

PUBLIC

# Design Working Group

## Attachment B: Transition Approach



ELEXON

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# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## CONTENTS

<b>THE CURRENT MARKET MODEL</b> .....	<b>4</b>
<b>CURRENT BSC AGENTS IMPACTED BY THE TRANSITION</b> .....	<b>7</b>
Supplier Volume Allocation Agent (SVAA) .....	7
Teleswitch Data Services Agent (TSDA).....	7
Profile Administrator Agent (PrA) .....	7
<b>THE DWG’S PREFERRED TARGET OPERATING MODEL</b> .....	<b>8</b>
<b>THE DWG’S TRANSITIONAL PRINCIPLES AND PRE-REQUISITES</b> .....	<b>9</b>
High-level transition principles .....	9
Transition pre-requisites.....	9
Transition end point.....	9
<b>TRANSITION TERMINOLOGY</b> .....	<b>10</b>
<b>PROFILE CLASSES, MEASUREMENT CLASSES, METER TYPES AND THE MARKET SEGMENTS</b> .....	<b>11</b>
Profile Classes .....	11
Measurement Classes.....	11
TOM Market Segments.....	12
Mapping of NHH MPANs to the TOM Market Segments.....	12
Mapping of HH MPANs to the TOM Market Segments .....	13
<b>ELECTIVE HALF HOURLY SETTLEMENT</b> .....	<b>14</b>
<b>WHAT WILL THE PERFORMANCE ASSURANCE FRAMEWORK BE UNDER THE TOM?</b> .....	<b>15</b>
DWG Performance Assurance Assumptions and Principles .....	15
<b>TOM SERVICES TRANSITIONAL APPROACH</b> .....	<b>16</b>
Phase 1 Code and Governance Changes .....	16
BSC Central System and Registration System Updates .....	16
Phase 2 BSC Central Systems and Registration changes - Interfacing and Go-Live .....	16
<b>HIGH LEVEL VIEW OF THE SVA MARKET AT VARIOUS STAGES OF TRANSITION</b> .....	<b>17</b>
<b>HIGH LEVEL SUMMARY OF TRANSITION APPROACH BY MARKET SEGMENT</b> .....	<b>20</b>
Smart and Non-smart Market Segment .....	20
The Advanced Market Segment .....	21
The Unmetered Supplies Market Segment .....	23
<b>TRANSITIONAL DIAGRAMS</b> .....	<b>24</b>
<b>CRITICAL PATH FOR TRANSITION</b> .....	<b>25</b>
<b>TRANSITION TO THE NEW SETTLEMENT TIMETABLE</b> .....	<b>26</b>
DWG proposals on the timing for introducing the revised Settlement Timetable.....	26
DWG proposal for the timing of the Post Final Settlement Run (PFSR) .....	27
DWG proposal for the Disputes Materiality Threshold .....	30

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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<b>APPENDIX A - TRANSITIONAL DIAGRAMS .....</b>	<b>31</b>
BSC Central Systems and Registration changes: Phase 1 Governance and Code Changes.....	32
Phase 2 BSC Central Systems and Registration changes - Interfacing and Go-Live .....	33
Smart and Non-Smart Segment Transition Approach.....	34
Advanced Meter Segment Transition Approach .....	38
Unmetered Supplies Segment Transition Approach .....	43
<b>APPENDIX B - THE CRITICAL PATH FOR TRANSITION .....</b>	<b>48</b>
<b>APPENDIX C - PERFORMANCE ASSURANCE CONSIDERATIONS .....</b>	<b>49</b>
Impact assessment of the implications of MHHS against all elements of the PAF Procedures .....	49
Impact assessment of the implications of MHHS against all PATs.....	51
<b>APPENDIX D - SUMMARY OF RESPONSES TO THE DWG'S TRANSITION APPROACH CONSULATION .....</b>	<b>55</b>

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## TRANSITION APPROACH

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This document sets out the detailed Transition Approach developed and consulted on by the Design Working Group. It sets out:

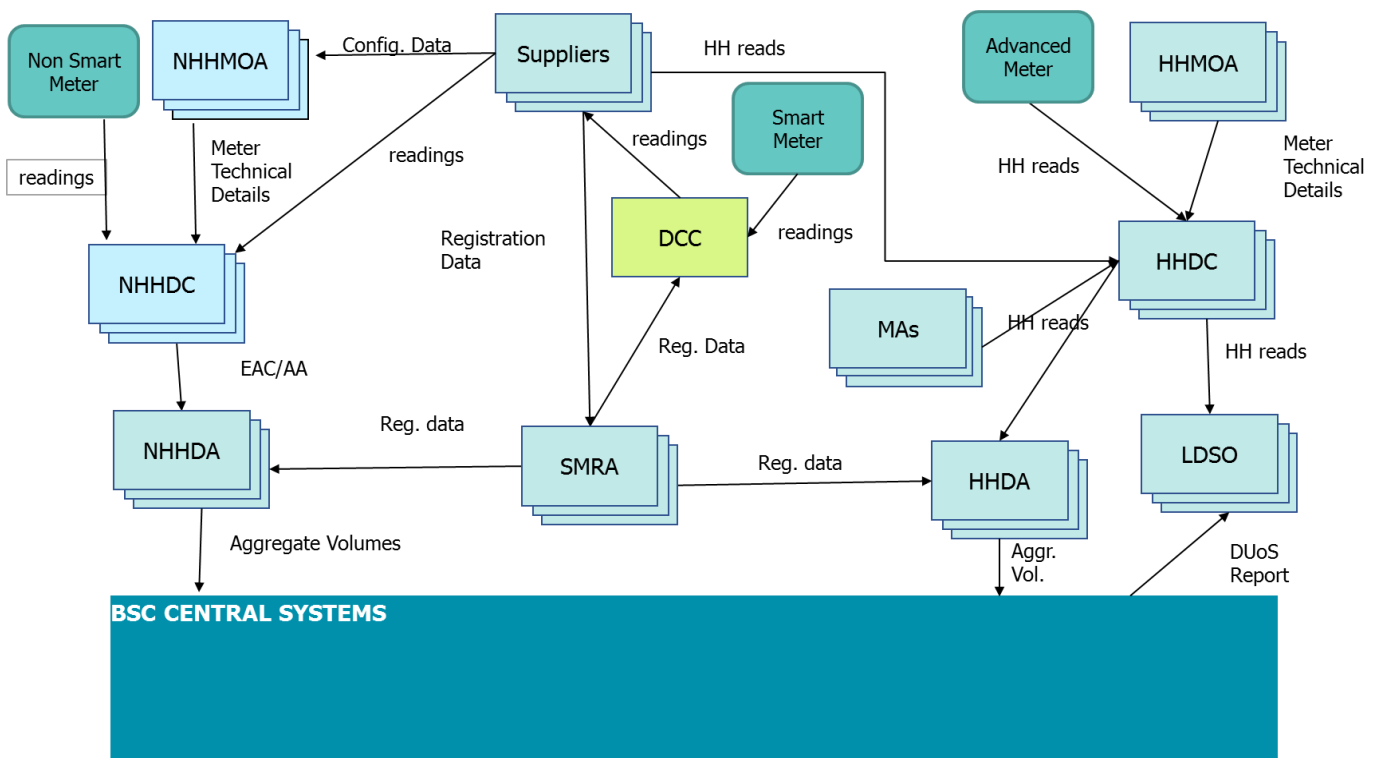
- The current market model;
- The current BSC Agents impacted by the transitions;
- The transition principles, pre-requisites and transitional development;
- The interaction with elective HHS;
- The future requirements for Performance Assurance;
- Transition Approach for the TOM Services;
- The critical path for Transition; and
- The transition approach for the Settlement Timetable and proposals for the Post Final Settlement Run.

The Appendices contain the Transition Diagrams, Performance Assurances considerations and a summary of the Transition Approach Consultation responses.

# MHHS TOM – RECOMMENDED 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 \(SVA\) Agents](#) and [Party Agents](#) performing defined Market Roles. 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 MPANs that have opted-in to HH Settlement, via its existing HH Agents:



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The Transition Approach looks 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:

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

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).
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 (HHDC)	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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## Licensed 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 Service' in this attachment refer to SMRS.

## CURRENT BSC AGENTS IMPACTED BY THE TRANSITION

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### 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 some 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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## THE DWG'S PREFERRED TARGET OPERATING MODEL

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You can find a summary of the DWG's preferred TOM in its Stage 2 report, with more detail in its January 2019 [report to Ofgem](#).



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## THE DWG'S TRANSITIONAL PRINCIPLES AND PRE-REQUISITES

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### 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 there would be specific requirements defined around the issue of customers reverting to NHH arrangements (principle f)).

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 energy 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 HHS 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. 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;
- Enrolment of SMETS1 Meters by the Data and Communications Company (DCC);
- A reasonable percentage of smart Meters rolled out; and
- Clarity on network charging requirements for Settlement data;

### 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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## TRANSITION TERMINOLOGY

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The DWG 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.

# MHHS TOM – RECOMMENDED 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 100 kW Maximum Demand Premises
D	Half Hourly Unmetered Supplies
E	Half Hourly Metering Equipment at below 100kW Premises with current transformer
F	Half Hourly Metering Equipment at below 100kW Premises with current transformer or whole current, and at Domestic Premises
G	Half Hourly Metering Equipment at below 100kW Premises with whole current and not at Domestic Premises

# MHHS TOM – RECOMMENDED 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 (with Current Transformer)	A	E	Advanced
05 to 08	Advanced (Whole Current)	A	G	Advanced
	Advanced (with Current Transformer)	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. For the avoidance of doubt customers with Whole Current Advance Meters wishing to retain their existing Metering arrangements would not be mandated to have a smart Meter.

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

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.

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 be settled directly into the appropriate Market Segment.

The DWG recommends 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 recognises that 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 shows 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

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## ELECTIVE HALF HOURLY SETTLEMENT

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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. Data from these Meters would then be accessed directly by the Smart Data Service.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## WHAT WILL THE PERFORMANCE ASSURANCE FRAMEWORK BE UNDER THE TOM?

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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 approach to 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 has set out the following Assumptions and Principles when considering the impact 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 would 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 SP level Meter data); and
- Performance serials could be flexed by Market Segment, Measurement Class and/or Meter type.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## TOM SERVICES TRANSITIONAL APPROACH

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

### Phase 1

#### 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 recommends allowing other changes to be progressed through the normal Code change processes before or after the final decision.

Other consequential changes may also be required which 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.

### Phase 2

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

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<sup>1</sup>, 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 Identifier (MPID) and appoint the new TOM Data Services. Additional data items are also required to identify MPAN Categorisations for load shaping and to identify customer preference (subject to the detail of Ofgem policy decisions on Data Access and Data Privacy).

