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MP162

‘SEC changes required to deliver MHHS’

Modification Report

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About this document

This document is a final Modification Report. It sets out the background, issue, solution, impacts, costs, implementation approach and progression timetable for this modification, along with any relevant discussions, views and conclusions.

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This document also has six annexes:

- **Annex A** contains the business requirements for the solution.
- **Annex B** contains the Data Communications Company (DCC) Impact Assessment response.¹
- **Annex C** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.
- **Annex D** contains the full non-confidential responses received to the first Refinement Consultation.
- **Annex E** contains the full responses received to the second Refinement Consultation.
- **Annex F** contains the full non-confidential responses received to the third Refinement Consultation.

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¹ A Word version is available on the [MP162 webpage](#) if you wish to access the embedded document

1. Summary

This proposal has been raised by Richard Vernon from the DCC.

As the smart metering rollout continues, there will be more and more premises with Electricity Smart Metering Equipment (ESME) installed capable of recording consumption in each half-hour period. Ofgem's Electricity Settlement Reform Significant Code Review (SCR) has concluded that settling all consumers on a half-hourly basis would bring net benefits of up to £4.5bn by 2045². It has therefore concluded that Suppliers should be mandated to settle their customers on a half-hourly basis (if that consumer has not opted out).

The full solution for market-wide half-hourly settlement (MHHS) will allow third party organisations to collect half-hourly data from smart meters for settlement on behalf of Suppliers or customers. However, the current smart metering architecture does not support such organisations being able to access and collect this data. Ofgem requested the DCC raise a SEC modification to progress and deliver the changes needed to allow for this.

MP162 proposes to introduce the changes needed under the SEC and the DCC Systems to facilitate independent agents being able to access half-hourly data from ESME, which will include:

- Introducing a new User Role for Parties other than Suppliers who will be carrying out the Meter Data Retrieval (MDR) service.
- The User Entry Process requirements for the new User Role.
- Defining the relevant Service Requests the new User Role will have access to and the associated Target Response Times (TRTs) and testing scenarios.
- The associated security and data privacy arrangements that will apply to the new User Role.

This solution is based on the Ofgem target operating model (TOM); major changes to the technical solution are not expected to be needed to resolve any incorrect design assumptions. The full MHHS solution is still being finalised, and further changes to the SEC may be needed to align with this. These will be raised and progressed under a separate modification due to the lead time needed to implement the DCC System changes under MP162.

This modification is expected to directly impact Suppliers and the DCC and may have indirect impacts on other SEC Parties. The full DCC implementation costs are approximately £9.0m, with a further £2.3m per annum in ongoing costs. This modification is targeted for the February 2024 SEC Release and is being progressed as an Authority-Determined Modification.

² Please see Ofgem's [final business case and decision to implement market-wide half-hourly settlement](#) for more details.

2. Issue

What are the current arrangements?

Generators and Suppliers trade electricity in the wholesale market for each half-hourly period in the run-up to the period of actual consumption. This is based on Suppliers' forecasts of how much energy its customers will consume. The actual amount of energy generated or consumed is then measured, along with any further actions taken by National Grid in real-time to keep the system balanced (the amount of generation at any given time matches the demand from consumers). Settlement reconciles any differences between the electricity a participant buys or sells, and the actual generation or demand realised. Any surplus or shortfall in a participant's position in each half-hour period is subsequently determined through the settlement process, and this difference is charged accordingly. These arrangements are governed and managed under the Balancing and Settlement Code (BSC).

The largest consumers, such as industrial sites, are already required to be settled on a 'half-hourly' basis, and have the metering already equipped to measure consumption in each half-hour period. Suppliers can also choose to settle consumers half-hourly through Ofgem's elective half-hourly settlement work. However, most smaller businesses and households continue to be settled on a 'non-half-hourly' basis. For these consumers, periodic meter reads are taken, usually at intervals of weeks or months. Profiles of average customer usage are then used to allocate the customer's consumption to the half-hourly periods between the meter reads. It is these estimates that are then used in settlement.

Smart Metering Equipment Technical Specification (SMETS) compliant ESME (both SMETS1 and SMETS2+) can record the amount of energy consumed or exported within every half hour period. Although SMETS-compliant meters are classed 'non-half-hourly' and do not meet the requirements needed to be BSC-compliant half-hourly meters, making use of this data still provides an opportunity to improve both the speed and the accuracy of settlement. This can also help to enable new products and services, for example in supporting the use of electric vehicles, heat pumps or making use of smart appliances. These can deliver positive outcomes for consumers through lower bills, reduced environmental impacts, enhanced security of supply and a better quality of service.

What is the issue?

As the smart metering rollout continues, there will be more and more premises with ESME capable of recording consumption in each half-hour period. Ofgem has considered whether the whole electricity market should be settled on a half-hourly basis, and in July 2017 it launched its [Electricity Settlement Reform Significant Code Review](#).

Ofgem's analysis has predicted that settling all consumers on a half-hourly basis would bring net benefits of between £1.6bn and £4.5bn over the period 2021-2045. In April 2021, Ofgem published its [final business case and decision to implement market-wide half-hourly settlement](#), confirming the decision to move forward with MHHS.

During the SCR, Ofgem has developed its TOM for how MHHS should be implemented. The full solution includes a requirement for third-party organisations to be able to be appointed to collect half-hourly readings from smart meters to feed into settlement. However, the Smart Metering Implementation Programme (SMIP) envisioned Suppliers being the only organisations accessing and collecting data from smart meters. Changes to the DCC Systems will therefore be required to allow

third-party 'Meter Data Retrieval Agents' (MDRAs), a new role created through the MHHS design, to be able to access ESME and collect half-hourly meter readings for settlement purposes.

Ofgem recognised that the changes required for the SEC and the DCC Systems to meet the above requirement will have a much longer development and implementation lead time than the changes needed under other Codes. It agreed these changes should be raised and progressed early under the governance of a SEC modification. High level requirements would be initially defined by Ofgem and the MHHS Programme, and then refined via the SEC modification framework. This allows for proper scrutiny of the different options and costs by the SEC Panel, its Sub-Committees, and the wider industry. On 27 April 2021, Ofgem issued a [request to the DCC to raise the SEC modification](#).

What is the impact this is having?

Implementing the full TOM for MHHS requires changes to the SEC and to the DCC Systems to allow third-party organisations to be able to collect half-hourly meter readings from ESME. Without these changes, the Ofgem TOM for MHHS cannot be fully delivered.

Impact on consumers

Ofgem predicts that settling all consumers on a half-hourly basis will bring net consumer benefits of between £1.6bn and £4.5bn over the period 2021-2045. Ofgem considers the full benefits will only be realised if all Suppliers are required to settle their consumers on a half-hourly basis³.

3. Solution

MHHS TOM – SEC requirements

During the SCR, Ofgem developed its TOM for delivery of the full MHHS solution. This modification covers the changes required to deliver the requirement for third-party organisations to be able to collect half-hourly meter readings from ESME on behalf of Suppliers for use in settlement.

Please note that MP162 focusses on the SEC and DCC System changes and processes required to deliver this requirement based on the TOM. This report does not consider the wider steps and activities that participants will need to follow (for example what they subsequently need to do with the data obtained from ESME to feed this into settlement).

The Proposer originally envisioned that MP162 would cover all the SEC changes required for MHHS. However, due to the ongoing development of the full MHHS solution, it will not be possible to pick up all the required changes under MP162 without delaying the implementation date of the DCC System changes needed to facilitate the MDRA role. Further changes to the SEC identified following finalisation of the full MHHS solution will be progressed under a separate modification(s).

³ Domestic consumers can opt out of sharing their import half-hourly data for settlement purposes. In this case, the Supplier would settle these consumers using either their daily or monthly consumption and an appropriate load shape to estimate their half-hourly consumption.

Proposed Solution

The MP162 solution will cover the changes needed under the SEC and the DCC Systems for the new User Role needed for MHHS. This will include:

- The introduction of a new User Role for Parties carrying out the MDR service.
- The User Entry Process requirements for the new User Role.
- Defining the relevant Service Requests the new User Role will have access to and the associated TRTs and testing scenarios.
- The associated security and data privacy arrangements that will apply to the new User Role.

The full MHHS solution is being developed under the wider MHHS programme, and this was not completed before this MP162 Modification Report needed to be finalised for decision. The MP162 solution is based on the TOM; there is a small risk that as the end-to-end solution is refined, changes may be required. The Smart Energy Code Administrator and Secretariat (SECAS) and the DCC have sought to mitigate this risk via regular engagement with the MHHS Programme. SECAS considers that the technical solution developed under MP162 is unlikely to need to materially change at this late stage.

The DCC solution has been based on a set of assumptions on the intended use of the MDR User role, the scheduling of Service Requests specifically in relation to half-hourly settlement data, and the associated TRTs.

The full business requirements and assumptions for this modification can be found in Annex A. The DCC's Impact Assessment providing the full details on the DCC's solution can be found in Annex B.

Introduction of the MDR User Role

A new DCC User Role, 'Meter Data Retriever' (or 'MDR'), will be created.

The identity of the MDRA appointed for a given Meter Point Administration Number (MPAN) and the effective dates for this appointment will be registered in the Meter Point Administration Service (MPAS). This information will be passed to the DCC Systems via the Central Switching Service (CSS) and stored in the Registration Data. The DCC will perform validation for an MDR User against this data.

User Entry Process requirements

A Supplier who elects to operate as its own MDRA will not need to register under the 'MDR' User Role and may continue to operate using its existing Supplier User Roles.

Any Supplier agent operating as an MDRA on behalf of a Supplier will be required to accede to the SEC under the 'Other SEC Party' Party Category if it has not already done so before. It will also be required to register as a DCC User in the new 'MDR' User Role. An MDR User will be required to undergo appropriate User Entry Process Testing (UEPT) for the role; new Test Scenarios will be defined for MDR Users undertaking the User Entry Process.

For the avoidance of doubt, if a Supplier wishes to act as an MDRA for another Supplier, it will count as a Supplier agent in that scenario. As such, it would need to register in and use the 'MDR' User Role when collecting data on behalf of other Suppliers.

Service Requests and TRTs

An MDR User will be able to use the following Service Requests (SR):

Valid Service Requests for an MDR User			
DCC SR ref.	Service Request name	On Demand?	DCC Scheduled?
4.1.1	Read Instantaneous Import Registers	Yes	No
4.2	Read Instantaneous Export Register Values	Yes	Yes ⁴
4.6.1	Retrieve Import Daily Read Log	Yes	Yes
4.6.2	Retrieve Export Daily Read Log	Yes	Yes
4.8.1	Read Active Import Profile Data	Yes	Yes
4.8.3	Read Export Profile Data	Yes	Yes
4.17	Retrieve Daily Consumption Log	Yes	Yes
5.1	Create Schedule	Yes	No
5.2	Read Schedule	Yes	No
5.3	Delete Schedule	Yes	No
8.2	Read Inventory	Yes	No

The DCC will use Access Control to validate any Service Request sent by an MDR User against the Registration Data. MDR Users will only be able to access those ESME for which they are the appointed MDRA.

Suppliers will, as now, only be able to submit Service Requests as an 'Import Supplier' or an 'Export Supplier' to ESME for which they are registered as the Import or Export Supplier. They would need to use the 'MDR' User Role if collecting data from ESME on behalf of another Supplier.

The TRTs associated with MHHS data retrieval for the different User Roles are set out below, and are subject to the following:

- Existing business-as-usual Import Supplier and Export Supplier Service Requests can continue to be submitted on-demand;
- All MHHS-related Service Requests, for all Users, are required to be scheduled for a first attempt to retrieve MHHS data; and
- Any retry to retrieve data can be set as an on-demand Service Request.

TRTs for Eligible Users for MHHS data retrieval Service Requests								
DCC SR ref.	SR sent by existing User Roles				SR sent by 'MDR' User Role			
	SMETS2		SMETS1		SMETS2		SMETS1	
	Scheduled	On-Demand	Scheduled	On-Demand	Scheduled	On-Demand	Scheduled	On-Demand
4.1.1	N/A	30 secs	N/A	16 secs	N/A	N/A	N/A	24 hrs
4.2	24 hrs ⁴	30 secs	24 hrs ⁴	16 secs	24 hrs	24 hrs	24 hrs	24 hrs
4.6.1	24 hrs	30 secs	24 hrs	16 secs	24 hrs	24 hrs	24 hrs	24 hrs
4.6.2	24 hrs	30 secs	N/A	N/A	24 hrs	24 hrs	N/A	N/A
4.8.1	24 hrs	5,600 secs	24 hrs	16 secs	24 hrs	24 hrs	24 hrs	24 hrs

⁴ SR 4.2 is not currently able to be scheduled. This will be made schedulable as part of MP162.

