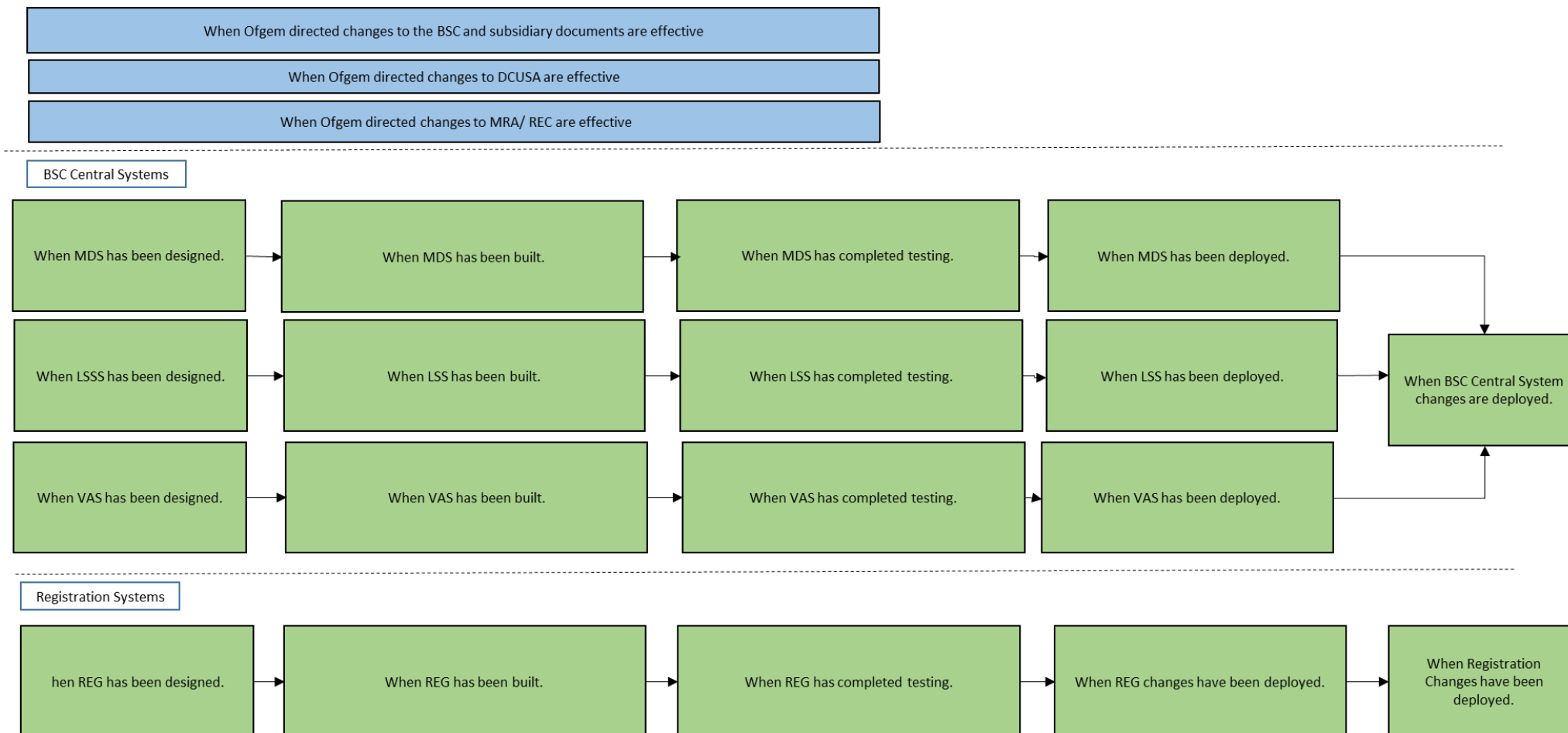
APPENDIX A - TRANSITIONAL DIAGRAMS

The diagrams use the following colour coding to identify the type of milestone:

Transition General
System Developments
Governance and Codes Changes
Commercial
Interfaces
Migration

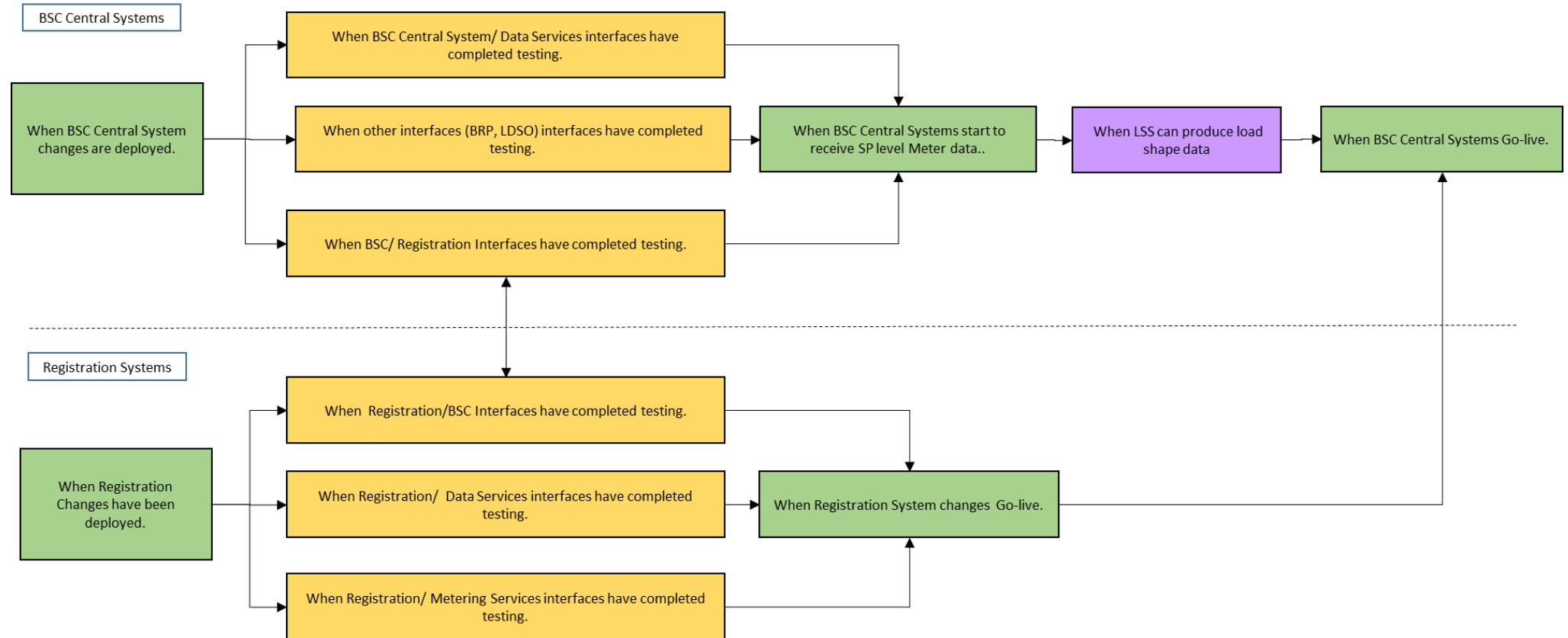
CONSULTATION ON TOM TRANSITION APPROACH

BSC Central Systems and Registration changes: Phase 1 Governance and Code Changes