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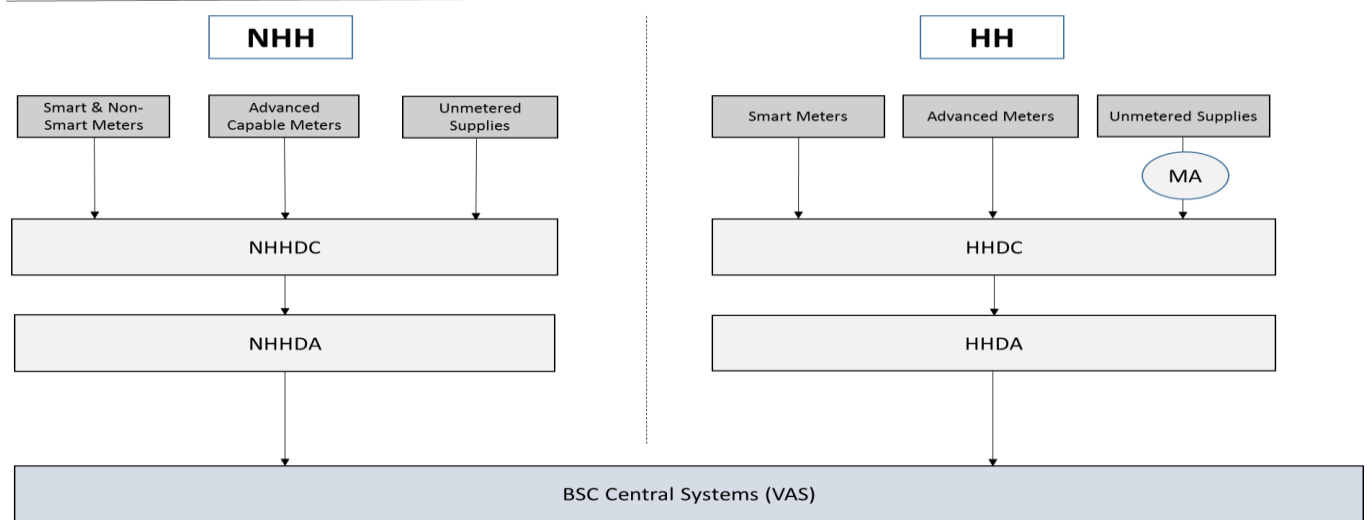
<sup>1</sup> The MDS's primary function is to validate data received from data services against Registration data. It will check for duplication and omission of meter data, defaulting where appropriate. During transition the MDS will aggregate meter level data for submission into the VAS. Once all metering systems are being settled under the TOM the VAS will aggregate all meter level data directly for volume allocation removing the requirement for two aggregation calculations.



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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

### Current SVA market arrangements

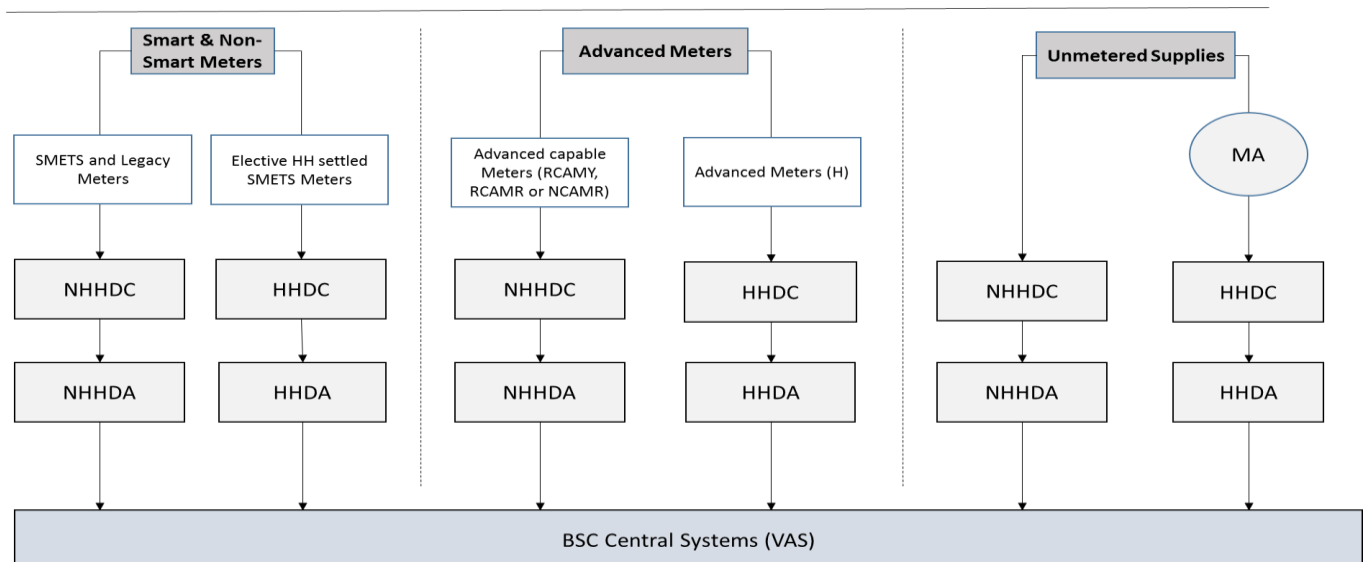


The above diagram\* is a representation of the existing SVA market, where both the NHH and HH markets contain different types of metering. The NHH market is primarily made up of non-smart (legacy) Meters, a rising proportion of smart Meters, and HH capable Advanced (AMR) Meters with remote communications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

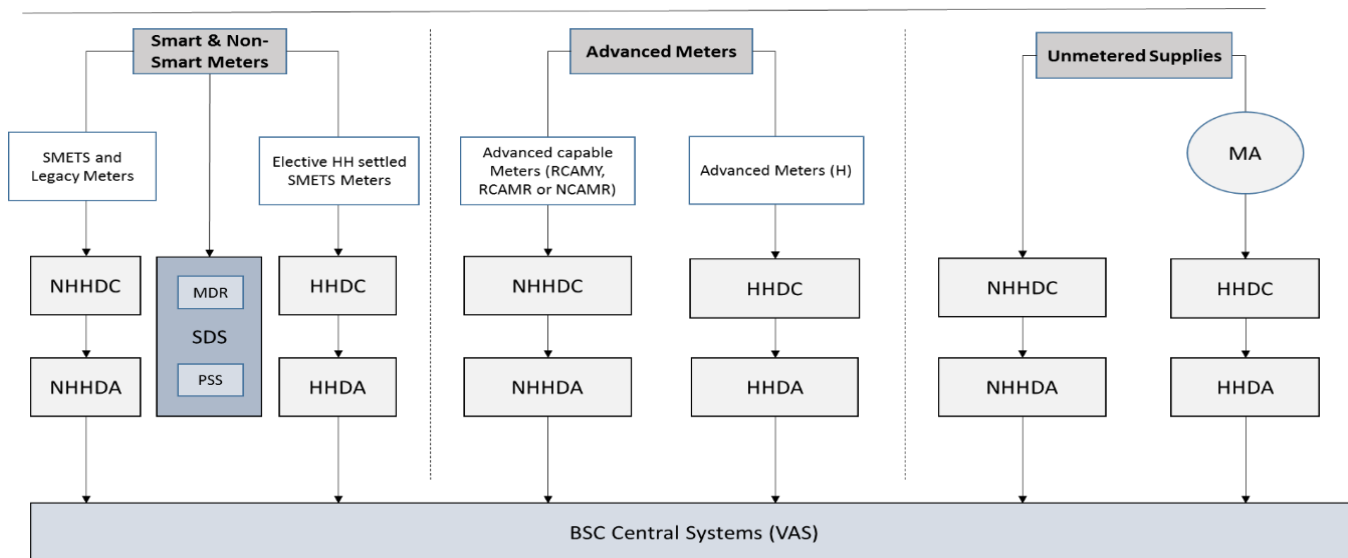
### 1. Pre-transition - SVA market separated by Meter type



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 transition earlier because their changes are more 'evolutionary' in nature.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

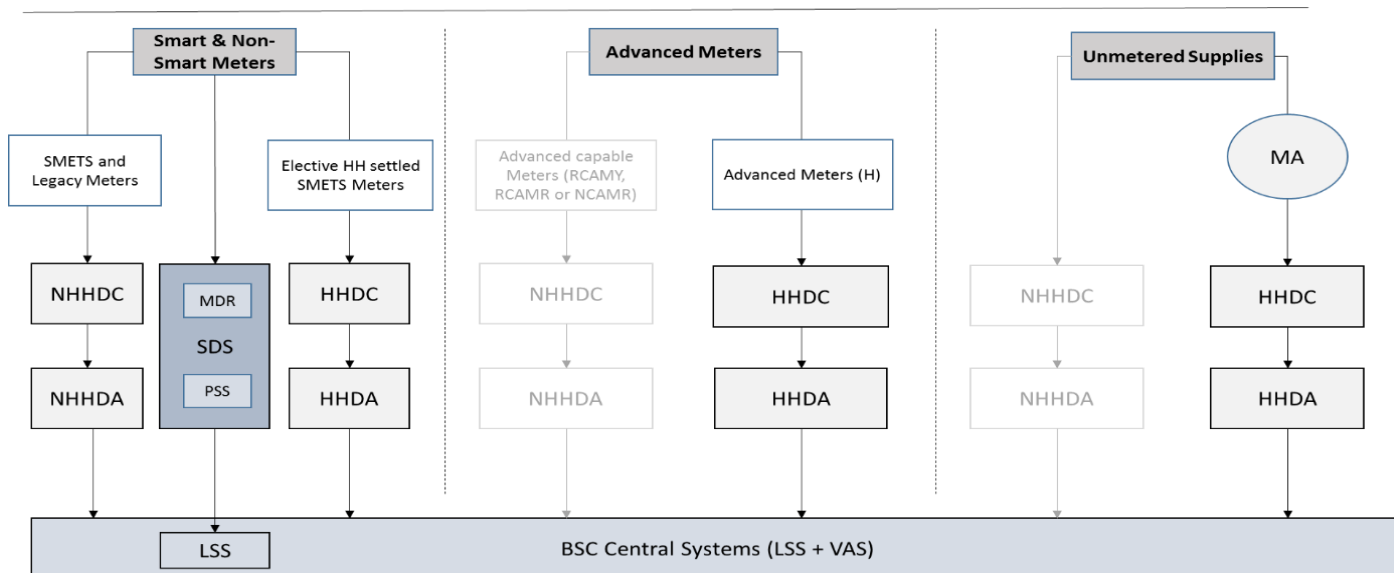
## 2. Qualification of first providers of new TOM services starts



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. 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.

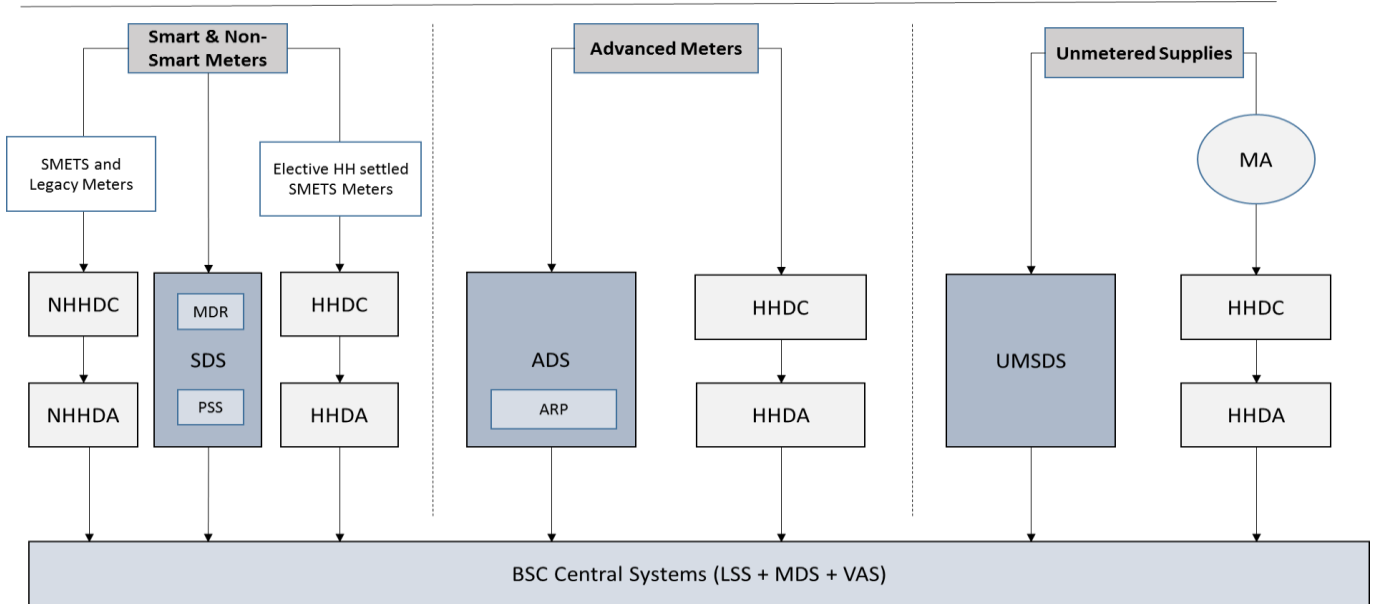
## 3. Migration/adoption of metering systems



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.