TRTs for Eligible Users for MHHS data retrieval Service Requests								
DCC SR ref.	SR sent by existing User Roles				SR sent by 'MDR' User Role			
	SMETS2		SMETS1		SMETS2		SMETS1	
	Scheduled	On-Demand	Scheduled	On-Demand	Scheduled	On-Demand	Scheduled	On-Demand
4.8.3	24 hrs	30 secs	24 hrs	16 secs	24 hrs	24 hrs	24 hrs	24 hrs
4.17	24 hrs	30 secs	N/A	N/A	24 hrs	24 hrs	N/A	N/A
5.1	N/A	24 hrs	N/A	24 hrs	N/A	24 hrs	N/A	24 hrs
5.2	N/A	24 hrs	N/A	24 hrs	N/A	24 hrs	N/A	24 hrs
5.3	N/A	24 hrs	N/A	24 hrs	N/A	24 hrs	N/A	24 hrs
8.2	N/A	30 secs	N/A	30 secs ⁵	N/A	30 secs	N/A	30 secs

Users will be expected to issue the correct Service Requests for the data granularity required for a given customer. The DCC will **not** validate whether a customer has opted out of half-hourly settlement or whether the User has requested the right granularity of data.

Introduction of scheduling windows

The DCC will introduce a 'peak' (overnight) and 'off-peak' (during the day) scheduling window for each Communications Service Provider (CSP) and SMETS1 Service Provider (S1SP). This is to control the transactions per second (TSP) processing rate for scheduled requests within each window and minimise the impact of demand spikes on the DCC Total System. The proposed times for each window are:

Scheduling windows		
DCC Service Provider	Peak window	Off-peak window
CSP North	00:00-08:00	10:00-20:00
CSP Central & South	00:00-07:00	10:00-20:00
S1SP-1 Initial Operating Capability (IOC)	00:00-06:00	10:00-20:00
S1SP-2 Middle Operating Capability (MOC)	00:00-06:00	14:00-22:00
S1SP-3 Final Operating Capability (FOC)	00:00-06:00	09:00-23:00
Dual Control Organisation (DCO) ⁶	00:00-06:00	09:00-23:00

A time gap has been allowed after the end of the peak window for retries and the start of Install & Commission (I&C) activity. A gap has also been allowed between the end of the off-peak window and midnight to allow retries and the Service Reference Variants (SRVs) to complete before the start of the next day's peak window. The DCC will also ensure that on-demand Service Requests sent during the off-peak scheduling window are prioritised over scheduled Service Requests.

⁵ The current SMETS1 TRT of 16 seconds for SR 8.2 is an anomaly. The process for reading Device details from the Smart Metering Inventory (SMI) is the same for both SMETS2 and SMETS1 Devices with processing of such requests limited to the DSP systems. This TRT will be amended to 30 seconds for all Users as part of this modification for alignment with other DCC-Only Service Requests.

⁶ The DCO's windows will cover the duration of all the S1SP individual windows

The schedulable Service Requests relevant to MHHS will be processed within the corresponding window depending on the User Role that has submitted the request:

Allocation of schedulable Service Requests to scheduling windows		
DCC SR ref.	Users processed in peak window	Users processed in off-peak window
4.2	-	Export Supplier, Meter Data Retriever
4.6.1	Import Supplier, Gas Supplier	Meter Data Retriever
4.6.2	-	Export Supplier, Meter Data Retriever
4.8.1	Import Supplier, Gas Supplier	Meter Data Retriever
4.8.3	-	Export Supplier, Meter Data Retriever
4.17	Import Supplier, Gas Supplier	Meter Data Retriever

All Service Requests submitted by other User Roles and all other scheduled Service Requests will not be affected and will continue to be processed overnight, as part of the peak window, as they are now.

The timings of each window and the allocation of Service Requests and User Roles to these will be fully configurable by the DCC.

Temporary caching of SMETS1 data

When a User submits a SRV 4.6.1, 4.8.1 or 4.8.3 to a SMETS1 ESME, the data returned will also be stored in a cache held by the DCC for 48 hours. If any other Users subsequently requested the same data during this time, this will be provided from the cache without needing to query the meter. After 48 hours, the cached data will be deleted. This will reduce the traffic to these Devices if more than one User is requesting the half-hourly data.

Due to the security requirements on encrypting SMETS2 consumption data, this data cannot be cached; it will continue to be collected from the meter as requested and sent only to the requesting User.

Security and privacy arrangements

Suppliers will continue to be subject to the existing User Security Assessments and will not need to undergo Privacy Assessments if they elect to perform the MDRA role in-house. No changes to these requirements are proposed due to MHHS.

MDR Users will need to undergo an initial Full User Security Assessment (FUSA) (unless they have already undergone an equivalent assessment as an Other User), which will form part of the User Entry criteria. They will then be required to adhere to the same SEC Section G 'Security' obligations as an Other User and undergo annual User Security Assessments. MDR Users will also need to declare relevant Anomaly Detection Thresholds (ADTs) in line with the existing provisions.

MDR Users will not need to undergo Privacy Assessments.

4. Impacts

This section summarises the impacts that would arise from the implementation of this modification.

SEC Parties

SEC Party Categories impacted			
✓	Large Suppliers	✓	Small Suppliers
	Electricity Network Operators		Gas Network Operators
✓	Other SEC Parties	✓	DCC

Breakdown of Other SEC Party types impacted			
✓	Shared Resource Providers		Meter Installers
	Device Manufacturers		Flexibility Providers

Suppliers will be directly impacted by the changes being introduced for MHHS and the obligations to collect half-hourly meter reads for settlement. Under the MHHS TOM, Suppliers, via the Smart Data Service (SDS), will be able to choose, for each MPAN, whether to collect half-hourly data for settlement themselves or whether to appoint a third-party agent to perform this activity.

- If Suppliers elect to collect the data themselves, it is likely that their internal systems will need changing to set up the additional schedules and manage the additional data that will be received to facilitate the MHHS requirements. This will likely be in addition to any existing data they currently receive.
- If Suppliers elect to appoint an MDRA, they will need to undergo the process to appoint this agent. They may also want to liaise with this agent to manage any potential duplication of data collected.

Changes will be required to relevant Users' systems to set up relevant schedules to retrieve data from relevant ESME, manage the handling of the data, and submit it into settlement.

Any User wishing to register in the new MDR User Role will need to be on the DUIS version that includes MP162 (currently expected to be version 5.3 – see below). Existing Users will need to update their DUIS schema if they wish to schedule SR 4.2 for SMETS1 Devices, but otherwise will not need to update their DUIS version for MHHS.

Suppliers may need to make changes to their interfaces with the CSS for the appointment or de-appointment of the relevant MDRA for an MPAN.

Shared Resource Providers may be impacted if they carry out any relevant activities on behalf of a Supplier. Other Party Categories are not expected to be directly impacted by MP162 but may be indirectly impacted by the increased volume of traffic that the MHHS solution is expected to generate.

Any new MDR Parties will need to accede to the SEC under the 'Other SEC Party' Party Category if they have not done so before. Any new MDR Users will need to develop or obtain a DCC adaptor, undergo UEPT for the 'MDR' User Role, and undergo any required User Security Assessments for this.

The responses received from Parties on the expected impacts on them to deliver MP162 can be found in Annexes D, E and F.

DCC System

The DCC will create a new User Role within the DCC Systems for MDR Users.

The DCC will accept and action Service Requests from the new MDR User role, as well as the existing Supplier roles, to retrieve import consumption data and, where configured, export generation data from specified SMETS1 and SMETS2 ESMEs enrolled within the DCC Systems. All Service Requests received from MDR Users will use the existing DCC User Gateway and be subject to Access Control authentication against the identity of the MDR User stored and provided to the DCC within the Registration Data. This authentication will ensure that only registered MDR Users can retrieve the relevant data from each ESME. Where data is successfully retrieved from both SMETS1 and SMETS2+ ESMEs, this data shall be returned across the Smart Metering communication networks to the requesting User.

All authenticated data requests from Suppliers and MDR Users shall be retrieved from each ESME using the Data Service Provider (DSP) scheduling services wherever possible. The DCC expects Users to set up a schedule for all applicable Service Requests, with any on-demand requests kept to a minimum. This will allow the DCC to maximise efficiencies across its systems and minimise the impacts of any demand spikes that could be caused by many on-demand Service Requests being sent at once. Any on-demand requests will be processed in line with the TRTs specified in Section 3 above.

The change allowing SR 4.2 to be scheduled will require a DUIS schema change. This will require a minor uplift to Parse and Correlate (P&C). Great Britain Companion Specification (GBCS) Integration Testing for Industry (GFI) and DCC Boxed will also incorporate the new DUIS schema.

The CSPs will implement capacity and infrastructure increases to manage the additional traffic expected from MHHS. Changes will also be made to accommodate the revisions to the scheduling windows.

S1SPs will also require changes to accommodate the new User Role and the changes to the DUIS schema for SR 4.2. A local cache will also be built for data collected through SRVs 4.6.1, 4.8.1 and 4.8.3, so that when subsequent requests are requested from other Users for the same date-time range within 48 hours, data is retrieved from the cache instead from the meter. Infrastructure changes will also be required.

The expected impacts on DCC Systems and the DCC's proposed testing approach can be found in the DCC Impact Assessment response in Annex B.

Northbound prioritisation

After revising the design based on the assumption that the DCC should be able to use existing off-peak capacity for MHHS Service Requests, concerns were raised that traffic for the Export Supplier and MDR Users' scheduled requests could impact on I&C request delivery times during the day. To alleviate these concerns, the DCC has introduced the concept of 'northbound prioritisation' to ensure that on-demand Service Requests sent during the off-peak scheduling window are prioritised over scheduled Service Requests. This will protect the DCC's performance measures relating to TRTs and support Users' daytime priority operational activities such as I&C and prepayment top-up activities.

Northbound prioritisation specifically relates to the off-peak scheduling window only. This control is designed as a single control to apply to all CSPs (SMETS1 and SMETS2).

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section A 'Definitions and Interpretations'
- Section G 'Security'
- Section H 'DCC Services'
- Section I 'Data Privacy'
- Section L 'Smart Metering Key Infrastructure and DCC Key Infrastructure'
- Schedule 11 'Technical Specification Applicability Tables'
- Appendix E 'DCC User Interface Services Schedule'
- Appendix R 'Common Test Scenarios Document'
- Appendix AB 'Service Request Processing Document'
- Appendix AD 'DCC User Interface Specification'

The changes to the SEC required to deliver the Proposed Solution can be found in Annex C.

Technical specification versions

MP162 will require changes to the DCC User Interface Specification (DUIS). This will be implemented in the next version of the DUIS at the time of implementation. The MP162 changes will require a minor DUIS uplift; at the time of this report, this is expected to form DUIS version 5.3.

Updates to the DUIS schema and the DCC User Gateway Interface Design Specification (DUGIDS) are needed to incorporate the additional error codes and responses.

Any Users intending to operate in the new MDR User Role and/or take advantage of the potential scheduling of SR 4.2 will need to be on the new version of DUIS incorporating MP162. Existing User Roles, such as Suppliers, will not need to uplift to this version to be able to deliver MHHS for their own customers; they will only need to update if they wish to create schedules for SR 4.2 as part of this.

No Message Mapping Catalogue (MMC) XML changes have been identified.

No changes to any other Technical Specification documents are expected.

Devices

There will be no impact to any Devices because of this modification.

Consumers

Consumers are not expected to be directly impacted by this modification but are expected to benefit from the full MHHS solution once implemented.

Other industry Codes

This modification forms part of the full MHHS solution, which will impact on several Codes including the SEC. The full MHHS solution, the changes required to the other Codes, and the co-ordination of cross-Code impacts are being assessed and developed as part of the wider MHHS programme.

Under [MP200 'Faster Switching consequential changes to the SEC'](#), the registration data used by the DCC's solution is being moved to sit under the Retail Energy Code (REC). The changes to this to validate and record the MDRA registered to each MPAN will need to be developed, tested, and implemented in parallel with MP162. REC Change Proposal [R0044 'MHHS Programme Changes required to Central Switching Service'](#)⁷ has now been raised to develop these changes.

Greenhouse gas emissions

This modification is not expected to impact on greenhouse gas emissions.

5. Costs

DCC costs

The DCC's implementation and ongoing costs are summarised below. More information on these can be found in the DCC Impact Assessment response in Annex B.

The DCC's implementation costs are recovered from SEC Parties via the Fixed Charges in SEC Section K 'Charging Methodology'. As a result, these costs would be split between Suppliers and Network Parties only.