CONSULTATION ON TOM TRANSITION APPROACH

BSC Central Systems and Registration changes - Interfacing and Go-Live



CONSULTATION ON TOM TRANSITION APPROACH

Smart and Non-Smart Segment Transition approach

Phase 1 Code and Governance Changes

When Ofgem has directed changes to the BSC and subsidiary documents

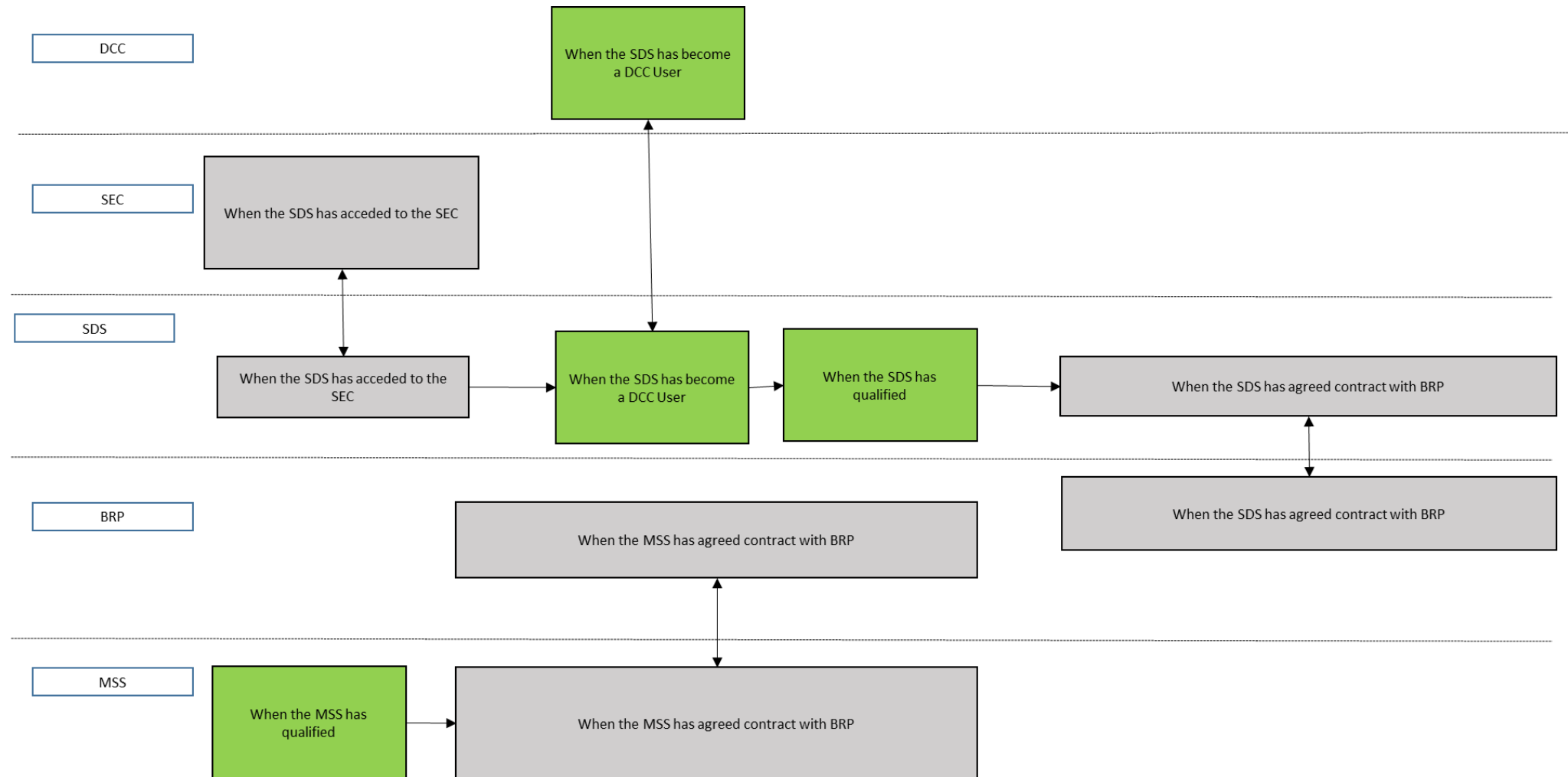
When Ofgem has directed changes to MRA

When a new/amended DCC User Role has been created within the SEC

When it is mandatory that a metering system can no longer revert to the NHH arrangements (for example on CoS)