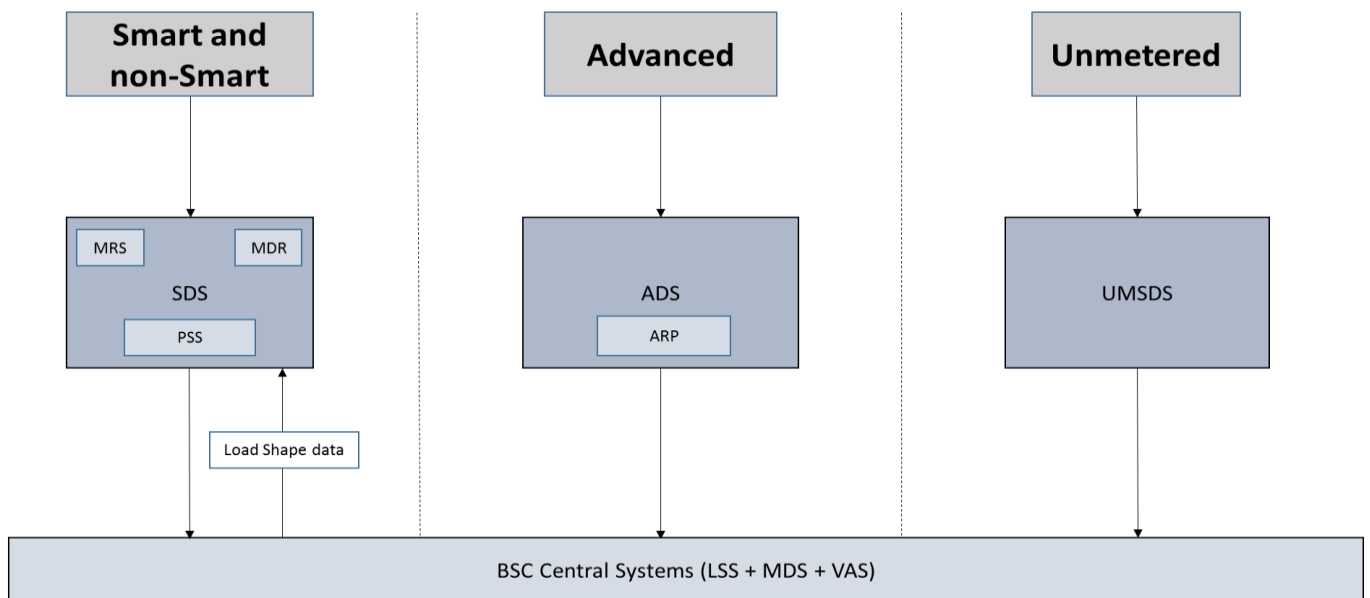
## 4. Parallel running with new TOM services and existing agent functions

# MHHS TOM – RECOMMENDED TRANSITION APPROACH



Once the enhanced BSC Central Systems are ready, the first metering systems can be settled using disaggregated SP level 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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## HIGH LEVEL SUMMARY OF TRANSITION APPROACH BY MARKET SEGMENT

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The DWG has 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:

### The 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 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 (MDR) Service 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 glance<sup>2</sup>:

- 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 directs changes to governance and codes using their Smart Meters Act powers;
- MSS qualifies and agrees contract with BRP (Supplier);
- SDS qualifies under the BSC; and
- MDR Service (within SDS) accedes to SEC, becomes a DCC User, the SDS 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<sup>3</sup> 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

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<sup>2</sup> Metering System numbers are sourced from a number of BSC and Non-BSC sources and may have changed.

<sup>3</sup> Industry Standing Data is the new and existing standing data from Market Domain Data (MDD)

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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- 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 which 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 be a disincentive to migrating MPANs early (see also Item 5 below).

## 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 configured 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<sup>4</sup> 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 HH capable 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 codes using their Smart Meters Act powers; and
- Parties will qualify as ADS and MSA for all Advanced Meters.

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

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

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

- ARP and MSA can interface with the Registration Services.

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<sup>4</sup> Advanced Retrieval and Processing (ARP) Service is the service, with defined requirements, that collects and processes data under the Advanced Data Service.

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

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### **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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## DWG Discussion on the Advanced Market Segment

Noted the need to identify Advanced 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 that only current transformer (CT) 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 Market Segment.

## The Unmetered Supplies Market Segment

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

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

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

### The Unmetered Supplies Segment at a glance:

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

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

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

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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

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

## Phase 3 – Interfacing with Registration Services

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

## 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 NHH UMS Distribution Use of System (DUoS) tariffs 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.

## TRANSITIONAL DIAGRAMS

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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:

<b>Transition General</b>
<b>System Developments</b>
<b>Governance and Codes Changes</b>
<b>Commercial</b>
<b>Interfaces</b>
<b>Migration</b>



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## CRITICAL PATH FOR TRANSITION

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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 these systems. Once interface testing has been completed the qualified SDS services will collect and feed SP level data into the BSC 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 NHH 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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## TRANSITION TO THE NEW SETTLEMENT TIMETABLE

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### DWG proposals on the timing for introducing the revised Settlement Timetable

The DWG has 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. It 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;

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

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- 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.

### 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. 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.

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.

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

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
2	Phase Failure caused Meter to under-record consumption on site.	£192	£384

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

Number of Disputes	Root Cause	Average Materiality	Approximate Total Materiality
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
<b>Total</b>			<b>£8M</b>

[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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## 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:

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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## APPENDIX A - TRANSITIONAL DIAGRAMS

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

<b>Transition General</b>
<b>System Developments</b>
<b>Governance and Codes Changes</b>
<b>Commercial</b>
<b>Interfaces</b>
<b>Migration</b>

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

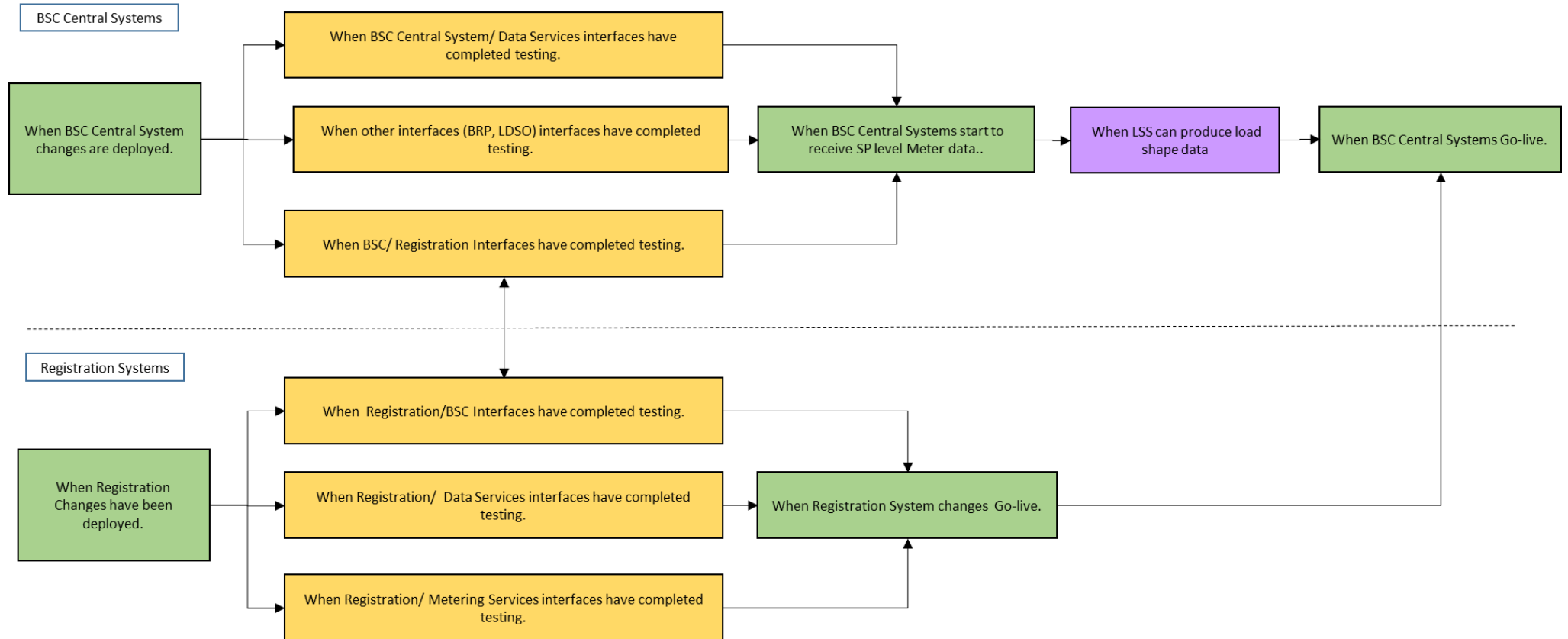
## BSC Central Systems and Registration changes: Phase 1 Governance and Code Changes





# MHHS TOM – RECOMMENDED TRANSITION APPROACH

## Phase 2 BSC Central Systems and Registration changes - Interfacing and Go-Live



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## Smart and Non-smart Segment Transition Approach