Implementation costs

The DCC implementation cost to implement this modification is £9,039,740. The breakdown of these costs are as follows:

Breakdown of DCC implementation costs		
Activity	SMETS2 Service Provider costs	SMETS1 Service Provider costs
Design and Build	£2,894,166	£1,257,034
Pre-Integration Testing (PIT)	£862,410	£876,091
Systems Integration Testing (SIT)	£1,947,638	£413,897
User Integration Testing (UIT)	£297,544	£272,681
Transition to Live	£153,396	£30,531
Total	£6,155,154	£2,884,586

⁷ You will need to log into the REC Portal to access this page

Application support costs

The DCC will also incur additional application support costs of £194,687 per month (£2,336,244 per annum).

The DCC expects MP162 will significantly increase the volume of messages being processed. As such, the operational service will require an uplift to support and maintain the solution. Due to the potential impact of the additional traffic volumes the operational support will include increased, ongoing, monitoring of the solution as well as technical support.

The DSP is anticipating application support resources related to increased traffic, monitoring, and support calls, as well as infrastructure running costs. The CSPs and S1SPs will also incur additional ongoing costs related to supporting the hardware, storage and bandwidth needed for the additional volume of traffic expected.

Interaction with the DSP re-procurement

The DSP re-procurement is currently expected to take place in late 2024. The DCC has been ensuring that the MP162 changes have been factored into the DSP re-procurement activities. The DCC confirms that the requirements for MP162 will be replicated in the requirements for any new DSP and as such there will be no additional costs related to MP162 arising from this.

SECAS costs

The estimated SECAS implementation cost to implement this as a standalone modification is two days of effort, amounting to approximately £1,200. This cost will be reassessed when combining this modification in a scheduled SEC Release. The activities needed to be undertaken for this are:

- Updating the SEC and releasing the new version to the industry.

SECAS will manage subsequent accession requests from Party agents not yet signatories to the SEC seeking to operate as MDRAs. It will also manage the UEPT and relevant security assessments needed for Users registering in the MDR User Role. It is not known how many additional requests will be received because of MHHS, but these will be managed as part of business-as-usual processes.

SEC Party costs

In the Refinement Consultations, several respondents were not able to provide any firm cost estimates. Suppliers that provided views gave estimates from less than £100,000 to over £1m but stressed that these costs would need to be reviewed once there is more information on the technical solution. Network Parties did not expect to incur any additional costs beyond their share of the central costs. Supplier agent organisations who are planning on registering as MDR Users anticipated costs of up to £500,000 to undergo the processes for registering in this role.

The responses received from Parties on the expected costs for them to deliver MP162 can be found in Annexes D, E and F.

6. Implementation approach

Approved implementation approach

The Change Sub-Committee (CSC) has agreed an implementation date of:

- **29 February 2024** (February 2024 SEC Release) if a decision to approve is received on or before 31 August 2022; or
- **The first Thursday on or after the date 18 months following approval** (ad-hoc SEC Release) if a decision to approve is received after 31 August 2022; and
- In either case, the changes to SEC Appendix R would be implemented in the November 2023 SEC Release (2 November 2023) to allow the relevant Common Testing Scenarios to be available for any MDR Users during UIT.

The full MHHS service will begin in 2024, and Ofgem and the MHHS Programme are requesting that all changes for MHHS be in place ahead of this. Due to the DCC's required lead time, the February 2024 SEC Release is the earliest SEC Release that MP162 can be included in. The February SEC Releases are normally a 'documentation-only' release, but for 2024 this could be converted to a SEC Systems Release to accommodate MP162.

Implementing MP162 after the February 2024 SEC Release is likely to adversely impact on the DSP re-procurement project's timelines. It also increases the risk that the changes would not be in place in time for the subsequent MHHS project milestones. For these reasons, an ad-hoc implementation date is proposed as the fall-back option rather than moving back to the June 2024 SEC Release.

The DCC has highlighted that due to the size of the MP162 solution and the significant infrastructure upgrades needed, it is likely that no other DCC System impacting modifications could be included in the same SEC Release. Any other modifications proposed for implementation at the same time will be assessed on a case-by-case basis for whether they can be accommodated.

The DCC will develop and test its system changes for implementation to live in the approved SEC Release. These changes will therefore be available in advance of the full MHHS go-live. Similarly, the SEC governance changes will be implemented in the same SEC Release, allowing third-party organisations seeking to act as MDRAs to accede and register in the MDR User Role as required sufficiently in advance of the full MHHS go-live. The full MHHS delivery plan is being developed as part of the wider MHHS programme.

Some respondents to the Refinement Consultations were generally unable to provide an estimated lead time until there is more certainty around the wider solution. Those that were able to provide a view noted lead times ranging from zero lead time up to 18 months, though were generally able to meet the proposed implementation date above. Some respondents noted that MP162 needed to be implemented prior to the full MHHS go-live, with enough time for necessary testing to be completed and the MHHS qualifying phase undertaken.

The responses received from Parties on the expected lead times for them to deliver MP162 can be found in Annexes D, E and F.

MDR User testing considerations

The DCC considers that MDR Users should start testing in time for UIT. This assumes that the Smart Metering Key Infrastructure (SMKI) Repository Entry Process Testing (SREPT) process is complete

before UEPT. The DCC's UIT team has indicated that the SEC Appendix R changes would need to be in force before the start of UIT, with these changes proposed for inclusion in the November 2023 SEC Release, ahead of the full MP162 solution go-live.

Further information can be found in the DCC's Impact Assessment response in Annex B.

7. Assessment of the proposal

Observations on the issue

Due to the extensive discussions that had taken place on the issue under the SCR, which is looking at the full MHHS solution, the Development Stage was kept short. Each relevant Sub-Committee was consulted to provide initial comments on the modification before it advanced to the Refinement Process.

Change Sub-Committee

The CSC was supportive of progressing the modification to the Refinement Process quickly. A member noted it is highly important that the Refinement Process accounts for the large amount of work that has been done by the Code Change and Development Group (CCDG).

One member believed inaccurate assumptions have been made under the SCR around how smart metering works. They noted the Working Group will need to be careful that the smart metering arrangements are not adversely impacted when incorporating half-hourly settlement. The member felt that MHHS has been primarily reviewed from a settlement perspective and has focused mainly on obtaining data from Devices, and not how Devices operate. This was considered out of scope of the CCDG work so this will require SEC Parties to define this in the end-to-end solution. Another member highlighted previous issues caused where only high-level detail had been provided under a modification and stressed that more detail around the solution will be needed to support Parties.

SECAS noted that it would strive to meet Ofgem's overall timetable; however, this should not come at the expense of making sure the smart metering arrangements are not compromised. If any major issues or concerns relating to the smart metering arrangements are identified as part of the Refinement Process, SECAS would raise these with Ofgem and the MHHS Programme as a priority, to assess how these affect the wider solution and timetable. The DCC also noted it has engaged with its Service Providers and was aware of the issues raised. It intended to use all possible resources to fully prepare for this change.

Operations Group

The Operations Group (OPSG) highlighted that the modelling and design assumptions within the DCC's solution will need to account for current performance. The DCC acknowledged that projections and assumptions over capacity will be crucial.

The OPSG queried at what stage it would see how the solution will operate and elements such as traffic patterns and use of the updated provisions. SECAS noted this would be developed and understood as the Refinement Process progresses – see below for more information on the analysis on expected traffic, and Section 3 for more details on the solution and how it will operate. The OPSG

also encouraged the DCC to test the MP162 changes using live Devices rather than emulators, as it has done with other recent changes, as this will reduce costs. The DCC will determine this when the modification is approved and expects that a mix of established Devices and emulators for Devices not available at the time of testing will be used. A member considered the DCC needed to consider how the implementation of the MHHS changes would interact with the planned DSP Re-procurement timescales.

TABASC

The Technical Architecture and Business Architecture Sub-Committee (TABASC) noted the requirement for a new MDR User Role. A member queried what the difference between this and the Supplier User Role was. Another member clarified that the MDRA role was planned to be competitive and so an MDR User may not always be a Supplier.

The TABASC queried how this solution would be implemented in the DUIS, for example through new Service Requests, and how it would be identified whether a Service Request had been sent by a Supplier or an MDR User. It also asked whether Suppliers should be able to request this data from ESME every half hour if they wanted. The TABASC requested these questions be examined as part of the modification. The initial business requirements propose that the existing Service Requests are re-used, with no new Service Requests expected. Any limit on the frequency of data retrieval will also be established as the modification progresses.

One member noted that while SMETS meters can record the consumption in each half-hour period, they considered they had not been designed to be half-hourly meters and would always be treated as non-half-hourly. They echoed previous comments that the end-to-end solution needed to look at the impact of MHHS across the wider smart metering arrangements and ensure that the changes do not have a negative impact.

SSC and SMKI PMA

The SSC and the SMKI Policy Management Authority (PMA) had no comments on the Draft Proposal. They both requested to be consulted on the security and privacy parts of the solution.

Requirement to comply with the MHHS implementation provisions in the BSC

During the Development Stage, Ofgem issued a [consultation seeking to require the DCC to comply with the MHHS implementation provisions within the BSC](#). Sub-Committee members queried how the BSC would place obligations on the DCC and how the DCC would be obliged to comply with other Codes. The TABASC was also concerned how the impacts on the smart metering architecture from any BSC-led change impacting the DCC would be assessed.

BSC Section C12 sets out the high-level governance and co-operation requirements of the MHHS programme for MHHS Participants. The content of this BSC Section were consulted on as part of Ofgem's [consultation on the MHHS implementation and governance arrangements](#). The new licence conditions make the DCC a 'MHHS participant' and require it to comply with this BSC Section. An equivalent requirement on SECAS has been added to the SEC through [MP180 'Market-wide Half Hourly Settlement Implementation'](#). These MHHS programme requirements are high level and are intended to sit alongside established Code governance and will not contain operational or detailed requirements.

How could MHHS impact on DCC System capacity?

The DCC expects a significant increase in the amount of traffic on the DCC Systems because of MHHS. In its Preliminary Assessment⁸, the DCC performed a high-level assessment of the additional capacity that would be needed to accommodate this traffic. While the current capacity is not 100% utilised, the DCC considered it prudent to assess the additional amount of capacity required for MHHS, decoupling this from the existing capacity. The DCC assessed three possible high-level scenarios:

- **Scenario A:** 75% of MHHS data is collected by Suppliers, with the remaining 25% collected by an independent MDRA; all data collected is re-used for other purposes
- **Scenario B:** 50% of MHHS data is collected by Suppliers, with the remaining 50% collected by an independent MDRA; half of the data collected by Suppliers is re-used for existing purposes
- **Scenario C:** All MHHS data is collected by an independent MDRA; Suppliers will continue to collect half-hourly data themselves where needed for existing purposes

Scenario A was used to derive a lower cost estimate of £29m (excluding SIT, UIT and Implement to Live costs), and Scenario C was used to derive an upper cost estimate of £59m.

The DCC noted the 'fixed' costs (those that would be incurred irrespective of the increase in data volumes expected) were relatively low compared to the 'variable' costs (those based on the expected increase in data volumes), as it currently has a good understanding about what changes are needed within its systems. However, expected User behaviour is less clear, particularly the number and timings of additional requests that will be submitted. The three scenarios above covered increasing size and complexity but essentially as more Service Requests are issued per day, the capacity needed to service these increases. Smoothing out requests over a longer period will help to reduce costs, as can using capacity and infrastructure in a more efficient way.

Reusing existing capacity

A Working Group member considered that the DCC should know how much of the current capacity is currently being used. They believed the DCC should be seeking to make maximum use of the current system, utilising existing troughs in demand, and enhancing business processes, rather than seeking additional capacity. They asked how the DCC's assessment of traffic under MHHS would compare to current usage. The DCC considered that depending on how Users behaved, the total traffic could be more than double what is seen today.

The member considered that if the DCC is only using 50% of current capacity, and it could make better use of the periods of low demand, a doubling of traffic could be catered for within the current capacity. They considered this implies that better management of Service Requests over time is the best way forward. However, another member believed that any solution shouldn't be entirely driven by making use of existing troughs in demand, as spare capacity is needed in case of unplanned or unexpected events.

When the DCC originally assessed the required capacity to meet the industry's requirements for smart metering, MHHS was not included in that. The requirements had not included the expectation

⁸ The DCC's Preliminary Assessment is available on the [MP162](#) webpage of the SEC Website
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that all meters would need to provide half-hourly data, or that export data would need collecting. The MDRA is also additional party that can submit Service Requests that was not considered in the original requirements. The DCC does understand the profile of its current service and has modelled expected future changes, but the MHHS changes are further additions that need to be modelled.

Another Working Group member agreed with the DCC's comments. When Suppliers originally fed in their requirements to the DCC, they had not been expecting to need to collect all the half-hourly readings for every day. Given the charging model was based on a cost per Service Request, Suppliers opted for the minimum amount of requests needed to meet their obligations.