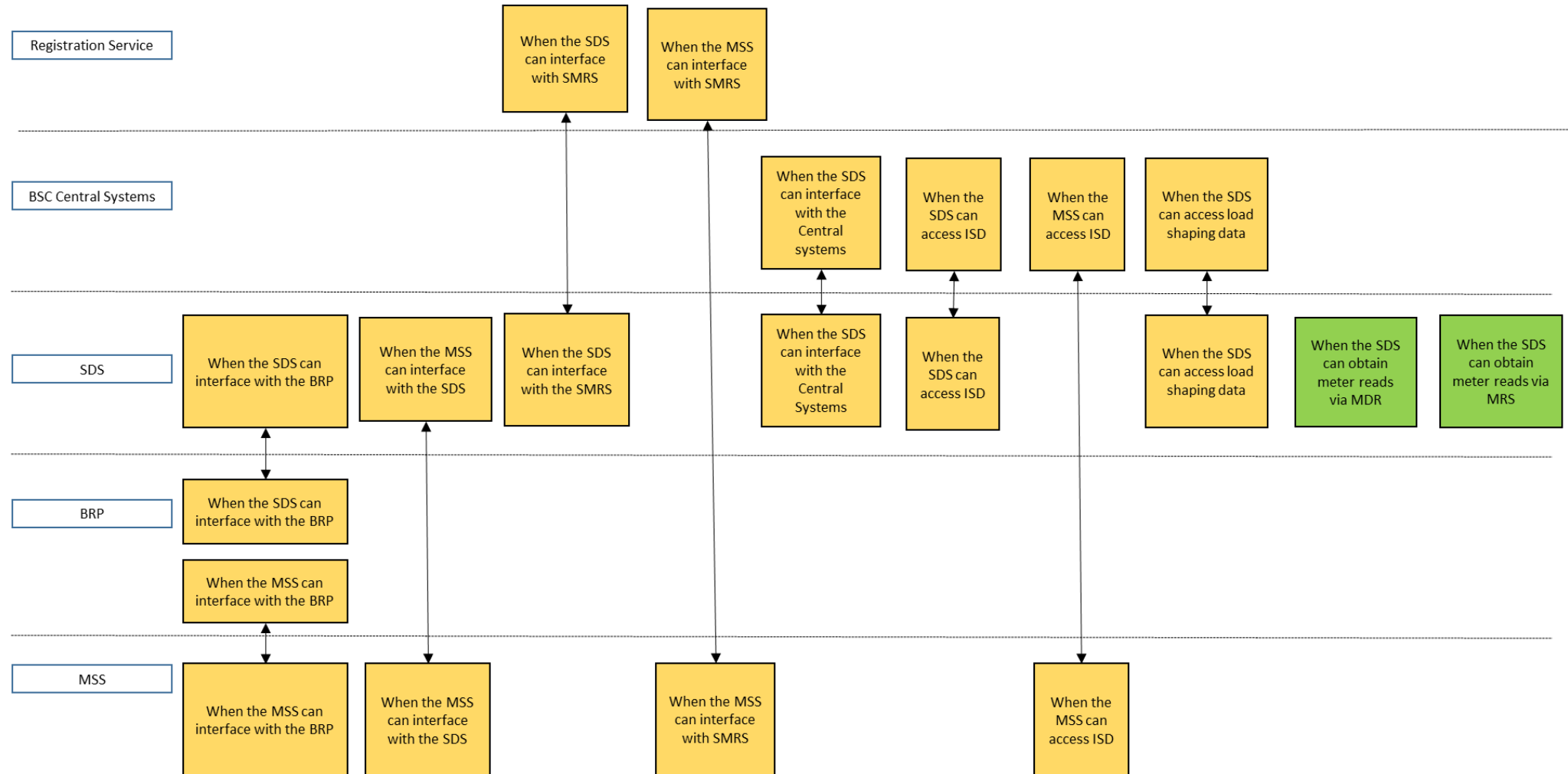
CONSULTATION ON TOM TRANSITION APPROACH

Smart and Non-smart Phase 1 – SDS (DCC, SEC), BRPO and MSS



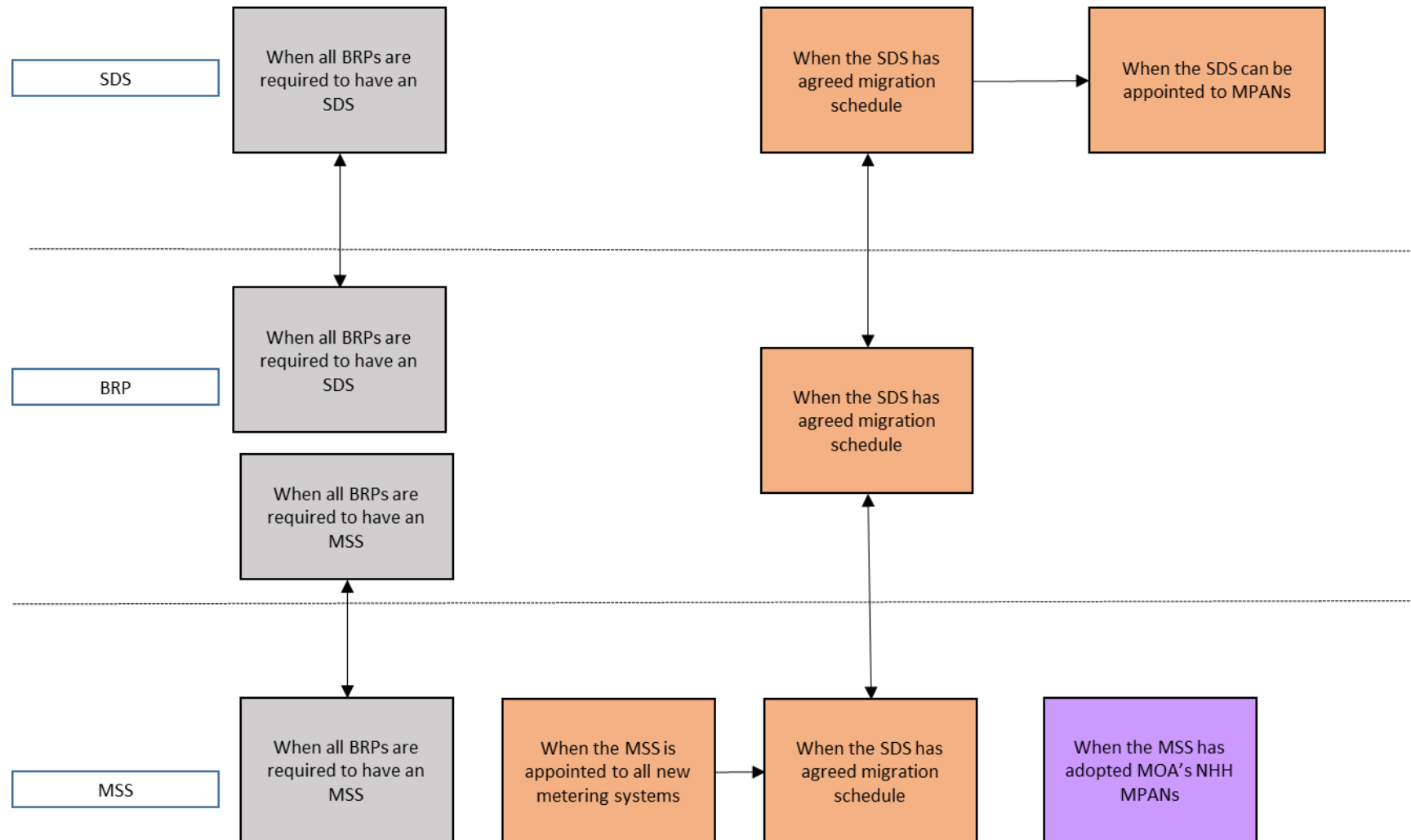
CONSULTATION ON TOM TRANSITION APPROACH

Smart and Non-smart Phase 2 – Registration, BSC Central Systems, SDS, BRP and MSS



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Smart and Non-smart Phase 3 – SDS, BRP and MSS



CONSULTATION ON TOM TRANSITION APPROACH

Advanced Meter Segment Transition approach

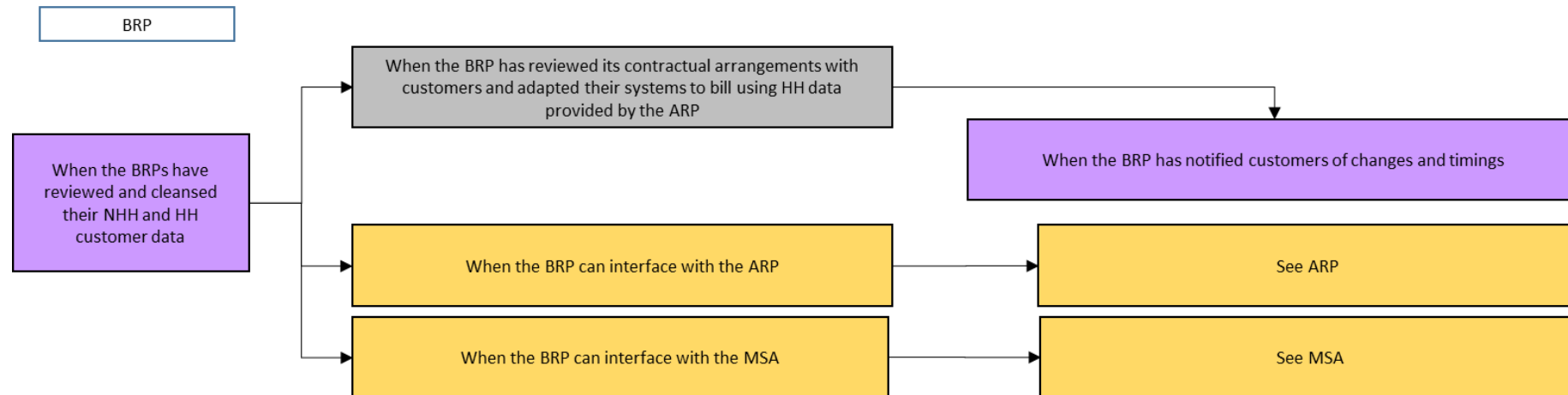
Phase 1 – Governance (Code and Licence) Changes and BRP

When Ofgem has directed that all remaining and newly registered CT meters should be settled on a HH basis by date [x]