### Phase 1 Code and Governance Changes

When Ofgem has directed changes to the BSC and subsidiary documents

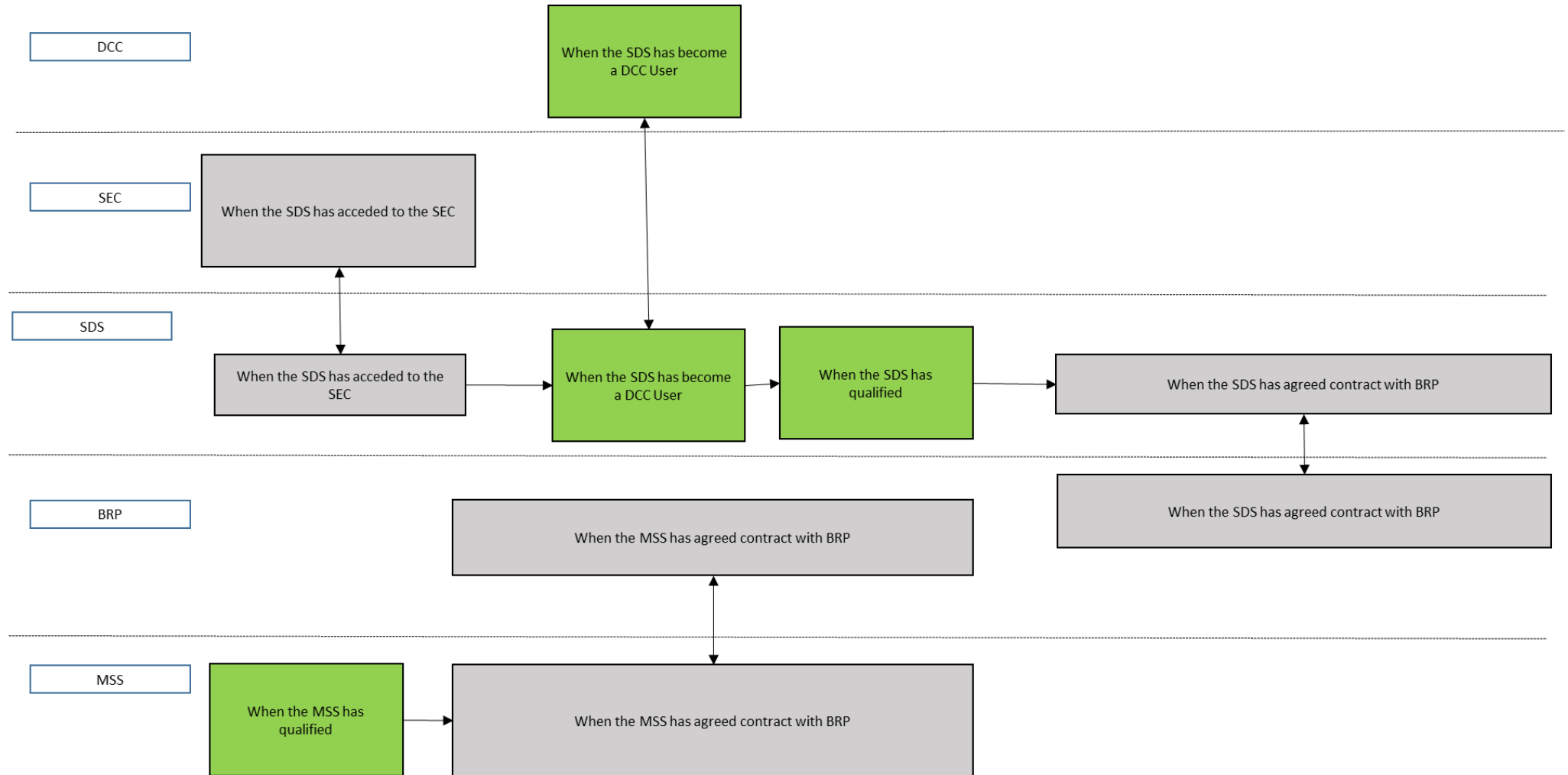
When Ofgem has directed changes to MRA

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)

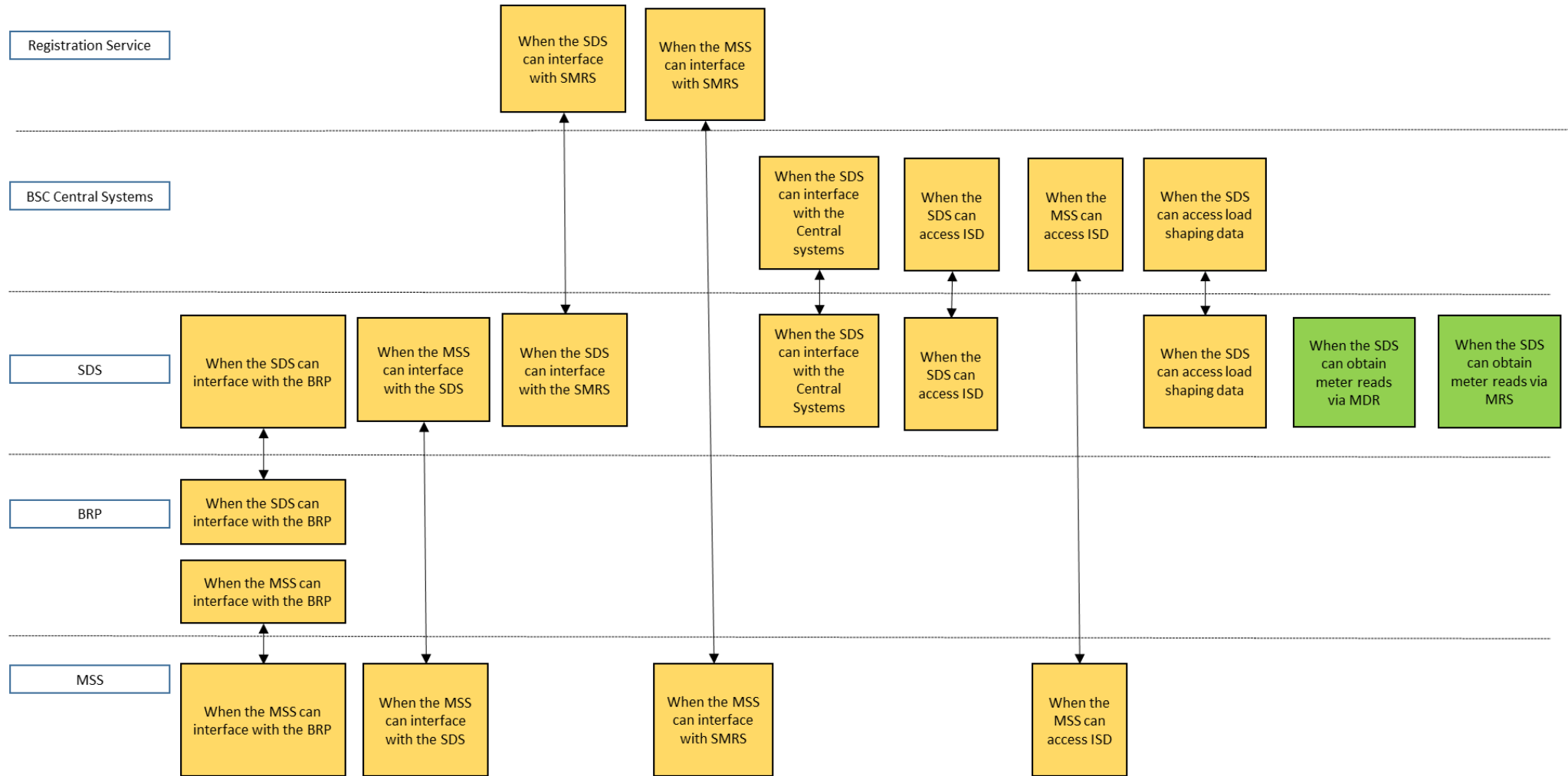
# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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



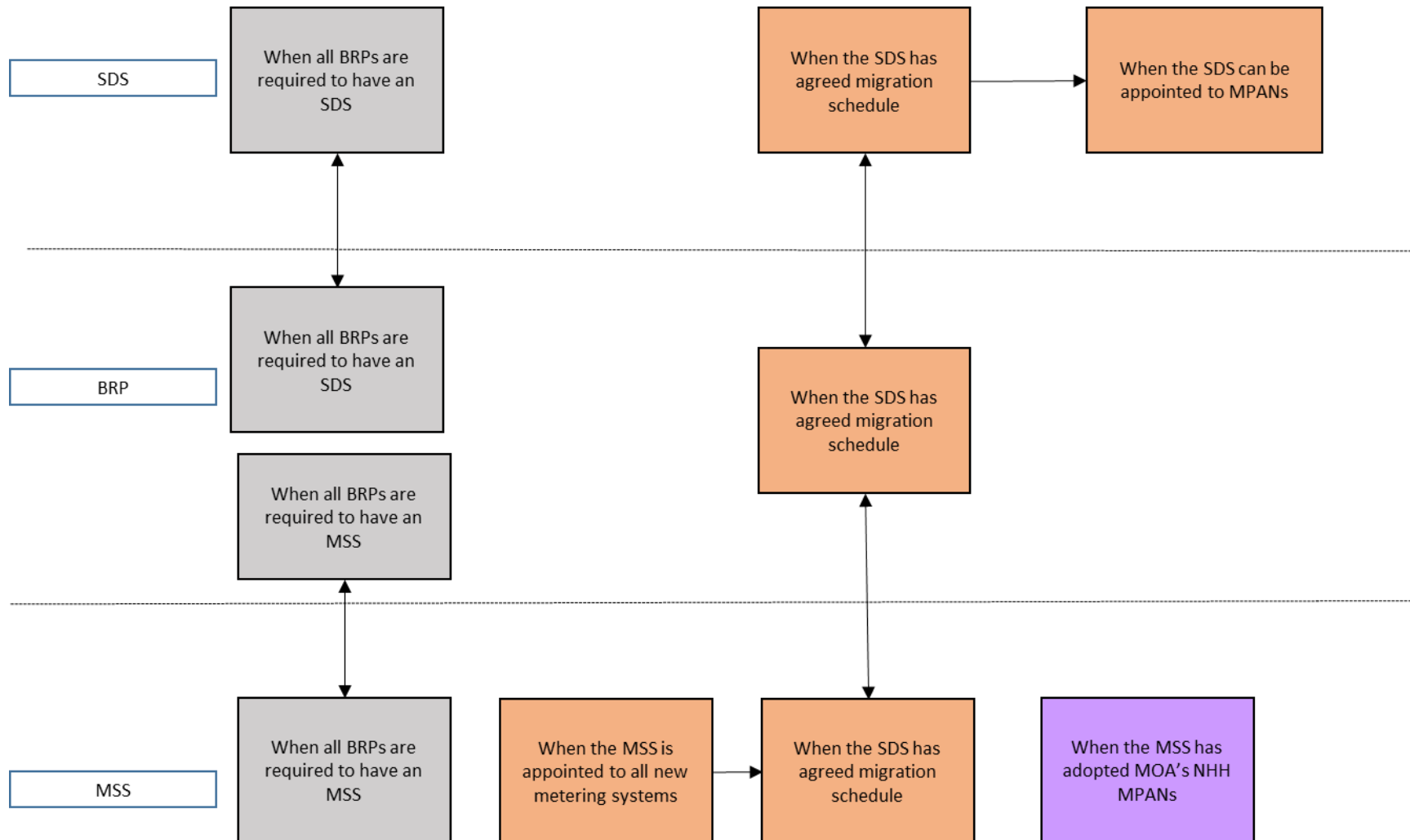
# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