The member noted the risk that the DCC isn't set up to handle this capacity had been highlighted to Ofgem at the beginning of the MHHS project; the view back had been that the DCC should have been expecting this change. The member noted there is no requirement under this modification to change or curtail current usage or apply any restrictions to this.

Wider capacity needs

Electricity Network Parties in their Refinement Consultation responses queried why the DCC had not considered the whole system impact of multiple Users collecting consumption data from smart meters. They specifically queried why expected Network Party requirements or known system and capacity constraints around the CSP North radio access network had been excluded. Unless this is considered, there remains the risk of further service degradation in performance. The DCC acknowledged that there are wider use cases that will impact on capacity but highlighted that these are outside the scope of MP162, and it only assessed the capacity needs for MHHS under this modification. The DCC has commenced a wider piece of work looking at holistic capacity needs.

Suppliers also queried why the DCC was including the costs for increased capacity under MP162, noting that there is nothing to stop all Users from collecting half-hourly data from all ESME today. They felt the DCC was incorrectly using MP162 to pick up and recover its costs for the MHHS programme. The DCC highlighted that MHHS will create new demand for consumption data, increasing the overall aggregated demand for half-hourly meter reads. As MHHS is requiring this data to be collected from every ESME, this will now make it part of the core service. The DCC therefore considers it appropriate that its capacity is increased to cater for this additional, mandated, demand. The DCC acknowledges that where data volumes increase today for existing business-as-usual services, this is captured under its general capacity planning service, and its operational costs are increased to reflect additional capacity needed over time.

The Working Group requested for the costs to be split between those needed to add the new User Role and those relating to increasing the capacity. The DCC queried what this information would be used for. Members considered the question was how much it will cost to deliver the User Role to meet the core Ofgem principle, and that additional costs for capacity should be explicitly approved by the Authority.

A Working Group member queried if the whole system needs to be reviewed and redesigned to meet future needs, before it reaches a point where it cannot cope with the demand, though conceded this would likely be outside the scope of MP162. They asked whether the DCC had a view on when a full review of the current model would be needed, due to the pipeline of expected changes that will impact on demand. TABASC members also queried whether there is value in reconsidering the end-to-end architecture considering future capacity expectations.

User behaviour and appointment of MDRAs

The DCC noted the large variability in its cost estimates in the Preliminary Assessment was largely due to not knowing how much extra capacity may be needed, as this will be driven by Users' behaviour. The DCC sought to understand the assumptions around User behaviour and how much additional traffic was expected. If the DCC's assumptions are radically different to what Users are planning, then the costs the DCC provides for this modification won't be reflective. The DCC sought to align its expectations with Users to ensure everyone was moving in the same direction.

The DCC needs to be able to support all the different options, but it wanted to better understand how likely or unlikely each given scenario is. The DCC would like all MHHS traffic to be scheduled, but highlighted subtleties in these assumptions, such as Suppliers following existing processes. While some of the potential scenarios, such as all Suppliers using a third-party agent versus all Suppliers performing the function in-house, may seem trivial, these will have big implications for the DCC's solution. Other factors, such as how many customers choose to opt out of having their half-hourly data collected, will also have impacts.

One of the DCC's key questions for its modelling was the proportion of MHHS data collection collected by Suppliers and by independent MDRAs, reflected in the three scenarios assessed above. The Working Group considered whether the DCC's model could be further broken down further into small, medium, and large Suppliers. Members considered that larger Suppliers would likely carry out the MDRA role in-house, while smaller Suppliers may be more likely to outsource this.

A Working Group member considered that Suppliers collecting this data themselves would place less strain on the system. They would want to encourage Suppliers to collect MHHS data themselves, to reduce the load on the system. However, they also wanted to ensure there is a balanced playing field for third-party MDRAs too. If collecting MHHS data is equally onerous for all Users, this could make it more likely Suppliers outsource this to an agent. Another member felt this approach could be unfavourable to third-party MDRAs, and that Ofgem's requirements was for a level playing field between the roles.

The Working Group noted the dilemma, as the solution will likely be less expensive if Suppliers were to collect their own data, but by making it possible for third-party MDRAs to do so too adds complexity and cost. It queried what could be done to balance this without negatively impacting existing Users. The DCC considered this would require a 'trust model', with ways of operation written into the SEC. The member noted that the current load on the DCC Systems is varied, and Users have had to work together to manage this in a form of trust model, which works well when seeking to resolve problems.

Working Group members noted design work for MHHS was in the early stages and participants may not know their expected behaviours before MP162 needs to be decided upon. Any assumptions could also change as participants build their solutions. However, members considered it reasonable for the DCC to ask Suppliers what their intentions are, to better enable the DCC to build the system to meet Users' requirements.

The TABASC cautioned that any information obtained at this stage on expected behaviours will likely change before MHHS goes live due to the dynamic nature of the current environment. It considered the DCC should focus its design on the assumption there will be a varying mix of Suppliers and third-party MDRAs collecting the data. Instead, the DCC should focus on how best to manage and optimise capacity. Members noted the DCC appeared able to accommodate any capacity increase needed, and that the key question is the cost of doing so. The TABASC also considered that Suppliers would likely not make any decisions around this until 2022.

Customers opting out

A Working Group member noted the DCC's assessment of the opt-out rate and queried if this had been based on data. The DCC confirmed that empirical data had been hard to obtain. The DCC was asked if it could determine opt-outs from the SR 5.1 requests sent. The DCC confirmed it could see if a schedule had been set up, but not why, so could not tell if this was due to opt-out or not.

Another member highlighted customers must actively opt in now but will have to actively opt out under MHHS. They considered the DCC's initial assumptions to be reasonable ones based on Ofgem's work. Another member noted the inclusion of collecting export data through the DCC will add a million further MPANs.

Conclusions

The Working Group concluded that MP162 will add additional demand to the DCC Systems which will need a corresponding increase in capacity. At this stage, there is no clear view on the proportion of data that will be collected by Suppliers or third-party MDRAs.

The DCC subsequently based its solution design on Scenario A, based on indicative views from Suppliers of the likelihood of them appointing an independent MDRA. The DCC's design assumptions which were used in its assessment can be found in Annex A.

The DCC has discussed its volume assumptions with Ofgem throughout the programme's progression, who was satisfied with the assumptions made. As the DCC's Impact Assessment was based on the worst-case scenarios, the DCC is not expecting large discrepancies between the assumptions and the actual demand. Once MP162 is implemented, the impact on capacity will be monitored as part of the DCC's business-as-usual capacity monitoring and management approach.

Should the existing scheduling window be changed?

Scheduling Service Requests across the day

The DCC queried whether Users had any constraints over changes to the existing scheduling windows, or whether doing so would be an issue to Users, to help inform design options. Allowing the DCC more freedom to make full use of the TRT for all Service Requests would allow the load to be better spread across the day, but the DCC wanted to ensure doing so would not impact on any existing User processes.

Many Suppliers currently schedule relevant Service Requests and the Working Group considered they would likely not move away from scheduling for MHHS. They also want to avoid the return traffic affecting other processes during working hours, such as I&C. An independent MDRA may be able to schedule requests across the whole day, but Suppliers likely couldn't. A member considered the impacts of receiving scheduled reads later in the day would depend on what the data currently collected is used for. If data is spread too far across the day, this may affect some services Suppliers provide to customers.

A Working Group member considered the biggest constraint for Suppliers is their own infrastructure and the impact collecting MHHS data may have on other processes such as I&C. Suppliers will also need to consider how to manage an increase in the data they receive and whether to do this as they do now or via a third party, as this will impact their infrastructure too. The member highlighted conversations from other forums raising concerns that the overnight processing of reads is already creeping into the following working day without the half-hourly data requests for settlement.

The Working Group noted the expectation for Users to be able to carry on with what they currently do, and for this to continue to happen within current time windows. Members felt there does not appear to be anywhere under the MHHS work that is looking at how businesses are currently operating more generally and how these will be affected by MHHS. They considered that MHHS would be in addition to existing processes but should not affect them. The DCC agreed that the industry needs to work together to make sure the impacts are mitigated on both the DCC and on Users, noting Service Providers have expressed the same concerns.

The DCC noted the TRT for scheduled requests is currently 24 hours, even though the service often delivers more quickly. A Working Group member considered that schedules have been set up based on the information being returned as quickly as it is now. If that was to change, even if it was still within the TRT, that could drive changes in User behaviour to meet customer expectations. Another member noted the TRT for scheduled requests has always been 24 hours, and so Users' expectations should be based on this. The DCC would be within its right to make full use of the TRT. Another member noted that they are already seeing the return of data sought overnight creeping into working hours and did not want to make this worse.

MHHS Programme representatives noted that the decision to collect data daily from all 30 million meters had been a DCC recommendation and not one from the TOM. Under the TOM, it had originally been considered to collect data for a whole month from one million meters each day.

A TABASC member noted that for some services offered to customers, it is important to obtain the previous day's data before the customer wakes up. If there is a day's delay, then this data becomes less valuable. Customers have also become used to having real-time data now, and that the current schedules obtain most of the data needed overnight. In contrast, MHHS data is less time-critical and can be obtained later in the day.

A TABASC member considered that if Suppliers are processing half-hourly data for settlement, they may want to also use that to offer value-add services for customers, who may be more interested in the data if it is available. The DCC noted around one-third of meters currently have a schedule set up for half-hourly data, but that requests are processed in a 'first in first out' method. TABASC members also noted that data can be collected locally by Devices on the Home Area Network (HAN), such as In-Home Displays (IHDs). Members wondered if this would allow alternative approaches for providing data to customers without passing the data through the DCC Systems.

Considering all this, the Working Group concluded that the DCC should be free to schedule any scheduled requests within the relevant 24-hour period.

Proposal to introduce 'peak' and 'off-peak' scheduling windows

In its Impact Assessment, the DCC proposed introducing 'peak' and 'off-peak' scheduling windows. This would allow relevant scheduled requests, primarily from Export Suppliers and MDRAs, to be processed during the day, as these requests would generally be for MHHS purposes. This would reduce the load in the overnight window for requests submitted by other Users who would likely be using these for existing services as well as MHHS. The DCC proposed the configuration to apply for MP162 set out in Section 3 above but highlighted this is fully configurable.

The SEC gives the DCC a 24-hour turnaround time for scheduled requests, but this is often completed a lot quicker. The DCC has tried to move away from processing everything overnight before but received significant pushback from Users who wanted to conserve the current turnaround times. The DCC therefore sought to retain this approach, while making the best use of the time. The

assumption has been that a 24-hour turnaround time is required for MHHS, and whether this comes early or late in the day doesn't really make a difference.

The Working Group reiterated the comments above regarding the impact on Users if the timing of when data is received changes, particularly if this was received during working hours. Members were also concerned over the impacts this may have on I&C requests, which need a fast turnaround. The DCC highlighted that it had left gaps between the peak and off-peak windows to facilitate I&C requests. It believed that I&C requests are likely to peak at the start of the working day, then become more staggered as the day goes on. The DCC has therefore allowed time for the schedules in the overnight window to complete and the initial I&C peak to pass before starting the off-peak window, without this then going too far back in the day.

The TABASC asked why the DCC had not proposed 18:00-24:00 as the off-peak window. The DCC has not proposed the off-peak windows extend beyond 20:00 to avoid impacting maintenance windows. Additionally, while there will be far fewer scheduled requests in the off-peak window, allowing a longer period means the transactions-per-second rate can be kept low to mitigate the impacts on other traffic. This will be fully configurable, so the DCC can monitor any impacts and adapt as needed following go-live.

The Working Group was still concerned whether the traffic for the Export Suppliers and MDRAs' scheduled requests could impact on I&C request delivery times. The DCC clarified that the off-peak requests would be processed at a lower rate and smoothed out across the day. The off-peak window should also contain far fewer requests than the peak window, where most of the scheduled traffic would continue to be processed. The DCC considers there to be sufficient headroom in capacity during the day to manage this. It also noted that Users have an obligation to ensure they have sufficient bandwidth to support the required level of inbound traffic. The DCC also subsequently introduced its 'northbound prioritisation' approach set out in Section 4 above.

The TABASC noted that only the scheduled requests from Export Suppliers and MDRAs would be processed in the off-peak window. All other Users Roles, including Import and Gas Suppliers, would continue to be processed overnight, as currently. Therefore, Suppliers should not receive any additional traffic during working hours unless they are requesting it as an Export Supplier. However, members were concerned the 'first-in-first-out' approach could cause traffic to be held up by large scheduled requests in the processing queue, though noted the DCC is continuing to assess its traffic management approach.