When Ofgem has directed changes to the BSC and subsidiary documents

When Ofgem has directed changes to the MRA/REC

When Ofgem has directed changes to other industry codes as necessary



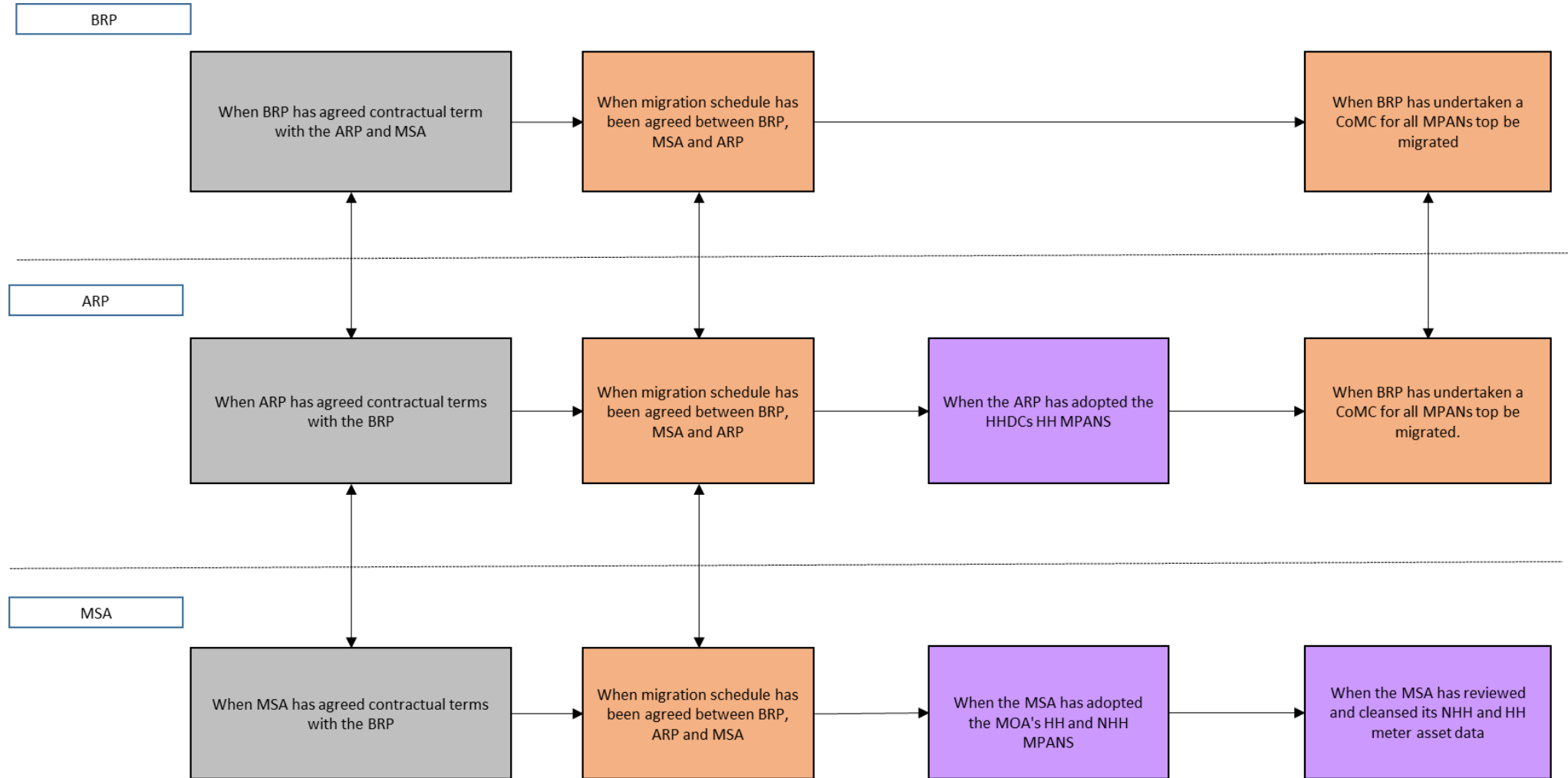
CONSULTATION ON TOM TRANSITION APPROACH

Phase 1 – MSA and ARP



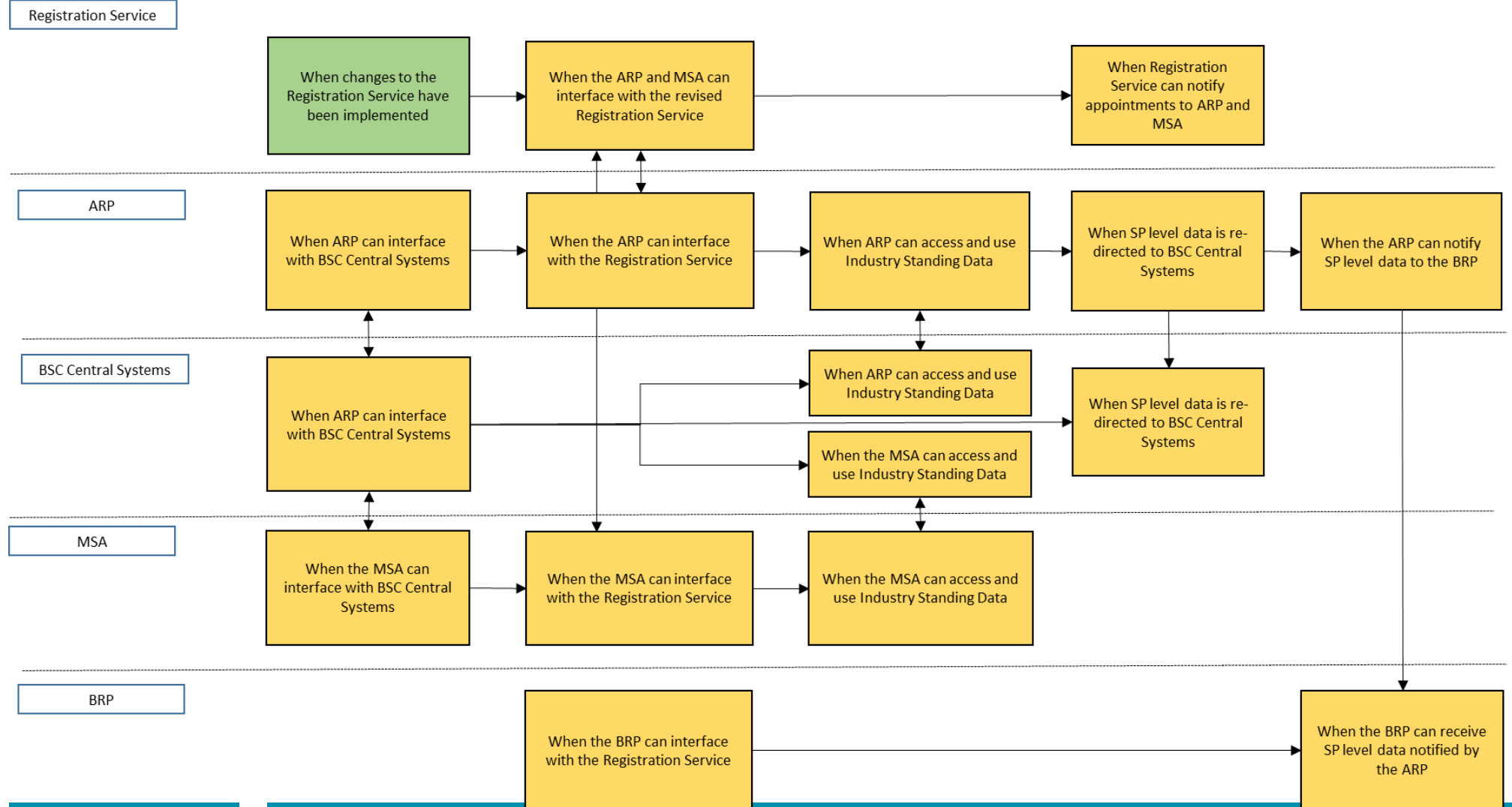
CONSULTATION ON TOM TRANSITION APPROACH

Phase 2 – BRP, ARP, MSA, LDSO