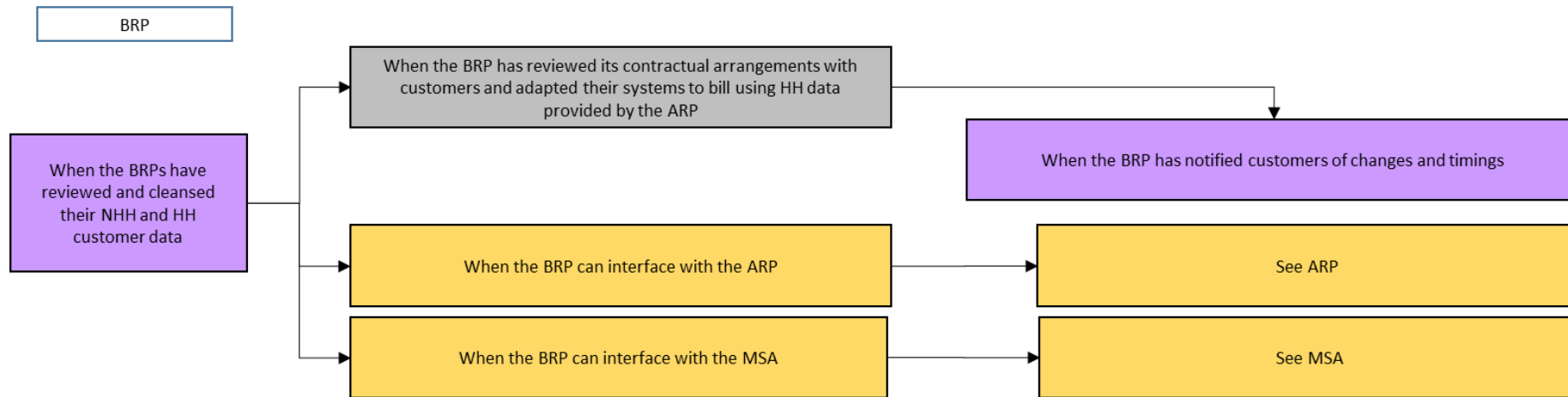
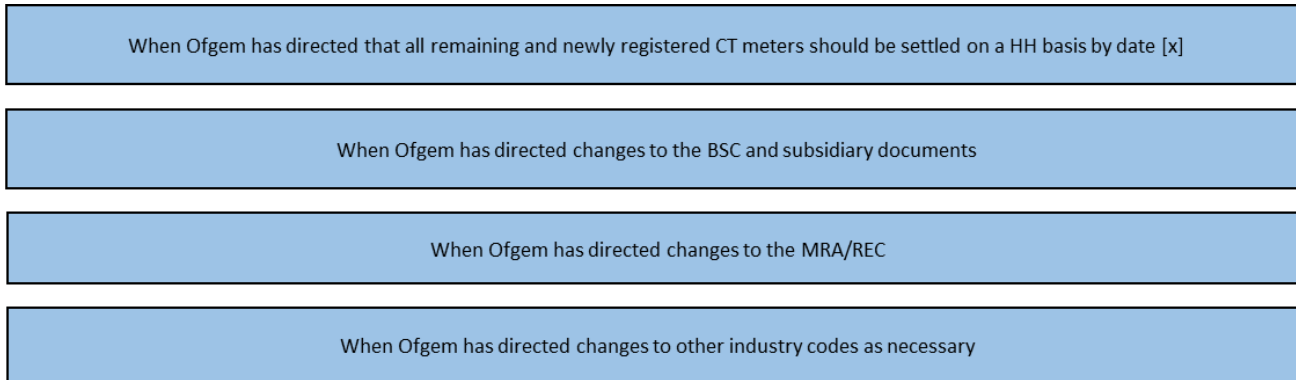
## Smart and Non-smart Phase 3 – SDS, BRP and MSS



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

## Advanced Meter Segment Transition Approach

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



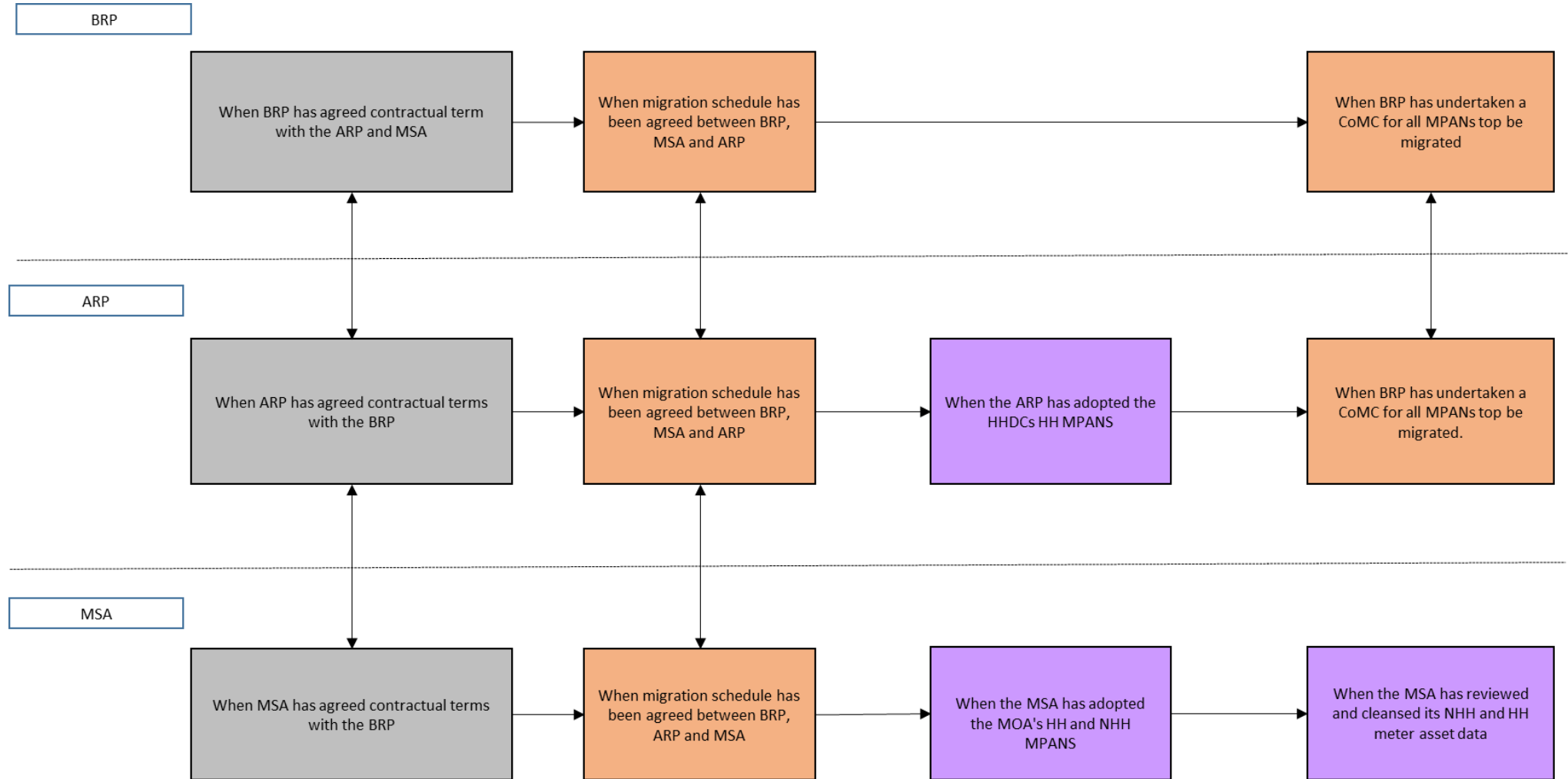
# MHHS TOM – RECOMMENDED TRANSITION APPROACH