TABASC members asked if Users could specify a time for their scheduled requests. The DCC stressed that scheduling works best if Users do not specify specific times, to give the DSP maximum flexibility around smoothing the load. The DCC is therefore maintaining its guidance for Users not to specify specific times in their schedules.

Suppliers and Network Parties that responded to the third Refinement Consultation were broadly supportive of the proposed approach. However, Other SEC Parties that are intending to register as MDR Users considered this approach to be anti-competitive, creating a two-tier system where Suppliers would receive metered data for MHHS earlier than independent agents. See below for further discussion on this area. The full responses received can be found in Annex F.

A Working Group member queried if the scheduled requests could be randomised so that some MDR Users received this in the peak window and some Suppliers in the off-peak window. The DCC noted this hadn't been looked at. It could be possible but would be a further change for which the requirements would need to be defined and the solution subsequently assessed.

The DCC considered that while MP162 is expected to go live in February 2024, the full programme won't go live until later that year, with a year after that for migration. The DCC therefore expects to see a gradual increase in traffic rather than a 'big bang'. Once the changes have been deployed, any further capacity requirements would then be managed as part of business-as-usual. Additionally, by 2024, the installation rate of SMETS2 meters should have reduced, although next-generation Communications Hubs may be ready to be installed from around this time.

Is SRV 4.1.1 needed for MHHS purposes?

The DCC noted an issue around permissions for SRV 4.1.1 relating to the Access Control Broker Remote Party Role. Currently, for SMETS2 Devices, the use case doesn't allow this role to use this Service Request, meaning that an MDR User would not be able to use this. The Working Group was asked for views on whether to remove the use of SRV 4.1.1 for SMETS2 Devices or whether a future GBCS version should enable DCC to support this. The DCC noted that SMETS1 Devices don't support this SRV as they don't store the relevant data.

A Working Group member queried if the use case for SRV 4.1.1 was just as a check, and whether a User could schedule a SRV 4.6.1 'Retrieve Import Daily Read Log' monthly instead. The DCC considered the primary use case for SRV 4.1.1 seems to be reading the log, so could be an edge case. The only difference between these two requests is that SRV 4.1.1 provides an instantaneous read while SRV 4.6.1 provides a midnight read.

A Working Group member considered the main use of SRV 4.1.1 for Suppliers is for customer contact around billing, where a reading would need to be taken as part of any interaction with that customer. Other than that, they would likely use midnight reads. Another member felt it would not impact them if this was not available.

The Working Group noted the principle of not impacting the GBCS, as otherwise it could take several years for the version to be implemented, and even then, some meters could never be updated to this version. One member considered consistency between SMETS1 and SMETS2 Devices would be beneficial. Representatives from the MHHS Programme felt not having an instantaneous read wouldn't be an issue, as a midnight read would work for settlement.

The TABASC queried why the instantaneous read would be needed for MHHS, considering the midnight reads should suffice. One member considered that the main use for instantaneous reads is in diagnosing issues. If the MDR User is not expected to be involved in fault-finding, not being able to use SRV 4.1.1 shouldn't be an issue. Members also had little appetite to introduce any changes to the GBCS for this, as doing so would likely require a retrospective change across all versions.

The TABASC queried who would be responsible for data investigation. An independent MDRA wouldn't have the ability to investigate if it discovered a discrepancy between the half-hourly data and the reconciliation reads. The expectation is that the MDRA would be expected to do only what it has been contracted to do within the scope of the role. Based on the TOM, this is expected to be to collect the data from smart meters and pass this on into settlement.

The Working Group concluded that SRV 4.1.1 was not needed for SMETS2 Devices.

Should SR 4.2 be schedulable?

The DCC also noted that SR 4.2 'Read Instantaneous Export Register Values' is not currently able to be scheduled. It sought the Working Group's views on if this should be changed, noting there could be an increase in the use of SR 4.2.

A Working Group member felt these likely don't need to be scheduled. Another member noted this would change the existing requirements, and it would depend on the costs. A further member noted the cost-savings around capacity from being able to schedule these requests would likely outweigh the costs of introducing scheduling for these. The DCC agreed that would likely be the case.

A Working Group member was not clear on the rationale for needing ad-hoc SR 4.2 requests and felt Users would use SRV 4.8.1 for MHHS. The DCC's assumption was that Users would collect interval data daily, then take a monthly meter read to validate advances.

The MHHS Programme representatives reminded the Working Group that MHHS is not just about collecting half-hourly data. There will be cases where Parties cannot obtain half-hourly data. In these scenarios, register reads can be used to derive half-hourly values through profiling. In these cases, a midnight reading will suffice, assuming a failure in communications does not prevent this from being collected.

The Working Group asked what scheduling SR 4.2 would mean for TRTs. In these cases, the User would receive the read at some point in the following 24 hours, but the alternative would be a spike of on-demand requests at midnight.

The TABASC noted the advantages of scheduling SR 4.2, to reduce peaks in traffic. Additionally, this only needs a wording change in the SEC to allow the DCC to schedule these Service Requests.

The Working Group concluded it would be sensible to make SR 4.2 schedulable.

Can data collected be stored or reused?

Could consumption data be stored in a cache?

A Working Group member noted the DCC does not store consumption data, and queried if it should, given the number of requests for this data that will be sent to meters. The DCC confirmed this had been investigated. The key constraint is with the security model regarding confidential data. SMETS2 consumption data is encrypted so only the intended recipient can access it, meaning the DCC couldn't reuse it. The DCC has looked at whether this could be changed, but it is a fundamental requirement of the smart metering security model that consumption data from SMETS2 meters is encrypted end-to-end. There is more leeway with SMETS1 Devices though. However, the DCC has worked to a design principle that it doesn't store this data or create another repository.

The DCC developed a proposed caching solution for SMETS1 meters. Under this, when a User requests data from the meter, this data will also be stored in a cache held by the DCC for 48 hours. If any other Users subsequently requested the same data, this can be provided from the cache without needing to query the meter. This approach could reduce traffic to these Devices. However, this approach will only provide benefit if more than one User is requesting the half-hourly data.

A Working Group member queried the setup between the DCO and the CSPs and how the cache will be managed. They sought clarification on whether the DCO could manage traffic to multiple cohorts in parallel or whether requests are managed sequentially. The DCC confirmed the DCO doesn't interact with the CSPs, only with the S1SPs. Requests are managed sequentially but the three different cohorts can be supported in parallel. The Working Group requested the DCC mitigate any impact on

the DCO. The DCC confirmed this solution would affect the DCO. It also highlighted that an increase in the number of Service Requests will have a bigger impact on the DCO as it handles requests in real time.

Another member noted the cache option also only works if there is no reuse of data outside of the DCC, such as through the MDRA passing data on to the Supplier (see below). The DCC noted it is important to futureproof the solution in case further use cases arise generating requests for half-hourly data. It also confirmed the cryptographic design for SMETS1 allows for the cache to be added without affecting Users' processes or experience, but the DCC will work with the SSC to ensure security is maintained.

A Working Group member asked whether it was possible to have a solution where the system could push data out to the MDR User during times of low system demand. The DCC noted that due to the security requirements on encrypting SMETS2 consumption data, it cannot collect and store this data to push out to Users; it must be collected from the meter as requested and sent only to the requesting User. The DCC also noted any solutions around having a Device push the data during quiet times would need changes to those Devices. One of the DCC's key design principles for the MP162 solution is for it not to need any changes to Devices.

The TABASC considered whether this provided an opportunity to rethink how scheduled reads are managed. Members asked whether it could be more efficient for the DSP to pool the schedules for a given Device, and only collect the data once. Members acknowledged the constraint currently posed by the security model but felt this could be an avenue worth exploring separately to this modification.

It was concluded that the DCC's solution will include the proposed caching solution for SMETS1 meters only. There will be no caching for data from SMETS2 meters.

Could the data collected be reused?

Working Group members noted an ambition of the MHHS TOM is for half-hourly data submitted for settlement to be more readily available to others. This could be a route for Parties to obtain this data outside of the DCC, which could reduce the impacts on capacity. Additionally, an MDRA that collects the data could then pass this on to the relevant Supplier or to other parties as required. This could reduce the expected demand and therefore the capacity needed. The DCC noted another scenario where if the Supplier appoints a third-party MDRA the Supplier may not collect any of its own data. Conversely, there is a risk that both the Supplier and the MDRA collect this data, creating duplication. Members felt there shouldn't be both a Supplier and an MDRA collecting the data, and that if an MDRA is in place they should be supplying the data to the Supplier. However, such reusing of data would be a question for the TOM and is outside the scope of MP162.

A Working Group member noted that having Suppliers collect data centrally rather than collecting it for themselves would require business process changes. If such behavioural changes weren't legislated for, they believed that Suppliers would not change their behaviours, considering a Supplier would not wait to receive data from an agent if they could collect it themselves faster and cheaper. Another member considered that legislation to prevent duplication would be beneficial, rather than seeking to place reliance on participants to not duplicate data collection.

A Working Group member asked if there would be any difference between the scenarios assessed in the Preliminary Assessment if there is more re-use of collected data. There are a lot of input parameters and assumptions in its modelling which will form layers. The DCC will perform more sensitivity analysis on this one it has a better understanding of the broader assumptions.

The TABASC noted the question of re-using data collected for MHHS for other uses. Members queried if there would be any security issues associated with that but felt this would sit outside the scope of MP162. Members considered that other Parties, such as Network Parties, could be interested in there being a central repository for half-hourly data, and that having multiple Parties collecting the same data via the current DCC Systems was not optimal.

It was concluded that the question of whether the data collected for MHHS could be reused is a valid question to consider but is beyond the scope of MP162.

Will Parties need to collect reconciliation data?

The Working Group queried the requirement for collecting reconciliation data and the rules for collecting reconciliation data for smart meters under the TOM. The MHHS Programme representatives noted the TOM is proposing Parties collect a total register read, and there is a requirement for Suppliers and MDRAs to carry out a meter advance reconciliation once a month.

A Working Group member queried if this would be mandated and where this requirement had come from, as it is not an activity currently carried out. The Programme representatives confirmed this requirement has come from the CCDG but could be further refined as the detail under the TOM is developed. They also confirmed this is a requirement for the SDS to manage. The Working Group noted concern over whether this requirement could impact for Suppliers' processes; it queried which group is looking at this and what participants would need to do to meet this.

A member asked whether the reconciliation meter reads would be daily or monthly, and whether this could be collected at the same time as the half-hourly data. For meters where the customer has opted out, this would be the data collected for MHHS anyway. The DCC has assumed that reconciliation data will be collected monthly. A member was concerned whether Suppliers would want to wait that long to confirm if any data had been missed. The Working Group also queried if validating less frequently would result in larger files when validation was carried out.

A Working Group member highlighted existing constraints with trying to collect a month's worth of half-hourly data at once. Another member flagged that Users would be collecting data for other uses too, and that this would need to be overlaid with the data collection for settlement. The Working Group also noted constraints on the Communications Hub and that there is a requirement for a Device to hold 13 months' worth of data. While Devices do hold this data, some Devices won't populate a SRV 4.8.1 response with more than 10 days' worth of data.

A member noted that where data is not returned, an Alert would be returned instead explaining the reason why. In some cases, this may be because the data is genuinely missing from the meter. They sought clarity on whether the MDR User will receive Alerts. The DCC confirmed that any DCC Alerts will be sent to the originator of the request, which could be the MDR User. This would include if the MDR User sends an on-demand Service Request which times out – the MDR User would receive the subsequent Alert. However, any Alerts generated by the meter will be returned to the Supplier regardless of who sent the request, as the Device would not recognise the MDR User.

The current MHHS requirements will require MDRAs to carry out a meter advance reconciliation once a month, with the expectation this is based on the total register read. This being collected by Users has been factored in to the MP162 solution.

How can data collected for MHHS purposes be identified?

Being able to distinguish where Service Requests are being sent for MHHS purposes would enable to DCC to better schedule these requests. There is currently no mechanism for identifying the purpose of a Service Request.

Initial proposal – all Users collect MHHS data using the MDR User role

The DCC proposed to the Working Group that a new User Role for 'MDR Users' should be established for the collection of half-hourly data for use in settlement. It initially proposed that anyone seeking to collect this data would need to register in this role. The benefit of this approach is that longer TRTs could then be applied to the corresponding Service Requests, allowing the DCC to better manage traffic through the DCC Systems. If all Users accessed half-hourly data using the current 30 second TRTs daily, the DCC's infrastructure capacity will need to be increased significantly to manage the extra demand.

A Working Group member queried if the new User Role would have any impact on how Suppliers would interact with the DCC, and the impact of using the role for different purposes. The group noted the need for wider guidance on the impact of conforming to the longer TRTs; while the processes may not change, guidance on what Users would need to do may be needed.