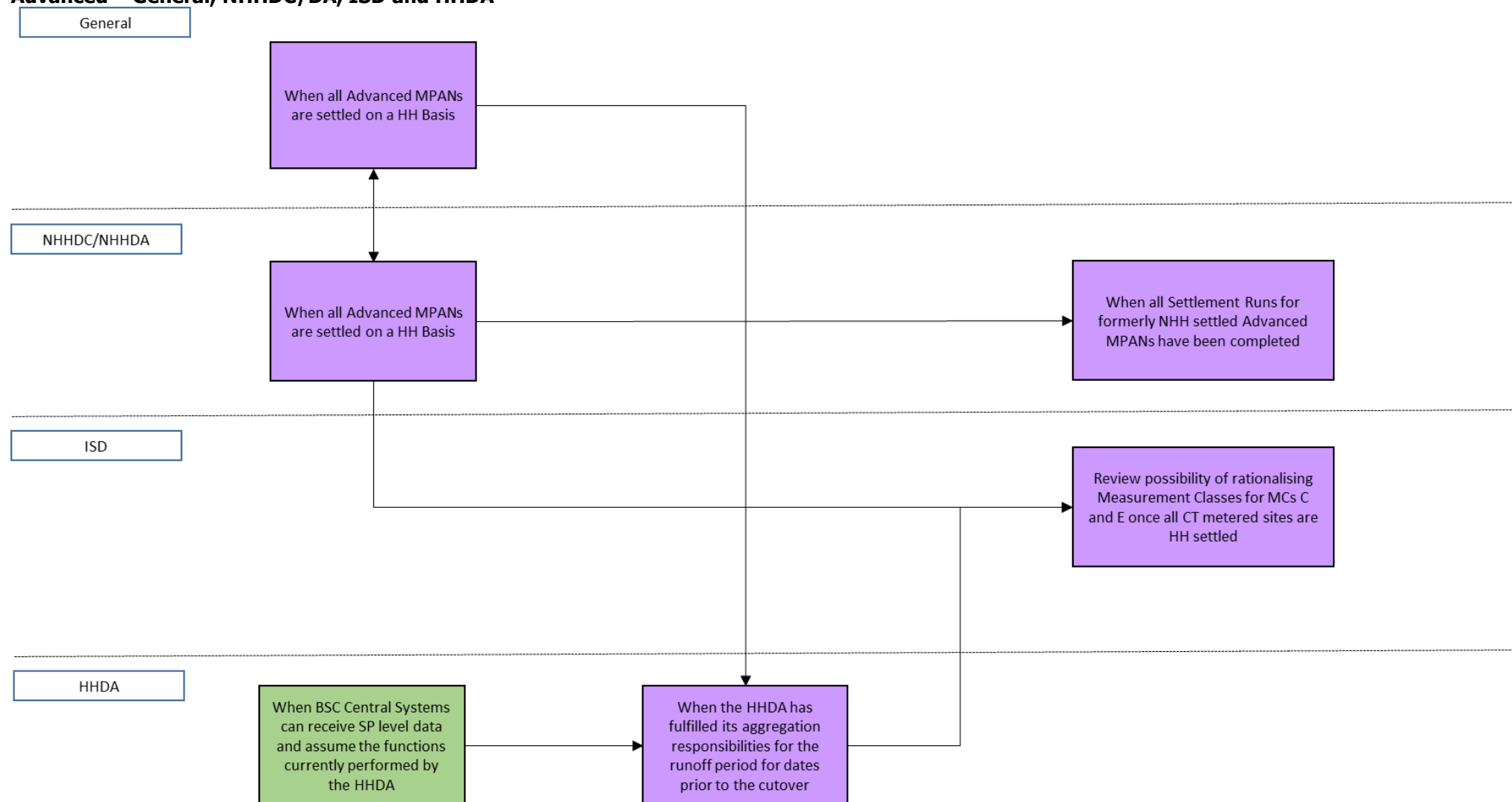
CONSULTATION ON TOM TRANSITION APPROACH

Phase 3 and 4 – Registration, ARP, BSC Central Systems, MSA and BRP



CONSULTATION ON TOM TRANSITION APPROACH

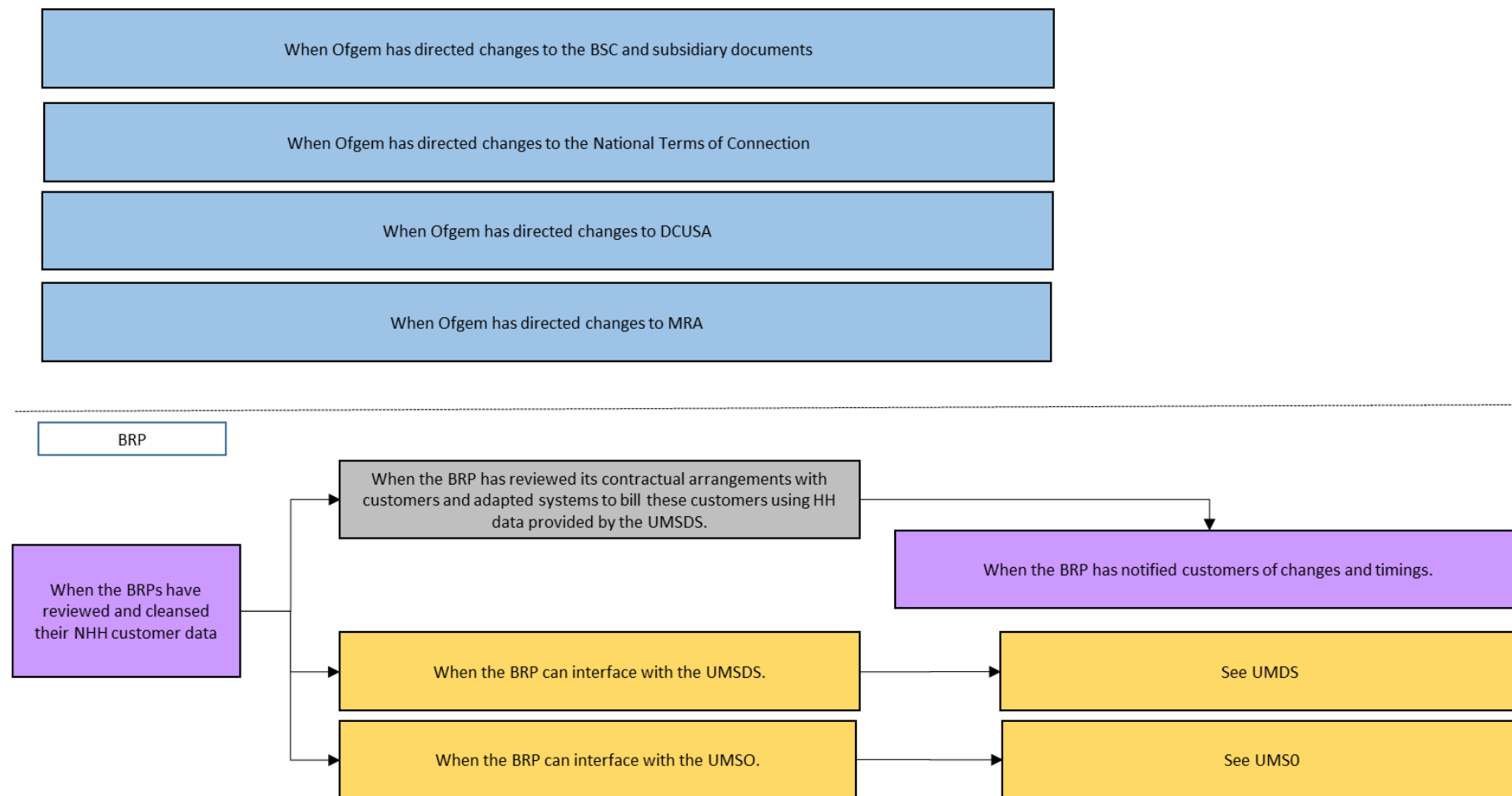
Advanced – General, NHHDC/DA, ISD and HHDA



CONSULTATION ON TOM TRANSITION APPROACH

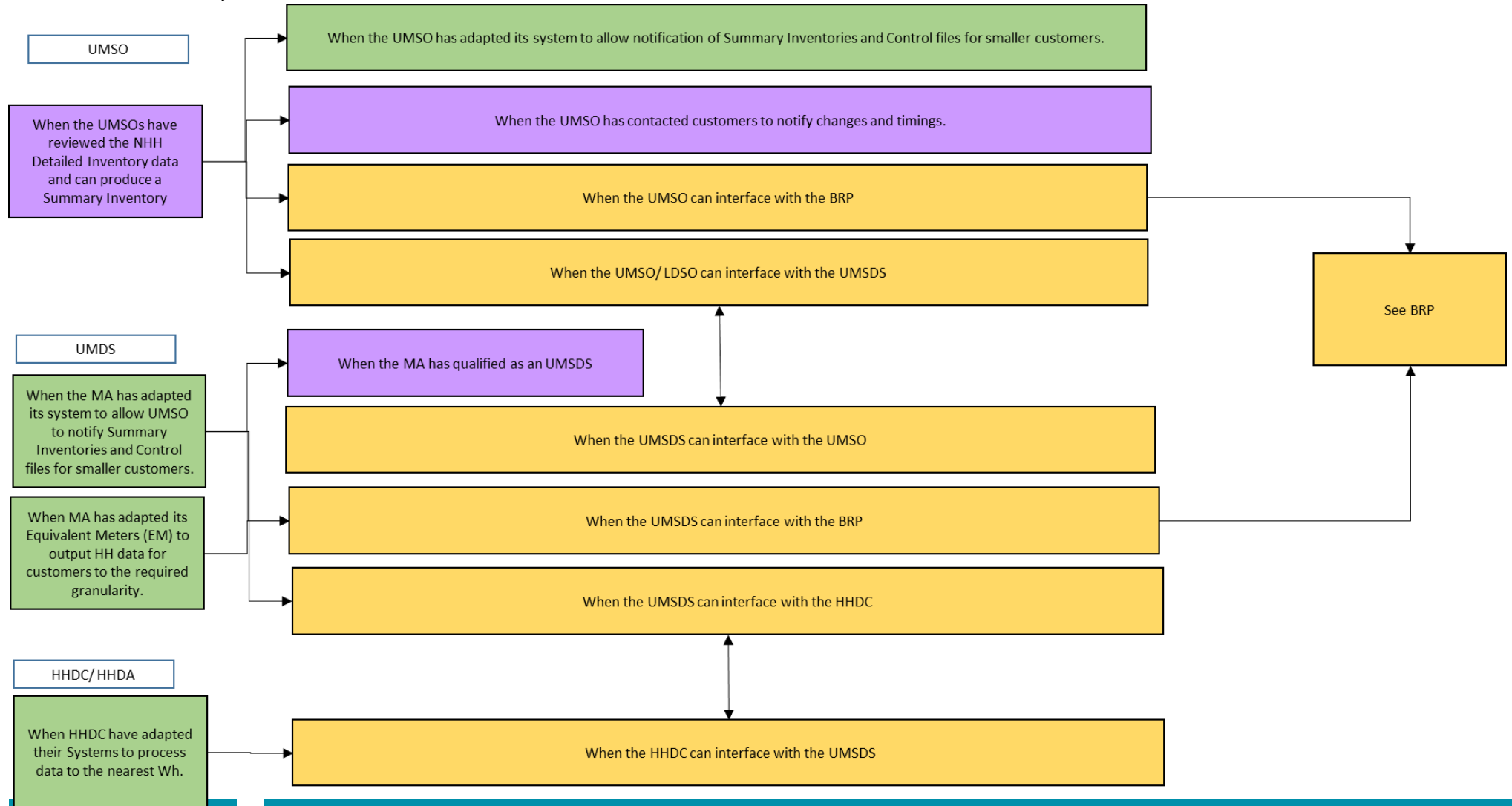
Unmetered Supplies Segment Transition approach