## Phase 1 – MSA and ARP



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

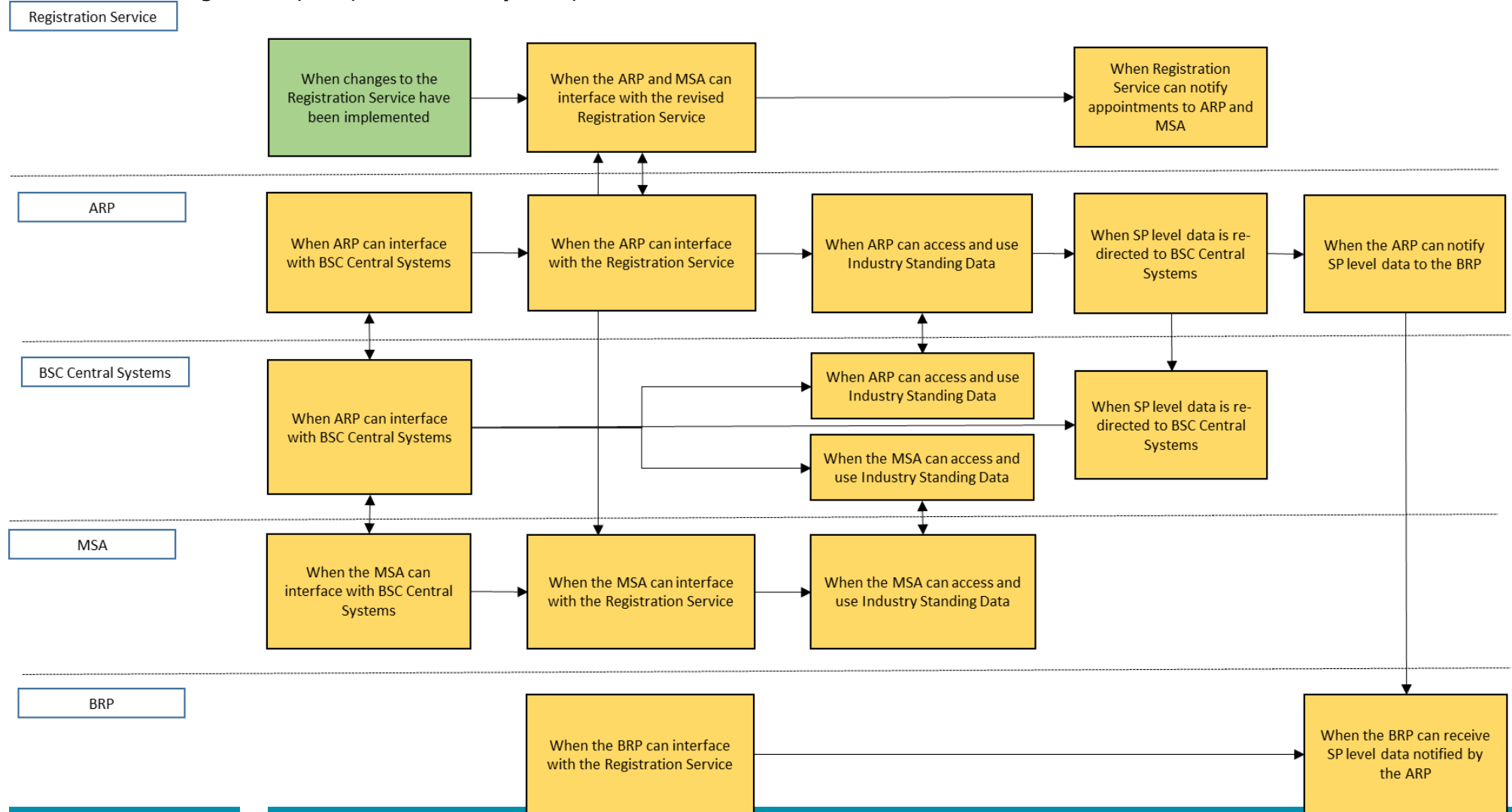
## Phase 2 – BRP, ARP, MSA, LDSO





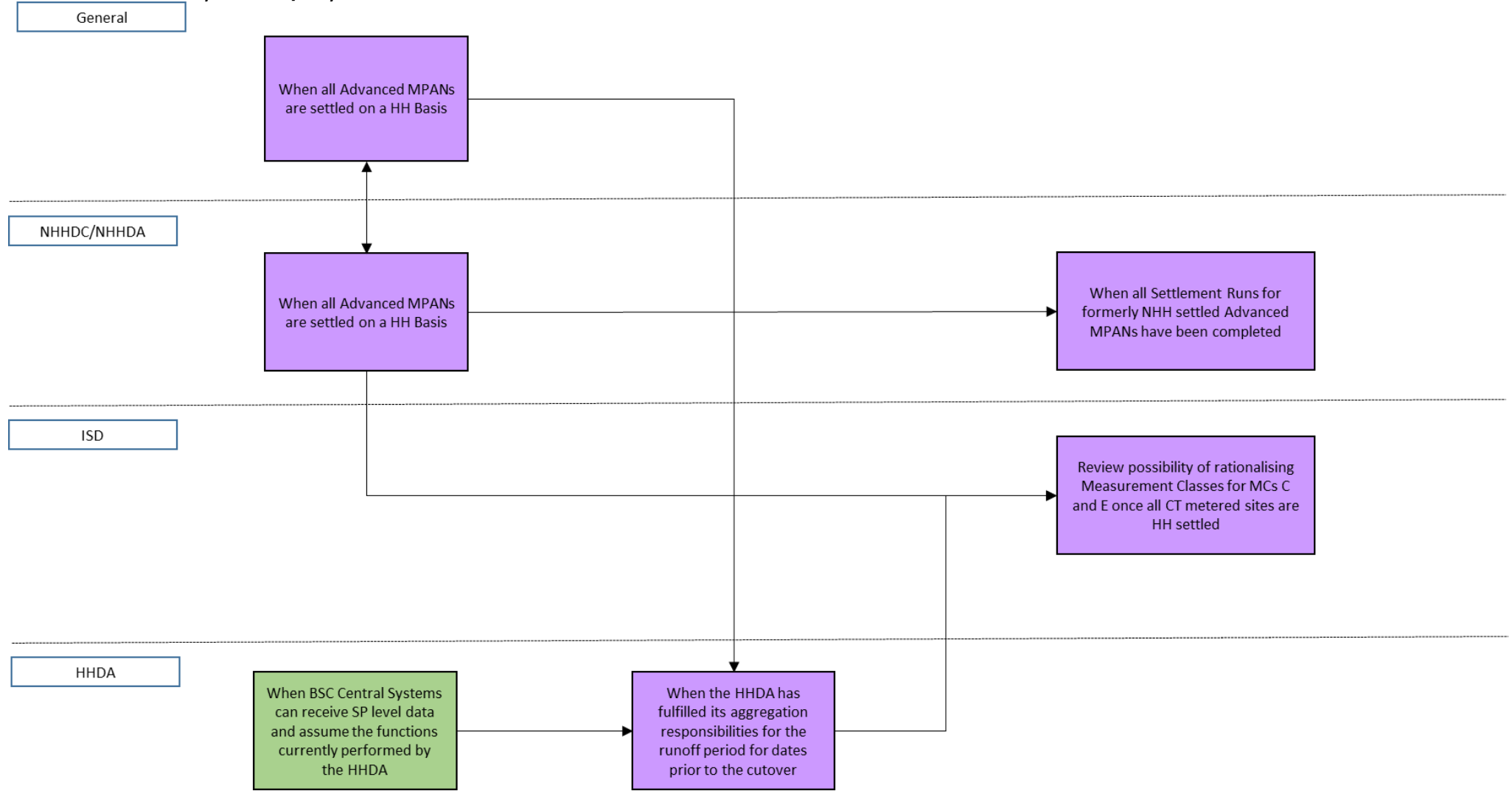
# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

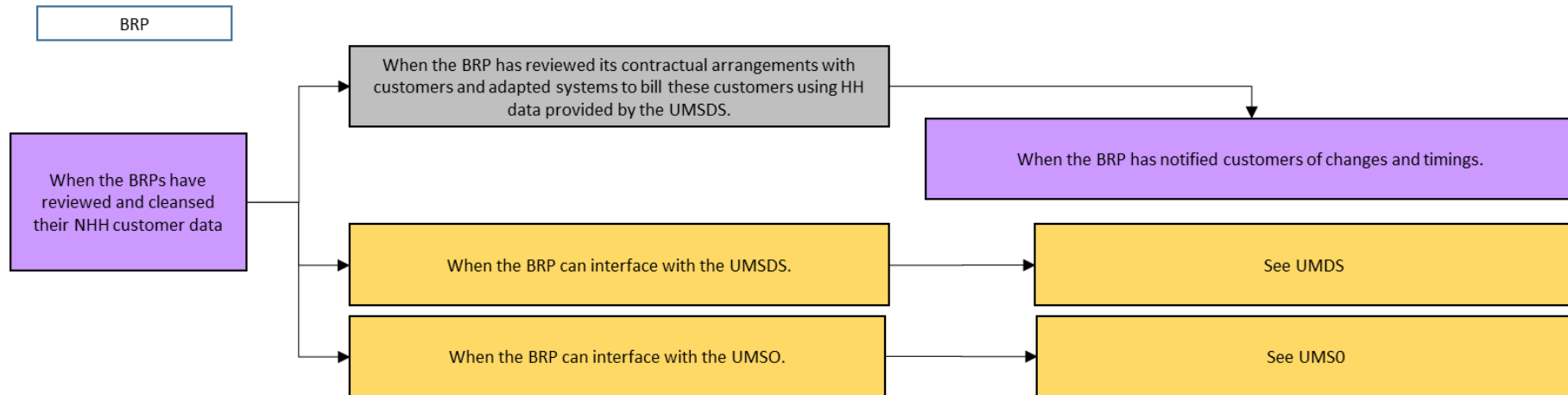
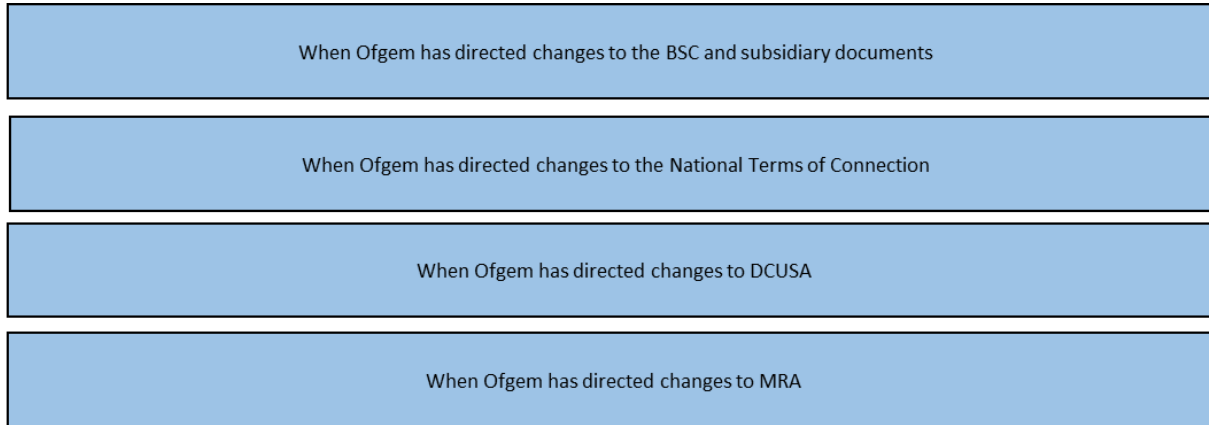
## Advanced – General, NHHDC/DA, ISD and HHDA



# MHHS TOM – RECOMMENDED TRANSITION APPROACH

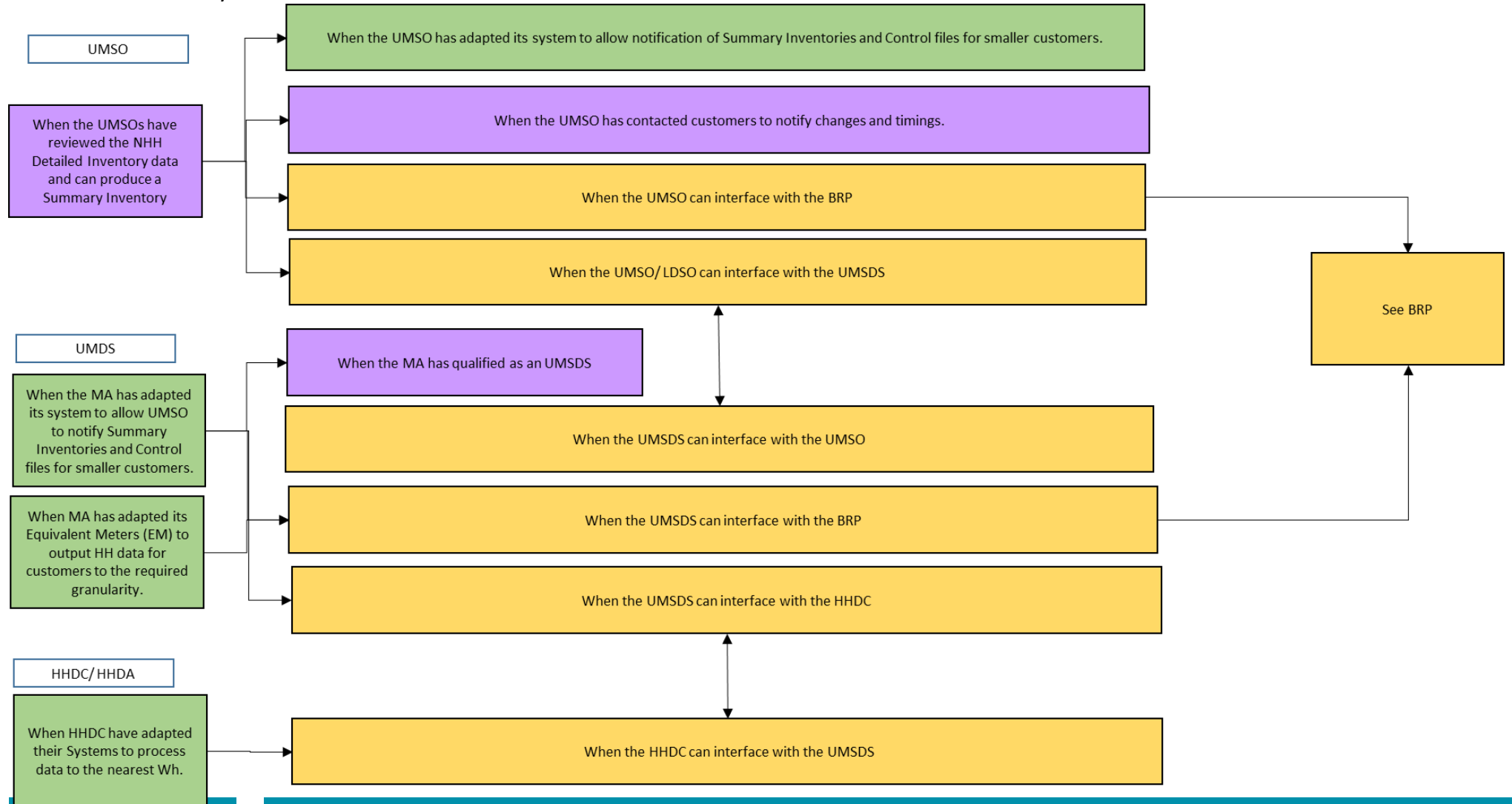
## Unmetered Supplies Segment Transition Approach