A Working Group member sought clarity on how the MDR and Supplier roles would interact. They were concerned if this could mean Suppliers would no longer be able to obtain half-hourly data from smart meters under the Supplier role and would only be able to obtain it using the MDR role. The DCC confirmed this would not be the case, and that existing User Roles would be unaffected by MP162. Another member considered that the Supplier would be able to retrieve data for billing purposes and other consented uses through the Supplier role. However, for settlement data, they would need to create a separate schedule using the MDR User Role.

The Working Group believed that if the calendar function was used to schedule the delivery of half-hourly data, there is a greater than 90% likelihood this pattern will be followed so considered the chances of the system being overloaded should be small. A member also queried why MDRs would need to submit on-demand requests if a schedule had been set up. The DCC noted that ad-hoc requests may be needed if a schedule failed to carry out or if something had gone wrong with the data retrieval.

The MHHS Programme representatives clarified that a Supplier or an MDR would be able to submit partial data (half-hourly values for only part of a day) into settlement and then catch the remaining values up later. The DCC noted that data collected via a scheduled request would collect what it could at that time. If it only collected partial data, the User would need to submit an on-demand request to obtain the rest.

The Working Group noted clarity would be needed on which role a Supplier would use in each scenario, and what would prevent a Supplier using its Supplier role to obtain half-hourly data for settlement. It agreed that any overlap between the roles needed clarifying and how it can be proved the right data is being collected for the right purposes. Members queried what role a Supplier would use if it wanted to obtain half-hourly data for both settlement and billing purposes.

The TABASC Chair noted that from an architectural perspective, it would seem odd to force a Supplier to retrieve data it has already obtained just because it needed to submit it for settlement. This would also create unnecessary traffic through the DCC Systems.

Subsequent proposal – Users tagging their Service Requests as being for MHHS

The DCC acknowledged the comments and concerns raised by the Working Group on its initial proposal. It subsequently developed an alternative approach which would not require a Supplier to register in the MDR User Role but would instead introduce different TRTs for different uses of the data.

If a Supplier was collecting the data for non-MHHS uses, such as for billing or a customer query, the existing TRTs would apply. For data retrieval related to MHHS, the DCC would want the User to state the Service Request is related to MHHS. The relevant Service Requests would be flagged as being for MHHS purposes by default when submitted by an MDR User. The DCC could then use its scheduling service to deliver the data within 24 hours. If a Supplier was collecting data both for settlement and for other uses, the shorter TRT would be used. The DCC confirmed that the processes behind this will be mapped out as the solution is developed but confirmed that any existing smart processes will be unchanged by MP162.

A Working Group member noted that SRV 4.1.1 and SR 4.2 don't bring back profile data. Suppliers need different data for profiling from that for billing, and these two Service Requests relate to billing. Furthermore, members felt Suppliers would likely be seeking billing information on a different frequency to settlement and considered Suppliers would be setting up schedules for these as needed. They also agreed there was several reasons why a Supplier may want to obtain a meter read, particularly if there had been issues affecting the half-hourly data or if the customer had opted out of half-hourly settlement. In the latter case, the Supplier would need to use the reading to calculate an advance which would be applied to a load profile to obtain half-hourly values.

A Working Group member asked how Suppliers' correct notification of a Service Request's purpose would be governed. The DCC proposed to add direction on this into the SEC but would not aim to enforce it; this would therefore be reliant on Users' honesty in tagging the request as being for MHHS. Suppliers could choose to ignore the request to mark MHHS data collection as such, and the DCC would then have to expand its capacity to cater for that. The DCC is not looking to force Suppliers on this, but to place the onus on them to specify whether the data is for MHHS or not.

The alternative approach would be for the DSP to build in some complex validation rules and provide significant, and costly, infrastructure upgrades. The Working Group considered that applying such filters and logic would be undesirable.

The TABASC noted the proposal to introduce this flag and queried whether Suppliers would use this if they weren't mandated to. Members sought clarification over whether this would be codified and were unsure if or how this could be enforced.

Conclusion – no marking of Service Requests as being for MHHS

Following the first Refinement Consultation, the DCC withdrew the proposal to flag a Service Request as being for MHHS purposes. It noted that introducing this flag would have required all relevant Users to uplift to the new DUIS version created by MP162 to deliver the solution. Requiring Suppliers to register in the new User Role (the original proposal) would have also required them to uplift to the new DUIS version.

Unlike adding in new data flows, where only the relevant part of the system needs updating, a DUIS uplift would require Users to implement the full changes to the specifications, which Working Group members noted incurs high cost. A member noted that Users have not yet been mandated to uplift to a higher DUIS version, and that it is up to Suppliers when they do so. As Suppliers can do everything

needed to collect the data needed for MHHS on the current DUIS versions, they would not want to be mandated to uplift to a new version if there was no justification for this.

What TRTs should be applied to MDR Users?

Do MDR Users need a response faster than within 24 hours?

The DCC proposed that all TRTs associated with collecting MHHS data should be 24 hours, regardless of whether the Service Request was scheduled or issued on-demand. As data for settlement is not needed until five Working Days after the relevant day, there is less urgency to collecting this data. Using the 24-hour TRT would also mimic existing schedules, which have a 24-hour TRT regardless of who has set them up.

The Working Group noted that, based on the above discussions, Suppliers would still be able use the shorter TRTs through using their Supplier role. Supplier agents were concerned this could give an advantage to Suppliers, which could be detrimental for competition. Members felt the same standards should apply to both Suppliers and third-party MDRA's, and that these should be the same that Suppliers get now, noting the MHHS policy intent for there to be sufficient competition within the MDRA role. They acknowledged the large cost expected for such changes. They also queried why MDR Users couldn't also be given the option to flag Service Requests as being for MHHS purposes, rather than this being automatically marked as such. However, other members noted that the MDRA's' only role will be to collect metered data and submit this for settlement, for which there is a four Working Day deadline to complete this in, and considered the proposed TRTs would still enable MDRA's to achieve this.

A Working Group member asked what would happen if a third-party MDRA needed the option for a quicker response. Other members queried what scenarios there would be for an MDRA needing a faster response. Supplier agents believed such scenarios could include:

- Extracting data from a meter before it is exchanged, which may need to happen within-day to ensure the last half-hourly reading is obtained before the old meter is removed.
- Retrieving any missing data before the relevant settlement run times, which could require up to two days' worth of data within-day.
- Collecting historic data if a customer fails to specify a collection frequency within seven days following a change of Supplier (CoS) or a new meter installation.

The Supplier agents considered these scenarios would facilitate accurate and timely settlement. They were keen to avoid a solution that could be potentially harmful to settlement because the MDRA could not access the data it needed when it needed to.

A Working Group member queried whether an MDR User may need to retrieve data for its first day of appointment on-demand if it couldn't set up a schedule beforehand. The DCC confirmed that an MDR User would be able to set up future-dated schedules in advance of its effective from date if those schedules don't begin before that date.

A Working Group member acknowledged that these were scenarios where an on-demand Service Request would be needed but was not sure why a response was needed in less than 24 hours. A Supplier agent acknowledged that maybe this was the case for the second and third scenarios noted above, but felt a faster response was needed for the first scenario. The Working Group queried how an MDRA would know a meter is being exchanged. It confirmed this would build upon existing communications about a meter exchange to ensure all relevant agents were notified ahead of time.

A Working Group member considered that the need for an MDR User to send an on-demand request should be rare, so usage should not spike. They considered a meter typically lasts for 10-20 years, and potentially longer if it continues to support the relevant requirements and its metrology remains accurate, so meter exchanges should not be common. For both User types, they questioned why Users would send on-demand requests when scheduled requests are easier. However, they considered that if the meter read takes place when requested, a delay in the subsequent response back should be acceptable. The DCC agreed there should be a low usage of on-demand requests, but there would be no technical control to stop an MDR User sending more. There is the risk of Suppliers sending an increased number of on-demand requests using the shorter TRTs; however, the existing use cases for these still apply.

The DCC noted that the more requests that can be scheduled, the more efficient the system will be, while more on-demand use creates unpredictable behaviour. Its concern is that if Users have the option to issue on-demand requests, it is not certain Users won't issue more of these, with the corresponding impact this has on capacity needs.

A Working Group member asked why the relevant Service Requests couldn't be forced to be scheduled. This is an option but there will be edge cases where an on-demand request may be needed. Furthermore, on-demand requests are available to existing Users for other uses under the SEC, and a key DCC design principle is for the MHHS solution to not impact on existing arrangements. This means MP162 should not change or remove the on-demand options for these Users. Another member also considered that Suppliers had already paid for the smart metering infrastructure. If there is a need for expanding the system's capacity to cater for uses it hadn't been originally built for, they queried who should pay for that. It will be Suppliers and other SEC Parties, rather than third-party MDRAs, who will need to pay for MP162, and the member asked if MDRAs would be benefitting from this for free.

The DCC queried who would own the service requirements for MHHS and queried whether the request for faster response times for Supplier agents would be in response to a service requirement. The MHHS Programme representatives noted it is up to the SDS to tell the MDRA the sites, data required and relevant dates to allow the MDRA to schedule requests.

Are the current TRTs appropriate?

A Working Group member noted that work under [MP122B 'Operational Metrics – Part 2'](#) had shown the current response times can't be met. They thought the most likely outcome of the MP122B work is recognition that the very quick response times set out in the SEC are unachievable without massive investment, while the 24-hour response times may feel pessimistic. They asked if this is leading to excessive caution over response times, and whether there were any wider improvements to response times that could be made.

The DCC highlighted that the main aim of scheduling is to take reads during the quieter parts of a given 24-hour window. If all Users had the 30 second TRT then if one User requests data at a given time this will usually be fine. However, if several, or all, Users requested the data at the same moment, the system would not be able to manage that. The DCC also stressed that the 24-hour TRT is the worst-case scenario, and response times would usually be much quicker, subject to the volume of traffic on the system.

Potential alternative solution – align On-Demand TRTs for MDR Users with existing Users

The Working Group noted an alternative solution raised by Supplier agents through the Refinement Consultation, where MDR Users would receive the same on-demand TRTs as existing Users do.

The DCC has sought to keep costs low for Suppliers and so would seek to do as much as possible under the existing setup. The DCC is assuming that Users would be using the 24-hour TRTs and was not keen on the proposed alternative option. A Working Group member noted the wider MHHS programme was developing solutions to meet the requirements, rather than focusing on the costs and simply going with the cheapest option. The DCC was not keen on taking more than one solution to Impact Assessment as this would increase the costs and timescales due to its approach of treating each alternative option like a separate modification.

A Working Group member sought clarification on why the DCC would be impacted differently by the alternative option, as the DCC would still expect the same volumes of data in each case. The Working Group considered that this would be difficult to firm up until the end-to-end processes for MHHS are developed, to understand how the consumption data is subsequently processed. The MHHS Programme considered that the difference in volumes between the DCC's solution and the alternative option would be the extra volume of requests from Suppliers and queried the current volume of failed scheduled reads. The DCC would need to validate this but felt it was less than 5%.

The MHHS Programme highlighted that the end-to-end design is not complete and will need to actively consider how Suppliers will consume MHHS data and what will need to be mandated as part of the overall design. It asked whether it is an assumption that Suppliers will continue to behave as they do now, whether the use cases for shorter TRTs were clear, and whether these options would materially affect the traffic volumes.

The Working Group asked what impact the alternative option would have on the DCC's solution. The DCC clarified that the challenge with shorter TRTs is that there wouldn't be any technical or regulatory elements to prevent a User from submitting all requests on-demand and overloading the system. While the DCC acknowledged this shouldn't happen, there is nothing to enforce this. A member felt Users should only use an on-demand request if a scheduled request failed. The DCC noted this would need to be codified, and there is no means to mitigate future behavioural changes. The Working Group agreed a provision would be added to the SEC requiring any User collecting data for MHHS purposes to collect this via a scheduled read in the first instance. An on-demand request could be made only if the scheduled request fails for some reason. This was added as Section H3.13A in the legal text in Annex C.

The Working Group queried whether the DCC could monitor and report on the volume of scheduled requests versus on-demand requests. The DCC agreed it could monitor this from now (see above), and if significant increases in on-demand requests are seen around MHHS go-live then the DCC and SECAS can talk to the relevant Users as needed. Additionally, the DCC could only report on this retrospectively.

The DCC noted the preference for Users to obtain the data daily. It also believed MP162 should focus on providing data for settlement, where a 24-hour turnaround will be sufficient. If MDR Users wanted shorter TRTs, they could raise a further modification, or make use of the DCC's elective services.

A Working Group member noted the scenario of a meter exchange where the MDR User would need to obtain readings within-day. Another member noted the cumulative read could be taken and the missing half-hours extrapolated from that.