Phase 1 – Governance and Code Changes and BRP



CONSULTATION ON TOM TRANSITION APPROACH

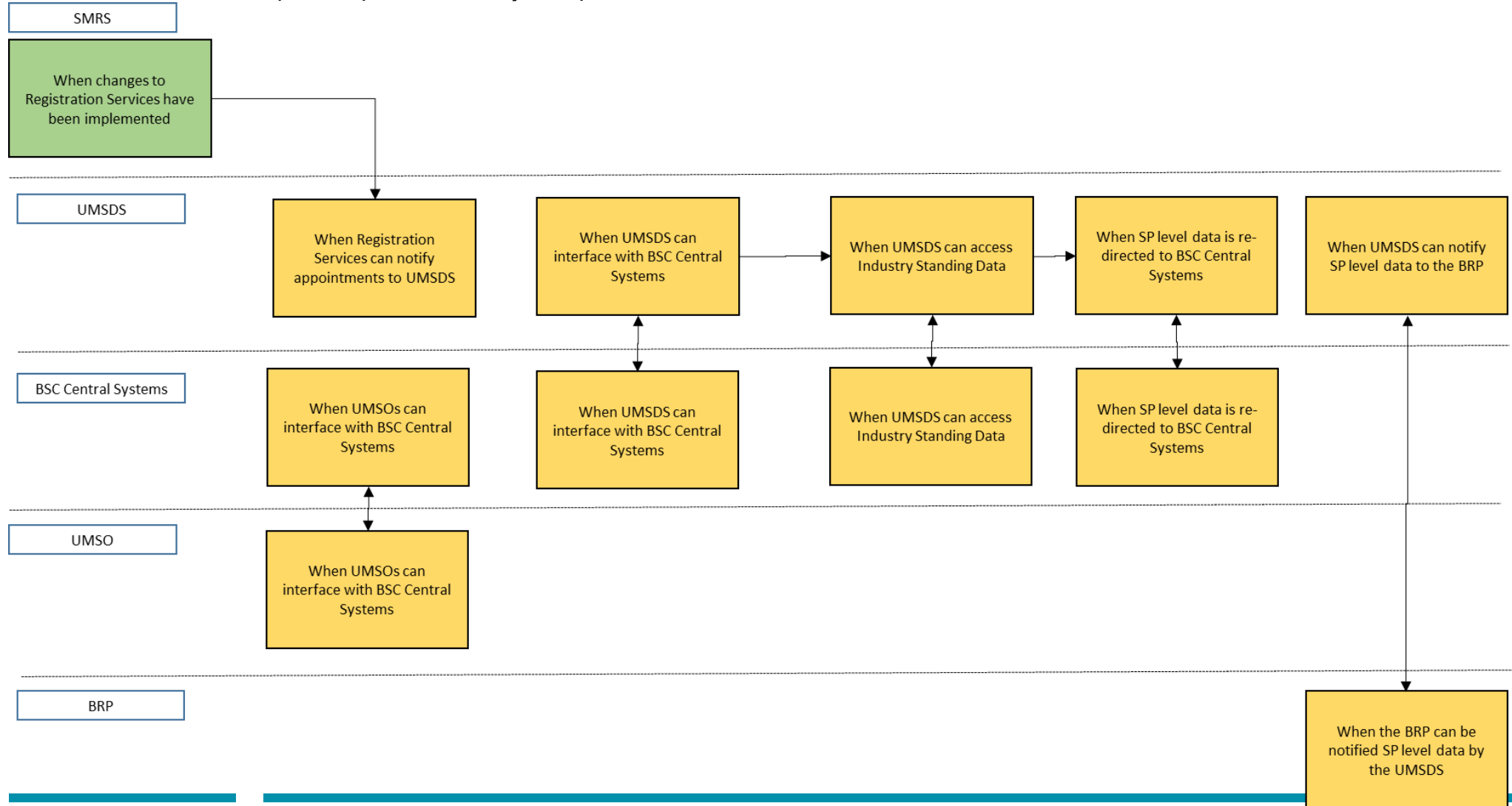
UMS Phase 1 – UMSO, UMSDS and HHDC



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graph TD; subgraph BRP; BRP1[When migration schedule has been agreed between BRP, UMSO and UMSDS]; BRP2[When BRP has undertaken a CoMCs for all MPANs to be migrated]; end; subgraph UMSDS; UMSDS1[When the UMSDS has adopted the MA HH MPANS]; UMSDS2[When UMSDS has agreed contractual terms with the BRP]; end; subgraph UMSO; UMSO1[When migration schedule has been agreed between BRP, UMSO and UMSDS]; end; subgraph LDSO; LDSO1[When LDSOs can interface with the UMSDS]; end; UMSDS1 --> LDSO1; LDSO1 --> UMSO1; UMSO1 --> BRP1; BRP1 --> UMSDS2; BRP1 --> BRP2; UMSDS2 --> BRP2;
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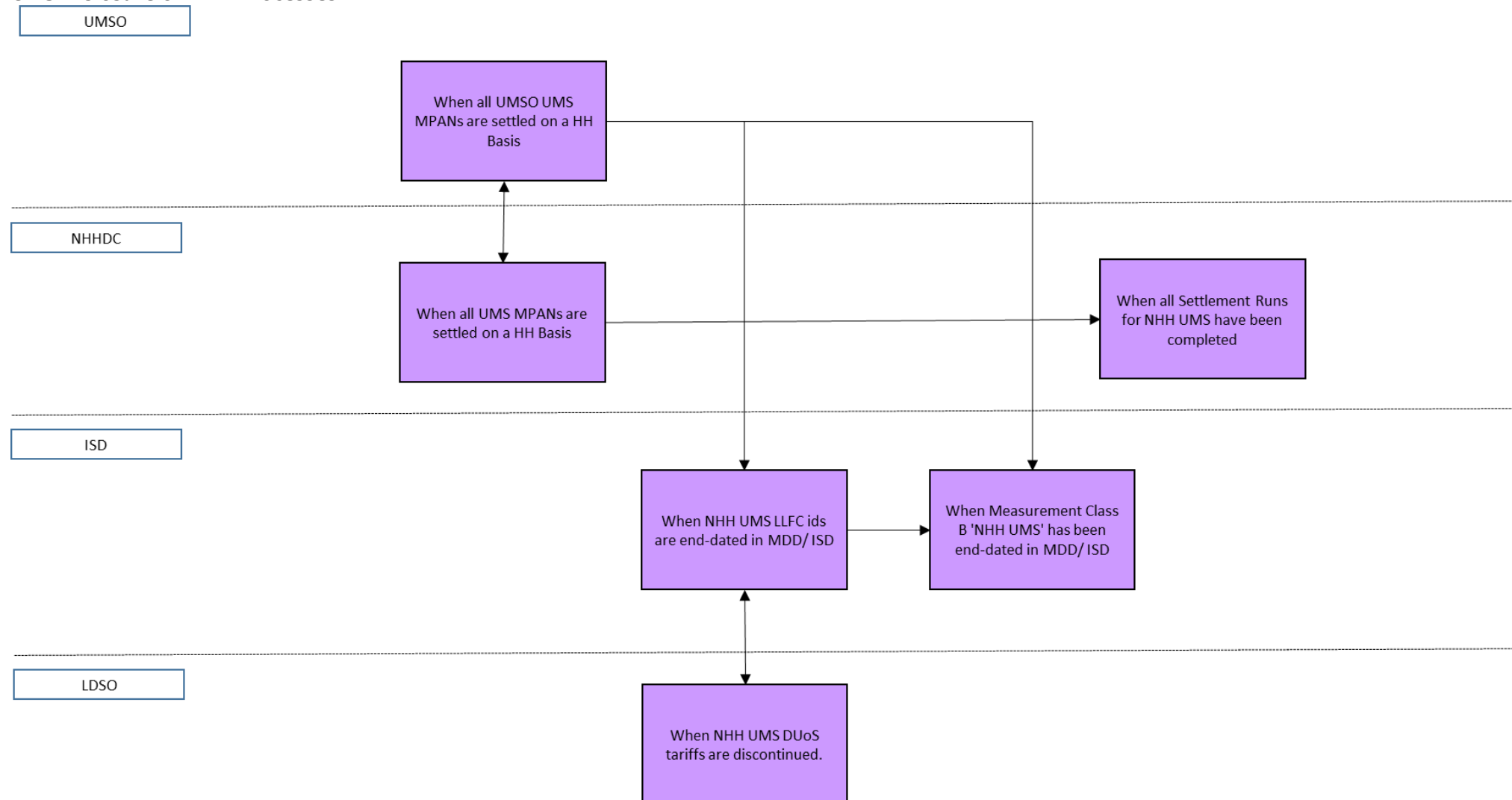
CONSULTATION ON TOM TRANSITION APPROACH