### Phase 1 – Governance and Code Changes and BRP



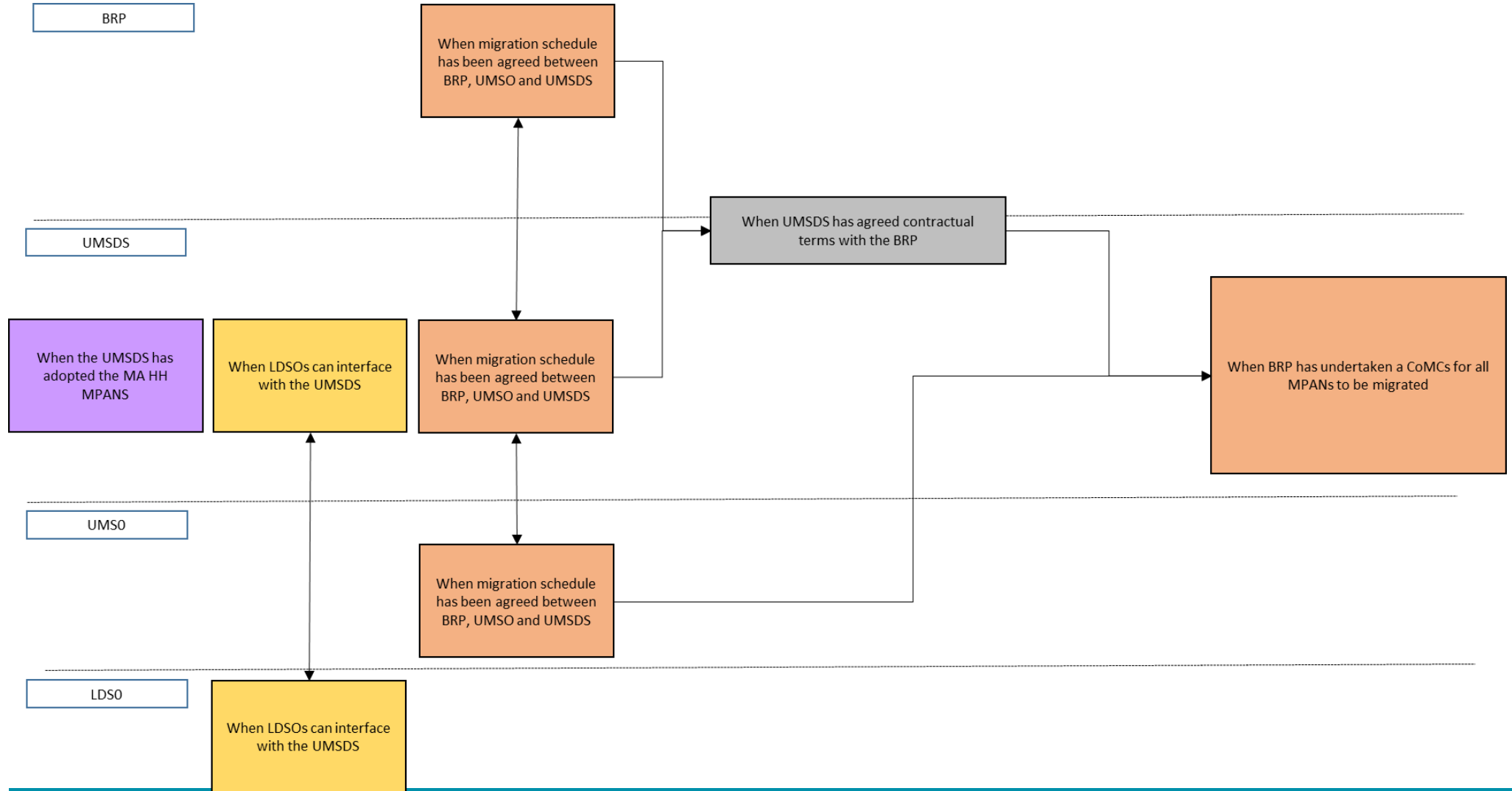
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## UMS Phase 1 – UMSO, UMSDS and HHDC



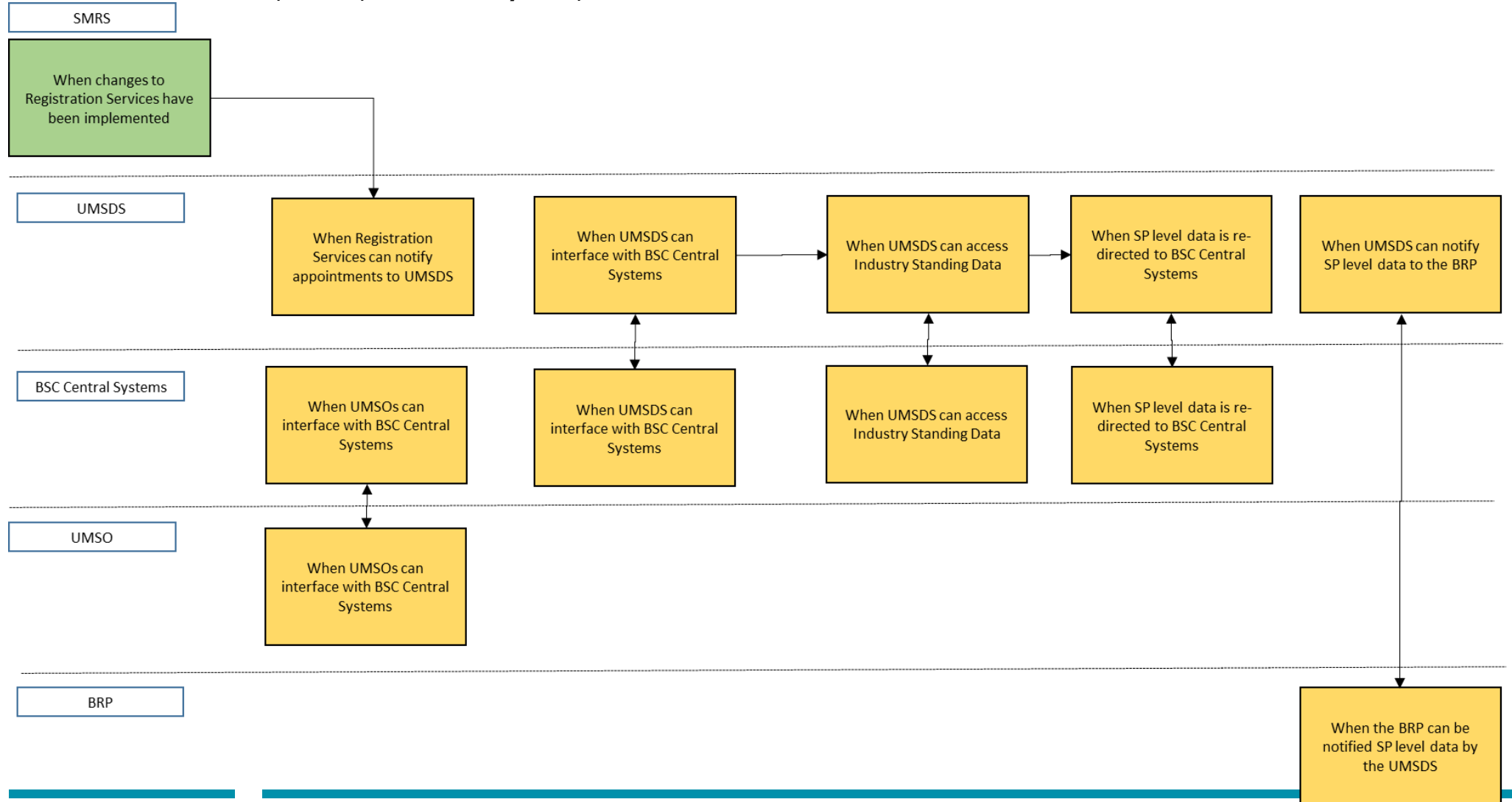
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## UMS Phase 2 – BRP, UMSO, UMSDS, LDSO



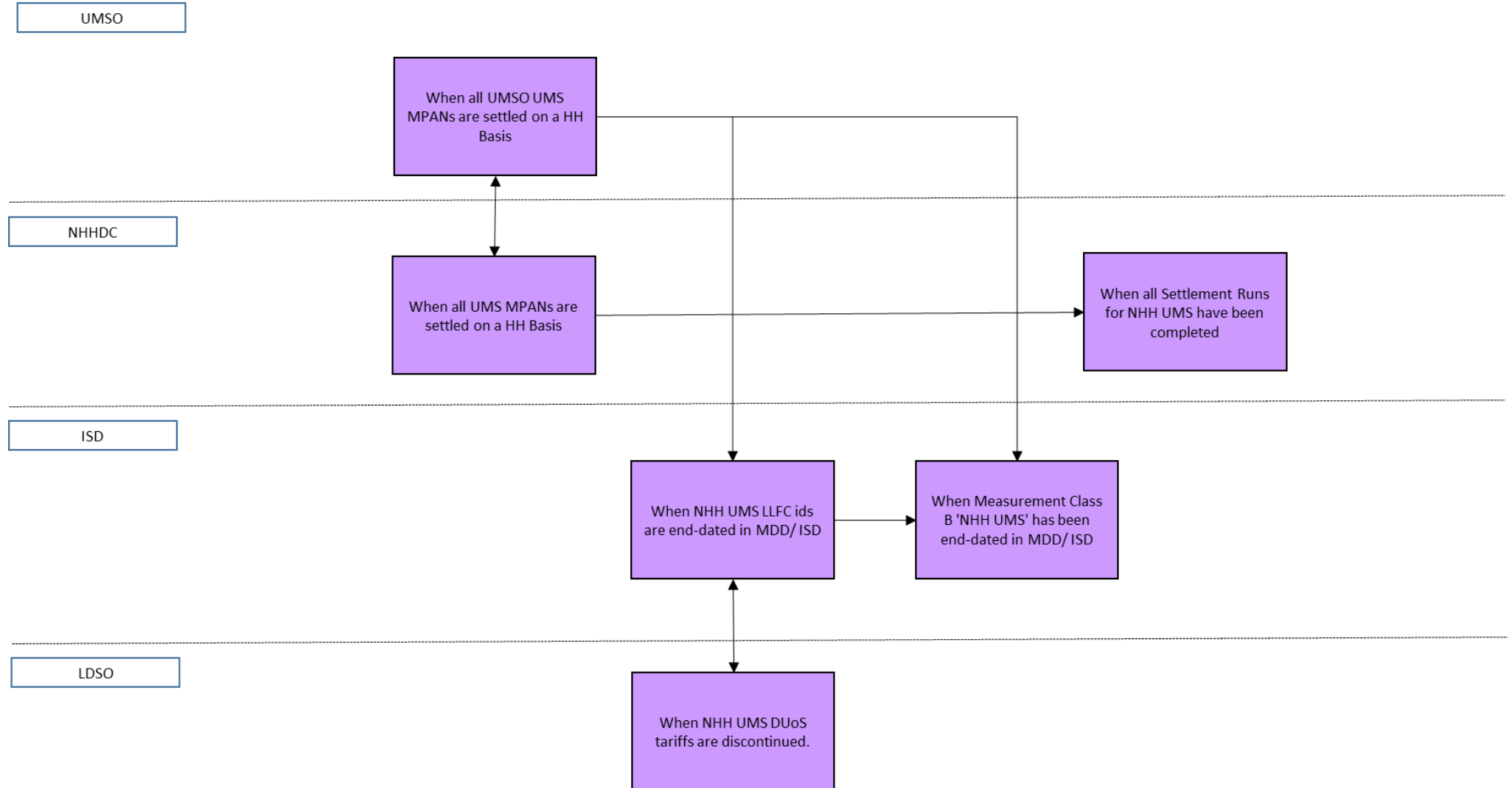
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## UMS Phase 3 and 4 – SMRS, UMDS, BSC Central Systems, UMSO and BRP