A Working Group member queried if there is a need to challenge the dominance of Suppliers around smart meters, feeling consumers could benefit from more competition in this space. Another member

noted that it was the Department for Business, Energy and Industrial Strategy's (BEIS) intent that the Supplier managed everything with smart metering. While they did not disagree with the first member's view, they noted this would require unpicking this original intent.

A member considered there should be incentives for Users to not submit on-demand requests frivolously. Another member supported this but noted these incentives and how they would work would need to be defined by the DCC with support from the industry.

A Working Group member highlighted the issue was that the more the playing field is aligned, the more the cost goes up. It needs to be discussed and decided whether equal access for Suppliers and agents is a mandatory requirement regardless of the cost, or whether a more cost-effective solution should be taken forward that doesn't cover this requirement.

Steer from the MHHS Programme

Noting these views, the Working Group elected to seek a steer from Ofgem and the MHHS Programme as to whether equal response times for obtaining consumption data on-demand must be provided under MP162 to meet the policy intent around effective competition, or whether this requirement can be disapplied to reduce the cost of the DCC's solution.

The MHHS Programme confirmed that in the first instance the Programme Senior Responsible Owner (SRO) would want the proposed solution put forward by the DCC (with 24-hour on-demand TRTs for MDR Users) to progress to the Change Board for decision on proceeding to DCC Impact Assessment. This was in recognition of the need to progress with the core activity to protect the Ofgem-set programme timescales. However, it recognised the significant challenge regarding there being a level playing field around the TRTs for the MDR services.

The MHHS Programme is initiating activity through its programme governance to further engage stakeholders to discuss options regarding these concerns and support any ongoing activity that might be required to arrive at an acceptable position. This may take the form of further Impact Assessments or requests for provisions to be made within the SEC and would likely result in further SEC changes arising from the conclusion of the MHHS governance process. This MHHS Programme activity is progressing in parallel with the assessment of MP162 to address these issues.

The [Design Advisory Group](#) (DAG) under the MHHS programme is discussing this area. A principle around equal access has been agreed, but this has not, as yet, been translated into specific solution requirements. SECAS expects that any change in requirements relating to the TRTs will be progressed under a separate modification to ensure the changes already assessed under MP162 can be delivered on time. The DCC's initial view is that this separation would not result in higher implementation costs compared to progressing everything under one modification.

Conclusion on the way forward

Noting the steer, the DCC's proposed solution as set out in Section 3 was taken forward. Under this approach, MDR Users will have a 24-hour TRT for on-demand requests, with Suppliers retaining the existing 30-second TRT.

SECAS and the DCC will support MDRAs in developing a further modification to separately review the business case for shortening the on-demand TRTs for MDR Users, should this be required following the DAG's considerations.

Should third-party MDRAs accede under a new Party Category?

The MP162 solution originally proposed that a new Party Category, 'MDR Party', be established under the SEC. While existing Suppliers electing to operate as an MDRA would not need to register under this Party Category, any third-party organisation operating as an MDRA on behalf of a Supplier would need to if not already an 'Other SEC Party'. The 'MDR Party' Party Category would have been treated the same as the existing 'Other SEC Party' Party Category, with seats on Sub-Committees shared between these groups.

When reviewing the draft legal text, the SEC Lawyer queried the need for this separate Party Category. It considered it inconsistent that MDRAs would have their own Party Category, when Registered Supplier Agents (RSAs) currently do not, given that the Party Categories would be treated the same. The SEC Lawyer suggested that MDRAs should register under the 'Other SEC Party' Party Category to be consistent with RSAs. SECAS and the DCC considered this a sensible amendment that would improve efficiency and updated the solution and legal text accordingly.

Do MDR Users need to undergo Privacy Assessments?

The MP162 solution initially proposed that MDR Users would need to undergo a Full Privacy Assessment as part of registering in the User Role, and annual Privacy Assessments thereafter, similar to the 'Other User' User Role. These Privacy Assessments would be applicable to any Users who aren't a Supplier that are accessing consumption data.

One Working Group and Refinement Consultation respondent queried whether MDR Users would need to undergo Privacy Assessments. They noted that, unlike Other Users, the MDR User would have been appointed by the SDS, who would be qualified under the BSC for this purpose. The SDS would then record the appointment and the effective dates in the Industry Standing Data, which would be the data ultimately used by the DCC when managing the access control for each MDR User. The MDRA would then have an obligation to perform this regulatory function of collecting half-hourly data for settlement. Another consultation respondent considered that the MDR User would not need direct consent from the consumer as this would be collected via the Supplier.

SECAS and the User Independent Privacy Auditor (IPA) agreed with this view and recommended to the Panel that MDR Users should not undergo Privacy Assessments. If the model works as intended, an MDR User should not be able to access any data which it does not have the right to access to complete its responsibilities as an MDR, and that it would only be collecting this data to fulfil its responsibilities as an MDR. Therefore, the MDR User should not be a source of privacy risk. The privacy risk in the system should be managed by the Supplier (via the SDS) successfully performing the mapping of consumer to MDR User and reflecting the consumer's consent to opt in or out within the Industry Standing Data. The obligations for Suppliers to do this will be contained within the Supplier Licence. However, there is no assurance regime which governs these obligations, so while compliance will be required, there will be no proactive confirmation of this. SECAS considers that this assurance could sit under the REC and will provide this view to the MHHS Programme. The Panel agreed with this recommendation.

What customer permission is needed to collect this data?

A Working Group member sought clarity on whether Suppliers needed permission to obtain half-hourly data. The MHHS Programme representatives noted that domestic import customers would be able to opt out of this. The member then queried how data separation would work if a Supplier had the

new MDR User role but was also acting as an Import Supplier, and what the data could be used for in each case.

Another member asked whether customers would need to give consent for an agent to collect data on their Supplier's behalf. Such consent would be obtained through the Supplier and Working Group members believed the corresponding Licence changes will be drafted for this under the SCR.

A Working Group member queried, if a new Party was set up on the MDR User role and was then requesting half-hourly data, what certificates and credentials would it need. The DCC clarified that it would be treated like an Other User in this scenario. The DCC would use its DCC credentials to obtain the requested data from the Device. It would then wrap this in further credentials before sending it on to the MDR User so that only intended recipient could read it.

The Working Group considered that the questions of what customer consent is required is not something that needs to be considered under MP162, as it is simply facilitating Users subsequently obtaining that data from meters. The DCC will not be validating the level of consent given by customers when a User submits any request.

How would a change of MDRA be managed?

The MHHS Programme representatives queried how far in advance of its appointment going live a new MDRA would be able to set up schedules. The DCC considered that it would depend how far in advance the registration data is received and highlighted this sequence of events still needed to be clarified by the wider project. A Working Group member noted that next-day switching should be the default by the time MHHS goes live, so this is likely to be a moot point.

Initially, the TOM did not propose Effective To Date be provided for inclusion in the registration data. The DCC believed including this would be the best approach for data matching, but it can work without this information if required. A Working Group member was concerned if this could result in an MDR being appointed indefinitely, and another member queried how this would work if a Supplier was carrying out the MDR activities in-house. The DCC considered work on the wider processes that MP162 is dependent on is still outstanding. It did not believe it was yet clear how this would work if a Supplier did not appoint a separate MDR.

The MHHS Programme representatives highlighted a Supplier could change but the new Supplier could use the same MDR as the old Supplier, which may mean no change in schedules. A Working Group member confirmed that following a change of Supplier, the old Supplier would de-appoint the old MDRA then the gaining Supplier would re-appoint the MDR. This would be the case even if the Supplier was appointing itself as the MDRA or if the MDRA was to remain unchanged after the switch. This means there will be an end-date for anyone fulfilling this role. The CCDG subsequently agreed to include the Effective To Date in the registration data.

What reporting is required for MHHS?

The TABASC considered that there was no reporting on MHHS included in the Preliminary Assessment. The OPSG also considered whether any bespoke reporting was needed around half-hourly settlement.

A Working Group member considered whether the success rate of daily reads should be reported and queried if the SRV 4.8.1 could be assumed as being used for MHHS. However, this is already used for other requests, so that assumption wouldn't work. The member also queried if there should be

reporting around the DCC retrieval process, but other members were concerned this could overlap with existing processes. Furthermore, failures could be down to a wide range of reasons, some of which would be outside the DCC's control.

A Working Group member noted that performance and processes are different under smart compared to half-hourly, with a lot of different moving parts. It would need to be clear what any reporting is for and who is responsible for each part, and there is nothing in the SEC regarding missing data and investigations into this. The member also queried if MDR Users would have access to the Self-Service Interface (SSI), which the DCC confirmed they would.

A Working Group member noted Suppliers will need to be involved in investigating the root cause of issues. The SSI would form part of this but would not be sufficient on its own. They also noted issues could be due to certificates, and consideration would be needed on whether an issue was a one-off or over an extended period. There is a lot of different evidence that needs to be considered when investigating issues, with no one simple diagnostic. Another member flagged that an agent wouldn't be able to assess issues with Devices on-site as no data could be obtained from Devices there. A further member noted issues in the CSP North region can also be due to the telecommunication masts. The Working Group considered that if an MDR User was not receiving readings, there would likely be an agreement with the Supplier to investigate. A member considered there would be obligations covered by Supply License Conditions and that the Codes should not duplicate that.

A Working Group member queried if there should be any auditing or monitoring by a Sub-Committee around Suppliers scheduling Service Requests correctly when they are being submitted for MHHS. Another member considered this would be a significant change and would require policy changes beyond the SEC. The Working Group considered that the DCC could monitor the proportion of on-demand requests versus scheduled requests but did not consider there needed to be any further reporting specifically linked to the MP162 solution. If Parties felt a more robust auditing approach was needed, this could be developed and implemented via a separate modification, in order to not jeopardise the timely delivery of the MP162 technical solution.

Overall, the Working Group considered no additional reporting is required for MHHS. However, the DCC will monitor the proportion of on-demand and scheduled Service Requests, and if it identifies a disproportionate increase in the proportion of on-demand requests it will contact the relevant User to understand the reasons for this. While this ex-post monitoring will not prevent the issue from arising, it will allow Users not scheduling MHHS requests to be identified, followed up on, and raised with the Panel or the Operations Group.

Should Export Supplier schedules be automatically deleted?

The Working Group considered the potential for automatically deleting schedules for Export Suppliers under MP162. Part of the TOM relates to mandating half-hourly settlement for export energy and improving processes around this. Members felt that if MHHS is looking at improving export processes generally, they would be keen to see a requirement around this under MP162. They considered this would be a positive move and would be in scope of this work. It would also be good to resolve any inconsistencies with Import Suppliers.

The DCC queried what the triggers would be for automatically deleting a schedule, noting this needs to be visible. There is currently no trigger for the DCC to know of a change in Export Supplier as SR 6.23 'Update Security Credentials (CoS)' is only for Import Suppliers due to their having Device certificates to update. The requirements would need to be fully clarified around when and how such deletions would take place.

A Working Group member queried if this would apply following a CoS or more generally. They noted that old schedules are not deleted from a Device until it receives SR6.23. However, in some cases following a CoS the gaining Supplier may not issue a SR6.23 for months, during which time the losing Supplier's schedules would continue to run, and would continually fail, generating unnecessary traffic. Rather than using the Service Request as the driver for completion, they considered whether the DCC could use the information around who is the responsible Supplier at that point to delete old schedules. This may also be useful for other processes that need updating following a CoS. Another Working Group member considered Device switching could be another trigger. They also noted the CSS will speed up this process.

The DCC was concerned that this additional requirement could expand significantly, and the Working Group needed to be clear how far any requirement here would need to be extended. SECAS noted a risk that the time and effort required to clarify this requirement could jeopardise the timely delivery of the core MHHS solution.

Noting this, the Proposer considered this aspect should be picked up under a separate modification, and not considered further under MP162.

Are SMETS meters designed to be half-hourly?

A TABASC member noted that while SMETS meters can record the consumption in each half-hour period, they considered they had not been designed to be half-hourly meters or to be used in settlement and would always be treated as non-half-hourly. The decision to record data at half-hourly granularity was decided upon because that was how available Devices at the time had been built. They had highlighted this to Ofgem and Elexon early in the MHHS programme and was concerned that the TOM had been developed based on incorrect assumptions regarding SMETS meters.

The DCC noted all SMETS1 and SMETS2 meters have the functional requirement to record consumption and generation data every 30 minutes. By design they are designed to support the measurement and recording and retrieval of half-hourly data. However, half-hourly data was not considered to be the primary data source for Supplier billing or for settlement as part of the SMETS2 design. This was expected to be the Register Read data, and hence by design the read is scheduled to be pushed out to the registered Supplier for efficiency.

If half-hourly interval data is to be the driving data set in future, the DCC considers it would be beneficial to have the ESME schedule the sending of this data directly and send Alerts as per the existing register read. This would be more efficient architecturally but making such changes would likely incur high cost.