UMS Phase 3 and 4 – SMRS, UMSDS, BSC Central Systems, UMSO and BRP



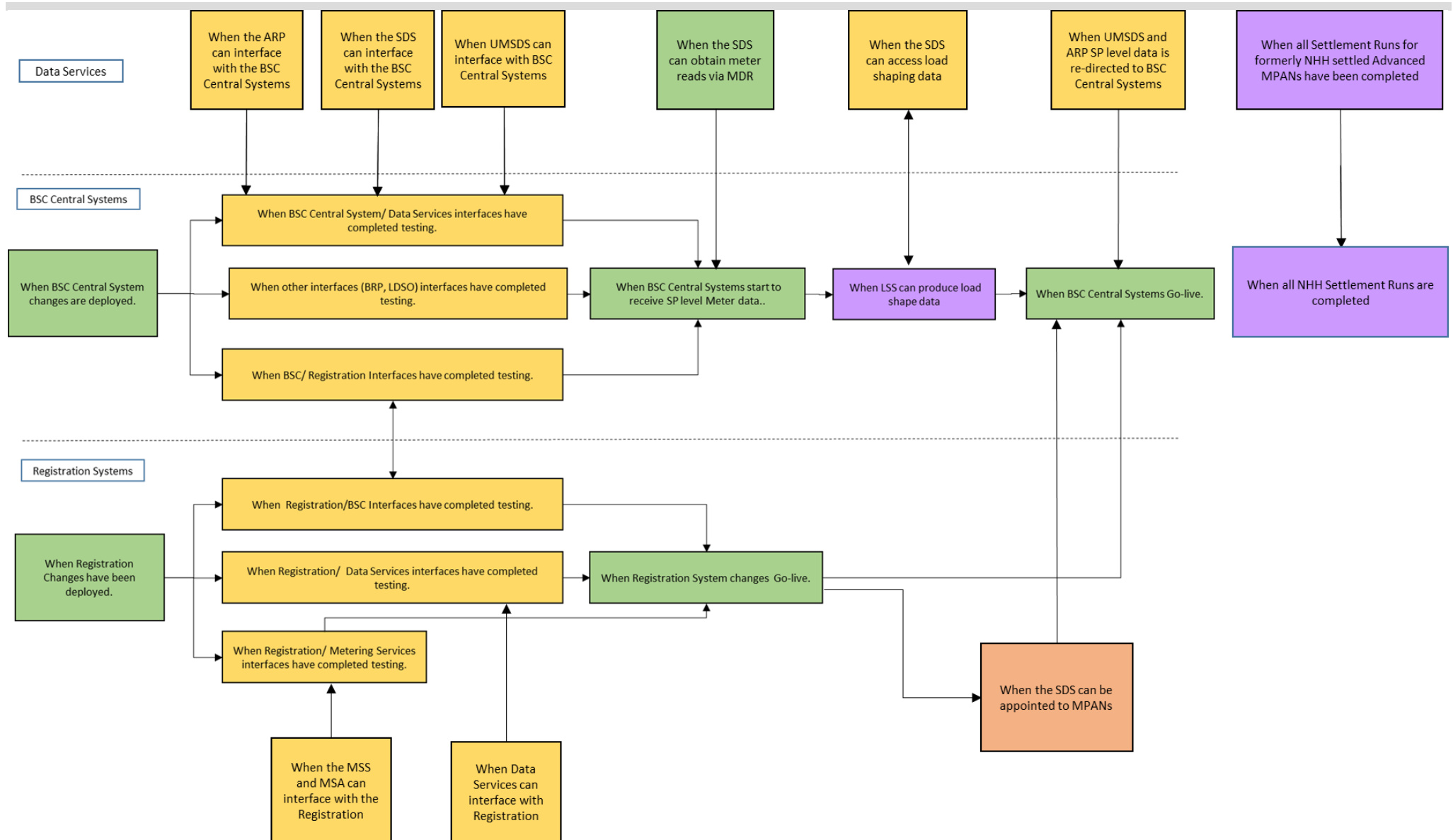
CONSULTATION ON TOM TRANSITION APPROACH

UMS – Closure of NHH Processes



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APPENDIX B - THE CRITICAL PATH FOR TRANSITION



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APPENDIX C PERFORMANCE ASSURANCE CONSIDERATIONS

Impact assessment of the implications of MHHS against all elements of the PAF Procedures

Section Z of the BSC

No immediate material impact.

Updates as required will be delivered by the Code changes drafted as part of the Significant Code Review in 2020.

PAB Strategy

No change required at this time.

MHHS is already drafted into the horizon change section of the strategy. This was approved by the PAB in December 2018 and will be reviewed periodically to direct the PAF's focus.

Risk Evaluation Methodology (REM)

No material changes envisaged.

We can consider what adjustments to the methodology might be useful, e.g. categorising MHHS risks separately, distinct impact scoring approach changes to the Impact bands. This can be done at any time as the REM is reviewed annually and can also be updated within-period.

Risk Evaluation Register (RER)

No immediate material impact.

The process for reviewing and amending the risk register is very flexible, so new risks can be added at any time through the annual or within-period revision processes.

The MHHS report describes each service at a high level, which could provide an initial view of the key processes that could impact Settlement if not completed to time or quality.

Risk evaluation uses data sources that provide information about past 'at risk' population types and sizes, failure rates and average impact volumes per failure, that are overlaid with assumptions about these metrics in the coming period. When MHHS initially goes live there will not be historical information to base these on, so more assumptions will likely need to be made, and revised within-year if necessary.

It is strongly recommended that access to performance information is considered in the design of the new TOM systems and processes, so that data is available to perform realistic and timely risk evaluation. Key sources of data we are currently using as risk indicators to evaluate the risks are listed below. Note that the Data Provision work stream of the PAF Review is evaluating these, and looking at alternative sources. Recommendations from the work stream are due autumn 2019.

- Performance Assurance Techniques:
 - BSC Audit Issues
 - Technical Assurance of Metering - non-compliances reported
 - PARMS Serials: NM11, HM11, HM14, SP08, HM13
 - Material Error Monitoring - Large EAC/AA, UMS
 - Trading Disputes
 - EFR action plans

CONSULTATION ON TOM TRANSITION APPROACH

- Other ELEXON monitoring:
 - Line Loss Factor Audit
 - Smart Meter Technical Details report
- Other external:
 - Ofgem Reporting
 - Utility Week (revenue protection analysis)
- Information ELEXON has access to:
 - MPAS quarterly extracts
 - DTN flows: D0095, D0235, D0215, D0150, D0149, D0268, D0001, D0002, D0010, D0152, D0036
- Central systems data:
 - Supplier of Last Resort information
 - Manifest errors
 - System Buy Price
 - Central Systems data – SVAA, CDCA fault log
 - Aggregation log

Risk Operating Plan (ROP)

The plan for managing Settlement Risks is drawn up in advance of the year starting (1 April), and can be revised in-year if necessary. Therefore, the changes from MHHS can be taken into account in drawing up the ROP each year.

The PAB may wish to start a piece of work focussed on overseeing the transition to MHHS end state. This might be best managed under the ROP to provide transparency to Performance Assurance Parties about what to expect for assurance of the transition and overall management of risk to Settlement through the process.

Risk Evaluation Supplementary Information (RESI) sheets

No material impact from MHHS.

These sheets explain how we evaluate the impact of each Settlement Risk, such as the data sources used and the assumptions made about likely manifestation of the risk in the coming year. These can be amended as necessary.

Reporting

No material impact from MHHS.

The PAF reporting suite is currently being reviewed by the operational team, supported by the PAF Review for data sources and proofs of concept, for analysis and reporting tools and approaches.

It will be necessary to build in flexibility for changes in the risks going forward, even without MHHS. Therefore reporting will have to flex to differing risk priorities, data sources and report recipients.

See note above about availability of data to evaluate (and report on) risks.

Issue Register

No material impact.

Any issues (non-compliances) on the register that related to the current Settlement arrangements would be considered in the transition plan. The PAB, with ELEXON support, would need to discuss and decide how to manage underperformance in the 'old' world and what action it should take to maintain accuracy of Settlement volumes through the transition.

CONSULTATION ON TOM TRANSITION APPROACH

Near-Miss Register

No material impact.

However, this may be a useful tool in the transition process to identify failures early and make changes or issue guidance to avoid the same problems in future.

Risk Policies (BUSRRs)

No material impact from MHHS.

These 'policies' are being drafted to describe for the focus risks what performance is acceptable or not, and what consequences (PAT deployment and escalation) there will be for non-compliance and under-performance. The PAB, with ELEXON support, would need to consider what levels of performance should trigger PAF action for the Settlement Risks related to the current arrangements and the proposed TOM.

Other

- LWIs – ELEXON working procedures would need to be updated
- Guidance notes – other subject specific guidance notes should be reviewed
- Website – various pages and uploaded documents would need to be updated
- Risk visualisation tool – risks would need to be updated

Impact assessment of the implications of MHHS against all PATs

All the techniques except Trading Disputes, Education and Change are in scope of the PAF Review. The notes below set out potential changes that may arise from the PAT reviews (taking place as part of the PAF review project) with an assessment of impacts against the TOM (based on what is known currently about how the PATs may look after they have been reviewed under the PAF review project).

Qualification

PAT Review – assumed that there will still be Qualification, and it will still be a self-assessment by applicants to perform a Qualified role under the BSC, which is reviewed and reported on by a service provider and/or ELEXON. There may be changes to the details and delivery of the processes, including (e.g.) controlled market entry, more targeted application of the SAD.

MHHS – New roles as Qualified Persons and possibly a combination of existing and new organisations applying for Qualification. Impacts (and assumptions):

- List of Qualified roles – will be changed via the SCR
- SAD changes – will be changed via the SCR
- Applications to be active at start of transition – assume existing organisations who want to perform one or more of the new roles will apply and go through the process more or less together as the new systems and processes are tested and rolled out. There may be applications from completely new BSC Parties / Agents that come in between when parties can first apply and completion of the transition period.
- Applications for old roles will be allowed to continue, potentially until a cut-off date when it would not be possible for Qualification to complete before the new TOM is live.
- There would need to be a lot of engagement with parties throughout this process, with education, workshops, guidance, testing support.

CONSULTATION ON TOM TRANSITION APPROACH

Re-Qualification

PAT Review – assumed that there will still be re-Qualification, and it will still be an updated self-assessment by applicants to perform a Qualified role under the BSC, which is reviewed and reported on by a service provider and/or ELEXON. Suppliers may be included in re-Qualification and there may be changes to the details and delivery of the processes.

MHHS – New roles as Qualified Persons subject to re-Qualification. Impacts (and assumptions):

- List of Qualified roles subject to re-Qualification – will be changed via the SCR
- We would draft new guidance on what might constitute material change and trigger re-Qualification.
- If there were material changes to the arrangements after go-live to fix issues or deliver deferred changes, the need to re-Qualify would be directed by PAB.

PARMS

PAT Review – Full review of PARMS to improve data provision; examine the cost effectiveness of any alternative ways of providing performance reporting for the PAF. As the priority risks should change more frequently in future, it's important any monitoring and reporting of key processes is easy to change for new data sources, and reporting on different parties, frequencies etc.

It's likely we'll want to change what's currently measured, try to get more independent reporting from BSC Parties to reduce burden and increase accuracy/consistency. We may recommend taking the performance standards out of the BSC, to allow risk appetite to be set by the PAB without the need for a Modification.

MHHS – Impacts (and assumptions):

- Current NHH Serials will become redundant
- Current HH Serials may not be appropriate for the new services/party types in the TOM design
- New party types may need to submit the data
- Current performance standards (e.g. % energy on actuals / estimates) may not reflect risk appetite in future.
- Indication of cost / scale of change might be CPs 1334 and 1325 which introduced new and removed obsolete serials in 2010.