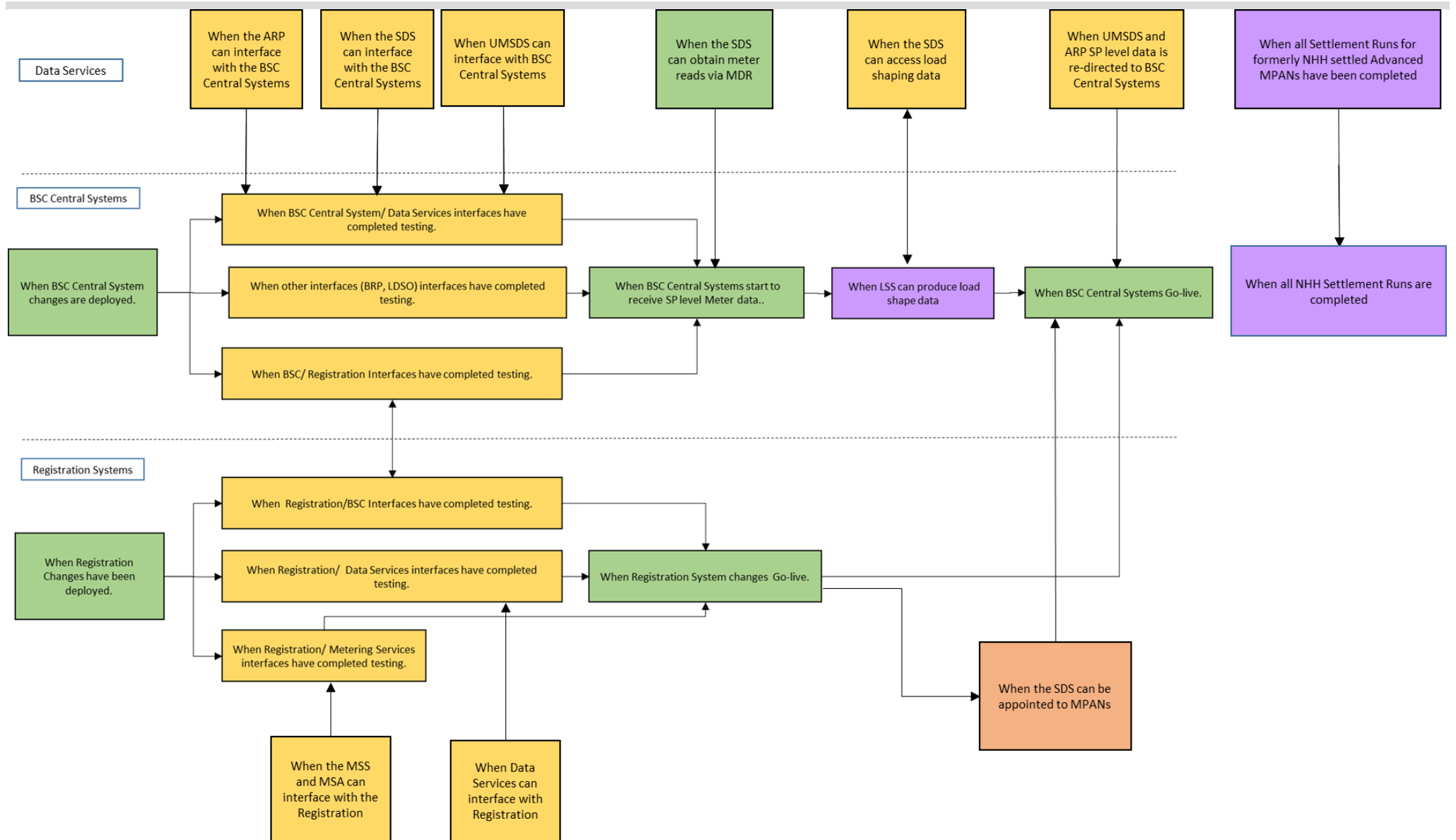
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## UMS – Closure of NHH Processes



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## APPENDIX B - THE CRITICAL PATH FOR TRANSITION





# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## APPENDIX C - PERFORMANCE ASSURANCE CONSIDERATIONS

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### 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

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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- 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.

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## 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; and
- 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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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## 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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

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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.

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

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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.

# MHHS TOM – RECOMMENDED TRANSITION APPROACH

## APPENDIX D - SUMMARY OF RESPONSES TO THE DWG'S TRANSITION APPROACH CONSULTATION

We received 25 responses. Responses were received from Large Suppliers, Small Suppliers, LCCC, DCC, Citizens Advice, Distribution Businesses and a Meter Administrator.

No.	Company Name	Confidential	Role of Parties/non-Parties represented
1.	Association of Meter Operators	No	Trade Association
2.	Centrica	No	Supplier
3.	Citizens Advice	No	Charity, Energy consumer advocate
4.	DCC	No	Central Industry Body
5.	Drax	No	Supplier
6.	EON	No	NHH & HH Supplier / DC / MO / DA
7.	EDF Energy	No	Supplier
8.	ElectraLink	No	SVA Network Service Provider
9.	Engie Power	No	Supplier
10.	Electricity North West	No	Electricity Distribution
11.	IMServ	No	Supplier Agent: Meter Operator, Data Collector and Data Aggregator
12.	Low Carbon Contracts Company (LCCC) & Electricity Settlements Company (ESC)	No	Central Industry Body
13.	Morrison Data Services	No	Party Agent
14.	Northern Powergrid	No	Distribution Network Operator (NEEB & YELG)
15.	Npower	No	Supplier, Supplier Agent
16.	Ovo	No	Domestic supplier
17.	Power Data Associates	No	Meter Administrator
18.	Salient Systems	No	System Solutions Provider – HHDC, HHDA, HHMO, NHHDC, NHHDA, NHHMO
19.	Shell Energy Retail	No	Energy Supplier
20.	Siemens	No	Supplier Agent
21.	SSE	No	Supplier
22.	Stark	No	Energy Data and Services
23.	TMA Data Management	No	Supplier Agent and Shared Services provider for Smart Metering
24.	Utilita Energy	No	Supplier
25.	Western Power Distribution	No	DNO

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

The following is a summary of the responses by question to the DWG’s consultation on its Transition Approach. The detailed response can be found on the [DWG webpage](#).

### Question 1: Do you agree with the DWG’s proposed mapping for Metering System types to Market Segments?

Yes	No	Neutral/Other	Not Answered
16	0	3	6

#### Key Themes

- Clarification on edge cases e.g. Domestic CT, related meters, behind-the-meter, multiple suppliers and Export under the future arrangements;
- May be merit in sub dividing MCs that cover domestic and non-domestic smart meters;
- Could run the TOM earlier using default profiles (profiling), whilst data for load shaping is collected; and
- DNO costs to moving Measurement Class may outweigh any benefits.

### 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?

Yes	No	Neutral/Other	Not Answered
9	9	4	3

#### Key Themes

- No benefit in migrating to elective then migrating again, as brings costs and complexities;
- Technically feasible but not supported by all Suppliers, based on HHDC processing rules;
- Value of developing Elective process depends on when the MHHS TOM is implemented; and
- Elective can deliver modest benefits in the shorter term; processes should be improved.



## MHHS TOM – RECOMMENDED TRANSITION APPROACH

**Question 3: Do you agree with the PAF Assumptions and Principles and that all the potential impacts on the PAF have been identified?**

Yes	No	Neutral/Other	Not Answered
13	6	3	3

### Key Themes

- Performance measures should be targeted at organisations responsible for resolving errors;
- Performance measures currently don't allow time for issues to be resolved;
- Need to consider industry payment schedules which are linked to settlement runs;
- New/changed performance serials need to be clearly understood upfront;
- Need tight definition of what can be considered 'outside a supplier's control';
- Settlement run timing should consider other defined processes e.g. DCC fault resolution; and
- Pre-requisite should require proportion of meters with Smart-SP Level data.

**Question 4: Do you agree with the phased approaches proposed for BSC and Registration Systems?**

Yes	No	Neutral/Other	Not Answered
14	2	5	4

### Key Themes

- Phased approach should benefit industry parties through lower cost;
- Need to consider timescales and interaction with Faster Switching;
- Parties may choose to delay qualification until later in the transition period; and
- Should clarify what the MDS is and what it is not i.e. MDS performs aggregation for settlement but also facilitates data access for flexibility aggregators etc.

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

### Question 5: Do you agree with the phased approach proposed for the Smart and Non-smart Market Segment?

Yes	No	Neutral/Other	Not Answered
17	1	3	4

#### Key Themes

- MSS should have a DUIS role created so that it can function independently of supplier;
- PSS should be a qualified role so that it can be subject to BSC monitoring/auditing;
- PAF should account for a drop in NHH performance as MPANs are migrated to SDS;
- Phased approach creates problems where MPANs revert to legacy NHH arrangements; and
- Need clear lines of responsibility to ensure volume is not double-counted across sectors.

### Question 6: Do you agree with the phased approach proposed for the Advanced Market Segment?

Yes	No	Neutral/Other	Not Answered
16	2	2	5

#### Key Themes

- Should qualify ADS before any migration so that HHDA doesn't need to be upgraded to handle higher volumes of data;
- Advanced meters are first being upgraded to HH under current process, then moved to the TOM. Need to avoid issues as with P272;
- Need to consider customer-appointed agents;
- Non-domestic customers have a choice of metering and many WC sites will continue with advanced meters on an enduring basis; and
- Shouldn't encourage Advanced WC to change to smart meters.

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

### Question 7: Do you agree with the phased approach proposed for the Unmetered Market Segment?

Yes	No	Neutral/Other	Not Answered
14	3	2	6

#### Key Themes

- Should qualify new services before mass migration to avoid investment in temporary systems - e.g. shouldn't modify HHDC to use Wh;
- Need to consider how to treat NHH customers with small EACs;
- NHH vs. HH UMS not based on a threshold; a handful of NHH UMS customers are very large;
- Transition might coincide with a ramping up of UMS end points (lamp post charging); and
- Need to account for customer involvement in the process.

### Question 8: Do you agree that the critical path captures all the key activities and dependencies?

Yes	No	Neutral/Other	Not Answered
9	8	4	4

#### Key Themes

- Would be helpful to describe how transition would be governed or orchestrated;
- Need to account for impacts of qualification, data cleanse, migration timeframes, credit cover, forecasting, significant CoMCs, SEC accession, DCC activities and other industry changes;
- Need entry/exit requirements for each phase, data to support shortened settlement timetable, plan for moving the standing data; and
- Architecture is a key dependency but is not included.

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

### Question 9: Do you agree with the DWG’s proposed approach for transitioning to the revised Settlement Timetable?

Yes	No	Neutral/Other	Not Answered
14	2	5	4

#### Key Themes

- Consult when the market has mostly moved to HH settlement; too early to decide now because smart meter penetration/distribution is not understood;
- Need changes far in advance; many business process are linked to the settlement timetable;
- Need an idea of when transition to new settlement timetable will be triggered because LCCC have a full schedule of system changes and a 12+month lead time; and
- Decision to reduce settlement timetable should be taken nearer the time based on market monitoring and clearly defined trigger points.

### 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?

Yes	No	Neutral/Other	Not Answered
13	2	3	7

#### Key Themes

- DF run can potentially be brought earlier, in time, following continual review;
- Need to review RF performance to assess the details of the dispute materiality thresholds;
- Consider mechanism for parties to recover mis-settled energy outside the disputes process;
- Shorter settlement timetable could mean more disputes and this needs to be costed;
- Materiality threshold should be low enough to settle legitimate disputes, otherwise there will be inaccurate settlement and more costs to suppliers; and
- Materiality thresholds need to be reviewed.

## MHHS TOM – RECOMMENDED TRANSITION APPROACH

**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?**

Yes	No	Neutral/Other	Not Answered
19	1	2	3

### Key Themes

- During transition there is a need checkpoints to monitor progress against principles;
- Avoid temporary arrangements being introduced for transition, increasing costs;
- Not enough detail regarding suppliers reverting to NHH arrangements or customers switching supplier during the transition period; and
- Should consider impact on end consumers/bills.

**Question 12: Do you have any other comments?**

- Transition Approach is too high level to inform an accurate cost estimate in Ofgem's RFI;
- Areas for discussion: GCF, align implementation with TCR, switching supplier when suppliers at different stage of transition, Ofgem support for industry engagement of consumers;
- There will be extra work for DNO relating to customer-provided UMS information;
- Need to handle transition carefully to ensure it is smooth and no unnecessary or excessive costs are incurred; and
- Should cover run off arrangement and how this affects different parties e.g. data aggregators.