Who should pay for MP162?

The Working Group recognised the issue that there is currently no mechanism for the Supplier agents to pick up any of the costs for MP162 despite benefitting from the changes, with modification implementation costs being allocated between Suppliers and Network Parties only. Currently, the DCC's costs for delivering modifications is charged to Parties via Fixed Charges, which SEC Section K specifies are split across Suppliers and Network Parties only.

A member was concerned that MDR Users would be heavy users of the DCC's network and felt they would need to pay somehow. While they are supportive of the benefits of MHHS, they did not believe Suppliers, who paid for the initial set-up of the DCC, should be further charged for the new User Role when they can already carry out everything required for MHHS without MP162, and particularly if in

doing so the additional traffic generated adversely impact on existing Users' processes. They considered that the SEC was never intended to be a competitive arena for new entrants or parties to carry out activities not previously done by them beforehand. They also queried whether this approach would align with the level playing field principle under the MHHS programme, given that only Suppliers and Network Parties would be picking up the costs for MP162 whereas it will only be MDR Users that materially benefit from this change.

Other SEC Parties intending to become MDR Users noted they would be willing to pay their share of the costs. The Working Group considered whether the charging methodology should be changed, though acknowledged the incremental cost of MP162 would still be huge even if split across more participants. However, members noted a concern that if change wasn't made prior to the new User Role being implemented, it could be harder to do later. The Working Group noted that changes to the current charging model would require approval from Ofgem and queried whether it would be open to reviewing the charging methodology. Furthermore, if a proposal was put forward, Ofgem would likely require much more detail before reaching a decision. This could impact on the progression of MP162 and the delivery of the core MHHS solution. Work is currently underway to review the charging arrangements for Other Users, and a modification around this may be raised soon; SECAS considers that the questions around charging MDR Users should be picked up as part of that work.

A Working Group member queried if there had been any consideration around charging Users based on the volume of requests they submit. There could be different rates for different Service Requests or rates based on whether a User submitted request for consumption data daily or monthly. Another member confirmed this had been considered in the early days of smart metering, but the effort needed to identify who was doing what had been considered excessive and would have needed complex monitoring. A further member noted that where they had seen this done elsewhere, such an approach had often turned out more complex than envisioned.

The SEC currently allows for a 'communication services' charge under SEC Section K7.5(j)⁹, but this is currently set to zero. The DCC has been asked whether this charge should be increased considering the impacts of MHHS. This change would not require a modification and can be made separately to MP162.

A Working Group member highlighted that the costs for MP162 had been raised during discussions with Ofgem over the price control. Ofgem is paying close attention to this modification and will scrutinise the cost and efficiency of this solution.

The Working Group noted the discussions but concluded that changes to the charging methodology would be a significant change that would be best considered separately to MP162.

8. Case for change

Business case

Under the SCR, Ofgem's analysis in its [final business case and decision to implement market-wide half-hourly settlement](#) predicted that settling all consumers on a half-hourly basis would bring net benefits of between £1.6bn and £4.5bn over the period 2021-2045. MP162 forms part of the full MHHS solution. Its implementation costs of £9.0m to deliver and £2.3m per annum in additional DCC

⁹ Communication services: the number of each of the Services identified in the DCC User Interface Services Schedule which have been provided to that Party during that Charging Period

operational costs will need to be weighed as part of the total implementation costs across all impacted Energy Codes against the overall benefits case when the Authority makes its final determination.

Views against the General SEC Objectives

Proposer's views

The Proposer believes MP162 will facilitate the following SEC Objectives:

- **Objective (b)**¹⁰, as implementing the changes needed to deliver MHHS will allow the DCC to comply with the requirement introduced into the DCC Licence to facilitate the implementation of MHHS.
- **Objective (c)**¹¹, as the delivery of MHHS will enable consumers to benefit from more accurate allocation of their consumption within settlement.
- **Objective (g)**¹², as delivering the SEC and DCC changes for MHHS will enable the wider programme to be delivered as planned.

Refinement Consultation respondents' views

Respondents to the first Refinement Consultation were mixed in their views. Three respondents agreed with the Proposer's views, while one respondent felt that while changing the SEC and the DCC Systems to deliver MHHS would facilitate the objectives overall, the proposed solution would not be appropriate.

Two respondents to the first Refinement Consultation, from independent agent organisations, felt the modification had the potential to also relate to the following SEC Objectives:

- **Objective (a)**¹³ would also be facilitated as this change would maximise the benefits realisation through extraction of half-hourly data.
- A successful solution would facilitate and promote effective competition between Suppliers and independent organisations, facilitating **Objective (d)**¹⁴. However, they considered the current solution would not better facilitate this objective because there is not this parity.
- Through the Dynamic Dispatch Model, Ofgem has identified between £100m and £1b in Network benefits from MHHS, which would relate to **Objective (e)**¹⁵. However, they considered the current solution would not better facilitate this objective because this had not been considered.

In the second Refinement Consultation, where the solution had been further developed, seven respondents agreed MP162 would better facilitate either some or all of the objectives identified by the

¹⁰ Enable the DCC to comply at all times with the General Objectives of the DCC (as defined in the DCC Licence), and to efficiently discharge the other obligations imposed upon it by the DCC Licence

¹¹ Facilitate Energy Consumers' management of their use of electricity and gas through the provision to them of appropriate information by means of Smart Metering Systems

¹² Facilitate the efficient and transparent administration and implementation of this Code

¹³ Facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers' premises within Great Britain

¹⁴ Facilitate effective competition between persons engaged in, or in Commercial Activities connected with, the Supply of Energy

¹⁵ Facilitate such innovation in the design and operation of Energy Networks (as defined in the DCC Licence) as will best contribute to the delivery of a secure and sustainable Supply of Energy

Proposer, citing similar reasons. One of these respondents was unclear how it better facilitated Objective (g). Two respondents disagreed. One noted the solution does not consider increasing DCC capacity holistically, while the other, while supportive of the intent, considered there were too many outstanding questions.

These views were largely unchanged in the third Refinement Consultation, issued following the Impact Assessment's completion. Suppliers and Network Parties broadly agreed that MP162 would better facilitate Objectives (b), (c) and/or (g) for the reasons given by the Proposer. However, the Other SEC Party respondents considered that MP162 would be detrimental to Objective (d) due to the solution distorting the market in favour of Suppliers electing to collect data for settlement in-house over those who choose to engage with an independent MDR.

The full responses received to the Refinement Consultations can be found in Annexes D, E and F.

Working Group views

The Working Group noted the views given by respondents to the Refinement consultation. Members broadly agreed with the view that MP162 would better facilitate Objectives (b), (c) and/or (g) but could be detrimental to Objective (d), for the rationale provided above.

Views against the consumer areas

Improved safety and reliability

This modification will have a neutral impact on this area.

One Refinement Consultation respondent considered more frequent collection of consumption data could allow faults on the networks to be identified and rectified faster. However, Electricity Network Parties have noted that MP162 will have no impact on their ability to monitor the networks.

Lower bills than would otherwise be the case

Ofgem has predicted that settling all consumers on a half-hourly basis would bring net consumer benefits of up to £4.5bn over the period up to 2045. Ofgem considers that the full benefits will only be realised if all Suppliers are required to settle their consumers on a half-hourly basis. The changes proposed under MP162 are needed to deliver the full MHHS solution.

Reduced environmental damage

MHHS is expected to be a key enabler of flexibility, which will help reduce reliance on carbon and fossil fuel generation, which damages the environment.

Improved quality of service

This modification could increase innovation through half-hourly enabled propositions that will benefit consumers and quality of service. One Working Group member also considered whether allowing customers to appoint independent MDRs would improve continuity of service across a change of Supplier event and provide assurance this is free from conflict.

Benefits for society as a whole

MHHS could unlock further innovation that will be required to transition to Net Zero efficiently.

Final conclusions

Respondents to the third Refinement Consultation generally felt MP162 should not be approved. Some respondents queried the need for the new User Role and noted concerns over how the costs of this modification were being recovered. Other respondents noted concerns over there not being a level playing field between Suppliers and independent MDRs.

The Working Group has completed its assessment of MP162. Members note the same concerns as consultation respondents but agreed the MP162 solution is sufficiently developed to be progressed to decision.

The TABASC has reviewed the DCC's solution and considers it to be appropriate to delivering the business requirements.

The CSC noted concerns over the outstanding issues, highlighting those relating to the TRTs and the level playing field principle, and those relating to the allocation of the costs for MP162. The CSC considered that these would need to be resolved through further modifications, and that there was limited further refinement that could be done on the core solution. The CSC therefore consented to approving the Modification Report for progression to the Report Phase.

Appendix 1: Progression timetable

The third Refinement Consultation responses have been discussed with the Working Group. The Modification Report will now be presented to the CSC for progression to the Report Phase. MP162 would then be issued for Modification Report Consultation before the Change Board makes its recommendation to the Authority. The final decision on MP162 will be made by the Authority.

SECAS and the DCC will continue to liaise with the MHHS programme's working groups to support the groups with the impacts of the end-to-end solution on the smart arrangements.

Timetable	
Event/Action	Date
Draft Proposal raised	7 May 2021
Presented to CSC for comment and recommendation	25 May 2021
Problem statement discussed with Sub-Committees	Early Jun 2021
Panel converts Draft Proposal to Modification Proposal	18 Jun 2021
Business requirements developed with DCC, Ofgem and Elexon	Jun 2021
Business requirements discussed with Working Group	7 Jul 2021
Business requirements discussed with Sub-Committees	Early Jul 2021
Business requirements updated for comments	Jul 2021
Updated business requirements agreed with Working Group	4 Aug 2021
Preliminary Assessment requested	18 Aug 2021

Timetable	
Event/Action	Date
Preliminary Assessment returned	17 Sep 2021
Preliminary Assessment discussed with Working Group	Oct 2021
Preliminary Assessment and solution elements discussed with Sub-Committees	Oct-Nov 2021
First Refinement Consultation	29 Oct 2021 – 19 Nov 2021
First Refinement Consultation responses and remaining solution elements discussed with Working Group	3 Dec 2021
Impact Assessment costs approved by Change Board	22 Dec 2021
Impact Assessment requested	23 Dec 2021
Second Refinement Consultation	14 Feb 2022 – 4 Mar 2022
Impact Assessment returned	7 Mar 2022
Second Refinement Consultation responses and Impact Assessment discussed with Working Group	4 Apr 2022
Impact Assessment discussed with TABASC	7 Apr 2022
Third Refinement Consultation	3 May 2022 – 24 May 2022
Third Refinement Consultation responses discussed with Working Group	7 Jun 2022
Modification Report approved by CSC	21 Jun 2022
Modification Report Consultation	22 Jun 2022 – 13 Jul 2022
Change Board Vote	27 Jul 2022
Authority decision (anticipated date)	Late Aug 2022

Appendix 2: Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	Full term
ADT	Anomaly Detection Threshold
BSC	Balancing and Settlement Code
BSCP	Balancing and Settlement Code Procedure
CCDG	Code Change and Development Group
CoS	change of Supplier
CSC	Change Sub-Committee
CSP	Communications Service Provider
CSS	Central Switching Service
DAG	Design Advisory Group

Glossary	
Acronym	Full term
DCC	Data Communications Company
DCO	Dual Control Organisation
DSP	Data Service Provider
DUGIDS	DCC User Gateway Interface Design Specification
DUIS	DCC User Interface Specification
ESME	Electricity Smart Metering Equipment
FOC	Final Operating Capability
FUSA	Full User Security Assessment
GBCS	Great Britain Companion Specification
HAN	Home Area Network
I&C	Install and Commission
IHD	In-Home Display
IOC	Initial Operating Capability
IPA	Independent Privacy Auditor
MDR	Meter Data Retrieval
MDRA	Meter Data Retrieval Agent
MHHS	market-wide half-hourly settlement
MMC	Message Mapping Catalogue
MOC	Middle Operating Capability
MPAN	Meter Point Administration Number
MPAS	Meter Point Administration Service
OPSG	Operations Group
PIT	Pre-Integration Testing
RSA	Registered Supplier Agent
S1SP	SMETS1 Service Provider
SCR	Significant Code Review
SDS	Smart Data Service
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SMETS	Smart Metering Equipment Technical Specification
SMKI	Smart Metering Key Infrastructure
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SMI	Smart Metering Inventory
SR	Service Request
SREPT	SMKI Repository Entry Process Testing
SRO	Senior Responsible Owner
SRV	Service Reference Variant

Glossary	
Acronym	Full term
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee
TOM	target operating model
TRT	Target Response Time
TSP	transactions per second
UEPT	User Entry Process Testing
UIT	User Integration Testing