Removal of Qualification / Breach & Default

PAT Review – Consider risk-based evidence for escalation and PAB decision making appropriately directed by PAA input.

MHHS – Assume new Qualified Persons types will be subject to Removal of Qualification unless they are BSC Parties who will be subject to Breach & Default, as now. No direct impact from MHHS envisaged.

Error and Failure Resolution (including escalation)

PAT Review – Review the methods for evidencing EFR and how we engage with participants. Assumed that there will still be EFR and escalation routes, possibly with additional formal layers with Ofgem support e.g. limits on registration.

MHHS – No direct impacts from MHHS on the EFR technique (the process). Although it may be a key technique for the transition (in the same way as it was applied for monitoring compliance with P272).

BSC Audit

PAT Review – Consider how to make more use of data and improve sampling process, and do general review of resourcing, planning and execution, including how all audit PATs fit together.

CONSULTATION ON TOM TRANSITION APPROACH

MHHS – Impacts (and assumptions):

- CVA work and Auditor opinion stays the same.
- SVA scope now has much more flexibility, so can be directed as per the Risk Operating Plan.
- Ad hoc audits can be carried out by the BSC Auditor.

Technical Assurance of Metering

PAT Review – Review of the sampling methodology / size, resources and delivery; increase flexibility in scoping to respond to the APB's risk appetite.

MHHS – SVA roles of registrant, LDSO, Metering Service (Advanced) would be fundamentally as now in terms of managing what are currently larger Half Hourly meter points, and CVA roles unchanged. No significant impacts foreseen.

Technical Assurance of Performance Assurance Parties

PAT Review – Consider more effective and efficient use through better access to and use of data, sharing of best practice with check results and how all audit PATs fit together.

MHHS – Technique is already very flexible. No impacts foreseen.

Peer Comparison

PAT Review – Consider how the technique can work with new Settlement Risks and KPIs. Currently Peer Comparison reports can only be produced for PARMS Serials. This technique is widely considered to be effective in principle, though the reports are not user friendly.

MHHS – Not necessarily any impact if there are still PARMS Serials and/or if the review results in peer comparison that can be deployed flexibly to other performance assurance measures to respond to risk. Updating the reporting would likely be relatively straightforward.

Supplier Charges

PAT Review – Full review of Supplier Charges; focus on whether it is feasible to use the more accurate risk appraisal and improve the methodology for pre-estimate of loss. Consider alternatives including if the technique should be discontinued. The exact Serials that could attract a Supplier Charge could be managed separately.

MHHS – Some of the Serials would become redundant and for the others, the current Supplier Charge may not reflect a realistic pre-estimate of the loss suffered by Suppliers due to underperformance of other Suppliers.

Material Error Monitoring

PAT Review – Consider if a single approach to data provision for performance monitoring is appropriate (i.e. merged with PARMS), and review each current MEM area to confirm if it remains worthwhile. This is a very flexible technique, which is essentially any routine monitoring of a risk that falls outside PARMS Serials.

MHHS – No impact envisaged besides natural obsolescence of the MEM areas - at least three of the current four are primarily or entirely NHH focused.

Bulk Change of Agent

PAT Review – Assess risk-based alternatives to the current threshold, and whether the techniques should be discontinued in favour of others e.g. TAPAP. Currently Suppliers usually change agent at a rate slightly under the threshold to avoid triggering it.

MHHS – The main purpose of restricting how many changes of agents a Supplier could register with an SMRA at one time was to protect the SMRAs' systems from being overloaded. Through improvements in systems to date, and in future through Fast Switching and MHHS, this technique may become obsolete anyway.

CONSULTATION ON TOM TRANSITION APPROACH

Performance Assurance Techniques not in scope of the PAF Review:

Trading Disputes

It is envisaged that the Trading Disputes process will operate as now, albeit potentially with shorter timescales and higher error threshold, so limited impact to implement once timescales and thresholds agreed.

Education

Education is a technique when it is specifically deployed to help mitigate risk. It is fully flexible and should not be impacted by MHHS.

Change

BSC Change is a technique when it is specifically deployed to help mitigate risk. It should not be impacted by MHHS.

CONSULTATION ON TOM TRANSITION APPROACH

APPENDIX D: GLOSSARY OF DEFINED TERMS

A

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 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.

CONSULTATION ON TOM TRANSITION APPROACH

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.

Central Volume Allocation (CVA)

Central Volume Allocation refers to the allocation of active energy from:

- a) BM Units other than Interconnector BMUs and BRP BMUs;
- b) Interconnectors;
- c) Grid Supply Points; and
- d) GSP Groups.

Code Subsidiary Document (CSD)

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

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 domestic consumers' smart Meters.

Demand-side response (DSR)

Actions taken by consumers to change the amount of energy they take off the grid at particular times in response to a signal, such as a price.

CONSULTATION ON TOM TRANSITION APPROACH

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.

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 BSC Co) 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.

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 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)

There are currently 14 GSP Groups consisting 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.

CONSULTATION ON TOM TRANSITION APPROACH

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.

Licensed 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

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 five Market Segments are:

- a) Smart Meters with Settlement Period level data available;
- b) Smart Meters with only Register Readings available;
- c) Non-smart Meters with Register Readings;
- d) Advanced Metering Systems with Settlement Period level data available; and
- e) Unmetered Supplies.

CONSULTATION ON TOM TRANSITION APPROACH

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 Systems 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.

N

National Grid Electricity System Operator (NGESO)

NGESO 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.

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)in). 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 either 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, Meters with Advanced capability that cannot be moved into the Advanced Market Segment due to communication issues or Ofgem policy requirements.

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 Administrator (PrA)

This agent currently produces the Profiling deliverables that are used by the SVAA, Suppliers and the Supplier Agents.

CONSULTATION ON TOM TRANSITION APPROACH

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.

Q

Qualification

Qualification is the BSC process that assures that systems and processes (developed outside of BSC Central Systems control) which may interact with BSC 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

Registration Service

The Registration 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 Meters 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.

CONSULTATION ON TOM TRANSITION APPROACH

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).

Static time-of-use tariff

A time-of-use tariff is a price or pricing structures for consumers that are fixed in advance (as set by the Supplier). Typically they set the peak and off-peak periods for electricity consumption (or export) and the prices applied at these times.

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.

CONSULTATION ON TOM TRANSITION APPROACH

Teleswitch Data Services Agent (TSDA)

This agent monitors the messages concerning contact switching times sent under the Radio Teleswitch Agreement to SVA Metering Systems equipped with a teleswitch. The agent provides a daily service that prepares a data interface file of teleswitch contact switching times reflecting actual messages broadcast for that day and transmitting the file to the SVAA on a daily basis.

It maintains a log archive recording the provision of details of teleswitch messages and reports to the SVAA any known or suspected failures in the monitoring and provision of messages. The teleswitch times are then used by the SVAA to calculate the half-hourly consumption values for Non Half Hourly meters.

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.

Trading Party

Under the BSC a Trading Party means a Party, other than the Transmission Company, which holds energy accounts. These are typically suppliers, generators and energy traders.

Transition Plan

The Transition Plan is the plan that set out the approach for moving to the new 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.

CONSULTATION ON TOM TRANSITION APPROACH

APPENDIX E: ACRONYMS

Acronyms used in this document are listed in the table below.

Acronym	Definition
AE	Active Export
AI	Active Import
BMU	Balancing Mechanism Unit
BRP	Balancing Responsible Party
BSC	Balancing and Settlement Code
BST	British Summer Time
CLK	Clock Time
CoA	Change of Agent
CoMC	Change of Measurement Class (process)
DAE	Daily Advance Estimate
DCC	Data and Communications Company
DLSC	Default Load Shape Coefficients
DSR	Demand Side Response
DUIS	DCC User Interface Specification
DWG	Design Working Group
EV	Electric Vehicle
GBCS	Great Britain Companion Specification
GUID	Globally Unique Identifier
HH	Half Hourly
ISD	Industry Standing Data
kWh	kilo-Watt hour
LDSO	Licensed Distribution System Operator
LLFs	Line Loss Factors
MHHS	Market-wide Half Hourly Settlement

CONSULTATION ON TOM TRANSITION APPROACH

Acronym	Definition
MPAN	Metering Point Administration Number
MRA	Master Registration Agreement
MTD	Meter Technical Details
MWh	Mega-Watt hour
NHH	Non Half Hourly
PARMS	Performance Assurance Reporting and Monitoring System
P2P	Peer to Peer
RPU	Revenue Protection Unit
RR	Register Readings
SD	Settlement Day
SDS	Smart Data Services
SEC	Smart Energy Code
SMETS	Smart Metering Equipment Technical Specification
SP	Settlement Period
SVA	Supplier Volume Allocation
SVAA	Supplier Volume Allocation Agent (BSC Agent)
TOM	Target Operating Model
ToU	Time of Use
UMS	Unmetered Supplies
UTC	Coordinated Universal Time